

# HASAS Reference Manual

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# Chapter 1

## HASAS Main Page

HASAS - HydroAcoustic Signal Analysis System

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**Author:**

Jussi Laako

**Date**

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**Overview**

HASAS is signal analysis software for passive sonar systems.

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## Chapter 2

# HASAS Namespace Index

### 2.1 HASAS Namespace List

Here is a list of all namespaces with brief descriptions:

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<a href="#">std</a>	18



## Chapter 3

# HASAS Hierarchical Index

### 3.1 HASAS Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

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## Chapter 4

# HASAS Compound Index

### 4.1 HASAS Compound List

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## Chapter 5

# HASAS File Index

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## **Chapter 6**

# **HASAS Namespace Documentation**

### **6.1 Magick Namespace Reference**

## 6.2 std Namespace Reference

## Chapter 7

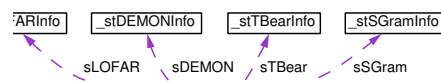
# HASAS Class Documentation

### 7.1 `_uPicInfo` Union Reference

Combination of information in all .inf files.

```
#include <ConvPic.hh>
```

Collaboration diagram for `_uPicInfo`:



#### Public Attributes

- [stLOFARInfo sLOFAR](#)
- [stDEMONInfo sDEMON](#)
- [stSGramInfo sSGram](#)
- [stTBearInfo sTBear](#)

#### 7.1.1 Detailed Description

Combination of information in all .inf files.

## 7.1.2 Member Data Documentation

7.1.2.1 [stLOFARInfo \\_uPicInfo::sLOFAR](#)

7.1.2.2 [stDEMONInfo \\_uPicInfo::sDEMON](#)

7.1.2.3 [stSGramInfo \\_uPicInfo::sSGram](#)

7.1.2.4 [stTBearInfo \\_uPicInfo::sTBear](#)

The documentation for this union was generated from the following file:

- [ConvPic.hh](#)

## 7.2 clArrayBase Class Reference

Base class for array operations.

```
#include <ArrayBase.hh>
```

Inheritance diagram for clArrayBase:



### Public Member Functions

- [clArrayBase](#) ()
- [~clArrayBase](#) ()
- void [EnableDebug](#) ()
- void [DisableDebug](#) ()
- void [SetSampleRate](#) (int)  
*Set sample rate.*
- void [SetSoundSpeed](#) (GDT)  
*Set sound speed.*
- void [SetShading](#) (GDT \*, int, long)  
*Generate shading coefficients.*

### Public Attributes

- bool [bDebug](#)
- GDT [fSoundSpeed](#)
- GDT [fSecsPerMeter](#)  
*1.0 / soundspeed*
- GDT [fSampleSpacing](#)  
*1.0 / samplerate*
- clDSPOp [DSP](#)

### 7.2.1 Detailed Description

Base class for array operations.

## 7.2.2 Constructor & Destructor Documentation

7.2.2.1 `clArrayBase::clArrayBase ()` [inline]

7.2.2.2 `clArrayBase::~~clArrayBase ()` [inline]

## 7.2.3 Member Function Documentation

7.2.3.1 `void clArrayBase::EnableDebug ()` [inline]

7.2.3.2 `void clArrayBase::DisableDebug ()` [inline]

7.2.3.3 `void clArrayBase::SetSampleRate (int)`

Set sample rate.

$$\Delta t_s = \frac{1}{f_s}$$

**Parameters:**

*iSampleRate* Samplerate

7.2.3.4 `void clArrayBase::SetSoundSpeed (GDT)`

Set sound speed.

$$c^{-1} = \frac{1}{c}$$

**Parameters:**

*fSndSpeed* Speed of sound in m/s

7.2.3.5 `void clArrayBase::SetShading (GDT *, int, long)`

Generate shading coefficients.

**Parameters:**

*fpCoeffs* Shading coefficients

*iShadeType* Type of shade window

*lSensCount* Number of sensors



## 7.2.4 Member Data Documentation

### 7.2.4.1 bool [clArrayBase::bDebug](#)

### 7.2.4.2 GDT [clArrayBase::fSoundSpeed](#)

### 7.2.4.3 GDT [clArrayBase::fSecsPerMeter](#)

1.0 / soundspeed

### 7.2.4.4 GDT [clArrayBase::fSampleSpacing](#)

1.0 / samplerate

### 7.2.4.5 clDSPOp [clArrayBase::DSP](#)

The documentation for this class was generated from the following files:

- [ArrayBase.hh](#)
- [ArrayBase.cc](#)

## 7.3 clArrayDipole Class Reference

Class for dipole array operations.

```
#include <ArrayDipole.hh>
```

Inheritance diagram for clArrayDipole:



Collaboration diagram for clArrayDipole:



### Public Member Functions

- [clArrayDipole](#) ()
- [~clArrayDipole](#) ()
- bool [Initialize](#) (GDT, GDT, int, long, GDT, bool)  
*Initialize array.*
- void [Uninitialize](#) ()  
*Uninitialize array.*
- GDT \* [GetRawPtr](#) (long)  
*Get pointer to data buffer.*
- GDT \* [GetFiltPtr](#) (long)
- GDT \* [GetHFPtr](#) (long)
- long [GetMaxDelay](#) ()  
*Get maximum delay in samples.*
- GDT [GetArrayFreq](#) ()  
*Get upper frequency limit of array.*
- GDT [GetDelay](#) (GDT)  
*Get delay for specified direction (rad).*

- GDT [GetDelayTime](#) (long, GDT)  
*Get delay length in seconds for specified sensor to specified direction (rad).*
- long [GetDelaySamples](#) (long, GDT)  
*Get delay length in samples for specified sensor to specified direction (rad).*
- void [SetLowFreqLimit](#) (GDT)  
*Set lower frequency limit.*
- void [AddData](#) (const GDT \*, long, long)  
*Add data to processing buffer.*
- void [GetRawData](#) (GDT \*\*, GDT)  
*Get raw (non filtered) data for specified direction.*
- GDT \* [GetRawDataPtr](#) (long, GDT)
- void [GetFilteredData](#) (GDT \*\*, GDT)  
*Get filtered data for specified direction.*
- GDT \* [GetFilteredDataPtr](#) (long, GDT)
- void [GetAudioData](#) (GDT \*, GDT, bool)  
*Get audio data for specified direction.*

### Private Attributes

- bool [bInitialized](#)
- long [lWindowSize](#)  
*for filtering and array processing = out size*
- long [lBufferSize](#)  
*total size of history buffer  $n * WindowSize$*
- long [lBaseIdx](#)  
*Start of non-delayed window.*
- int [iSampleRate](#)
- GDT [fSpacing](#)
- GDT [fDelay](#)
- clDSPAlloc [RawBuf](#) [2]  
*Raw data.*
- clDSPAlloc [FiltBuf](#) [2]  
*Filtered data (BP filtered).*

- `clDSPAlloc` [HFBuf](#) [2]  
*High frequency data (HP filtered).*
- `clFilter` [FilterBank](#) [4]  
*0,1 BP filters, 2,3 HP filters*

### 7.3.1 Detailed Description

Class for dipole array operations.

### 7.3.2 Constructor & Destructor Documentation

**7.3.2.1** `clArrayDipole::clArrayDipole ()`

**7.3.2.2** `clArrayDipole::~~clArrayDipole ()`

### 7.3.3 Member Function Documentation

**7.3.3.1** `bool clArrayDipole::Initialize (GDT, GDT, int, long, GDT, bool)`

Initialize array.

$$\Delta T_d = dc^{-1}$$

#### Parameters:

*fSensorSpacing* Sensor spacing (m)

*fSndSpeed* Speed of sound (m/s)

*iSRate* Samplerate

*lWinSize* Size of window

*fLowFreqLimit* Low frequency limit (Hz)

*bEnableDebug* Enable debug printout

#### Returns:

Success

**7.3.3.2** `void clArrayDipole::Uninitialize ()`

Uninitialize array.

**7.3.3.3 GDT \* clArrayDipole::GetRawPtr (long)**

Get pointer to data buffer.

**Parameters:**

*ISensor* Number of sensor

**Returns:**

Pointer to data buffer

**7.3.3.4 GDT \* clArrayDipole::GetFiltPtr (long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.3.3.5 GDT \* clArrayDipole::GetHFPtr (long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.3.3.6 long clArrayDipole::GetMaxDelay ()**

Get maximum delay in samples.

$$\Delta T_{max} = \frac{\Delta T_d}{\Delta t_s}$$

**Returns:**

Maximum delay in samples

**7.3.3.7 GDT clArrayDipole::GetArrayFreq ()**

Get upper frequency limit of array.

$$f_a = \frac{\Delta T_d^{-1}}{2}$$

or

$$f_a = \frac{c^{-1}d}{2}$$

**Returns:**

Upper frequency limit of array (Hz)

**7.3.3.8 GDT clArrayDipole::GetDelay (GDT)**

Get delay for specified direction (rad).

$$\Delta T = \sin(\theta) \Delta T_d$$

or

$$\Delta T = \frac{\sin(\theta)d}{c}$$

**Parameters:**

*fDirection* Direction (rad)

**Returns:**

Delay (time)

**7.3.3.9 GDT clArrayDipole::GetDelayTime (long, GDT)**

Get delay length in seconds for specified sensor to specified direction (rad).

$$\Delta T_n = \Delta T_n$$

**Parameters:**

*lSensor* Sensor number

*fDirection* Direction (rad)

**Returns:**

Delay (time)

**7.3.3.10 long clArrayDipole::GetDelaySamples (long, GDT)**

Get delay length in samples for specified sensor to specified direction (rad).

**Parameters:**

*lSensor* Sensor number

*fDirection* Direction (rad)

**Returns:**

Delay (samples)

**7.3.3.11 void clArrayDipole::SetLowFreqLimit (GDT)**

Set lower frequency limit.

**Parameters:**

*fLowFreqLimit* Lower frequency limit (Hz)

**7.3.3.12 void clArrayDipole::AddData (const GDT \*, long, long)**

Add data to processing buffer.

**Note:**

There must be enough data to fill each channel with IWindowSize amount of data.

**Parameters:**

*fpSource* Source vector

*lStartIndex* Starting channel index

*lChannels* Number of channels

**7.3.3.13 void clArrayDipole::GetRawData (GDT \*\*, GDT)**

Get raw (non filtered) data for specified direction.

**Parameters:**

*fpaDest* Destination vectors (array of pointers)

*fDirection* Direction (rad)

**7.3.3.14 GDT \* clArrayDipole::GetRawDataPtr (long, GDT)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:**

*lSensor* Sensor number

*fDirection* Direction (rad)

**Returns:**

Pointer to data

**7.3.3.15 void clArrayDipole::GetFilteredData (GDT \*\*, GDT)**

Get filtered data for specified direction.

**Parameters:**

*fpaDest* Destination vectors (array of pointers)

*fDirection* Direction (rad)

### 7.3.3.16 GDT \* clArrayDipole::GetFilteredDataPtr (long, GDT)

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:**

*lSensor* Sensor number  
*fDirection* Direction (rad)

**Returns:**

Pointer to data

### 7.3.3.17 void clArrayDipole::GetAudioData (GDT \*, GDT, bool)

Get audio data for specified direction.

**Parameters:**

*fpDest* Destination vector  
*fDirection* Direction (rad)  
*bFullBand* Full bandwidth or array-limited

## 7.3.4 Member Data Documentation

7.3.4.1 bool [clArrayDipole::bInitialized](#) [private]

7.3.4.2 long [clArrayDipole::lWindowSize](#) [private]

for filtering and array processing = out size

7.3.4.3 long [clArrayDipole::lBufferSize](#) [private]

total size of history buffer n \* WindowSize

7.3.4.4 long [clArrayDipole::lBaseIdx](#) [private]

Start of non-delayed window.

7.3.4.5 int [clArrayDipole::iSampleRate](#) [private]

7.3.4.6 GDT [clArrayDipole::fSpacing](#) [private]

7.3.4.7 GDT [clArrayDipole::fDelay](#) [private]

7.3.4.8 cDSPAlloc [clArrayDipole::RawBuf\[2\]](#) [private]

Raw data.



**7.3.4.9** clDSPAlloc [clArrayDipole::FiltBuf](#)[2] [private]

Filtered data (BP filtered).

**7.3.4.10** clDSPAlloc [clArrayDipole::HFBuf](#)[2] [private]

High frequency data (HP filtered).

**7.3.4.11** clFilter [clArrayDipole::FilterBank](#)[4] [private]

0,1 BP filters, 2,3 HP filters

The documentation for this class was generated from the following files:

- [ArrayDipole.hh](#)
- [ArrayDipole.cc](#)

## 7.4 clArraySensor Class Reference

Class representing sensor in sensor array for frequency domain beamforming.

```
#include <ArraySensor.hh>
```

### Public Member Functions

- [clArraySensor](#) ()
- [~clArraySensor](#) ()
- void [EnableDebug](#) ()
- void [DisableDebug](#) ()
- bool [Initialize](#) (GDT, GDT, long)  
*Initialize sensor.*
- void [SetSampleRate](#) (GDT)  
*Set sample rate.*
- void [SetSoundSpeed](#) (GDT)  
*Set sound speed.*
- void [SetArrayFrequency](#) (GDT)  
*Set design frequency of array.*
- void [SetShading](#) (GDT)  
*Set shading coefficient.*
- void [SetDirection](#) (GDT, bool=true)  
*Set direction (in rad).*
- void [Put](#) (const GDT \*, long)  
*Put sensor data into sensor processor.*
- bool [Get](#) (GDT \*, long)  
*Get delayed data from the sensor processor.*

### Protected Member Functions

- void [SinCosC](#) (float, float \*, float \*)
- void [SinCosC](#) (double, double \*, double \*)

## Protected Attributes

- bool [bDebug](#)
- long [lWindowSize](#)  
*Processing window size.*
- long [lProcCount](#)  
*Number of samples per processing.*
- GDT [fPI](#)
- GDT [fArrayFrequency](#)  
*Array frequency.*
- GDT [fSoundSpeed](#)  
*Speed of sound.*
- GDT [fSecsPerMeter](#)  
*1.0 / soundspeed*
- GDT [fSampleRate](#)  
*Samplerate.*
- GDT [fSampleSpacing](#)  
*1.0 / samplerate*
- GDT [fFreqResolution](#)  
*Frequency resolution.*
- GDT [fShadeCoeff](#)  
*Shading coefficient.*
- GDT [fLeftDistance](#)  
*Left side sensor distance.*
- GDT [fRightDistance](#)  
*Right side sensor distance.*
- GDT [fLeftTime](#)  
*Left side sensor delay.*
- GDT [fRightTime](#)  
*Right side sensor delay.*
- GDT [fDirection](#)  
*Beam direction for delay.*

- `clDSPOp` [DSP](#)
- `clFilter` [Filter](#)
- `clDSPVector< GDT >` [dspvInData](#)
- `clDSPVector< GDT >` [dspvProcData](#)
- `clDSPVector< GDT >` [dspvOutData](#)

### 7.4.1 Detailed Description

Class representing sensor in sensor array for frequency domain beamforming.

### 7.4.2 Constructor & Destructor Documentation

**7.4.2.1** `clArraySensor::clArraySensor ()`

**7.4.2.2** `clArraySensor::~~clArraySensor ()` [inline]

### 7.4.3 Member Function Documentation

**7.4.3.1** `void clArraySensor::SinCosC (float, float *, float *)` [inline, protected]

**7.4.3.2** `void clArraySensor::SinCosC (double, double *, double *)` [inline, protected]

**7.4.3.3** `void clArraySensor::EnableDebug ()` [inline]

**7.4.3.4** `void clArraySensor::DisableDebug ()` [inline]

**7.4.3.5** `bool clArraySensor::Initialize (GDT, GDT, long)`

Initialize sensor.

Frequency resolution is  $\frac{f_{Nyquist}}{N+1}$ .

#### Parameters:

*fLDistance* Left side sensor distance to end of the array (m)

*fRDistance* Right side sensor distance to end of the array (m)

*lWinSize* Processing window size

#### Returns:

Success

**7.4.3.6** `void clArraySensor::SetSampleRate (GDT)`

Set sample rate.

$$\Delta t_s = \frac{1}{f_s}$$

**Parameters:**

*fFs* Samplerate

**7.4.3.7 void clArraySensor::SetSoundSpeed (GDT)**

Set sound speed.

$$c^{-1} = \frac{1}{c}$$

**Parameters:**

*fSndSpeed* Speed of sound in m/s

**7.4.3.8 void clArraySensor::SetArrayFrequency (GDT)**

Set design frequency of array.

$$\lambda/2$$

**Parameters:**

*fFa* Array frequency (Hz)

**7.4.3.9 void clArraySensor::SetShading (GDT)**

Set shading coefficient.

**Parameters:**

*fCoeff* Shading coefficient

**7.4.3.10 void clArraySensor::SetDirection (GDT, bool = true)**

Set direction (in rad).

$$\varphi_f = \sin(\theta) \pi \left( \frac{\frac{1}{c} d}{\frac{1}{2f}} \right)$$

$$C_f = \cos(\varphi_f) + j \sin(\varphi_f)$$

**Parameters:**

*fDir* Direction

*bLowPass* Low pass filter at array frequency

**7.4.3.11 void clArraySensor::Put (const GDT \*, long)**

Put sensor data into sensor processor.

**Parameters:**

*fpSrc* Source vector

*lSrcCount* Number of samples in source vector

**7.4.3.12 bool clArraySensor::Get (GDT \*, long)**

Get delayed data from the sensor processor.

**Parameters:**

*fpDest* Destination vector

*lDestCount* Number of samples to put into destination vector

**Returns:**

Success

**7.4.4 Member Data Documentation****7.4.4.1 bool clArraySensor::bDebug** [protected]**7.4.4.2 long clArraySensor::lWindowSize** [protected]

Processing window size.

**7.4.4.3 long clArraySensor::lProcCount** [protected]

Number of samples per processing.

**7.4.4.4 GDT clArraySensor::fPI** [protected]**7.4.4.5 GDT clArraySensor::fArrayFrequency** [protected]

Array frequency.

**7.4.4.6 GDT clArraySensor::fSoundSpeed** [protected]

Speed of sound.

**7.4.4.7 GDT clArraySensor::fSecsPerMeter** [protected]

1.0 / soundspeed

**7.4.4.8 GDT clArraySensor::fSampleRate** [protected]

Samplerate.

**7.4.4.9 GDT clArraySensor::fSampleSpacing** [protected]

1.0 / samplerate

**7.4.4.10 GDT clArraySensor::fFreqResolution** [protected]

Frequency resolution.

**7.4.4.11 GDT clArraySensor::fShadeCoeff** [protected]

Shading coefficient.

**7.4.4.12 GDT clArraySensor::fLeftDistance** [protected]

Left side sensor distance.

**7.4.4.13 GDT clArraySensor::fRightDistance** [protected]

Right side sensor distance.

**7.4.4.14 GDT clArraySensor::fLeftTime** [protected]

Left side sensor delay.

**7.4.4.15 GDT clArraySensor::fRightTime** [protected]

Right side sensor delay.

**7.4.4.16 GDT clArraySensor::fDirection** [protected]

Beam direction for delay.

**7.4.4.17** `clDSPOp` [`clArraySensor::DSP`](#) [protected]

**7.4.4.18** `clFilter` [`clArraySensor::Filter`](#) [protected]

**7.4.4.19** `clDSPVector<GDT>` [`clArraySensor::dspvInData`](#) [protected]

**7.4.4.20** `clDSPVector<GDT>` [`clArraySensor::dspvProcData`](#) [protected]

**7.4.4.21** `clDSPVector<GDT>` [`clArraySensor::dspvOutData`](#) [protected]

The documentation for this class was generated from the following files:

- [ArraySensor.hh](#)
- [ArraySensor.cc](#)



## 7.5 clAudio Class Reference

Class for OSS audio IO operations.

```
#include <Audio.hh>
```

### Public Member Functions

- [clAudio](#) ()
- [clAudio](#) (const char \*, int \*, int \*, int \*, int)
- [~clAudio](#) ()
- bool [Open](#) (const char \*, int \*, int \*, int \*, int)  
*Open device.*
- void [Close](#) ()  
*Close device.*
- bool [SetParams](#) (int \*, int \*, int \*)  
*Set device parameters.*
- bool [SetFormat](#) (int \*)  
*Set format.*
- bool [SetChannels](#) (int \*)  
*Set channel count.*
- bool [SetSampleRate](#) (int \*)  
*Set samplerate.*
- int [Read](#) (void \*, int)  
*Read data to buffer.*
- int [Write](#) (const void \*, int)  
*Write data from buffer.*
- bool [Sync](#) ()  
*Wait for buffer to be played empty.*
- bool [Reset](#) ()  
*Stops any ongoing action and returns 'normal' state (for example stops recording).*
- bool [Post](#) ()  
*Indicates driver that there will be pause in IO action.*
- int [GetFragmentSize](#) ()  
*Get internal buffering fragment size.*

- bool [SubDivide](#) (int \*)  
*Undocumented feature of OSS.*
- bool [SetFragment](#) (int, int)  
*Set buffering.*
- int [GetFormats](#) ()  
*Get supported formats.*
- bool [GetInBufInfo](#) (audio\_buf\_info \*)  
*Get input buffer info.*
- bool [GetOutBufInfo](#) (audio\_buf\_info \*)  
*Get output buffer info.*
- bool [GetInBufStat](#) (count\_info \*)  
*Get input buffer status.*
- bool [GetOutBufStat](#) (count\_info \*)  
*Get output buffer status.*
- int [GetCaps](#) ()  
*Get device capabilities.*
- bool [SetDuplex](#) ()  
*Enable full duplex.*
- bool [SetNonBlock](#) ()  
*Set always nonblocking io.*
- bool [SetSynchronous](#) ()  
*Set synchronous operation.*
- int [GetTrigger](#) ()  
*Get trigger mask.*
- bool [SetTrigger](#) (int)  
*Set trigger mask.*
- bool [MapInBuffer](#) (buffmem\_desc \*)  
*Map input buffer.*
- bool [MapOutBuffer](#) (buffmem\_desc \*)  
*Map output buffer.*

- int [GetOutDelay](#) ()  
*Get output delay.*
- bool [GetErrorInfo](#) (audio\_errinfo \*)  
*Get detailed error information.*
- int [GetVersion](#) ()  
*Get OSS version.*
- void [DeIntStereo](#) (const signed short \*, signed short \*, signed short \*, unsigned int)  
*Methods for (de)interleaving stereo data.*
- void [DeIntStereo](#) (const unsigned char \*, unsigned char \*, unsigned char \*, unsigned int)
- void [IntStereo](#) (signed short \*, const signed short \*, const signed short \*, unsigned int)
- void [IntStereo](#) (unsigned char \*, const unsigned char \*, const unsigned char \*, unsigned int)
- int [GetHandle](#) ()  
*Get device handle.*
- int [GetError](#) ()  
*Get errno code.*
- int [GetErrno](#) ()

## Private Attributes

- int [iDevH](#)
- int [iErrorCode](#)

### 7.5.1 Detailed Description

Class for OSS audio IO operations.

## 7.5.2 Constructor & Destructor Documentation

### 7.5.2.1 `clAudio::clAudio ()`

### 7.5.2.2 `clAudio::clAudio (const char *, int *, int *, int *, int)`

### 7.5.2.3 `clAudio::~~clAudio ()`

## 7.5.3 Member Function Documentation

### 7.5.3.1 `bool clAudio::Open (const char *, int *, int *, int *, int)`

Open device.

**Note:**

Check format, channels and samplerate for changes!

**Parameters:**

*cpDevName* Device name

*ipFormat* Format (SND\_FMT\_\*)

*ipSampleRate* Samplerate

*ipChannels* Channel count

*iType* Open mode, read, write or full-duplex

**Returns:**

Success

### 7.5.3.2 `void clAudio::Close ()`

Close device.

### 7.5.3.3 `bool clAudio::SetParams (int *, int *, int *)`

Set device parameters.

**Parameters:**

*ipFormat* Format (SND\_FMT\_\*)

*ipChannels* Channel count

*ipSampleRate* Samplerate

**Returns:**

Success

#### 7.5.3.4 bool clAudio::SetFormat (int \*)

Set format.

**Parameters:**

*ipFormat* Format (SND\_FMT\_\*)

**Returns:**

Success

#### 7.5.3.5 bool clAudio::SetChannels (int \*)

Set channel count.

**Parameters:**

*ipChannels* Channel count

**Returns:**

Success

#### 7.5.3.6 bool clAudio::SetSampleRate (int \*)

Set samplerate.

**Parameters:**

*ipSampleRate* Samplerate

**Returns:**

Success

#### 7.5.3.7 int clAudio::Read (void \*, int)

Read data to buffer.

**Parameters:**

*vpData* Buffer

*iBytes* Number of bytes to read

**Returns:**

Number of bytes read

**7.5.3.8 int clAudio::Write (const void \*, int)**

Write data from buffer.

**Parameters:**

*vpData* Buffer

*iBytes* Number of bytes to write

**Returns:**

Number of bytes written

**7.5.3.9 bool clAudio::Sync ()**

Wait for buffer to be played empty.

**Returns:**

Success

**7.5.3.10 bool clAudio::Reset ()**

Stops any ongoing action and returns 'normal' state (for example stops recording).

**Returns:**

Success

**7.5.3.11 bool clAudio::Post ()**

Indicates driver that there will be pause in IO action.

**Returns:**

Success

**7.5.3.12 int clAudio::GetFragmentSize ()**

Get internal buffering fragment size.

**Returns:**

Internal fragment size in bytes

**7.5.3.13 bool clAudio::SubDivide (int \*)**

Undocumented feature of OSS.

**7.5.3.14 bool clAudio::SetFragment (int, int)**

Set buffering.

**Parameters:**

*iFragSize* Fragment size x where fragsize = 2^x

*iFragCount* Number of fragments, 7fff = no limit

**7.5.3.15 int clAudio::GetFormats ()**

Get supported formats.

**Returns:**

Formats, 0 on error

**7.5.3.16 bool clAudio::GetInBufInfo (audio\_buf\_info \*)**

Get input buffer info.

**Parameters:**

*spInBufInfo* Input buffer info (audio\_buf\_info struct)

**Returns:**

Success

**7.5.3.17 bool clAudio::GetOutBufInfo (audio\_buf\_info \*)**

Get output buffer info.

**Parameters:**

*spOutBufInfo* Output buffer info (audio\_buf\_info struct)

**Returns:**

Success

**7.5.3.18 bool clAudio::GetInBufStat (count\_info \*)**

Get input buffer status.

**Parameters:**

*spInBufStat* Input buffer status (count\_info struct)

**Returns:**

Success

**7.5.3.19 bool clAudio::GetOutBufStat (count\_info \*)**

Get output buffer status.

**Parameters:**

*spOutBufStat* Output buffer status (count\_info struct)

**Returns:**

Success

**7.5.3.20 int clAudio::GetCaps ()**

Get device capabilities.

**Returns:**

DSP\_CAP\_\* bitmask, 0 on error

**7.5.3.21 bool clAudio::SetDuplex ()**

Enable full duplex.

**Returns:**

Success

**7.5.3.22 bool clAudio::SetNonBlock ()**

Set always nonblocking io.

**Returns:**

Success

**7.5.3.23 bool clAudio::SetSynchronous ()**

Set synchronous operation.

**Returns:**

Success

**7.5.3.24 int clAudio::GetTrigger ()**

Get trigger mask.

**Returns:**

Trigger mask, 0 on error



**7.5.3.25 bool clAudio::SetTrigger (int)**

Set trigger mask.

**Parameters:**

*iTrigger* Trigger mask

**Returns:**

Success

**7.5.3.26 bool clAudio::MapInBuffer (buffmem\_desc \*)**

Map input buffer.

**Parameters:**

*spBufferInfo* Mapping info (buffmem\_desc struct)

**Returns:**

Success

**7.5.3.27 bool clAudio::MapOutBuffer (buffmem\_desc \*)**

Map output buffer.

**Parameters:**

*spBufferInfo* Mapping info (buffmem\_desc struct)

**Returns:**

Success

**7.5.3.28 int clAudio::GetOutDelay ()**

Get output delay.

**Returns:**

Output delay (samples)

**7.5.3.29 bool clAudio::GetErrorInfo (audio\_errinfo \*)**

Get detailed error information.

**Note:**

Commercial OSS driver only!

**Parameters:**

*spErrorInfo* Detailed error information

**Returns:**

Success

**7.5.3.30 int clAudio::GetVersion ()**

Get OSS version.

**Returns:**

OSS version, 0 on error

**7.5.3.31 void clAudio::DeIntStereo (const signed short \*, signed short \*, signed short \*, unsigned int)**

Methods for (de)interleaving stereo data.

**7.5.3.32 void clAudio::DeIntStereo (const unsigned char \*, unsigned char \*, unsigned char \*, unsigned int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.5.3.33 void clAudio::IntStereo (signed short \*, const signed short \*, const signed short \*, unsigned int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.5.3.34 void clAudio::IntStereo (unsigned char \*, const unsigned char \*, const unsigned char \*, unsigned int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.5.3.35 int clAudio::GetHandle () [inline]**

Get device handle.

**Returns:**

File descriptor to device

**7.5.3.36 int clAudio::GetError () [inline]**

Get errno code.

**Returns:**

errno

**7.5.3.37 int clAudio::GetErrno () [inline]**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.5.4 Member Data Documentation****7.5.4.1 int clAudio::iDevH [private]****7.5.4.2 int clAudio::iErrorCode [private]**

The documentation for this class was generated from the following files:

- [Audio.hh](#)
- [Audio.cc](#)

## 7.6 clAudio3D Class Reference

3D audio engine

```
#include <Audio3D.hh>
```

### Public Member Functions

- [clAudio3D](#) ()
- [~clAudio3D](#) ()
- void [Initialize](#) (long)  
*Initialize.*
- void [Uninitialize](#) ()  
*Uninitialize.*
- void [SetAngles](#) (int, int, GDT)  
*Set sound direction.*
- void [Process](#) (GDT \*)  
*Process interleaved data.*
- void [Process](#) (GDT \*, GDT \*)  
*Process noninterleaved data.*
- long [GetWindowSize](#) ()  
*Get size of processing window.*

### Private Member Functions

- void [CopyToLocal](#) (GDT \*, const float \*)
- void [HeadingElevN40](#) (int)
- void [HeadingElevN30](#) (int)
- void [HeadingElevN20](#) (int)
- void [HeadingElevN10](#) (int)
- void [HeadingElev0](#) (int)
- void [HeadingElev10](#) (int)
- void [HeadingElev20](#) (int)
- void [HeadingElev30](#) (int)
- void [HeadingElev40](#) (int)
- void [HeadingElev50](#) (int)
- void [HeadingElev60](#) (int)
- void [HeadingElev70](#) (int)
- void [HeadingElev80](#) (int)
- void [HeadingElev90](#) ()
- void [Prepare](#) (bool)
- void [ProcessDistance](#) (GDT \*, GDT \*, long)

## Private Attributes

- bool [bInitialized](#)
- long [lWindowSize](#)
- long [lFFTSize](#)
- long [lSpectSize](#)
- GDT [fDistance](#)
- GDT [fAmp](#)
- GDT \* [fpLeftFilt](#)
- GDT \* [fpRightFilt](#)
- GCDT \* [spLeftFilt](#)
- GCDT \* [spRightFilt](#)
- clAlloc [LeftData](#)
- clAlloc [RightData](#)
- clAlloc [LeftFilt](#)
- clAlloc [RightFilt](#)
- clAlloc [CLeftFilt](#)
- clAlloc [CRightFilt](#)
- clDSPOp [DSP](#)
- clFilter [FilterLeft](#)
- clFilter [FilterRight](#)

### 7.6.1 Detailed Description

3D audio engine

## 7.6.2 Constructor & Destructor Documentation

7.6.2.1 `clAudio3D::clAudio3D ()`

7.6.2.2 `clAudio3D::~~clAudio3D ()`

## 7.6.3 Member Function Documentation

7.6.3.1 `void clAudio3D::CopyToLocal (GDT *, const float *)` [private]

7.6.3.2 `void clAudio3D::HeadingElevN40 (int)` [inline, private]

7.6.3.3 `void clAudio3D::HeadingElevN30 (int)` [inline, private]

7.6.3.4 `void clAudio3D::HeadingElevN20 (int)` [inline, private]

7.6.3.5 `void clAudio3D::HeadingElevN10 (int)` [inline, private]

7.6.3.6 `void clAudio3D::HeadingElev0 (int)` [private]

7.6.3.7 `void clAudio3D::HeadingElev10 (int)` [inline, private]

7.6.3.8 `void clAudio3D::HeadingElev20 (int)` [inline, private]

7.6.3.9 `void clAudio3D::HeadingElev30 (int)` [inline, private]

7.6.3.10 `void clAudio3D::HeadingElev40 (int)` [inline, private]

7.6.3.11 `void clAudio3D::HeadingElev50 (int)` [inline, private]

7.6.3.12 `void clAudio3D::HeadingElev60 (int)` [inline, private]

7.6.3.13 `void clAudio3D::HeadingElev70 (int)` [inline, private]

7.6.3.14 `void clAudio3D::HeadingElev80 (int)` [inline, private]

7.6.3.15 `void clAudio3D::HeadingElev90 ()` [private]

7.6.3.16 `void clAudio3D::Prepare (bool)` [private]

7.6.3.17 `void clAudio3D::ProcessDistance (GDT *, GDT *, long)` [private]

7.6.3.18 `void clAudio3D::Initialize (long)`

Initialize.

### Note:

Reinitialization without `Uninitialize()` is allowed

**Parameters:**

*lSize* Size of window

**7.6.3.19 void clAudio3D::Uninitialize ()**

Uninitialize.

**7.6.3.20 void clAudio3D::SetAngles (int, int, GDT)**

Set sound direction.

**Note:**

Heading and pitch in degrees, distance 0 - 1

**Parameters:**

*iHeading* Heading (deg)

*iPitch* Pitch (deg)

*fDist* Distance

**7.6.3.21 void clAudio3D::Process (GDT \*)**

Process interleaved data.

**Parameters:**

*fpData* New data

**7.6.3.22 void clAudio3D::Process (GDT \*, GDT \*)**

Process noninterleaved data.

**Parameters:**

*fpLeftData* Left channel data

*fpRightData* Right channel data

**7.6.3.23 long clAudio3D::GetWindowSize () [inline]**

Get size of processing window.

**Returns:**

Size of processing window

## 7.6.4 Member Data Documentation

- 7.6.4.1 `bool clAudio3D::bInitialized` [private]
- 7.6.4.2 `long clAudio3D::lWindowSize` [private]
- 7.6.4.3 `long clAudio3D::lFFTSIZE` [private]
- 7.6.4.4 `long clAudio3D::lSpectSize` [private]
- 7.6.4.5 `GDT clAudio3D::fDistance` [private]
- 7.6.4.6 `GDT clAudio3D::fAmp` [private]
- 7.6.4.7 `GDT* clAudio3D::fpLeftFilt` [private]
- 7.6.4.8 `GDT* clAudio3D::fpRightFilt` [private]
- 7.6.4.9 `GCDT* clAudio3D::spLeftFilt` [private]
- 7.6.4.10 `GCDT* clAudio3D::spRightFilt` [private]
- 7.6.4.11 `clAlloc clAudio3D::LeftData` [private]
- 7.6.4.12 `clAlloc clAudio3D::RightData` [private]
- 7.6.4.13 `clAlloc clAudio3D::LeftFilt` [private]
- 7.6.4.14 `clAlloc clAudio3D::RightFilt` [private]
- 7.6.4.15 `clAlloc clAudio3D::CLeftFilt` [private]
- 7.6.4.16 `clAlloc clAudio3D::CRightFilt` [private]
- 7.6.4.17 `clDSPOp clAudio3D::DSP` [private]
- 7.6.4.18 `clFilter clAudio3D::FilterLeft` [private]
- 7.6.4.19 `clFilter clAudio3D::FilterRight` [private]

The documentation for this class was generated from the following files:

- [Audio3D.hh](#)
- [Audio3D.cc](#)



## 7.7 clBaseMsg Class Reference

Base class for all message handling.

```
#include <Messages.hh>
```

Inheritance diagram for clBaseMsg:



### Protected Member Functions

- void [EndianConv](#) (float \*, const float \*)  
*Result endian conversion.*
- void [EndianConv](#) (double \*, const double \*)

### 7.7.1 Detailed Description

Base class for all message handling.

For communication between userinterfaces and processing servers the usual rule is to first send request message. This is null-terminated string of length GLOBAL\_HEADER\_LEN. For results there is GLOBAL\_HEADER\_LEN amount of null-terminated string header data and then endianness converted result data follows.

Set/GetRequest generates/parses this string from request struct. Set/GetResult generates/parses the result message.

### 7.7.2 Member Function Documentation

**7.7.2.1** void [clBaseMsg::EndianConv](#) (float \*, const float \*) [inline, protected]

Result endian conversion.

**Parameters:**

*fpDest* Destination

*fpSrc* Source

**7.7.2.2** void [clBaseMsg::EndianConv](#) (double \*, const double \*) [inline, protected]

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

The documentation for this class was generated from the following files:

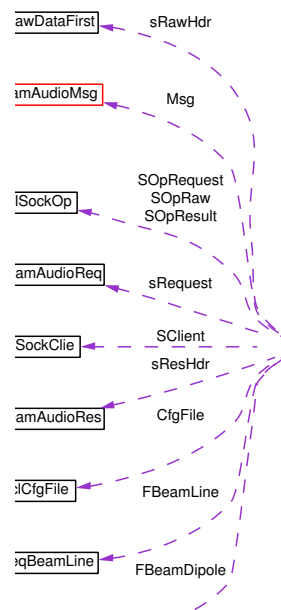
- [Messages.hh](#)
- [Messages.cc](#)

## 7.8 clBeamAudio Class Reference

Server for beamformed audio.

```
#include <BeamAudio.hh>
```

Collaboration diagram for clBeamAudio:



### Public Member Functions

- `clBeamAudio` (int, int)
- `~clBeamAudio` ()
- int `Main` ()
- void `Stop` ()

### Private Member Functions

- bool `GetCfg` ()
- bool `GetRq` ()
- bool `ConnectStream` ()
- bool `InitBeam` ()
- bool `SendFirst` ()
- void `SetDirection` ()
- void `ProcessLoop` ()
- bool `SendResult` (GDT \*, long)

## Private Attributes

- bool [bRun](#)
- int [iArrayType](#)
- int [iShadingType](#)
- long [lStartCh](#)
- long [lWindowSize](#)
- long [lSensorCount](#)
- GDT [fSensorSpacing](#)
- char [cpStreamSocket](#) [\_POSIX\_PATH\_MAX+1]
- GDT [fAttenuation](#)
- [stBeamAudioReq](#) sRequest
- [stBeamAudioRes](#) sResHdr
- [stRawDataFirst](#) sRawHdr
- [clCfgFile](#) CfgFile
- [clBeamAudioMsg](#) Msg
- [clDSPOp](#) DSP
- [clSockClie](#) SClient
- [clSockOp](#) SOpRaw
- [clSockOp](#) SOpRequest
- [clSockOp](#) SOpResult
- [clFreqBeamDipole](#) FBeamDipole
- [clFreqBeamLine](#) FBeamLine

### 7.8.1 Detailed Description

Server for beamformed audio.



## 7.8.2 Constructor & Destructor Documentation

7.8.2.1 `clBeamAudio::clBeamAudio (int, int)`

7.8.2.2 `clBeamAudio::~~clBeamAudio ()`

## 7.8.3 Member Function Documentation

7.8.3.1 `bool clBeamAudio::GetCfg () [private]`

7.8.3.2 `bool clBeamAudio::GetRq () [private]`

7.8.3.3 `bool clBeamAudio::ConnectStream () [private]`

7.8.3.4 `bool clBeamAudio::InitBeam () [private]`

7.8.3.5 `bool clBeamAudio::SendFirst () [private]`

7.8.3.6 `void clBeamAudio::SetDirection () [private]`

7.8.3.7 `void clBeamAudio::ProcessLoop () [private]`

7.8.3.8 `bool clBeamAudio::SendResult (GDT *, long) [private]`

7.8.3.9 `int clBeamAudio::Main ()`

7.8.3.10 `void clBeamAudio::Stop () [inline]`

## 7.8.4 Member Data Documentation

7.8.4.1 `bool clBeamAudio::bRun [private]`

7.8.4.2 `int clBeamAudio::iArrayType [private]`

7.8.4.3 `int clBeamAudio::iShadingType [private]`

7.8.4.4 `long clBeamAudio::lStartCh [private]`

7.8.4.5 `long clBeamAudio::lWindowSize [private]`

7.8.4.6 `long clBeamAudio::lSensorCount [private]`

7.8.4.7 `GDT clBeamAudio::fSensorSpacing [private]`

7.8.4.8 `char clBeamAudio::cpStreamSocket[_POSIX_PATH_MAX + 1]  
[private]`

7.8.4.9 `GDT clBeamAudio::fAttenuation [private]`

7.8.4.10 `stBeamAudioReq clBeamAudio::sRequest [private]`

7.8.4.11 `stBeamAudioRes clBeamAudio::sResHdr [private]`

7.8.4.12 `stRawDataFirst clBeamAudio::sRawHdr [private]`

7.8.4.13 `clCfgFile clBeamAudio::CfgFile [private]`

7.8.4.14 `clBeamAudioMsg clBeamAudio::Msg [private]`

- [BeamAudio.hh](#)
- [BeamAudio.cc](#)

## 7.9 `_stBeamAudioFirst` Struct Reference

BeamAudio: result header.

```
#include <Messages.hh>
```

### Public Attributes

- long [lBufLength](#)  
*Buffer length.*
- int [iSampleRate](#)  
*Samplerate.*

### 7.9.1 Detailed Description

BeamAudio: result header.

### 7.9.2 Member Data Documentation

#### 7.9.2.1 long `_stBeamAudioFirst::lBufLength`

Buffer length.

#### 7.9.2.2 int `_stBeamAudioFirst::iSampleRate`

Samplerate.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)



## 7.10 clBeamAudioMsg Class Reference

BeamAudio server communication.

```
#include <Messages.hh>
```

Inheritance diagram for clBeamAudioMsg:



Collaboration diagram for clBeamAudioMsg:



### Public Member Functions

- void [SetRequest](#) (char \*, const [stpBeamAudioReq](#))
- void [GetRequest](#) (const char \*, [stpBeamAudioReq](#))
- void [SetFirst](#) (char \*, const [stpBeamAudioFirst](#))
- void [GetFirst](#) (const char \*, [stpBeamAudioFirst](#))
- void [SetResult](#) (void \*, const [stpBeamAudioRes](#), const float \*)
- void [SetResult](#) (void \*, const [stpBeamAudioRes](#), const double \*)
- void [GetResult](#) (const void \*, [stpBeamAudioRes](#), float \*)
- void [GetResult](#) (const void \*, [stpBeamAudioRes](#), double \*)

#### 7.10.1 Detailed Description

BeamAudio server communication.

## 7.10.2 Member Function Documentation

- 7.10.2.1 void `clBeamAudioMsg::SetRequest` (char \*, const *stpBeamAudioReq*)
- 7.10.2.2 void `clBeamAudioMsg::GetRequest` (const char \*, [stpBeamAudioReq](#))
- 7.10.2.3 void `clBeamAudioMsg::SetFirst` (char \*, const *stpBeamAudioFirst*)
- 7.10.2.4 void `clBeamAudioMsg::GetFirst` (const char \*, [stpBeamAudioFirst](#))
- 7.10.2.5 void `clBeamAudioMsg::SetResult` (void \*, const *stpBeamAudioRes*, const float \*)
- 7.10.2.6 void `clBeamAudioMsg::SetResult` (void \*, const *stpBeamAudioRes*, const double \*)
- 7.10.2.7 void `clBeamAudioMsg::GetResult` (const void \*, [stpBeamAudioRes](#), float \*)
- 7.10.2.8 void `clBeamAudioMsg::GetResult` (const void \*, [stpBeamAudioRes](#), double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)

## 7.11 `_stBeamAudioReq` Struct Reference

BeamAudio: request.

```
#include <Messages.hh>
```

### Public Attributes

- float `fDirection`  
*Direction of beam (rad).*
- float `fSoundSpeed`  
*Speed of sound (m/s).*
- bool `bHighFreq`  
*High frequency content.*

### 7.11.1 Detailed Description

BeamAudio: request.

### 7.11.2 Member Data Documentation

#### 7.11.2.1 float `_stBeamAudioReq::fDirection`

Direction of beam (rad).

#### 7.11.2.2 float `_stBeamAudioReq::fSoundSpeed`

Speed of sound (m/s).

#### 7.11.2.3 bool `_stBeamAudioReq::bHighFreq`

High frequency content.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.12 `_stBeamAudioRes` Struct Reference

BeamAudio: result.

```
#include <Messages.hh>
```

### Public Attributes

- timeval [sTimeStamp](#)  
*Timestamp.*
- long [lBufLength](#)  
*Buffer length.*
- float [fPeakLevel](#)  
*Peak level (dB).*
- float [fDirection](#)  
*Direction (rad).*

### 7.12.1 Detailed Description

BeamAudio: result.

### 7.12.2 Member Data Documentation

#### 7.12.2.1 struct timeval [\\_stBeamAudioRes::sTimeStamp](#)

Timestamp.

#### 7.12.2.2 long [\\_stBeamAudioRes::lBufLength](#)

Buffer length.

#### 7.12.2.3 float [\\_stBeamAudioRes::fPeakLevel](#)

Peak level (dB).

#### 7.12.2.4 float [\\_stBeamAudioRes::fDirection](#)

Direction (rad).

The documentation for this struct was generated from the following file:

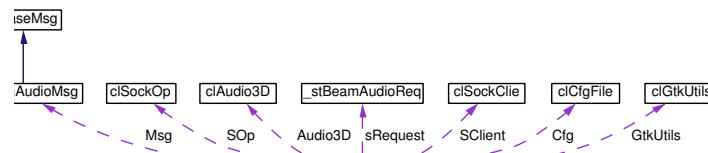
- [Messages.hh](#)

## 7.13 clBeamAudioUI Class Reference

User interface for beam audio server.

```
#include <BeamAudioUI.hh>
```

Collaboration diagram for clBeamAudioUI:



### Public Member Functions

- `clBeamAudioUI` (int \*, char \*\*\*)
- `~clBeamAudioUI` ()
- `int Main` ()
- `gboolean OnDelete` (GtkWidget \*, GdkEvent \*, gpointer)
- `void OnConnectClick` (GtkButton \*, gpointer)
- `void OnValueChanged` (GtkAdjustment \*, gpointer)
- `void OnToggled` (GtkToggleButton \*, gpointer)
- `void OnGdkInput` (gpointer, gint, GdkInputCondition)
- `void * AudioOutThread` (void \*)

### Private Member Functions

- `void Build` ()
- `void BuildTable1` ()
- `void BuildTable2` ()
- `void ConnectSignals` ()
- `bool ParseServerStr` (char \*, int \*, const char \*)
- `bool InitConnection` (const char \*, int)
- `bool SendSettings` ()
- `void AllocateBuffers` (const `stpBeamAudioFirst`)
- `bool InitAudio` (`clAudio` &, `clAudioA2` &)
- `void UpdateSettings` ()
- `void ConvertMS` ()
- `void Process3D` ()
- `void Dither` ()
- `void ConvertFromDither` ()

## Private Attributes

- volatile bool [bConnected](#)
- bool [bDither](#)
- bool [b3DAudio](#)
- bool [bALSA](#)
- int [iSampleRate](#)
- int [iRandH](#)
- int [iPrevHeading](#)
- long [lFragSize](#)
- long [lDataCount](#)
- long [lMsgSize](#)
- long [lClips](#)
- volatile long [lBufIdx](#)
- GDT \* [fpInAudio](#)
- GDT \* [fpSrcAudio](#)
- BAUI\_SND\_DATATYPE \* [ipOutAudio](#) [BAUI\_AUDIO\_BUFCOUNT]
- pthread\_t [ptidAudio](#)
- [stBeamAudioReq](#) sRequest
- guint [guSbCtxt](#)
- gint [giGdkTag](#)
- GList \* [glServer](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwLSoundSpeed](#)
- GtkWidget \* [gwESoundSpeed](#)
- GtkWidget \* [gwCBHighFreq](#)
- GtkWidget \* [gwCBDither](#)
- GtkWidget \* [gwCB3DAudio](#)
- GtkWidget \* [gwLDirection](#)
- GObject \* [goADirection](#)
- GtkWidget \* [gwHSDirection](#)
- GtkWidget \* [gwStatusBar](#)
- clAlloc [MessageBuf](#)
- clAlloc [InAudioBuf](#)
- clAlloc [SrcAudioBuf](#)
- clAlloc [DitherBuf](#)
- clAlloc [DitherRandBuf](#)
- clAlloc [OutAudioBuf](#) [BAUI\_AUDIO\_BUFCOUNT]
- [clAudio3D](#) Audio3D
- [clCfgFile](#) Cfg
- clDSPOp [DSP](#)

- [clBeamAudioMsg](#) [Msg](#)
- [clMutex](#) [OutBufMutex](#) [BAUL\_AUDIO\_BUFCOUNT]
- [clGtkUtils](#) [GtkUtils](#)
- [clSockClie](#) [SClient](#)
- [clSockOp](#) [SOp](#)

### 7.13.1 Detailed Description

User interface for beam audio server.





### 7.13.2 Constructor & Destructor Documentation

7.13.2.1 `clBeamAudioUI::clBeamAudioUI (int *, char **)`

7.13.2.2 `clBeamAudioUI::~~clBeamAudioUI ()`

### 7.13.3 Member Function Documentation

7.13.3.1 `void clBeamAudioUI::Build () [private]`

7.13.3.2 `void clBeamAudioUI::BuildTable1 () [private]`

7.13.3.3 `void clBeamAudioUI::BuildTable2 () [private]`

7.13.3.4 `void clBeamAudioUI::ConnectSignals () [private]`

7.13.3.5 `bool clBeamAudioUI::ParseServerStr (char *, int *, const char *)  
[private]`

7.13.3.6 `bool clBeamAudioUI::InitConnection (const char *, int) [private]`

7.13.3.7 `bool clBeamAudioUI::SendSettings () [private]`

7.13.3.8 `void clBeamAudioUI::AllocateBuffers (const stpBeamAudioFirst)  
[private]`

7.13.3.9 `bool clBeamAudioUI::InitAudio (clAudio &, clAudioA2 &)  
[private]`

7.13.3.10 `void clBeamAudioUI::UpdateSettings () [private]`

7.13.3.11 `void clBeamAudioUI::ConvertMS () [private]`

7.13.3.12 `void clBeamAudioUI::Process3D () [private]`

7.13.3.13 `void clBeamAudioUI::Dither () [private]`

7.13.3.14 `void clBeamAudioUI::ConvertFromDither () [private]`

7.13.3.15 `int clBeamAudioUI::Main ()`

7.13.3.16 `gboolean clBeamAudioUI::OnDelete (GtkWidget *, GdkEvent *,  
gpointer)`

7.13.3.17 `void clBeamAudioUI::OnConnectClick (GtkButton *, gpointer)`

7.13.3.18 `void clBeamAudioUI::OnValueChanged (GtkAdjustment *, gpointer)`

7.13.3.19 `void clBeamAudioUI::OnToggled (GtkToggleButton *, gpointer)`

7.13.3.20 `void clBeamAudioUI::OnGdkInput (gpointer, gint,  
GdkInputCondition)`

7.13.3.21 `void * clBeamAudioUI::AudioOutThread (void *)`

### 7.13.4 Member Data Documentation

7.13.4.1 `volatile bool clBeamAudioUI::bConnected [private]`

- [BeamAudioUI.hh](#)
- [BeamAudioUI.cc](#)

## 7.14 clBeamDipole Class Reference

Beamformer class for dipole array.

```
#include <BeamDipole.hh>
```

Collaboration diagram for clBeamDipole:



### Public Member Functions

- [clBeamDipole](#) ([clArrayDipole](#) \*, GDT, int, long, bool)  
*Constructor.*
- [~clBeamDipole](#) ()
- bool [AddData](#) ()  
*Add data to integration buffers.*
- GDT [Process](#) (GDT)  
*Process data in integration buffers and return result.*
- void [SetHistory](#) ()  
*Set history part of buffer.*
- GDT [GetPeakLevel](#) ()  
*Get peak level (in dB) of integration buffer.*
- GDT [GetIntegrationTime](#) ()  
*Get real integration time.*

### Private Attributes

- bool [bDebug](#)
- long [lSampleCount](#)  
*Sample count for specified integration time.*

- long [lBaseIdx](#)  
*Starting index = maximum delay.*
- long [lWinSize](#)  
*Window size (input data).*
- GDT [fIntTime](#)  
*Integration time in seconds.*
- clDSPAlloc [Data](#) [2]  
*Data buffers for integration.*
- clDSPOp [DSP](#)
- clDSPOp [DSPBank](#) [2]
- [clArrayDipole](#) \* [Array](#)

### 7.14.1 Detailed Description

Beamformer class for dipole array.

### 7.14.2 Constructor & Destructor Documentation

#### 7.14.2.1 clBeamDipole::clBeamDipole ([clArrayDipole](#) \*, GDT, int, long, bool)

Constructor.

##### Parameters:

*ArrayPtr* Pointer to [clArrayDipole](#)  
*fIntegrationTime* Integration time (s)  
*iSampleRate* Samplerate  
*lWindowSize* Size of window  
*bEnableDebug* Enable debugging output

#### 7.14.2.2 clBeamDipole::~~clBeamDipole ()

### 7.14.3 Member Function Documentation

#### 7.14.3.1 bool clBeamDipole::AddData ()

Add data to integration buffers.

Call this after calling [clArrayDipole::AddData\(\)](#) Returns  $\geq 1$  when integration buffers are full and ready to be processed by [Process\(\)](#), call until returns 0 before calling [clArrayDipole::AddData\(\)](#) again.

**Returns:**

Status

**7.14.3.2 GDT `clBeamDipole::Process` (GDT)**

Process data in integration buffers and return result.

This can be called many times for different directions.

**Parameters:**

*fDirection* Direction (rad)

**Returns:**

Normalized energy

**7.14.3.3 `void clBeamDipole::SetHistory` ()**

Set history part of buffer.

Call this between last call of [Process\(\)](#) and next call of [AddData\(\)](#), this will copy data from end of integration buffer to start of integration buffer.

**7.14.3.4 GDT `clBeamDipole::GetPeakLevel` ()**

Get peak level (in dB) of integration buffer.

**Returns:**

Peak level (dB)

**7.14.3.5 GDT `clBeamDipole::GetIntegrationTime` () [inline]**

Get real integration time.

**Returns:**

Integration time (s)

**7.14.4 Member Data Documentation**

**7.14.4.1 `bool clBeamDipole::bDebug` [private]**

**7.14.4.2 `long clBeamDipole::lSampleCount` [private]**

Sample count for specified integration time.

**7.14.4.3** long [clBeamDipole::lBaseIdx](#) [private]

Starting index = maximum delay.

**7.14.4.4** long [clBeamDipole::lWinSize](#) [private]

Window size (input data).

**7.14.4.5** GDT [clBeamDipole::fIntTime](#) [private]

Integration time in seconds.

**7.14.4.6** cDSPAlloc [clBeamDipole::Data\[2\]](#) [private]

Data buffers for integration.

**7.14.4.7** cDSPOp [clBeamDipole::DSP](#) [private]

**7.14.4.8** cDSPOp [clBeamDipole::DSPBank\[2\]](#) [private]

**7.14.4.9** [clArrayDipole\\*](#) [clBeamDipole::Array](#) [private]

The documentation for this class was generated from the following files:

- [BeamDipole.hh](#)
- [BeamDipole.cc](#)

## 7.15 `_stBeamNodeParams` Struct Reference

Node parameters for beamforming cluster.

```
#include <BeamCommon.h>
```

### Public Attributes

- `int iType`  
*Array type.*
- `int iSensors`  
*Number of sensors.*
- `float fSpacing`  
*Sensor spacing.*
- `float fSoundSpeed`  
*Speed of sound.*
- `int iBeamCount`  
*Beam count.*
- `int iWindowSize`  
*Size of window.*
- `int iBlockSize`  
*Cluster communication block size.*
- `float fSampleRate`  
*Samplerate of incoming data.*

### 7.15.1 Detailed Description

Node parameters for beamforming cluster.

### 7.15.2 Member Data Documentation

#### 7.15.2.1 `int _stBeamNodeParams::iType`

Array type.

#### 7.15.2.2 `int _stBeamNodeParams::iSensors`

Number of sensors.



**7.15.2.3** `float _stBeamNodeParams::fSpacing`

Sensor spacing.

**7.15.2.4** `float _stBeamNodeParams::fSoundSpeed`

Speed of sound.

**7.15.2.5** `int _stBeamNodeParams::iBeamCount`

Beam count.

**7.15.2.6** `int _stBeamNodeParams::iWindowSize`

Size of window.

**7.15.2.7** `int _stBeamNodeParams::iBlockSize`

Cluster communication block size.

**7.15.2.8** `float _stBeamNodeParams::fSampleRate`

Samplerate of incoming data.

The documentation for this struct was generated from the following file:

- [BeamCommon.hh](#)

## 7.16 `_stBeamProcInfo` Struct Reference

```
#include <BeamSrv.hh>
```

### Public Attributes

- `pid_t` [pidProc](#)
- `int` [iSockH](#)

### 7.16.1 Member Data Documentation

#### 7.16.1.1 `pid_t` [\\_stBeamProcInfo::pidProc](#)

#### 7.16.1.2 `int` [\\_stBeamProcInfo::iSockH](#)

The documentation for this struct was generated from the following file:

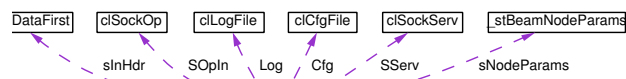
- [BeamSrv.hh](#)

## 7.17 clBeamSrv2Master Class Reference

Beamforming input server, root node.

```
#include <BeamSrv2.hh>
```

Collaboration diagram for clBeamSrv2Master:



### Public Member Functions

- [clBeamSrv2Master](#) ()
- [~clBeamSrv2Master](#) ()
- [Main](#) (int \*, char \*\*\*)
- [InDataThread](#) (void \*)
- [ServerThread](#) (void \*)
- [ServeClientThread](#) (void \*)

### Static Public Member Functions

- [Abort](#) (int=0)

### Private Member Functions

- [ReadConfig](#) ()
- [InitFilterBank](#) ()
- [InitProcessing](#) ()
- [WaitReady](#) ()
- [ProcessLoop](#) ()
- [CompactData](#) (GDT \*, const GDT \*, long, long, long, long)
- [FilterData](#) (GDT \*, const GDT \*, long, long, long, long)

### Private Attributes

- [iFilterType](#)
- [iDecimate](#)
- [iDecFact](#)
- [iChOffset](#)
- [iOutDataCount](#)
- [cpLogBuf](#) [BS\_LOGBUFSIZE]
- [stRawDataFirst](#) [sInHdr](#)

- [stBeamNodeParams](#) [sNodeParams](#)
- [clAlloc](#) [FiltWork](#)
- [clCfgFile](#) [Cfg](#)
- [clDSPOp](#) [DSP](#)
- [clLogFile](#) [Log](#)
- [clRecDecimator](#) \* [FilterBank](#)
- [clSockOp](#) [SOpIn](#)
- [clSockServ](#) [SServ](#)
- [clReBuffer](#) [InBuf](#)
- [clSemaphore](#) [SemIn](#)
- [clMutex](#) [MtxIn](#)
- [clAlloc](#) [OutData](#)
- [clCondition](#) [CndOut](#)
- [clMutex](#) [MtxOut](#)

### 7.17.1 Detailed Description

Beamforming input server, root node.

This node reads data from streamdist, distributes it to slave nodes, collects beamformed data and sends it to clients. Each beam is represented as a channel at output.



## 7.17.2 Constructor & Destructor Documentation

7.17.2.1 `clBeamSrv2Master::clBeamSrv2Master ()`

7.17.2.2 `clBeamSrv2Master::~~clBeamSrv2Master ()`

## 7.17.3 Member Function Documentation

7.17.3.1 `bool clBeamSrv2Master::ReadConfig () [private]`

7.17.3.2 `bool clBeamSrv2Master::InitFilterBank () [private]`

7.17.3.3 `bool clBeamSrv2Master::InitProcessing () [private]`

7.17.3.4 `bool clBeamSrv2Master::WaitReady () [private]`

7.17.3.5 `void clBeamSrv2Master::ProcessLoop () [private]`

7.17.3.6 `void clBeamSrv2Master::CompactData (GDT *, const GDT *, long, long, long, long) [private]`

7.17.3.7 `bool clBeamSrv2Master::FilterData (GDT *, const GDT *, long, long, long, long) [private]`

7.17.3.8 `int clBeamSrv2Master::Main (int *, char ***)`

7.17.3.9 `void clBeamSrv2Master::Abort (int = 0) [static]`

7.17.3.10 `void * clBeamSrv2Master::InDataThread (void *)`

7.17.3.11 `void * clBeamSrv2Master::ServerThread (void *)`

7.17.3.12 `void * clBeamSrv2Master::ServeClientThread (void *)`

## 7.17.4 Member Data Documentation

7.17.4.1 `int clBeamSrv2Master::iFilterType [private]`

7.17.4.2 `int clBeamSrv2Master::iDecimate [private]`

7.17.4.3 `int clBeamSrv2Master::iDecFact [private]`

7.17.4.4 `int clBeamSrv2Master::iChOffset [private]`

7.17.4.5 `int clBeamSrv2Master::iOutDataCount [private]`

7.17.4.6 `char clBeamSrv2Master::cpLogBuf[BS_LOGBUFSIZE] [private]`

7.17.4.7 `stRawDataFirst clBeamSrv2Master::sInHdr [private]`

Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen

7.17.4.8 `stBeamNodeParams clBeamSrv2Master::sNodeParams [private]`

7.17.4.9 `clAlloc clBeamSrv2Master::FiltWork [private]`

7.17.4.10 `clCfgFile clBeamSrv2Master::Cfg [private]`

7.17.4.11 `clDSPOp clBeamSrv2Master::DSP [private]`

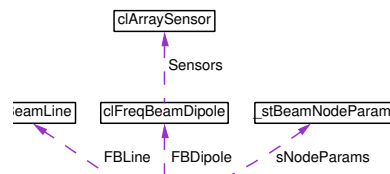
- [BeamSrv2.hh](#)
- [BeamSrv2.cc](#)

## 7.18 clBeamSrv2Slave Class Reference

Beamforming input server, slave node.

```
#include <BeamSrv2.hh>
```

Collaboration diagram for clBeamSrv2Slave:



### Public Member Functions

- [clBeamSrv2Slave](#) (int)
- [~clBeamSrv2Slave](#) ()
- [Main](#) (int \*, char \*\*\*)

### Private Member Functions

- [SendReady](#) ()
- [SendRes](#) (GDT \*, int)

### Private Attributes

- [iRank](#)
- [stBeamNodeParams sNodeParams](#)
- [clFreqBeamDipole FBDipole](#)
- [clFreqBeamLine FBLine](#)

#### 7.18.1 Detailed Description

Beamforming input server, slave node.

Slave nodes do the actual beam processing.



## 7.18.2 Constructor & Destructor Documentation

7.18.2.1 `clBeamSrv2Slave::clBeamSrv2Slave (int)`

7.18.2.2 `clBeamSrv2Slave::~~clBeamSrv2Slave ()`

## 7.18.3 Member Function Documentation

7.18.3.1 `bool clBeamSrv2Slave::SendReady ()` [private]

7.18.3.2 `bool clBeamSrv2Slave::SendRes (GDT *, int)` [private]

7.18.3.3 `int clBeamSrv2Slave::Main (int *, char **)`

## 7.18.4 Member Data Documentation

7.18.4.1 `int clBeamSrv2Slave::iRank` [private]

7.18.4.2 `stBeamNodeParams clBeamSrv2Slave::sNodeParams` [private]

7.18.4.3 `clFreqBeamDipole clBeamSrv2Slave::FBDipole` [private]

7.18.4.4 `clFreqBeamLine clBeamSrv2Slave::FBLine` [private]

The documentation for this class was generated from the following files:

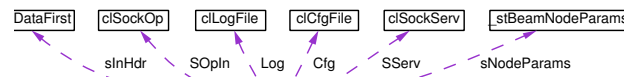
- [BeamSrv2.hh](#)
- [BeamSrv2.cc](#)

## 7.19 clBeamSrvMaster Class Reference

Beamforming input server, main process.

```
#include <BeamSrv.hh>
```

Collaboration diagram for clBeamSrvMaster:



### Public Member Functions

- [clBeamSrvMaster](#) ()
- [~clBeamSrvMaster](#) ()
- [Main](#) (int \*, char \*\*\*)
- [InDataThread](#) (void \*)
- [ServerThread](#) (void \*)
- [ServeClientThread](#) (void \*)

### Static Public Member Functions

- [Abort](#) ()

### Private Member Functions

- [ReadConfig](#) ()
- [InitFilterBank](#) ()
- [InitProcessing](#) ()
- [ProcessLoop](#) ()
- [SendNodeParams](#) ()
- [WaitReady](#) ()
- [SendInData](#) (const GDT \*, int)
- [CompactData](#) (GDT \*, const GDT \*, long, long, long, long)
- [FilterData](#) (GDT \*, const GDT \*, long, long, long, long)

### Private Attributes

- [iFilterType](#)
- [iDecimate](#)
- [iDecFact](#)
- [iChOffset](#)
- [iOutDataCount](#)

- volatile int [iBlockCntr](#)
- char [cpLogBuf](#) [BS.LOGBUFSIZE]
- [stRawDataFirst](#) [sInHdr](#)
- [stBeamNodeParams](#) [sNodeParams](#)
- clAlloc [FiltWork](#)
- [clCfgFile](#) [Cfg](#)
- [clDSPOp](#) [DSP](#)
- [clLogFile](#) [Log](#)
- [clRecDecimator](#) \* [FilterBank](#)
- [clSockOp](#) [SOpIn](#)
- [clSockServ](#) [SServ](#)
- [clReBuffer](#) [InBuf](#)
- [clSemaphore](#) [SemIn](#)
- [clMutex](#) [MtxIn](#)
- clAlloc [OutData](#)
- [clCondition](#) [CndOut](#)
- [clMutex](#) [MtxOut](#)

### 7.19.1 Detailed Description

Beamforming input server, main process.

This process reads data from streamdist, distributes it to slave processes, collects beam-formed data and sends it to clients. Each beam is represented as a channel at output.



## 7.19.2 Constructor & Destructor Documentation

7.19.2.1 `clBeamSrvMaster::clBeamSrvMaster ()`

7.19.2.2 `clBeamSrvMaster::~~clBeamSrvMaster ()`

## 7.19.3 Member Function Documentation

7.19.3.1 `bool clBeamSrvMaster::ReadConfig () [private]`

7.19.3.2 `bool clBeamSrvMaster::InitFilterBank () [private]`

7.19.3.3 `bool clBeamSrvMaster::InitProcessing () [private]`

7.19.3.4 `void clBeamSrvMaster::ProcessLoop () [private]`

7.19.3.5 `bool clBeamSrvMaster::SendNodeParams () [private]`

7.19.3.6 `bool clBeamSrvMaster::WaitReady () [private]`

7.19.3.7 `bool clBeamSrvMaster::SendInData (const GDT *, int) [private]`

7.19.3.8 `void clBeamSrvMaster::CompactData (GDT *, const GDT *, long, long, long, long) [private]`

7.19.3.9 `bool clBeamSrvMaster::FilterData (GDT *, const GDT *, long, long, long, long) [private]`

7.19.3.10 `int clBeamSrvMaster::Main (int *, char ***)`

7.19.3.11 `void clBeamSrvMaster::Abort () [static]`

7.19.3.12 `void * clBeamSrvMaster::InDataThread (void *)`

7.19.3.13 `void * clBeamSrvMaster::ServerThread (void *)`

7.19.3.14 `void * clBeamSrvMaster::ServeClientThread (void *)`

## 7.19.4 Member Data Documentation

7.19.4.1 `int clBeamSrvMaster::iFilterType [private]`

7.19.4.2 `int clBeamSrvMaster::iDecimate [private]`

7.19.4.3 `int clBeamSrvMaster::iDecFact [private]`

7.19.4.4 `int clBeamSrvMaster::iChOffset [private]`

7.19.4.5 `int clBeamSrvMaster::iOutDataCount [private]`

7.19.4.6 `volatile int clBeamSrvMaster::iBlockCnt [private]`

7.19.4.7 `char clBeamSrvMaster::cpLogBuf[BS_LOGBUFSIZE] [private]`

7.19.4.8 `stRawDataFirst clBeamSrvMaster::sInHdr [private]`

7.19.4.9 `stBeamNodeParams clBeamSrvMaster::sNodeParams [private]`

7.19.4.10 `clAlloc clBeamSrvMaster::filtWork [private]`

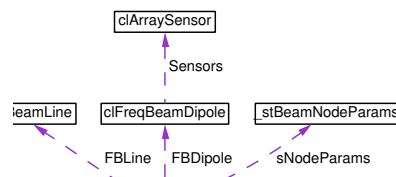
- [BeamSrv.hh](#)
- [BeamSrv.cc](#)

## 7.20 clBeamSrvSlave Class Reference

Beamforming input server, slave process.

```
#include <BeamSrv.hh>
```

Collaboration diagram for clBeamSrvSlave:



### Public Member Functions

- [clBeamSrvSlave](#) (int, int)
- [~clBeamSrvSlave](#) ()
- int [Main](#) (int \*, char \*\*\*)

### Private Member Functions

- bool [RecvParams](#) ()
- bool [RecvInData](#) (GDT \*, int)
- bool [SendReady](#) ()
- bool [SendRes](#) (const GDT \*, int)

### Private Attributes

- int [iProcess](#)
- int [iSockH](#)
- [stBeamNodeParams](#) [sNodeParams](#)
- [clFreqBeamDipole](#) [FBDipole](#)
- [clFreqBeamLine](#) [FBLine](#)

#### 7.20.1 Detailed Description

Beamforming input server, slave process.

Slave processes do the actual beam processing.

## 7.20.2 Constructor & Destructor Documentation

7.20.2.1 `clBeamSrvSlave::clBeamSrvSlave (int, int)`

7.20.2.2 `clBeamSrvSlave::~~clBeamSrvSlave ()`

## 7.20.3 Member Function Documentation

7.20.3.1 `bool clBeamSrvSlave::RecvParams ()` [private]

7.20.3.2 `bool clBeamSrvSlave::RecvInData (GDT *, int)` [private]

7.20.3.3 `bool clBeamSrvSlave::SendReady ()` [private]

7.20.3.4 `bool clBeamSrvSlave::SendRes (const GDT *, int)` [private]

7.20.3.5 `int clBeamSrvSlave::Main (int *, char **)`

## 7.20.4 Member Data Documentation

7.20.4.1 `int clBeamSrvSlave::iProcess` [private]

7.20.4.2 `int clBeamSrvSlave::iSockH` [private]

7.20.4.3 `stBeamNodeParams clBeamSrvSlave::sNodeParams` [private]

7.20.4.4 `clFreqBeamDipole clBeamSrvSlave::FBDipole` [private]

7.20.4.5 `clFreqBeamLine clBeamSrvSlave::FBLine` [private]

The documentation for this class was generated from the following files:

- [BeamSrv.hh](#)
- [BeamSrv.cc](#)



## 7.21 clCfgFile Class Reference

```
#include <CfgFile.hh>
```

### Public Member Functions

- [clCfgFile](#) ()
- [clCfgFile](#) (const char \*)
- [~clCfgFile](#) ()
- void [SetFileName](#) (const char \*)  
*Read configuration file.*
- bool [GetStr](#) (const char \*, char \*)  
*Get value for key.*
- bool [GetInt](#) (const char \*, int \*)
- bool [GetInt](#) (const char \*, long \*)
- bool [GetFlt](#) (const char \*, float \*)
- bool [GetFlt](#) (const char \*, double \*)
- int [GetFltArray](#) (const char \*, float \*)
- int [GetFltArray](#) (const char \*, double \*)

### Private Member Functions

- void [ReadFile](#) (const char \*)
- void [FreeAll](#) ()

### Private Attributes

- int [iEntryCount](#)
- clAlloc [Names](#) [CFGF\_MAX\_ENTRIES]
- clAlloc [Values](#) [CFGF\_MAX\_ENTRIES]

## 7.21.1 Constructor & Destructor Documentation

7.21.1.1 `clCfgFile::clCfgFile ()`

7.21.1.2 `clCfgFile::clCfgFile (const char *)`

7.21.1.3 `clCfgFile::~~clCfgFile ()`

## 7.21.2 Member Function Documentation

7.21.2.1 `void clCfgFile::ReadFile (const char *)` [private]

7.21.2.2 `void clCfgFile::FreeAll ()` [private]

7.21.2.3 `void clCfgFile::SetFileName (const char *)`

Read configuration file.

You can call this many times. Previous settings are flushed from the memory every time this method is called.

### Parameters:

*cpFileName* Name of configuration file

7.21.2.4 `bool clCfgFile::GetStr (const char *, char *)`

Get value for key.

### Parameters:

*cpKey* Key name

*cpVal* Value

### Returns:

Success

7.21.2.5 `bool clCfgFile::GetInt (const char *, int *)`

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

7.21.2.6 `bool clCfgFile::GetInt (const char *, long *)`

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.21.2.7 bool clCfgFile::GetFlt (const char \*, float \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.21.2.8 bool clCfgFile::GetFlt (const char \*, double \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.21.2.9 int clCfgFile::GetFltArray (const char \*, float \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.21.2.10 int clCfgFile::GetFltArray (const char \*, double \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.21.3 Member Data Documentation****7.21.3.1 int clCfgFile::iEntryCount** [private]**7.21.3.2 clAlloc clCfgFile::Names**[CFGF\_MAX\_ENTRIES] [private]**7.21.3.3 clAlloc clCfgFile::Values**[CFGF\_MAX\_ENTRIES] [private]

The documentation for this class was generated from the following files:

- [CfgFile.hh](#)
- [CfgFile.cc](#)

## 7.22 clComediIO Class Reference

Class for Comedi IO operations.

```
#include <ComediIO.hh>
```

### Public Types

- enum { [VERS\\_MASK\\_MAJ](#) = 0x00ff0000, [VERS\\_MASK\\_MIN](#) = 0x0000ff00, [VERS\\_MASK\\_PL](#) = 0x000000ff }
- enum { [VERS\\_SHIFT\\_MAJ](#) = 16, [VERS\\_SHIFT\\_MIN](#) = 8, [VERS\\_SHIFT\\_PL](#) = 0 }

### Public Member Functions

- [clComediIO](#) ()
- [~clComediIO](#) ()
- bool [Open](#) (const char \*)  
*Open device.*
- bool [Close](#) ()  
*Close device.*
- int [GetSubdeviceCount](#) ()  
*Get number of subdevices.*
- int [GetVersionCode](#) ()  
*Get version code.*
- const char \* [GetDriverName](#) ()  
*Get driver name.*
- const char \* [GetBoardName](#) ()  
*Get board name.*
- const char \* [GetErrorMsg](#) ()  
*Get error message.*
- bool [PcmInOpen](#) ()  
*Open PCM input device.*
- bool [PcmInClose](#) ()  
*Close PCM input device.*
- int [PcmInGetChannelCount](#) ()  
*Get number of channels for PCM input device.*

- bool [PcmInStart](#) (double \*, int, double, bool=true, bool=false)

*Start input operation.*

- bool [PcmInStop](#) ()

*Stop input operation.*

- long [PcmInRead](#) (float \*, long)

*Read input samples.*

- long [PcmInRead](#) (double \*, long)

- bool [PcmBufferSizeSet](#) (unsigned int)

*Set buffer size for PCM device.*

- int [PcmBufferSizeGet](#) ()

*Get buffer size for PCM device.*

- size\_t [PcmGetIntSampleSize](#) ()

*Get internal sample size (for calculating buffer sizes).*

## Private Member Functions

- void [SetError](#) ()
- bool [PcmStart](#) (int, double \*, int, unsigned int \*, unsigned int, bool, bool)
- long [PcmRead](#) (sampl\_t \*\*, long)

## Private Attributes

- int [iInSubDev](#)
- char \* [cpErrorMsg](#)
- comedi\_t \* [comediDev](#)
- lsampl\_t [iInMaxValue](#)
- clAlloc [InScanList](#)
- clAlloc [InBuf](#)

### 7.22.1 Detailed Description

Class for Comedi IO operations.

## 7.22.2 Member Enumeration Documentation

### 7.22.2.1 anonymous enum

Enumeration values:

**VERS\_MASK\_MAJ**

**VERS\_MASK\_MIN**

**VERS\_MASK\_PL**

### 7.22.2.2 anonymous enum

Enumeration values:

**VERS\_SHIFT\_MAJ**

**VERS\_SHIFT\_MIN**

**VERS\_SHIFT\_PL**

## 7.22.3 Constructor & Destructor Documentation

### 7.22.3.1 clComediIO::clComediIO ()

### 7.22.3.2 clComediIO::~~clComediIO ()

## 7.22.4 Member Function Documentation

### 7.22.4.1 void clComediIO::SetError () [private]

### 7.22.4.2 bool clComediIO::PcmStart (int *iSubDev*, double \* *dpSampleRate*, int *iChannels*, unsigned int \* *uipScanList*, unsigned int *uiListLength*, bool *bDither*, bool *bDoubleClock*) [private]

$dpSampleRate = 1.0 / ((double) sComediCmd.convert\_arg * iChannels / 1.0e9);$

### 7.22.4.3 long clComediIO::PcmRead (sampl\_t \*\*, long) [private]

### 7.22.4.4 bool clComediIO::Open (const char \*)

Open device.

**Parameters:**

*cpDevice* Device filename

**Returns:**

Success?

**7.22.4.5 bool clComediIO::Close ()**

Close device.

**Returns:**

Success?

**7.22.4.6 int clComediIO::GetSubdeviceCount ()**

Get number of subdevices.

**Returns:**

Number of subdevices

**7.22.4.7 int clComediIO::GetVersionCode ()**

Get version code.

**Returns:**

Version code

**7.22.4.8 const char \* clComediIO::GetDriverName ()**

Get driver name.

**Returns:**

Driver name

**7.22.4.9 const char \* clComediIO::GetBoardName ()**

Get board name.

**Returns:**

Board name

**7.22.4.10 const char\* clComediIO::GetErrorMsg () [inline]**

Get error message.

**Returns:**

Error message

**7.22.4.11 bool clComediIO::PcmInOpen ()**

Open PCM input device.

**Returns:**

Success?

**7.22.4.12 bool clComediIO::PcmInClose ()**

Close PCM input device.

**Returns:**

Success?

**7.22.4.13 int clComediIO::PcmInGetChannelCount ()**

Get number of channels for PCM input device.

**Returns:**

Number of channels

**7.22.4.14 bool clComediIO::PcmInStart (double \*, int, double, bool = true, bool = false)**

Start input operation.

**Parameters:**

*dpSampleRate* Samplerate (actual rate is returned)

*iChannels* Number of channels to use

*dRange* Input range (in volts)

*bDither* User dither?

*bDoubleClock* Use scan/channel timers instead of one?

**Returns:**

Success?

**7.22.4.15 bool clComediIO::PcmInStop ()**

Stop input operation.

**Returns:**

Success?



**7.22.4.16 long clComediIO::PcmInRead (float \*, long)**

Read input samples.

**Parameters:**

*Buffer*

*Buffer* size (in samples)

**Returns:**

Number of samples

**7.22.4.17 long clComediIO::PcmInRead (double \*, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.22.4.18 bool clComediIO::PcmBufferSizeSet (unsigned int)**

Set buffer size for PCM device.

**Note:**

Buffer size must be multiple of pagesize.

**Parameters:**

*uiBufSize* Buffer size

**Returns:**

Success?

**7.22.4.19 int clComediIO::PcmBufferSizeGet ()**

Get buffer size for PCM device.

**Returns:**

Size of buffer

**7.22.4.20 size\_t clComediIO::PcmGetIntSampleSize () [inline]**

Get internal sample size (for calculating buffer sizes).

**Returns:**

Intenal sample size

### 7.22.5 Member Data Documentation

7.22.5.1 `int clComediIO::iInSubDev` [private]

7.22.5.2 `char* clComediIO::cpErrorMsg` [private]

7.22.5.3 `comedi_t* clComediIO::comediDev` [private]

7.22.5.4 `lsampl_t clComediIO::iInMaxValue` [private]

7.22.5.5 `clAlloc clComediIO::InScanList` [private]

7.22.5.6 `clAlloc clComediIO::InBuf` [private]

The documentation for this class was generated from the following files:

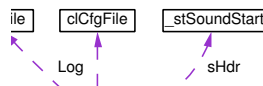
- [ComediIO.hh](#)
- [ComediIO.cc](#)

## 7.23 clComediSrv Class Reference

ComediServer.

```
#include <ComediSrv.hh>
```

Collaboration diagram for clComediSrv:



### Public Member Functions

- [clComediSrv](#) ()
- [~clComediSrv](#) ()
- [int Main](#) (int, char \*\*)
- [void \\* AudioInThread](#) (void \*)
- [void \\* ServeClientThread](#) (void \*)
- [void Stop](#) ()

### Public Attributes

- [clLogFile Log](#)

### Private Member Functions

- [bool GetAudioCfg](#) (char \*, int \*, double \*, int \*, double \*, int \*)
- [bool InitCompress](#) (int, int, int, int, int)

### Private Attributes

- volatile bool [bRun](#)
- volatile int [iAudioBufSize](#)
- volatile int [iBlockCntr](#)
- [stSoundStart sHdr](#)
- [clAlloc AudioBuf](#)
- [clAlloc CompHead](#)
- [clAlloc FLACFrame](#)
- [clMutex MtxAudio](#)
- [clCondition CndAudio](#)
- [clCfgFile Cfg](#)

### 7.23.1 Detailed Description

ComediServer.

Input server with support for Comedi DAQ cards.

## 7.23.2 Constructor & Destructor Documentation

7.23.2.1 `clComediSrv::clComediSrv ()`

7.23.2.2 `clComediSrv::~~clComediSrv ()`

## 7.23.3 Member Function Documentation

7.23.3.1 `bool clComediSrv::GetAudioCfg (char *, int *, double *, int *, double *, int *) [private]`

7.23.3.2 `bool clComediSrv::InitCompress (int, int, int, int, int) [private]`

7.23.3.3 `int clComediSrv::Main (int, char **)`

7.23.3.4 `void * clComediSrv::AudioInThread (void *)`

7.23.3.5 `void * clComediSrv::ServeClientThread (void *)`

7.23.3.6 `void clComediSrv::Stop () [inline]`

## 7.23.4 Member Data Documentation

7.23.4.1 `volatile bool clComediSrv::bRun [private]`

7.23.4.2 `volatile int clComediSrv::iAudioBufSize [private]`

7.23.4.3 `volatile int clComediSrv::iBlockCntr [private]`

7.23.4.4 `stSoundStart clComediSrv::sHdr [private]`

7.23.4.5 `clAlloc clComediSrv::AudioBuf [private]`

7.23.4.6 `clAlloc clComediSrv::CompHead [private]`

7.23.4.7 `clAlloc clComediSrv::FLACFrame [private]`

7.23.4.8 `clMutex clComediSrv::MtxAudio [private]`

7.23.4.9 `clCondition clComediSrv::CndAudio [private]`

7.23.4.10 `clCfgFile clComediSrv::Cfg [private]`

7.23.4.11 `clLogFile clComediSrv::Log`

The documentation for this class was generated from the following files:

- [ComediSrv.hh](#)

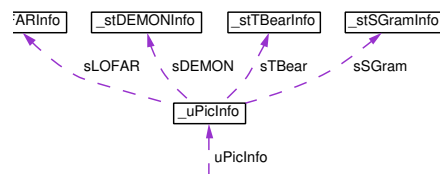
- [ComediSrv.cc](http://ComediSrv.cc)

## 7.24 clConvPic Class Reference

Conversion of .tif + .tif.inf to image containing information in the .inf file.

```
#include <ConvPic.hh>
```

Collaboration diagram for clConvPic:



### Public Member Functions

- [clConvPic](#) ()
- [~clConvPic](#) ()
- [int Main](#) (int \*, char \*\*\*)

### Private Member Functions

- [bool Initialize](#) ()
- [bool LoadLOFARInfo](#) (const char \*)
- [bool LoadDEMONInfo](#) (const char \*)
- [bool LoadSGramInfo](#) (const char \*)
- [bool LoadTBearInfo](#) (const char \*)
- [bool LoadAndCreate](#) (const char \*)
- [bool CopySource](#) ()
- [bool DrawLOFARInfo](#) ()
- [bool DrawDEMONInfo](#) ()
- [bool DrawSGramInfo](#) ()
- [bool DrawTBearInfo](#) ()
- [bool ConvertColors](#) ()
- [bool SaveResult](#) (const char \*)
- [void Clean](#) ()
- [void SplitLine](#) (const char \*, string &, string &)
- [time\\_t ParseTime](#) (const char \*)
- [double RadToDeg](#) (double)
- [void GetTextSize](#) (const char \*, int \*, int \*, int \* = NULL)

## Private Attributes

- bool [bTwoColor](#)
- int [iType](#)
- int [iSrcWidth](#)
- int [iSrcHeight](#)
- int [iDstWidth](#)
- int [iDstHeight](#)
- char \* [cpPageSize](#)
- [utPicInfo](#) [uPicInfo](#)
- Image \* [ImgSrc](#)
- Image \* [ImgDst](#)

### 7.24.1 Detailed Description

Conversion of .tif + .tif.inf to image containing information in the .inf file.





## 7.24.2 Constructor & Destructor Documentation

7.24.2.1 `clConvPic::clConvPic ()`

7.24.2.2 `clConvPic::~~clConvPic ()`

## 7.24.3 Member Function Documentation

7.24.3.1 `bool clConvPic::Initialize () [private]`

7.24.3.2 `bool clConvPic::LoadLOFARInfo (const char *) [private]`

7.24.3.3 `bool clConvPic::LoadDEMONInfo (const char *) [private]`

7.24.3.4 `bool clConvPic::LoadSGramInfo (const char *) [private]`

7.24.3.5 `bool clConvPic::LoadTBearInfo (const char *) [private]`

7.24.3.6 `bool clConvPic::LoadAndCreate (const char *) [private]`

7.24.3.7 `bool clConvPic::CopySource () [private]`

7.24.3.8 `bool clConvPic::DrawLOFARInfo () [private]`

7.24.3.9 `bool clConvPic::DrawDEMONInfo () [private]`

7.24.3.10 `bool clConvPic::DrawSGramInfo () [private]`

7.24.3.11 `bool clConvPic::DrawTBearInfo () [private]`

7.24.3.12 `bool clConvPic::ConvertColors () [private]`

7.24.3.13 `bool clConvPic::SaveResult (const char *) [private]`

7.24.3.14 `void clConvPic::Clean () [private]`

7.24.3.15 `void clConvPic::SplitLine (const char *, string &, string &) [private]`

7.24.3.16 `time_t clConvPic::ParseTime (const char *) [private]`

7.24.3.17 `double clConvPic::RadToDeg (double) [inline, private]`

7.24.3.18 `void clConvPic::GetTextSize (const char *, int *, int *, int * = NULL) [private]`

7.24.3.19 `int clConvPic::Main (int *, char ***)`

## 7.24.4 Member Data Documentation

7.24.4.1 `bool clConvPic::bTwoColor` Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen

7.24.4.2 `int clConvPic::iType [private]`

7.24.4.3 `int clConvPic::iSrcWidth [private]`

7.24.4.4 `int clConvPic::iSrcHeight [private]`

7.24.4.5 `int clConvPic::iDstWidth [private]`

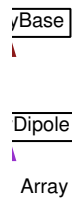
- [ConvPic.hh](#)
- [ConvPic.cc](#)

## 7.25 clCorrDipole Class Reference

Correlator class for dipole array.

```
#include <CorrDipole.hh>
```

Collaboration diagram for clCorrDipole:



### Public Member Functions

- [clCorrDipole](#) ([clArrayDipole](#) \*, GDT, int, long, bool, bool)  
*Constructor.*
- [~clCorrDipole](#) ()
- bool [AddData](#) ()  
*Add data to integration buffers.*
- GDT [Process](#) (GDT)  
*Process data in integration buffers and return result.*
- void [SetHistory](#) ()  
*Set history part of buffer.*
- GDT [GetPeakLevel](#) ()  
*Get peak level (in dB) of integration buffer.*
- GDT [GetIntegrationTime](#) ()  
*Get real integration time.*

### Private Attributes

- bool [bDebug](#)
- bool [bFilter](#)
- long [lSampleCount](#)  
*Sample count for specified integration time.*

- long [lBaseIdx](#)  
*Starting index = maximum delay.*
- long [lWinSize](#)  
*Window size (input data).*
- GDT [fIntTime](#)  
*Integration time in seconds.*
- clDSPAlloc [Data](#) [2]  
*Data buffers for integration.*
- clDSPOp [DSP](#)
- clDSPOp [DSPBank](#) [2]
- [clArrayDipole](#) \* [Array](#)

### 7.25.1 Detailed Description

Correlator class for dipole array.

### 7.25.2 Constructor & Destructor Documentation

#### 7.25.2.1 clCorrDipole::clCorrDipole ([clArrayDipole](#) \*, GDT, int, long, bool, bool)

Constructor.

##### Parameters:

- ArrayPtr* Pointer to [clArrayDipole](#)  
*fIntegrationTime* Integration time (s)  
*iSampleRate* Samplerate  
*lWindowSize* Size of window  
*bDisableFilter* Disable source data filtering  
*bEnableDebug* Enable debugging output

#### 7.25.2.2 clCorrDipole::~~clCorrDipole ()

### 7.25.3 Member Function Documentation

#### 7.25.3.1 bool clCorrDipole::AddData ()

Add data to integration buffers.

Call this after calling [clArrayDipole::AddData\(\)](#) Returns  $\geq 1$  when integration buffers are full and ready to be processed by [Process\(\)](#), call until returns 0 before calling [clArrayDipole::AddData\(\)](#) again.

#### 7.25.3.2 GDT [clCorrDipole::Process](#) (GDT)

Process data in integration buffers and return result.  
This can be called many times for different directions.

**Parameters:**

*fDirection* Direction (rad)

**Returns:**

Normalized cross-correlation

#### 7.25.3.3 void [clCorrDipole::SetHistory](#) ()

Set history part of buffer.  
Call this between last call of [Process\(\)](#) and next call of [AddData\(\)](#), this will copy data from end of integration buffer to start of integration buffer.

#### 7.25.3.4 GDT [clCorrDipole::GetPeakLevel](#) ()

Get peak level (in dB) of integration buffer.

**Returns:**

Peak level (dB)

#### 7.25.3.5 GDT [clCorrDipole::GetIntegrationTime](#) () [inline]

Get real integration time.

**Returns:**

Integration time (s)

### 7.25.4 Member Data Documentation

7.25.4.1 bool [clCorrDipole::bDebug](#) [private]

7.25.4.2 bool [clCorrDipole::bFilter](#) [private]

7.25.4.3 long [clCorrDipole::lSampleCount](#) [private]

Sample count for specified integration time.

**7.25.4.4**   `long clCorrDipole::lBaseIdx`   [private]

Starting index = maximum delay.

**7.25.4.5**   `long clCorrDipole::lWinSize`   [private]

Window size (input data).

**7.25.4.6**   `GDT clCorrDipole::fIntTime`   [private]

Integration time in seconds.

**7.25.4.7**   `clDSPAlloc clCorrDipole::Data[2]`   [private]

Data buffers for integration.

**7.25.4.8**   `clDSPOp clCorrDipole::DSP`   [private]

**7.25.4.9**   `clDSPOp clCorrDipole::DSPBank[2]`   [private]

**7.25.4.10**   `clArrayDipole* clCorrDipole::Array`   [private]

The documentation for this class was generated from the following files:

- [CorrDipole.hh](#)
- [CorrDipole.cc](#)

## 7.26 `_stDEMONInfo` Struct Reference

Information stored in saved DEMON .tif.inf.

```
#include <ConvPic.hh>
```

### Public Attributes

- `time_t ttTime`  
*Oldest dataline time.*
- `double dLowFreq`  
*Lower frequency limit.*
- `double dHighFreq`  
*Upper frequency limit.*
- `double dDEMONBand`  
*DEMON bandwidth.*
- `double dLineTime`  
*Length of one scanline in time (s).*

### 7.26.1 Detailed Description

Information stored in saved DEMON .tif.inf.

### 7.26.2 Member Data Documentation

#### 7.26.2.1 `time_t _stDEMONInfo::ttTime`

Oldest dataline time.

#### 7.26.2.2 `double _stDEMONInfo::dLowFreq`

Lower frequency limit.

#### 7.26.2.3 `double _stDEMONInfo::dHighFreq`

Upper frequency limit.

#### 7.26.2.4 `double _stDEMONInfo::dDEMONBand`

DEMON bandwidth.



### 7.26.2.5 `double _stDEMONInfo::dLineTime`

Length of one scanline in time (s).

The documentation for this struct was generated from the following file:

- [ConvPic.hh](#)

## 7.27 `_stDirCfg` Struct Reference

Configuration information message for subnodes.

```
#include <Locate.hh>
```

### Public Attributes

- long [lWindowSize](#)
- float [fSoundSpeed](#)
- float [fLowFrequency](#)
- float [fIntegrationTime](#)
- int [iScaling](#)
- float [fScalingExp](#)
- int [iRemoveNoise](#)
- float [fAlpha](#)
- long [lMeanLength](#)
- long [lGapLength](#)

### 7.27.1 Detailed Description

Configuration information message for subnodes.

### 7.27.2 Member Data Documentation

7.27.2.1 long [\\_stDirCfg::lWindowSize](#)

7.27.2.2 float [\\_stDirCfg::fSoundSpeed](#)

7.27.2.3 float [\\_stDirCfg::fLowFrequency](#)

7.27.2.4 float [\\_stDirCfg::fIntegrationTime](#)

7.27.2.5 int [\\_stDirCfg::iScaling](#)

7.27.2.6 float [\\_stDirCfg::fScalingExp](#)

7.27.2.7 int [\\_stDirCfg::iRemoveNoise](#)

7.27.2.8 float [\\_stDirCfg::fAlpha](#)

7.27.2.9 long [\\_stDirCfg::lMeanLength](#)

7.27.2.10 long [\\_stDirCfg::lGapLength](#)

The documentation for this struct was generated from the following file:

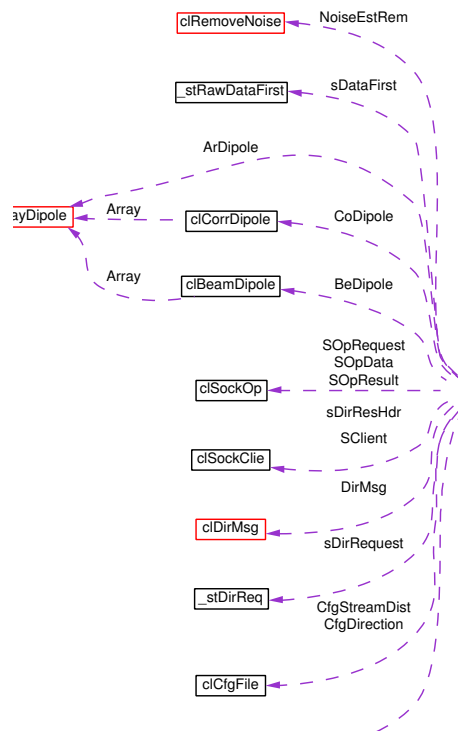
- [Locate.hh](#)

## 7.28 clDirection Class Reference

Direction calculation server.

```
#include <Direction.hh>
```

Collaboration diagram for clDirection:



### Public Member Functions

- `clDirection` (int, int)
- `~clDirection` ()
- `int Exec` ()

*Main method, call this only.*

- `void * ReceiveData` (void \*)

*Receive data thread.*

- `void * ProcessData` (void \*)

*Dataprocessing thread (there can be multiple instances of these).*

- `void * SendResults` (void \*)

*Send results thread.*

## Private Member Functions

- bool [GetRequest](#) ()
- bool [GetFirstMsg](#) ()
- bool [InitArray](#) ()
- void [Stop](#) ()
- void [Scale](#) (GDT \*)
- void [CalcDipoleBeams](#) (int, long, long, bool)
- void [CalcDipoleCorrs](#) (int, long, long, bool)
- void [StartTiming](#) ()
- void [StopTiming](#) ()

## Private Attributes

- volatile bool [bRun](#)
- volatile bool [bConnected](#)
- int [iProcessorCount](#)
- int [iStartChannel](#)
- int [iArrayType](#)
- int [iShadingType](#)
- int [iHorizSensors](#)
- int [iVertSensors](#)
- int [iRawBufSize](#)
- volatile int [iResultsRefCount](#)
- long [lWindowSize](#)
- double [dTimingReal](#)
- GDT [fSensorSpacing](#)
- GDT [fpHorizSpacing](#) [BF\_MAX\_X\_SENSORS]
- GDT [fpVertSpacing](#) [BF\_MAX\_Y\_SENSORS]
- clock\_t [ctTiming](#)
- pthread\_t [tidReceiveData](#)
- pthread\_t [tidpProcessData](#) [DIR\_MAX\_CPUS]
- pthread\_t [tidSendResults](#)
- [stDirReq](#) [sDirRequest](#)
- [stDirRes](#) [sDirResHdr](#)
- [stRawDataFirst](#) [sDataFirst](#)
- clCondition [CndDataReady](#)
- clCondition [CndResultsReady](#)
- clMutex [MtxClassData](#)
- clMutex [MtxDataReady](#)
- clMutex [MtxResultsReady](#)
- clCfgFile \* [CfgStreamDist](#)
- clCfgFile \* [CfgDirection](#)

- [clSockClie SClient](#)
- [clSockOp \\* SOpRequest](#)
- [clSockOp \\* SOpResult](#)
- [clSockOp \\* SOpData](#)
- [clDirMsg DirMsg](#)
- [clDSPAlloc RawData](#)
- [clDSPAlloc DirResData](#)
- [clDSPOp DSP](#)
- [clRemoveNoise NoiseEstRem](#)
- [clArrayDipole ArDipole](#)
- [clBeamDipole \\* BeDipole](#) [DIR\_MAX\_CPUS]
- [clCorrDipole \\* CoDipole](#) [DIR\_MAX\_CPUS]

### 7.28.1 Detailed Description

Direction calculation server.

### 7.28.2 Constructor & Destructor Documentation

7.28.2.1 `clDirection::clDirection (int, int)`

7.28.2.2 `clDirection::~~clDirection ()`

### 7.28.3 Member Function Documentation

7.28.3.1 `bool clDirection::GetRequest ()` [private]

7.28.3.2 `bool clDirection::GetFirstMsg ()` [private]

7.28.3.3 `bool clDirection::InitArray ()` [private]

7.28.3.4 `void clDirection::Stop ()` [private]

7.28.3.5 `void clDirection::Scale (GDT *)` [inline, private]

7.28.3.6 `void clDirection::CalcDipoleBeams (int, long, long, bool)` [private]

7.28.3.7 `void clDirection::CalcDipoleCorrs (int, long, long, bool)` [private]

7.28.3.8 `void clDirection::StartTiming ()` [private]

7.28.3.9 `void clDirection::StopTiming ()` [private]

7.28.3.10 `int clDirection::Exec ()`

Main method, call this only.

**7.28.3.11 void \* clDirection::ReceiveData (void \*)**

Receive data thread.

**7.28.3.12 void \* clDirection::ProcessData (void \*)**

Dataprocessing thread (there can be multiple instances of these).

**7.28.3.13 void \* clDirection::SendResults (void \*)**

Send results thread.





## 7.28.4 Member Data Documentation

- 7.28.4.1 volatile bool [clDirection::bRun](#) [private]
  - 7.28.4.2 volatile bool [clDirection::bConnected](#) [private]
  - 7.28.4.3 int [clDirection::iProcessorCount](#) [private]
  - 7.28.4.4 int [clDirection::iStartChannel](#) [private]
  - 7.28.4.5 int [clDirection::iArrayType](#) [private]
  - 7.28.4.6 int [clDirection::iShadingType](#) [private]
  - 7.28.4.7 int [clDirection::iHorizSensors](#) [private]
  - 7.28.4.8 int [clDirection::iVertSensors](#) [private]
  - 7.28.4.9 int [clDirection::iRawBufSize](#) [private]
  - 7.28.4.10 volatile int [clDirection::iResultsRefCount](#) [private]
  - 7.28.4.11 long [clDirection::lWindowSize](#) [private]
  - 7.28.4.12 double [clDirection::dTimingReal](#) [private]
  - 7.28.4.13 GDT [clDirection::fSensorSpacing](#) [private]
  - 7.28.4.14 GDT [clDirection::fpHorizSpacing](#)[BF\_MAX\_X\_SENSORS]  
[private]
  - 7.28.4.15 GDT [clDirection::fpVertSpacing](#)[BF\_MAX\_Y\_SENSORS]  
[private]
  - 7.28.4.16 clock\_t [clDirection::ctTiming](#) [private]
  - 7.28.4.17 pthread\_t [clDirection::tidReceiveData](#) [private]
  - 7.28.4.18 pthread\_t [clDirection::tidpProcessData](#)[DIR\_MAX\_CPUS]  
[private]
  - 7.28.4.19 pthread\_t [clDirection::tidSendResults](#) [private]
  - 7.28.4.20 stDirReq [clDirection::sDirRequest](#) [private]
  - 7.28.4.21 stDirRes [clDirection::sDirResHdr](#) [private]
  - 7.28.4.22 stRawDataFirst [clDirection::sDataFirst](#) [private]
  - 7.28.4.23 clCondition [clDirection::CndDataReady](#) [private]
- 
- Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen
- 7.28.4.24 clCondition [clDirection::CndResultsReady](#) [private]
  - 7.28.4.25 clMutex [clDirection::MtxClassData](#) [private]
  - 7.28.4.26 clMutex [clDirection::MtxDataReady](#) [private]
  - 7.28.4.27 clMutex [clDirection::MtxResultsReady](#) [private]

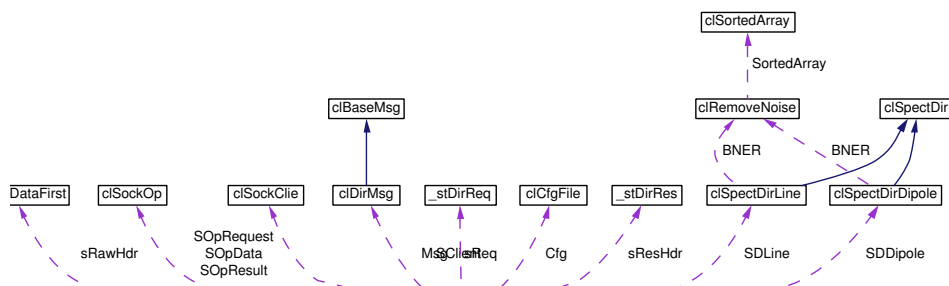
- [Direction.hh](#)
- [Direction.cc](#)

## 7.29 clDirection2 Class Reference

Spectrum based direction server.

```
#include <Direction2.hh>
```

Collaboration diagram for clDirection2:



### Public Member Functions

- [clDirection2](#) (int, int)
- [~clDirection2](#) ()
- int [Main](#) ()

### Private Member Functions

- bool [GetCfg](#) ()
- bool [GetRq](#) ()
- bool [ConnectStream](#) ()
- bool [InitDir](#) ()
- void [ProcessLoop](#) ()

### Private Attributes

- bool [bRun](#)
- int [iFilterType](#)
- int [iArrayType](#)
- long [lSensorCount](#)
- long [lFilterSize](#)
- long [lWindowSize](#)
- long [lStartChannel](#)
- GDT [fSensorSpacing](#)
- char [cpStreamSocket](#) [\_POSIX\_PATH\_MAX+1]
- [stDirReq](#) sReq

- [stDirRes sResHdr](#)
- [stRawDataFirst sRawHdr](#)
- [clCfgFile Cfg](#)
- [clDSPOp DSP](#)
- [clDirMsg Msg](#)
- [clSockClie SClient](#)
- [clSockOp SOpRequest](#)
- [clSockOp SOpResult](#)
- [clSockOp SOpData](#)
- [clSpectDirDipole \\* SDDipole](#)
- [clSpectDirLine \\* SDLine](#)

### 7.29.1 Detailed Description

Spectrum based direction server.



## 7.29.2 Constructor & Destructor Documentation

7.29.2.1 `clDirection2::clDirection2 (int, int)`

7.29.2.2 `clDirection2::~~clDirection2 ()`

## 7.29.3 Member Function Documentation

7.29.3.1 `bool clDirection2::GetCfg () [private]`

7.29.3.2 `bool clDirection2::GetRq () [private]`

7.29.3.3 `bool clDirection2::ConnectStream () [private]`

7.29.3.4 `bool clDirection2::InitDir () [private]`

7.29.3.5 `void clDirection2::ProcessLoop () [private]`

7.29.3.6 `int clDirection2::Main ()`

## 7.29.4 Member Data Documentation

7.29.4.1 `bool clDirection2::bRun [private]`

7.29.4.2 `int clDirection2::iFilterType [private]`

7.29.4.3 `int clDirection2::iArrayType [private]`

7.29.4.4 `long clDirection2::lSensorCount [private]`

7.29.4.5 `long clDirection2::lFilterSize [private]`

7.29.4.6 `long clDirection2::lWindowSize [private]`

7.29.4.7 `long clDirection2::lStartChannel [private]`

7.29.4.8 `GDT clDirection2::fSensorSpacing [private]`

7.29.4.9 `char clDirection2::cpStreamSocket[_POSIX_PATH_MAX + 1]  
[private]`

7.29.4.10 `stDirReq clDirection2::sReq [private]`

7.29.4.11 `stDirRes clDirection2::sResHdr [private]`

7.29.4.12 `stRawDataFirst clDirection2::sRawHdr [private]`

7.29.4.13 `clCfgFile clDirection2::Cfg [private]`

7.29.4.14 `clDSPOp clDirection2::DSP [private]`

7.29.4.15 `clDirMsg clDirection2::Msg [private]`

7.29.4.16 `clSockClie clDirection2::SClient [private]`

7.29.4.17 `clSockOp clDirection2::SOpRequest [private]`

7.29.4.18 `clSockOp clDirection2::SOpResult [private]`

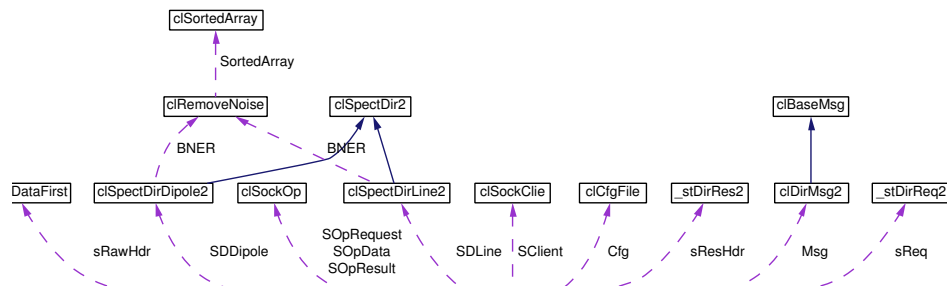
- [Direction2.hh](#)
- [Direction2.cc](#)

## 7.30 clDirection3 Class Reference

Spectrum based direction server.

```
#include <Direction3.hh>
```

Collaboration diagram for clDirection3:



### Public Member Functions

- [clDirection3](#) (int, int)
- [~clDirection3](#) ()
- int [Main](#) ()

### Private Member Functions

- bool [GetCfg](#) ()
- bool [GetRq](#) ()
- bool [ConnectStream](#) ()
- bool [InitDir](#) ()
- void [ProcessLoop](#) ()

### Private Attributes

- bool [bRun](#)
- int [iFilterType](#)
- int [iArrayType](#)
- long [lSensorCount](#)
- long [lFilterSize](#)
- long [lWindowSize](#)
- long [lStartChannel](#)
- GDT [fSensorSpacing](#)
- char [cpStreamSocket](#) [\_POSIX\_PATH\_MAX+1]
- [stDirReq2](#) [sReq](#)



- [stDirRes2 sResHdr](#)
- [stRawDataFirst sRawHdr](#)
- [clCfgFile Cfg](#)
- [clDSPOp DSP](#)
- [clDirMsg2 Msg](#)
- [clSockClie SClient](#)
- [clSockOp SOpRequest](#)
- [clSockOp SOpResult](#)
- [clSockOp SOpData](#)
- [clSpectDirDipole2 \\* SDDipole](#)
- [clSpectDirLine2 \\* SDLine](#)

### 7.30.1 Detailed Description

Spectrum based direction server.



## 7.30.2 Constructor & Destructor Documentation

7.30.2.1 `clDirection3::clDirection3 (int, int)`

7.30.2.2 `clDirection3::~~clDirection3 ()`

## 7.30.3 Member Function Documentation

7.30.3.1 `bool clDirection3::GetCfg ()` [private]

7.30.3.2 `bool clDirection3::GetRq ()` [private]

7.30.3.3 `bool clDirection3::ConnectStream ()` [private]

7.30.3.4 `bool clDirection3::InitDir ()` [private]

7.30.3.5 `void clDirection3::ProcessLoop ()` [private]

7.30.3.6 `int clDirection3::Main ()`

## 7.30.4 Member Data Documentation

7.30.4.1 `bool clDirection3::bRun` [private]

7.30.4.2 `int clDirection3::iFilterType` [private]

7.30.4.3 `int clDirection3::iArrayType` [private]

7.30.4.4 `long clDirection3::lSensorCount` [private]

7.30.4.5 `long clDirection3::lFilterSize` [private]

7.30.4.6 `long clDirection3::lWindowSize` [private]

7.30.4.7 `long clDirection3::lStartChannel` [private]

7.30.4.8 `GDT clDirection3::fSensorSpacing` [private]

7.30.4.9 `char clDirection3::cpStreamSocket[_POSIX_PATH_MAX + 1]`  
[private]

7.30.4.10 `stDirReq2 clDirection3::sReq` [private]

7.30.4.11 `stDirRes2 clDirection3::sResHdr` [private]

7.30.4.12 `stRawDataFirst clDirection3::sRawHdr` [private]

7.30.4.13 `clCfgFile clDirection3::Cfg` [private]

7.30.4.14 `clDSPOp clDirection3::DSP` [private]

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7.30.4.15 `clDirMsg2 clDirection3::Msg` [private]

7.30.4.16 `clSockClie clDirection3::SClient` [private]

7.30.4.17 `clSockOp clDirection3::SOpRequest` [private]

7.30.4.18 `clSockOp clDirection3::SOpResult` [private]

- [Direction3.hh](#)
- [Direction3.cc](#)

## 7.31 cDirMsg Class Reference

Direction server communication.

```
#include <Messages.hh>
```

Inheritance diagram for cDirMsg:



Collaboration diagram for cDirMsg:



### Public Member Functions

- void [SetRequest](#) (char \*, const [stpDirReq](#))
- void [GetRequest](#) (const char \*, [stpDirReq](#))
- void [SetResult](#) (void \*, const [stpDirRes](#), const float \*)
- void [SetResult](#) (void \*, const [stpDirRes](#), const double \*)
- void [GetResult](#) (const void \*, [stpDirRes](#), float \*)
- void [GetResult](#) (const void \*, [stpDirRes](#), double \*)

#### 7.31.1 Detailed Description

Direction server communication.

## 7.31.2 Member Function Documentation

7.31.2.1 void `clDirMsg::SetRequest` (char \*, const *stpDirReq*)

7.31.2.2 void `clDirMsg::GetRequest` (const char \*, [stpDirReq](#))

7.31.2.3 void `clDirMsg::SetResult` (void \*, const *stpDirRes*, const float \*)

7.31.2.4 void `clDirMsg::SetResult` (void \*, const *stpDirRes*, const double \*)

7.31.2.5 void `clDirMsg::GetResult` (const void \*, [stpDirRes](#), float \*)

7.31.2.6 void `clDirMsg::GetResult` (const void \*, [stpDirRes](#), double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)

## 7.32 cDirMsg2 Class Reference

Direction server communication 2 (for locate/direction3).

```
#include <Messages.hh>
```

Inheritance diagram for cDirMsg2:



Collaboration diagram for cDirMsg2:



### Public Member Functions

- void [SetRequest](#) (char \*, const [stpDirReq2](#))
- void [GetRequest](#) (const char \*, [stpDirReq2](#))
- void [SetResult](#) (void \*, const [stpDirRes2](#), const float \*, const float \*)
- void [SetResult](#) (void \*, const [stpDirRes2](#), const double \*, const double \*)
- void [GetResult](#) (const void \*, [stpDirRes2](#), float \*, float \*)
- void [GetResult](#) (const void \*, [stpDirRes2](#), double \*, double \*)

#### 7.32.1 Detailed Description

Direction server communication 2 (for locate/direction3).

## 7.32.2 Member Function Documentation

7.32.2.1 void `clDirMsg2::SetRequest` (char \*, const *stpDirReq2*)

7.32.2.2 void `clDirMsg2::GetRequest` (const char \*, [stpDirReq2](#))

7.32.2.3 void `clDirMsg2::SetResult` (void \*, const *stpDirRes2*, const float \*, const float \*)

7.32.2.4 void `clDirMsg2::SetResult` (void \*, const *stpDirRes2*, const double \*, const double \*)

7.32.2.5 void `clDirMsg2::GetResult` (const void \*, [stpDirRes2](#), float \*, float \*)

7.32.2.6 void `clDirMsg2::GetResult` (const void \*, [stpDirRes2](#), double \*, double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)



## 7.33 \_stDirReq Struct Reference

Direction: request.

```
#include <Messages.hh>
```

### Public Attributes

- int [iAlgorithm](#)  
*Algorithm.*
- float [fSoundSpeed](#)  
*Speed of sound (m/s).*
- float [fLowFreqLimit](#)  
*Lower frequency limit (Hz).*
- float [fIntegrationTime](#)  
*Integration time (s).*
- int [iScaling](#)  
*Scaling function.*
- float [fScalingExp](#)  
*Exponent for exponential scaling.*
- bool [bNormalize](#)  
*Normalization.*
- float [fLeftDir](#)  
*Left direction (rad).*
- float [fRightDir](#)  
*Right direction (rad).*
- long [lSectorCount](#)  
*Number of sectors.*
- int [iRemoveNoise](#)  
*Background noise estimation and removal algorithm.*
- float [fAlpha](#)  
*Alpha for noise removal.*
- long [lMeanLength](#)  
*Mean length for noise removal.*

- long [lGapLength](#)  
*Gap length for TPSW noise removal algorithm.*
- bool [bDisableFilter](#)  
*Disable all filtering of input signal.*

### 7.33.1 Detailed Description

Direction: request.

### 7.33.2 Member Data Documentation

#### 7.33.2.1 int [\\_stDirReq::iAlgorithm](#)

Algorithm.

#### 7.33.2.2 float [\\_stDirReq::fSoundSpeed](#)

Speed of sound (m/s).

#### 7.33.2.3 float [\\_stDirReq::fLowFreqLimit](#)

Lower frequency limit (Hz).

#### 7.33.2.4 float [\\_stDirReq::fIntegrationTime](#)

Integration time (s).

#### 7.33.2.5 int [\\_stDirReq::iScaling](#)

Scaling function.

#### 7.33.2.6 float [\\_stDirReq::fScalingExp](#)

Exponent for exponential scaling.

#### 7.33.2.7 bool [\\_stDirReq::bNormalize](#)

Normalization.

**7.33.2.8** `float _stDirReq::fLeftDir`

Left direction (rad).

**7.33.2.9** `float _stDirReq::fRightDir`

Right direction (rad).

**7.33.2.10** `long _stDirReq::lSectorCount`

Number of sectors.

**7.33.2.11** `int _stDirReq::iRemoveNoise`

Background noise estimation and removal algorithm.

**7.33.2.12** `float _stDirReq::fAlpha`

Alpha for noise removal.

**7.33.2.13** `long _stDirReq::lMeanLength`

Mean length for noise removal.

**7.33.2.14** `long _stDirReq::lGapLength`

Gap length for TPSW noise removal algorithm.

**7.33.2.15** `bool _stDirReq::bDisableFilter`

Disable all filtering of input signal.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.34 \_stDirReq2 Struct Reference

Direction3: request.

```
#include <Messages.hh>
```

### Public Attributes

- long [lWindowSize](#)  
*Window size.*
- float [fSoundSpeed](#)  
*Speed of sound (m/s).*
- float [fLowFreqLimit](#)  
*Lower frequency limit (Hz).*
- float [fIntegrationTime](#)  
*Integration time (s).*
- int [iScaling](#)  
*Scaling algorithm.*
- float [fScalingExp](#)  
*Exponent for exponential scaling.*
- int [iRemoveNoise](#)  
*Background noise estimation and removal algorithm.*
- float [fAlpha](#)  
*Alpha for noise removal.*
- long [lMeanLength](#)  
*Mean length for noise removal.*
- long [lGapLength](#)  
*Gap length for TPSW noise removal algorithm.*

### 7.34.1 Detailed Description

Direction3: request.

This is used by locate server.

## 7.34.2 Member Data Documentation

### 7.34.2.1 `long _stDirReq2::lWindowSize`

Window size.

### 7.34.2.2 `float _stDirReq2::fSoundSpeed`

Speed of sound (m/s).

### 7.34.2.3 `float _stDirReq2::fLowFreqLimit`

Lower frequency limit (Hz).

### 7.34.2.4 `float _stDirReq2::fIntegrationTime`

Integration time (s).

### 7.34.2.5 `int _stDirReq2::iScaling`

Scaling algorithm.

### 7.34.2.6 `float _stDirReq2::fScalingExp`

Exponent for exponential scaling.

### 7.34.2.7 `int _stDirReq2::iRemoveNoise`

Background noise estimation and removal algorithm.

### 7.34.2.8 `float _stDirReq2::fAlpha`

Alpha for noise removal.

### 7.34.2.9 `long _stDirReq2::lMeanLength`

Mean length for noise removal.

### 7.34.2.10 `long _stDirReq2::lGapLength`

Gap length for TPSW noise removal algorithm.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.35 `_stDirRes` Struct Reference

Direction: result.

```
#include <Messages.hh>
```

### Public Attributes

- `timeval` [sTimeStamp](#)  
*Timestamp.*
- `float` [fIntegrationTime](#)  
*Integration time (s).*
- `float` [fHighFreqLimit](#)  
*Higher frequency limit (Hz).*
- `float` [fPeakLevel](#)  
*Peak level (dB).*
- `long` [lSectorCount](#)  
*Number of sectors (number of results).*
- `bool` [b3DArray](#)  
*3D array (the non-twosided case)*

### 7.35.1 Detailed Description

Direction: result.

### 7.35.2 Member Data Documentation

#### 7.35.2.1 `struct timeval` [\\_stDirRes::sTimeStamp](#)

Timestamp.

#### 7.35.2.2 `float` [\\_stDirRes::fIntegrationTime](#)

Integration time (s).

#### 7.35.2.3 `float` [\\_stDirRes::fHighFreqLimit](#)

Higher frequency limit (Hz).

**7.35.2.4** float [\\_stDirRes::fPeakLevel](#)

Peak level (dB).

**7.35.2.5** long [\\_stDirRes::lSectorCount](#)

Number of sectors (number of results).

**7.35.2.6** bool [\\_stDirRes::b3DArray](#)

3D array (the non-twosided case)

The documentation for this struct was generated from the following file:

- [Messages.hh](#)



## 7.36 \_stDirRes2 Struct Reference

Direction3: result.

```
#include <Messages.hh>
```

### Public Attributes

- timeval [sTimeStamp](#)  
*Timestamp.*
- long [lMinBin](#)  
*Lowest used bin index.*
- long [lMaxBin](#)  
*Highest used bin index.*
- float [fFreqResolution](#)  
*Frequency resolution (Hz/bin).*
- long [lResultCount](#)  
*Number of results.*
- float [fPeakLevel](#)  
*Peak level (dB).*
- float [fIntegrationTime](#)  
*Integration time (s).*

### 7.36.1 Detailed Description

Direction3: result.

This is used by locate server.

### 7.36.2 Member Data Documentation

#### 7.36.2.1 struct timeval [\\_stDirRes2::sTimeStamp](#)

Timestamp.

#### 7.36.2.2 long [\\_stDirRes2::lMinBin](#)

Lowest used bin index.

**7.36.2.3 long [\\_stDirRes2::lMaxBin](#)**

Highest used bin index.

**7.36.2.4 float [\\_stDirRes2::fFreqResolution](#)**

Frequency resolution (Hz/bin).

**7.36.2.5 long [\\_stDirRes2::lResultCount](#)**

Number of results.

**7.36.2.6 float [\\_stDirRes2::fPeakLevel](#)**

Peak level (dB).

**7.36.2.7 float [\\_stDirRes2::fIntegrationTime](#)**

Integration time (s).

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.37 estring Class Reference

```
#include <Extensions.hh>
```

The documentation for this class was generated from the following file:

- [Extensions.hh](#)

## 7.38 clFileSrv Class Reference

Input server for playback of previously recorded data.

```
#include <FileSrv.hh>
```

Collaboration diagram for clFileSrv:




### Public Member Functions

- [clFileSrv](#) ()
- [~clFileSrv](#) ()
- [int](#) [Main](#) (int \*, char \*\*\*)
- [gboolean](#) [OnDelete](#) (GtkWidget \*, GdkEvent \*, gpointer)
- [void](#) [OnFileSelectOkClick](#) (GtkButton \*, gpointer)
- [void](#) [OnFileSelectCancelClick](#) (GtkButton \*, gpointer)
- [void](#) [OnBrowseClick](#) (GtkButton \*, gpointer)
- [void](#) [OnPlayStopToggle](#) (GtkToggleButton \*, gpointer)
- [void](#) [OnPositionChange](#) (GtkAdjustment \*, gpointer)
- [void \\*](#) [ReaderThread](#) (void \*)
- [void \\*](#) [ServerThread](#) (void \*)
- [void \\*](#) [ServeClientThread](#) (void \*)

### Private Member Functions

- [bool](#) [Build](#) ()
- [bool](#) [BuildTable1](#) ()
- [bool](#) [BuildTable2](#) ()
- [bool](#) [ConnectSignals](#) ()
- [double](#) [GetTime](#) ()
- [void](#) [ShortSleep](#) (long)

### Private Attributes

- volatile [bool](#) [bRun](#)
- [timeval](#) [sTimeStamp](#)
- [SNDFILE \\*](#) [sndfileFile](#)
- [SF\\_INFO](#) [sFileInfo](#)

- clAlloc [AudioBlock](#)
- clCondition [CndReady](#)
- clMutex [MtxAudio](#)
- clReBufferT< double > [StreamBuf](#)
- long [lEpoch](#)
- clAlloc [ConvBuf](#)
- [clCfgFile](#) [Cfg](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwFileSelect](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLFile](#)
- GtkWidget \* [gwEFile](#)
- GtkWidget \* [gwBBrowse](#)
- GtkWidget \* [gaPosition](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwTBPlayStop](#)
- GtkWidget \* [gwLPosition](#)
- GtkWidget \* [gwHSPosition](#)

### 7.38.1 Detailed Description

Input server for playback of previously recorded data.



## 7.38.2 Constructor & Destructor Documentation

7.38.2.1 `clFileSrv::clFileSrv ()`

7.38.2.2 `clFileSrv::~~clFileSrv ()`

## 7.38.3 Member Function Documentation

7.38.3.1 `bool clFileSrv::Build () [private]`

7.38.3.2 `bool clFileSrv::BuildTable1 () [private]`

7.38.3.3 `bool clFileSrv::BuildTable2 () [private]`

7.38.3.4 `bool clFileSrv::ConnectSignals () [private]`

7.38.3.5 `double clFileSrv::GetTime () [private]`

7.38.3.6 `void clFileSrv::ShortSleep (long) [private]`

7.38.3.7 `int clFileSrv::Main (int *, char ***)`

7.38.3.8 `gboolean clFileSrv::OnDelete (GtkWidget *, GdkEvent *, gpointer)`

7.38.3.9 `void clFileSrv::OnFileSelectOkClick (GtkButton *, gpointer)`

7.38.3.10 `void clFileSrv::OnFileSelectCancelClick (GtkButton *, gpointer)`

7.38.3.11 `void clFileSrv::OnBrowseClick (GtkButton *, gpointer)`

7.38.3.12 `void clFileSrv::OnPlayStopToggle (GtkToggleButton *, gpointer)`

7.38.3.13 `void clFileSrv::OnPositionChange (GtkAdjustment *, gpointer)`

7.38.3.14 `void * clFileSrv::ReaderThread (void *)`

7.38.3.15 `void * clFileSrv::ServerThread (void *)`

7.38.3.16 `void * clFileSrv::ServeClientThread (void *)`

## 7.38.4 Member Data Documentation

7.38.4.1 `volatile bool clFileSrv::bRun [private]`

7.38.4.2 `struct timeval clFileSrv::sTimeStamp [private]`

7.38.4.3 `SNDFILE* clFileSrv::sndfileFile [private]`

7.38.4.4 `SF_INFO clFileSrv::sFileInfo [private]`

7.38.4.5 `clAudio clFileSrv::AudioBlock [private]`

7.38.4.6 `clCondition clFileSrv::CndReady [private]`

7.38.4.7 `clMutex clFileSrv::MtxAudio [private]`

7.38.4.8 `clReBufferT<double> clFileSrv::StreamBuf [private]`

7.38.4.9 `long clFileSrv::lEnosh [private]`

- [FileSrv.hh](#)
- [FileSrv.cc](#)



## 7.39 clFrameBuf Class Reference

Framebuffer class.

```
#include <FrameBuf.hh>
```

Inheritance diagram for clFrameBuf:



Collaboration diagram for clFrameBuf:



### Public Member Functions

- [clFrameBuf](#) ()
- [~clFrameBuf](#) ()
- void [SetSize](#) (int, int)  
*Set size of framebuffer.*
- void [Clear](#) ()  
*Clear framebuffer.*
- unsigned int \* [GetFBPtr](#) ()  
*Get pointer to raw framebuffer.*
- unsigned int \* [GetPalPtr](#) ()  
*Get pointer to palette buffer.*
- guchar \* [GetCurPtr](#) (int, int)  
*Get pointer to current position in doublebuffered framebuffer.*
- gint [GetRowStride](#) ()  
*Get row stride.*
- int [GetNumColors](#) ()

*Get number of colors in palette LUT.*

- int [GetWidth](#) ()  
*Get width of framebuffer.*
- int [GetHeight](#) ()  
*Get height of framebuffer.*
- void [DrawLine](#) (unsigned int \*)  
*Draw line to vertically scrolling graph.*
- void [DrawLine](#) (GDT \*)
- void [DrawColumn](#) (unsigned int \*)  
*Draw column to horizontally scrolling graph.*
- void [DrawColumn](#) (GDT \*)
- unsigned int [operator\[\]](#) (int iPix)  
*Get single pixel from framebuffer.*
- void [PalGenBW](#) ()  
*Generate white-to-black palette.*
- void [PalGenHSV](#) ()  
*Generate black-blue-cyan-green-yellow-red palette.*
- void [PalGenLight](#) ()  
*Generate palette matching to light's spectrum.*
- void [PalGenTemp](#) ()  
*Generate black-red-yellow-white palette.*
- void [PalGenDir](#) ()  
*Generate black-white palette with two highest values red.*
- void [PalGenGreen](#) ()  
*Generate black-green-red palette.*
- void [PalGenGreen2](#) ()  
*Generate black-green-white palette.*
- void [PalGenGreen3](#) ()  
*Generate black-green-yellow palette.*
- void [PalGenGreen4](#) ()  
*Generate black-green-red-yellow palette.*

- void [PalGenPureGreen](#) ()  
*Generate black-green palette.*
- void [PalGenWB](#) ()  
*Generate black-white palette.*
- bool [SaveToFile](#) (const char \*, int, int, const char \*)  
*Save current framebuffer contents to TIFF file.*
- bool [SaveToFile](#) (const char \*, int, int, const char \*, double, double, double, double)
- bool [StartSaveToFile](#) (const char \*, int, int, const char \*, int)  
*Start continuous save to TIFF file.*
- void [StopSaveToFile](#) ()  
*Stop continuous save to TIFF file.*

### Private Member Functions

- void [RGBA2RGB](#) (unsigned char \*, const unsigned int \*, int, int, int, int, int, int)
- bool [SetTiffTags](#) (const char \*, int, int, const char \*, int, int, int)
- bool [WriteTiffData](#) ()
- bool [WriteTiffData](#) (int, int, double, double, double, double)
- bool [WriteTiffScanData](#) ()
- void [DrawHLine](#) (unsigned char \*, int, int, int, int, int)
- void [DrawVLine](#) (unsigned char \*, int, int, int, int, int)
- bool [DrawText](#) (unsigned char \*, int, int, int, int, const char \*)

### Private Attributes

- bool [bSaving](#)
- int [iType](#)
- int [iWidth](#)
- int [iHeight](#)
- int [iCurPos](#)
- int [iPixFontSize](#)
- int [iMaxFontWidth](#)
- char [cpDateTime](#) [FB\_TIFF\_DATELEN+1]
- unsigned int \* [upFrameBuf](#)
- uint32 \* [upScanBuf](#)
- uint32 [uiStripSize](#)
- tstrip\_t [uiContStrip](#)
- TIFF \* [tiffImg](#)
- FT\_Library [ftLib](#)
- FT\_Face [ftFace](#)
- clAlloc [FrameBuf](#)
- clAlloc [ScanBuf](#)

### 7.39.1 Detailed Description

Framebuffer class.

Framebuffer class for vertically or horizontally scrolling intensity graph. Capable of saving contents to tiff and also continuous saving. Uses doublebuffering for speed.

Dataformat is 32-bit BGRA (0xAABBGGRR).

### 7.39.2 Constructor & Destructor Documentation

**7.39.2.1** `clFrameBuf::clFrameBuf ()`

**7.39.2.2** `clFrameBuf::~~clFrameBuf ()`

### 7.39.3 Member Function Documentation

**7.39.3.1** `void clFrameBuf::RGBA2RGB (unsigned char *, const unsigned int *, int, int, int, int, int, int) [private]`

**7.39.3.2** `bool clFrameBuf::SetTiffTags (const char *, int, int, const char *, int, int) [private]`

**7.39.3.3** `bool clFrameBuf::WriteTiffData () [private]`

**7.39.3.4** `bool clFrameBuf::WriteTiffData (int, int, double, double, double, double) [private]`

**7.39.3.5** `bool clFrameBuf::WriteTiffScanData () [private]`

**7.39.3.6** `void clFrameBuf::DrawHLine (unsigned char *, int, int, int, int, int) [private]`

**7.39.3.7** `void clFrameBuf::DrawVLine (unsigned char *, int, int, int, int, int) [private]`

**7.39.3.8** `bool clFrameBuf::DrawText (unsigned char *, int, int, int, int, const char *) [private]`

**7.39.3.9** `void clFrameBuf::SetSize (int, int)`

Set size of framebuffer.

Resize is non-destructive.

#### Parameters:

*iReqWidth* Width

*iReqHeight* Height

**7.39.3.10 void clFrameBuf::Clear ()**

Clear framebuffer.

**7.39.3.11 unsigned int\* clFrameBuf::GetFBPtr () [inline]**

Get pointer to raw framebuffer.

**Returns:**

Pointer to raw framebuffer

**7.39.3.12 unsigned int\* clFrameBuf::GetPalPtr () [inline]**

Get pointer to palette buffer.

**Returns:**

Pointer to palette LUT

**7.39.3.13 guchar \* clFrameBuf::GetCurPtr (int, int)**

Get pointer to current position in doublebuffered framebuffer.

**Parameters:**

*iXPos* X position offset

*iYPos* Y position offset

**Returns:**

Pointer to framebuffer position

**7.39.3.14 gint clFrameBuf::GetRowStride () [inline]**

Get row stride.

Get size of scanline in bytes. For use with gdk\_rgb\_\*

**Returns:**

Size of scanline

**7.39.3.15 int clFrameBuf::GetNumColors () [inline]**

Get number of colors in palette LUT.

**Returns:**

Number of colors

**7.39.3.16 int clFrameBuf::GetWidth () [inline]**

Get width of framebuffer.

**Returns:**

Width of framebuffer

**7.39.3.17 int clFrameBuf::GetHeight () [inline]**

Get height of framebuffer.

**Returns:**

Height of framebuffer

**7.39.3.18 void clFrameBuf::DrawLine (unsigned int \*)**

Draw line to vertically scrolling graph.

Scroll graph down and draw new scanline to top. Indexes to palette LUT as parameter.

**Parameters:**

*upLineBuf* Scanline LUT indexes

**7.39.3.19 void clFrameBuf::DrawLine (GDT \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:**

*fpDataBuf* Normalized data values [0..1]

**7.39.3.20 void clFrameBuf::DrawColumn (unsigned int \*)**

Draw column to horizontally scrolling graph.

Scroll graph left and draw new column to right. Indexes to palette LUT as parameter.

**Parameters:**

*upColumnBuf* Column LUT indexes

**7.39.3.21 void clFrameBuf::DrawColumn (GDT \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:**

*fpDataBuf* Normalized data values [0..1]

**7.39.3.22 ]**

unsigned int clFrameBuf::operator[ ] (int *iPix*) [inline]

Get single pixel from framebuffer.

**Returns:**

Pixel value

Reimplemented from [clPalette](#).

**7.39.3.23 void clFrameBuf::PalGenBW () [inline]**

Generate white-to-black palette.

**7.39.3.24 void clFrameBuf::PalGenHSV () [inline]**

Generate black-blue-cyan-green-yellow-red palette.

**7.39.3.25 void clFrameBuf::PalGenLight () [inline]**

Generate palette matching to light's spectrum.

**7.39.3.26 void clFrameBuf::PalGenTemp () [inline]**

Generate black-red-yellow-white palette.

**7.39.3.27 void clFrameBuf::PalGenDir () [inline]**

Generate black-white palette with two highest values red.

**7.39.3.28 void clFrameBuf::PalGenGreen () [inline]**

Generate black-green-red palette.

"NATO-style"

**7.39.3.29 void clFrameBuf::PalGenGreen2 () [inline]**

Generate black-green-white palette.

**7.39.3.30 void clFrameBuf::PalGenGreen3 () [inline]**

Generate black-green-yellow palette.

**7.39.3.31 void clFrameBuf::PalGenGreen4 () [inline]**

Generate black-green-red-yellow palette.

**7.39.3.32 void clFrameBuf::PalGenPureGreen () [inline]**

Generate black-green palette.

**7.39.3.33 void clFrameBuf::PalGenWB () [inline]**

Generate black-white palette.

**7.39.3.34 bool clFrameBuf::SaveToFile (const char \*, int, int, const char \*)**

Save current framebuffer contents to TIFF file.

**Parameters:**

*cpFileName* Name of TIFF file  
*iCompression* TIFF CODEC  
*iJPEGQuality* Quality for JPEG CODEC  
*cpDescription* Description  
*dXMin* X-axis minimum  
*dXMax* X-axis maximum  
*dYMin* Y-axis minimum  
*dYMax* Y-axis maximum

**Returns:**

Success

**7.39.3.35 bool clFrameBuf::SaveToFile (const char \*, int, int, const char \*, double, double, double, double)****7.39.3.36 bool clFrameBuf::StartSaveToFile (const char \*, int, int, const char \*, int)**

Start continuous save to TIFF file.



All new data is saved to TIFF until saving is stopped.

**Parameters:**

*cpFileName* Name of TIFF file

*iCompression* TIFF CODEC

*iJPEGQuality* Quality for JPEG CODEC

*cpDescription* Description

*iDirection* Drawing direction

**Returns:**

Success

**7.39.3.37 void clFrameBuf::StopSaveToFile ()**

Stop continuous save to TIFF file.

### 7.39.4 Member Data Documentation

- 7.39.4.1 `bool clFrameBuf::bSaving` [private]
- 7.39.4.2 `int clFrameBuf::iType` [private]
- 7.39.4.3 `int clFrameBuf::iWidth` [private]
- 7.39.4.4 `int clFrameBuf::iHeight` [private]
- 7.39.4.5 `int clFrameBuf::iCurPos` [private]
- 7.39.4.6 `int clFrameBuf::iPixFontSize` [private]
- 7.39.4.7 `int clFrameBuf::iMaxFontWidth` [private]
- 7.39.4.8 `char clFrameBuf::cpDateTime[FB_TIFF_DATELEN + 1]`  
[private]
- 7.39.4.9 `unsigned int* clFrameBuf::upFrameBuf` [private]
- 7.39.4.10 `uint32* clFrameBuf::upScanBuf` [private]
- 7.39.4.11 `uint32 clFrameBuf::uiStripSize` [private]
- 7.39.4.12 `tstrip_t clFrameBuf::uiContStrip` [private]
- 7.39.4.13 `TIFF* clFrameBuf::tiffImg` [private]
- 7.39.4.14 `FT_Library clFrameBuf::ftLib` [private]
- 7.39.4.15 `FT_Face clFrameBuf::ftFace` [private]
- 7.39.4.16 `clAlloc clFrameBuf::FrameBuf` [private]
- 7.39.4.17 `clAlloc clFrameBuf::ScanBuf` [private]

The documentation for this class was generated from the following files:

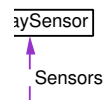
- [FrameBuf.hh](#)
- [FrameBuf.cc](#)

## 7.40 clFreqBeamDipole Class Reference

Frequency-domain beamforming for dipole array.

```
#include <FreqBeamDipole.hh>
```

Collaboration diagram for clFreqBeamDipole:



### Public Member Functions

- [clFreqBeamDipole](#) ()
- [~clFreqBeamDipole](#) ()
- void [SetDebug](#) (bool)  
*Enable/disable debug printouts.*
- bool [Initialize](#) (GDT, long, GDT)  
*Initialize dipole array.*
- void [SetSoundSpeed](#) (GDT)  
*Set speed of sound.*
- void [SetDirection](#) (GDT, bool)  
*Set direction.*
- void [Put](#) (const GDT \*, long, long, long)  
*Put data into beamformer.*
- bool [Get](#) (GDT \*, long)  
*Get data from beamformer.*

### Protected Attributes

- GDT [fSensorSpacing](#)
- [clArraySensor](#) [Sensors](#) [2]

#### 7.40.1 Detailed Description

Frequency-domain beamforming for dipole array.

## 7.40.2 Constructor & Destructor Documentation

**7.40.2.1** `clFreqBeamDipole::clFreqBeamDipole ()` `[inline]`

**7.40.2.2** `clFreqBeamDipole::~~clFreqBeamDipole ()` `[inline]`

## 7.40.3 Member Function Documentation

**7.40.3.1** `void clFreqBeamDipole::SetDebug (bool)`

Enable/disable debug printouts.

**Parameters:**

*bDebug* Enable/disable debug printouts

**7.40.3.2** `bool clFreqBeamDipole::Initialize (GDT, long, GDT)`

Initialize dipole array.

**Parameters:**

*fSpacing* Sensor spacing (m)

*lWinSize* Window size

*fSampleRate* Sampling rate

**Returns:**

Success

**7.40.3.3** `void clFreqBeamDipole::SetSoundSpeed (GDT)`

Set speed of sound.

**Parameters:**

*fSoundSpeed* Speed of sound (m/s)

**7.40.3.4** `void clFreqBeamDipole::SetDirection (GDT, bool)`

Set direction.

**Parameters:**

*fDirection* Direction (rad)

*bLowPass* Lowpass filter

### 7.40.3.5 void clFreqBeamDipole::Put (const GDT \*, long, long, long)

Put data into beamformer.

**Parameters:**

- fpSrc* Source vector
- lSrcCount* Number of samples in source vector
- lSensorOffs* Sensor offset in source vector
- lChannels* Number of channels in source vector

### 7.40.3.6 bool clFreqBeamDipole::Get (GDT \*, long)

Get data from beamformer.

**Parameters:**

- fpDest* Destination vector
- lDestCount* Number of samples to put into destination vector

**Returns:**

Success

## 7.40.4 Member Data Documentation

### 7.40.4.1 GDT clFreqBeamDipole::fSensorSpacing [protected]

### 7.40.4.2 clArraySensor clFreqBeamDipole::Sensors[2] [protected]

The documentation for this class was generated from the following files:

- [FreqBeamDipole.hh](#)
- [FreqBeamDipole.cc](#)

## 7.41 clFreqBeamLine Class Reference

Frequency-domain beamforming for line array.

```
#include <FreqBeamLine.hh>
```

### Public Member Functions

- [clFreqBeamLine](#) ()
- [~clFreqBeamLine](#) ()
- void [SetDebug](#) (bool)  
*Enable/disable debug printouts.*
- bool [Initialize](#) (long, GDT, long, GDT)  
*Initialize dipole array.*
- void [SetSoundSpeed](#) (GDT)  
*Set speed of sound.*
- void [SetDirection](#) (GDT, bool)  
*Set direction.*
- void [Put](#) (const GDT \*, long, long, long)  
*Put data into beamformer.*
- bool [Get](#) (GDT \*, long)  
*Get data from beamformer.*

### Protected Attributes

- long [lSensorCount](#)
- GDT [fSensorSpacing](#)
- std::vector< [clArraySensor](#) \* > [vSensors](#)

#### 7.41.1 Detailed Description

Frequency-domain beamforming for line array.

Array is shaded using Dolph-Chebyshev window.

## 7.41.2 Constructor & Destructor Documentation

**7.41.2.1** `clFreqBeamLine::clFreqBeamLine ()` [inline]

**7.41.2.2** `clFreqBeamLine::~~clFreqBeamLine ()`

## 7.41.3 Member Function Documentation

**7.41.3.1** `void clFreqBeamLine::SetDebug (bool)`

Enable/disable debug printouts.

**Parameters:**

*bDebug* Enable/disable debug printouts

**7.41.3.2** `bool clFreqBeamLine::Initialize (long, GDT, long, GDT)`

Initialize dipole array.

**Parameters:**

*lSensors* Number of sensors in array

*fSpacing* Sensor spacing (m)

*lWinSize* Window size

*fSampleRate* Sampling rate

**Returns:**

Success

**7.41.3.3** `void clFreqBeamLine::SetSoundSpeed (GDT)`

Set speed of sound.

**Parameters:**

*fSoundSpeed* Speed of sound (m/s)

**7.41.3.4** `void clFreqBeamLine::SetDirection (GDT, bool)`

Set direction.

**Parameters:**

*fDirection* Direction (rad)

*bLowPass* Lowpass filter

#### 7.41.3.5 void `clFreqBeamLine::Put` (const GDT \*, long, long, long)

Put data into beamformer.

**Parameters:**

- fpSrc* Source vector
- lSrcCount* Number of samples in source vector
- lSensorOffs* Sensor offset in source vector
- lChannels* Number of channels in source vector

#### 7.41.3.6 bool `clFreqBeamLine::Get` (GDT \*, long)

Get data from beamformer.

**Parameters:**

- fpDest* Destination vector
- lDestCount* Number of samples to put into destination vector

**Returns:**

Success

### 7.41.4 Member Data Documentation

7.41.4.1 long `clFreqBeamLine::lSensorCount` [protected]

7.41.4.2 GDT `clFreqBeamLine::fSensorSpacing` [protected]

7.41.4.3 `std::vector<clArraySensor*>` `clFreqBeamLine::vSensors`  
[protected]

The documentation for this class was generated from the following files:

- [FreqBeamLine.hh](#)
- [FreqBeamLine.cc](#)



## 7.42 clGraphWidget Class Reference

```
#include <GraphWidget.hh>
```

### Public Member Functions

- [clGraphWidget](#) ()
- [~clGraphWidget](#) ()
- GtkWidget \* [Create](#) (GtkWidget \*)
- GtkWidget \* [GetPtr](#) ()
- void [SetSize](#) (int, int)

### Private Member Functions

- void [MapToDisplay](#) (int \*, int \*, double, double)

### Private Attributes

- long [lWidth](#)
- long [lHeight](#)
- long [lMarginTop](#)
- long [lMarginLeft](#)
- long [lMarginBottom](#)
- long [lMarginRight](#)
- long [lGraphWidth](#)
- long [lGraphHeight](#)
- double [dXLeft](#)
- double [dXRight](#)
- double [dYBottom](#)
- double [dYTop](#)
- double [dXRange](#)
- double [dYRange](#)
- GtkWidget \* [gwParent](#)
- GtkWidget \* [gwDrawingArea](#)



## 7.42.1 Constructor & Destructor Documentation

7.42.1.1 `clGraphWidget::clGraphWidget ()`

7.42.1.2 `clGraphWidget::~~clGraphWidget ()`

## 7.42.2 Member Function Documentation

7.42.2.1 `void clGraphWidget::MapToDisplay (int *, int *, double, double)`  
[private]

7.42.2.2 `GtkWidget * clGraphWidget::Create (GtkWidget *)`

7.42.2.3 `GtkWidget* clGraphWidget::GetPtr ()` [inline]

7.42.2.4 `void clGraphWidget::SetSize (int, int)`

## 7.42.3 Member Data Documentation

7.42.3.1 `long clGraphWidget::lWidth` [private]

7.42.3.2 `long clGraphWidget::lHeight` [private]

7.42.3.3 `long clGraphWidget::lMarginTop` [private]

7.42.3.4 `long clGraphWidget::lMarginLeft` [private]

7.42.3.5 `long clGraphWidget::lMarginBottom` [private]

7.42.3.6 `long clGraphWidget::lMarginRight` [private]

7.42.3.7 `long clGraphWidget::lGraphWidth` [private]

7.42.3.8 `long clGraphWidget::lGraphHeight` [private]

7.42.3.9 `double clGraphWidget::dXLeft` [private]

7.42.3.10 `double clGraphWidget::dXRight` [private]

7.42.3.11 `double clGraphWidget::dYBottom` [private]

7.42.3.12 `double clGraphWidget::dYTop` [private]

7.42.3.13 `double clGraphWidget::dXRange` [private]

7.42.3.14 `double clGraphWidget::dYRange` [private]

7.42.3.15 `GtkWidget* clGraphWidget::gwParent` [private]

7.42.3.16 `GtkWidget* clGraphWidget::gwDrawingArea` [private]

---

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The documentation for this class was generated from the following files:

- [GraphWidget.hh](#)
- [GraphWidget.cc](#)

## 7.43 clGraphWidget::clXGraphWidget Class Reference

### Public Member Functions

- [clXGraphWidget](#) (const char \*cpErrorMsg, int iErrorCode=0) throw ()

#### 7.43.1 Constructor & Destructor Documentation

- 7.43.1.1** `clGraphWidget::clXGraphWidget::clXGraphWidget (const char *cpErrorMsg, int iErrorCode = 0) throw () [inline]`

The documentation for this class was generated from the following file:

- [GraphWidget.hh](#)

## 7.44 clGtkUtils Class Reference

Gtk+ utility class.

```
#include <GtkUtils.hh>
```

### Public Member Functions

- [clGtkUtils](#) ()
- [~clGtkUtils](#) ()
- void [BuildOptionsMenu](#) (const GtkWidget \*, GtkWidget \*\*, GtkWidget \*\*, const char \*\*, int)

*Builds and attaches entries for specified OptionMenu, sets default entry to 0.*

- int [OptionsMenuGetActive](#) (const GtkWidget \*, GtkWidget \*\*, int)

*Get active item for option menu.*

- void [ConnectMotionEvent](#) (const GtkWidget \*, const GtkWidget \*)

*Connects widgets motion\_notify\_event to specified widget.*

- void [EnableBackingStore](#) (const GtkWidget \*)

*Enables X backing store for specified widget.*

- void [ComboListFromFile](#) (const GtkWidget \*, GList \*\*, const char \*)

*Creates Combo widget's popdown menu from specified file.*

### Private Member Functions

- void [RemoveNewLine](#) (char \*)

#### 7.44.1 Detailed Description

Gtk+ utility class.

## 7.44.2 Constructor & Destructor Documentation

**7.44.2.1** `clGtkUtils::clGtkUtils ()` [inline]

**7.44.2.2** `clGtkUtils::~~clGtkUtils ()` [inline]

## 7.44.3 Member Function Documentation

**7.44.3.1** `void clGtkUtils::RemoveNewLine (char *)` [inline, private]

**7.44.3.2** `void clGtkUtils::BuildOptionsMenu (const GtkWidget *, GtkWidget **, GtkWidget **, const char **, int)`

Builds and attaches entries for specified OptionMenu, sets default entry to 0.

### Parameters:

*gwOptionMenu* Option menu widget (in)

*gwpMenu* Menu (out)

*gwaMenuItem* Menu items (out)

*cpaMenuTxts* Menu item texts (in)

*iNumItems* Itemcount (in)

**7.44.3.3** `int clGtkUtils::OptionsMenuGetActive (const GtkWidget *, GtkWidget **, int)`

Get active item for option menu.

### Parameters:

*gwOptionMenu* Option menu

*gwaMenuItems* Menu items

*iMenuItemCount* Number of menuitems

### Returns:

Index of active menuitem, -1 on error

**7.44.3.4** `void clGtkUtils::ConnectMotionEvent (const GtkWidget *, const GtkWidget *)`

Connects widgets motion\_notify\_event to specified widget.

This is very useful for connecting drawing area's motion\_notify\_event to rulers.

### Parameters:

*gwDest* Destination widget

*gwSrc* Source widget

**7.44.3.5 void clGtkUtils::EnableBackingStore (const GtkWidget \*)**

Enables X backing store for specified widget.

**Parameters:**

*gwWidget* Widget

**7.44.3.6 void clGtkUtils::ComboListFromFile (const GtkWidget \*, GList \*\*, const char \*)**

Creates Combo widget's popdown menu from specified file.

**Note:**

Free's list if already allocated

**Parameters:**

*gwWidget* Widget

*pListPtr* GList object pointer (out)

*cpFileName* Name of file

The documentation for this class was generated from the following files:

- [GtkUtils.hh](#)
- [GtkUtils.cc](#)

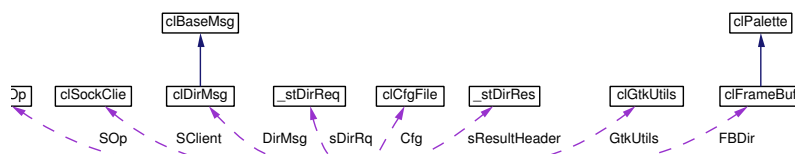


## 7.45 clGUIDir Class Reference

Direction finding GUI.

```
#include <GUIDir.hh>
```

Collaboration diagram for clGUIDir:



### Public Member Functions

- [clGUIDir](#) (int \*, char \*\*\*)
- [~clGUIDir](#) ()
- int [Exec](#) ()
- gint [OnDelete](#) (GtkWidget \*, GdkEventAny \*)
- void [OnHideToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnConnectClick](#) (GtkWidget \*, gpointer gpData)
- void [OnFreezeToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnExposeWorm](#) (GtkWidget \*, GdkEventExpose \*)
- gint [OnMotionWorm](#) (GtkWidget \*, GdkEventMotion \*)
- gint [OnPaletteActivate](#) (GtkWidget \*, gpointer)
- void [OnSaveClicks](#) (GtkWidget \*, gpointer)
- void [OnGdkInput](#) (gpointer, gint, GdkInputCondition)

### Private Member Functions

- bool [Build](#) ()
- bool [ConnectSignals](#) ()
- bool [BuildTable1](#) ()
- bool [BuildTable2](#) ()
- bool [BuildTable3](#) ()
- bool [BuildTable4](#) ()
- bool [BuildTableWorm](#) ()
- bool [BuildDrawingPrims](#) ()
- void [FreeDrawingPrims](#) ()
- bool [ParseServerStr](#) (char \*, int \*, const char \*)
- bool [InitConnection](#) (const char \*, int)
- void [GetSettings](#) ()
- bool [SendSettings](#) ()
- void [PrintStatus](#) ()
- void [SaveInfo](#) (const char \*, time\_t)
- void [StartNewImgFile](#) ()

## Private Attributes

- volatile bool [bRun](#)
- volatile bool [bConnected](#)
- volatile bool [bFreezed](#)
- bool [bSaving](#)
- int [iSockH](#)
- int [iDirectionScale](#)
- int [iHistoryLines](#)
- int [iPalette](#)
- int [iClips](#)
- int [iWormWidth](#)
- int [iWormHeight](#)
- int [iCursorX](#)
- int [iCursorY](#)
- int [iTIFFCompression](#)
- int [iJPEGQuality](#)
- int [iCompressMode](#)
- int [iContSaveScans](#)
- int [iScanCount](#)
- int [iImgCount](#)
- long [lResultMsgBufSize](#)
- long [lResultCount](#)
- float [fSoundSpeed](#)
- float [fLeftDirDeg](#)
- float [fRightDirDeg](#)
- GDT [fIntegrationTime](#)
- [stDirReq](#) [sDirRq](#)
- [stDirRes](#) [sResultHeader](#)
- GList \* [glServers](#)
- gint [giGdkTag](#)
- guint [guSbCtxt](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwCBHide](#)
- GtkWidget \* [gwStatusBar](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwBDisconnect](#)
- GtkWidget \* [gwCBFreeze](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwLAlgorithm](#)
- GtkWidget \* [gwOMAlgorithm](#)
- GtkWidget \* [gwMAAlgorithm](#)
- GtkWidget \* [gwaMIAAlgorithm](#) [DGUI\_ALGORITHM\_ITEMS]

- GtkWidget \* [gwLSoundSpeed](#)
- GtkWidget \* [gwESoundSpeed](#)
- GtkWidget \* [gwLLowFrequencyLimit](#)
- GtkWidget \* [gwELowFrequencyLimit](#)
- GtkWidget \* [gwLIntegrationTime](#)
- GtkWidget \* [gwEIntegrationTime](#)
- GtkWidget \* [gwTable3](#)
- GtkWidget \* [gwLScaling](#)
- GtkWidget \* [gwOMScaling](#)
- GtkWidget \* [gwMScaling](#)
- GtkWidget \* [gwaMIScaling](#) [DGUI\_SCALING\_ITEMS]
- GtkWidget \* [gwLScalingExponent](#)
- GtkWidget \* [gwEScalingExponent](#)
- GtkWidget \* [gwLRemoveNoise](#)
- GtkWidget \* [gwOMRemoveNoise](#)
- GtkWidget \* [gwMRemoveNoise](#)
- GtkWidget \* [gwaMIRemoveNoise](#) [DGUI\_REMOVE\_NOISE\_ITEMS]
- GtkWidget \* [gwLAlpha](#)
- GtkWidget \* [gwEAlpha](#)
- GtkWidget \* [gwLMeanLength](#)
- GtkWidget \* [gwEMeanLength](#)
- GtkWidget \* [gwLGapLength](#)
- GtkWidget \* [gwEGapLength](#)
- GtkWidget \* [gwCBNoFilter](#)
- GtkWidget \* [gwCBNormalize](#)
- GtkWidget \* [gwLPalette](#)
- GtkWidget \* [gwOMPalette](#)
- GtkWidget \* [gwMPalette](#)
- GtkWidget \* [gwaMIPalette](#) [DGUI\_PALETTE\_ITEMS]
- GtkWidget \* [gwTable4](#)
- GtkWidget \* [gwLLeftDirection](#)
- GtkWidget \* [gwELeftDirection](#)
- GtkWidget \* [gwLRightDirection](#)
- GtkWidget \* [gwERightDirection](#)
- GtkWidget \* [gwLSectorCount](#)
- GtkWidget \* [gwESectorCount](#)
- GtkWidget \* [gwLDirectionScale](#)
- GtkWidget \* [gwEDirectionScale](#)
- GtkWidget \* [gwCBSaving](#)
- GtkWidget \* [gwBSave](#)
- GtkWidget \* [gwFSSave](#)
- GtkWidget \* [gwTableWorm](#)
- GtkWidget \* [gwHRDirection](#)
- GtkWidget \* [gwVRTime](#)
- GtkWidget \* [gwDAWorm](#)
- GdkGC \* [ggcWormBG](#)

- Gdkgc \* [ggcWormFG](#)
- Gdkgc \* [gcCrossHair](#)
- std::string [strImgFileName](#)
- clAlloc [Results](#)
- clAlloc [ResultMsgBuf](#)
- clAlloc [ScaledResults](#)
- clCfgFile \* [Cfg](#)
- clFrameBuf [FBDIR](#)
- clGtkUtils [GtkUtils](#)
- clSockClie [SClient](#)
- clSockOp \* [SOp](#)
- clDirMsg [DirMsg](#)
- clDSPOp [DSP](#)

### 7.45.1 Detailed Description

Direction finding GUI.



## 7.45.2 Constructor & Destructor Documentation

7.45.2.1 `clGUIDir::clGUIDir (int *, char ***)`

7.45.2.2 `clGUIDir::~~clGUIDir ()`

## 7.45.3 Member Function Documentation

7.45.3.1 `bool clGUIDir::Build ()` [private]

7.45.3.2 `bool clGUIDir::ConnectSignals ()` [private]

7.45.3.3 `bool clGUIDir::BuildTable1 ()` [private]

7.45.3.4 `bool clGUIDir::BuildTable2 ()` [private]

7.45.3.5 `bool clGUIDir::BuildTable3 ()` [private]

7.45.3.6 `bool clGUIDir::BuildTable4 ()` [private]

7.45.3.7 `bool clGUIDir::BuildTableWorm ()` [private]

7.45.3.8 `bool clGUIDir::BuildDrawingPrims ()` [private]

7.45.3.9 `void clGUIDir::FreeDrawingPrims ()` [private]

7.45.3.10 `bool clGUIDir::ParseServerStr (char *, int *, const char *)`  
[private]

7.45.3.11 `bool clGUIDir::InitConnection (const char *, int)` [private]

7.45.3.12 `void clGUIDir::GetSettings ()` [private]

7.45.3.13 `bool clGUIDir::SendSettings ()` [private]

7.45.3.14 `void clGUIDir::PrintStatus ()` [private]

7.45.3.15 `void clGUIDir::SaveInfo (const char *, time_t)` [private]

7.45.3.16 `void clGUIDir::StartNewImgFile ()` [private]

7.45.3.17 `int clGUIDir::Exec ()`

7.45.3.18 `gint clGUIDir::OnDelete (GtkWidget *, GdkEventAny *)`

7.45.3.19 `void clGUIDir::OnHideToggled (GtkToggleButton *, gpointer)`

7.45.3.20 `gint clGUIDir::OnConnectClick (GtkWidget *, gpointer gpData)`

7.45.3.21 `void clGUIDir::OnFreezeToggled (GtkToggleButton *, gpointer)`

7.45.3.22 `gint clGUIDir::OnExposeWorm (GtkWidget *, GdkEventExpose *)`

7.45.3.23 `gint clGUIDir::OnMotionWorm (GtkWidget *, GdkEventMotion *)`

7.45.3.24 `gint clGUIDir::OnPaletteActivate (GtkWidget *, gpointer)`

7.45.3.25 `void clGUIDir::OnSaveClicks (GtkWidget *, gpointer)`

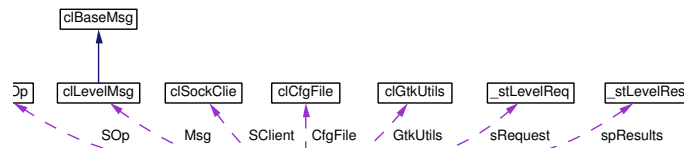
- [GUIDir.hh](#)
- [GUIDir.cc](#)

## 7.46 clGUILevel Class Reference

GUI for level server.

```
#include <GUILevel.hh>
```

Collaboration diagram for clGUILevel:



### Public Member Functions

- [clGUILevel \(\)](#)
- [~clGUILevel \(\)](#)
- [int Main \(int \\*, char \\*\\*\\*\)](#)
- [gboolean OnDelete \(GtkWidget \\*, GdkEvent \\*, gpointer\)](#)
- [void OnConnectClick \(GtkButton \\*, gpointer\)](#)
- [gboolean OnSofarExpose \(GtkWidget \\*, GdkEventExpose \\*, gpointer\)](#)
- [gboolean OnSofarMotion \(GtkWidget \\*, GdkEventMotion \\*, gpointer\)](#)
- [gboolean OnSofarConfigure \(GtkWidget \\*, GdkEventConfigure \\*, gpointer\)](#)
- [void OnGdkInput \(gpointer, gint, GdkInputCondition\)](#)

### Private Member Functions

- [bool GetCfg \(\)](#)
- [bool Build \(\)](#)
- [bool BuildTable1 \(\)](#)
- [bool BuildTable2 \(\)](#)
- [bool BuildSofar \(\)](#)
- [bool ConnectSignals \(\)](#)
- [bool BuildDrawingPrims \(\)](#)
- [bool ConnectToServer \(const char \\*, int\)](#)
- [bool SendSettings \(\)](#)
- [void DisplayResults \(\)](#)
- [void InitializeDisplay \(\)](#)



## Private Attributes

- bool [bRun](#)
- bool [bConnected](#)
- bool [bFirstResult](#)
- int [iBeamCount](#)
- long [lResultPos](#)
- long [lResultCount](#)
- float [fDisplayLow](#)
- float [fDisplayHigh](#)
- char [cpResultBuf](#) [GLOBAL\_HEADER\_LEN]
- [stLevelReq](#) [sRequest](#)
- [stpLevelRes](#) [spResults](#)
- guint [guSbCtxt](#)
- gint [iGdkInputTag](#)
- GList \* [glServer](#)
- GdkGC \* [ggcSofarBG](#)
- GdkGC \* [ggcSofarFG](#)
- GdkCursor \* [gcCrossHair](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwStatusBar](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwLChannel](#)
- GtkObject \* [goAChannel](#)
- GtkWidget \* [gwSBChannel](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwLAlgorithm](#)
- GtkWidget \* [gwOMAlgorithm](#)
- GtkWidget \* [gwMAlgorithm](#)
- GtkWidget \* [gwaMIAAlgorithm](#) [GUILEV\_ALGORITHM\_ITEMS]
- GtkWidget \* [gwLIntegrationTime](#)
- GtkWidget \* [gwEIntegrationTime](#)
- GtkWidget \* [gwLLowFrequency](#)
- GtkWidget \* [gwELowFrequency](#)
- GtkWidget \* [gwLHighFrequency](#)
- GtkWidget \* [gwEHighFrequency](#)
- GtkWidget \* [gwLDisplayLow](#)
- GtkWidget \* [gwEDisplayLow](#)
- GtkWidget \* [gwLDisplayHigh](#)
- GtkWidget \* [gwEDisplayHigh](#)
- GtkWidget \* [gwTableSofar](#)
- GtkWidget \* [gwHRTIME](#)
- GtkWidget \* [gwVRLevel](#)

- [GtkWidget](#) \* [gwDASofar](#)

- [clCfgFile](#) [CfgFile](#)

- [clGtkUtils](#) [GtkUtils](#)

- [clSockClie](#) [SClient](#)

- [clSockOp](#) [SOp](#)

- [clLevelMsg](#) [Msg](#)

### 7.46.1 Detailed Description

GUI for level server.



## 7.46.2 Constructor & Destructor Documentation

7.46.2.1 `clGUILevel::clGUILevel ()`

7.46.2.2 `clGUILevel::~~clGUILevel ()`

## 7.46.3 Member Function Documentation

7.46.3.1 `bool clGUILevel::GetCfg () [private]`

7.46.3.2 `bool clGUILevel::Build () [private]`

7.46.3.3 `bool clGUILevel::BuildTable1 () [private]`

7.46.3.4 `bool clGUILevel::BuildTable2 () [private]`

7.46.3.5 `bool clGUILevel::BuildSofar () [private]`

7.46.3.6 `bool clGUILevel::ConnectSignals () [private]`

7.46.3.7 `bool clGUILevel::BuildDrawingPrims () [private]`

7.46.3.8 `bool clGUILevel::ConnectToServer (const char *, int) [private]`

7.46.3.9 `bool clGUILevel::SendSettings () [private]`

7.46.3.10 `void clGUILevel::DisplayResults () [private]`

7.46.3.11 `void clGUILevel::InitializeDisplay () [private]`

7.46.3.12 `int clGUILevel::Main (int *, char ***)`

7.46.3.13 `gboolean clGUILevel::OnDelete (GtkWidget *, GdkEvent *, gpointer)`

7.46.3.14 `void clGUILevel::OnConnectClick (GtkButton *, gpointer)`

7.46.3.15 `gboolean clGUILevel::OnSofarExpose (GtkWidget *,  
GdkEventExpose *, gpointer)`

7.46.3.16 `gboolean clGUILevel::OnSofarMotion (GtkWidget *,  
GdkEventMotion *, gpointer)`

7.46.3.17 `gboolean clGUILevel::OnSofarConfigure (GtkWidget *,  
GdkEventConfigure *, gpointer)`

7.46.3.18 `void clGUILevel::OnGdkInput (gpointer, gint, GdkInputCondition)`

## 7.46.4 Member Data Documentation

7.46.4.1 `bool clGUILevel::bRun [private]`

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7.46.4.2 `bool clGUILevel::bConnected [private]`

7.46.4.3 `bool clGUILevel::bFirstResult [private]`

7.46.4.4 `int clGUILevel::iBeamCount [private]`

7.46.4.5 `long clGUILevel::lResultPos [private]`

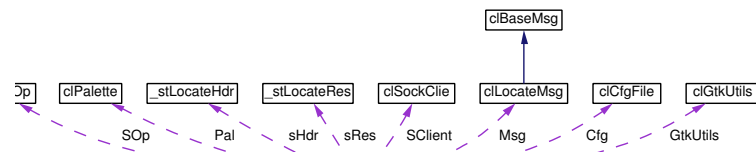
- [GUILevel.hh](#)
- [GUILevel.cc](#)

## 7.47 clGUILocate Class Reference

GUI for locating.

```
#include <GUILocate.hh>
```

Collaboration diagram for clGUILocate:



### Public Member Functions

- [clGUILocate](#) ()
- [~clGUILocate](#) ()
- [int Main](#) (int \*, char \*\*\*)
- [gboolean OnDelete](#) (GtkWidget \*, GdkEvent \*, gpointer)
- [void OnConnectClick](#) (GtkButton \*, gpointer)
- [void OnPaletteActivate](#) (GtkMenuItem \*, gpointer)
- [gboolean OnLocateExpose](#) (GtkWidget \*, GdkEventExpose \*, gpointer)
- [gboolean OnLocateMotion](#) (GtkWidget \*, GdkEventMotion \*, gpointer)
- [void OnGdkInput](#) (gpointer, gint, GdkInputCondition)

### Private Member Functions

- [bool GetCfg](#) ()
- [bool Build](#) ()
- [bool BuildTable1](#) ()
- [bool BuildTable2](#) ()
- [bool BuildLocate](#) ()
- [bool ConnectSignals](#) ()
- [bool BuildDrawingPrims](#) ()
- [bool ConnectToServer](#) (const char \*, int)
- [void DisplayResults](#) ()

### Private Attributes

- [bool bRun](#)
- [bool bConnected](#)
- [int iPalette](#)
- [int iMsgSize](#)

- [stLocateHdr sHdr](#)
- [stLocateRes sRes](#)
- [gint iGdkInputTag](#)
- [GList \\* glServer](#)
- [GdkGC \\* ggcLocateBG](#)
- [GdkGC \\* ggcLocateFG](#)
- [GdkCursor \\* gcCrossHair](#)
- [GtkWidget \\* gwWindow](#)
- [GtkWidget \\* gwVBox](#)
- [GtkWidget \\* gwTable1](#)
- [GtkWidget \\* gwLServer](#)
- [GtkWidget \\* gwCServer](#)
- [GtkWidget \\* gwBConnect](#)
- [GtkWidget \\* gwTable2](#)
- [GtkWidget \\* gwLPalette](#)
- [GtkWidget \\* gwOMPalette](#)
- [GtkWidget \\* gwMPalette](#)
- [GtkWidget \\* gwaMIPalette](#) [GUILOC\_PALETTE\_ITEMS]
- [GtkWidget \\* gwSWLocate](#)
- [GtkWidget \\* gwDALocate](#)
- [clAlloc ResMsg](#)
- [clAlloc ResMatrix](#)
- [clAlloc ResFrame](#)
- [clCfgFile Cfg](#)
- [clGtkUtils GtkUtils](#)
- [clLocateMsg Msg](#)
- [clPalette Pal](#)
- [clSockClie SClient](#)
- [clSockOp SOp](#)

### 7.47.1 Detailed Description

GUI for locating.





## 7.47.2 Constructor & Destructor Documentation

7.47.2.1 `clGUILocate::clGUILocate ()`

7.47.2.2 `clGUILocate::~~clGUILocate ()`

## 7.47.3 Member Function Documentation

7.47.3.1 `bool clGUILocate::GetCfg () [private]`

7.47.3.2 `bool clGUILocate::Build () [private]`

7.47.3.3 `bool clGUILocate::BuildTable1 () [private]`

7.47.3.4 `bool clGUILocate::BuildTable2 () [private]`

7.47.3.5 `bool clGUILocate::BuildLocate () [private]`

7.47.3.6 `bool clGUILocate::ConnectSignals () [private]`

7.47.3.7 `bool clGUILocate::BuildDrawingPrims () [private]`

7.47.3.8 `bool clGUILocate::ConnectToServer (const char *, int) [private]`

7.47.3.9 `void clGUILocate::DisplayResults () [private]`

7.47.3.10 `int clGUILocate::Main (int *, char ***)`

7.47.3.11 `gboolean clGUILocate::OnDelete (GtkWidget *, GdkEvent *,  
gpointer)`

7.47.3.12 `void clGUILocate::OnConnectClick (GtkButton *, gpointer)`

7.47.3.13 `void clGUILocate::OnPaletteActivate (GtkMenuItem *, gpointer)`

7.47.3.14 `gboolean clGUILocate::OnLocateExpose (GtkWidget *,  
GdkEventExpose *, gpointer)`

7.47.3.15 `gboolean clGUILocate::OnLocateMotion (GtkWidget *,  
GdkEventMotion *, gpointer)`

7.47.3.16 `void clGUILocate::OnGdkInput (gpointer, gint, GdkInputCondition)`

## 7.47.4 Member Data Documentation

7.47.4.1 `bool clGUILocate::bRun [private]`

7.47.4.2 `bool clGUILocate::bConnected [private]`

7.47.4.3 `int clGUILocate::iPalette [private]`

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7.47.4.4 `int clGUILocate::iMsgSize [private]`

7.47.4.5 `stLocateHdr clGUILocate::sHdr [private]`

7.47.4.6 `stLocateRes clGUILocate::sRes [private]`

7.47.4.7 `gint clGUILocate::iGdkInputTag [private]`

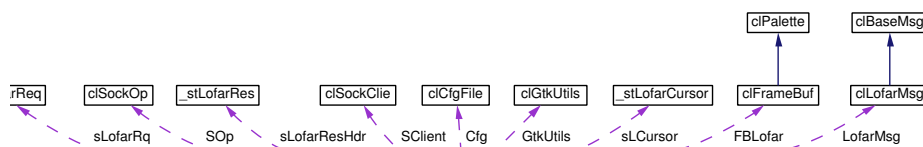
- [GUILocate.hh](#)
- [GUILocate.cc](#)

## 7.48 clGUILOfar Class Reference

LOFAR/DEMON GUI.

```
#include <GUILOfar.hh>
```

Collaboration diagram for clGUILOfar:



### Public Member Functions

- [clGUILOfar](#) (int \*, char \*\*\*)
- [~clGUILOfar](#) ()
- int [Exec](#) ()
- gint [OnDelete](#) (GtkWidget \*, GdkEventAny \*)
- void [OnHideToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnConnectClick](#) (GtkWidget \*, gpointer)
- void [OnFreezeToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnExposeLofar](#) (GtkWidget \*, GdkEventExpose \*, gpointer)
- gint [OnConfigureLofar](#) (GtkWidget \*, GdkEventConfigure \*, gpointer)
- gint [OnExposeLine](#) (GtkWidget \*, GdkEventExpose \*, gpointer)
- gint [OnExposeCursor](#) (GtkWidget \*, GdkEventExpose \*, gpointer)
- gint [OnMotionLofar](#) (GtkWidget \*, GdkEventMotion \*, gpointer)
- gint [OnPaletteActivate](#) (GtkWidget \*, gpointer)
- void [OnAverageToggled](#) (GtkToggleButton \*, gpointer)
- void [OnClipValueChanged](#) (GtkAdjustment \*, gpointer)
- void [OnSaveClicks](#) (GtkWidget \*, gpointer)
- void [OnGdkInput](#) (gpointer, gint, GdkInputCondition)

### Private Member Functions

- bool [Build](#) ()
- bool [BuildTable1](#) ()
- bool [BuildTable2](#) ()
- bool [BuildTable3](#) ()
- bool [BuildTable4](#) ()
- bool [BuildTableLofar](#) ()
- bool [BuildDrawingPrims](#) ()
- void [FreeDrawingPrims](#) ()
- bool [ConnectSignals](#) ()

- bool [ParseServerStr](#) (char \*, int \*, const char \*)
- bool [InitConnection](#) (const char \*, int)
- bool [SendSettings](#) ()
- void [PrintStatus](#) ()
- void [SetPalette](#) (int)
- void [Configure](#) ()
- void [ConfigureHeight](#) ()
- void [DrawCursor](#) ()
- void [SaveInfo](#) (const char \*, time\_t)
- void [StartNewImgFile](#) ()

### Private Attributes

- bool [bRun](#)
- bool [bConnected](#)
- bool [bFreezed](#)
- bool [bConfigured](#)
- bool [bAveraged](#)
- bool [bCursorDrag](#)
- bool [bSaving](#)
- int [iResMsgBufSize](#)
- int [iFit](#)
- int [iPalette](#)
- int [iLofarWidth](#)
- int [iLofarHeight](#)
- int [iCursorX](#)
- int [iCursorY](#)
- int [iClips](#)
- int [iTIFFCompression](#)
- int [iJPEGQuality](#)
- int [iContSaveScans](#)
- int [iCompressMode](#)
- int [iScanCount](#)
- int [iImgCount](#)
- int [iBeamCount](#)
- long [lSpectSize](#)
- GDT [fClip](#)
- [stLofarReq](#) [sLofarRq](#)
- [stLofarRes](#) [sLofarResHdr](#)
- [stLofarCursor](#) [sLCursor](#)
- GList \* [glServer](#)
- gint [giGdkTag](#)
- guint [guSbCtxt](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwCBHide](#)

- GtkWidget \* [gwStatusBar](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwLChannel](#)
- GObject \* [goAChannel](#)
- GtkWidget \* [gwSBChannel](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwBDisconnect](#)
- GtkWidget \* [gwCBFreeze](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwLType](#)
- GtkWidget \* [gwOMType](#)
- GtkWidget \* [gwMType](#)
- GtkWidget \* [gwaMIType](#) [LGUI\_TYPE\_ITEMS]
- GtkWidget \* [gwLWindow](#)
- GtkWidget \* [gwOMWindow](#)
- GtkWidget \* [gwMWindow](#)
- GtkWidget \* [gwaMIWindow](#) [LGUI\_WINDOW\_ITEMS]
- GtkWidget \* [gwLWinParam](#)
- GtkWidget \* [gwEWinParam](#)
- GtkWidget \* [gwLWinLength](#)
- GtkWidget \* [gwOMWinLength](#)
- GtkWidget \* [gwMWinLength](#)
- GtkWidget \* [gwaMIWinLength](#) [LGUI\_WIN\_LENGTH\_ITEMS]
- GtkWidget \* [gwLLowerFreq](#)
- GtkWidget \* [gwELowerFreq](#)
- GtkWidget \* [gwLHigherFreq](#)
- GtkWidget \* [gwEHigherFreq](#)
- GtkWidget \* [gwLOverlap](#)
- GtkWidget \* [gwEOverlap](#)
- GtkWidget \* [gwTable3](#)
- GtkWidget \* [gwLRemoveNoise](#)
- GtkWidget \* [gwOMRemoveNoise](#)
- GtkWidget \* [gwMRemoveNoise](#)
- GtkWidget \* [gwaMIRemoveNoise](#) [LGUI\_REMOVE\_NOISE\_ITEMS]
- GtkWidget \* [gwLAlpha](#)
- GtkWidget \* [gwEAlpha](#)
- GtkWidget \* [gwLMeanLength](#)
- GtkWidget \* [gwEMeanLength](#)
- GtkWidget \* [gwLGapLength](#)
- GtkWidget \* [gwEGapLength](#)
- GtkWidget \* [gwLAverageCount](#)
- GtkWidget \* [gwEAverageCount](#)
- GtkWidget \* [gwLClip](#)
- GtkWidget \* [gwOMClip](#)

- GtkWidget \* [gwMClip](#)
- GtkWidget \* [gwaMClip](#) [LGUI\_CLIP\_ITEMS]
- GtkWidget \* [gwCBLinear](#)
- GtkWidget \* [gwCBDemon](#)
- GtkWidget \* [gwLPalette](#)
- GtkWidget \* [gwOMPalette](#)
- GtkWidget \* [gwMPalette](#)
- GtkWidget \* [gwaMIPalette](#) [LGUI\_PALETTE\_ITEMS]
- GtkWidget \* [gwCBAverage](#)
- GtkWidget \* [gwCBSaving](#)
- GtkWidget \* [gwBSave](#)
- GtkWidget \* [gwFSSave](#)
- GtkWidget \* [gwTable4](#)
- GtkWidget \* [gwLClipValue](#)
- GtkWidget \* [goAClipValue](#)
- GtkWidget \* [gwHSClipValue](#)
- GtkWidget \* [gwTableLofar](#)
- GtkWidget \* [gwLTopTime](#)
- GtkWidget \* [gwLBottomTime](#)
- GtkWidget \* [gwSWLofar](#)
- GtkWidget \* [gwTableLofar2](#)
- GtkWidget \* [gwHRFrequency](#)
- GtkWidget \* [gwVRTime](#)
- GtkWidget \* [gwDALine](#)
- GtkWidget \* [gwDACursor](#)
- GtkWidget \* [gwDALofar](#)
- GdkGC \* [ggcLofarBG](#)
- GdkGC \* [ggcLofarFG](#)
- GdkGC \* [ggcLineBG](#)
- GdkGC \* [ggcLineFG](#)
- GdkGC \* [ggcCursorBG](#)
- GdkGC \* [ggcCursorFG](#)
- GdkCursor \* [gcCrossHair](#)
- std::string [strImgFileName](#)
- clAlloc [SpectData](#)
- clAlloc [AvgSpectData](#)
- clCfgFile [Cfg](#)
- clDSPOp [DSP](#)
- clFrameBuf [FBLofar](#)
- clGtkUtils [GtkUtils](#)
- clLofarMsg [LofarMsg](#)
- clSockClie [SClient](#)
- clSockOp [SOp](#)

### 7.48.1 Detailed Description

LOFAR/DEMON GUI.



## 7.48.2 Constructor & Destructor Documentation

7.48.2.1 `clGUILOfar::clGUILOfar (int *, char ***)`

7.48.2.2 `clGUILOfar::~~clGUILOfar ()`

## 7.48.3 Member Function Documentation

7.48.3.1 `bool clGUILOfar::Build () [private]`

7.48.3.2 `bool clGUILOfar::BuildTable1 () [private]`

7.48.3.3 `bool clGUILOfar::BuildTable2 () [private]`

7.48.3.4 `bool clGUILOfar::BuildTable3 () [private]`

7.48.3.5 `bool clGUILOfar::BuildTable4 () [private]`

7.48.3.6 `bool clGUILOfar::BuildTableLOfar () [private]`

7.48.3.7 `bool clGUILOfar::BuildDrawingPrims () [private]`

7.48.3.8 `void clGUILOfar::FreeDrawingPrims () [private]`

7.48.3.9 `bool clGUILOfar::ConnectSignals () [private]`

7.48.3.10 `bool clGUILOfar::ParseServerStr (char *, int *, const char *)  
[private]`

7.48.3.11 `bool clGUILOfar::InitConnection (const char *, int) [private]`

7.48.3.12 `bool clGUILOfar::SendSettings () [private]`

7.48.3.13 `void clGUILOfar::PrintStatus () [private]`

7.48.3.14 `void clGUILOfar::SetPalette (int) [private]`

7.48.3.15 `void clGUILOfar::Configure () [private]`

7.48.3.16 `void clGUILOfar::ConfigureHeight () [private]`

7.48.3.17 `void clGUILOfar::DrawCursor () [private]`

7.48.3.18 `void clGUILOfar::SaveInfo (const char *, time_t) [private]`

7.48.3.19 `void clGUILOfar::StartNewImgFile () [private]`

7.48.3.20 `int clGUILOfar::Exec ()`

7.48.3.21 `gint clGUILOfar::OnDelete (GtkWidget *, GdkEventAny *)`

7.48.3.22 `void clGUILOfar::OnHideToggled (GtkToggleButton *, gpointer)`

7.48.3.23 `gint clGUILOfar::OnConnectClick (GtkWidget *, gpointer)`

7.48.3.24 `void clGUILOfar::OnFreezeToggled (GtkToggleButton *, gpointer)`

7.48.3.25 `gint clGUILOfar::OnExposeLOfar (GtkWidget *, GdkEventExpose *,  
gpointer)`

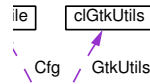


- [GUILofar.hh](#)
- [GUILofar.cc](#)

## 7.49 clGUITransient Class Reference

```
#include <GUITrans.hh>
```

Collaboration diagram for clGUITransient:



### Public Member Functions

- [clGUITransient](#) ()
- [~clGUITransient](#) ()
- [int Main](#) (int \*, char \*\*\*)
- [gboolean OnDelete](#) (GtkWidget \*, GdkEvent \*, gpointer)
- [void OnConnectClick](#) (GtkButton \*, gpointer)

### Private Member Functions

- [bool GetCfg](#) ()
- [bool Build](#) ()
- [bool BuildTable1](#) ()
- [bool BuildDrawingPrims](#) ()
- [bool ConnectSignals](#) ()

### Private Attributes

- [bool bRun](#)
- [bool bConnected](#)
- [gint iGdkInputTag](#)
- [GList \\* glServer](#)
- [GtkWidget \\* gwWindow](#)
- [GtkWidget \\* gwVBox](#)
- [GtkWidget \\* gwTable1](#)
- [GtkWidget \\* gwLServer](#)
- [GtkWidget \\* gwCServer](#)
- [GtkWidget \\* gwBConnect](#)
- [clCfgFile Cfg](#)
- [clGtkUtils GtkUtils](#)



### 7.49.1 Constructor & Destructor Documentation

7.49.1.1 `clGUITransient::clGUITransient ()`

7.49.1.2 `clGUITransient::~~clGUITransient ()`

### 7.49.2 Member Function Documentation

7.49.2.1 `bool clGUITransient::GetCfg () [private]`

7.49.2.2 `bool clGUITransient::Build () [private]`

7.49.2.3 `bool clGUITransient::BuildTable1 () [private]`

7.49.2.4 `bool clGUITransient::BuildDrawingPrims () [private]`

7.49.2.5 `bool clGUITransient::ConnectSignals () [private]`

7.49.2.6 `int clGUITransient::Main (int *, char ***)`

7.49.2.7 `gboolean clGUITransient::OnDelete (GtkWidget *, GdkEvent *,  
gpointer)`

7.49.2.8 `void clGUITransient::OnConnectClick (GtkButton *, gpointer)`

### 7.49.3 Member Data Documentation

7.49.3.1 `bool clGUITransient::bRun [private]`

7.49.3.2 `bool clGUITransient::bConnected [private]`

7.49.3.3 `gint clGUITransient::iGdkInputTag [private]`

7.49.3.4 `GList* clGUITransient::glServer [private]`

7.49.3.5 `GtkWidget* clGUITransient::gwWindow [private]`

7.49.3.6 `GtkWidget* clGUITransient::gwVBox [private]`

7.49.3.7 `GtkWidget* clGUITransient::gwTable1 [private]`

7.49.3.8 `GtkWidget* clGUITransient::gwLServer [private]`

7.49.3.9 `GtkWidget* clGUITransient::gwCServer [private]`

7.49.3.10 `GtkWidget* clGUITransient::gwBConnect [private]`

7.49.3.11 `clCfgFile clGUITransient::Cfg [private]`

7.49.3.12 `clGtkUtils clGUITransient::GtkUtils [private]`

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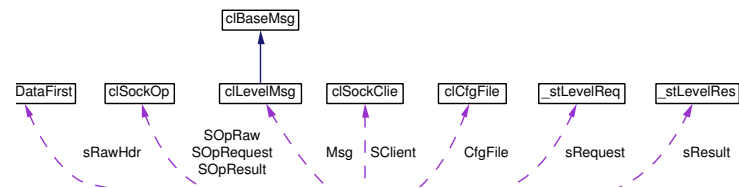
- [GUITrans.hh](#)
- [GUITrans.cc](#)

## 7.50 clLevel Class Reference

Level server.

```
#include <Level.hh>
```

Collaboration diagram for clLevel:



### Public Member Functions

- [clLevel](#) (int, int)
- [~clLevel](#) ()
- int [Main](#) (int, char \*\*)

### Private Member Functions

- bool [GetCfg](#) ()
- bool [GetRequest](#) ()
- bool [ConnectStream](#) ()
- bool [Initialize](#) ()
- bool [ReceiveData](#) ()
- bool [Process](#) ()
- bool [SendResult](#) ()

### Private Attributes

- bool [bRun](#)
- long [lFilterSize](#)
- long [lRawDataCount](#)
- long [lRawBufSize](#)
- long [lSampleCount](#)
- char [cpStreamSocket](#) [\_POSIX\_PATH\_MAX+1]
- GDT [fResPeakLevel](#)
- [stRawDataFirst](#) [sRawHdr](#)
- [stLevelReq](#) [sRequest](#)
- [stLevelRes](#) [sResult](#)
- [clDSPAlloc](#) [RawBuf](#)

- [clDSPAlloc DataBuf](#)
- [clCfgFile CfgFile](#)
- [clDSPOp DSP](#)
- [clFilter Filter](#)
- [clSockClie SClient](#)
- [clSockOp SOpRequest](#)
- [clSockOp SOpResult](#)
- [clSockOp SOpRaw](#)
- [clLevelMsg Msg](#)

### 7.50.1 Detailed Description

Level server.





## 7.50.2 Constructor & Destructor Documentation

7.50.2.1 `cLevel::cLevel (int, int)`

7.50.2.2 `cLevel::~~cLevel ()`

## 7.50.3 Member Function Documentation

7.50.3.1 `bool cLevel::GetCfg () [private]`

7.50.3.2 `bool cLevel::GetRequest () [private]`

7.50.3.3 `bool cLevel::ConnectStream () [private]`

7.50.3.4 `bool cLevel::Initialize () [private]`

7.50.3.5 `bool cLevel::ReceiveData () [private]`

7.50.3.6 `bool cLevel::Process () [private]`

7.50.3.7 `bool cLevel::SendResult () [private]`

7.50.3.8 `int cLevel::Main (int, char **)`

## 7.50.4 Member Data Documentation

7.50.4.1 `bool cLevel::bRun [private]`

7.50.4.2 `long cLevel::lFilterSize [private]`

7.50.4.3 `long cLevel::lRawDataCount [private]`

7.50.4.4 `long cLevel::lRawBufSize [private]`

7.50.4.5 `long cLevel::lSampleCount [private]`

7.50.4.6 `char cLevel::cpStreamSocket[_POSIX_PATH_MAX + 1]  
[private]`

7.50.4.7 `GDT cLevel::fResPeakLevel [private]`

7.50.4.8 `stRawDataFirst cLevel::sRawHdr [private]`

7.50.4.9 `stLevelReq cLevel::sRequest [private]`

7.50.4.10 `stLevelRes cLevel::sResult [private]`

7.50.4.11 `cDSPAlloc cLevel::RawBuf [private]`

7.50.4.12 `cDSPAlloc cLevel::DataBuf [private]`

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7.50.4.13 `cCfgFile cLevel::CfgFile [private]`

7.50.4.14 `cDSPOp cLevel::DSP [private]`

7.50.4.15 `cFilter cLevel::Filter [private]`

7.50.4.16 `cSockClie cLevel::SClient [private]`

- [Level.hh](#)
- [Level.cc](#)

## 7.51 cLevelMsg Class Reference

Level server communication.

```
#include <Messages.hh>
```

Inheritance diagram for cLevelMsg:



Msg

Collaboration diagram for cLevelMsg:



Msg

### Public Member Functions

- void [SetRequest](#) (char \*, const [stpLevelReq](#))
- void [GetRequest](#) (const char \*, [stpLevelReq](#))
- void [SetResult](#) (void \*, const [stpLevelRes](#))
- void [GetResult](#) (const void \*, [stpLevelRes](#))

#### 7.51.1 Detailed Description

Level server communication.

#### 7.51.2 Member Function Documentation

**7.51.2.1** void cLevelMsg::SetRequest (char \*, const *stpLevelReq*)

**7.51.2.2** void cLevelMsg::GetRequest (const char \*, [stpLevelReq](#))

**7.51.2.3** void cLevelMsg::SetResult (void \*, const *stpLevelRes*)

**7.51.2.4** void cLevelMsg::GetResult (const void \*, [stpLevelRes](#))

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)

## 7.52 `_stLevelReq` Struct Reference

Level: request.

```
#include <Messages.hh>
```

### Public Attributes

- `int iChannel`  
*Channel.*
- `int iAlgorithm`  
*Algorithm.*
- `float fIntegrationTime`  
*Integration time (s).*
- `float fLowFrequency`  
*Lower frequency limit (Hz).*
- `float fHighFrequency`  
*Higer frequency limit (Hz).*

### 7.52.1 Detailed Description

Level: request.

### 7.52.2 Member Data Documentation

#### 7.52.2.1 `int _stLevelReq::iChannel`

Channel.

#### 7.52.2.2 `int _stLevelReq::iAlgorithm`

Algorithm.

#### 7.52.2.3 `float _stLevelReq::fIntegrationTime`

Integration time (s).

#### 7.52.2.4 `float _stLevelReq::fLowFrequency`

Lower frequency limit (Hz).

#### 7.52.2.5 float [\\_stLevelReq::fHighFrequency](#)

Higer frequency limit (Hz).

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.53 `_stLevelRes` Struct Reference

Level: result.

```
#include <Messages.hh>
```

### Public Attributes

- `timeval sTimeStamp`  
*Timestamp.*
- `float fIntegrationTime`  
*Integration time (s).*
- `float fPeakLevel`  
*Peak level (dB).*
- `float fResult`  
*Result.*

### 7.53.1 Detailed Description

Level: result.

### 7.53.2 Member Data Documentation

#### 7.53.2.1 `struct timeval _stLevelRes::sTimeStamp`

Timestamp.

#### 7.53.2.2 `float _stLevelRes::fIntegrationTime`

Integration time (s).

#### 7.53.2.3 `float _stLevelRes::fPeakLevel`

Peak level (dB).

#### 7.53.2.4 `float _stLevelRes::fResult`

Result.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

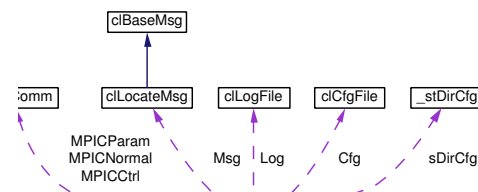


## 7.54 clLocate Class Reference

Master node for locate server.

```
#include <Locate.hh>
```

Collaboration diagram for clLocate:



### Public Member Functions

- [clLocate \(\)](#)
- [~clLocate \(\)](#)
- [int Main \(int, char \\*\\*\)](#)
- [void Stop \(\)](#)
- [void \\* ProcessThread \(void \\*\)](#)
- [void \\* ServeClientThread \(void \\*\)](#)

### Private Member Functions

- [bool Initialize \(\)](#)
- [void SendParams \(int, const char \\*, int, long, long, float\)](#)

### Private Attributes

- volatile bool [bRun](#)
- int [iSensorCount](#)
- int [iPort](#)
- int [iMsgSize](#)
- long [lWidth](#)
- long [lHeight](#)
- GDT [fWeight](#)
- GDT \* [fpLocMatrix](#)
- [stDirCfg sDirCfg](#)
- [clAlloc LocMatrix](#)
- [clAlloc ResMsg](#)
- [clCondition CndResMsg](#)
- [clMutex MtxResMsg](#)

- [clCfgFile Cfg](#)
- [clDSPOp DSP](#)
- [clLogFile Log](#)
- [clLocateMsg Msg](#)
- [clMPIComm MPICtrl](#)
- [clMPIComm MPICParam](#)
- [clMPIComm MPICNormal](#)

### 7.54.1 Detailed Description

Master node for locate server.



## 7.54.2 Constructor & Destructor Documentation

7.54.2.1 `clLocate::clLocate ()`

7.54.2.2 `clLocate::~~clLocate ()`

## 7.54.3 Member Function Documentation

7.54.3.1 `bool clLocate::Initialize () [private]`

7.54.3.2 `void clLocate::SendParams (int, const char *, int, long, long, float) [private]`

7.54.3.3 `int clLocate::Main (int, char **)`

7.54.3.4 `void clLocate::Stop ()`

7.54.3.5 `void * clLocate::ProcessThread (void *)`

7.54.3.6 `void * clLocate::ServeClientThread (void *)`

## 7.54.4 Member Data Documentation

7.54.4.1 `volatile bool clLocate::bRun [private]`

7.54.4.2 `int clLocate::iSensorCount [private]`

7.54.4.3 `int clLocate::iPort [private]`

7.54.4.4 `int clLocate::iMsgSize [private]`

7.54.4.5 `long clLocate::lWidth [private]`

7.54.4.6 `long clLocate::lHeight [private]`

7.54.4.7 `GDT clLocate::fWeight [private]`

7.54.4.8 `GDT* clLocate::fpLocMatrix [private]`

7.54.4.9 `stDirCfg clLocate::sDirCfg [private]`

7.54.4.10 `clAlloc clLocate::LocMatrix [private]`

7.54.4.11 `clAlloc clLocate::ResMsg [private]`

7.54.4.12 `clCondition clLocate::CndResMsg [private]`

7.54.4.13 `clMutex clLocate::MtxResMsg [private]`

7.54.4.14 `clCfgFile clLocate::Cfg [private]`

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7.54.4.15 `clDSPOp clLocate::DSP [private]`

7.54.4.16 `clLogFile clLocate::Log [private]`

7.54.4.17 `clLocateMsg clLocate::Msg [private]`

7.54.4.18 `clMPIComm clLocate::MPICCtrl [private]`

- [Locate.hh](#)
- [Locate.cc](#)

## 7.55 `_stLocateHdr` Struct Reference

Locate: results header.

```
#include <Messages.hh>
```

### Public Attributes

- `int iWidth`  
*Matrix width.*
- `int iHeight`  
*Matrix height.*

### 7.55.1 Detailed Description

Locate: results header.

### 7.55.2 Member Data Documentation

#### 7.55.2.1 `int _stLocateHdr::iWidth`

Matrix width.

#### 7.55.2.2 `int _stLocateHdr::iHeight`

Matrix height.

The documentation for this struct was generated from the following file:

- `Messages.hh`

## 7.56 cILocateMsg Class Reference

Locate server communication.

```
#include <Messages.hh>
```

Inheritance diagram for cILocateMsg:



Collaboration diagram for cILocateMsg:



### Public Member Functions

- void [SetHeader](#) (char \*, const [stpLocateHdr](#))
- void [GetHeader](#) (const char \*, [stpLocateHdr](#))
- void [SetResult](#) (void \*, const [stpLocateRes](#), const float \*)
- void [SetResult](#) (void \*, const [stpLocateRes](#), const double \*)
- void [GetResult](#) (const void \*, [stpLocateRes](#), float \*)
- void [GetResult](#) (const void \*, [stpLocateRes](#), double \*)

#### 7.56.1 Detailed Description

Locate server communication.

## 7.56.2 Member Function Documentation

**7.56.2.1** void `clLocateMsg::SetHeader` (char \*, const *stpLocateHdr*)

**7.56.2.2** void `clLocateMsg::GetHeader` (const char \*, [stpLocateHdr](#))

**7.56.2.3** void `clLocateMsg::SetResult` (void \*, const *stpLocateRes*, const float \*)

**7.56.2.4** void `clLocateMsg::SetResult` (void \*, const *stpLocateRes*, const double \*)

**7.56.2.5** void `clLocateMsg::GetResult` (const void \*, [stpLocateRes](#), float \*)

**7.56.2.6** void `clLocateMsg::GetResult` (const void \*, [stpLocateRes](#), double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)



## 7.57 `_stLocateRes` Struct Reference

Locate: result.

```
#include <Messages.hh>
```

### Public Attributes

- long [lPointCount](#)  
*Point count.*

### 7.57.1 Detailed Description

Locate: result.

### 7.57.2 Member Data Documentation

#### 7.57.2.1 long `_stLocateRes::lPointCount`

Point count.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.58 cILocateSensor Class Reference

Sensor matrix processing for locating sound sources.

```
#include <LocateSensor.hh>
```

### Public Member Functions

- [cILocateSensor \(\)](#)
- [~cILocateSensor \(\)](#)
- bool [Initialize](#) (long, long, long, long, GDT, bool)  
*Initialize.*
- void [Uninitialize](#) ()  
*Uninitialize.*
- void [SetDirectionValues](#) (const GDT \*, const GDT \*, long, long, long, GDT)  
*Set direction values.*
- GDT \* [GetResultMatrix](#) ()  
*Get result matrix.*

### Private Member Functions

- void [Clear](#) ()
- void [SetValue](#) (long, long, GDT)
- void [SetDirection](#) (GDT, GDT, GDT)

### Private Attributes

- bool [bInitialized](#)
- bool [b3D](#)
- long [lWidth](#)
- long [lHeight](#)
- long [lPosX](#)
- long [lPosY](#)
- GDT [fPI](#)
- GDT [fHalfPI](#)
- GDT [fAzimuth](#)
- GDT \* [fpLocMatrix](#)
- clAlloc [LocMatrix](#)
- clDSPOp [DSP](#)

### 7.58.1 Detailed Description

Sensor matrix processing for locating sound sources.

### 7.58.2 Constructor & Destructor Documentation

**7.58.2.1** `cILocateSensor::cILocateSensor ()`

**7.58.2.2** `cILocateSensor::~~cILocateSensor ()`

### 7.58.3 Member Function Documentation

**7.58.3.1** `void cILocateSensor::Clear () [inline, private]`

**7.58.3.2** `void cILocateSensor::SetValue (long, long, GDT) [inline, private]`

**7.58.3.3** `void cILocateSensor::SetDirection (GDT, GDT, GDT) [private]`

**7.58.3.4** `bool cILocateSensor::Initialize (long, long, long, long, GDT, bool)`

Initialize.

#### Parameters:

- IW* Matrix width
- IH* Matrix height
- IX* Sensor X position
- IY* Sensor Y position
- fA* Sensor azimuth (direction) (rad)
- bTD* Three dimensional array (non-twosided case)

#### Returns:

Success

**7.58.3.5** `void cILocateSensor::Uninitialize ()`

Uninitialize.

**7.58.3.6** `void cILocateSensor::SetDirectionValues (const GDT *, const GDT *, long, long, long, GDT)`

Set direction values.

We just walk through matrix and adjust level using

$$\alpha = 0.05 \frac{f^{1.4}}{1000}$$

$$R = 15 \log(s) + \alpha s 10^{-3}$$

$$V_n = V_0 10^{\frac{R}{20}}$$

We definitely need way better algorithm, this is stupidly simple. Ajust multiplier for R for environment, 10 gives cylindral spreading and 20 spherical spreading.

**Parameters:**

*fpLevelValues* Levels

*fpDirectionValues* Directions

*lValueCount* number of levels & directions

*lMinBin* Results starting at index

*lMaxBin* Results end at index

*fFreqResolution* Frequency resolution

#### 7.58.3.7 GDT\* clLocateSensor::GetResultMatrix () [inline]

Get result matrix.

**Returns:**

Pointer to result matrix

## 7.58.4 Member Data Documentation

- 7.58.4.1 bool [cILocateSensor::bInitialized](#) [private]
- 7.58.4.2 bool [cILocateSensor::b3D](#) [private]
- 7.58.4.3 long [cILocateSensor::lWidth](#) [private]
- 7.58.4.4 long [cILocateSensor::lHeight](#) [private]
- 7.58.4.5 long [cILocateSensor::lPosX](#) [private]
- 7.58.4.6 long [cILocateSensor::lPosY](#) [private]
- 7.58.4.7 GDT [cILocateSensor::fPI](#) [private]
- 7.58.4.8 GDT [cILocateSensor::fHalfPI](#) [private]
- 7.58.4.9 GDT [cILocateSensor::fAzimuth](#) [private]
- 7.58.4.10 GDT\* [cILocateSensor::fpLocMatrix](#) [private]
- 7.58.4.11 cAlloc [cILocateSensor::LocMatrix](#) [private]
- 7.58.4.12 cDSPOp [cILocateSensor::DSP](#) [private]

The documentation for this class was generated from the following files:

- [LocateSensor.hh](#)
- [LocateSensor.cc](#)

## 7.59 cLocateSystem Class Reference

Result combining of locate matrixes.

```
#include <LocateSystem.hh>
```

### Public Member Functions

- [cLocateSystem](#) ()
- [~cLocateSystem](#) ()
- bool [Initialize](#) (long, long, GDT)  
*Initialize.*
- void [Add](#) (const GDT \*)  
*Add subresult.*
- void [Process](#) ()  
*Process final result.*
- void [GetResults](#) (GDT \*)  
*Get results.*

### Private Attributes

- long [lWidth](#)
- long [lHeight](#)
- long [lPointCount](#)
- long [lResultCount](#)
- GDT [fWeight](#)
- GDT \* [fpResults](#)
- GDT \* [fpFinal](#)
- clAlloc [Results](#)
- clAlloc [Final](#)
- clDSPOp [DSP](#)

### 7.59.1 Detailed Description

Result combining of locate matrixes.

## 7.59.2 Constructor & Destructor Documentation

### 7.59.2.1 cILocateSystem::cILocateSystem ()

### 7.59.2.2 cILocateSystem::~~cILocateSystem ()

## 7.59.3 Member Function Documentation

### 7.59.3.1 bool cILocateSystem::Initialize (long, long, GDT)

Initialize.

**Parameters:**

*IW* Matrix width

*IH* Matrix height

*fCoeff* Weighting coefficient

### 7.59.3.2 void cILocateSystem::Add (const GDT \*)

Add subresult.

**Parameters:**

*fpSubRes* Result matrix

### 7.59.3.3 void cILocateSystem::Process ()

Process final result.

### 7.59.3.4 void cILocateSystem::GetResults (GDT \*)

Get results.

**Parameters:**

*fpDest* Result matrix

## 7.59.4 Member Data Documentation

- 7.59.4.1 long [clLocateSystem::lWidth](#) [private]
- 7.59.4.2 long [clLocateSystem::lHeight](#) [private]
- 7.59.4.3 long [clLocateSystem::lPointCount](#) [private]
- 7.59.4.4 long [clLocateSystem::lResultCount](#) [private]
- 7.59.4.5 GDT [clLocateSystem::fWeight](#) [private]
- 7.59.4.6 GDT\* [clLocateSystem::fpResults](#) [private]
- 7.59.4.7 GDT\* [clLocateSystem::fpFinal](#) [private]
- 7.59.4.8 clAlloc [clLocateSystem::Results](#) [private]
- 7.59.4.9 clAlloc [clLocateSystem::Final](#) [private]
- 7.59.4.10 clDSPOp [clLocateSystem::DSP](#) [private]

The documentation for this class was generated from the following files:

- [LocateSystem.hh](#)
- [LocateSystem.cc](#)



## 7.60 `_stLofarCursor` Struct Reference

Lofar cursor.

```
#include <GUILofar.hh>
```

### Public Attributes

- `int iType`  
*Cursor type.*
- `int iPosition`  
*Position.*
- `int iDistance`  
*Spike spacing.*

### 7.60.1 Detailed Description

Lofar cursor.

### 7.60.2 Member Data Documentation

#### 7.60.2.1 `int _stLofarCursor::iType`

Cursor type.

#### 7.60.2.2 `int _stLofarCursor::iPosition`

Position.

#### 7.60.2.3 `int _stLofarCursor::iDistance`

Spike spacing.

The documentation for this struct was generated from the following file:

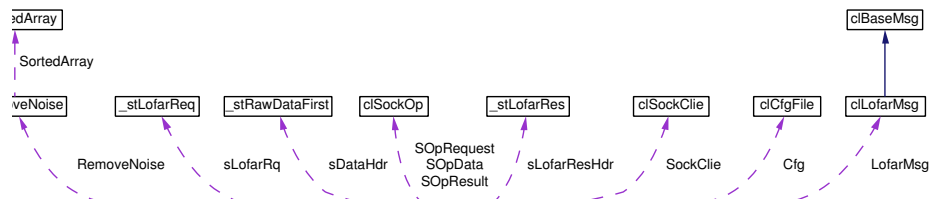
- [GUILofar.hh](#)

## 7.61 cLofarDemon Class Reference

LOFAR/DEMON calculation server.

```
#include <LofarDemon.h>
```

Collaboration diagram for cLofarDemon:



### Public Member Functions

- [cLofarDemon](#) (int, int)
- [~cLofarDemon](#) ()
- [int Exec](#) ()

### Public Attributes

- volatile bool [bRun](#)

### Private Member Functions

- bool [GetRequestMsg](#) ()
- bool [GetDataHdr](#) ()
- bool [Initialize](#) ()
- bool [InitFilter](#) ()
- bool [InitFFT](#) ()
- int [MainLoop](#) ()
- void [CalcSpect](#) ()
- bool [SendResults](#) ()
- void [PutData](#) (GDT \*, long)
- bool [PullData](#) (GDT \*, long)
- void [DemonProc](#) (GDT \*, long)
- void [SpectStdDev](#) (GDT \*)

## Private Attributes

- bool [bReverseOrder](#)
- int [iFilterType](#)
- int [iDCBlock](#)
- int [iNormIdx](#)
- int [iNormHistCount](#)
- long [lFilterSize](#)
- long [lDecimation](#)
- long [lDemonDecimation](#)
- long [lWinSize](#)
- long [lSpectSize](#)
- long [lNewDataSize](#)
- long [lOldDataSize](#)
- long [lAvgCntr](#)
- long [lHistCntr](#)
- GDT \* [fpWinFunc](#)
- GDT \* [fpDataBuf](#)
- GDT \* [fpSpectRes](#)
- GDT \* [fpLofarRes](#)
- GDT \* [fpNormHist](#)
- [stRawDataFirst](#) [sDataHdr](#)
- [stLofarReq](#) [sLofarRq](#)
- [stLofarRes](#) [sLofarResHdr](#)
- [clDSPAlloc](#) [WinFunc](#)
- [clDSPAlloc](#) [DataBuf](#)
- [clDSPAlloc](#) [SpectRes](#)
- [clDSPAlloc](#) [LofarRes](#)
- [clDSPAlloc](#) [HistoryBuf](#)
- [clDSPAlloc](#) [NormHist](#)
- [clCfgFile](#) [Cfg](#)
- [clDSPOp](#) [DSP](#)
- [clLofarMsg](#) [LofarMsg](#)
- [clReBuffer](#) [ReBuffer](#)

*This is used instead of decimator if decimation factor is < 2.*

- [clRecDecimator](#) [Decimator](#)  
*This is always the last decimation.*
- [clRecDecimator](#) [DemonDecimator](#)  
*DEMON BP decimation.*
- [clIIRCascade](#) [DCBlockIIR](#)  
*DC notch for DEMON.*
- [clFlipBand](#) [FlipBand](#)

*Odd frequency band flipping.*

- [clRemoveNoise RemoveNoise](#)
- [clSockClie SockClie](#)
- [clSockOp SOpRequest](#)
- [clSockOp SOpResult](#)
- [clSockOp SOpData](#)

### 7.61.1 Detailed Description

LOFAR/DEMON calculation server.



## 7.61.2 Constructor & Destructor Documentation

7.61.2.1 `clLofarDemon::clLofarDemon (int, int)`

7.61.2.2 `clLofarDemon::~~clLofarDemon ()`

## 7.61.3 Member Function Documentation

7.61.3.1 `bool clLofarDemon::GetRequestMsg () [private]`

7.61.3.2 `bool clLofarDemon::GetDataHdr () [private]`

7.61.3.3 `bool clLofarDemon::Initialize () [private]`

7.61.3.4 `bool clLofarDemon::InitFilter () [private]`

7.61.3.5 `bool clLofarDemon::InitFFT () [private]`

7.61.3.6 `int clLofarDemon::MainLoop () [private]`

7.61.3.7 `void clLofarDemon::CalcSpect () [private]`

7.61.3.8 `bool clLofarDemon::SendResults () [private]`

7.61.3.9 `void clLofarDemon::PutData (GDT *, long) [private]`

7.61.3.10 `bool clLofarDemon::PullData (GDT *, long) [private]`

7.61.3.11 `void clLofarDemon::DemonProc (GDT *, long) [private]`

7.61.3.12 `void clLofarDemon::SpectStdDev (GDT *) [private]`

7.61.3.13 `int clLofarDemon::Exec ()`

## 7.61.4 Member Data Documentation

7.61.4.1 `bool clLofarDemon::bReverseOrder [private]`

7.61.4.2 `int clLofarDemon::iFilterType [private]`

7.61.4.3 `int clLofarDemon::iDCBlock [private]`

7.61.4.4 `int clLofarDemon::iNormIdx [private]`

7.61.4.5 `int clLofarDemon::iNormHistCount [private]`

7.61.4.6 `long clLofarDemon::iFilterSize [private]`

7.61.4.7 `long clLofarDemon::iDecimation [private]`

7.61.4.8 `long clLofarDemon::iDemonDecimation [private]` Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen

7.61.4.9 `long clLofarDemon::iWinSize [private]`

7.61.4.10 `long clLofarDemon::iSpectSize [private]`

7.61.4.11 `long clLofarDemon::iNewDataSize [private]`

7.61.4.12 `long clLofarDemon::iOldDataSize [private]`

**7.61.4.33 cIRecDecimator cLofarDemon::Decimator** [private]

This is always the last decimation.

**7.61.4.34 cIRecDecimator cLofarDemon::DemonDecimator** [private]

DEMON BP decimation.

**7.61.4.35 cIIRCascade cLofarDemon::DCBlockIIR** [private]

DC notch for DEMON.

**7.61.4.36 cIFlipBand cLofarDemon::FlipBand** [private]

Odd frequency band flipping.

**7.61.4.37 cIRemoveNoise cLofarDemon::RemoveNoise** [private]**7.61.4.38 cISockClie cLofarDemon::SockClie** [private]**7.61.4.39 cISockOp cLofarDemon::SOpRequest** [private]**7.61.4.40 cISockOp cLofarDemon::SOpResult** [private]**7.61.4.41 cISockOp cLofarDemon::SOpData** [private]**7.61.4.42 volatile bool cLofarDemon::bRun**

The documentation for this class was generated from the following files:

- [LofarDemon.hh](#)
- [LofarDemon.cc](#)

## 7.62 `_stLOFARInfo` Struct Reference

Information stored in saved LOFAR .tif.inf.

```
#include <ConvPic.hh>
```

### Public Attributes

- `time_t ttTime`  
*Oldest dataline time.*
- `double dLowFreq`  
*Lower frequency limit.*
- `double dHighFreq`  
*Upper frequency limit.*
- `double dLineTime`  
*Length of one scanline in time (s).*

### 7.62.1 Detailed Description

Information stored in saved LOFAR .tif.inf.

### 7.62.2 Member Data Documentation

#### 7.62.2.1 `time_t _stLOFARInfo::ttTime`

Oldest dataline time.

#### 7.62.2.2 `double _stLOFARInfo::dLowFreq`

Lower frequency limit.

#### 7.62.2.3 `double _stLOFARInfo::dHighFreq`

Upper frequency limit.

#### 7.62.2.4 `double _stLOFARInfo::dLineTime`

Length of one scanline in time (s).

The documentation for this struct was generated from the following file:



- [ConvPic.hh](#)

## 7.63 cLofarMsg Class Reference

LOFAR/DEMON server communication.

```
#include <Messages.hh>
```

Inheritance diagram for cLofarMsg:



```
graph TD; Msg[Msg];
```

Collaboration diagram for cLofarMsg:



```
graph TD; Msg[Msg];
```

### Public Member Functions

- void [SetRequest](#) (char \*, const [stpLofarReq](#))
- void [GetRequest](#) (const char \*, [stpLofarReq](#))
- void [SetResult](#) (void \*, const [stpLofarRes](#), const float \*)
- void [SetResult](#) (void \*, const [stpLofarRes](#), const double \*)
- void [GetResult](#) (const void \*, [stpLofarRes](#), float \*)
- void [GetResult](#) (const void \*, [stpLofarRes](#), double \*)

#### 7.63.1 Detailed Description

LOFAR/DEMON server communication.

## 7.63.2 Member Function Documentation

7.63.2.1 void cILofarMsg::SetRequest (char \*, const *stpLofarReq*)

7.63.2.2 void cILofarMsg::GetRequest (const char \*, [stpLofarReq](#))

7.63.2.3 void cILofarMsg::SetResult (void \*, const *stpLofarRes*, const float \*)

7.63.2.4 void cILofarMsg::SetResult (void \*, const *stpLofarRes*, const double \*)

7.63.2.5 void cILofarMsg::GetResult (const void \*, [stpLofarRes](#), float \*)

7.63.2.6 void cILofarMsg::GetResult (const void \*, [stpLofarRes](#), double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)

## 7.64 `stLofarReq` Struct Reference

LOFAR: request.

```
#include <Messages.hh>
```

### Public Attributes

- int `iChannel`  
*Channel.*
- int `iType`  
*Type; FFT, Hankel, Cepstrum, etc.*
- int `iWindow`  
*Window function.*
- float `fWinParameter`  
*Parameter for window function.*
- long `lWinLength`  
*Window length in points.*
- float `fLowFreq`  
*Lower frequency limit (Hz).*
- float `fHighFreq`  
*Higher frequency limit (Hz).*
- int `iOverlap`  
*Overlap ().*
- bool `bLinear`  
*Linear/logarithmic scaling.*
- int `iRemoveNoise`  
*Background noise estimation and removal algorithm.*
- float `fAlpha`  
*Alpha for noise removal.*
- long `lMeanLength`  
*Mean length for noise removal.*
- long `lGapLength`  
*Gap length for TPSW noise removal algorithm.*

- bool `bDemon`  
*LOFAR/DEMON.*
- int `iClip`  
*Predefined clipping function.*
- long `lAvgCount`  
*Number of spectrums to average.*

### 7.64.1 Detailed Description

LOFAR: request.

### 7.64.2 Member Data Documentation

#### 7.64.2.1 int `_stLofarReq::iChannel`

Channel.

#### 7.64.2.2 int `_stLofarReq::iType`

Type; FFT, Hankel, Cepstrum, etc.

#### 7.64.2.3 int `_stLofarReq::iWindow`

Window function.

#### 7.64.2.4 float `_stLofarReq::fWinParameter`

Parameter for window function.

#### 7.64.2.5 long `_stLofarReq::lWinLength`

Window length in points.

#### 7.64.2.6 float `_stLofarReq::fLowFreq`

Lower frequency limit (Hz).

#### 7.64.2.7 float `_stLofarReq::fHighFreq`

Higher frequency limit (Hz).

**7.64.2.8 int [\\_stLofarReq::iOverlap](#)**

Overlap ().

**7.64.2.9 bool [\\_stLofarReq::bLinear](#)**

Linear/logarithmic scaling.

**7.64.2.10 int [\\_stLofarReq::iRemoveNoise](#)**

Background noise estimation and removal algorithm.

**7.64.2.11 float [\\_stLofarReq::fAlpha](#)**

Alpha for noise removal.

**7.64.2.12 long [\\_stLofarReq::lMeanLength](#)**

Mean length for noise removal.

**7.64.2.13 long [\\_stLofarReq::lGapLength](#)**

Gap length for TPSW noise removal algorithm.

**7.64.2.14 bool [\\_stLofarReq::bDemon](#)**

LOFAR/DEMON.

**7.64.2.15 int [\\_stLofarReq::iClip](#)**

Predefined clipping function.

**7.64.2.16 long [\\_stLofarReq::lAvgCount](#)**

Number of spectrums to average.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.65 `_stLofarRes` Struct Reference

LOFAR: result.

```
#include <Messages.hh>
```

### Public Attributes

- `timeval sTimeStamp`  
*Timestamp.*
- `long lSpectLength`  
*Spectrum length.*
- `float fLowFreq`  
*Lower frequency limit (Hz).*
- `float fHighFreq`  
*Higher frequency limit (Hz).*
- `float fDemonBand`  
*DEMON bandwidth (Hz).*
- `float fLineTime`  
*Length of spectrum window in time (s).*
- `float fPeakLevel`  
*Peak level (dB).*

### 7.65.1 Detailed Description

LOFAR: result.

### 7.65.2 Member Data Documentation

#### 7.65.2.1 `struct timeval _stLofarRes::sTimeStamp`

Timestamp.

#### 7.65.2.2 `long _stLofarRes::lSpectLength`

Spectrum length.

**7.65.2.3 float [\\_stLofarRes::fLowFreq](#)**

Lower frequency limit (Hz).

**7.65.2.4 float [\\_stLofarRes::fHighFreq](#)**

Higher frequency limit (Hz).

**7.65.2.5 float [\\_stLofarRes::fDemonBand](#)**

DEMON bandwidth (Hz).

**7.65.2.6 float [\\_stLofarRes::fLineTime](#)**

Length of spectrum window in time (s).

**7.65.2.7 float [\\_stLofarRes::fPeakLevel](#)**

Peak level (dB).

The documentation for this struct was generated from the following file:

- [Messages.hh](#)



## 7.66 clLogFile Class Reference

Log file class.

```
#include <LogFile.hh>
```

### Public Member Functions

- [clLogFile](#) ()
- [clLogFile](#) (const char \*)
- [~clLogFile](#) ()
- bool [Open](#) (const char \*)  
*Open logfile.*
- bool [Add](#) (char, const char \*)  
*Add new entry to logfile.*
- bool [Add](#) (char, const char \*, int)  
*Add new entry to logfile with errno.*
- int [GetError](#) ()  
*Get error code.*

### Private Member Functions

- void [Time](#) ()

### Private Attributes

- bool [bOk](#)
- int [iEC](#)
- char [cpTime](#) [20]
- FILE \* [FLog](#)

#### 7.66.1 Detailed Description

Log file class.

## 7.66.2 Constructor & Destructor Documentation

### 7.66.2.1 `clLogFile::clLogFile ()`

### 7.66.2.2 `clLogFile::clLogFile (const char *)`

### 7.66.2.3 `clLogFile::~~clLogFile ()`

## 7.66.3 Member Function Documentation

### 7.66.3.1 `void clLogFile::Time () [private]`

### 7.66.3.2 `bool clLogFile::Open (const char *)`

Open logfile.

**Parameters:**

*cpLogFile* Filename

**Returns:**

Success

### 7.66.3.3 `bool clLogFile::Add (char, const char *)`

Add new entry to logfile.

**Parameters:**

*cLogMark* Mark character

*cpLogEntry* Entry line

**Returns:**

Success

### 7.66.3.4 `bool clLogFile::Add (char, const char *, int)`

Add new entry to logfile with errno.

**Parameters:**

*cLogMark* Mark character

*cpLogEntry* Entry line

*iErrno* errno value

**Returns:**

Success

**7.66.3.5** int cLogFile::GetError () [inline]

Get error code.

**7.66.4 Member Data Documentation****7.66.4.1** bool cLogFile::bOk [private]**7.66.4.2** int cLogFile::iEC [private]**7.66.4.3** char cLogFile::cpTime[20] [private]**7.66.4.4** FILE\* cLogFile::FLog [private]

The documentation for this class was generated from the following files:

- [LogFile.hh](#)
- [LogFile.cc](#)

## 7.67 cMPIComm Class Reference

MPI communication.

```
#include <Cluster.hh>
```

### Public Member Functions

- [cMPIComm](#) ()
- [cMPIComm](#) (int)
- [~cMPIComm](#) ()
- void [SetTag](#) (int)  
*Set message tag.*
- bool [Send](#) (int, char \*, int)  
*Send message.*
- bool [Send](#) (int, unsigned char \*, int)
- bool [Send](#) (int, short \*, int)
- bool [Send](#) (int, unsigned short \*, int)
- bool [Send](#) (int, int \*, int)
- bool [Send](#) (int, unsigned int \*, int)
- bool [Send](#) (int, long \*, int)
- bool [Send](#) (int, unsigned long \*, int)
- bool [Send](#) (int, float \*, int)
- bool [Send](#) (int, double \*, int)
- bool [Send](#) (int, long double \*, int)
- bool [Send](#) (int, void \*, int)
- bool [Probe](#) (int)  
*Synchronize message and return info (with our tag or wildcard).*
- bool [ProbeAny](#) (int)
- bool [ProbeNB](#) (int)
- bool [ProbeAnyNB](#) (int)
- bool [Recv](#) (int, char \*, int)  
*Receive message.*
- bool [Recv](#) (int, unsigned char \*, int)
- bool [Recv](#) (int, short \*, int)
- bool [Recv](#) (int, unsigned short \*, int)
- bool [Recv](#) (int, int \*, int)
- bool [Recv](#) (int, unsigned int \*, int)
- bool [Recv](#) (int, long \*, int)
- bool [Recv](#) (int, unsigned long \*, int)
- bool [Recv](#) (int, float \*, int)
- bool [Recv](#) (int, double \*, int)

- bool [Recv](#) (int, long double \*, int)
- bool [Recv](#) (int, void \*, int)
- bool [RecvAny](#) (int, char \*, int)

*Receive message with any tag.*

- bool [RecvAny](#) (int, unsigned char \*, int)
- bool [RecvAny](#) (int, short \*, int)
- bool [RecvAny](#) (int, unsigned short \*, int)
- bool [RecvAny](#) (int, int \*, int)
- bool [RecvAny](#) (int, unsigned int \*, int)
- bool [RecvAny](#) (int, long \*, int)
- bool [RecvAny](#) (int, unsigned long \*, int)
- bool [RecvAny](#) (int, float \*, int)
- bool [RecvAny](#) (int, double \*, int)
- bool [RecvAny](#) (int, long double \*, int)
- bool [RecvAny](#) (int, void \*, int)
- bool [GetCount](#) (const std::type\_info &, int \*)

*Get length of last received message (number of elements).*

- int [GetSenderRank](#) ()

*Get rank of sender of last received message.*

- int [GetSenderTag](#) ()

*Get tag of last received message.*

- int [GetError](#) ()

*Get MPI returned error code.*

- int [GetError2](#) ()

*Get MPI error value from status.*

## Private Attributes

- int [iTag](#)
- int [iError](#)
- MPI\_Status [sStatus](#)

### 7.67.1 Detailed Description

MPI communication.

## 7.67.2 Constructor & Destructor Documentation

**7.67.2.1** `clMPIComm::clMPIComm ()`

**7.67.2.2** `clMPIComm::clMPIComm (int)`

**7.67.2.3** `clMPIComm::~~clMPIComm ()`

## 7.67.3 Member Function Documentation

**7.67.3.1** `void clMPIComm::SetTag (int)`

Set message tag.

**Parameters:**

*iTag* Tag

**7.67.3.2** `bool clMPIComm::Send (int, char *, int)`

Send message.

**Parameters:**

*iDest* Receiver rank

*Data* Message buffer

*iCount* Item count

**Returns:**

Success

**7.67.3.3** `bool clMPIComm::Send (int, unsigned char *, int)`

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.4** `bool clMPIComm::Send (int, short *, int)`

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.5** `bool clMPIComm::Send (int, unsigned short *, int)`

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.6 bool cMPIOComm::Send (int, int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.7 bool cMPIOComm::Send (int, unsigned int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.8 bool cMPIOComm::Send (int, long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.9 bool cMPIOComm::Send (int, unsigned long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.10 bool cMPIOComm::Send (int, float \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.11 bool cMPIOComm::Send (int, double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.12 bool cMPIOComm::Send (int, long double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.13 bool cMPIOComm::Send (int, void \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.14 bool cMPIOComm::Probe (int)**

Synchronize message and return info (with our tag or wildcard).

Check/wait for message.

**Parameters:***iSrc* Source rank**Returns:**

Status

**7.67.3.15 bool cMPIOComm::ProbeAny (int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.16 bool cMPIOComm::ProbeNB (int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.17 bool cMPIOComm::ProbeAnyNB (int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.18 bool cMPIOComm::Recv (int, char \*, int)**

Receive message.

**Parameters:***iSrc* Source rank*Data* Message buffer*iCount* Buffer size in items**Returns:**

Success

**7.67.3.19 bool cMPIOComm::Recv (int, unsigned char \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.20 bool cMPIOComm::Recv (int, short \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.



**7.67.3.21 bool cMPIComm::Recv (int, unsigned short \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.22 bool cMPIComm::Recv (int, int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.23 bool cMPIComm::Recv (int, unsigned int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.24 bool cMPIComm::Recv (int, long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.25 bool cMPIComm::Recv (int, unsigned long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.26 bool cMPIComm::Recv (int, float \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.27 bool cMPIComm::Recv (int, double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.28 bool cMPIComm::Recv (int, long double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.29 bool cMPIComm::Recv (int, void \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.30 bool cMPIOComm::RecvAny (int, char \*, int)**

Receive message with any tag.

**Parameters:**

*iSrc* Sender rank

*Data* Message buffer

*iCount* Size of message buffer in items

**7.67.3.31 bool cMPIOComm::RecvAny (int, unsigned char \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.32 bool cMPIOComm::RecvAny (int, short \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.33 bool cMPIOComm::RecvAny (int, unsigned short \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.34 bool cMPIOComm::RecvAny (int, int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.35 bool cMPIOComm::RecvAny (int, unsigned int \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.36 bool cMPIOComm::RecvAny (int, long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.37 bool cMPIOComm::RecvAny (int, unsigned long \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.38 bool cMPIOComm::RecvAny (int, float \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.39 bool cMPIOComm::RecvAny (int, double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.40 bool cMPIOComm::RecvAny (int, long double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.41 bool cMPIOComm::RecvAny (int, void \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.67.3.42 bool cMPIOComm::GetCount (const std::type\_info &, int \*)**

Get length of last received message (number of elements).

**Note:**

This is not to be used extensively. This uses RTTI, so it could be very slow.

**Parameters:**

*TypeInfo* Type information

*ipCount* Number of elements

**Returns:**

Success

**7.67.3.43 int cMPIOComm::GetSenderRank () [inline]**

Get rank of sender of last received message.

**Returns:**

Sender rank

**7.67.3.44** `int cMPIOComm::GetSenderTag () [inline]`

Get tag of last received message.

**Returns:**

Last received tag

**7.67.3.45** `int cMPIOComm::GetError () [inline]`

Get MPI returned error code.

**Returns:**

Error code

**7.67.3.46** `int cMPIOComm::GetError2 () [inline]`

Get MPI error value from status.

**Returns:**

Error code

**7.67.4 Member Data Documentation****7.67.4.1** `int cMPIOComm::iTag [private]`**7.67.4.2** `int cMPIOComm::iError [private]`**7.67.4.3** `MPI_Status cMPIOComm::sStatus [private]`

The documentation for this class was generated from the following files:

- [Cluster.hh](#)
- [Cluster.cc](#)

## 7.68 clMPIProc Class Reference

MPI process.

```
#include <Cluster.hh>
```

### Public Member Functions

- [clMPIProc \(\)](#)
- [~clMPIProc \(\)](#)
- [bool Initialize \(int \\*, char \\*\\*\\*\)](#)  
*Initialize MPI process.*
- [bool Finalize \(\)](#)  
*Uninitialize MPI process.*
- [bool GetRank \(int \\*\)](#)  
*Get rank of this MPI node.*
- [bool GetNodeCount \(int \\*\)](#)  
*Get number of nodes for this MPI process.*
- [int GetError \(\)](#)  
*Get error code.*

### Private Attributes

- [bool bInitialized](#)
- [int iError](#)

### 7.68.1 Detailed Description

MPI process.

### 7.68.2 Constructor & Destructor Documentation

#### 7.68.2.1 clMPIProc::clMPIProc ()

#### 7.68.2.2 clMPIProc::~~clMPIProc ()

### 7.68.3 Member Function Documentation

#### 7.68.3.1 bool clMPIProc::Initialize (int \*, char \*\*\*)

Initialize MPI process.

**Parameters:**

*argc* Parameter count

*argv* Parameter vector

**Returns:**

Success

**7.68.3.2 bool clMPIProc::Finalize ()**

Uninitialize MPI process.

**Returns:**

Success

**7.68.3.3 bool clMPIProc::GetRank (int \*)**

Get rank of this MPI node.

**Parameters:**

*ipRank* Rank

**Returns:**

Success

**7.68.3.4 bool clMPIProc::GetNodeCount (int \*)**

Get number of nodes for this MPI process.

**Parameters:**

*ipNodeCount* Number of nodes

**Returns:**

Success

**7.68.3.5 int clMPIProc::GetError () [inline]**

Get error code.

**Returns:**

Error code

## 7.68.4 Member Data Documentation

7.68.4.1 `bool cMPIProc::bInitialized` [private]

7.68.4.2 `int cMPIProc::iError` [private]

The documentation for this class was generated from the following files:

- [Cluster.hh](#)
- [Cluster.cc](#)

## 7.69 cIPalette Class Reference

RGB palette class.

```
#include <Palette.hh>
```

Inheritance diagram for cIPalette:

### Public Member Functions

- [cIPalette](#) ()
- [~cIPalette](#) ()
- void [GenBW](#) ()  
*Generate white-to-black palette.*
- void [GenHSV](#) ()  
*Generate black-blue-cyan-green-yellow-red palette.*
- void [GenLight](#) ()  
*Generate palette matching to light's spectrum.*
- void [GenTemp](#) ()  
*Generate black-red-yellow-white palette.*
- void [GenDir](#) ()  
*Generate black-white palette with two highest values red.*
- void [GenGreen](#) ()  
*Generate black-green-red palette.*
- void [GenGreen2](#) ()  
*Generate black-green-white palette.*
- void [GenGreen3](#) ()  
*Generate black-green-yellow palette.*
- void [GenGreen4](#) ()  
*Generate black-green-red-yellow palette.*
- void [GenPureGreen](#) ()



*Generate black-green palette.*

- void [GenWB](#) ()  
*Generate black-white palette.*
- int [Size](#) ()  
*Get number of colors in palette.*
- unsigned int [Color](#) (int iValue)  
*Return color from palette LUT.*
- unsigned int [operator\[\]](#) (int iValue)  
*Return color from palette LUT.*

### Protected Attributes

- int [iPalSize](#)
- unsigned int \* [upPalette](#)

### Private Attributes

- clAlloc [Palette](#)

## 7.69.1 Detailed Description

RGB palette class.

## 7.69.2 Constructor & Destructor Documentation

### 7.69.2.1 clPalette::clPalette ()

### 7.69.2.2 clPalette::~~clPalette ()

## 7.69.3 Member Function Documentation

### 7.69.3.1 void clPalette::GenBW ()

Generate white-to-black palette.

### 7.69.3.2 void clPalette::GenHSV ()

Generate black-blue-cyan-green-yellow-red palette.

**7.69.3.3 void clPalette::GenLight ()**

Generate palette matching to light's spectrum.

**7.69.3.4 void clPalette::GenTemp ()**

Generate black-red-yellow-white palette.

**7.69.3.5 void clPalette::GenDir ()**

Generate black-white palette with two highest values red.

**7.69.3.6 void clPalette::GenGreen ()**

Generate black-green-red palette.

"NATO-style"

**7.69.3.7 void clPalette::GenGreen2 ()**

Generate black-green-white palette.

**7.69.3.8 void clPalette::GenGreen3 ()**

Generate black-green-yellow palette.

**7.69.3.9 void clPalette::GenGreen4 ()**

Generate black-green-red-yellow palette.

**7.69.3.10 void clPalette::GenPureGreen ()**

Generate black-green palette.

**7.69.3.11 void clPalette::GenWB ()**

Generate black-white palette.

**7.69.3.12 int clPalette::Size () [inline]**

Get number of colors in palette.

**Returns:**

Number of colors

**7.69.3.13** unsigned int clPalette::Color (int *iValue*) [inline]

Return color from palette LUT.

**Parameters:**

*iValue* Palette LUT index.

**Returns:**

Color

**7.69.3.14** ]

unsigned int clPalette::operator[] (int *iValue*) [inline]

Return color from palette LUT.

Reimplemented in [clFrameBuf](#).

**7.69.4 Member Data Documentation**

**7.69.4.1** clAlloc [clPalette::Palette](#) [private]

**7.69.4.2** int [clPalette::iPalSize](#) [protected]

**7.69.4.3** unsigned int\* [clPalette::upPalette](#) [protected]

The documentation for this class was generated from the following files:

- [Palette.hh](#)
- [Palette.cc](#)

## 7.70 `_stRawDataFirst` Struct Reference

Header from streamdist server.

```
#include <LocalMsg.h>
```

### Public Attributes

- `int iChannels`  
*Number of channels.*
- `double dSampleRate`  
*Samplerate.*

### 7.70.1 Detailed Description

Header from streamdist server.

### 7.70.2 Member Data Documentation

#### 7.70.2.1 `int _stRawDataFirst::iChannels`

Number of channels.

#### 7.70.2.2 `double _stRawDataFirst::dSampleRate`

Samplerate.

The documentation for this struct was generated from the following file:

- `LocalMsg.h`

## 7.71 `_stRawDataReq` Struct Reference

Request to streamdist server.

```
#include <LocalMsg.h>
```

### Public Attributes

- `int iChannel`  
*Channel or -1 for all.*

#### 7.71.1 Detailed Description

Request to streamdist server.

#### 7.71.2 Member Data Documentation

##### 7.71.2.1 `int _stRawDataReq::iChannel`

Channel or -1 for all.

The documentation for this struct was generated from the following file:

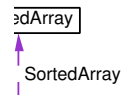
- `LocalMsg.h`

## 7.72 clRemoveNoise Class Reference

Background noise estimation and removal.

```
#include <RemoveNoise.hh>
```

Collaboration diagram for clRemoveNoise:



### Public Member Functions

- [clRemoveNoise](#) ()
- [~clRemoveNoise](#) ()
- void [TPSW](#) (float \*, float, long, long, long)  
*Two-Pass Split-Window algorithm.*
- void [TPSW](#) (double \*, double, long, long, long)
- void [TPSW](#) (float \*, const float \*, float, long, long, long)
- void [TPSW](#) (double \*, const double \*, double, long, long, long)
- void [OTA](#) (float \*, float, long, long)  
*Order-Truncate-Average algorithm.*
- void [OTA](#) (double \*, double, long, long)
- void [OTA](#) (float \*, const float \*, float, long, long)
- void [OTA](#) (double \*, const double \*, double, long, long)
- void [Diff](#) (float \*, float, long)  
*Differential method (experimental).*
- void [Diff](#) (double \*, double, long)
- void [Diff](#) (float \*, const float \*, float, long)
- void [Diff](#) (double \*, const double \*, double, long)
- void [InvDiff](#) (float \*, float, long)  
*Inverse differential method (experimental).*
- void [InvDiff](#) (double \*, double, long)
- void [InvDiff](#) (float \*, const float \*, float, long)
- void [InvDiff](#) (double \*, const double \*, double, long)

## Private Member Functions

- void [GetPosSize](#) (long \*, long \*, long, long, long)
- void [GetPosSize1](#) (long \*, long \*, long, long, long, long)
- void [GetPosSize2](#) (long \*, long \*, long, long, long, long)
- long [GetAlphaMedian](#) (const float \*, float, long)
- long [GetAlphaMedian](#) (const double \*, double, long)

## Private Attributes

- long [lPrevSize](#)
- clAlloc [PrevBuf](#)
- clSortedArray [SortedArray](#)

### 7.72.1 Detailed Description

Background noise estimation and removal.

### 7.72.2 Constructor & Destructor Documentation

**7.72.2.1** [clRemoveNoise::clRemoveNoise \(\)](#)

**7.72.2.2** [clRemoveNoise::~~clRemoveNoise \(\)](#)

### 7.72.3 Member Function Documentation

**7.72.3.1** [void clRemoveNoise::GetPosSize \(long \\*, long \\*, long, long, long\)](#)  
[inline, private]

**7.72.3.2** [void clRemoveNoise::GetPosSize1 \(long \\*, long \\*, long, long, long, long\)](#) [inline, private]

**7.72.3.3** [void clRemoveNoise::GetPosSize2 \(long \\*, long \\*, long, long, long, long\)](#) [inline, private]

**7.72.3.4** [long clRemoveNoise::GetAlphaMedian \(const float \\*, float, long\)](#)  
[inline, private]

**7.72.3.5** [long clRemoveNoise::GetAlphaMedian \(const double \\*, double, long\)](#)  
[inline, private]

**7.72.3.6** [void clRemoveNoise::TPSW \(float \\*, float, long, long, long\)](#)

Two-Pass Split-Window algorithm.

$$R_k = \{k - M, k - M + 1, \dots, k - L, k + L, \dots, k + M\}, 0 \leq L < M$$

$$K = \begin{cases} 2M + 1 & , L = 0 \\ 2M + 2 - 2L & , L \neq 0 \end{cases}$$

$$\hat{x}(k) = \frac{1}{K} \sum_{i \in R_k} x(i)$$

$$y(k) = \begin{cases} x(k) & , x(k) \leq \alpha \hat{x}(k) \\ \hat{x}(k) & , x(k) > \alpha \hat{x}(k) \end{cases}$$

$$\hat{m}(k) = \frac{1}{K} \sum_{i \in R_k} y(i)$$

then

$$z'(k) = \frac{x(k) - \hat{m}(k)}{\hat{m}(k)}, 0 \leq k \leq N - 1$$

**Parameters:**

*fpVect* Source&destination vector

*fAlpha* Alpha

*lMeanLength* Mean window length

*lGapLength* Gap length

*lLength* Length of source&destination vector

**7.72.3.7 void clRemoveNoise::TPSW (double \*, double, long, long, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.8 void clRemoveNoise::TPSW (float \*, const float \*, float, long, long, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:**

*fpDest* Destination vector

*fpSrc* Source vector

*lMeanLength* Mean window length

*lGapLength* Gap length

*lLength* Length of source&destination vectors

**7.72.3.9 void clRemoveNoise::TPSW (double \*, const double \*, double, long, long, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.



**7.72.3.10 void clRemoveNoise::OTA (float \*, float, long, long)**

Order-Truncate-Average algorithm.

Let  $y(k)$  be sorted (ascending)  $x(k)$  and  $Y_{sm}$  median, then

$$\hat{m}(k) = \frac{1}{I} \sum_{\substack{i=1 \\ i \in R_k}}^I y(i), y(I) \leq \alpha Y_{sm}, y(I+1) > \alpha Y_{sm}$$

then

$$z'(k) = \frac{x(k) - \hat{m}(k)}{\hat{m}(k)}, 0 \leq k \leq N - 1$$

**Parameters:**

*fpVect* Source&destination vector

*fAlpha* Alpha

*lMeanLength* Mean length

*lLength* Length of source&destination vector

**7.72.3.11 void clRemoveNoise::OTA (double \*, double, long, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.12 void clRemoveNoise::OTA (float \*, const float \*, float, long, long)****Parameters:**

*fpDest* Destination vector

*fpSrc* Source vector

*fAlpha* Alpha

*lMeanLength* Mean length

*lLength* Length of source&destination vectors

**7.72.3.13 void clRemoveNoise::OTA (double \*, const double \*, double, long, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.14 void clRemoveNoise::Diff (float \*, float, long)**

Differential method (experimental).

$$z'(k) = x_1(k)w - x_2(k)(1 - w), 0 \leq k \leq N - 1$$

**Parameters:***fpVect* Source&destination vector*fWeight* Weight, w*lLength* Vector length**7.72.3.15 void clRemoveNoise::Diff (double \*, double, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.16 void clRemoveNoise::Diff (float \*, const float \*, float, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**Parameters:***fpDest* Destination vector*fpSrc* Source vector*fWeight* Weight, w*lLength* Vector length**7.72.3.17 void clRemoveNoise::Diff (double \*, const double \*, double, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.18 void clRemoveNoise::InvDiff (float \*, float, long)**

Inverse differential method (experimental).

**7.72.3.19 void clRemoveNoise::InvDiff (double \*, double, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.20 void clRemoveNoise::InvDiff (float \*, const float \*, float, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.3.21 void clRemoveNoise::InvDiff (double \*, const double \*, double, long)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.72.4 Member Data Documentation**

**7.72.4.1 long clRemoveNoise::lPrevSize** [private]

**7.72.4.2 clAlloc clRemoveNoise::PrevBuf** [private]

**7.72.4.3 clSortedArray clRemoveNoise::SortedArray** [private]

The documentation for this class was generated from the following files:

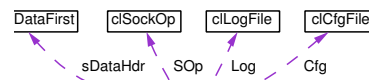
- [RemoveNoise.hh](#)
- [RemoveNoise.cc](#)

## 7.73 clSaveSrv Class Reference

Save server.

```
#include <SaveSrv.hh>
```

Collaboration diagram for clSaveSrv:



### Public Member Functions

- [clSaveSrv](#) ()
- [~clSaveSrv](#) ()
- [int Main](#) (int, char \*\*)
- [void Stop](#) ()

### Public Attributes

- [clLogFile Log](#)

### Private Member Functions

- [bool Initialize](#) ()
- [bool ConnectStream](#) ()
- [bool CreateFile](#) ()
- [bool CreateFile2](#) ()
- [void CreateFileName](#) (char \*)
- [void ProcessLoop](#) ()
- [void Dither](#) ()
- [bool WriteData](#) ()
- [bool WriteData2](#) ()

### Private Attributes

- [bool bRun](#)
- [int iFormat](#)
- [int iType](#)
- [int iBits](#)
- [int iDither](#)
- [int iFileTime](#)
- [int iFileH](#)

- unsigned int [uiRndSeed](#)
- long [lFrameLen](#)
- long [lFrameSize](#)
- char [cpSockName](#) [\_POSIX\_PATH\_MAX+1]
- char [cpSavePath](#) [\_POSIX\_PATH\_MAX+1]
- time\_t [ttFileStarted](#)
- [stRawDataFirst](#) [sDataHdr](#)
- SNDFILE \* [spSndFile](#)
- clAlloc [InFrame](#)
- clAlloc [OutFrame](#)
- clAlloc [NoiseFrame](#)
- clAlloc [FLACFrame](#)
- [clCfgFile](#) [Cfg](#)
- [clDSPOp](#) [DSP](#)
- [clSockOp](#) [SOp](#)

### 7.73.1 Detailed Description

Save server.



## 7.73.2 Constructor & Destructor Documentation

7.73.2.1 `clSaveSrv::clSaveSrv ()`

7.73.2.2 `clSaveSrv::~~clSaveSrv ()`

## 7.73.3 Member Function Documentation

7.73.3.1 `bool clSaveSrv::Initialize ()` [private]

7.73.3.2 `bool clSaveSrv::ConnectStream ()` [private]

7.73.3.3 `bool clSaveSrv::CreateFile ()` [private]

7.73.3.4 `bool clSaveSrv::CreateFile2 ()` [private]

7.73.3.5 `void clSaveSrv::CreateFileName (char *)` [private]

7.73.3.6 `void clSaveSrv::ProcessLoop ()` [private]

7.73.3.7 `void clSaveSrv::Dither ()` [private]

7.73.3.8 `bool clSaveSrv::WriteData ()` [private]

7.73.3.9 `bool clSaveSrv::WriteData2 ()` [private]

7.73.3.10 `int clSaveSrv::Main (int, char **)`

7.73.3.11 `void clSaveSrv::Stop ()` [inline]

## 7.73.4 Member Data Documentation

7.73.4.1 `bool clSaveSrv::bRun` [private]

7.73.4.2 `int clSaveSrv::iFormat` [private]

7.73.4.3 `int clSaveSrv::iType` [private]

7.73.4.4 `int clSaveSrv::iBits` [private]

7.73.4.5 `int clSaveSrv::iDither` [private]

7.73.4.6 `int clSaveSrv::iFileTime` [private]

7.73.4.7 `int clSaveSrv::iFileH` [private]

7.73.4.8 `unsigned int clSaveSrv::uiRndSeed` [private]

7.73.4.9 `long clSaveSrv::iFrameLen` [private]

7.73.4.10 `long clSaveSrv::iFrameSize` [private]

7.73.4.11 `char clSaveSrv::cpSockName[_POSIX_PATH_MAX + 1]`  
[private]

7.73.4.12 `char clSaveSrv::cpSavePath[_POSIX_PATH_MAX + 1]` [private]

7.73.4.13 `time_t clSaveSrv::ttFileStarted` [private]

- [SaveSrv.hh](#)
- [SaveSrv.cc](#)



## 7.74 `_stSgramInfo` Struct Reference

Information stored in saved spectrogram .tif.inf.

```
#include <ConvPic.hh>
```

### Public Attributes

- `time_t ttTime`  
*Newest dataline time.*
- `double dLowFreq`  
*Lower frequency limit.*
- `double dHighFreq`  
*Upper frequency limit.*
- `double dLineTime`  
*Length of one column in time (s).*

### 7.74.1 Detailed Description

Information stored in saved spectrogram .tif.inf.

### 7.74.2 Member Data Documentation

#### 7.74.2.1 `time_t _stSgramInfo::ttTime`

Newest dataline time.

#### 7.74.2.2 `double _stSgramInfo::dLowFreq`

Lower frequency limit.

#### 7.74.2.3 `double _stSgramInfo::dHighFreq`

Upper frequency limit.

#### 7.74.2.4 `double _stSgramInfo::dLineTime`

Length of one column in time (s).

The documentation for this struct was generated from the following file:

- [ConvPic.hh](#)

## 7.75 clSockClie Class Reference

Socket client class.

```
#include <SockClie.hh>
```

### Public Member Functions

- [clSockClie](#) ()
- [~clSockClie](#) ()
- int [Connect](#) (const char \*, const char \*, int)  
*Connect to TCP server, set either hostname or hostaddr and the other to NULL.*
- int [Connect](#) (const char \*)  
*Connect to Unix domain server.*
- int [GetErrno](#) ()  
*Get errno.*

### Private Attributes

- int [iErrno](#)

### 7.75.1 Detailed Description

Socket client class.

### 7.75.2 Constructor & Destructor Documentation

**7.75.2.1** [clSockClie::clSockClie](#) ()

**7.75.2.2** [clSockClie::~~clSockClie](#) ()

### 7.75.3 Member Function Documentation

**7.75.3.1** int [clSockClie::Connect](#) (const char \*, const char \*, int)

Connect to TCP server, set either hostname or hostaddr and the other to NULL.

#### Parameters:

*cpHostName* Hostname

*cpHostAddr* Host address

*iHostPort* Host port

**Returns:**

Handle, -1 on error

**7.75.3.2 int clSockClie::Connect (const char \*)**

Connect to Unix domain server.

In QNX (which doesn't support domain sockets) this is faked to TCP socket and filename should be port number.

**Parameters:**

*cpSockName* Socket filename

**Returns:**

Handle, -1 on error

**7.75.3.3 int clSockClie::GetErrno () [inline]**

Get errno.

**Returns:**

errno

**7.75.4 Member Data Documentation****7.75.4.1 int clSockClie::iErrno [private]**

The documentation for this class was generated from the following files:

- [SockClie.hh](#)
- [SockClie.cc](#)

## 7.76 clSockOp Class Reference

Socket I/O operations.

```
#include <SockOp.hh>
```

### Public Member Functions

- [clSockOp](#) ()
- [clSockOp](#) (int)
- [~clSockOp](#) ()
- void [SetHandle](#) (int)  
*Set handle.*
- void [Close](#) ()  
*Close handle/connection.*
- bool [ReadSelect](#) (int)  
*Wait for socket to become readable.*
- bool [WriteSelect](#) (int)  
*Wait for socket to become writable.*
- int [Read](#) (void \*, int)  
*Read data.*
- int [Write](#) (const void \*, int)  
*Write data.*
- int [ReadN](#) (void \*, int)  
*Read N bytes.*
- int [WriteN](#) (const void \*, int)  
*Write N bytes.*
- int [Receive](#) (void \*, int, int)  
*Receive data.*
- int [Send](#) (const void \*, int, int)  
*Send data.*
- int [ReceiveMsg](#) (struct msghdr \*, int)  
*Receive message.*
- int [SendMsg](#) (const struct msghdr \*, int)  
*Send message.*

- int [Shutdown](#) (int)  
*Shutdown connection.*
- int [GetSockName](#) (struct sockaddr \*, socklen\_t \*)  
*Get address of this end.*
- int [GetPeerName](#) (struct sockaddr \*, socklen\_t \*)  
*Get address of remote end.*
- bool [SetBlocking](#) (bool)  
*Set blocking/nonblocking IO.*
- bool [SetKeepAlive](#) ()  
*Enable keepalive messages.*
- bool [SetLinger](#) (int)  
*Enable linger option.*
- int [GetRecvBufSize](#) ()  
*Get receive buffer size.*
- bool [SetRecvBufSize](#) (int)  
*Set receive buffer size.*
- int [GetSendBufSize](#) ()  
*Get send buffer size.*
- bool [SetSendBufSize](#) (int)  
*Set send buffer size.*
- int [GetRecvBufLowWater](#) ()  
*Get position of receive buffer low-water sign.*
- bool [SetRecvBufLowWater](#) (int)  
*Set receive buffer low-water sign.*
- int [GetSendBufLowWater](#) ()  
*Get position of send buffer low-water sign.*
- bool [SetSendBufLowWater](#) (int)  
*Set send buffer low-water sign.*
- bool [SetRecvTimeout](#) (int)  
*Set receive timeout.*

- bool [SetSendTimeout](#) (int)  
*Set send timeout.*
- bool [SetTCPKeepAlive](#) (int)  
*Set interval of TCP keepalive messages.*
- bool [DisableNagle](#) ()  
*Disable TCP nagle-algorithm.*
- bool [SetNagle](#) (bool)
- bool [SetTypeOfService](#) (int)  
*Set type-of-service flag.*
- void [SetCloseOnDestruct](#) (bool)  
*Close handle/connection in destructor.*
- int [GetHandle](#) ()  
*Get handle (file descriptor).*
- int [GetErrno](#) ()  
*Get errno.*

## Private Attributes

- int [iErrno](#)
- int [iRetVal](#)
- int [iSockH](#)
- bool [bCloseOnDestruct](#)

### 7.76.1 Detailed Description

Socket I/O operations.

## 7.76.2 Constructor & Destructor Documentation

### 7.76.2.1 `clSockOp::clSockOp ()`

### 7.76.2.2 `clSockOp::clSockOp (int)`

### 7.76.2.3 `clSockOp::~~clSockOp ()`

## 7.76.3 Member Function Documentation

### 7.76.3.1 `void clSockOp::SetHandle (int)`

Set handle.

Closes previously open handle.

**Parameters:**

*iHandle* Handle

### 7.76.3.2 `void clSockOp::Close ()`

Close handle/connection.

### 7.76.3.3 `bool clSockOp::ReadSelect (int)`

Wait for socket to become readable.

**Parameters:**

*iTimeoutMS* Timeout (ms)

**Returns:**

Readable?

### 7.76.3.4 `bool clSockOp::WriteSelect (int)`

Wait for socket to become writable.

**Parameters:**

*iTimeoutMS* Timeout (ms)

**Returns:**

Writable?



**7.76.3.5 int clSockOp::Read (void \*, int)**

Read data.

**Parameters:**

*vpBuf* Buffer

*iBufLen* Buffer size

**Returns:**

Bytes read

**7.76.3.6 int clSockOp::Write (const void \*, int)**

Write data.

**Parameters:**

*vpBuf* Buffer

*iBufLen* Buffer size

**Returns:**

Bytes written

**7.76.3.7 int clSockOp::ReadN (void \*, int)**

Read N bytes.

Ensures that N bytes are read, unless error occurs.

**Parameters:**

*vpBuf* Buffer

*iBufLen* Buffer size

**Returns:**

Bytes read

**7.76.3.8 int clSockOp::WriteN (const void \*, int)**

Write N bytes.

Ensures that N bytes are written, unless error occurs.

**Parameters:**

*vpBuf* Buffer

*iBufLen* Buffer size

**Returns:**

Bytes written

**7.76.3.9 int cSockOp::Receive (void \*, int, int)**

Receive data.

**Parameters:**

*vpBuf* Buffer  
*iBufLen* Buffer size  
*iFlags* Flags

**Returns:**

Bytes received

**7.76.3.10 int cSockOp::Send (const void \*, int, int)**

Send data.

**Parameters:**

*vpBuf* Buffer  
*iBufLen* Buffer size  
*iFlags* Flags

**Returns:**

Bytes sent

**7.76.3.11 int cSockOp::ReceiveMsg (struct msghdr \*, int)**

Receive message.

**Parameters:**

*spMsgHdr* Message header  
*iFlags* Flags

**Returns:**

Bytes received

**7.76.3.12 int cSockOp::SendMsg (const struct msghdr \*, int)**

Send message.

**Parameters:**

*spMsgHdr* Message header  
*iFlags* Flags

**Returns:**

Bytes sent

**7.76.3.13 int cSockOp::Shutdown (int)**

Shutdown connection.

**Parameters:**

*iShutdownDir* Direction flag

**Returns:**

0 on success, -1 on error

**7.76.3.14 int cSockOp::GetSockName (struct sockaddr \*, socklen\_t \*)**

Get address of this end.

**Parameters:**

*spAddr* Address

*ipAddrLen* Address length

**Returns:**

0 on success, -1 on error

**7.76.3.15 int cSockOp::GetPeerName (struct sockaddr \*, socklen\_t \*)**

Get address of remote end.

**Parameters:**

*spAddr* Address

*ipAddrLen* Address length

**Returns:**

0 on succes, -1 on error

**7.76.3.16 bool cSockOp::SetBlocking (bool)**

Set blocking/nonblocking IO.

**Parameters:**

*bBlocking* Blocking?

**Returns:**

Success

**7.76.3.17 bool clSockOp::SetKeepAlive ()**

Enable keepalive messages.

**Returns:**

Success

**7.76.3.18 bool clSockOp::SetLinger (int)**

Enable linger option.

**Parameters:**

*iLingerTime* Linger time

**Returns:**

Success

**7.76.3.19 int clSockOp::GetRecvBufSize ()**

Get receive buffer size.

**Returns:**

Size of receive buffer

**7.76.3.20 bool clSockOp::SetRecvBufSize (int)**

Set receive buffer size.

**Parameters:**

*iBufSize* Size of receive buffer

**Returns:**

Success

**7.76.3.21 int clSockOp::GetSendBufSize ()**

Get send buffer size.

**Returns:**

Size of send buffer

**7.76.3.22 bool clSockOp::SetSendBufSize (int)**

Set send buffer size.

**Parameters:**

*iBufSize* Size of send buffer

**Returns:**

Success

**7.76.3.23 int clSockOp::GetRecvBufLowWater ()**

Get position of receive buffer low-water sign.

**Returns:**

Low-water position

**7.76.3.24 bool clSockOp::SetRecvBufLowWater (int)**

Set receive buffer low-water sign.

**Parameters:**

*iBufLowWater* Position of receive low-water sign

**Returns:**

Success

**7.76.3.25 int clSockOp::GetSendBufLowWater ()**

Get position of send buffer low-water sign.

**Returns:**

Low-water position

**7.76.3.26 bool clSockOp::SetSendBufLowWater (int)**

Set send buffer low-water sign.

**Parameters:**

*iBufLowWater* Position of send low-water sign

**Returns:**

Success

**7.76.3.27 bool cSockOp::SetRecvTimeout (int)**

Set receive timeout.

**Parameters:**

*iTimeoutMS* Timeout (ms)

**Returns:**

Success

**7.76.3.28 bool cSockOp::SetSendTimeout (int)**

Set send timeout.

**Parameters:**

*iTimeoutMS* Timeout (ms)

**Returns:**

Success

**7.76.3.29 bool cSockOp::SetTCPKeepAlive (int)**

Set interval of TCP keepalive messages.

**Parameters:**

*iTimeSec* Time between keepalive messages (s)

**Returns:**

Success

**7.76.3.30 bool cSockOp::DisableNagle ()**

Disable TCP nagle-algorithm.

**Returns:**

Success

**7.76.3.31 bool cSockOp::SetNagle (bool)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.76.3.32 bool clSockOp::SetTypeOfService (int)**

Set type-of-service flag.

**Parameters:**

*iTOS* Type-of-service flag (IPTOS\_\*)

**Returns:**

Success

**7.76.3.33 void clSockOp::SetCloseOnDestruct (bool)**

Close handle/connection in destructor.

**Parameters:**

*bSetting* Close in destructor?

**7.76.3.34 int clSockOp::GetHandle () [inline]**

Get handle (file descriptor).

**Returns:**

Handle

**7.76.3.35 int clSockOp::GetErrno () [inline]**

Get errno.

**Returns:**

errno

**7.76.4 Member Data Documentation**

**7.76.4.1 int clSockOp::iErrno** [private]

**7.76.4.2 int clSockOp::iRetVal** [private]

**7.76.4.3 int clSockOp::iSockH** [private]

**7.76.4.4 bool clSockOp::bCloseOnDestruct** [private]

The documentation for this class was generated from the following files:

- [SockOp.hh](#)
- [SockOp.cc](#)

## 7.77 cISockServ Class Reference

Socket server class.

```
#include <SockServ.hh>
```

### Public Member Functions

- [cISockServ](#) ()
- [cISockServ](#) (unsigned short)
- [cISockServ](#) (const char \*)
- [~cISockServ](#) ()
- bool [Bind](#) (unsigned short)  
*Bind to TCP port.*
- bool [Bind](#) (const char \*, unsigned short)  
*Bind to specific address and port.*
- bool [Bind](#) (const char \*)  
*Bind to UNIX domain socket.*
- int [WaitForConnect](#) ()  
*Wait for connect.*
- int [WaitForConnect](#) (int)  
*Wait for connect.*
- void [Close](#) ()  
*Close listening socket.*
- int [GetErrno](#) ()  
*Get errno.*

### Private Attributes

- int [iErrno](#)
- int [iListenH](#)
- bool [bLocal](#)
- char [cpLocalSockName](#) [UNIX\_PATH\_MAX+1]

#### 7.77.1 Detailed Description

Socket server class.



## 7.77.2 Constructor & Destructor Documentation

7.77.2.1 clSockServ::clSockServ ()

7.77.2.2 clSockServ::clSockServ (unsigned *short*)

7.77.2.3 clSockServ::clSockServ (const char \*)

7.77.2.4 clSockServ::~~clSockServ ()

## 7.77.3 Member Function Documentation

7.77.3.1 bool clSockServ::Bind (unsigned *short*)

Bind to TCP port.

**Parameters:**

*usPort* Port number

**Returns:**

Success

7.77.3.2 bool clSockServ::Bind (const char \*, unsigned *short*)

Bind to specific address and port.

**Parameters:**

*cpAddress* Address

*usPort* Port

**Returns:**

Success

7.77.3.3 bool clSockServ::Bind (const char \*)

Bind to UNIX domain socket.

**Parameters:**

*cpSockFile* Filename

**Returns:**

Success

**7.77.3.4 int clSockServ::WaitForConnect ()**

Wait for connect.

**Note:**

This has no timeout.

**Returns:**

Handle to new connection, -1 on error

**7.77.3.5 int clSockServ::WaitForConnect (int)**

Wait for connect.

**Note:**

Check errno for timeout/error.

**Parameters:**

*iTimeout* Timeout (ms)

**Returns:**

Handle to new connection, -1 on error

**7.77.3.6 void clSockServ::Close ()**

Close listening socket.

**7.77.3.7 int clSockServ::GetErrno () [inline]**

Get errno.

**Returns:**

errno

**7.77.4 Member Data Documentation**

**7.77.4.1 int clSockServ::iErrno** [private]

**7.77.4.2 int clSockServ::iListenH** [private]

**7.77.4.3 bool clSockServ::bLocal** [private]

**7.77.4.4 char clSockServ::cpLocalSockName**[UNIX\_PATH\_MAX + 1]  
[private]

The documentation for this class was generated from the following files:

- [SockServ.hh](#)
- [SockServ.cc](#)

## 7.78 clSortedArray Class Reference

Class for array of sorted values with insert/remove functionality.

```
#include <RemoveNoise.hh>
```

### Public Member Functions

- [clSortedArray](#) ()
- [~clSortedArray](#) ()
- void [Initialize](#) (const float \*, long)  
*Initialize array, optionally with data.*
- void [InsertTail](#) (float)  
*Insert new value to "tail" of the array.*
- void [RemoveHead](#) ()  
*Remove value from "head" of the array.*
- void [GetValues](#) (float \*, long)  
*Get values in array (in sorted order).*
- long [GetSize](#) ()  
*Get number of values in array.*
- void [Clear](#) ()  
*Clear the array.*

### Private Types

- enum [eDataType](#) { [TYPE\\_DOUBLE](#), [TYPE\\_FLOAT](#) }

### Private Attributes

- [eDataType](#) [DataType](#)
- long [lFrontSerial](#)
- long [lTailSerial](#)
- [ValueMap\\_t](#) [mapValues](#)
- [ValueMapf\\_t](#) [mapValuesf](#)

### 7.78.1 Detailed Description

Class for array of sorted values with insert/remove functionality.

## 7.78.2 Member Enumeration Documentation

7.78.2.1 enum [clSortedArray::eDataType](#) [private]

Enumeration values:

TYPE\_DOUBLE

TYPE\_FLOAT

## 7.78.3 Constructor & Destructor Documentation

7.78.3.1 [clSortedArray::clSortedArray \(\)](#)

7.78.3.2 [clSortedArray::~~clSortedArray \(\)](#)

## 7.78.4 Member Function Documentation

7.78.4.1 [void clSortedArray::Initialize \(const float \\*, long\)](#)

Initialize array, optionally with data.

Parameters:

*fpValues* Initialization values

*IValueCount* Number of values in initialization array

7.78.4.2 [void clSortedArray::InsertTail \(float\)](#)

Insert new value to "tail" of the array.

Parameters:

*fValue* Value to insert

7.78.4.3 [void clSortedArray::RemoveHead \(\)](#)

Remove value from "head" of the array.

7.78.4.4 [void clSortedArray::GetValues \(float \\*, long\)](#)

Get values in array (in sorted order).

Parameters:

*fpValues* Destination array

*IValueCount* Size of destination array

Exceptions:

*clXSortedArray*

**7.78.4.5** `long clSortedArray::GetSize ()`

Get number of values in array.

**Returns:**

Number of values

**Exceptions:**

*clXSortedArray*

**7.78.4.6** `void clSortedArray::Clear ()`

Clear the array.

**7.78.5 Member Data Documentation**

**7.78.5.1** `eDataType clSortedArray::DataType` [private]

**7.78.5.2** `long clSortedArray::lFrontSerial` [private]

**7.78.5.3** `long clSortedArray::lTailSerial` [private]

**7.78.5.4** `ValueMap_t clSortedArray::mapValues` [private]

**7.78.5.5** `ValueMapf_t clSortedArray::mapValuesf` [private]

The documentation for this class was generated from the following files:

- [RemoveNoise.hh](#)
- [RemoveNoise.cc](#)

## 7.79 clSortedArray::clXSortedArray Class Reference

### Public Member Functions

- [clXSortedArray](#) (const char \*cpErrorMsg, int iErrorCode=0) throw ()

### 7.79.1 Constructor & Destructor Documentation

- 7.79.1.1** `clSortedArray::clXSortedArray::clXSortedArray (const char *cpErrorMsg, int iErrorCode = 0) throw () [inline]`

The documentation for this class was generated from the following file:

- [RemoveNoise.hh](#)

## 7.80 clSoundChGUI Class Reference

Per channel GUI for [clSoundUI](#).

```
#include <SoundUI.hh>
```

Collaboration diagram for clSoundChGUI:



### Public Member Functions

- [clSoundChGUI](#) (GtkWidget \*, int, int, long)
- [~clSoundChGUI](#) ()

### Public Attributes

- GList \* [glServers](#)
- GtkWidget \* [gwFrame](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwLChannel](#)
- GObject \* [goAChannel](#)
- GtkWidget \* [gwSBChannel](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwLInputLevel](#)
- GtkWidget \* [gwPBInputLevel](#)
- GtkWidget \* [gwCBEq](#)
- GtkWidget \* [gwTableEq](#)
- GtkWidget \* [gwLOutputLevel](#)
- GObject \* [goAOutputLevel](#)
- GtkWidget \* [gwVSOOutputLevel](#)
- GtkWidget \* [gwPBOOutputLevel](#)
- GtkWidget \* [gwaLEqLevel](#) [SUIEQ\_MAXOCTS]
- GObject \* [goaAEqLevel](#) [SUIEQ\_MAXOCTS]
- GtkWidget \* [gwaVSEqLevel](#) [SUIEQ\_MAXOCTS]
- GtkWidget \* [gwCurveEq](#)
- GtkWidget \* [gwBApplyCurve](#)



## Private Attributes

- [clGtkUtils](#) [GtkUtils](#)

### 7.80.1 Detailed Description

Per channel GUI for [clSoundUI](#).



## 7.80.2 Constructor & Destructor Documentation

7.80.2.1 `clSoundChGUI::clSoundChGUI (GtkWidget *, int, int, long)`

7.80.2.2 `clSoundChGUI::~~clSoundChGUI ()`

## 7.80.3 Member Data Documentation

7.80.3.1 `clGtkUtils clSoundChGUI::GtkUtils` [private]

7.80.3.2 `GList* clSoundChGUI::glServers`

7.80.3.3 `GtkWidget* clSoundChGUI::gwFrame`

7.80.3.4 `GtkWidget* clSoundChGUI::gwVBox`

7.80.3.5 `GtkWidget* clSoundChGUI::gwTable1`

7.80.3.6 `GtkWidget* clSoundChGUI::gwLServer`

7.80.3.7 `GtkWidget* clSoundChGUI::gwCServer`

7.80.3.8 `GtkWidget* clSoundChGUI::gwLChannel`

7.80.3.9 `GtkObject* clSoundChGUI::goAChannel`

7.80.3.10 `GtkWidget* clSoundChGUI::gwSBChannel`

7.80.3.11 `GtkWidget* clSoundChGUI::gwBConnect`

7.80.3.12 `GtkWidget* clSoundChGUI::gwLInputLevel`

7.80.3.13 `GtkWidget* clSoundChGUI::gwPBInputLevel`

7.80.3.14 `GtkWidget* clSoundChGUI::gwCBEq`

7.80.3.15 `GtkWidget* clSoundChGUI::gwTableEq`

7.80.3.16 `GtkWidget* clSoundChGUI::gwLOutputLevel`

7.80.3.17 `GtkObject* clSoundChGUI::goAOutputLevel`

7.80.3.18 `GtkWidget* clSoundChGUI::gwVSOOutputLevel`

7.80.3.19 `GtkWidget* clSoundChGUI::gwPBOOutputLevel`

7.80.3.20 `GtkWidget* clSoundChGUI::gwaLEqLevel[SUIEQ_MAXOCTS]`

7.80.3.21 `GtkObject* clSoundChGUI::goaAEqLevel[SUIEQ_MAXOCTS]`

7.80.3.22 `GtkWidget* clSoundChGUI::gwaVSEqLevel[SUIEQ_MAXOCTS]`

7.80.3.23 `GtkWidget* clSoundChGUI::gwCurveEq`

7.80.3.24 `GtkWidget* clSoundChGUI::gwBApplyCurve`

Generated on Sun Oct 10 2009 14:56:11 CEST by Doxygen

The documentation for this class was generated from the following files:

- [SoundUI.hh](#)
- [SoundUI.cc](#)

## 7.81 clSoundMsg Class Reference

Sound server communication.

```
#include <Messages.hh>
```

Inheritance diagram for clSoundMsg:



```

classDiagram
    class Msg
  
```

Collaboration diagram for clSoundMsg:



```

classDiagram
    class Msg
  
```

### Public Member Functions

- void [SetStart](#) (char \*, const [stpSoundStart](#))  
*Start message from server.*
- void [GetStart](#) (const char \*, [stpSoundStart](#))
- void [SetData](#) (void \*, const struct timeval \*, const float \*, int)  
*Datastream from server.*
- void [SetData](#) (void \*, const struct timeval \*, const double \*, int)
- void [SetData](#) (void \*, const float \*, int)
- void [SetData](#) (void \*, const double \*, int)
- int [GetData](#) (const void \*, struct timeval \*, float \*)
- int [GetData](#) (const void \*, struct timeval \*, double \*)
- void [GetData](#) (const void \*, float \*, int)
- void [GetData](#) (const void \*, double \*, int)

#### 7.81.1 Detailed Description

Sound server communication.

## 7.81.2 Member Function Documentation

### 7.81.2.1 void clSoundMsg::SetStart (char \*, const stpSoundStart)

Start message from server.

**Parameters:**

*cpMsgBuf* Message buffer

*stpSoundStart* Message

### 7.81.2.2 void clSoundMsg::GetStart (const char \*, stpSoundStart)

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

### 7.81.2.3 void clSoundMsg::SetData (void \*, const struct timeval \*, const float \*, int)

Datastream from server.

**Parameters:**

*vpMsgBuf* Message buffer

*spTimeStamp* Time stamp

*fpData* Data

*iDataLen* Data length

### 7.81.2.4 void clSoundMsg::SetData (void \*, const struct timeval \*, const double \*, int)

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

### 7.81.2.5 void clSoundMsg::SetData (void \*, const float \*, int)

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

### 7.81.2.6 void clSoundMsg::SetData (void \*, const double \*, int)

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.81.2.7 int clSoundMsg::GetData (const void \*, struct timeval \*, float \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.81.2.8 int clSoundMsg::GetData (const void \*, struct timeval \*, double \*)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.81.2.9 void clSoundMsg::GetData (const void \*, float \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

**7.81.2.10 void clSoundMsg::GetData (const void \*, double \*, int)**

This is an overloaded member function, provided for convenience. It differs from the above function only in what argument(s) it accepts.

The documentation for this class was generated from the following files:

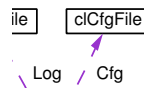
- [Messages.hh](#)
- [Messages.cc](#)

## 7.82 clSoundProxy Class Reference

Sound service proxy.

```
#include <SoundProxy.hh>
```

Collaboration diagram for clSoundProxy:



### Public Member Functions

- [clSoundProxy](#) ()
- [~clSoundProxy](#) ()
- [int Exec](#) ()
- [void Stop](#) ()
- [void \\* SoundInThread](#) (void \*)
- [void \\* WaitConnectThread](#) (void \*)
- [void \\* ServeClientThread](#) (void \*)

### Private Member Functions

- [void AddToLog](#) (char, const char \*)
- [void AddToLog](#) (char, const char \*, int)
- [int FindFreeSlot](#) ()

### Private Attributes

- volatile bool [bRun](#)
- bool [bServeClient](#) [SP\_MAXCLIENTS]
- int [iServerPort](#)
- int [iServicePort](#)
- int [iClientSockH](#) [SP\_MAXCLIENTS]
- char [cpLogFile](#) [\_POSIX\_PATH\_MAX+1]
- char [cpServerHost](#) [SP\_SERV\_MAXLEN+1]
- char \* [cpFirstMsg](#)
- char \* [cpDataMsg](#)
- pthread\_t [ptidSoundIn](#)
- pthread\_t [ptidWaitConnect](#)
- pthread\_t [ptidServeClient](#) [SP\_MAXCLIENTS]
- clAlloc [FirstMsg](#)



- clAlloc [DataMsg](#)
- clCfgFile [Cfg](#)
- clCondition [CondData](#)
- clLogFile [Log](#)
- clMutex [MutexData](#)
- clMutex [MutexClass](#)

### 7.82.1 Detailed Description

Sound service proxy.

**Note:**

See soundsrv2 for architecture description.



## 7.82.2 Constructor & Destructor Documentation

7.82.2.1 `clSoundProxy::clSoundProxy ()`

7.82.2.2 `clSoundProxy::~~clSoundProxy ()`

## 7.82.3 Member Function Documentation

7.82.3.1 `void clSoundProxy::AddToLog (char, const char *)` [inline, private]

7.82.3.2 `void clSoundProxy::AddToLog (char, const char *, int)` [inline, private]

7.82.3.3 `int clSoundProxy::FindFreeSlot ()` [private]

7.82.3.4 `int clSoundProxy::Exec ()`

7.82.3.5 `void clSoundProxy::Stop ()`

7.82.3.6 `void * clSoundProxy::SoundInThread (void *)`

7.82.3.7 `void * clSoundProxy::WaitConnectThread (void *)`

7.82.3.8 `void * clSoundProxy::ServeClientThread (void *)`

## 7.82.4 Member Data Documentation

7.82.4.1 `volatile bool clSoundProxy::bRun` [private]

7.82.4.2 `bool clSoundProxy::bServeClient[SP_MAXCLIENTS]` [private]

7.82.4.3 `int clSoundProxy::iServerPort` [private]

7.82.4.4 `int clSoundProxy::iServicePort` [private]

7.82.4.5 `int clSoundProxy::iClientSockH[SP_MAXCLIENTS]` [private]

7.82.4.6 `char clSoundProxy::cpLogFile[_POSIX_PATH_MAX + 1]` [private]

7.82.4.7 `char clSoundProxy::cpServerHost[SP_SERV_MAXLEN + 1]` [private]

7.82.4.8 `char* clSoundProxy::cpFirstMsg` [private]

7.82.4.9 `char* clSoundProxy::cpDataMsg` [private]

7.82.4.10 `pthread_t clSoundProxy::ptidSoundIn` [private]

7.82.4.11 `pthread_t clSoundProxy::ptidWaitConnect` [private]

7.82.4.12 `pthread_t clSoundProxy::ptidServeClient[SP_MAXCLIENTS]` [private]

7.82.4.13 `clAlloc clSoundProxy::FirstMsg` [private]

7.82.4.14 `clAlloc clSoundProxy::DataMsg` [private]

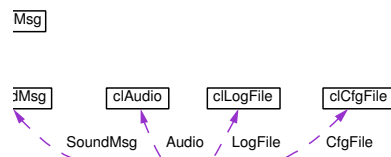
- [SoundProxy.hh](#)
- [SoundProxy.cc](#)

## 7.83 clSoundSrv Class Reference

Sound card input server.

```
#include <SoundSrv.hh>
```

Collaboration diagram for clSoundSrv:



### Public Member Functions

- [clSoundSrv](#) (const char \*, const char \*)
- [~clSoundSrv](#) ()
- void [Exec](#) ()
- void [Quit](#) ()
- void [Quit](#) (int)
- void [InputExec](#) ()
- void [WaitConnectExec](#) ()
- void [ServeClientExec](#) (void \*)
- bool [Run](#) ()

### Private Member Functions

- int [FindFreeClient](#) ()
- int [FindThisHandle](#) (int)

### Private Attributes

- int [iAudioFmt](#)
- int [iAudioSr](#)
- int [iAudioCh](#)
- int [iAudioTypeSize](#)
- int [iErrorCount](#)
- int [iClientId](#)
- int [ipClientH](#) [SS\_MAXCLIENTS]
- int [iSampleCount](#)
- int [iOutBufSize](#)
- bool [bRun](#)
- char [cpProgName](#) [\_POSIX\_PATH\_MAX]

- char \* [cpOutBuf](#)
- sigset\_t [sigsetQuit](#)
- pth\_t [tidInput](#)
- pth\_t [tidWaitConnect](#)
- pth\_t [ptidServeClient](#) [SS\_MAXCLIENTS]
- clPthMutex [MutexThis](#)
- clPthCond [CondDataAvail](#)
- clSoundMsg [SoundMsg](#)
- clDSPOp [DSP](#)
- clCfgFile \* [CfgFile](#)
- clLogFile \* [LogFile](#)
- clAudio \* [Audio](#)

### 7.83.1 Detailed Description

Sound card input server.

This uses great GNU Pth library for threads. This seems to be more efficient in some cases than soundsrv2 due to nonpre-emptive behaviour of used threading library. It, however, requires select() support from soundcard which, unfortunately, all soundcard drivers don't support...



### 7.83.2 Constructor & Destructor Documentation

7.83.2.1 `clSoundSrv::clSoundSrv (const char *, const char *)`

7.83.2.2 `clSoundSrv::~~clSoundSrv ()`

### 7.83.3 Member Function Documentation

7.83.3.1 `int clSoundSrv::FindFreeClient ()` [inline, private]

7.83.3.2 `int clSoundSrv::FindThisHandle (int)` [inline, private]

7.83.3.3 `void clSoundSrv::Exec ()`

7.83.3.4 `void clSoundSrv::Quit ()`

7.83.3.5 `void clSoundSrv::Quit (int)`

7.83.3.6 `void clSoundSrv::InputExec ()`

7.83.3.7 `void clSoundSrv::WaitConnectExec ()`

7.83.3.8 `void clSoundSrv::ServeClientExec (void *)`

7.83.3.9 `bool clSoundSrv::Run ()` [inline]

### 7.83.4 Member Data Documentation

7.83.4.1 `int clSoundSrv::iAudioFrmt` [private]

7.83.4.2 `int clSoundSrv::iAudioSr` [private]

7.83.4.3 `int clSoundSrv::iAudioCh` [private]

7.83.4.4 `int clSoundSrv::iAudioTypeSize` [private]

7.83.4.5 `int clSoundSrv::iErrorCount` [private]

7.83.4.6 `int clSoundSrv::iClientIdx` [private]

7.83.4.7 `int clSoundSrv::ipClientH[SS_MAXCLIENTS]` [private]

7.83.4.8 `int clSoundSrv::iSampleCount` [private]

7.83.4.9 `int clSoundSrv::iOutBufSize` [private]

7.83.4.10 `bool clSoundSrv::bRun` [private]

7.83.4.11 `char clSoundSrv::cpProgName[_POSIX_PATH_MAX]` [private]

7.83.4.12 `char* clSoundSrv::cpOutBuf` [private]

7.83.4.13 `sigset_t clSoundSrv::sigsetQuit` [private]

7.83.4.14 `pth_t clSoundSrv::tidInput` [private]

7.83.4.15 `pth_t clSoundSrv::tidWaitConnect` [private]

7.83.4.16 `pth_t clSoundSrv::tidServeClient[SS_MAXCLIENTS]`



- [SoundSrv.hh](#)
- [SoundSrv.cc](#)

## 7.84 clSoundSrv2 Class Reference

SoundServer2.

```
#include <SoundSrv2.hh>
```

Collaboration diagram for clSoundSrv2:



### Public Member Functions

- [clSoundSrv2](#) ()
- [~clSoundSrv2](#) ()
- [int Main](#) (int, char \*\*)
- [void \\* AudioInThread](#) (void \*)
- [void \\* ServeClientThread](#) (void \*)
- [void Stop](#) ()

### Public Attributes

- [clLogFile](#) `Log`

### Private Member Functions

- [bool GetAudioCfg](#) (char \*, int \*, int \*, int \*, int \*)
- [bool InitCompress](#) (int, int, int, int, int)

### Private Attributes

- volatile bool [bRun](#)
- volatile int [iAudioBufSize](#)
- volatile int [iBlockCntr](#)
- [stSoundStart](#) `sHdr`
- `clAlloc` [AudioBuf](#)
- `clAlloc` [CompHead](#)
- `clAlloc` [FLACFrame](#)
- `clMutex` [MtxAudio](#)
- `clCondition` [CndAudio](#)
- [clCfgFile](#) `Cfg`

### 7.84.1 Detailed Description

SoundServer2.

This uses freely spinning architecture based on condition variables. When thread gets buffer read from the soundcard it copies it's contents to shared buffer and broadcasts condition. Then all client servicing threads (which are waiting for condition) copy it's contents to private buffers and start sending out. Thus, if one of client servicing threads get stuck on blocking socket it doesn't take any CPU time and just misses n blocks of data.

Soundproxy and streamdist also use this architecture. This ensures, that one client can't affect others performance.

## 7.84.2 Constructor & Destructor Documentation

7.84.2.1 `clSoundSrv2::clSoundSrv2 ()`

7.84.2.2 `clSoundSrv2::~~clSoundSrv2 ()`

## 7.84.3 Member Function Documentation

7.84.3.1 `bool clSoundSrv2::GetAudioCfg (char *, int *, int *, int *, int *)`  
[private]

7.84.3.2 `bool clSoundSrv2::InitCompress (int, int, int, int, int)` [private]

7.84.3.3 `int clSoundSrv2::Main (int, char **)`

7.84.3.4 `void * clSoundSrv2::AudioInThread (void *)`

7.84.3.5 `void * clSoundSrv2::ServeClientThread (void *)`

7.84.3.6 `void clSoundSrv2::Stop ()` [inline]

## 7.84.4 Member Data Documentation

7.84.4.1 `volatile bool clSoundSrv2::bRun` [private]

7.84.4.2 `volatile int clSoundSrv2::iAudioBufSize` [private]

7.84.4.3 `volatile int clSoundSrv2::iBlockCnt` [private]

7.84.4.4 `stSoundStart clSoundSrv2::sHdr` [private]

7.84.4.5 `clAlloc clSoundSrv2::AudioBuf` [private]

7.84.4.6 `clAlloc clSoundSrv2::CompHead` [private]

7.84.4.7 `clAlloc clSoundSrv2::FLACFrame` [private]

7.84.4.8 `clMutex clSoundSrv2::MtxAudio` [private]

7.84.4.9 `clCondition clSoundSrv2::CndAudio` [private]

7.84.4.10 `clCfgFile clSoundSrv2::Cfg` [private]

7.84.4.11 `clLogFile clSoundSrv2::Log`

The documentation for this class was generated from the following files:

- [SoundSrv2.hh](#)

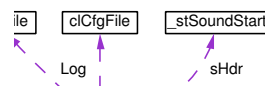
- [SoundSrv2.cc](#)

## 7.85 clSoundSrvA Class Reference

SoundServer for ALSA.

```
#include <SoundSrvA.hh>
```

Collaboration diagram for clSoundSrvA:



### Public Member Functions

- [clSoundSrvA](#) ()
- [~clSoundSrvA](#) ()
- [int Main](#) (int, char \*\*)
- [void \\* AudioInThread](#) (void \*)
- [void \\* ServeClientThread](#) (void \*)
- [void Stop](#) ()

### Public Attributes

- [clLogFile](#) `Log`

### Private Member Functions

- [bool GetAudioCfg](#) (int \*, int \*, int \*, int \*, int \*, int \*, int \*, int \*)
- [bool InitCompress](#) (int, int, int, int, int)

### Private Attributes

- volatile bool [bRun](#)
- volatile int [iAudioBufSize](#)
- volatile int [iBlockCntr](#)
- [stSoundStart](#) `sHdr`
- `clAlloc` [AudioBuf](#)
- `clAlloc` [CompHead](#)
- `clAlloc` [FLACFrame](#)
- `clMutex` [MtxAudio](#)
- `clCondition` [CndAudio](#)
- [clCfgFile](#) `Cfg`

### 7.85.1 Detailed Description

SoundServer for ALSA.

**Note:**

See soundsrv2 for architecture description.

## 7.85.2 Constructor & Destructor Documentation

7.85.2.1 `clSoundSrvA::clSoundSrvA ()`

7.85.2.2 `clSoundSrvA::~~clSoundSrvA ()`

## 7.85.3 Member Function Documentation

7.85.3.1 `bool clSoundSrvA::GetAudioCfg (int *, int *, int *, int *, int *, int *, int *, int *, int *) [private]`

7.85.3.2 `bool clSoundSrvA::InitCompress (int, int, int, int, int) [private]`

7.85.3.3 `int clSoundSrvA::Main (int, char **)`

7.85.3.4 `void * clSoundSrvA::AudioInThread (void *)`

7.85.3.5 `void * clSoundSrvA::ServeClientThread (void *)`

7.85.3.6 `void clSoundSrvA::Stop () [inline]`

## 7.85.4 Member Data Documentation

7.85.4.1 `volatile bool clSoundSrvA::bRun [private]`

7.85.4.2 `volatile int clSoundSrvA::iAudioBufSize [private]`

7.85.4.3 `volatile int clSoundSrvA::iBlockCntr [private]`

7.85.4.4 `stSoundStart clSoundSrvA::sHdr [private]`

7.85.4.5 `clAlloc clSoundSrvA::AudioBuf [private]`

7.85.4.6 `clAlloc clSoundSrvA::CompHead [private]`

7.85.4.7 `clAlloc clSoundSrvA::FLACFrame [private]`

7.85.4.8 `clMutex clSoundSrvA::MtxAudio [private]`

7.85.4.9 `clCondition clSoundSrvA::CndAudio [private]`

7.85.4.10 `clCfgFile clSoundSrvA::Cfg [private]`

7.85.4.11 `clLogFile clSoundSrvA::Log`

The documentation for this class was generated from the following files:

- [SoundSrvA.hh](#)



- 
- [SoundSrvA.cc](#)

## 7.86 `_stSoundStart` Struct Reference

Header message from soundsrv.

```
#include <Messages.hh>
```

### Public Attributes

- `int iChannels`  
*Number of channels.*
- `double dSampleRate`  
*Samplerate.*
- `int iFragmentSize`  
*Fragment size (in samples).*
- `int iCompress`  
*Compression.*

### 7.86.1 Detailed Description

Header message from soundsrv.

### 7.86.2 Member Data Documentation

#### 7.86.2.1 `int _stSoundStart::iChannels`

Number of channels.

#### 7.86.2.2 `double _stSoundStart::dSampleRate`

Samplerate.

#### 7.86.2.3 `int _stSoundStart::iFragmentSize`

Fragment size (in samples).

#### 7.86.2.4 `int _stSoundStart::iCompress`

Compression.

The documentation for this struct was generated from the following file:

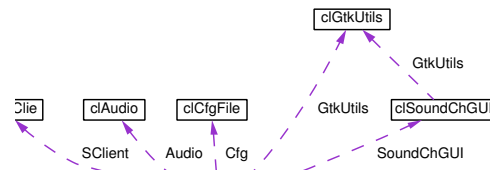
- [Messages.hh](#)

## 7.87 clSoundUI Class Reference

Sound user interface.

```
#include <SoundUI.hh>
```

Collaboration diagram for clSoundUI:



### Public Member Functions

- [clSoundUI](#) (int \*, char \*\*\*)
- [~clSoundUI](#) ()
- int [Exec](#) ()
- gboolean [OnDeleteEvent](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- void [OnClickedEvent](#) (GtkButton \*, gpointer)
- gint [OnTimeoutEvent](#) (gpointer)
- void [OnToggledEvent](#) (GtkToggleButton \*, gpointer)
- void [OnValueChangedEvent](#) (GtkAdjustment \*, gpointer)
- void [OnApplyCurveClicked](#) (GtkButton \*, gpointer)
- void [OnMotionCurve](#) (GtkWidget \*, GdkEventMotion \*, gpointer)
- void \* [SoundOutThread](#) (void \*vpData)
- void \* [SoundInThread](#) (void \*vpData)

### Private Member Functions

- void [GetCfg](#) ()
- void [BuildGUI](#) ()
- void [ConnectSignals](#) ()
- bool [ParseServerStr](#) (char \*, int \*, const char \*)

### Private Attributes

- bool [bALSA](#)
- bool [bFirstTimeout](#)
- int [iVuTimeout](#)
- int [iALSACard](#)
- int [iALSADevice](#)

- int [iALSASubDevice](#)
- int [iDeviceBase](#)
- int [iDCBlock](#)
- char [cpDevice](#) [\_POSIX\_PATH\_MAX]
- pthread\_t [ptidSoundOut](#)
- pthread\_t [ptidSoundIn](#) [SUI\_MAX\_CHANNELS]
- volatile bool [bRun](#)
- volatile int [iChCount](#)
- volatile int [iSampleRate](#)
- volatile int [iOctaveCount](#)
- volatile long [lDataRefCount](#)
- volatile long [lSampleCount](#)
- volatile bool [bpConnected](#) [SUI\_MAX\_CHANNELS]
- volatile bool [bpEqEnabled](#) [SUI\_MAX\_CHANNELS]
- volatile int [ipSockH](#) [SUI\_MAX\_CHANNELS]
- GDT [fpLevelCoeff](#) [SUI\_MAX\_CHANNELS]
- clDSPAlloc [ChData](#) [SUI\_MAX\_CHANNELS]
- clDSPAlloc [EqCoeffs](#) [SUI\_MAX\_CHANNELS]
- guint [guiStatusbarCtxt](#)
- gfloat [fpInputLevel](#) [SUI\_MAX\_CHANNELS]
- gfloat [fpOutputLevel](#) [SUI\_MAX\_CHANNELS]
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwHBox](#)
- GtkWidget \* [gwStatusbar](#)
- [clAudio](#) [Audio](#)
- [clAudioA2](#) [AudioA](#)
- [clCfgFile](#) [Cfg](#)
- clCondition [CondData](#) [SUI\_MAX\_CHANNELS]
- clFilter [Filters](#) [SUI\_MAX\_CHANNELS]
- [clGtkUtils](#) [GtkUtils](#)
- clMutex [MutexData](#)
- clMutex [MutexLevel](#)
- clMutex [MutexChData](#) [SUI\_MAX\_CHANNELS]
- clMutex [MutexFilter](#) [SUI\_MAX\_CHANNELS]
- clSemaphore [SemStart1](#)
- clSemaphore [SemStart2](#)
- [clSockClie](#) [SClient](#)
- [clSoundChGUI](#) \* [SoundChGUI](#) [SUI\_MAX\_CHANNELS]

### 7.87.1 Detailed Description

Sound user interface.



## 7.87.2 Constructor & Destructor Documentation

7.87.2.1 `clSoundUI::clSoundUI (int *, char ***)`

7.87.2.2 `clSoundUI::~~clSoundUI ()`

## 7.87.3 Member Function Documentation

7.87.3.1 `void clSoundUI::GetCfg () [private]`

7.87.3.2 `void clSoundUI::BuildGUI () [private]`

7.87.3.3 `void clSoundUI::ConnectSignals () [private]`

7.87.3.4 `bool clSoundUI::ParseServerStr (char *, int *, const char *)  
[private]`

7.87.3.5 `int clSoundUI::Exec ()`

7.87.3.6 `gboolean clSoundUI::OnDeleteEvent (GtkWidget * gwSender,  
GdkEvent * geEvent, gpointer gpData)`

7.87.3.7 `void clSoundUI::OnClickedEvent (GtkButton *, gpointer)`

7.87.3.8 `gint clSoundUI::OnTimeoutEvent (gpointer)`

7.87.3.9 `void clSoundUI::OnToggledEvent (GtkToggleButton *, gpointer)`

7.87.3.10 `void clSoundUI::OnValueChangedEvent (GtkAdjustment *,  
gpointer)`

7.87.3.11 `void clSoundUI::OnApplyCurveClicked (GtkButton *, gpointer)`

7.87.3.12 `void clSoundUI::OnMotionCurve (GtkWidget *, GdkEventMotion *,  
gpointer)`

7.87.3.13 `void * clSoundUI::SoundOutThread (void * vpData)`

7.87.3.14 `void * clSoundUI::SoundInThread (void * vpData)`

## 7.87.4 Member Data Documentation

7.87.4.1 `bool clSoundUI::bALSA [private]`

7.87.4.2 `bool clSoundUI::bFirstTimeout [private]`

7.87.4.3 `int clSoundUI::iVuTimeout [private]`

7.87.4.4 `int clSoundUI::iALSACard [private]`

7.87.4.5 `int clSoundUI::iALSADevice [private]`

7.87.4.6 `int clSoundUI::iALSASubDevice [private]`

7.87.4.7 `int clSoundUI::iDeviceBase [private]`

7.87.4.8 `int clSoundUI::iDCBlock [private]`

7.87.4.9 `char clSoundUI::cpDevice[ POSIX_PATH_MAX] [private]`

- [SoundUI.hh](#)
- [SoundUI.cc](#)



## 7.88 clSpectDir Class Reference

Direction calculation from spectrum.

```
#include <SpectDir.hh>
```

Inheritance diagram for clSpectDir:



### Public Member Functions

- [clSpectDir](#) ()
- [~clSpectDir](#) ()
- void [SetSensorSpacing](#) (GDT)  
*Set sensor spacing.*
- void [SetSoundSpeed](#) (GDT)  
*Set speed of sound.*
- GDT [GetArrayFrequency](#) ()  
*Get array frequency.*
- GDT [GetDirection](#) (GDT, GDT)  
*Get direction from frequency and phase difference.*
- void [SetDirectionCount](#) (long)  
*Set number of directions.*
- void [SetDirection](#) (GDT, GDT, GDT)  
*Set direction from frequency, power/magnitude and phase diff.*
- GDT \* [GetDirections](#) (GDT \*)  
*Get vector containing results of subsequent [SetDirection\(\)](#)'s.*
- void [ResetDirections](#) ()  
*Reset directions.*

### Public Attributes

- clDSPOp [DSP](#)

## Private Attributes

- long [lDirCount](#)
- GDT [fPI](#)
- GDT [fHalfPI](#)
- GDT [fSensorSpacing](#)
- GDT [fArrayFreq](#)
- GDT \* [fpDirections](#)
- clAlloc [DirBuf](#)

### 7.88.1 Detailed Description

Direction calculation from spectrum.

This is 100% my (Jussi Laako) own algorithm. At least I haven't seen this anywhere before and I'm not aware if such exists anywhere else.

### 7.88.2 Constructor & Destructor Documentation

#### 7.88.2.1 [clSpectDir::clSpectDir \(\)](#)

#### 7.88.2.2 [clSpectDir::~~clSpectDir \(\)](#)

### 7.88.3 Member Function Documentation

#### 7.88.3.1 [void clSpectDir::SetSensorSpacing \(GDT\)](#)

Set sensor spacing.

**Note:**

Call this before setting speed of sound.

**Parameters:**

*fSpacing* Sensor spacing (m)

#### 7.88.3.2 [void clSpectDir::SetSoundSpeed \(GDT\)](#)

Set speed of sound.

**Parameters:**

*fSoundSpeed* Speed of sound (m/s)

**7.88.3.3 GDT clSpectDir::GetArrayFrequency () [inline]**

Get array frequency.

Get maximum frequency that can be handled by the array without false directions. It is  $\frac{\lambda}{2}$ .

**Returns:**

Array frequency

**7.88.3.4 GDT clSpectDir::GetDirection (GDT, GDT)**

Get direction from frequency and phase difference.

$$\Delta f = \frac{f_a}{f}$$

$$\theta = \Delta f \frac{\Delta \varphi}{2}$$

**Parameters:**

*fFrequency* Frequency (Hz)

*fDPhase* Phase difference (rad)

**Returns:**

Direction (rad)

**7.88.3.5 void clSpectDir::SetDirectionCount (long)**

Set number of directions.

180 / n = resolution.

**Parameters:**

*lCount* Number of directions (sectors)

**7.88.3.6 void clSpectDir::SetDirection (GDT, GDT, GDT)**

Set direction from frequency, power/magnitude and phase diff.

**Note:**

Results are integrated over subsequent calls.

**Parameters:**

*fFrequency* Frequency (Hz)

*fLevel* Level

*fDPhase* Phase difference

**7.88.3.7 GDT \* clSpectDir::GetDirections (GDT \*)**

Get vector containing results of subsequent [SetDirection\(\)](#)'s.

**Note:**

Destination pointer can be NULL, destination copy is normalized to [0:1], returned pointer is pointer to raw results.

**Parameters:**

*fpDest* Directions

**Returns:**

Pointer to directions

**7.88.3.8 void clSpectDir::ResetDirections ()**

Reset directions.

**7.88.4 Member Data Documentation**

**7.88.4.1** long [clSpectDir::lDirCount](#) [private]

**7.88.4.2** GDT [clSpectDir::fPI](#) [private]

**7.88.4.3** GDT [clSpectDir::fHalfPI](#) [private]

**7.88.4.4** GDT [clSpectDir::fSensorSpacing](#) [private]

**7.88.4.5** GDT [clSpectDir::fArrayFreq](#) [private]

**7.88.4.6** GDT\* [clSpectDir::fpDirections](#) [private]

**7.88.4.7** clAlloc [clSpectDir::DirBuf](#) [private]

**7.88.4.8** clDSPOp [clSpectDir::DSP](#)

The documentation for this class was generated from the following files:

- [SpectDir.hh](#)
- [SpectDir.cc](#)

## 7.89 clSpectDir2 Class Reference

Direction calculation from spectrum.

```
#include <SpectDir2.hh>
```

Inheritance diagram for clSpectDir2:



### Public Member Functions

- [clSpectDir2](#) ()
- [~clSpectDir2](#) ()
- void [SetSensorSpacing](#) (GDT)
- void [SetSoundSpeed](#) (GDT)
- GDT [GetArrayFrequency](#) ()
- GDT [GetDirection](#) (GDT, GDT)

### Public Attributes

- clDSPOp [DSP](#)

### Private Attributes

- long [lDirCount](#)
- GDT [fPI](#)
- GDT [fSensorSpacing](#)
- GDT [fArrayFreq](#)

### 7.89.1 Detailed Description

Direction calculation from spectrum.

See [clSpectDir](#) for details.

## 7.89.2 Constructor & Destructor Documentation

7.89.2.1 `clSpectDir2::clSpectDir2 ()`

7.89.2.2 `clSpectDir2::~~clSpectDir2 ()`

## 7.89.3 Member Function Documentation

7.89.3.1 `void clSpectDir2::SetSensorSpacing (GDT)`

7.89.3.2 `void clSpectDir2::SetSoundSpeed (GDT)`

7.89.3.3 `GDT clSpectDir2::GetArrayFrequency () [inline]`

7.89.3.4 `GDT clSpectDir2::GetDirection (GDT, GDT)`

## 7.89.4 Member Data Documentation

7.89.4.1 `long clSpectDir2::lDirCount [private]`

7.89.4.2 `GDT clSpectDir2::fPI [private]`

7.89.4.3 `GDT clSpectDir2::fSensorSpacing [private]`

7.89.4.4 `GDT clSpectDir2::fArrayFreq [private]`

7.89.4.5 `clDSPOp clSpectDir2::DSP`

The documentation for this class was generated from the following files:

- [SpectDir2.hh](#)
- [SpectDir2.cc](#)

## 7.90 `_stSpectDir2RN` Struct Reference

```
#include <SpectDir2.hh>
```

### Public Attributes

- int `iType`
- GDT `fAlpha`
- long `lMeanLength`
- long `lGapLength`

### 7.90.1 Member Data Documentation

7.90.1.1 int `_stSpectDir2RN::iType`

7.90.1.2 GDT `_stSpectDir2RN::fAlpha`

7.90.1.3 long `_stSpectDir2RN::lMeanLength`

7.90.1.4 long `_stSpectDir2RN::lGapLength`

The documentation for this struct was generated from the following file:

- `SpectDir2.hh`

## 7.91 clSpectDirDipole Class Reference

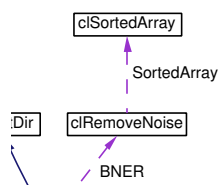
Spectrum based direction finding for a dipole array.

```
#include <SpectDirDipole.hh>
```

Inheritance diagram for clSpectDirDipole:



Collaboration diagram for clSpectDirDipole:



### Public Member Functions

- [clSpectDirDipole](#) (GDT, GDT, double, long, int, long, long, GDT, bool)  
*Constructor.*
- [~clSpectDirDipole](#) ()
- void [PutData](#) (const GDT \*, long, long, long)  
*Put data into input data FIFO.*
- bool [GetResults](#) (GDT \*, GDT, int, [stpSpectDirRN](#))  
*Get results.*
- void [ResetResults](#) ()  
*Reset results.*
- GDT [GetIntegrationTime](#) ()  
*Get integration time (seconds).*

### Private Member Functions

- void [Calculate](#) (int, [stpSpectDirRN](#))



## Private Attributes

- bool [bDebug](#)
- long [lDirectionCount](#)
- long [lFilterSize](#)
- long [lFFTSize](#)
- long [lDecimation](#)
- long [lSpectSize](#)
- long [lMinBin](#)
- long [lMaxBin](#)
- long [lNewData](#)
- long [lOldData](#)
- float [fOverlap](#)
- GDT [fFreqRes](#)
- GDT [fIntTime](#)
- GDT \* [fpWinFunc](#)
- GDT \* [fpExtBuf](#)
- GDT \* [fpProcBuf](#) [2]
- GDT \* [fpPrevBuf](#) [2]
- GDT \* [fpRNBuf](#) [2]
- GCDT \* [spSpect](#) [2]
- clDSPAlloc [WinFuncBuf](#)
- clDSPAlloc [ExtBuf](#)
- clDSPAlloc [ProcBuf](#) [2]
- clDSPAlloc [PrevBuf](#) [2]
- clDSPAlloc [RNBuf](#) [2]
- clDSPAlloc [SpectBuf](#) [2]
- clRecDecimator [Decimator](#) [2]
- [clRemoveNoise](#) [BNER](#)

### 7.91.1 Detailed Description

Spectrum based direction finding for a dipole array.

This is 100% my (Jussi Laako) own algorithm. At least I haven't seen this anywhere before and I'm not aware if such exists anywhere else.

### 7.91.2 Constructor & Destructor Documentation

#### 7.91.2.1 clSpectDirDipole::clSpectDirDipole (GDT, GDT, double, long, int, long, long, GDT, bool)

Constructor.

**Parameters:**

*fSensorSpacing* Sensor distance (m)

*fSoundSpeed* Speed of sound (m/s)  
*dSampleRate* Samplerate  
*lFiltSize* Filter size (points)  
*iFilterType* Type of decimation filter  
*lWindowSize* Window size (points)  
*lDirCount* Number of sectors  
*fIntTimeReq* Integration time request (s)  
*bEnableDebug* Enable debug?

#### 7.91.2.2 `clSpectDirDipole::~~clSpectDirDipole()`

### 7.91.3 Member Function Documentation

#### 7.91.3.1 `void clSpectDirDipole::Calculate(int, stpSpectDirRN)` [private]

#### 7.91.3.2 `void clSpectDirDipole::PutData(const GDT *, long, long, long)`

Put data into input data FIFO.

##### Parameters:

*fpInputData* Input data  
*lDataCount* Number of samples (total)  
*lStartCh* Starting channel index  
*lChCount* Number of channels (total)

#### 7.91.3.3 `bool clSpectDirDipole::GetResults(GDT *, GDT, int, stpSpectDirRN)`

Get results.

$$\begin{aligned}
 V_f(x) &= \sqrt{\left(\Re F(x)_L^2 + \Im F(x)_L^2\right) + \left(\Re F(x)_R^2 + \Im F(x)_R^2\right)} \\
 z_c(x) &= F(x)_L F(x)_R^* \\
 \Delta\varphi_f(x) &= \arctan\left(\frac{\Im z_c(x)}{\Re z_c(x)}\right)
 \end{aligned}$$

##### Parameters:

*fpResults* Results vector  
*fLowFreqLimit* Lower frequency limit (Hz)  
*iScaling* Scaling type  
*spRemoveNoise* Noise removal parameters

##### Returns:

Results available?

#### 7.91.3.4 void clSpectDirDipole::ResetResults ()

Reset results.

#### 7.91.3.5 GDT clSpectDirDipole::GetIntegrationTime () [inline]

Get integration time (seconds).

**Returns:**

Integration time (s)



## 7.91.4 Member Data Documentation

- 7.91.4.1 `bool` [clSpectDirDipole::bDebug](#) [private]
- 7.91.4.2 `long` [clSpectDirDipole::lDirectionCount](#) [private]
- 7.91.4.3 `long` [clSpectDirDipole::lFilterSize](#) [private]
- 7.91.4.4 `long` [clSpectDirDipole::lFFTSize](#) [private]
- 7.91.4.5 `long` [clSpectDirDipole::lDecimation](#) [private]
- 7.91.4.6 `long` [clSpectDirDipole::lSpectSize](#) [private]
- 7.91.4.7 `long` [clSpectDirDipole::lMinBin](#) [private]
- 7.91.4.8 `long` [clSpectDirDipole::lMaxBin](#) [private]
- 7.91.4.9 `long` [clSpectDirDipole::lNewData](#) [private]
- 7.91.4.10 `long` [clSpectDirDipole::lOldData](#) [private]
- 7.91.4.11 `float` [clSpectDirDipole::fOverlap](#) [private]
- 7.91.4.12 `GDT` [clSpectDirDipole::fFreqRes](#) [private]
- 7.91.4.13 `GDT` [clSpectDirDipole::fIntTime](#) [private]
- 7.91.4.14 `GDT*` [clSpectDirDipole::fpWinFunc](#) [private]
- 7.91.4.15 `GDT*` [clSpectDirDipole::fpExtBuf](#) [private]
- 7.91.4.16 `GDT*` [clSpectDirDipole::fpProcBuf\[2\]](#) [private]
- 7.91.4.17 `GDT*` [clSpectDirDipole::fpPrevBuf\[2\]](#) [private]
- 7.91.4.18 `GDT*` [clSpectDirDipole::fpRNBuf\[2\]](#) [private]
- 7.91.4.19 `GCDT*` [clSpectDirDipole::spSpect\[2\]](#) [private]
- 7.91.4.20 `clDSPAlloc` [clSpectDirDipole::WinFuncBuf](#) [private]
- 7.91.4.21 `clDSPAlloc` [clSpectDirDipole::ExtBuf](#) [private]
- 7.91.4.22 `clDSPAlloc` [clSpectDirDipole::ProcBuf\[2\]](#) [private]
- 7.91.4.23 `clDSPAlloc` [clSpectDirDipole::PrevBuf\[2\]](#) [private]
- 7.91.4.24 `clDSPAlloc` [clSpectDirDipole::RNBuf\[2\]](#) [private]
- 7.91.4.25 `clDSPAlloc` [clSpectDirDipole::SpectBuf\[2\]](#) [private]
- 7.91.4.26 `clRecDecimator` [clSpectDirDipole::Decimator\[2\]](#) [private]
- 7.91.4.27 `clRemoveNoise` [clSpectDirDipole::BNER](#) [private]

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Generated on Sun Oct 26 18:42:00 2003 for H43A8 by Doxygen

- [SpectDirDipole.hh](#)
- [SpectDirDipole.cc](#)

## 7.92 clSpectDirDipole2 Class Reference

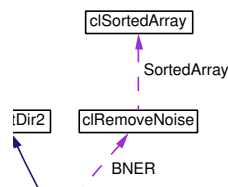
Spectrum based direction finding for dipole array.

```
#include <SpectDirDipole2.hh>
```

Inheritance diagram for clSpectDirDipole2:



Collaboration diagram for clSpectDirDipole2:



### Public Member Functions

- [clSpectDirDipole2](#) (GDT, GDT, double, long, int, long, GDT, bool)  
*Constructor.*
- [~clSpectDirDipole2](#) ()
- void [PutData](#) (const GDT \*, long, long, long)  
*Put data into input FIFO.*
- bool [GetResults](#) (GDT \*, GDT \*, GDT, int, [stpSpectDir2RN](#))  
*Get copy of results.*
- GDT \* [GetLevels](#) ()  
*Get pointer to level results.*
- GDT \* [GetDirections](#) ()  
*Get pointer to direction results.*
- GDT [GetIntegrationTime](#) ()  
*Get integration time (seconds).*

- GDT [GetFreqResolution](#) ()  
*Get frequency resolution (Hz).*
- long [GetMinBin](#) ()  
*Get minimum used spectrum bin.*
- long [GetMaxBin](#) ()  
*Get maximum used spectrum bin.*
- long [GetResultCount](#) ()  
*Get result count.*

### Private Member Functions

- void [Calculate](#) (int, [stpSpectDir2RN](#))

### Private Attributes

- bool [bDebug](#)
- long [lFilterSize](#)
- long [lFFTSz](#)
- long [lDecimation](#)
- long [lSpectSize](#)
- long [lMinBin](#)
- long [lMaxBin](#)
- long [lNewData](#)
- long [lOldData](#)
- float [fOverlap](#)
- GDT [fFreqRes](#)
- GDT [fIntTime](#)
- GDT \* [fpWinFunc](#)
- GDT \* [fpLevRes](#)
- GDT \* [fpDirRes](#)
- GDT \* [fpExtBuf](#)
- GDT \* [fpProcBuf](#) [2]
- GDT \* [fpPrevBuf](#) [2]
- GDT \* [fpRNBuf](#) [2]
- GCDT \* [spSpect](#) [2]
- cIDSPAlloc [WinFuncBuf](#)
- cIDSPAlloc [LevResBuf](#)
- cIDSPAlloc [DirResBuf](#)
- cIDSPAlloc [ExtBuf](#)
- cIDSPAlloc [ProcBuf](#) [2]
- cIDSPAlloc [PrevBuf](#) [2]



- clDSPAlloc [RNBuf](#) [2]
- clDSPAlloc [SpectBuf](#) [2]
- clRecDecimator [Decimator](#) [2]
- [clRemoveNoise](#) [BNER](#)

### 7.92.1 Detailed Description

Spectrum based direction finding for dipole array.

This is used by [clDirection3](#).

**Note:**

See [clSpectDirDipole](#) for details!

### 7.92.2 Constructor & Destructor Documentation

#### 7.92.2.1 clSpectDirDipole2::clSpectDirDipole2 (GDT, GDT, double, long, int, long, GDT, bool)

Constructor.

**Parameters:**

- fSensorSpacing* Sensor spacing (m)
- fSoundSpeed* Speed of sound (m/s)
- dSampleRate* Samplerate
- lFiltSize* Size of filter (points)
- iFilterType* Type of decimation filter
- lWindowSize* Size of window (points)
- fIntTimeReq* Integration time request (s)
- bEnableDebug* Enable debug?

#### 7.92.2.2 clSpectDirDipole2::~~clSpectDirDipole2 ()

### 7.92.3 Member Function Documentation

#### 7.92.3.1 void clSpectDirDipole2::Calculate (int, [stpSpectDir2RN](#)) [private]

#### 7.92.3.2 void clSpectDirDipole2::PutData (const GDT \*, long, long, long)

Put data into input FIFO.

**Parameters:**

- fpInputData* Input data vector

*lSampleCount* Number of sample in input vector (total)

*lStartCh* Starting channel index

*lChCount* Channel count, total

### 7.92.3.3 **bool** `clSpectDirDipole2::GetResults` (GDT \*, GDT \*, GDT, int, [stpSpectDir2RN](#))

Get copy of results.

#### **Parameters:**

*fpLevelResults* Levels vector (can be NULL)

*fpDirResults* Directions vector (can be NULL)

*fLowFreqLimit* Low frequency limit (Hz)

*iScaling* Scaling type

*spRemoveNoise* Noise removal parameters

#### **Returns:**

Results available?

### 7.92.3.4 **GDT\*** `clSpectDirDipole2::GetLevels` () [`inline`]

Get pointer to level results.

#### **Returns:**

Pointer to level results

### 7.92.3.5 **GDT\*** `clSpectDirDipole2::GetDirections` () [`inline`]

Get pointer to direction results.

#### **Returns:**

Pointer to direction results

### 7.92.3.6 **GDT** `clSpectDirDipole2::GetIntegrationTime` () [`inline`]

Get integration time (seconds).

#### **Returns:**

Integration time (s)

**7.92.3.7 GDT clSpectDirDipole2::GetFreqResolution () [inline]**

Get frequency resolution (Hz).

**Returns:**

Frequency resolution (Hz)

**7.92.3.8 long clSpectDirDipole2::GetMinBin () [inline]**

Get minimum used spectrum bin.

**Returns:**

Index to lowest used bin

**7.92.3.9 long clSpectDirDipole2::GetMaxBin () [inline]**

Get maximum used spectrum bin.

**Returns:**

Index to highest used bin

**7.92.3.10 long clSpectDirDipole2::GetResultCount () [inline]**

Get result count.

**Returns:**

Result vector length



## 7.92.4 Member Data Documentation

- 7.92.4.1 `bool` [clSpectDirDipole2::bDebug](#) [private]
- 7.92.4.2 `long` [clSpectDirDipole2::lFilterSize](#) [private]
- 7.92.4.3 `long` [clSpectDirDipole2::lFFTSize](#) [private]
- 7.92.4.4 `long` [clSpectDirDipole2::lDecimation](#) [private]
- 7.92.4.5 `long` [clSpectDirDipole2::lSpectSize](#) [private]
- 7.92.4.6 `long` [clSpectDirDipole2::lMinBin](#) [private]
- 7.92.4.7 `long` [clSpectDirDipole2::lMaxBin](#) [private]
- 7.92.4.8 `long` [clSpectDirDipole2::lNewData](#) [private]
- 7.92.4.9 `long` [clSpectDirDipole2::lOldData](#) [private]
- 7.92.4.10 `float` [clSpectDirDipole2::fOverlap](#) [private]
- 7.92.4.11 `GDT` [clSpectDirDipole2::fFreqRes](#) [private]
- 7.92.4.12 `GDT` [clSpectDirDipole2::fIntTime](#) [private]
- 7.92.4.13 `GDT*` [clSpectDirDipole2::fpWinFunc](#) [private]
- 7.92.4.14 `GDT*` [clSpectDirDipole2::fpLevRes](#) [private]
- 7.92.4.15 `GDT*` [clSpectDirDipole2::fpDirRes](#) [private]
- 7.92.4.16 `GDT*` [clSpectDirDipole2::fpExtBuf](#) [private]
- 7.92.4.17 `GDT*` [clSpectDirDipole2::fpProcBuf\[2\]](#) [private]
- 7.92.4.18 `GDT*` [clSpectDirDipole2::fpPrevBuf\[2\]](#) [private]
- 7.92.4.19 `GDT*` [clSpectDirDipole2::fpRNBuf\[2\]](#) [private]
- 7.92.4.20 `GCDT*` [clSpectDirDipole2::spSpect\[2\]](#) [private]
- 7.92.4.21 `clDSPAlloc` [clSpectDirDipole2::WinFuncBuf](#) [private]
- 7.92.4.22 `clDSPAlloc` [clSpectDirDipole2::LevResBuf](#) [private]
- 7.92.4.23 `clDSPAlloc` [clSpectDirDipole2::DirResBuf](#) [private]
- 7.92.4.24 `clDSPAlloc` [clSpectDirDipole2::ExtBuf](#) [private]
- 7.92.4.25 `clDSPAlloc` [clSpectDirDipole2::ProcBuf\[2\]](#) [private]
- 7.92.4.26 `clDSPAlloc` [clSpectDirDipole2::PrevBuf\[2\]](#) [private]
- 7.92.4.27 `clDSPAlloc` [clSpectDirDipole2::RNBuf\[2\]](#) [private]
- 7.92.4.28 `clDSPAlloc` [clSpectDirDipole2::SpectBuf\[2\]](#) [private]
- 7.92.4.29 `clRecDecimator` [clSpectDirDipole2::Decimator\[2\]](#) [private]

- [SpectDirDipole2.hh](#)
- [SpectDirDipole2.cc](#)

## 7.93 clSpectDirLine Class Reference

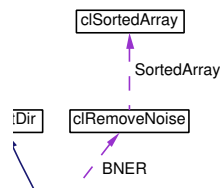
Spectrum based direction finding for a line array.

```
#include <SpectDirLine.hh>
```

Inheritance diagram for clSpectDirLine:



Collaboration diagram for clSpectDirLine:



### Public Member Functions

- [clSpectDirLine](#) (long, GDT, GDT, double, long, int, long, long, GDT, bool)

*Constructor.*

- [~clSpectDirLine](#) ()
- void [PutData](#) (const GDT \*, long, long, long)

*Put data into input data FIFO.*

- bool [GetResults](#) (GDT \*, GDT, int, [stpSpectDirRN](#))

*Get results.*

- void [ResetResults](#) ()

*Reset results.*

- GDT [GetIntegrationTime](#) ()

*Get integration time (seconds).*

## Private Member Functions

- void [Calculate](#) (int, [stpSpectDirRN](#))

## Private Attributes

- bool [bDebug](#)
- long [lSensorCount](#)
- long [lDirectionCount](#)
- long [lFilterSize](#)
- long [lFFTSize](#)
- long [lDecimation](#)
- long [lSpectSize](#)
- long [lMinBin](#)
- long [lMaxBin](#)
- long [lNewData](#)
- long [lOldData](#)
- float [fOverlap](#)
- GDT [fFreqRes](#)
- GDT [fIntTime](#)
- GDT \* [fpWinFunc](#)
- GDT \* [fpExtBuf](#)
- std::vector< GDT \* > [vfpProcBuf](#)
- std::vector< GDT \* > [vfpPrevBuf](#)
- std::vector< GDT \* > [vfpRNBuf](#)
- std::vector< GCDT \* > [vspSpect](#)
- cIDSPAlloc [WinFuncBuf](#)
- cIDSPAlloc [ExtBuf](#)
- std::vector< cIDSPAlloc > [vProcBuf](#)
- std::vector< cIDSPAlloc > [vPrevBuf](#)
- std::vector< cIDSPAlloc > [vRNBuf](#)
- std::vector< cIDSPAlloc > [vSpectBuf](#)
- std::vector< cIRecDecimator \* > [vDecimator](#)
- [clRemoveNoise](#) [BNER](#)

### 7.93.1 Detailed Description

Spectrum based direction finding for a line array.

This is 100% my (Jussi Laako) own algorithm. At least I haven't seen this anywhere before and I'm not aware if such exists anywhere else.



## 7.93.2 Constructor & Destructor Documentation

### 7.93.2.1 clSpectDirLine::clSpectDirLine (long, GDT, GDT, double, long, int, long, long, GDT, bool)

Constructor.

#### Parameters:

*lSensors* Number of sensors in array  
*fSensorSpacing* Sensor distance (m)  
*fSoundSpeed* Speed of sound (m/s)  
*dSampleRate* Samplerate  
*lFiltSize* Filter size (points)  
*iFilterType* Type of decimation filter  
*lWindowSize* Window size (points)  
*lDirCount* Number of sectors  
*fIntTimeReq* Integration time request (s)  
*bEnableDebug* Enable debug?

### 7.93.2.2 clSpectDirLine::~~clSpectDirLine ()

## 7.93.3 Member Function Documentation

### 7.93.3.1 void clSpectDirLine::Calculate (int, stpSpectDirRN) [private]

### 7.93.3.2 void clSpectDirLine::PutData (const GDT \*, long, long, long)

Put data into input data FIFO.

#### Parameters:

*fpInputData* Input data  
*lDataCount* Number of samples (total)  
*lStartCh* Starting channel index  
*lChCount* Number of channels (total)

### 7.93.3.3 bool clSpectDirLine::GetResults (GDT \*, GDT, int, stpSpectDirRN)

Get results.

$$V_f(x) = \sqrt{\left(\Re F(x)_L^2 + \Im F(x)_L^2\right) + \left(\Re F(x)_R^2 + \Im F(x)_R^2\right)}$$

$$z_c(x) = F(x)_L F(x)_R^*$$

$$\Delta\varphi_f(x) = \arctan\left(\frac{\Im z_c(x)}{\Re z_c(x)}\right)$$

**Parameters:**

*fpResults* Results vector

*fLowFreqLimit* Lower frequency limit (Hz)

*iScaling* Scaling type

*spRemoveNoise* Noise removal parameters

**Returns:**

Results available?

**7.93.3.4 void clSpectDirLine::ResetResults ()**

Reset results.

**7.93.3.5 GDT clSpectDirLine::GetIntegrationTime () [inline]**

Get integration time (seconds).

**Returns:**

Integration time (s)



### 7.93.4 Member Data Documentation

- 7.93.4.1 `bool clSpectDirLine::bDebug` [private]
- 7.93.4.2 `long clSpectDirLine::lSensorCount` [private]
- 7.93.4.3 `long clSpectDirLine::lDirectionCount` [private]
- 7.93.4.4 `long clSpectDirLine::lFilterSize` [private]
- 7.93.4.5 `long clSpectDirLine::lFFTSize` [private]
- 7.93.4.6 `long clSpectDirLine::lDecimation` [private]
- 7.93.4.7 `long clSpectDirLine::lSpectSize` [private]
- 7.93.4.8 `long clSpectDirLine::lMinBin` [private]
- 7.93.4.9 `long clSpectDirLine::lMaxBin` [private]
- 7.93.4.10 `long clSpectDirLine::lNewData` [private]
- 7.93.4.11 `long clSpectDirLine::lOldData` [private]
- 7.93.4.12 `float clSpectDirLine::fOverlap` [private]
- 7.93.4.13 `GDT clSpectDirLine::fFreqRes` [private]
- 7.93.4.14 `GDT clSpectDirLine::fIntTime` [private]
- 7.93.4.15 `GDT* clSpectDirLine::fpWinFunc` [private]
- 7.93.4.16 `GDT* clSpectDirLine::fpExtBuf` [private]
- 7.93.4.17 `std::vector<GDT*> clSpectDirLine::vfpProcBuf` [private]
- 7.93.4.18 `std::vector<GDT*> clSpectDirLine::vfpPrevBuf` [private]
- 7.93.4.19 `std::vector<GDT*> clSpectDirLine::vfpRNBuf` [private]
- 7.93.4.20 `std::vector<GCDT*> clSpectDirLine::vspSpect` [private]
- 7.93.4.21 `clDSPAlloc clSpectDirLine::WinFuncBuf` [private]
- 7.93.4.22 `clDSPAlloc clSpectDirLine::ExtBuf` [private]
- 7.93.4.23 `std::vector<clDSPAlloc> clSpectDirLine::vProcBuf` [private]
- 7.93.4.24 `std::vector<clDSPAlloc> clSpectDirLine::vPrevBuf` [private]
- 7.93.4.25 `std::vector<clDSPAlloc> clSpectDirLine::vRNBuf` [private]
- 7.93.4.26 `std::vector<clDSPAlloc> clSpectDirLine::vSpectBuf` [private]
- 7.93.4.27 `std::vector<clRecDecimator*> clSpectDirLine::vDecimator` [private]
- 7.93.4.28 `clRemoveNoise clSpectDirLine::BNER` [private]

- [SpectDirLine.hh](#)
- [SpectDirLine.cc](#)

## 7.94 clSpectDirLine2 Class Reference

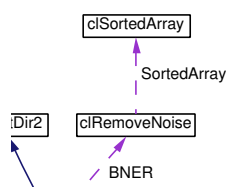
Spectrum based direction finding for line array.

```
#include <SpectDirLine2.hh>
```

Inheritance diagram for clSpectDirLine2:



Collaboration diagram for clSpectDirLine2:



### Public Member Functions

- [clSpectDirLine2](#) (long, GDT, GDT, double, long, int, long, GDT, bool)  
*Constructor.*
- [~clSpectDirLine2](#) ()
- void [PutData](#) (const GDT \*, long, long, long)  
*Put data into input FIFO.*
- bool [GetResults](#) (GDT \*, GDT \*, GDT, int, [stpSpectDir2RN](#))  
*Get copy of results.*
- GDT \* [GetLevels](#) ()  
*Get pointer to level results.*
- GDT \* [GetDirections](#) ()  
*Get pointer to direction results.*
- GDT [GetIntegrationTime](#) ()  
*Get integration time (seconds).*

- GDT [GetFreqResolution](#) ()  
*Get frequency resolution (Hz).*
- long [GetMinBin](#) ()  
*Get minimum used spectrum bin.*
- long [GetMaxBin](#) ()  
*Get maximum used spectrum bin.*
- long [GetResultCount](#) ()  
*Get result count.*

### Private Member Functions

- void [Calculate](#) (int, [stpSpectDir2RN](#))

### Private Attributes

- bool [bDebug](#)
- long [lSensorCount](#)
- long [lFilterSize](#)
- long [lFFTSz](#)
- long [lDecimation](#)
- long [lSpectSize](#)
- long [lMinBin](#)
- long [lMaxBin](#)
- long [lNewData](#)
- long [lOldData](#)
- float [fOverlap](#)
- GDT [fFreqRes](#)
- GDT [fIntTime](#)
- GDT \* [fpWinFunc](#)
- GDT \* [fpLevRes](#)
- GDT \* [fpDirRes](#)
- GDT \* [fpExtBuf](#)
- std::vector< GDT \* > [vfpProcBuf](#)
- std::vector< GDT \* > [vfpPrevBuf](#)
- std::vector< GDT \* > [vfpRNBu](#)
- std::vector< GCDT \* > [vspSpect](#)
- clDSPAlloc [WinFuncBu](#)
- clDSPAlloc [LevResBu](#)
- clDSPAlloc [DirResBu](#)
- clDSPAlloc [ExtBu](#)
- std::vector< clDSPAlloc > [vProcBu](#)

- `std::vector< clDSPAlloc > vPrevBuf`
- `std::vector< clDSPAlloc > vRNBuf`
- `std::vector< clDSPAlloc > vSpectBuf`
- `std::vector< clRecDecimator * > vDecimator`
- `clRemoveNoise BNER`

### 7.94.1 Detailed Description

Spectrum based direction finding for line array.

This is used by `clDirection3`.

**Note:**

See `clSpectDirLine` for details!

### 7.94.2 Constructor & Destructor Documentation

#### 7.94.2.1 `clSpectDirLine2::clSpectDirLine2 (long, GDT, GDT, double, long, int, long, GDT, bool)`

Constructor.

**Parameters:**

- lSensors* Number of sensors in array
- fSensorSpacing* Sensor spacing (m)
- fSoundSpeed* Speed of sound (m/s)
- dSampleRate* Samplerate
- lFiltSize* Size of filter (points)
- iFilterType* Type of decimation filter
- lWindowSize* Size of window (points)
- fIntTimeReq* Integration time request (s)
- bEnableDebug* Enable debug?

#### 7.94.2.2 `clSpectDirLine2::~~clSpectDirLine2 ()`

### 7.94.3 Member Function Documentation

#### 7.94.3.1 `void clSpectDirLine2::Calculate (int, stpSpectDir2RN) [private]`

#### 7.94.3.2 `void clSpectDirLine2::PutData (const GDT *, long, long, long)`

Put data into input FIFO.

**Parameters:**

- fpInputData* Input data vector



*lSampleCount* Number of sample in input vector (total)

*lStartCh* Starting channel index

*lChCount* Channel count, total

#### 7.94.3.3 bool clSpectDirLine2::GetResults (GDT \*, GDT \*, GDT, int, [stpSpectDir2RN](#))

Get copy of results.

##### Parameters:

*fpLevelResults* Levels vector (can be NULL)

*fpDirResults* Directions vector (can be NULL)

*fLowFreqLimit* Low frequency limit (Hz)

*iScaling* Scaling type

*spRemoveNoise* Noise removal parameters

##### Returns:

Results available?

#### 7.94.3.4 GDT\* clSpectDirLine2::GetLevels () [inline]

Get pointer to level results.

##### Returns:

Pointer to level results

#### 7.94.3.5 GDT\* clSpectDirLine2::GetDirections () [inline]

Get pointer to direction results.

##### Returns:

Pointer to direction results

#### 7.94.3.6 GDT clSpectDirLine2::GetIntegrationTime () [inline]

Get integration time (seconds).

##### Returns:

Integration time (s)

**7.94.3.7 GDT clSpectDirLine2::GetFreqResolution () [inline]**

Get frequency resolution (Hz).

**Returns:**

Frequency resolution (Hz)

**7.94.3.8 long clSpectDirLine2::GetMinBin () [inline]**

Get minimum used spectrum bin.

**Returns:**

Index to lowest used bin

**7.94.3.9 long clSpectDirLine2::GetMaxBin () [inline]**

Get maximum used spectrum bin.

**Returns:**

Index to highest used bin

**7.94.3.10 long clSpectDirLine2::GetResultCount () [inline]**

Get result count.

**Returns:**

Result vector length



### 7.94.4 Member Data Documentation

- 7.94.4.1 `bool clSpectDirLine2::bDebug` [private]
- 7.94.4.2 `long clSpectDirLine2::lSensorCount` [private]
- 7.94.4.3 `long clSpectDirLine2::lFilterSize` [private]
- 7.94.4.4 `long clSpectDirLine2::lFFTSize` [private]
- 7.94.4.5 `long clSpectDirLine2::lDecimation` [private]
- 7.94.4.6 `long clSpectDirLine2::lSpectSize` [private]
- 7.94.4.7 `long clSpectDirLine2::lMinBin` [private]
- 7.94.4.8 `long clSpectDirLine2::lMaxBin` [private]
- 7.94.4.9 `long clSpectDirLine2::lNewData` [private]
- 7.94.4.10 `long clSpectDirLine2::lOldData` [private]
- 7.94.4.11 `float clSpectDirLine2::fOverlap` [private]
- 7.94.4.12 `GDT clSpectDirLine2::fFreqRes` [private]
- 7.94.4.13 `GDT clSpectDirLine2::fIntTime` [private]
- 7.94.4.14 `GDT* clSpectDirLine2::fpWinFunc` [private]
- 7.94.4.15 `GDT* clSpectDirLine2::fpLevRes` [private]
- 7.94.4.16 `GDT* clSpectDirLine2::fpDirRes` [private]
- 7.94.4.17 `GDT* clSpectDirLine2::fpExtBuf` [private]
- 7.94.4.18 `std::vector<GDT*> clSpectDirLine2::vfpProcBuf` [private]
- 7.94.4.19 `std::vector<GDT*> clSpectDirLine2::vfpPrevBuf` [private]
- 7.94.4.20 `std::vector<GDT*> clSpectDirLine2::vfpRNBuf` [private]
- 7.94.4.21 `std::vector<GCDT*> clSpectDirLine2::vspSpect` [private]
- 7.94.4.22 `clDSPAlloc clSpectDirLine2::WinFuncBuf` [private]
- 7.94.4.23 `clDSPAlloc clSpectDirLine2::LevResBuf` [private]
- 7.94.4.24 `clDSPAlloc clSpectDirLine2::DirResBuf` [private]
- 7.94.4.25 `clDSPAlloc clSpectDirLine2::ExtBuf` [private]
- 7.94.4.26 `std::vector<clDSPAlloc> clSpectDirLine2::vProcBuf` [private]
- 7.94.4.27 `std::vector<clDSPAlloc> clSpectDirLine2::vPrevBuf` [private]
- 7.94.4.28 `std::vector<clDSPAlloc> clSpectDirLine2::vRNBuf` [private]
- 7.94.4.29 `std::vector<clDSPAlloc> clSpectDirLine2::vSpectBuf` [private]

- [SpectDirLine2.hh](#)
- [SpectDirLine2.cc](#)

## 7.95 `_stSpectDirRN` Struct Reference

SpectDir: Noise removal parameters.

```
#include <SpectDir.hh>
```

### Public Attributes

- int [iType](#)
- GDT [fAlpha](#)
- long [lMeanLength](#)
- long [lGapLength](#)

### 7.95.1 Detailed Description

SpectDir: Noise removal parameters.

### 7.95.2 Member Data Documentation

7.95.2.1 int [\\_stSpectDirRN::iType](#)

7.95.2.2 GDT [\\_stSpectDirRN::fAlpha](#)

7.95.2.3 long [\\_stSpectDirRN::lMeanLength](#)

7.95.2.4 long [\\_stSpectDirRN::lGapLength](#)

The documentation for this struct was generated from the following file:

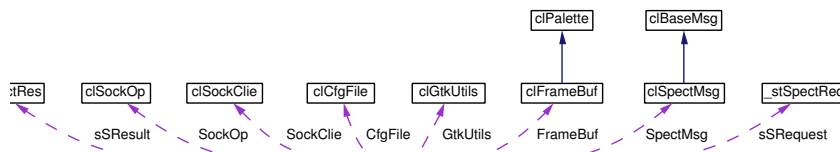
- [SpectDir.hh](#)

## 7.96 clSpectGUI Class Reference

Transient spectrum GUI.

```
#include <GUISpect.hh>
```

Collaboration diagram for clSpectGUI:



### Public Member Functions

- [clSpectGUI](#) (int \*, char \*\*\*)
- [~clSpectGUI](#) ()
- int [Exec](#) ()
- gint [OnDelete](#) (GtkWidget \*, GdkEventAny \*)
- void [OnHideToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnConnectClick](#) (GtkWidget \*, gpointer)
- void [OnFreezeToggled](#) (GtkToggleButton \*, gpointer)
- gint [OnPaletteActivate](#) (GtkWidget \*, gpointer)
- gint [OnMotionSgram](#) (GtkWidget \*, GdkEventMotion \*)
- gint [OnMotionSpect](#) (GtkWidget \*, GdkEventMotion \*)
- gint [OnExposeSgram](#) (GtkWidget \*, GdkEventExpose \*)
- gint [OnExposeSpect](#) (GtkWidget \*, GdkEventExpose \*)
- gboolean [OnConfigure](#) (GtkWidget \*, GdkEventConfigure \*, gpointer)
- void [OnSizeAllocate](#) (GtkWidget \*, GtkAllocation \*, gpointer)
- void [GdkInput](#) (gpointer, gint, GdkInputCondition)
- void [OnSaveClicks](#) (GtkButton \*, gpointer)

### Private Member Functions

- bool [Build](#) ()
- bool [BuildTable1](#) ()
- bool [BuildTable2](#) ()
- bool [BuildTable3](#) ()
- bool [BuildTableGram](#) ()
- bool [BuildTableSpect](#) ()
- bool [BuildDrawingPrims](#) ()
- void [FreeDrawingPrims](#) ()
- bool [ConnectSignals](#) ()
- int [GetGramHeight](#) ()

- bool [ParseServerStr](#) (char \*, int \*, const char \*)
- bool [InitConnection](#) (const char \*, int)
- void [GetSettings](#) ()
- bool [SendSettings](#) ()
- void [ReConfigDisplay](#) ()
- void [DrawSpectrogram](#) ()
- void [DrawSpectrum](#) ()
- void [PrintRealTime](#) ()
- long [CountBands](#) (long)
- void [SaveInfo](#) (const char \*)

### Private Attributes

- bool [bRun](#)
- bool [bConnected](#)
- bool [bFreezed](#)
- bool [bReConfig](#)
- int [iSockH](#)
- int [iRcvMsgSize](#)
- int [iFit](#)
- int [iPalette](#)
- int [iGramW](#)
- int [iGramH](#)
- int [iSpectW](#)
- int [iSpectH](#)
- int [iScaleFactor](#)
- int [iSpectPoints](#)
- int [iClips](#)
- int [iTIFFCompression](#)
- int [iJPEGQuality](#)
- int [iBeamCount](#)
- float [fGramX](#)
- float [fGramY](#)
- float [fSpectX](#)
- float [fSpectY](#)
- char [cpGramXTime](#) [20]
- char \* [cpRcvMsgBuf](#)
- GDT \* [fpSpect](#)
- GDT \* [fpIntSpect](#)
- gint [giGdkTag](#)
- GList \* [glServers](#)
- GtkWidget \* [gwWindow](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwCBHide](#)
- GtkWidget \* [gwVPaned](#)
- GtkWidget \* [gwScrolledW1](#)



- GtkWidget \* [gwScrolledW2](#)
- GtkWidget \* [gwStatusBar](#)
- guint [guCtxtSB](#)
- GtkWidget \* [gwTable1](#)
- GtkWidget \* [gwLServer](#)
- GtkWidget \* [gwCServer](#)
- GtkWidget \* [gwLChannel](#)
- GObject \* [goAChannel](#)
- GtkWidget \* [gwSBChannel](#)
- GtkWidget \* [gwBConnect](#)
- GtkWidget \* [gwBDisconnect](#)
- GtkWidget \* [gwCBFreeze](#)
- GtkWidget \* [gwTable2](#)
- GtkWidget \* [gwLType](#)
- GtkWidget \* [gwOMType](#)
- GtkWidget \* [gwMType](#)
- GtkWidget \* [gwaMIType](#) [SGUI\_TYPE\_ITEMS]
- GtkWidget \* [gwLWindow](#)
- GtkWidget \* [gwOMWindow](#)
- GtkWidget \* [gwMWindow](#)
- GtkWidget \* [gwaMIWindow](#) [SGUI\_WINDOW\_ITEMS]
- GtkWidget \* [gwLWindowParam](#)
- GtkWidget \* [gwEWindowParam](#)
- GtkWidget \* [gwLWindowLen](#)
- GtkWidget \* [gwOMWindowLen](#)
- GtkWidget \* [gwMWindowLen](#)
- GtkWidget \* [gwaMIWindowLen](#) [SGUI\_WINLEN\_ITEMS]
- GtkWidget \* [gwLLowFreq](#)
- GtkWidget \* [gwELowFreq](#)
- GtkWidget \* [gwLHighFreq](#)
- GtkWidget \* [gwEHighFreq](#)
- GtkWidget \* [gwLGain](#)
- GtkWidget \* [gwEGain](#)
- GtkWidget \* [gwLSlope](#)
- GtkWidget \* [gwESlope](#)
- GtkWidget \* [gwLOverlap](#)
- GtkWidget \* [gwEOverlap](#)
- GtkWidget \* [gwCBLinear](#)
- GtkWidget \* [gwCBNormalize](#)
- GtkWidget \* [gwTable3](#)
- GtkWidget \* [gwLRemoveNoise](#)
- GtkWidget \* [gwOMRemoveNoise](#)
- GtkWidget \* [gwMRemoveNoise](#)
- GtkWidget \* [gwaMIRemoveNoise](#) [SGUI\_REMOVE\_NOISE\_ITEMS]
- GtkWidget \* [gwLAlpha](#)
- GtkWidget \* [gwEAlpha](#)

- GtkWidget \* [gwLMeanLength](#)
- GtkWidget \* [gwEMeanLength](#)
- GtkWidget \* [gwLGapLength](#)
- GtkWidget \* [gwEGapLength](#)
- GtkWidget \* [gwLDynRange](#)
- GtkWidget \* [gwEDynRange](#)
- GtkWidget \* [gwLPalette](#)
- GtkWidget \* [gwOMPalette](#)
- GtkWidget \* [gwMPalette](#)
- GtkWidget \* [gwaMIPalette](#) [SGUI.PALETTE\_ITEMS]
- GtkWidget \* [gwBSave](#)
- GtkWidget \* [gwFSSave](#)
- GtkWidget \* [gwTableGram](#)
- GtkWidget \* [gwHRTIME](#)
- GtkWidget \* [gwVRFreq](#)
- GtkWidget \* [gwDASpectrogram](#)
- GtkWidget \* [gwTableSpect](#)
- GtkWidget \* [gwHRFreq](#)
- GtkWidget \* [gwVRLevel](#)
- GtkWidget \* [gwDASpectrum](#)
- GdkGC \* [ggcGramBG](#)
- GdkGC \* [ggcGramFG](#)
- GdkGC \* [ggcSpectBG](#)
- GdkGC \* [ggcSpectFG](#)
- GdkCursor \* [gcCrossHair](#)
- [stSpectReq](#) sSRequest
- [stSpectRes](#) sSResult
- clAlloc [RcvMsgBuf](#)
- clAlloc [SpectBuf](#)
- clAlloc [IntSpectBuf](#)
- clCfgFile \* [CfgFile](#)
- clDSPOp [DSP](#)
- clGtkUtils [GtkUtils](#)
- clSockClie [SockClie](#)
- clSockOp \* [SockOp](#)
- clSpectMsg [SpectMsg](#)
- clFrameBuf [FrameBuf](#)

### 7.96.1 Detailed Description

Transient spectrum GUI.



## 7.96.2 Constructor & Destructor Documentation

7.96.2.1 `clSpectGUI::clSpectGUI (int *, char **)`

7.96.2.2 `clSpectGUI::~~clSpectGUI ()`

## 7.96.3 Member Function Documentation

7.96.3.1 `bool clSpectGUI::Build () [private]`

7.96.3.2 `bool clSpectGUI::BuildTable1 () [private]`

7.96.3.3 `bool clSpectGUI::BuildTable2 () [private]`

7.96.3.4 `bool clSpectGUI::BuildTable3 () [private]`

7.96.3.5 `bool clSpectGUI::BuildTableGram () [private]`

7.96.3.6 `bool clSpectGUI::BuildTableSpect () [private]`

7.96.3.7 `bool clSpectGUI::BuildDrawingPrims () [private]`

7.96.3.8 `void clSpectGUI::FreeDrawingPrims () [private]`

7.96.3.9 `bool clSpectGUI::ConnectSignals () [private]`

7.96.3.10 `int clSpectGUI::GetGramHeight () [private]`

7.96.3.11 `bool clSpectGUI::ParseServerStr (char *, int *, const char *)  
[private]`

7.96.3.12 `bool clSpectGUI::InitConnection (const char *, int) [private]`

7.96.3.13 `void clSpectGUI::GetSettings () [private]`

7.96.3.14 `bool clSpectGUI::SendSettings () [private]`

7.96.3.15 `void clSpectGUI::ReConfigDisplay () [private]`

7.96.3.16 `void clSpectGUI::DrawSpectrogram () [private]`

7.96.3.17 `void clSpectGUI::DrawSpectrum () [private]`

7.96.3.18 `void clSpectGUI::PrintRealTime () [private]`

7.96.3.19 `long clSpectGUI::CountBands (long) [private]`

7.96.3.20 `void clSpectGUI::SaveInfo (const char *) [private]`

7.96.3.21 `int clSpectGUI::Exec ()`

---

Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen

7.96.3.22 `gint clSpectGUI::OnDelete (GtkWidget *, GdkEventAny *)`

7.96.3.23 `void clSpectGUI::OnHideToggled (GtkToggleButton *, gpointer)`

7.96.3.24 `gint clSpectGUI::OnConnectClick (GtkWidget *, gpointer)`

7.96.3.25 `void clSpectGUI::OnFreezeToggled (GtkToggleButton *, gpointer)`

- [GUISpect.hh](#)
- [GUISpect.cc](#)

## 7.97 clSpectMsg Class Reference

Spectrum server communication.

```
#include <Messages.h>
```

Inheritance diagram for clSpectMsg:



```
graph TD; Msg[Msg];
```

Collaboration diagram for clSpectMsg:



```
graph TD; Msg[Msg];
```

### Public Member Functions

- void [SetRequest](#) (char \*, const [stpSpectReq](#))
- void [GetRequest](#) (const char \*, [stpSpectReq](#))
- void [SetResult](#) (void \*, const [stpSpectRes](#), const float \*)
- void [SetResult](#) (void \*, const [stpSpectRes](#), const double \*)
- void [GetResult](#) (const void \*, [stpSpectRes](#), float \*)
- void [GetResult](#) (const void \*, [stpSpectRes](#), double \*)

#### 7.97.1 Detailed Description

Spectrum server communication.

## 7.97.2 Member Function Documentation

**7.97.2.1** void clSpectMsg::SetRequest (char \*, const *stpSpectReq*)

**7.97.2.2** void clSpectMsg::GetRequest (const char \*, [stpSpectReq](#))

**7.97.2.3** void clSpectMsg::SetResult (void \*, const *stpSpectRes*, const float \*)

**7.97.2.4** void clSpectMsg::SetResult (void \*, const *stpSpectRes*, const double \*)

**7.97.2.5** void clSpectMsg::GetResult (const void \*, [stpSpectRes](#), float \*)

**7.97.2.6** void clSpectMsg::GetResult (const void \*, [stpSpectRes](#), double \*)

The documentation for this class was generated from the following files:

- [Messages.hh](#)
- [Messages.cc](#)

## 7.98 \_stSpectReq Struct Reference

Spectrum: request.

```
#include <Messages.hh>
```

### Public Attributes

- int [iChannel](#)  
*Channel.*
- int [iType](#)  
*Type (STFT, Hankel, etc).*
- int [iWindow](#)  
*Window function.*
- float [fWinParam](#)  
*Optional window parameter.*
- long [lLength](#)  
*Number of points.*
- int [iLowFreq](#)  
*Lower frequency limit (Hz).*
- int [iHighFreq](#)  
*Higher frequency limit (Hz).*
- float [fGain](#)  
*Gain (dB).*
- float [fSlope](#)  
*Gain (dB/oct).*
- int [iOverlap](#)  
*Overlap ().*
- bool [bLinear](#)  
*Linear/logarithmic scaling.*
- bool [bNormalize](#)  
*Normalize?*
- int [iRemoveNoise](#)  
*Noise removal algorithm.*



- float `fAlpha`  
*Alpha for noise removal.*
- long `lMeanLength`  
*Mean length for noise removal.*
- long `lGapLength`  
*Gap length for TPSW noise removal.*
- float `fDynRange`  
*Dynamic range for logarithmic (dB) level.*

### 7.98.1 Detailed Description

Spectrum: request.

### 7.98.2 Member Data Documentation

#### 7.98.2.1 int `_stSpectReq::iChannel`

Channel.

#### 7.98.2.2 int `_stSpectReq::iType`

Type (STFT, Hankel, etc).

#### 7.98.2.3 int `_stSpectReq::iWindow`

Window function.

#### 7.98.2.4 float `_stSpectReq::fWinParam`

Optional window parameter.

#### 7.98.2.5 long `_stSpectReq::lLength`

Number of points.

#### 7.98.2.6 int `_stSpectReq::iLowFreq`

Lower frequency limit (Hz).

**7.98.2.7** `int _stSpectReq::iHighFreq`

Higher frequency limit (Hz).

**7.98.2.8** `float _stSpectReq::fGain`

Gain (dB).

**7.98.2.9** `float _stSpectReq::fSlope`

Gain (dB/oct).

**7.98.2.10** `int _stSpectReq::iOverlap`

Overlap ().

**7.98.2.11** `bool _stSpectReq::bLinear`

Linear/logarithmic scaling.

**7.98.2.12** `bool _stSpectReq::bNormalize`

Normalize?

**7.98.2.13** `int _stSpectReq::iRemoveNoise`

Noise removal algorithm.

**7.98.2.14** `float _stSpectReq::fAlpha`

Alpha for noise removal.

**7.98.2.15** `long _stSpectReq::lMeanLength`

Mean length for noise removal.

**7.98.2.16** `long _stSpectReq::lGapLength`

Gap length for TPSW noise removal.

**7.98.2.17**   `float` `_stSpectReq::fDynRange`

Dynamic range for logarithmic (dB) level.

The documentation for this struct was generated from the following file:

- [Messages.hh](#)

## 7.99 \_stSpectRes Struct Reference

Spectrum: result.

```
#include <Messages.hh>
```

### Public Attributes

- timeval [sTimeStamp](#)  
*Timestamp.*
- int [iChannel](#)  
*Channel.*
- long [lLength](#)  
*Result length.*
- int [iLowFreq](#)  
*Lower frequency limit (may differ from request).*
- int [iHighFreq](#)  
*Higher frequency limit (may differ from request).*
- int [iSampleRate](#)  
*Samplerate.*
- bool [bLinear](#)  
*Linear/logarithmic.*
- float [fPeakLevel](#)  
*Peak level (dB).*
- float [fLineTime](#)  
*Length of spectrum window (s).*

### 7.99.1 Detailed Description

Spectrum: result.

### 7.99.2 Member Data Documentation

#### 7.99.2.1 struct timeval [\\_stSpectRes::sTimeStamp](#)

Timestamp.

**7.99.2.2** `int` `_stSpectRes::iChannel`

Channel.

**7.99.2.3** `long` `_stSpectRes::iLength`

Result length.

**7.99.2.4** `int` `_stSpectRes::iLowFreq`

Lower frequency limit (may differ from request).

**7.99.2.5** `int` `_stSpectRes::iHighFreq`

Higher frequency limit (may differ from request).

**7.99.2.6** `int` `_stSpectRes::iSampleRate`

Samplerate.

**7.99.2.7** `bool` `_stSpectRes::bLinear`

Linear/logarithmic.

**7.99.2.8** `float` `_stSpectRes::fPeakLevel`

Peak level (dB).

**7.99.2.9** `float` `_stSpectRes::fLineTime`

Length of spectrum window (s).

The documentation for this struct was generated from the following file:

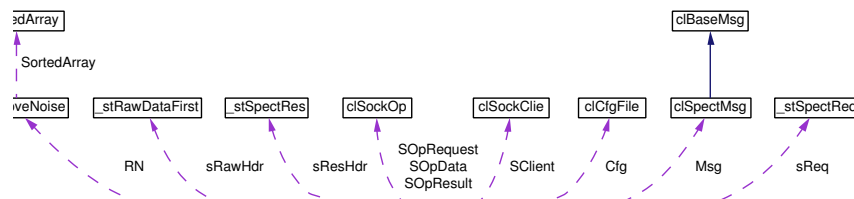
- [Messages.hh](#)

## 7.100 clSpectrum Class Reference

Spectrum server.

```
#include <Spectrum.hh>
```

Collaboration diagram for clSpectrum:



### Public Member Functions

- `clSpectrum` (int, int)
- `~clSpectrum` ()
- int `Main` ()
- void `Stop` ()

### Private Member Functions

- bool `GetCfg` ()
- bool `GetRq` ()
- bool `ConnectStream` ()
- bool `Init` ()
- void `CreateFilter` ()
- void `ProcessLoop` ()
- bool `GetData` ()
- bool `PullData` (GDT \*, long)

### Private Attributes

- bool `bRun`
- bool `bReverseOrder`
- int `iFilterType`
- int `iInDataSize`
- long `lInDataCount`
- long `lFilterSize`
- long `lDecimation`
- long `lOldDataCount`
- long `lNewDataCount`

- long lSpectPoints
- long lSpectLen
- long lResSize
- float fLowCorner
- float fHighCorner
- char cpStreamSocket [\_POSIX\_PATH\_MAX+1]
- stSpectReq sReq
- stSpectRes sResHdr
- stRawDataFirst sRawHdr
- clDSPAlloc InData
- clDSPAlloc Window
- clDSPAlloc SpectIn
- clDSPAlloc SpectOut
- clDSPAlloc ResMsg
- clCfgFile Cfg
- clDSPOp DSP
- clDSPOp FFT
- clHankel Hankel
- clReBuffer ReBuffer
- clRecDecimator Decimator
- clRecDecimator WVDDec
- clRemoveNoise RN
- clSpectMsg Msg
- clSockClie SClient
- clSockOp SOpRequest
- clSockOp SOpResult
- clSockOp SOpData

### 7.100.1 Detailed Description

Spectrum server.





## 7.100.2 Constructor & Destructor Documentation

7.100.2.1 `clSpectrum::clSpectrum (int, int)`

7.100.2.2 `clSpectrum::~~clSpectrum ()`

## 7.100.3 Member Function Documentation

7.100.3.1 `bool clSpectrum::GetCfg ()` [private]

7.100.3.2 `bool clSpectrum::GetRq ()` [private]

7.100.3.3 `bool clSpectrum::ConnectStream ()` [private]

7.100.3.4 `bool clSpectrum::Init ()` [private]

7.100.3.5 `void clSpectrum::CreateFilter ()` [private]

7.100.3.6 `void clSpectrum::ProcessLoop ()` [private]

7.100.3.7 `bool clSpectrum::GetData ()` [private]

7.100.3.8 `bool clSpectrum::PullData (GDT *, long)` [private]

7.100.3.9 `int clSpectrum::Main ()`

7.100.3.10 `void clSpectrum::Stop ()` [inline]

## 7.100.4 Member Data Documentation

7.100.4.1 `bool clSpectrum::bRun` [private]

7.100.4.2 `bool clSpectrum::bReverseOrder` [private]

7.100.4.3 `int clSpectrum::iFilterType` [private]

7.100.4.4 `int clSpectrum::iInDataSize` [private]

7.100.4.5 `long clSpectrum::iInDataCount` [private]

7.100.4.6 `long clSpectrum::iFilterSize` [private]

7.100.4.7 `long clSpectrum::iDecimation` [private]

7.100.4.8 `long clSpectrum::iOldDataCount` [private]

7.100.4.9 `long clSpectrum::iNewDataCount` [private]

7.100.4.10 `long clSpectrum::iSpectPoints` [private]

7.100.4.11 `long clSpectrum::iSpectrum` [private]

7.100.4.12 `long clSpectrum::iResSize` [private]

7.100.4.13 `float clSpectrum::fLowCorner` [private]

7.100.4.14 `float clSpectrum::fHighCorner` [private]

7.100.4.15 `char clSpectrum::uStreamSocket[ POSIX_PATH_MAX + 1 ]`

- [Spectrum.hh](#)
- [Spectrum.cc](#)

## 7.101 clStreamDist Class Reference

Audio stream distributor.

```
#include <StreamDist.hh>
```

Collaboration diagram for clStreamDist:



### Public Member Functions

- [clStreamDist](#) ()
- [~clStreamDist](#) ()
- int [Main](#) (int, char \*\*)
- void \* [AudioInThread](#) (void \*)
- void \* [ServeClientThread](#) (void \*)
- void [Stop](#) ()

### Public Attributes

- [clLogFile](#) Log

### Private Member Functions

- void [CopyChannel](#) (GDT \*, const GDT \*, int)
- bool [InitCompress](#) (int)

### Private Attributes

- volatile bool [bRun](#)
- volatile int [iFragmentSize](#)
- volatile int [iAudioBufSize](#)
- volatile int [iBlockCntr](#)
- [stRawDataFirst](#) sHdr
- [clCfgFile](#) Cfg
- clAlloc [AudioBuf](#)
- clMutex [MtxAudio](#)
- clCondition [CndAudio](#)

### 7.101.1 Detailed Description

Audio stream distributor.

**Note:**

See soundsrv2 for architecture description.

## 7.101.2 Constructor & Destructor Documentation

7.101.2.1 `clStreamDist::clStreamDist ()`

7.101.2.2 `clStreamDist::~~clStreamDist ()`

## 7.101.3 Member Function Documentation

7.101.3.1 `void clStreamDist::CopyChannel (GDT *, const GDT *, int)`  
[inline, private]

7.101.3.2 `bool clStreamDist::InitCompress (int)` [private]

7.101.3.3 `int clStreamDist::Main (int, char **)`

7.101.3.4 `void * clStreamDist::AudioInThread (void *)`

7.101.3.5 `void * clStreamDist::ServeClientThread (void *)`

7.101.3.6 `void clStreamDist::Stop ()` [inline]

## 7.101.4 Member Data Documentation

7.101.4.1 `volatile bool clStreamDist::bRun` [private]

7.101.4.2 `volatile int clStreamDist::iFragmentSize` [private]

7.101.4.3 `volatile int clStreamDist::iAudioBufSize` [private]

7.101.4.4 `volatile int clStreamDist::iBlockCntr` [private]

7.101.4.5 `stRawDataFirst clStreamDist::sHdr` [private]

7.101.4.6 `clCfgFile clStreamDist::Cfg` [private]

7.101.4.7 `clAlloc clStreamDist::AudioBuf` [private]

7.101.4.8 `clMutex clStreamDist::MtxAudio` [private]

7.101.4.9 `clCondition clStreamDist::CndAudio` [private]

7.101.4.10 `clLogFile clStreamDist::Log`

The documentation for this class was generated from the following files:

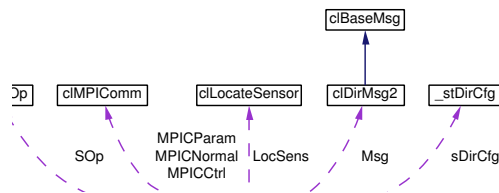
- [StreamDist.hh](#)
- [StreamDist.cc](#)

## 7.102 clSubLocate Class Reference

Slave nodes for locate server.

```
#include <Locate.hh>
```

Collaboration diagram for clSubLocate:



### Public Member Functions

- [clSubLocate](#) ()
- [~clSubLocate](#) ()
- [int Main](#) (int, char \*\*)

### Private Member Functions

- [bool RecvParams](#) ()
- [bool Initialize](#) ()
- [bool ConnectDir](#) ()

### Private Attributes

- [int iHostPort](#)
- [int iDirMsgSize](#)
- [long lWidth](#)
- [long lHeight](#)
- [long lPosX](#)
- [long lPosY](#)
- [float fAzimuth](#)
- [char cpHostName](#) [LOCATE\_HOSTNAME\_MAXLEN]
- [GDT \\* fpLevRes](#)
- [GDT \\* fpDirRes](#)
- [stDirCfg sDirCfg](#)
- [clAlloc DirMsg](#)
- [clAlloc LevRes](#)
- [clAlloc DirRes](#)
- [clLocateSensor LocSens](#)

- [clMPIComm MPICCtrl](#)
- [clMPIComm MPICParam](#)
- [clMPIComm MPICNormal](#)
- [clDirMsg2 Msg](#)
- [clSockOp SOp](#)

### 7.102.1 Detailed Description

Slave nodes for locate server.





## 7.102.2 Constructor & Destructor Documentation

7.102.2.1 `clSubLocate::clSubLocate ()`

7.102.2.2 `clSubLocate::~~clSubLocate ()`

## 7.102.3 Member Function Documentation

7.102.3.1 `bool clSubLocate::RecvParams ()` [private]

7.102.3.2 `bool clSubLocate::Initialize ()` [private]

7.102.3.3 `bool clSubLocate::ConnectDir ()` [private]

7.102.3.4 `int clSubLocate::Main (int, char **)`

## 7.102.4 Member Data Documentation

7.102.4.1 `int clSubLocate::iHostPort` [private]

7.102.4.2 `int clSubLocate::iDirMsgSize` [private]

7.102.4.3 `long clSubLocate::lWidth` [private]

7.102.4.4 `long clSubLocate::lHeight` [private]

7.102.4.5 `long clSubLocate::lPosX` [private]

7.102.4.6 `long clSubLocate::lPosY` [private]

7.102.4.7 `float clSubLocate::fAzimuth` [private]

7.102.4.8 `char clSubLocate::cpHostName[LOCATE_HOSTNAME_MAXLEN]`  
[private]

7.102.4.9 `GDT* clSubLocate::fpLevRes` [private]

7.102.4.10 `GDT* clSubLocate::fpDirRes` [private]

7.102.4.11 `stDirCfg clSubLocate::sDirCfg` [private]

7.102.4.12 `clAlloc clSubLocate::DirMsg` [private]

7.102.4.13 `clAlloc clSubLocate::LevRes` [private]

7.102.4.14 `clAlloc clSubLocate::DirRes` [private]

7.102.4.15 `clLocateSensor clSubLocate::LocSens` [private]

7.102.4.16 `clMPIComm clSubLocate::MPICCtrl` [private]

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7.102.4.17 `clMPIComm clSubLocate::MPICParam` [private]

7.102.4.18 `clMPIComm clSubLocate::MPICNormal` [private]

7.102.4.19 `clDirMsg2 clSubLocate::Msg` [private]

7.102.4.20 `clSockOp clSubLocate::SOp` [private]

- [Locate.hh](#)
- [Locate.cc](#)

## 7.103 `_stTBearInfo` Struct Reference

Information stored in saved bearing-time .tif.inf.

```
#include <ConvPic.hh>
```

### Public Attributes

- `time_t ttTime`  
*Oldest dataline time.*
- `double dLeftDir`  
*Left angle (rad).*
- `double dRightDir`  
*Right angle (rad).*
- `double dIntTime`  
*Integration time (s).*
- `double dHighFreq`  
*Upper frequency limit.*
- `int iSectors`  
*Number of sectors.*

### 7.103.1 Detailed Description

Information stored in saved bearing-time .tif.inf.

### 7.103.2 Member Data Documentation

#### 7.103.2.1 `time_t _stTBearInfo::ttTime`

Oldest dataline time.

#### 7.103.2.2 `double _stTBearInfo::dLeftDir`

Left angle (rad).

#### 7.103.2.3 `double _stTBearInfo::dRightDir`

Right angle (rad).

**7.103.2.4 double [\\_stTBearInfo::dIntTime](#)**

Integration time (s).

**7.103.2.5 double [\\_stTBearInfo::dHighFreq](#)**

Upper frequency limit.

**7.103.2.6 int [\\_stTBearInfo::iSectors](#)**

Number of sectors.

The documentation for this struct was generated from the following file:

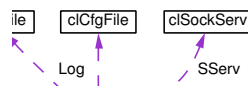
- [ConvPic.hh](#)

## 7.104 clUIServer Class Reference

User interface server.

```
#include <UIServ.hh>
```

Collaboration diagram for clUIServer:



### Public Member Functions

- [clUIServer \(\)](#)
- [~clUIServer \(\)](#)
- [int Wait \(\)](#)
- [void NoLogShutdown \(\)](#)

### Public Attributes

- [clLogFile \\* Log](#)

### Private Attributes

- [bool bLogShutdown](#)
- [clCfgFile \\* Cfg](#)
- [clSockServ \\* SServ](#)

### 7.104.1 Detailed Description

User interface server.

This works like inetd. It starts waiting for connections in single predefined port. When connection arrives it receives process request from client, duplicates handles and fork() and exec() the requested process and then continues to wait for new connections.

There are several advantages of this behaviour:

- Takes only one port
- SMP friendly
- Easy to extend

### 7.104.2 Constructor & Destructor Documentation

7.104.2.1 `clUIServer::clUIServer ()`

7.104.2.2 `clUIServer::~~clUIServer ()`

### 7.104.3 Member Function Documentation

7.104.3.1 `int clUIServer::Wait ()`

7.104.3.2 `void clUIServer::NoLogShutdown () [inline]`

### 7.104.4 Member Data Documentation

7.104.4.1 `bool clUIServer::bLogShutdown [private]`

7.104.4.2 `clCfgFile* clUIServer::Cfg [private]`

7.104.4.3 `clSockServ* clUIServer::SServ [private]`

7.104.4.4 `clLogFile* clUIServer::Log`

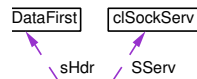
The documentation for this class was generated from the following files:

- [UIServ.hh](#)
- [UIServ.cc](#)

## 7.105 clXMMSOut Class Reference

```
#include <XMMSOut.hh>
```

Collaboration diagram for clXMMSOut:



### Public Member Functions

- [clXMMSOut \(\)](#)
- [~clXMMSOut \(\)](#)
- void [Init \(\)](#)
- void [About \(\)](#)
- void [Configure \(\)](#)
- int [OpenAudio](#) (AFormat, int, int)
- void [WriteAudio](#) (void \*, int)
- void [CloseAudio \(\)](#)
- void [Flush](#) (int)
- void [Pause](#) (short)
- int [BufferFree \(\)](#)
- int [BufferPlaying \(\)](#)
- int [OutputTime \(\)](#)
- int [WrittenTime \(\)](#)
- void \* [MainThread](#) (void \*)
- void \* [ServeClientThread](#) (void \*)
- void [Stop \(\)](#)
- void [OnAboutButton](#) (GtkButton \*, gpointer)
- void [OnButtonClick](#) (GtkButton \*, gpointer)

### Private Member Functions

- double [GetTime \(\)](#)
- void [Convert8s8u](#) (void \*, int)
- void [Convert16u16s](#) (void \*, int)
- void [EndianConvert](#) (unsigned short \*, int)
- void [CopyChannel](#) (GDT \*, const GDT \*, int)

### Private Attributes

- volatile bool [bRun](#)
- volatile bool [bPause](#)
- int [iMainThreadH](#)
- int [iWriteTime](#)
- int [iPlayTime](#)
- volatile int [iAudioBufSize](#)
- volatile int [iFragmentSize](#)
- unsigned long long [uiTotalTickCount](#)
- double [dStartTime](#)
- char \* [cpLocalSocket](#)
- AFormat [eAudioFormat](#)
- [stRawDataFirst](#) [sHdr](#)
- clReBufferT< GDT > [ReBuffer](#)
- clAlloc [AudioBuf](#)
- clMutex [MtxAudio](#)
- clCondition [CndAudio](#)
- clDSPOp [DSP](#)
- clSockServ [SServ](#)
- gchar \* [cpMessageTxt](#)
- GtkWidget \* [gwMessageBox](#)
- GtkWidget \* [gwWinConfig](#)
- GtkWidget \* [gwVBox](#)
- GtkWidget \* [gwHBox](#)
- GtkWidget \* [gwLBufSize](#)
- GtkWidget \* [gwEBufSize](#)
- GtkWidget \* [gwLocalSocket](#)
- GtkWidget \* [gwELocalSocket](#)
- GtkWidget \* [gwBOK](#)
- GtkWidget \* [gwBCancel](#)





### 7.105.1 Constructor & Destructor Documentation

7.105.1.1 `clXMMSOut::clXMMSOut ()`

7.105.1.2 `clXMMSOut::~~clXMMSOut ()`

### 7.105.2 Member Function Documentation

7.105.2.1 `double clXMMSOut::GetTime ()` [inline, private]

7.105.2.2 `void clXMMSOut::Convert8s8u (void *, int)` [inline, private]

7.105.2.3 `void clXMMSOut::Convert16u16s (void *, int)` [inline, private]

7.105.2.4 `void clXMMSOut::EndianConvert (unsigned short *, int)` [inline, private]

7.105.2.5 `void clXMMSOut::CopyChannel (GDT *, const GDT *, int)` [inline, private]

7.105.2.6 `void clXMMSOut::Init ()`

7.105.2.7 `void clXMMSOut::About ()`

7.105.2.8 `void clXMMSOut::Configure ()`

7.105.2.9 `int clXMMSOut::OpenAudio (AFormat, int, int)`

7.105.2.10 `void clXMMSOut::WriteAudio (void *, int)`

7.105.2.11 `void clXMMSOut::CloseAudio ()`

7.105.2.12 `void clXMMSOut::Flush (int)`

7.105.2.13 `void clXMMSOut::Pause (short)`

7.105.2.14 `int clXMMSOut::BufferFree ()`

7.105.2.15 `int clXMMSOut::BufferPlaying ()`

7.105.2.16 `int clXMMSOut::OutputTime ()`

7.105.2.17 `int clXMMSOut::WrittenTime ()`

7.105.2.18 `void * clXMMSOut::MainThread (void *)`

7.105.2.19 `void * clXMMSOut::ServeClientThread (void *)`

7.105.2.20 `void clXMMSOut::Stop ()` [inline] Generated on Sun Oct 26 18:42:00 2003 for HASAS by Doxygen

7.105.2.21 `void clXMMSOut::OnAboutButton (GtkButton *, gpointer)`

7.105.2.22 `void clXMMSOut::OnButtonClick (GtkButton *, gpointer)`

### 7.105.3 Member Data Documentation

7.105.3.1 `volatile bool clXMMSOut::bRun` [private]

- [XMMSOut.hh](#)
- [XMMSOut.cc](#)



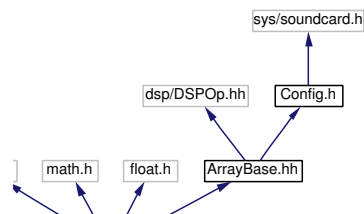
## Chapter 8

# HASAS File Documentation

### 8.1 ArrayBase.cc File Reference

```
#include <stdio.h>
#include <math.h>
#include <float.h>
#include "ArrayBase.hh"
```

Include dependency graph for ArrayBase.cc:



### Variables

- const char \* [cpaShadingTypes](#) []

#### 8.1.1 Variable Documentation

8.1.1.1 const char\* [cpaShadingTypes](#)[] [static]

Initial value:

```
{ "Rectangle", "Blackman",
```

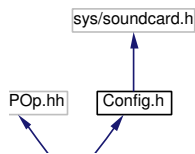
"Kaiser-Bessel" }

## 8.2 ArrayBase.hh File Reference

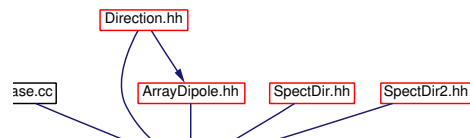
```
#include <dsp/DSPOp.hh>
```

```
#include "Config.h"
```

Include dependency graph for ArrayBase.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clArrayBase](#)  
*Base class for array operations.*

### Enumerations

- enum { [AB\\_SHADE\\_RECTANGLE](#) = 0, [AB\\_SHADE\\_BLACKMAN](#) = 1, [AB\\_SHADE\\_KAISER\\_BESSEL](#) = 2 }  
*Types for shading window.*

#### 8.2.1 Enumeration Type Documentation

##### 8.2.1.1 anonymous enum

Types for shading window.

Enumeration values:

**AB\_SHADE\_RECTANGLE**

**AB\_SHADE\_BLACKMAN**

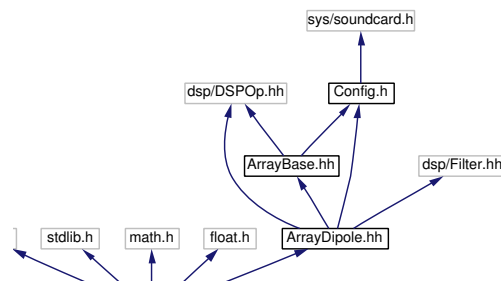
**AB\_SHADE\_KAISER\_BESSEL**



## 8.3 ArrayDipole.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <float.h>
#include "ArrayDipole.hh"
```

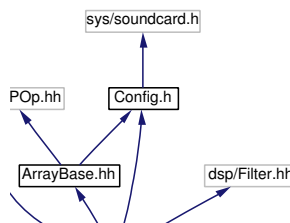
Include dependency graph for ArrayDipole.cc:



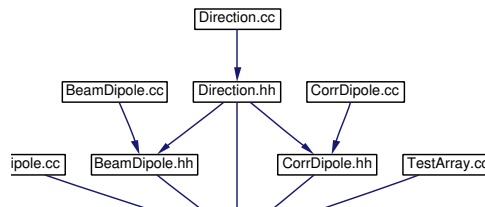
## 8.4 ArrayDipole.hh File Reference

```
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include "Config.h"
#include "ArrayBase.hh"
```

Include dependency graph for ArrayDipole.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clArrayDipole](#)  
*Class for dipole array operations.*

## 8.5 ArraySensor.cc File Reference

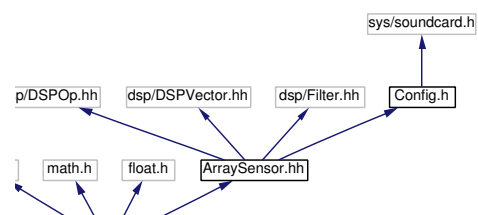
```
#include <stdio.h>
```

```
#include <math.h>
```

```
#include <float.h>
```

```
#include "ArraySensor.hh"
```

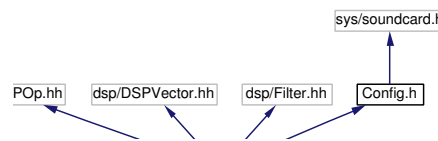
Include dependency graph for ArraySensor.cc:



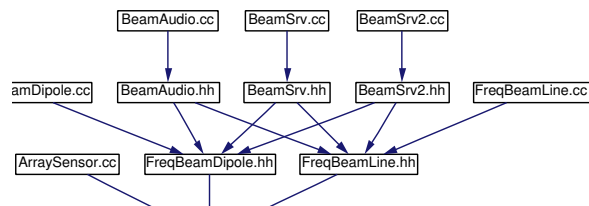
## 8.6 ArraySensor.hh File Reference

```
#include <dsp/DSPOp.hh>
#include <dsp/DSPVector.hh>
#include <dsp/Filter.hh>
#include "Config.h"
```

Include dependency graph for ArraySensor.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

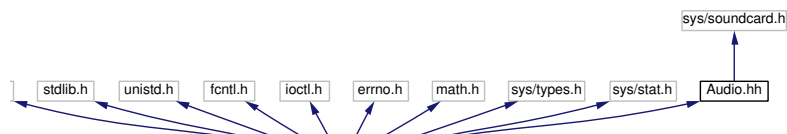
- class [clArraySensor](#)

*Class representing sensor in sensor array for frequency domain beamforming.*

## 8.7 Audio.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <fcntl.h>
#include <ioctl.h>
#include <errno.h>
#include <math.h>
#include <sys/types.h>
#include <sys/stat.h>
#include "Audio.hh"
```

Include dependency graph for Audio.cc:



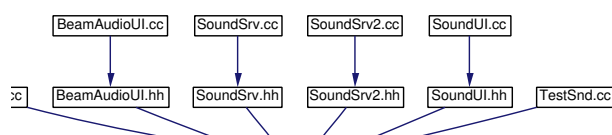
## 8.8 Audio.hh File Reference

```
#include "sys/soundcard.h"
```

Include dependency graph for Audio.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clAudio](#)  
*Class for OSS audio IO operations.*

### Defines

- #define [BUF\\_SIZE](#) 4096

### Enumerations

- enum { [AUDIO\\_READ](#) = 0, [AUDIO\\_WRITE](#) = 1, [AUDIO\\_DUPLEX](#) = 2 }

#### 8.8.1 Define Documentation

##### 8.8.1.1 #define BUF\_SIZE 4096

#### 8.8.2 Enumeration Type Documentation

##### 8.8.2.1 anonymous enum

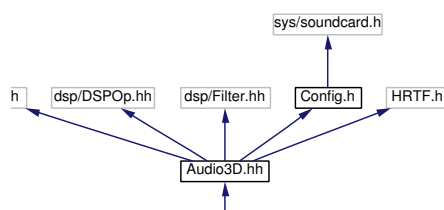
Enumeration values:  
**AUDIO\_READ**

**AUDIO\_WRITE**  
**AUDIO\_DUPLEX**

## 8.9 Audio3D.cc File Reference

```
#include "Audio3D.hh"
```

Include dependency graph for Audio3D.cc:



### Defines

- #define [COMPILE](#)

### 8.9.1 Define Documentation

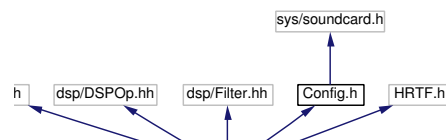
#### 8.9.1.1 #define COMPILE



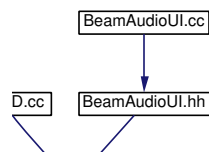
## 8.10 Audio3D.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include "Config.h"
#include "HRTF.h"
```

Include dependency graph for Audio3D.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clAudio3D](#)  
*3D audio engine*

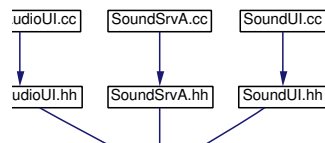
## **8.11 AudioA.cc File Reference**

## 8.12 AudioA.hh File Reference

## **8.13 AudioA2.cc File Reference**

## 8.14 AudioA2.hh File Reference

This graph shows which files directly or indirectly include this file:



## 8.15 BeamAudio.cc File Reference

```
#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <math.h>
#include <float.h>
#include <unistd.h>
#include <sched.h>
#include <sys/time.h>
#include <sys/types.h>
#include "BeamAudio.hh"
```

Include dependency graph for BeamAudio.cc:



### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bDebug](#)
- bool [bDaemon](#)
- [clBeamAudio](#) \* [BeamAudio](#)

### 8.15.1 Function Documentation

8.15.1.1 void SigHandler (int *iSigNum*)

8.15.1.2 int main (int *argc*, char \* *argv*[ ])

### 8.15.2 Variable Documentation

8.15.2.1 bool [bDebug](#) [static]

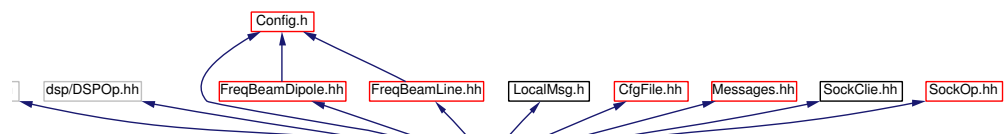
8.15.2.2 bool [bDaemon](#) [static]

8.15.2.3 [clBeamAudio\\*](#) [BeamAudio](#)

## 8.16 BeamAudio.hh File Reference

```
#include <limits.h>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "FreqBeamDipole.hh"
#include "FreqBeamLine.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for BeamAudio.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clBeamAudio](#)  
*Server for beamformed audio.*

### Enumerations

- enum {  
[BA\\_ARRAY\\_TYPE\\_DIPOLE](#) = 0, [BA\\_ARRAY\\_TYPE\\_TRIANGLE](#) = 1, [BA\\_ARRAY\\_TYPE\\_LINE](#) = 2, [BA\\_ARRAY\\_TYPE\\_PLANE](#) = 3,



---

```
BA_ARRAY_TYPE_CYLINDER = 4, BA_ARRAY_TYPE_SPHERE = 5 }
```

## 8.16.1 Enumeration Type Documentation

### 8.16.1.1 anonymous enum

Enumeration values:

**BA\_ARRAY\_TYPE\_DIPOLE**

**BA\_ARRAY\_TYPE\_TRIANGLE**

**BA\_ARRAY\_TYPE\_LINE**

**BA\_ARRAY\_TYPE\_PLANE**

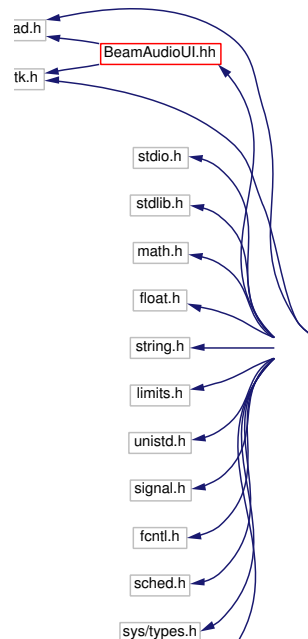
**BA\_ARRAY\_TYPE\_CYLINDER**

**BA\_ARRAY\_TYPE\_SPHERE**

## 8.17 BeamAudioUI.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <float.h>
#include <string.h>
#include <limits.h>
#include <unistd.h>
#include <signal.h>
#include <fcntl.h>
#include <sched.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <gtk/gtk.h>
#include "BeamAudioUI.hh"
```

Include dependency graph for BeamAudioUI.cc:



## Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- int [main](#) (int argc, char \*argv[ ])
- gboolean [WrapOnDelete](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- void [WrapOnConnectClick](#) (GtkButton \*gbButton, gpointer gpData)
- void [WrapOnValueChanged](#) (GtkAdjustment \*gaAdjustment, gpointer gpData)
- void [WrapOnToggled](#) (GtkToggleButton \*gtbToggleButton, gpointer gpData)
- void [WrapOnGdkInput](#) (gpointer gpData, gint giSource, GdkInputCondition gicCondition)
- void \* [WrapAudioOutThread](#) (void \*vpParam)

## Variables

- [clBeamAudioUI](#) \* [BeamAudioUI](#)

### 8.17.1 Function Documentation

#### 8.17.1.1 [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)

#### 8.17.1.2 [int main](#) (int *argc*, char \* *argv*[ ])

#### 8.17.1.3 [gboolean WrapOnDelete](#) (GtkWidget \* *gwSender*, GdkEvent \* *geEvent*, gpointer *gpData*)

#### 8.17.1.4 [void WrapOnConnectClick](#) (GtkButton \* *gbButton*, gpointer *gpData*)

#### 8.17.1.5 [void WrapOnValueChanged](#) (GtkAdjustment \* *gaAdjustment*, gpointer *gpData*)

#### 8.17.1.6 [void WrapOnToggled](#) (GtkToggleButton \* *gtbToggleButton*, gpointer *gpData*)

#### 8.17.1.7 [void WrapOnGdkInput](#) (gpointer *gpData*, gint *giSource*, GdkInputCondition *gicCondition*)

#### 8.17.1.8 [void\\*](#) [WrapAudioOutThread](#) (void \* *vpParam*)

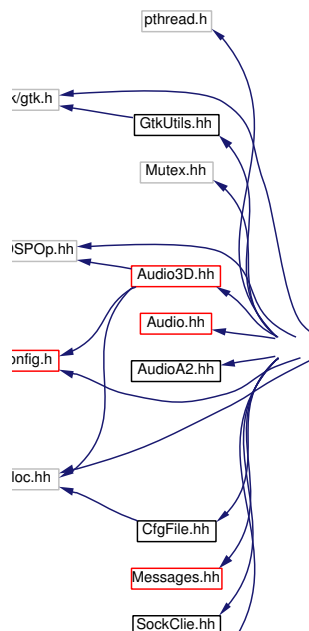
### 8.17.2 Variable Documentation

#### 8.17.2.1 [clBeamAudioUI](#) \* [BeamAudioUI](#)

## 8.18 BeamAudioUI.hh File Reference

```
#include <pthread.h>
#include <gtk/gtk.h>
#include <Alloc.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "Audio.hh"
#include "AudioA2.hh"
#include "Audio3D.hh"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for BeamAudioUI.hh:



This graph shows which files directly or indirectly include this file:



BeamAudioUI.cc

## Compounds

- class [clBeamAudioUI](#)

*User interface for beam audio server.*

## Defines

- #define [BAUI\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [BAUI\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [BAUI\\_VER\\_PL](#) GLOBAL\_VERSPL
- #define [BAUI\\_PADDING](#) 8
- #define [BAUI\\_SERVER\\_MAXLEN](#) 255
- #define [BAUI\\_CONV\\_BUF\\_LEN](#) 255
- #define [BAUI\\_AUDIO\\_BUFCOUNT](#) 10

## Variables

- const char \* [cpWindowTxt](#) = "Beam audio UI"
- const char \* [cpLServerTxt](#) = "Server"
- const char \* [cpBConnectTxt](#) = "Connect"
- const char \* [cpLSoundSpeedTxt](#) = "Sound speed"
- const char \* [cpCBHighFreqTxt](#) = "High frequencies"
- const char \* [cpCBDitherTxt](#) = "Dither"
- const char \* [cpCB3DAudioTxt](#) = "3D"
- const char \* [cpLDirectionTxt](#) = "Direction"

### 8.18.1 Define Documentation

8.18.1.1 `#define BAUI_VER_MAJ GLOBAL_VERSMAJ`

8.18.1.2 `#define BAUI_VER_MIN GLOBAL_VERSMIN`

8.18.1.3 `#define BAUI_VER_PL GLOBAL_VERSPL`

8.18.1.4 `#define BAUI_PADDING 8`

8.18.1.5 `#define BAUI_SERVER_MAXLEN 255`

8.18.1.6 `#define BAUI_CONV_BUF_LEN 255`

8.18.1.7 `#define BAUI_AUDIO_BUFCOUNT 10`

### 8.18.2 Variable Documentation

8.18.2.1 `const char* cpWindowTxt = "Beam audio UP" [static]`

8.18.2.2 `const char* cpLServerTxt = "Server" [static]`

8.18.2.3 `const char* cpBConnectTxt = "Connect" [static]`

8.18.2.4 `const char* cpLSoundSpeedTxt = "Sound speed" [static]`

8.18.2.5 `const char* cpCBHighFreqTxt = "High frequencies" [static]`

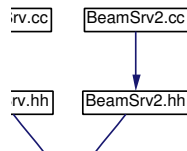
8.18.2.6 `const char* cpCBDitherTxt = "Dither" [static]`

8.18.2.7 `const char* cpCB3DAudioTxt = "3D" [static]`

8.18.2.8 `const char* cpLDirectionTxt = "Direction" [static]`

## 8.19 BeamCommon.hh File Reference

This graph shows which files directly or indirectly include this file:



### Compounds

- struct [\\_stBeamNodeParams](#)  
*Node parameters for beamforming cluster.*

### Defines

- #define [BS\\_LOGBUFSIZE](#) 4096
- #define [BS\\_ACCEPT\\_TO](#) 250

### Typedefs

- typedef [\\_stBeamNodeParams](#) [stBeamNodeParams](#)  
*Node parameters for beamforming cluster.*
- typedef [\\_stBeamNodeParams](#) \* [stpBeamNodeParams](#)  
*Node parameters for beamforming cluster.*

### Enumerations

- enum {  
[BS\\_ARRAY\\_TYPE\\_DIPOLE](#) = 0, [BS\\_ARRAY\\_TYPE\\_TRIANGLE](#) = 1, [BS\\_ARRAY\\_TYPE\\_LINE](#) = 2, [BS\\_ARRAY\\_TYPE\\_PLANE](#) = 3,  
[BS\\_ARRAY\\_TYPE\\_CYLINDER](#) = 4, [BS\\_ARRAY\\_TYPE\\_SPHERE](#) = 5 }  
*Array types for beamforming server.*

### 8.19.1 Define Documentation

8.19.1.1 `#define BS_LOGBUFSIZE 4096`

8.19.1.2 `#define BS_ACCEPT_TO 250`

### 8.19.2 Typedef Documentation

8.19.2.1 `typedef struct \_stBeamNodeParams stBeamNodeParams`

Node parameters for beamforming cluster.

8.19.2.2 `typedef struct \_stBeamNodeParams * stpBeamNodeParams`

Node parameters for beamforming cluster.

### 8.19.3 Enumeration Type Documentation

8.19.3.1 `anonymous enum`

Array types for beamforming server.

Enumeration values:

`BS_ARRAY_TYPE_DIPOLE`

`BS_ARRAY_TYPE_TRIANGLE`

`BS_ARRAY_TYPE_LINE`

`BS_ARRAY_TYPE_PLANE`

`BS_ARRAY_TYPE_CYLINDER`

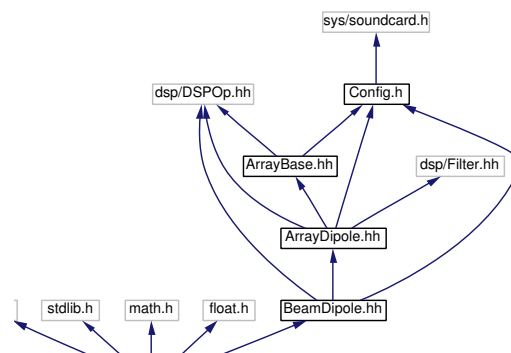
`BS_ARRAY_TYPE_SPHERE`



## 8.20 BeamDipole.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <float.h>
#include "BeamDipole.hh"
```

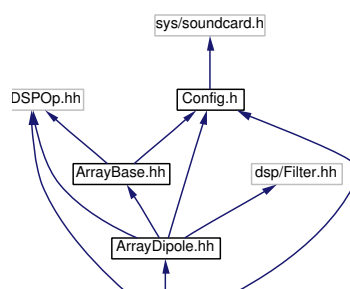
Include dependency graph for BeamDipole.cc:



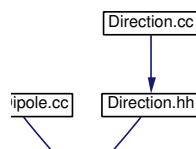
## 8.21 BeamDipole.hh File Reference

```
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "ArrayDipole.hh"
```

Include dependency graph for BeamDipole.hh:



This graph shows which files directly or indirectly include this file:



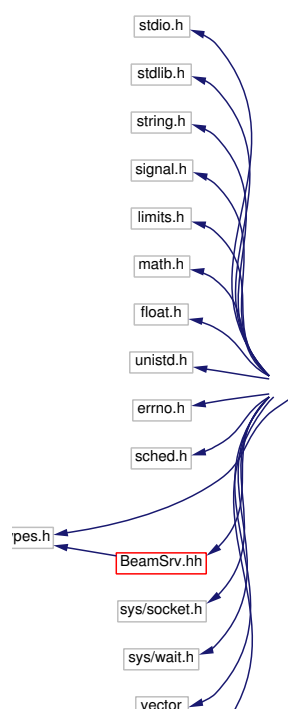
## Compounds

- class [clBeamDipole](#)  
*Beamformer class for dipole array.*

## 8.22 BeamSrv.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <limits.h>
#include <math.h>
#include <float.h>
#include <unistd.h>
#include <errno.h>
#include <sched.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <sys/wait.h>
#include <vector>
#include <DynThreads.hh>
#include "BeamSrv.hh"
```

Include dependency graph for BeamSrv.cc:



## Functions

- void [sig\\_handler\\_m](#) (int signo)
- void [sig\\_handler\\_s](#) (int signo)
- int [main](#) (int argc, char \*argv[ ])

## Variables

- volatile bool [bRun](#) = true
- cIDynThreads< [clBeamSrvMaster](#) > \* [BeamSrvMasterThreads](#)
- BS\_PROCINFOV\_T [vProcInfo](#)

### 8.22.1 Function Documentation

8.22.1.1 void sig\_handler\_m (int *signo*)

8.22.1.2 void sig\_handler\_s (int *signo*)

8.22.1.3 int main (int *argc*, char \* *argv*[ ])

### 8.22.2 Variable Documentation

8.22.2.1 volatile bool **bRun** = true

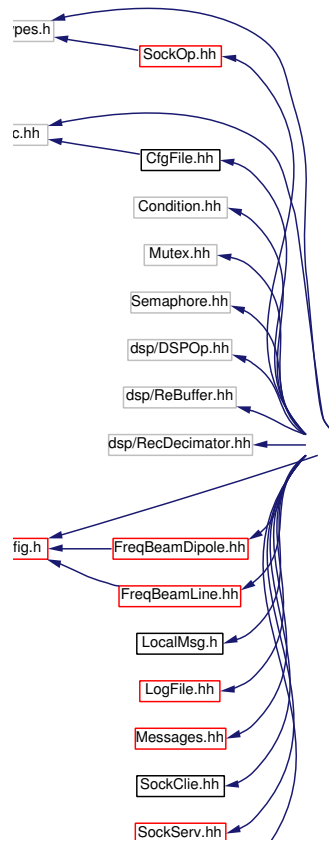
8.22.2.2 cldynThreads<**clBeamSrvMaster**>\* **BeamSrvMasterThreads**

8.22.2.3 BS\_PROCINFOV\_T **vProcInfo**

## 8.23 BeamSrv.hh File Reference

```
#include <sys/types.h>
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <Semaphore.hh>
#include <dsp/DSPOp.hh>
#include <dsp/ReBuffer.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "FreqBeamDipole.hh"
#include "FreqBeamLine.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SockServ.hh"
#include "BeamCommon.hh"
```

Include dependency graph for BeamSrv.hh:



This graph shows which files directly or indirectly include this file:

BeamSrv.cc

## Compounds

- struct [\\_stBeamProcInfo](#)
- class [clBeamSrvMaster](#)  
*Beamforming input server, main process.*
- class [clBeamSrvSlave](#)  
*Beamforming input server, slave process.*

## Defines

- `#define BS_PROCINFOV_T std::vector<stBeamProcInfo>`

## Typedefs

- `typedef _stBeamProcInfo stBeamProcInfo`
- `typedef _stBeamProcInfo * stpBeamProcInfo`

### 8.23.1 Define Documentation

8.23.1.1 `#define BS_PROCINFOV_T std::vector<stBeamProcInfo>`

### 8.23.2 Typedef Documentation

8.23.2.1 `typedef struct _stBeamProcInfo stBeamProcInfo`

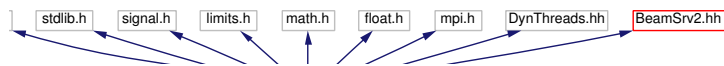
8.23.2.2 `typedef struct _stBeamProcInfo * stpBeamProcInfo`



## 8.24 BeamSrv2.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <signal.h>
#include <limits.h>
#include <math.h>
#include <float.h>
#include <mpi.h>
#include <DynThreads.hh>
#include "BeamSrv2.hh"
```

Include dependency graph for BeamSrv2.cc:



### Functions

- void [sig\\_handler](#) (int signo)
- int [main](#) (int argc, char \*argv[ ])
- bool [BeamCommNodeParams](#) ([stBeamNodeParams](#) &sNodeParams)  
*Communicates beamformer parameters between nodes.*
- bool [BeamCommInData](#) (GDT \*fpData, int iDataCount)

### Variables

- volatile bool [bRun](#) = true
- clDynThreads< [clBeamSrv2Master](#) > \* [BeamSrvMasterThreads](#)

#### 8.24.1 Function Documentation

##### 8.24.1.1 void sig\_handler (int signo)

##### 8.24.1.2 int main (int argc, char \* argv[ ])

##### 8.24.1.3 bool BeamCommNodeParams ([stBeamNodeParams](#) & sNodeParams)

Communicates beamformer parameters between nodes.

8.24.1.4 `bool BeamCommInData (GDT * fpData, int iDataCount)`

## 8.24.2 Variable Documentation

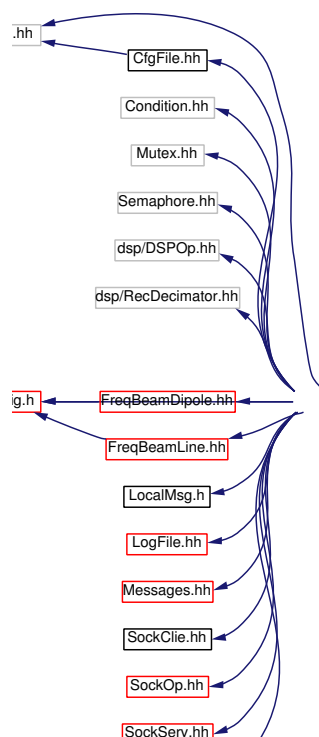
8.24.2.1 `volatile bool bRun = true`

8.24.2.2 `clDynThreads<clBeamSrv2Master>* BeamSrvMasterThreads`

## 8.25 BeamSrv2.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <Semaphore.hh>
#include <dsp/DSPOp.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "FreqBeamDipole.hh"
#include "FreqBeamLine.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SockServ.hh"
#include "BeamCommon.hh"
```

Include dependency graph for BeamSrv2.hh:



This graph shows which files directly or indirectly include this file:

rv2.cc

## Compounds

- class [clBeamSrv2Master](#)  
*Beamforming input server, root node.*
- class [clBeamSrv2Slave](#)  
*Beamforming input server, slave node.*

## Defines

- #define [BS\\_TAG\\_READY](#) 1

- #define [BS\\_TAG\\_RES](#) 2

## Functions

- bool [BeamCommNodeParams](#) ([stBeamNodeParams](#) &)  
*Communicates beamformer parameters between nodes.*
- bool [BeamCommInData](#) (GDT \*, int)

### 8.25.1 Define Documentation

8.25.1.1 #define [BS\\_TAG\\_READY](#) 1

8.25.1.2 #define [BS\\_TAG\\_RES](#) 2

### 8.25.2 Function Documentation

8.25.2.1 bool [BeamCommNodeParams](#) ([stBeamNodeParams](#) &)

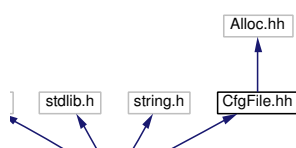
Communicates beamformer parameters between nodes.

8.25.2.2 bool [BeamCommInData](#) (GDT \*, int)

## 8.26 CfgFile.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "CfgFile.hh"
```

Include dependency graph for CfgFile.cc:



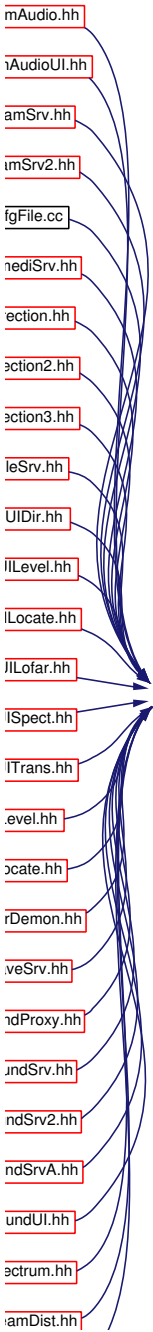
## 8.27 CfgFile.hh File Reference

```
#include <Alloc.hh>
```

Include dependency graph for CfgFile.hh:

A small square box containing the text "hh".

This graph shows which files directly or indirectly include this file:



Compounds

- class [clCfgFile](#)



## Defines

- `#define CFGF_MAX_ENTRIES 1024`
- `#define CFGF_BUFSIZE 1024`

### 8.27.1 Define Documentation

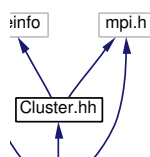
#### 8.27.1.1 `#define CFGF_MAX_ENTRIES 1024`

#### 8.27.1.2 `#define CFGF_BUFSIZE 1024`

## 8.28 Cluster.cc File Reference

```
#include <typeinfo>
#include <mpi.h>
#include "Cluster.hh"
```

Include dependency graph for Cluster.cc:



## 8.29 Cluster.hh File Reference

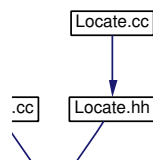
```
#include <typeinfo>
```

```
#include <mpi.h>
```

Include dependency graph for Cluster.hh:



This graph shows which files directly or indirectly include this file:



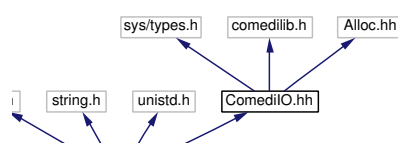
### Compounds

- class [cIMPIProc](#)  
*MPI process.*
- class [cIMPIComm](#)  
*MPI communication.*

## 8.30 ComediIO.cc File Reference

```
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include "ComediIO.hh"
```

Include dependency graph for ComediIO.cc:



## 8.31 ComediIO.hh File Reference

```
#include <sys/types.h>
```

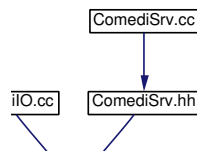
```
#include <comedilib.h>
```

```
#include <Alloc.hh>
```

Include dependency graph for ComediIO.hh:



This graph shows which files directly or indirectly include this file:



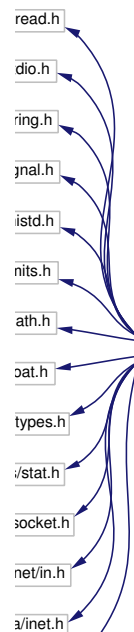
### Compounds

- class [clComediIO](#)  
*Class for Comedi IO operations.*

## 8.32 ComediSrv.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <limits.h>
#include <math.h>
#include <float.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "ComediSrv.hh"
```

Include dependency graph for ComediSrv.cc:



## Functions

- int [main](#) (int argc, char \*argv[ ])
- void [SigHandler](#) (int iSigNum)
- void \* [WrapAudioInThread](#) (void \*vpParam)
- void \* [WrapServeClientThread](#) (void \*vpParam)

## Variables

- bool [bDaemon](#) = false
- [clComediSrv](#) [ComediSrv](#)

### 8.32.1 Function Documentation

8.32.1.1 int [main](#) (int *argc*, char \* *argv*[ ])

8.32.1.2 void [SigHandler](#) (int *iSigNum*)

8.32.1.3 void\* [WrapAudioInThread](#) (void \* *vpParam*)

8.32.1.4 void\* [WrapServeClientThread](#) (void \* *vpParam*)

### 8.32.2 Variable Documentation

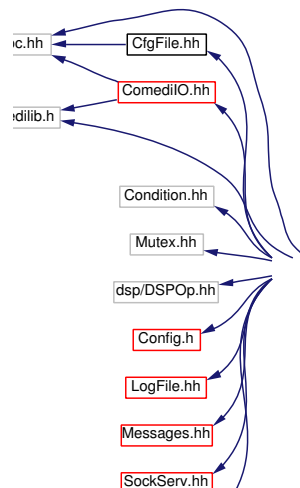
8.32.2.1 bool [bDaemon](#) = false [static]

8.32.2.2 [clComediSrv](#) [ComediSrv](#)

### 8.33 ComediSrv.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include <comedilib.h>
#include "Config.h"
#include "CfgFile.hh"
#include "ComediIO.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockServ.hh"
#include "SockOp.hh"
```

Include dependency graph for ComediSrv.hh:



This graph shows which files directly or indirectly include this file:



iSrv.cc

## Compounds

- class [clComediSrv](#)  
*ComediServer.*

## Defines

- #define [COM\\_LOGENTRY\\_SIZE](#) 4096

### 8.33.1 Define Documentation

#### 8.33.1.1 #define COM\_LOGENTRY\_SIZE 4096

## 8.34 Config.h File Reference

```
#include "sys/soundcard.h"
```

Include dependency graph for Config.h:



This graph shows which files directly or indirectly include this file:

### Defines

- #define [CONSTF](#)
- #define [GLOBAL\\_DATATYPE](#) float
- #define [GDT](#) GLOBAL\_DATATYPE
- #define [GCDT](#) stSCplx
- #define [GPDt](#) stSPolar
- #define [GUDT](#) utSCoord
- #define [GDT\\_SCAN](#) "%f"
- #define [GLOBAL\\_HEADER\\_LEN](#) 256
- #define [GLOBAL\\_SOCKET\\_PATH](#) "/tmp"
- #define [GLOBAL\\_VERSMAJ](#) 1
- #define [GLOBAL\\_VERSMIN](#) 7
- #define [GLOBAL\\_VERSPL](#) 0
- #define [SS\\_VERSMAJ](#) GLOBAL\_VERSMAJ
- #define [SS\\_VERSMIN](#) GLOBAL\_VERSMIN
- #define [SS\\_VERSPL](#) GLOBAL\_VERSPL
- #define [SS\\_SND\\_FORMAT](#) AFMT\_S16\_LE
- #define [SS\\_SND\\_FORMAT\\_SIZE](#) 2
- #define [SS\\_SND\\_SAMPLERATE](#) 44100
- #define [SS\\_SND\\_CHANNELS](#) 2
- #define [SS\\_SND\\_DEVICE](#) "dsp0"
- #define [SS\\_LOGFILE](#) "log/soundsrv.log"
- #define [SS\\_SHUTDOWNFILE](#) "/tmp/soundsrv.shutdown"
- #define [SS\\_MAXCLIENTS](#) 8
- #define [SS\\_TIMEOUT](#) 250
- #define [SS\\_DEFAULT\\_PORT](#) 30000
- #define [SS\\_MAXERRORS](#) 100
- #define [SS\\_SCHED\\_PRIORITY](#) 1
- #define [SS\\_SOCKET\\_BUF\\_FRAGS](#) 16
- #define [SS2\\_CFGFILE](#) "soundsrv2.cfg"

- #define [SS2\\_LOGFILE](#) "log/soundsrv2.log"
- #define [SS2\\_SHUTDOWNFILE](#) "/tmp/soundsrv2.shutdown"
- #define [SS2\\_SOCKET\\_BUF\\_FRAGS](#) 16
- #define [SS2\\_FRAG\\_SIZE\\_DEFAULT](#) 4096
- #define [SS2\\_CONNECT\\_TIMEOUT](#) 250
- #define [SS2\\_INTHREAD\\_PRIORITY](#) 4
- #define [SS2\\_OUTTHREAD\\_PRIORITY](#) 3
- #define [SSA\\_CFGFILE](#) "soundsrva.cfg"
- #define [SSA\\_LOGFILE](#) "log/soundsrva.log"
- #define [SSA\\_SHUTDOWNFILE](#) "/tmp/soundsrva.shutdown"
- #define [SSA\\_SOCKET\\_BUF\\_FRAGS](#) 16
- #define [SSA\\_FRAG\\_SIZE\\_DEFAULT](#) 4096
- #define [SSA\\_CONNECT\\_TIMEOUT](#) 250
- #define [SSA\\_INTHREAD\\_PRIORITY](#) 4
- #define [SSA\\_OUTTHREAD\\_PRIORITY](#) 3
- #define [COM\\_CFGFILE](#) "comedisrv.cfg"
- #define [COM\\_LOGFILE](#) "log/comedisrv.log"
- #define [COM\\_SHUTDOWNFILE](#) "/tmp/comedisrv.shutdown"
- #define [COM\\_SOCKET\\_BUF\\_FRAGS](#) 16
- #define [COM\\_FRAG\\_SIZE\\_DEFAULT](#) 4096
- #define [COM\\_CONNECT\\_TIMEOUT](#) 250
- #define [COM\\_INTHREAD\\_PRIORITY](#) 4
- #define [COM\\_OUTTHREAD\\_PRIORITY](#) 3
- #define [COM\\_USE\\_DITHER](#) true
- #define [FS\\_CFGFILE](#) "filesrv.cfg"
- #define [FS\\_FRAG\\_SIZE\\_DEFAULT](#) 4096
- #define [FS\\_DEFAULT\\_PORT](#) 30000
- #define [FS\\_INTHREAD\\_PRIORITY](#) 4
- #define [FS\\_OUTTHREAD\\_PRIORITY](#) 3
- #define [BS\\_CFGFILE](#) "beamsrv.cfg"
- #define [BS\\_LOGFILE](#) "log/beamsrv.log"
- #define [BS\\_INTHREAD\\_PRIORITY](#) 4
- #define [BS\\_OUTTHREAD\\_PRIORITY](#) 3
- #define [SD\\_VERSMAJ](#) GLOBAL\_VERSMAJ
- #define [SD\\_VERSMIN](#) GLOBAL\_VERSMIN
- #define [SD\\_VERSPL](#) GLOBAL\_VERSPL
- #define [SD\\_MAXCLIENTS](#) 128
- #define [SD\\_CONNECT\\_TIMEOUT](#) 250
- #define [SD\\_TIMEOUT](#) 1000
- #define [SD\\_CFGFILE](#) "streamdist.cfg"
- #define [SD\\_LOGFILE](#) "log/streamdist.log"
- #define [SD\\_SHUTDOWNFILE](#) "/tmp/streamdist.shutdown"
- #define [SD\\_MAX\\_ADDR\\_LEN](#) 128
- #define [SD\\_SCHED\\_PRIORITY](#) 1
- #define [SD\\_BUFFER\\_SIZE](#) 4096
- #define [SD\\_INTHREAD\\_PRIORITY](#) 2

- #define SD\_OUTTHREAD\_PRIORITY 1
- #define SAVS\_VERSMAJ GLOBAL\_VERSMAJ
- #define SAVS\_VERSMIN GLOBAL\_VERSMIN
- #define SAVS\_VERSPL GLOBAL\_VERSPL
- #define SAVS\_CFGFILE "savesrv.cfg"
- #define SAVS\_LOGFILE "log/savesrv.log"
- #define SAVS\_SHUTDOWNFILE "/tmp/savesrv.shutdown"
- #define SAVS\_TIMEOUT 1000
- #define UIS\_VERSMAJ GLOBAL\_VERSMAJ
- #define UIS\_VERSMIN GLOBAL\_VERSMIN
- #define UIS\_VERSPL GLOBAL\_VERSPL
- #define UIS\_CFGFILE "uiserv.cfg"
- #define UIS\_LOGFILE "log/uiserv.log"
- #define UIS\_SHUTDOWNFILE "/tmp/uiserv.shutdown"
- #define UIS\_DEFAULT\_PORT 30001
- #define UIS\_TIMEOUT 250
- #define UIS\_MSG\_TIMEOUT 1000
- #define SPECT\_CFGFILE "spectrum.cfg"
- #define SPECT\_TIMEOUT 250
- #define SPECT\_RAW1ST\_TIMEOUT 1000
- #define SPECT\_REQ\_TIMEOUT 5000
- #define SPECT\_DEF\_FILTSIZE 4096
- #define SPECT\_BAND\_LIMIT 10.0F
- #define SGUL\_CFGFILE "guispect.cfg"
- #define SGUL\_HOSTFILE "guispect.hosts"
- #define SGUL\_REQ\_PROC "spectrum"
- #define AB\_KBWIN\_ALPHA 3.0
- #define BF\_MAX\_X\_SENSORS 64
- #define BF\_MAX\_Y\_SENSORS 16
- #define DIR\_CFGFILE "direction.cfg"
- #define DIR\_MAX\_CPUS 8
- #define DIR\_REQ\_TIMEOUT 5000
- #define DIR\_RAW1ST\_TIMEOUT 1000
- #define DIR\_TIMEOUT 250
- #define DIR\_DB\_SCALE 144.4943979
- #define DIR\_DEF\_WIN\_SIZE 2048
- #define DIR2\_CFGFILE "direction2.cfg"
- #define DIR2\_REQ\_TIMEOUT 5000
- #define DIR2\_RAW1ST\_TIMEOUT 1000
- #define DIR2\_TIMEOUT 250
- #define DIR2\_DEF\_FILT\_SIZE 2048
- #define DIR2\_DEF\_FFT\_SIZE 4096
- #define DIR3\_CFGFILE "direction3.cfg"
- #define DIR3\_REQ\_TIMEOUT 5000
- #define DIR3\_RAW1ST\_TIMEOUT 1000
- #define DIR3\_TIMEOUT 250

- #define `DIR3_DEF_FILT_SIZE` 2048
- #define `DGUL_CFGFILE` "guidir.cfg"
- #define `DGUL_HOSTFILE` "guidir.hosts"
- #define `DGUL_REQ_PROC` "direction"
- #define `DGUL_REQ_PROC2` "direction2"
- #define `DGUL_DEF_LINES` 300
- #define `DGUL_DEF_SOUNDSPD` 1430.0
- #define `LOFAR_CFGFILE` "lofardemon.cfg"
- #define `LOFAR_REQ_TIMEOUT` 5000
- #define `LOFAR_RAW1ST_TIMEOUT` 1000
- #define `LOFAR_TIMEOUT` 250
- #define `LOFAR_DEF_FILTER_SIZE` 4096
- #define `LOFAR_DEF_DC_BLOCK` 1
- #define `LGUL_CFGFILE` "guilofar.cfg"
- #define `LGUL_HOSTFILE` "guilofar.hosts"
- #define `LGUL_REQ_PROC` "lofardemon"
- #define `LGUL_DEF_WIN_LENGTH` 1024
- #define `LGUL_DEF_LOW_FREQ` 0.0
- #define `LGUL_DEF_HIGH_FREQ` 1000.0
- #define `LGUL_DEF_REMOVE_NOISE` 0
- #define `LGUL_DEF_ALPHA` 1.5
- #define `LGUL_DEF_MEAN_LENGTH` 100
- #define `LGUL_DEF_GAP_LENGTH` 3
- #define `LGUL_DEF_HEIGHT` 100
- #define `SUI_MAX_CHANNELS` 8
- #define `SUI_SND_FORMAT` AFMT\_S16\_LE
- #define `SUI_SND_BITS` 16
- #define `SUI_SND_DATATYPE` signed short
- #define `SUI_SND_QUEUE_SIZE` 4096
- #define `SUI_SAMPLECOUNT` 2048
- #define `SUI_DEF_DEVICE` "/dev/dsp"
- #define `SUI_DEF_CHANNELS` 2
- #define `SUI_DEF_SAMPLERATE` 44100
- #define `SUI_CFGFILE` "soundui.cfg"
- #define `SUI_HOSTFILE` "soundui.hosts"
- #define `SUI_FIRST_TIMEOUT` 1000
- #define `SUI_IN_TIMEOUT` 250
- #define `SUI_VU_TIMEOUT` 200
- #define `SP_VERSMAJ` GLOBAL\_VERSMAJ
- #define `SP_VERSMIN` GLOBAL\_VERSMIN
- #define `SP_VERSPL` GLOBAL\_VERSPL
- #define `SP_CFGFILE` "soundproxy.cfg"
- #define `SP_DEF_LOGFILE` "log/soundproxy.cfg"
- #define `SP_SERV_MAXLEN` 255
- #define `SP_MAXCLIENTS` 255
- #define `SP_1ST_MSG_TIMEOUT` 1000

---

- #define SP\_MSG\_TIMEOUT 250
- #define SP\_WAIT\_CONN\_TIMEOUT 250
- #define SP\_SCHED\_PRIORITY 1
- #define SP\_BUFFER\_SIZE 4096
- #define BA\_CFGFILE "beamaudio.cfg"
- #define BA\_1STREQ\_TIMEOUT 5000
- #define BA\_RAW1ST\_TIMEOUT 1000
- #define BA\_TIMEOUT 250
- #define BA\_DEF\_FRAGMENT\_SIZE 4096
- #define BA\_SCHED\_PRIORITY 2
- #define BAUI\_CFGFILE "beamaudioui.cfg"
- #define BAUI\_HOSTFILE "beamaudioui.hosts"
- #define BAUI\_REQ\_PROC "beamaudio"
- #define BAUI\_1ST\_TIMEOUT 5000
- #define BAUI\_DEF\_SOUNDSPED "1430.0"
- #define BAUI\_DEF\_DIR\_RANGE 180.0
- #define BAUI\_INT\_DATATYPE int
- #define BAUI\_SND\_FORMAT AFMT\_S16\_LE
- #define BAUI\_SND\_BITS 16
- #define BAUI\_SND\_DATATYPE signed short
- #define LEVEL\_CFGFILE "level.cfg"
- #define LEVEL\_1STREQ\_TIMEOUT 5000
- #define LEVEL\_RAW1ST\_TIMEOUT 1000
- #define LEVEL\_TIMEOUT 250
- #define LEVEL\_DEF\_FILTER\_SIZE 4096
- #define GUILV\_CFGFILE "guilevel.cfg"
- #define GUILV\_HOSTFILE "guilevel.hosts"
- #define GUILV\_REQ\_PROC "level"
- #define LOCATE\_CFGFILE "locate.cfg"
- #define LOCATE\_LOGFILE "log/locate.log"
- #define LOCATE\_SENSOR\_LIST "locate.sensors"
- #define LOCATE\_DIR\_PROC "direction3"
- #define LOCATE\_TIMEOUT 250
- #define LOCATE\_DEF\_WINDOWSIZE 4096
- #define LOCATE\_DEF\_SOUNDSPED 1430.0
- #define LOCATE\_DEF\_LOWFREQ 10.0
- #define LOCATE\_DEF\_INTTIME 1.0
- #define LOCATE\_DEF\_SCALING 0
- #define LOCATE\_DEF\_SCALINGEXP 2.0
- #define LOCATE\_DEF\_REMOVE\_NOISE 0
- #define LOCATE\_DEF\_ALPHA 2.0
- #define LOCATE\_DEF\_MEANLENGTH 10
- #define LOCATE\_DEF\_GAPLENGTH 3
- #define GUILOC\_CFGFILE "guilocate.cfg"
- #define GUILOC\_HOSTFILE "guilocate.hosts"
- #define GUITRANS\_CFGFILE "guitrans.cfg"
- #define GUITRANS\_HOSTFILE "guitrans.hosts"

---



### 8.34.1 Define Documentation

8.34.1.1 `#define CONSTF`

8.34.1.2 `#define GLOBAL_DATATYPE float`

8.34.1.3 `#define GDT GLOBAL_DATATYPE`

8.34.1.4 `#define GCDT stSCplx`

8.34.1.5 `#define GPDT stSPolar`

8.34.1.6 `#define GUDT utSCoord`

8.34.1.7 `#define GDT_SCAN "%f"`

8.34.1.8 `#define GLOBAL_HEADER_LEN 256`

8.34.1.9 `#define GLOBAL_SOCKET_PATH "/tmp"`

8.34.1.10 `#define GLOBAL_VERSMAJ 1`

8.34.1.11 `#define GLOBAL_VERSMIN 7`

8.34.1.12 `#define GLOBAL_VERSPL 0`

8.34.1.13 `#define SS_VERSMAJ GLOBAL_VERSMAJ`

8.34.1.14 `#define SS_VERSMIN GLOBAL_VERSMIN`

8.34.1.15 `#define SS_VERSPL GLOBAL_VERSPL`

8.34.1.16 `#define SS_SND_FORMAT AFMT_S16_LE`

8.34.1.17 `#define SS_SND_FORMAT_SIZE 2`

8.34.1.18 `#define SS_SND_SAMPLERATE 44100`

8.34.1.19 `#define SS_SND_CHANNELS 2`

8.34.1.20 `#define SS_SND_DEVICE "dsp0"`

8.34.1.21 `#define SS_LOGFILE "log/soundsrv.log"`

8.34.1.22 `#define SS_SHUTDOWNFILE "/tmp/soundsrv.shutdown"`

8.34.1.23 `#define SS_MAXCLIENTS 8`

8.34.1.24 `#define SS_TIMEOUT 250`

8.34.1.25 `#define SS_DEFAULT_PORT 30000`

8.34.1.26 `#define SS_MAXERRORS 100`

8.34.1.27 `#define SS_SCHED_PRIORITY 1`

8.34.1.28 `#define SS_SOCKET_BUF_FRAGS 16`

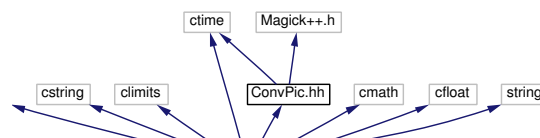
8.34.1.29 `#define SS2_CFGFILE "soundsrv2.cfg"`



## 8.35 ConvPic.cc File Reference

```
#include <cstdio>
#include <cstring>
#include <climits>
#include <ctime>
#include <cmath>
#include <cfloat>
#include <string>
#include "ConvPic.hh"
```

Include dependency graph for ConvPic.cc:



### Functions

- int [main](#) (int argc, char \*argv[ ])

### Variables

- [clConvPic](#) [ConvPic](#)

### 8.35.1 Function Documentation

#### 8.35.1.1 int main (int argc, char \* argv[ ])

### 8.35.2 Variable Documentation

#### 8.35.2.1 [clConvPic](#) [ConvPic](#)

## 8.36 ConvPic.hh File Reference

```
#include <ctime>
```

```
#include <Magick++.h>
```

Include dependency graph for ConvPic.hh:



This graph shows which files directly or indirectly include this file:



### Namespaces

- namespace [std](#)
- namespace [Magick](#)

### Compounds

- struct [\\_stLOFARInfo](#)  
*Information stored in saved LOFAR .tif.inf.*
- struct [\\_stDEMONInfo](#)  
*Information stored in saved DEMON .tif.inf.*
- struct [\\_stSGramInfo](#)  
*Information stored in saved spectrogram .tif.inf.*
- struct [\\_stTBearInfo](#)  
*Information stored in saved bearing-time .tif.inf.*
- union [\\_uPicInfo](#)  
*Combination of information in all .inf files.*
- class [clConvPic](#)

*Conversion of .tif + .tif.inf to image containing information in the .inf file.*

## Defines

- #define [CP\\_FONT\\_NAME](#) "helvetica"
- #define [CP\\_FONT\\_SMALL](#) 10
- #define [CP\\_FONT\\_NORMAL](#) 12
- #define [CP\\_FONT\\_LARGE](#) 16
- #define [CP\\_PAGE\\_SPEC](#) "+100+100"
- #define [CP\\_MARGIN\\_L](#) 100
- #define [CP\\_MARGIN\\_T](#) 100
- #define [CP\\_MARGIN\\_R](#) 50
- #define [CP\\_MARGIN\\_B](#) 50
- #define [CP\\_TICKL\\_LEN](#) 10
- #define [CP\\_TICKS\\_LEN](#) 5

## Typedefs

- typedef [\\_stLOFARInfo](#) [stLOFARInfo](#)  
*Information stored in saved LOFAR .tif.inf.*
- typedef [\\_stLOFARInfo](#) \* [stpLOFARInfo](#)  
*Information stored in saved LOFAR .tif.inf.*
- typedef [\\_stDEMONInfo](#) [stDEMONInfo](#)  
*Information stored in saved DEMON .tif.inf.*
- typedef [\\_stDEMONInfo](#) \* [stpDEMONInfo](#)  
*Information stored in saved DEMON .tif.inf.*
- typedef [\\_stSGramInfo](#) [stSGramInfo](#)  
*Information stored in saved spectrogram .tif.inf.*
- typedef [\\_stSGramInfo](#) \* [stpSGramInfo](#)  
*Information stored in saved spectrogram .tif.inf.*
- typedef [\\_stTBearInfo](#) [stTBearInfo](#)  
*Information stored in saved bearing-time .tif.inf.*
- typedef [\\_stTBearInfo](#) \* [stpTBearInfo](#)  
*Information stored in saved bearing-time .tif.inf.*
- typedef [\\_uPicInfo](#) [utPicInfo](#)  
*Combination of information in all .inf files.*

- typedef [\\_uPicInfo](#) \* [utpPicInfo](#)

*Combination of information in all .inf files.*

## Enumerations

- enum { [CP\\_TYPE\\_LOFAR](#), [CP\\_TYPE\\_DEMON](#), [CP\\_TYPE\\_SGRAM](#), [CP\\_TYPE\\_TBear](#) }

*Types for different kinds of saved images.*

### 8.36.1 Define Documentation

8.36.1.1 **#define CP\_FONT\_NAME "helvetica"**

8.36.1.2 **#define CP\_FONT\_SMALL 10**

8.36.1.3 **#define CP\_FONT\_NORMAL 12**

8.36.1.4 **#define CP\_FONT\_LARGE 16**

8.36.1.5 **#define CP\_PAGE\_SPEC "+100+100"**

8.36.1.6 **#define CP\_MARGIN\_L 100**

8.36.1.7 **#define CP\_MARGIN\_T 100**

8.36.1.8 **#define CP\_MARGIN\_R 50**

8.36.1.9 **#define CP\_MARGIN\_B 50**

8.36.1.10 **#define CP\_TICKL\_LEN 10**

8.36.1.11 **#define CP\_TICKS\_LEN 5**

### 8.36.2 Typedef Documentation

8.36.2.1 **typedef struct [\\_stLOFARInfo](#) [stLOFARInfo](#)**

Information stored in saved LOFAR .tif.inf.

8.36.2.2 **typedef struct [\\_stLOFARInfo](#) \* [stpLOFARInfo](#)**

Information stored in saved LOFAR .tif.inf.

### 8.36.2.3 typedef struct [\\_stDEMONInfo](#) stDEMONInfo

Information stored in saved DEMON .tif.inf.

### 8.36.2.4 typedef struct [\\_stDEMONInfo](#) \* stpDEMONInfo

Information stored in saved DEMON .tif.inf.

### 8.36.2.5 typedef struct [\\_stSGramInfo](#) stSGramInfo

Information stored in saved spectrogram .tif.inf.

### 8.36.2.6 typedef struct [\\_stSGramInfo](#) \* stpSGramInfo

Information stored in saved spectrogram .tif.inf.

### 8.36.2.7 typedef struct [\\_stTBearInfo](#) stTBearInfo

Information stored in saved bearing-time .tif.inf.

### 8.36.2.8 typedef struct [\\_stTBearInfo](#) \* stpTBearInfo

Information stored in saved bearing-time .tif.inf.

### 8.36.2.9 typedef union [\\_uPicInfo](#) utPicInfo

Combination of information in all .inf files.

### 8.36.2.10 typedef union [\\_uPicInfo](#) \* utpPicInfo

Combination of information in all .inf files.

## 8.36.3 Enumeration Type Documentation

### 8.36.3.1 anonymous enum

Types for different kinds of saved images.

Enumeration values:

**CP\_TYPE\_LOFAR**

**CP\_TYPE\_DEMON**

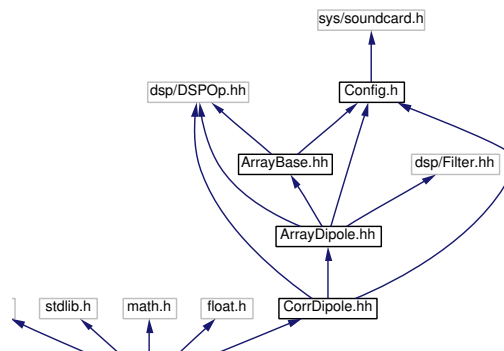
**CP\_TYPE\_SGRAM**

**CP\_TYPE\_TBEAR**

## 8.37 CorrDipole.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#include <float.h>
#include "CorrDipole.hh"
```

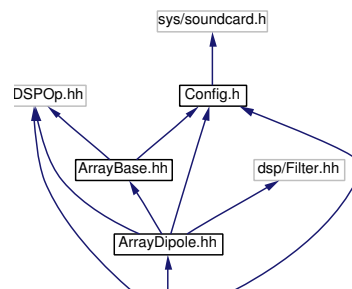
Include dependency graph for CorrDipole.cc:



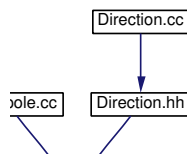
## 8.38 CorrDipole.hh File Reference

```
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "ArrayDipole.hh"
```

Include dependency graph for CorrDipole.hh:



This graph shows which files directly or indirectly include this file:



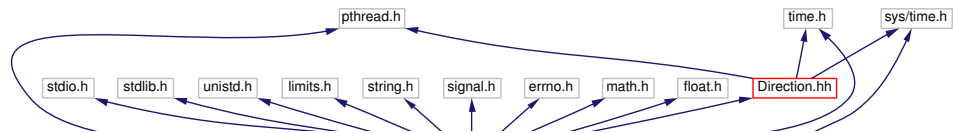
## Compounds

- class [clCorrDipole](#)  
*Correlator class for dipole array.*

### 8.39 Direction.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <signal.h>
#include <errno.h>
#include <math.h>
#include <float.h>
#include <time.h>
#include <sys/time.h>
#include "Direction.hh"
```

Include dependency graph for Direction.cc:



#### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])
- void \* [ThrReceiveData](#) (void \*vpParam)
- void \* [ThrProcessData](#) (void \*vpParam)
- void \* [ThrSendResults](#) (void \*vpParam)

#### Variables

- bool [bDebug](#) = false
- bool [bDaemon](#) = false
- const char \* [cpaArrayTypes](#) [ ]
- [cldirection](#) \* [Dir](#)



## 8.39.1 Function Documentation

8.39.1.1 void SigHandler (int *iSigNum*)

8.39.1.2 int main (int *argc*, char \* *argv* [ ])

8.39.1.3 void\* ThrReceiveData (void \* *vpParam*)

8.39.1.4 void\* ThrProcessData (void \* *vpParam*)

8.39.1.5 void\* ThrSendResults (void \* *vpParam*)

## 8.39.2 Variable Documentation

8.39.2.1 bool **bDebug** = false [static]

8.39.2.2 bool **bDaemon** = false [static]

8.39.2.3 const char\* **cpaArrayTypes**[ ] [static]

Initial value:

```
{ "Dipole", "Triangle", "Line",  
  "Plane", "Cylinder", "Sphere" }
```

8.39.2.4 **clDirection\*** **Dir** [static]

## 8.40 Direction.hh File Reference

```
#include <pthread.h>
#include <time.h>
#include <sys/time.h>
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "ArrayBase.hh"
#include "ArrayDipole.hh"
#include "BeamDipole.hh"
#include "CorrDipole.hh"
#include "CfgFile.hh"
#include "Messages.hh"
#include "RemoveNoise.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for Direction.hh:

This graph shows which files directly or indirectly include this file:

[n.cc](#)

### Compounds

- class [clDirection](#)  
*Direction calculation server.*

### Defines

- #define [AB\\_COMPILE](#)

## Enumerations

- enum {  
    DIR\_ARRAY\_TYPE\_DIPOLE = 0, DIR\_ARRAY\_TYPE\_TRIANGLE = 1,  
    DIR\_ARRAY\_TYPE\_LINE = 2, DIR\_ARRAY\_TYPE\_PLANE = 3,  
    DIR\_ARRAY\_TYPE\_CYLINDER = 4, DIR\_ARRAY\_TYPE\_SPHERE = 5 }

*Array types.*

### 8.40.1 Define Documentation

#### 8.40.1.1 #define AB\_COMPILE

### 8.40.2 Enumeration Type Documentation

#### 8.40.2.1 anonymous enum

*Array types.*

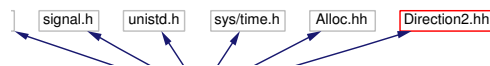
Enumeration values:

DIR\_ARRAY\_TYPE\_DIPOLE  
DIR\_ARRAY\_TYPE\_TRIANGLE  
DIR\_ARRAY\_TYPE\_LINE  
DIR\_ARRAY\_TYPE\_PLANE  
DIR\_ARRAY\_TYPE\_CYLINDER  
DIR\_ARRAY\_TYPE\_SPHERE

## 8.41 Direction2.cc File Reference

```
#include <stdio.h>
#include <signal.h>
#include <unistd.h>
#include <sys/time.h>
#include <Alloc.hh>
#include "Direction2.hh"
```

Include dependency graph for Direction2.cc:



### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bDebug](#)
- bool [bDaemon](#)
- [cldirection2](#) \* [Direction2](#)

### 8.41.1 Function Documentation

8.41.1.1 void [SigHandler](#) (int *iSigNum*)

8.41.1.2 int [main](#) (int *argc*, char \* *argv*[ ])

### 8.41.2 Variable Documentation

8.41.2.1 bool [bDebug](#) [static]

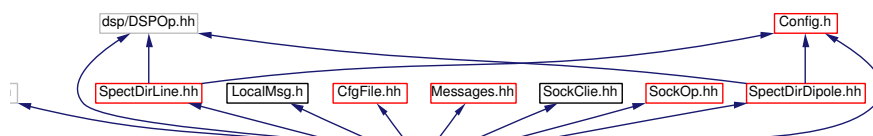
8.41.2.2 bool [bDaemon](#) [static]

8.41.2.3 [cldirection2](#)\* [Direction2](#)

## 8.42 Direction2.hh File Reference

```
#include <limits.h>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SpectDirDipole.hh"
#include "SpectDirLine.hh"
```

Include dependency graph for Direction2.hh:



This graph shows which files directly or indirectly include this file:

[n2.cc](#)

## Compounds

- class [clDirection2](#)  
*Spectrum based direction server.*

## Enumerations

- enum {  
[DIR2\\_ARRAY\\_TYPE\\_DIPOLE](#) = 0, [DIR2\\_ARRAY\\_TYPE\\_TRIANGLE](#) = 1,  
[DIR2\\_ARRAY\\_TYPE\\_LINE](#) = 2, [DIR2\\_ARRAY\\_TYPE\\_PLANE](#) = 3,

```
DIR2_ARRAY_TYPE_CYLINDER = 4, DIR2_ARRAY_TYPE_SPHERE = 5 }
```

*Array types.*

## 8.42.1 Enumeration Type Documentation

### 8.42.1.1 anonymous enum

Array types.

Enumeration values:

**DIR2\_ARRAY\_TYPE\_DIPOLE**

**DIR2\_ARRAY\_TYPE\_TRIANGLE**

**DIR2\_ARRAY\_TYPE\_LINE**

**DIR2\_ARRAY\_TYPE\_PLANE**

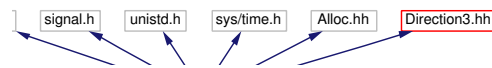
**DIR2\_ARRAY\_TYPE\_CYLINDER**

**DIR2\_ARRAY\_TYPE\_SPHERE**

## 8.43 Direction3.cc File Reference

```
#include <stdio.h>
#include <signal.h>
#include <unistd.h>
#include <sys/time.h>
#include <Alloc.hh>
#include "Direction3.hh"
```

Include dependency graph for Direction3.cc:



### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bDebug](#)
- bool [bDaemon](#)
- [clDirection3](#) \* [Direction3](#)

### 8.43.1 Function Documentation

#### 8.43.1.1 void [SigHandler](#) (int *iSigNum*)

#### 8.43.1.2 int [main](#) (int *argc*, char \* *argv*[ ])

### 8.43.2 Variable Documentation

#### 8.43.2.1 bool [bDebug](#) [static]

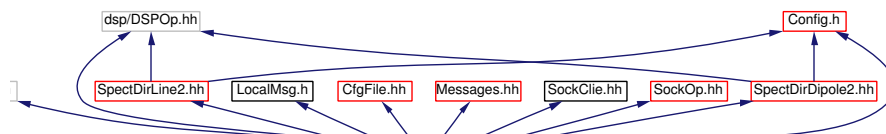
#### 8.43.2.2 bool [bDaemon](#) [static]

#### 8.43.2.3 [clDirection3](#)\* [Direction3](#)

## 8.44 Direction3.hh File Reference

```
#include <limits.h>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SpectDirDipole2.hh"
#include "SpectDirLine2.hh"
```

Include dependency graph for Direction3.hh:



This graph shows which files directly or indirectly include this file:

n3.cc

## Compounds

- class [clDirection3](#)  
*Spectrum based direction server.*

## Enumerations

- enum {  
[DIR3\\_ARRAY\\_TYPE\\_DIPOLE](#) = 0, [DIR3\\_ARRAY\\_TYPE\\_TRIANGLE](#) = 1,  
[DIR3\\_ARRAY\\_TYPE\\_LINE](#) = 2, [DIR3\\_ARRAY\\_TYPE\\_PLANE](#) = 3,



```
DIR3_ARRAY_TYPE_CYLINDER = 4, DIR3_ARRAY_TYPE_SPHERE = 5 }
```

*Array types.*

## 8.44.1 Enumeration Type Documentation

### 8.44.1.1 anonymous enum

Array types.

Enumeration values:

```
DIR3_ARRAY_TYPE_DIPOLE  
DIR3_ARRAY_TYPE_TRIANGLE  
DIR3_ARRAY_TYPE_LINE  
DIR3_ARRAY_TYPE_PLANE  
DIR3_ARRAY_TYPE_CYLINDER  
DIR3_ARRAY_TYPE_SPHERE
```

## 8.45 Extensions.cc File Reference

## 8.46 Extensions.hh File Reference

```
#include <string>
```

Include dependency graph for Extensions.hh:



```
graph LR; Extensions["Extensions.hh"] --> string["string"]
```

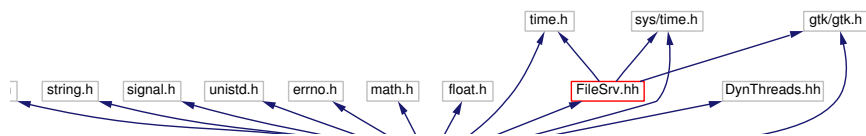
### Compounds

- class [estring](#)

## 8.47 FileSrv.cc File Reference

```
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <errno.h>
#include <math.h>
#include <float.h>
#include <time.h>
#include <sys/time.h>
#include <gtk/gtk.h>
#include <DynThreads.hh>
#include "FileSrv.hh"
```

Include dependency graph for FileSrv.cc:



## Functions

- `clDynThreads< clFileSrv > FileSrvThreads (FileSrv)`
- `int main (int argc, char *argv[ ])`
- `gboolean WrapOnDelete (GtkWidget *gwSender, GdkEvent *geEvent, gpointer gpData)`
- `void WrapOnFileSelectOkClick (GtkButton *gbSender, gpointer gpData)`
- `void WrapOnFileSelectCancelClick (GtkButton *gbSender, gpointer gpData)`
- `void WrapOnBrowseClick (GtkButton *gbSender, gpointer gpData)`
- `void WrapOnPlayStopToggle (GtkToggleButton *gthSender, gpointer gpData)`
- `void WrapOnPositionChange (GtkAdjustment *gaSender, gpointer gpData)`

## Variables

- `const char * cpWindowTxt = "File server"`
- `const char * cpFileSelectTxt = "Select file"`
- `const char * cpFileTxt = "Filename"`
- `const char * cpBrowseTxt = "Browse..."`

- `const char * cpPlayStopTxt [] = { "Play", "Stop" }`
- `const char * cpPositionTxt = "Position"`
- `clFileSrv FileSrv`

### 8.47.1 Function Documentation

8.47.1.1 `clDynThreads<clFileSrv> FileSrvThreads (FileSrv)`

8.47.1.2 `int main (int argc, char * argv[ ])`

8.47.1.3 `gboolean WrapOnDelete (GtkWidget * gwSender, GdkEvent * geEvent, gpointer gpData)`

8.47.1.4 `void WrapOnFileSelectOkClick (GtkButton * gbSender, gpointer gpData)`

8.47.1.5 `void WrapOnFileSelectCancelClick (GtkButton * gbSender, gpointer gpData)`

8.47.1.6 `void WrapOnBrowseClick (GtkButton * gbSender, gpointer gpData)`

8.47.1.7 `void WrapOnPlayStopToggle (GtkToggleButton * gtbSender, gpointer gpData)`

8.47.1.8 `void WrapOnPositionChange (GtkAdjustment * gaSender, gpointer gpData)`

### 8.47.2 Variable Documentation

8.47.2.1 `const char* cpWindowTxt = "File server" [static]`

8.47.2.2 `const char* cpFileSelectTxt = "Select file" [static]`

8.47.2.3 `const char* cpFileTxt = "Filename" [static]`

8.47.2.4 `const char* cpBrowseTxt = "Browse..." [static]`

8.47.2.5 `const char* cpPlayStopTxt[] = { "Play", "Stop" } [static]`

8.47.2.6 `const char* cpPositionTxt = "Position" [static]`

8.47.2.7 `clFileSrv FileSrv`

## 8.48 FileSrv.hh File Reference

```
#include <time.h>
#include <sys/time.h>
#include <gtk/gtk.h>
#include <sndfile.h>
#include <Alloc.hh>
#include <Mutex.hh>
#include <Condition.hh>
#include <dsp/ReBufferT.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockServ.hh"
#include "SockOp.hh"
```

Include dependency graph for FileSrv.hh:

This graph shows which files directly or indirectly include this file:



## Compounds

- class [clFileSrv](#)

*Input server for playback of previously recorded data.*

## Defines

- #define [FS\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [FS\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [FS\\_VER\\_PL](#) GLOBAL\_VERSPL
- #define [FS\\_WSPACING](#) 8
- #define [FS\\_ACCEPT\\_TIMEOUT](#) 250

### 8.48.1 Define Documentation

8.48.1.1 `#define FS_VER_MAJ GLOBAL_VERSMAJ`

8.48.1.2 `#define FS_VER_MIN GLOBAL_VERSMIN`

8.48.1.3 `#define FS_VER_PL GLOBAL_VERSPL`

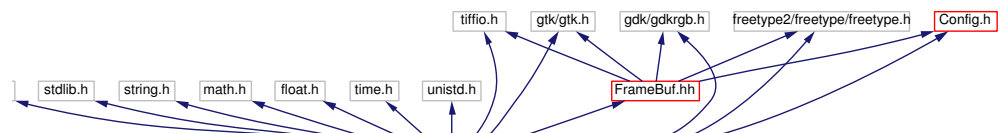
8.48.1.4 `#define FS_WSPACING 8`

8.48.1.5 `#define FS_ACCEPT_TIMEOUT 250`

## 8.49 FrameBuf.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <float.h>
#include <time.h>
#include <unistd.h>
#include <tiffio.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include <freetype2/freetype/freetype.h>
#include "Config.h"
#include "FrameBuf.hh"
```

Include dependency graph for FrameBuf.cc:





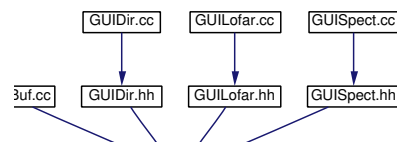
## 8.50 FrameBuf.hh File Reference

```
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include <tiffio.h>
#include <freetype2/freetype/freetype.h>
#include <Alloc.hh>
#include "Config.h"
#include "Palette.hh"
```

Include dependency graph for FrameBuf.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clFrameBuf](#)  
*Framebuffer class.*

## Defines

- #define [FB\\_TIFF\\_MODE](#) "w"
- #define [FB\\_TIFF\\_RESOLUTION](#) 100
- #define [FB\\_TIFF\\_FONTSIZE](#) 12
- #define [FB\\_TIFF\\_DATELEN](#) 19

## Enumerations

- enum { `FB_TYPE_NONE` = 0, `FB_TYPE_LINE` = 1, `FB_TYPE_COLUMN` = 2 }

*Frame buffer types.*

- enum {  
`FB_TIFF_COMPRESS_NONE` = `COMPRESSION_NONE`, `FB_TIFF_COMPRESS_RLE` = `COMPRESSION_CCITTRLE`, `FB_TIFF_COMPRESS_LZW` = `COMPRESSION_LZW`, `FB_TIFF_COMPRESS_JPEG` = `COMPRESSION_JPEG`,  
`FB_TIFF_COMPRESS_DEFLATE` = `COMPRESSION_ADOBE_DEFLATE` }

*TIFF CODECs.*

- enum { `FB_TIFF_CONT_NO`, `FB_TIFF_CONT_VERTICAL`, `FB_TIFF_CONT_HORIZONTAL` }

*TIFF save mode.*

### 8.50.1 Define Documentation

**8.50.1.1** `#define FB_TIFF_MODE "w"`

**8.50.1.2** `#define FB_TIFF_RESOLUTION 100`

**8.50.1.3** `#define FB_TIFF_FONTSIZE 12`

**8.50.1.4** `#define FB_TIFF_DATELEN 19`

### 8.50.2 Enumeration Type Documentation

#### 8.50.2.1 anonymous enum

Frame buffer types.

**Enumeration values:**

`FB_TYPE_NONE`

`FB_TYPE_LINE`

`FB_TYPE_COLUMN`

#### 8.50.2.2 anonymous enum

TIFF CODECs.

**Enumeration values:**

`FB_TIFF_COMPRESS_NONE`

**FB\_TIFF\_COMPRESS\_RLE**  
**FB\_TIFF\_COMPRESS\_LZW**  
**FB\_TIFF\_COMPRESS\_JPEG**  
**FB\_TIFF\_COMPRESS\_DEFLATE**

#### 8.50.2.3 anonymous enum

TIFF save mode.

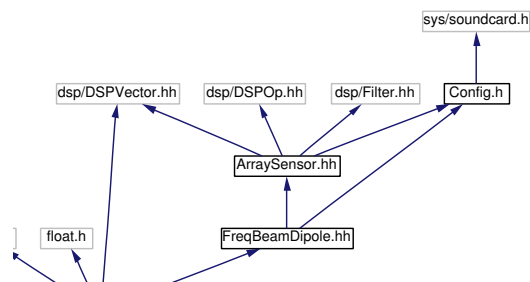
Enumeration values:

**FB\_TIFF\_CONT\_NO**  
**FB\_TIFF\_CONT\_VERTICAL**  
**FB\_TIFF\_CONT\_HORIZONTAL**

## 8.51 FreqBeamDipole.cc File Reference

```
#include <math.h>
#include <float.h>
#include <dsp/DSPVector.hh>
#include "FreqBeamDipole.hh"
```

Include dependency graph for FreqBeamDipole.cc:

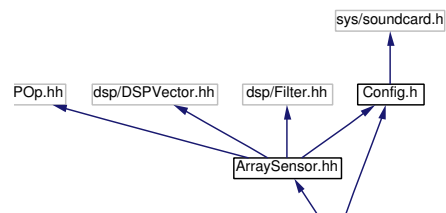


## 8.52 FreqBeamDipole.hh File Reference

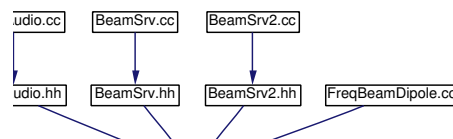
```
#include "Config.h"
```

```
#include "ArraySensor.hh"
```

Include dependency graph for FreqBeamDipole.hh:



This graph shows which files directly or indirectly include this file:



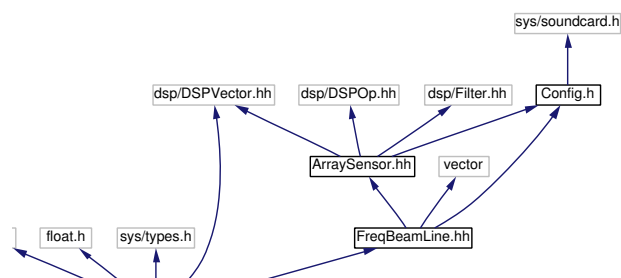
### Compounds

- class [clFreqBeamDipole](#)  
*Frequency-domain beamforming for dipole array.*

## 8.53 FreqBeamLine.cc File Reference

```
#include <math.h>
#include <float.h>
#include <sys/types.h>
#include <dsp/DSPVector.hh>
#include "FreqBeamLine.hh"
```

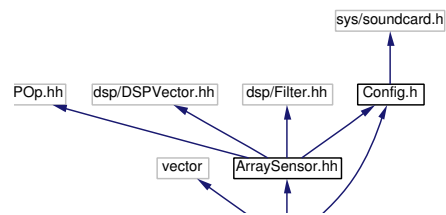
Include dependency graph for FreqBeamLine.cc:



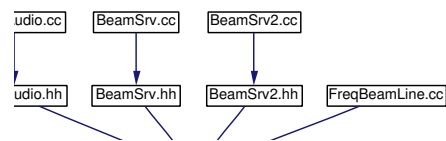
## 8.54 FreqBeamLine.hh File Reference

```
#include <vector>
#include "Config.h"
#include "ArraySensor.hh"
```

Include dependency graph for FreqBeamLine.hh:



This graph shows which files directly or indirectly include this file:



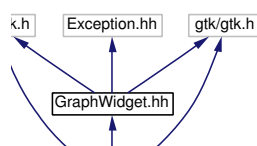
### Compounds

- class [clFreqBeamLine](#)  
*Frequency-domain beamforming for line array.*

## 8.55 GraphWidget.cc File Reference

```
#include <gdk/gdk.h>
#include <gtk/gtk.h>
#include "GraphWidget.hh"
```

Include dependency graph for GraphWidget.cc:





## 8.56 GraphWidget.hh File Reference

```
#include <gdk/gdk.h>
#include <gtk/gtk.h>
#include "Exception.hh"
```

Include dependency graph for GraphWidget.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clGraphWidget](#)
- class [clGraphWidget.clXGraphWidget](#)

### Defines

- #define [GRAPHWIDGET\\_MARGIN\\_TOP](#) 10
- #define [GRAPHWIDGET\\_MARGIN\\_LEFT](#) 50
- #define [GRAPHWIDGET\\_MARGIN\\_BOTTOM](#) 25
- #define [GRAPHWIDGET\\_MARGIN\\_RIGHT](#) 10

### 8.56.1 Define Documentation

**8.56.1.1 #define GRAPHWIDGET\_MARGIN\_TOP 10**

**8.56.1.2 #define GRAPHWIDGET\_MARGIN\_LEFT 50**

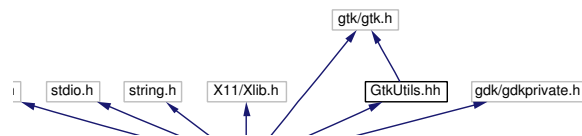
**8.56.1.3 #define GRAPHWIDGET\_MARGIN\_BOTTOM 25**

**8.56.1.4 #define GRAPHWIDGET\_MARGIN\_RIGHT 10**

## 8.57 GtkUtils.cc File Reference

```
#include <stdlib.h>
#include <stdio.h>
#include <string.h>
#include <X11/Xlib.h>
#include <gtk/gtk.h>
#include <gdk/gdkprivate.h>
#include "GtkUtils.hh"
```

Include dependency graph for GtkUtils.cc:



### Functions

- void [GListFreeItem](#) (gpointer *gpData*, gpointer *gpUserData*)

#### 8.57.1 Function Documentation

##### 8.57.1.1 void GListFreeItem (gpointer *gpData*, gpointer *gpUserData*)

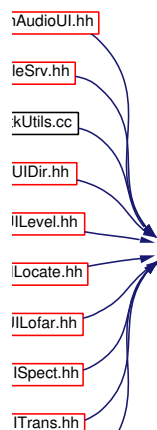
## 8.58 GtkUtils.hh File Reference

```
#include <gtk/gtk.h>
```

Include dependency graph for GtkUtils.hh:

k.h

This graph shows which files directly or indirectly include this file:



### Compounds

- class `clGtkUtils`

*Gtk+ utility class.*

### Defines

- #define `GU_TXTBUFSIZE` 1024
- #define `EVENT_METHOD(i, x)` `GTK_WIDGET_GET_CLASS(GTK_OBJECT(i)) → x`

### **8.58.1 Define Documentation**

**8.58.1.1 #define GU\_TXTBUFSIZE 1024**

**8.58.1.2 #define EVENT\_METHOD(i, x) GTK\_WIDGET\_GET\_CLASS(GTK-  
OBJECT(i)) → x**

## 8.59 GUIDir.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <time.h>
#include <signal.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUIDir.hh"
```

Include dependency graph for GUIDir.cc:



### Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- [int main](#) (int argc, char \*argv[ ])
- [gint WrapOnDelete](#) (GtkWidget \*gwSender, GdkEventAny \*geaEvent)
- [void WrapOnHideToggled](#) (GtkToggleButton \*gtbSender, gpointer gpData)
- [gint WrapOnConnectClick](#) (GtkWidget \*gwSender, gpointer gpData)
- [void WrapOnFreezeToggled](#) (GtkToggleButton \*gtbSender, gpointer gpData)
- [gint WrapOnExposeWorm](#) (GtkWidget \*gwSender, GdkEventExpose \*gee-Event)
- [gint WrapOnMotionWorm](#) (GtkWidget \*gwSender, GdkEventMotion \*gem-Event)
- [gint WrapOnPaletteActivate](#) (GtkWidget \*gwSender, gpointer gpData)
- [void WrapOnSaveClicks](#) (GtkWidget \*gwSender, gpointer gpData)
- [void WrapOnGdkInput](#) (gpointer gpData, gint giSource, GdkInputCondition gic-Condition)

### Variables

- [const char \\* cpWindowTxt](#) = "Direction"
- [const char \\* cpLServerTxt](#) = "Server"
- [const char \\* cpBConnectTxt](#) = "Connect"
- [const char \\* cpBDisconnectTxt](#) = "Disconnect"
- [const char \\* cpCBFreezeTxt](#) = "Freeze"

- `const char * cpLAlgorithmTxt = "Algorithm"`
- `const char * cpaLAlgorithmMenu []`
- `const char * cpLSoundSpeedTxt = "Sound speed"`
- `const char * cpLLowFrequencyLimitTxt = "Low frequency limit"`
- `const char * cpLIntegrationTimeTxt = "Integration time"`
- `const char * cpLScalingTxt = "Scaling"`
- `const char * cpaLScalingMenu []`
- `const char * cpLScalingExponentTxt = "Scaling exponent"`
- `const char * cpLRemoveNoiseTxt = "Remove noise"`
- `const char * cpaLRemoveNoiseMenu []`
- `const char * cpLAlphaTxt = "Alpha"`
- `const char * cpLMeanLengthTxt = "Mean length"`
- `const char * cpLGapLengthTxt = "Gap length"`
- `const char * cpCBNormalizeTxt = "Normalize"`
- `const char * cpCBNoFilterTxt = "No filter"`
- `const char * cpLPaletteTxt = "Palette"`
- `const char * cpaLPaletteMenu []`
- `const char * cpLLeftDirectionTxt = "Left direction"`
- `const char * cpLRightDirectionTxt = "Right direction"`
- `const char * cpLSectorCountTxt = "Sector count"`
- `const char * cpLDirectionScaleTxt = "Direction scale"`
- `const char * cpCBSavingTxt = "Saving"`
- `const char * cpBSaveTxt = "Save"`
- `const char * cpFSSaveTxt = "Save to TIFF file"`
- `clGUIDir * GUIDir`

## 8.59.1 Function Documentation

8.59.1.1 `G_LOCK_DEFINE_STATIC (gmInputMutex)`

8.59.1.2 `int main (int argc, char * argv[ ])`

8.59.1.3 `gint WrapOnDelete (GtkWidget * gwSender, GdkEventAny *  
geaEvent)`

8.59.1.4 `void WrapOnHideToggled (GtkToggleButton * gtbSender, gpointer  
gpData)`

8.59.1.5 `gint WrapOnConnectClick (GtkWidget * gwSender, gpointer gpData)`

8.59.1.6 `void WrapOnFreezeToggled (GtkToggleButton * gtbSender, gpointer  
gpData)`

8.59.1.7 `gint WrapOnExposeWorm (GtkWidget * gwSender, GdkEventExpose  
* geeEvent)`

8.59.1.8 `gint WrapOnMotionWorm (GtkWidget * gwSender, GdkEventMotion  
* gemEvent)`

8.59.1.9 `gint WrapOnPaletteActivate (GtkWidget * gwSender, gpointer gpData)`

8.59.1.10 `void WrapOnSaveClicks (GtkWidget * gwSender, gpointer gpData)`

8.59.1.11 `void WrapOnGdkInput (gpointer gpData, gint giSource,  
GdkInputCondition gicCondition)`

## 8.59.2 Variable Documentation

8.59.2.1 `const char* cpWindowTxt = "Direction" [static]`

8.59.2.2 `const char* cpLServerTxt = "Server" [static]`

8.59.2.3 `const char* cpBConnectTxt = "Connect" [static]`

8.59.2.4 `const char* cpBDisconnectTxt = "Disconnect" [static]`

8.59.2.5 `const char* cpCBFreezeTxt = "Freeze" [static]`

8.59.2.6 `const char* cpLAlgorithmTxt = "Algorithm" [static]`

8.59.2.7 `const char* cpaLAlgorithmMenu[ ] [static]`

Initial value:

```
{ "Beamforming", "Correlation",
```

```
"Beamforming & Correlation", "Spectrum power/phase" }
```

**8.59.2.8** `const char* cpLSoundSpeedTxt = "Sound speed" [static]`

**8.59.2.9** `const char* cpLLowFrequencyLimitTxt = "Low frequency limit"  
[static]`

**8.59.2.10** `const char* cpLIntegrationTimeTxt = "Integration time"  
[static]`

**8.59.2.11** `const char* cpLScalingTxt = "Scaling" [static]`

**8.59.2.12** `const char* cpaLScalingMenu[] [static]`

**Initial value:**

```
{ "Linear", "Logarithmic",  
  "Exponential", "Sine" }
```

**8.59.2.13** `const char* cpLScalingExponentTxt = "Scaling exponent"  
[static]`

**8.59.2.14** `const char* cpLRemoveNoiseTxt = "Remove noise" [static]`

**8.59.2.15** `const char* cpaLRemoveNoiseMenu[] [static]`

**Initial value:**

```
{ "None", "TPSW", "OTA",  
  "Diff", "InvDiff" }
```

**8.59.2.16** `const char* cpLAlphaTxt = "Alpha" [static]`

**8.59.2.17** `const char* cpLMeanLengthTxt = "Mean length" [static]`

**8.59.2.18** `const char* cpLGapLengthTxt = "Gap length" [static]`

**8.59.2.19** `const char* cpCBNormalizeTxt = "Normalize" [static]`

**8.59.2.20** `const char* cpCBNoFilterTxt = "No filter" [static]`

**8.59.2.21** `const char* cpLPaletteTxt = "Palette" [static]`

**8.59.2.22** `const char* cpaLPaletteMenu[] [static]`

**Initial value:**



```
{ "BW", "HSV", "Light", "Temp",  
  "Dir", "Green", "Green2", "PureGreen", "WB" }
```

**8.59.2.23**   `const char* cpLLeftDirectionTxt = "Left direction"   [static]`

**8.59.2.24**   `const char* cpLRightDirectionTxt = "Right direction"   [static]`

**8.59.2.25**   `const char* cpLSectorCountTxt = "Sector count"   [static]`

**8.59.2.26**   `const char* cpLDirectionScaleTxt = "Direction scale"   [static]`

**8.59.2.27**   `const char* cpCBSavingTxt = "Saving"   [static]`

**8.59.2.28**   `const char* cpBSaveTxt = "Save"   [static]`

**8.59.2.29**   `const char* cpFSSaveTxt = "Save to TIFF file"   [static]`

**8.59.2.30**   `clGUIDir* GUIDir`

## 8.60 GUIDir.hh File Reference

```
#include <ctime>
#include <string>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "FrameBuf.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for GUIDir.hh:



This graph shows which files directly or indirectly include this file:

`.CC`

## Compounds

- class `clGUIDir`  
*Direction finding GUI.*

## Defines

- #define `DGUL_VER_MAJ` GLOBAL\_VERSMAJ
- #define `DGUL_VER_MIN` GLOBAL\_VERSMIN

- #define `DGUL_VER_PL` GLOBAL\_VERSPL
- #define `DGUL_PADDING` 8
- #define `DGUL_ENTRY_WIDTH` 80
- #define `DGUL_SERVER_MAXLEN` 255
- #define `DGUL_WORM_BG` 0x00ffffff
- #define `DGUL_WORM_FG` 0x00000000
- #define `DGUL_CONV_BUF_SIZE` 255
- #define `DGUL_ALGORITHM_ITEMS` 4
- #define `DGUL_SCALING_ITEMS` 4
- #define `DGUL_REMOVE_NOISE_ITEMS` 5
- #define `DGUL_PALETTE_ITEMS` 9

## Enumerations

- enum {  
  
    `DGUL_PAL_BW` = 0, `DGUL_PAL_HSV` = 1, `DGUL_PAL_LIGHT` = 2, `DGUL_PAL_TEMP` = 3,  
  
    `DGUL_PAL_DIR` = 4, `DGUL_PAL_GREEN` = 5, `DGUL_PAL_GREEN2` = 6,  
    `DGUL_PAL_PUREGREEN` = 7,  
  
    `DGUL_PAL_WB` = 8 }

*Available palettes.*

### **8.60.1 Define Documentation**

**8.60.1.1 #define DGUI\_VER\_MAJ GLOBAL\_VERSMAJ**

**8.60.1.2 #define DGUI\_VER\_MIN GLOBAL\_VERSMIN**

**8.60.1.3 #define DGUI\_VER\_PL GLOBAL\_VERSPL**

**8.60.1.4 #define DGUI\_PADDING 8**

**8.60.1.5 #define DGUI\_ENTRY\_WIDTH 80**

**8.60.1.6 #define DGUI\_SERVER\_MAXLEN 255**

**8.60.1.7 #define DGUI\_WORM\_BG 0x00ffffff**

**8.60.1.8 #define DGUI\_WORM\_FG 0x00000000**

**8.60.1.9 #define DGUI\_CONV\_BUF\_SIZE 255**

**8.60.1.10 #define DGUI\_ALGORITHM\_ITEMS 4**

**8.60.1.11 #define DGUI\_SCALING\_ITEMS 4**

**8.60.1.12 #define DGUI\_REMOVE\_NOISE\_ITEMS 5**

**8.60.1.13 #define DGUI\_PALETTE\_ITEMS 9**

### **8.60.2 Enumeration Type Documentation**

#### **8.60.2.1 anonymous enum**

Available palettes.

**Enumeration values:**

**DGUIPAL\_BW**

**DGUIPAL\_HSV**

**DGUIPAL\_LIGHT**

**DGUIPAL\_TEMP**

**DGUIPAL\_DIR**

**DGUIPAL\_GREEN**

**DGUIPAL\_GREEN2**

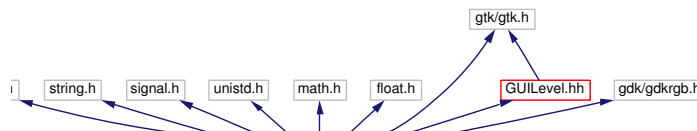
**DGUIPAL\_PUREGREEN**

**DGUIPAL\_WB**

## 8.61 GUILevel.cc File Reference

```
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <math.h>
#include <float.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUILevel.hh"
```

Include dependency graph for GUILevel.cc:



### Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- int [main](#) (int argc, char \*argv[ ])
- gboolean [WrapOnDelete](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- void [WrapOnConnectClick](#) (GtkButton \*gbSender, gpointer gpData)
- gboolean [WrapOnSofarExpose](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent, gpointer gpData)
- gboolean [WrapOnSofarMotion](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent, gpointer gpData)
- gboolean [WrapOnSofarConfigure](#) (GtkWidget \*gwSender, GdkEventConfigure \*gecEvent, gpointer gpData)
- void [WrapOnGdkInput](#) (gpointer gpData, gint iSource, GdkInputCondition gicCondition)

### Variables

- const char \* [cpWindowTxt](#) = "Level"
- const char \* [cpLServerTxt](#) = "Server"
- const char \* [cpALChannelTxt](#) [ ] = { "Channel", "Direction" }
- const char \* [cpBConnectTxt](#) = "Connect"

- const char \* [cpLAlgorithmTxt](#) = "Algorithm"
- const char \* [cpaLAlgorithmMenu](#) []
- const char \* [cpLIntegrationTimeTxt](#) = "Integration time"
- const char \* [cpLLowFrequencyTxt](#) = "Lower frequency"
- const char \* [cpLHighFrequencyTxt](#) = "Higher frequency"
- const char \* [cpLDisplayLowTxt](#) = "Display low limit"
- const char \* [cpLDisplayHighTxt](#) = "Display high limit"
- [clGUILevel](#) [GUILevel](#)

### 8.61.1 Function Documentation

#### 8.61.1.1 G\_LOCK\_DEFINE\_STATIC (gmInputMutex)

#### 8.61.1.2 int main (int argc, char \* argv[])

#### 8.61.1.3 gboolean WrapOnDelete (GtkWidget \* gwSender, GdkEvent \* geEvent, gpointer gpData)

#### 8.61.1.4 void WrapOnConnectClick (GtkButton \* gbSender, gpointer gpData)

#### 8.61.1.5 gboolean WrapOnSofarExpose (GtkWidget \* gwSender, GdkEventExpose \* geeEvent, gpointer gpData)

#### 8.61.1.6 gboolean WrapOnSofarMotion (GtkWidget \* gwSender, GdkEventMotion \* gemEvent, gpointer gpData)

#### 8.61.1.7 gboolean WrapOnSofarConfigure (GtkWidget \* gwSender, GdkEventConfigure \* gecEvent, gpointer gpData)

#### 8.61.1.8 void WrapOnGdkInput (gpointer gpData, gint iSource, GdkInputCondition gicCondition)

### 8.61.2 Variable Documentation

#### 8.61.2.1 const char\* [cpWindowTxt](#) = "Level" [static]

#### 8.61.2.2 const char\* [cpLServerTxt](#) = "Server" [static]

#### 8.61.2.3 const char\* [cpaLChannelTxt](#)[] = { "Channel", "Direction" } [static]

#### 8.61.2.4 const char\* [cpBConnectTxt](#) = "Connect" [static]

#### 8.61.2.5 const char\* [cpLAlgorithmTxt](#) = "Algorithm" [static]

#### 8.61.2.6 const char\* [cpaLAlgorithmMenu](#)[] [static]

Initial value:

```
{ "Peak", "RMS", "Mean", "Median",  
  "StdDev" }
```

**8.61.2.7**   `const char* cpLIntegrationTimeTxt = "Integration time"`   `[static]`

**8.61.2.8**   `const char* cpLLowFrequencyTxt = "Lower frequency"`   `[static]`

**8.61.2.9**   `const char* cpLHighFrequencyTxt = "Higher frequency"`   `[static]`

**8.61.2.10**   `const char* cpLDisplayLowTxt = "Display low limit"`   `[static]`

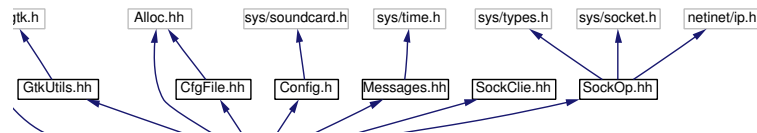
**8.61.2.11**   `const char* cpLDisplayHighTxt = "Display high limit"`   `[static]`

**8.61.2.12**   `clGUILevel GUILevel`

## 8.62 GUILevel.hh File Reference

```
#include <gtk/gtk.h>
#include <Alloc.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for GUILevel.hh:



This graph shows which files directly or indirectly include this file:

[rel.cc](#)

## Compounds

- class [clGUILevel](#)  
*GUI for level server.*

## Defines

- #define [GULEV\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [GULEV\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [GULEV\\_VER\\_PL](#) GLOBAL\_VERSPL
- #define [GULEV\\_WSPACING](#) 8
- #define [GULEV\\_ENTRY\\_WIDTH](#) 80
- #define [GULEV\\_SOFAR\\_WIDTH](#) 600



- #define `GUILEV_SOFAR_HEIGHT` 100
- #define `GUILEV_SERVER_MAXLEN` 256
- #define `GUILEV_CH_LOWER` 1
- #define `GUILEV_CH_UPPER` 16
- #define `GUILEV_LINE_BG` 0x00ffffff
- #define `GUILEV_LINE_FG` 0x000000ff
- #define `GUILEV_ALGORITHM_ITEMS` 5

### 8.62.1 Define Documentation

**8.62.1.1** #define `GUILEV_VER_MAJ` `GLOBAL_VERSMAJ`

**8.62.1.2** #define `GUILEV_VER_MIN` `GLOBAL_VERSMIN`

**8.62.1.3** #define `GUILEV_VER_PL` `GLOBAL_VERSPL`

**8.62.1.4** #define `GUILEV_WSPACING` 8

**8.62.1.5** #define `GUILEV_ENTRY_WIDTH` 80

**8.62.1.6** #define `GUILEV_SOFAR_WIDTH` 600

**8.62.1.7** #define `GUILEV_SOFAR_HEIGHT` 100

**8.62.1.8** #define `GUILEV_SERVER_MAXLEN` 256

**8.62.1.9** #define `GUILEV_CH_LOWER` 1

**8.62.1.10** #define `GUILEV_CH_UPPER` 16

**8.62.1.11** #define `GUILEV_LINE_BG` 0x00ffffff

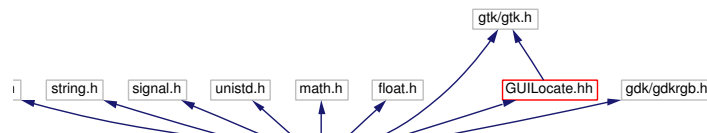
**8.62.1.12** #define `GUILEV_LINE_FG` 0x000000ff

**8.62.1.13** #define `GUILEV_ALGORITHM_ITEMS` 5

## 8.63 GUILocate.cc File Reference

```
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <math.h>
#include <float.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUILocate.hh"
```

Include dependency graph for GUILocate.cc:



### Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- [int main](#) (int argc, char \*argv[ ])
- [gboolean WrapOnDelete](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- [void WrapOnConnectClick](#) (GtkButton \*gbSender, gpointer gpData)
- [void WrapOnPaletteActivate](#) (GtkMenuItem \*gmiSender, gpointer gpData)
- [gboolean WrapOnLocateExpose](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent, gpointer gpData)
- [gboolean WrapOnLocateMotion](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent, gpointer gpData)
- [void WrapOnGdkInput](#) (gpointer gpData, gint iSource, GdkInputCondition gicCondition)

### Variables

- [const char \\* cpWindowTxt](#) = "Locate"
- [const char \\* cpLServerTxt](#) = "Server"
- [const char \\* cpBConnectTxt](#) = "Connect"
- [const char \\* cpLPaletteTxt](#) = "Palette"
- [const char \\* cpaLPaletteMenu](#) [ ]
- [cIGUILocate GUILocate](#)

### 8.63.1 Function Documentation

8.63.1.1 `G_LOCK_DEFINE_STATIC (gmInputMutex)`

8.63.1.2 `int main (int argc, char * argv[ ])`

8.63.1.3 `gboolean WrapOnDelete (GtkWidget * gwSender, GdkEvent * geEvent, gpointer gpData)`

8.63.1.4 `void WrapOnConnectClick (GtkButton * gbSender, gpointer gpData)`

8.63.1.5 `void WrapOnPaletteActivate (GtkMenuItem * gmiSender, gpointer gpData)`

8.63.1.6 `gboolean WrapOnLocateExpose (GtkWidget * gwSender, GdkEventExpose * geeEvent, gpointer gpData)`

8.63.1.7 `gboolean WrapOnLocateMotion (GtkWidget * gwSender, GdkEventMotion * gemEvent, gpointer gpData)`

8.63.1.8 `void WrapOnGdkInput (gpointer gpData, gint iSource, GdkInputCondition gicCondition)`

### 8.63.2 Variable Documentation

8.63.2.1 `const char* cpWindowTxt = "Locate" [static]`

8.63.2.2 `const char* cpLServerTxt = "Server" [static]`

8.63.2.3 `const char* cpBConnectTxt = "Connect" [static]`

8.63.2.4 `const char* cpLPaletteTxt = "Palette" [static]`

8.63.2.5 `const char* cpLPaletteMenu[] [static]`

Initial value:

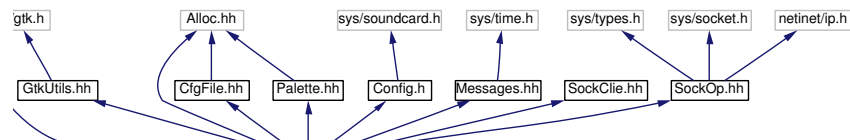
```
{ "BW", "HSV", "Light", "Temp",
  "Dir", "Green", "Green2", "PureGreen", "WB" }
```

8.63.2.6 `clGUILocate GUILocate`

## 8.64 GUILocate.hh File Reference

```
#include <gtk/gtk.h>
#include <Alloc.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "Palette.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for GUILocate.hh:



This graph shows which files directly or indirectly include this file:

[ate.cc](#)

## Compounds

- class [clGUILocate](#)  
*GUI for locating.*

## Defines

- #define [GUILOC\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [GUILOC\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [GUILOC\\_VER\\_PL](#) GLOBAL\_VERSPL
- #define [GUILOC\\_WSPACING](#) 8

- #define `GUILOC_ENTRY_WIDTH` 80
- #define `GUILOC_SERVER_MAXLEN` 256
- #define `GUILOC_LOCATE_BG` 0x00000000
- #define `GUILOC_LOCATE_FG` 0x00ffffff
- #define `GUILOC_PALETTE_ITEMS` 9

## Enumerations

- enum {  
    `GUILOC_PAL_BW` = 0, `GUILOC_PAL_HSV` = 1, `GUILOC_PAL_LIGHT` = 2,  
    `GUILOC_PAL_TEMP` = 3,  
    `GUILOC_PAL_DIR` = 4, `GUILOC_PAL_GREEN` = 5, `GUILOC_PAL_GREEN2`  
    = 6, `GUILOC_PAL_PUREGREEN` = 7,  
    `GUILOC_PAL_WB` = 8 }

*Available palettes.*

### 8.64.1 Define Documentation

**8.64.1.1** #define `GUILOC_VER_MAJ` GLOBAL\_VERSMAJ

**8.64.1.2** #define `GUILOC_VER_MIN` GLOBAL\_VERSMIN

**8.64.1.3** #define `GUILOC_VER_PL` GLOBAL\_VERSPL

**8.64.1.4** #define `GUILOC_WSPACING` 8

**8.64.1.5** #define `GUILOC_ENTRY_WIDTH` 80

**8.64.1.6** #define `GUILOC_SERVER_MAXLEN` 256

**8.64.1.7** #define `GUILOC_LOCATE_BG` 0x00000000

**8.64.1.8** #define `GUILOC_LOCATE_FG` 0x00ffffff

**8.64.1.9** #define `GUILOC_PALETTE_ITEMS` 9

### 8.64.2 Enumeration Type Documentation

**8.64.2.1** anonymous enum

*Available palettes.*

**Enumeration values:**

`GUILOC_PAL_BW`

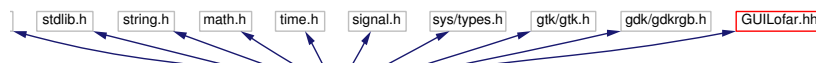
`GUILOC_PAL_HSV`

**GUILLOC\_PAL\_LIGHT**  
**GUILLOC\_PAL\_TEMP**  
**GUILLOC\_PAL\_DIR**  
**GUILLOC\_PAL\_GREEN**  
**GUILLOC\_PAL\_GREEN2**  
**GUILLOC\_PAL\_PUREGREEN**  
**GUILLOC\_PAL\_WB**

## 8.65 GUILOfar.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <time.h>
#include <signal.h>
#include <sys/types.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUILOfar.hh"
```

Include dependency graph for GUILOfar.cc:



## Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- int [main](#) (int argc, char \*argv[ ])
- gint [WrapOnDelete](#) (GtkWidget \*gwSender, GdkEventAny \*geaEvent)
- void [WrapOnHideToggled](#) (GtkToggleButton \*gtbSender, gpointer gpData)
- gint [WrapOnConnectClick](#) (GtkWidget \*gwSender, gpointer gpData)
- void [WrapOnFreezeToggled](#) (GtkToggleButton \*gtbSender, gpointer gpData)
- gint [WrapOnExposeLofar](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent, gpointer gpData)
- gint [WrapOnConfigureLofar](#) (GtkWidget \*gwSender, GdkEventConfigure \*gecEvent, gpointer gpData)
- gint [WrapOnExposeLine](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent, gpointer gpData)
- gint [WrapOnExposeCursor](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent, gpointer gpData)
- gint [WrapOnMotionLofar](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent, gpointer gpData)
- gint [WrapOnPaletteActivate](#) (GtkWidget \*gwSender, gpointer gpData)
- void [WrapOnAverageToggled](#) (GtkToggleButton \*gtbSender, gpointer gpData)
- void [WrapOnClipValueChanged](#) (GtkAdjustment \*gaSender, gpointer gpData)
- void [WrapOnSaveClicks](#) (GtkWidget \*gwSender, gpointer gpData)
- void [WrapOnGdkInput](#) (gpointer gpData, gint giSource, GdkInputCondition gicCondition)

## Variables

- `const char * cpWindowTxt = "LOFAR / DEMON"`
- `const char * cpLServerTxt = "Server"`
- `const char * cpLChannelTxt [] = { "Channel", "Direction" }`
- `const char * cpBConnectTxt = "Connect"`
- `const char * cpBDisconnectTxt = "Disconnect"`
- `const char * cpCBFreezeTxt = "Freeze"`
- `const char * cpLTypeTxt = "Type"`
- `const char * cpLTypeMenu [] = { "FFT", "Cepstrum", "Autocorr." }`
- `const char * cpLWindowTxt = "Window"`
- `const char * cpLWindowMenu []`
- `const char * cpLWinParamTxt = "Window param."`
- `const char * cpLWinLengthTxt = "Window length"`
- `const char * cpLWinLengthMenu []`
- `const char * cpLLowerFreqTxt = "Lower freq."`
- `const char * cpLHigherFreqTxt = "Higher freq."`
- `const char * cpLOverlapTxt = "Overlap %"`
- `const char * cpLRemoveNoiseTxt = "Remove noise"`
- `const char * cpLRemoveNoiseMenu []`
- `const char * cpLAlphaTxt = "Alpha"`
- `const char * cpLMeanLengthTxt = "Mean length"`
- `const char * cpLGapLengthTxt = "Gap length"`
- `const char * cpLAverageCountTxt = "Average count"`
- `const char * cpLClipTxt = "Clip"`
- `const char * cpLClipMenu []`
- `const char * cpCBLinearTxt = "Linear"`
- `const char * cpCBDemonTxt = "DEMON"`
- `const char * cpLPaletteTxt = "Palette"`
- `const char * cpLPaletteMenu []`
- `const char * cpCAverageTxt = "ContAvg"`
- `const char * cpCBSavingTxt = "Saving"`
- `const char * cpBSaveTxt = "Save"`
- `const char * cpFSSaveTxt = "Save to TIFF file"`
- `const char * cpLClipValueTxt = "Clip value"`
- `clGUILOfar * GUILOfar`





## 8.65.1 Function Documentation

8.65.1.1 `G_LOCK_DEFINE_STATIC (gmInputMutex)`

8.65.1.2 `int main (int argc, char * argv[ ])`

8.65.1.3 `gint WrapOnDelete (GtkWidget * gwSender, GdkEventAny *  
geaEvent)`

8.65.1.4 `void WrapOnHideToggled (GtkToggleButton * gtbSender, gpointer  
gpData)`

8.65.1.5 `gint WrapOnConnectClick (GtkWidget * gwSender, gpointer gpData)`

8.65.1.6 `void WrapOnFreezeToggled (GtkToggleButton * gtbSender, gpointer  
gpData)`

8.65.1.7 `gint WrapOnExposeLofar (GtkWidget * gwSender, GdkEventExpose  
* geeEvent, gpointer gpData)`

8.65.1.8 `gint WrapOnConfigureLofar (GtkWidget * gwSender,  
GdkEventConfigure * gecEvent, gpointer gpData)`

8.65.1.9 `gint WrapOnExposeLine (GtkWidget * gwSender, GdkEventExpose *  
geeEvent, gpointer gpData)`

8.65.1.10 `gint WrapOnExposeCursor (GtkWidget * gwSender,  
GdkEventExpose * geeEvent, gpointer gpData)`

8.65.1.11 `gint WrapOnMotionLofar (GtkWidget * gwSender, GdkEventMotion  
* gemEvent, gpointer gpData)`

8.65.1.12 `gint WrapOnPaletteActivate (GtkWidget * gwSender, gpointer  
gpData)`

8.65.1.13 `void WrapOnAverageToggled (GtkToggleButton * gtbSender,  
gpointer gpData)`

8.65.1.14 `void WrapOnClipValueChanged (GtkAdjustment * gaSender,  
gpointer gpData)`

8.65.1.15 `void WrapOnSaveClicks (GtkWidget * gwSender, gpointer gpData)`

8.65.1.16 `void WrapOnGdkInput (gpointer gpData, gint giSource,  
GdkInputCondition gicCondition)`

## 8.65.2 Variable Documentation

8.65.2.1 `const char* cpWindowTxt = "LOFAR / DEMON" [static]`

8.65.2.2 `const char* cpLServerTxt = "Server" [static]`

8.65.2.3 `const char* cpLChannelTxt[ ] = { "Channel", "Direction" }  
[static]`

8.65.2.4 `const char* cpBConnectTxt = "Connect" [static]`

8.65.2.5 `const char* cpBDisconnectTxt = "Disconnect" [static]`

```
{ "Rectangle", "Bartlett",
  "Blackman", "Blackman-Harris", "Cosine tapered", "Exponential",
  "Flat-top", "Hamming", "Hanning", "Kaiser", "Kaiser-Bessel", "Tukey" }
```

**8.65.2.11** `const char* cpLWinParamTxt = "Window param."` [static]

**8.65.2.12** `const char* cpLWinLengthTxt = "Window length"` [static]

**8.65.2.13** `const char* cpaLWinLengthMenu []` [static]

**Initial value:**

```
{ "1024", "2048", "4096", "8192",
  "16384", "32768", "65536" }
```

**8.65.2.14** `const char* cpLLowerFreqTxt = "Lower freq."` [static]

**8.65.2.15** `const char* cpLHigherFreqTxt = "Higher freq."` [static]

**8.65.2.16** `const char* cpLOverlapTxt = "Overlap %"` [static]

**8.65.2.17** `const char* cpLRemoveNoiseTxt = "Remove noise"` [static]

**8.65.2.18** `const char* cpaLRemoveNoiseMenu []` [static]

**Initial value:**

```
{ "None", "TPSW", "OTA",
  "Diff", "InvDiff", "StdDev" }
```

**8.65.2.19** `const char* cpLAlphaTxt = "Alpha"` [static]

**8.65.2.20** `const char* cpLMeanLengthTxt = "Mean length"` [static]

**8.65.2.21** `const char* cpLGapLengthTxt = "Gap length"` [static]

**8.65.2.22** `const char* cpLAverageCountTxt = "Average count"` [static]

**8.65.2.23** `const char* cpLClipTxt = "Clip"` [static]

**8.65.2.24** `const char* cpaLClipMenu []` [static]

**Initial value:**

```
{ "None", "Low", "Both", "Mean" ,
  "Median", "10 dB", "20 dB", "50%", "75%", "Offset", "Offset 2",
  "Offset 3", "Sliding" }
```

**8.65.2.25** `const char* cpCBLinearTxt = "Linear" [static]`

**8.65.2.26** `const char* cpCBDemonTxt = "DEMON" [static]`

**8.65.2.27** `const char* cpLPaletteTxt = "Palette" [static]`

**8.65.2.28** `const char* cpaLPaletteMenu[] [static]`

**Initial value:**

```
{ "BW", "HSV", "Light", "Temp",  
  "Dir", "Green", "Green2", "Green3", "Green4", "PureGreen", "WB" }
```

**8.65.2.29** `const char* cpCBAverageTxt = "ContAvg" [static]`

**8.65.2.30** `const char* cpCBSavingTxt = "Saving" [static]`

**8.65.2.31** `const char* cpBSaveTxt = "Save" [static]`

**8.65.2.32** `const char* cpFSSaveTxt = "Save to TIFF file" [static]`

**8.65.2.33** `const char* cpLClipValueTxt = "Clip value" [static]`

**8.65.2.34** `clGUILOfar* GUILOfar`

## 8.66 GUILOfar.hh File Reference

```
#include <ctime>
#include <string>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "FrameBuf.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for GUILOfar.hh:



This graph shows which files directly or indirectly include this file:

iar.cc

## Compounds

- struct [\\_stLofarCursor](#)

*Lofar cursor.*

- class [clGUILOfar](#)

*LOFAR/DEMON GUI.*

## Defines

- #define `LGUI_VER_MAJ` `GLOBAL_VERSMAJ`
- #define `LGUI_VER_MIN` `GLOBAL_VERSMIN`
- #define `LGUI_VER_PL` `GLOBAL_VERSPL`
- #define `LGUI_PADDING` 8
- #define `LGUIENTRY_WIDTH` 80
- #define `LGUILINESPECT_HEIGHT` 40
- #define `LGUI_CURSOR_HEIGHT` 16
- #define `LGUI_SERVER_MAXLEN` 255
- #define `LGUI_CH_LOWER` 1
- #define `LGUI_CH_UPPER` 16
- #define `LGUILOFAR_BG` 0x00ffffff
- #define `LGUILOFAR_FG` 0x00000000
- #define `LGUILINE_BG` 0x00ffffff
- #define `LGUILINE_FG` 0x000000ff
- #define `LGUI_CURSOR_BG` 0x00ffffff
- #define `LGUI_CURSOR_FG` 0x00ff0000
- #define `LGUI_CONV_BUF_SIZE` 255
- #define `LGUI_TYPE_ITEMS` 3
- #define `LGUI_WINDOW_ITEMS` 12
- #define `LGUI_WIN_LENGTH_ITEMS` 7
- #define `LGUI_REMOVE_NOISE_ITEMS` 6
- #define `LGUI_CLIP_ITEMS` 13
- #define `LGUI_PALETTE_ITEMS` 11

## Typedefs

- typedef `_stLofarCursor` `stLofarCursor`  
*Lofar cursor.*
- typedef `_stLofarCursor *` `stpLofarCursor`  
*Lofar cursor.*

## Enumerations

- enum {  
`LGUI_PAL_BW` = 0, `LGUI_PAL_HSV` = 1, `LGUI_PAL_LIGHT` = 2, `LGUI_PAL_TEMP` = 3,  
`LGUI_PAL_DIR` = 4, `LGUI_PAL_GREEN` = 5, `LGUI_PAL_GREEN2` = 6,  
`LGUI_PAL_GREEN3` = 7,  
`LGUI_PAL_GREEN4` = 8, `LGUI_PAL_PUREGREEN` = 9, `LGUI_PAL_WB` = 10  
 }  
*Palettes available.*

- enum { LGUI\_FIT\_NONE = 0, LGUI\_FIT\_NEIGHBOR = 1, LGUI\_FIT\_AVERAGE = 2 }

*Fit algorithms available.*

- enum { LGUI\_CURSOR\_11 = 0, LGUI\_CURSOR\_INF = 1 }

*Cursor types.*





### 8.66.1 Define Documentation

8.66.1.1 `#define LGUI_VER_MAJ GLOBAL_VERSMAJ`

8.66.1.2 `#define LGUI_VER_MIN GLOBAL_VERSMIN`

8.66.1.3 `#define LGUI_VER_PL GLOBAL_VERSPL`

8.66.1.4 `#define LGUI_PADDING 8`

8.66.1.5 `#define LGUI_ENTRY_WIDTH 80`

8.66.1.6 `#define LGUI_LINESPECT_HEIGHT 40`

8.66.1.7 `#define LGUI_CURSOR_HEIGHT 16`

8.66.1.8 `#define LGUI_SERVER_MAXLEN 255`

8.66.1.9 `#define LGUI_CH_LOWER 1`

8.66.1.10 `#define LGUI_CH_UPPER 16`

8.66.1.11 `#define LGUI_LOFAR_BG 0x00ffffff`

8.66.1.12 `#define LGUI_LOFAR_FG 0x00000000`

8.66.1.13 `#define LGUI_LINE_BG 0x00ffffff`

8.66.1.14 `#define LGUI_LINE_FG 0x000000ff`

8.66.1.15 `#define LGUI_CURSOR_BG 0x00ffffff`

8.66.1.16 `#define LGUI_CURSOR_FG 0x00ff0000`

8.66.1.17 `#define LGUI_CONV_BUF_SIZE 255`

8.66.1.18 `#define LGUI_TYPE_ITEMS 3`

8.66.1.19 `#define LGUI_WINDOW_ITEMS 12`

8.66.1.20 `#define LGUI_WIN_LENGTH_ITEMS 7`

8.66.1.21 `#define LGUI_REMOVE_NOISE_ITEMS 6`

8.66.1.22 `#define LGUI_CLIP_ITEMS 13`

8.66.1.23 `#define LGUI_PALETTE_ITEMS 11`

### 8.66.2 Typedef Documentation

8.66.2.1 `typedef struct tLofarCursor tLofarCursor`

Lofar cursor.

### 8.66.2.2 typedef struct [\\_stLofarCursor](#) \* [stpLofarCursor](#)

Lofar cursor.

## 8.66.3 Enumeration Type Documentation

### 8.66.3.1 anonymous enum

Palettes available.

Enumeration values:

- LGUIPAL\_BW**
- LGUIPAL\_HSV**
- LGUIPAL\_LIGHT**
- LGUIPAL\_TEMP**
- LGUIPAL\_DIR**
- LGUIPAL\_GREEN**
- LGUIPAL\_GREEN2**
- LGUIPAL\_GREEN3**
- LGUIPAL\_GREEN4**
- LGUIPAL\_PUREGREEN**
- LGUIPAL\_WB**

### 8.66.3.2 anonymous enum

Fit algorithms available.

Enumeration values:

- LGUIFIT\_NONE**
- LGUIFIT\_NEIGHBOR**
- LGUIFIT\_AVERAGE**

### 8.66.3.3 anonymous enum

Cursor types.

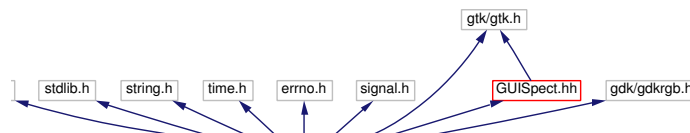
Enumeration values:

- LGUI\_CURSOR\_11** 11 spike type
- LGUI\_CURSOR\_INF** Infinite spike count.

## 8.67 GUIspect.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <errno.h>
#include <signal.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUIspect.hh"
```

Include dependency graph for GUIspect.cc:



## Functions

- [G\\_LOCK\\_DEFINE\\_STATIC](#) (gmInputMutex)
- [int main](#) (int argc, char \*argv[ ])
- [gint WrapOnDelete](#) (GtkWidget \*gwSender, GdkEventAny \*geaEvent)
- [void WrapOnHideToggled](#) (GtkToggleButton \*gtbSender, gpointer \*gpData)
- [gint WrapOnConnectClick](#) (GtkWidget \*gwSender, gpointer gpData)
- [void WrapOnFreezeToggled](#) (GtkToggleButton \*gtbSender, gpointer \*gpData)
- [gint WrapOnPaletteActivate](#) (GtkWidget \*gwSender, gpointer gpData)
- [gint WrapOnMotionSgram](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent)
- [gint WrapOnMotionSpect](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent)
- [gint WrapOnExposeSgram](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent)
- [gint WrapOnExposeSpect](#) (GtkWidget \*gwSender, GdkEventExpose \*geeEvent)
- [gboolean WrapOnConfigure](#) (GtkWidget \*gwSender, GdkEventConfigure \*gecEvent, gpointer gpData)
- [void WrapOnSizeAllocate](#) (GtkWidget \*gwSender, GtkAllocation \*gaAllocation, gpointer gpData)
- [void WrapGdkInput](#) (gpointer gpData, gint giSource, GdkInputCondition gicCondition)

- void [WrapOnSaveClicks](#) (GtkButton \*gbSender, gpointer gpData)

## Variables

- const char \* [cpWindowTxt](#) = "Spectrogram"
- const char \* [cpLServerTxt](#) = "Server"
- const char \* [cpaLChannelTxt](#) [] = { "Channel", "Direction" }
- const char \* [cpBConnectTxt](#) = "Connect"
- const char \* [cpBDisconnectTxt](#) = "Disconnect"
- const char \* [cpCBFreezeTxt](#) = "Freeze"
- const char \* [cpLTypeTxt](#) = "Type"
- const char \* [cpaLTypeMenu](#) []
- const char \* [cpLWindowTxt](#) = "Window"
- const char \* [cpaLWindowMenu](#) []
- const char \* [cpLWindowParamTxt](#) = "Window param."
- const char \* [cpLWindowLenTxt](#) = "Window length"
- const char \* [cpaLWindowLenMenu](#) []
- const char \* [cpLLowFreqTxt](#) = "Lower freq."
- const char \* [cpLHighFreqTxt](#) = "Higher freq."
- const char \* [cpLGainTxt](#) = "Gain dB"
- const char \* [cpLSlopeTxt](#) = "Gain dB/oct"
- const char \* [cpLOverlapTxt](#) = "Overlap (%)"
- const char \* [cpLLinearTxt](#) = "Linear scale"
- const char \* [cpLNormalizeTxt](#) = "Normalize"
- const char \* [cpLRemoveNoiseTxt](#) = "Remove noise"
- const char \* [cpaLRemoveNoiseMenu](#) []
- const char \* [cpLAlphaTxt](#) = "Alpha"
- const char \* [cpLMeanLengthTxt](#) = "Mean length"
- const char \* [cpLGapLengthTxt](#) = "Gap length"
- const char \* [cpLDynRangeTxt](#) = "Dynamic range (dB)"
- const char \* [cpLPaletteTxt](#) = "Palette"
- const char \* [cpaLPaletteMenu](#) []
- const char \* [cpBSaveTxt](#) = "Save"
- const char \* [cpFSSaveTxt](#) = "Save to TIFF file"
- [clSpectGUI](#) \* [SpectGUI](#)



## 8.67.1 Function Documentation

8.67.1.1 `G_LOCK_DEFINE_STATIC (gmInputMutex)`

8.67.1.2 `int main (int argc, char * argv[])`

8.67.1.3 `gint WrapOnDelete (GtkWidget * gwSender, GdkEventAny *  
geaEvent)`

8.67.1.4 `void WrapOnHideToggled (GtkToggleButton * gtbSender, gpointer *  
gpData)`

8.67.1.5 `gint WrapOnConnectClick (GtkWidget * gwSender, gpointer gpData)`

8.67.1.6 `void WrapOnFreezeToggled (GtkToggleButton * gtbSender, gpointer *  
gpData)`

8.67.1.7 `gint WrapOnPaletteActivate (GtkWidget * gwSender, gpointer gpData)`

8.67.1.8 `gint WrapOnMotionSgram (GtkWidget * gwSender, GdkEventMotion  
* gemEvent)`

8.67.1.9 `gint WrapOnMotionSpect (GtkWidget * gwSender, GdkEventMotion  
* gemEvent)`

8.67.1.10 `gint WrapOnExposeSgram (GtkWidget * gwSender,  
GdkEventExpose * geeEvent)`

8.67.1.11 `gint WrapOnExposeSpect (GtkWidget * gwSender, GdkEventExpose  
* geeEvent)`

8.67.1.12 `gboolean WrapOnConfigure (GtkWidget * gwSender,  
GdkEventConfigure * gecEvent, gpointer gpData)`

8.67.1.13 `void WrapOnSizeAllocate (GtkWidget * gwSender, GtkAllocation *  
gaAllocation, gpointer gpData)`

8.67.1.14 `void WrapGdkInput (gpointer gpData, gint giSource,  
GdkInputCondition gicCondition)`

8.67.1.15 `void WrapOnSaveClicks (GtkButton * gbSender, gpointer gpData)`

## 8.67.2 Variable Documentation

8.67.2.1 `const char* cpWindowTxt = "Spectrogram" [static]`

8.67.2.2 `const char* cpLServerTxt = "Server" [static]`

8.67.2.3 `const char* cpaLChannelTxt[] = { "Channel", "Direction" }  
[static]`

8.67.2.4 `const char* cpBConnectTxt = "Connect" [static]`

8.67.2.5 `const char* cpBDisconnectTxt = "Disconnect" [static]`

8.67.2.6 `const char* cpCBFreezeTxt = "Freeze" [static]`

8.67.2.7 `const char* cpLTypeTxt = "Type" [static]`

```
{ "STFT", "(MR-STFT)", "(Gabor)",
  "(WVD)", "Hankel", "Autocorr.", "Cepstrum" }
```

**8.67.2.9** `const char* cpLWindowTxt = "Window"` [static]

**8.67.2.10** `const char* cpaLWindowMenu []` [static]

**Initial value:**

```
{ "Rectangle", "Bartlett",
  "Blackman", "Blackman-Harris", "Cosine tapered", "Exponential",
  "Flat top", "Generic cosine", "Hamming", "Hanning", "Kaiser",
  "Kaiser-Bessel", "Tukey" }
```

**8.67.2.11** `const char* cpLWindowParamTxt = "Window param."` [static]

**8.67.2.12** `const char* cpLWindowLenTxt = "Window length"` [static]

**8.67.2.13** `const char* cpaLWindowLenMenu []` [static]

**Initial value:**

```
{ "128", "256", "512", "1024",
  "2048", "4096", "8192", "16384", "32768", "65536" }
```

**8.67.2.14** `const char* cpLLowFreqTxt = "Lower freq."` [static]

**8.67.2.15** `const char* cpLHighFreqTxt = "Higher freq."` [static]

**8.67.2.16** `const char* cpLGainTxt = "Gain dB"` [static]

**8.67.2.17** `const char* cpLSlopeTxt = "Gain dB/oct"` [static]

**8.67.2.18** `const char* cpLOverlapTxt = "Overlap (%)"` [static]

**8.67.2.19** `const char* cpLLinearTxt = "Linear scale"` [static]

**8.67.2.20** `const char* cpLNormalizeTxt = "Normalize"` [static]

**8.67.2.21** `const char* cpLRemoveNoiseTxt = "Remove noise"` [static]

**8.67.2.22** `const char* cpaLRemoveNoiseMenu []` [static]

**Initial value:**

```
{ "None", "TPSW", "OTA",
  "Diff", "InvDiff" }
```

**8.67.2.23** `const char* cpLAlphaTxt = "Alpha" [static]`

**8.67.2.24** `const char* cpLMeanLengthTxt = "Mean length" [static]`

**8.67.2.25** `const char* cpLGapLengthTxt = "Gap length" [static]`

**8.67.2.26** `const char* cpLDynRangeTxt = "Dynamic range (dB)" [static]`

**8.67.2.27** `const char* cpLPaletteTxt = "Palette" [static]`

**8.67.2.28** `const char* cpaLPaletteMenu[] [static]`

**Initial value:**

```
{ "BW", "HSV", "Light", "Temp",  
  "Dir", "Green", "Green2", "PureGreen", "WB" }
```

**8.67.2.29** `const char* cpBSaveTxt = "Save" [static]`

**8.67.2.30** `const char* cpFSSaveTxt = "Save to TIFF file" [static]`

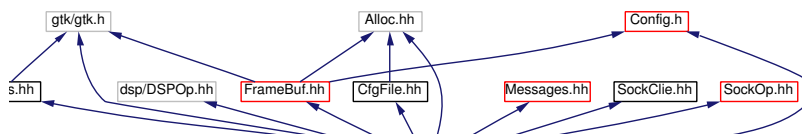
**8.67.2.31** `clSpectGUI* SpectGUI`



## 8.68 GUIspect.hh File Reference

```
#include <gtk/gtk.h>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "FrameBuf.hh"
```

Include dependency graph for GUIspect.hh:



This graph shows which files directly or indirectly include this file:

[ect.cc](#)

## Compounds

- class [clSpectGUI](#)  
*Transient spectrum GUI.*

## Defines

- #define [SGUI\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [SGUI\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [SGUI\\_VER\\_PL](#) GLOBAL\_VERSPL

- #define `SGUL_CONV_MAXLEN` 255
- #define `SGUL_DEF_WIDTH` 1024
- #define `SGUL_DEF_HEIGHT` 700
- #define `SGUL_PADDING` 8
- #define `SGUL_SERVER_MAXLEN` 255
- #define `SGUL_CH_LOWER` 1.0
- #define `SGUL_CH_UPPER` 16.0
- #define `SGUL_GRAM_BG` 0x00ffffff
- #define `SGUL_GRAM_FG` 0x00000000
- #define `SGUL_SPECT_BG` 0x00ffffff
- #define `SGUL_SPECT_FG` 0x000000ff
- #define `SGUL_TYPE_ITEMS` 7
- #define `SGUL_WINDOW_ITEMS` 13
- #define `SGUL_WINLEN_ITEMS` 10
- #define `SGUL_REMOVE_NOISE_ITEMS` 5
- #define `SGUL_PALETTE_ITEMS` 9

## Enumerations

- enum { `SGULFIT_NONE` = 0, `SGULFIT_NEIGHBOR` = 1, `SGULFIT_AVERAGE` = 2 }

*Fit types available.*

- enum {  
  
`SGULPAL_BW` = 0, `SGULPAL_HSV` = 1, `SGULPAL_LIGHT` = 2, `SGULPAL_TEMP` = 3,  
  
`SGULPAL_DIR` = 4, `SGULPAL_GREEN` = 5, `SGULPAL_GREEN2` = 6, `SGULPAL_PUREGREEN` = 7,  
  
`SGULPAL_WB` = 8 }

*Palettes available.*

### 8.68.1 Define Documentation

8.68.1.1 `#define SGUI_VER_MAJ GLOBAL_VERSMAJ`

8.68.1.2 `#define SGUI_VER_MIN GLOBAL_VERSMIN`

8.68.1.3 `#define SGUI_VER_PL GLOBAL_VERSPL`

8.68.1.4 `#define SGUI_CONV_MAXLEN 255`

8.68.1.5 `#define SGUI_DEF_WIDTH 1024`

8.68.1.6 `#define SGUI_DEF_HEIGHT 700`

8.68.1.7 `#define SGUI_PADDING 8`

8.68.1.8 `#define SGUI_SERVER_MAXLEN 255`

8.68.1.9 `#define SGUI_CH_LOWER 1.0`

8.68.1.10 `#define SGUI_CH_UPPER 16.0`

8.68.1.11 `#define SGUI_GRAM_BG 0x00ffffff`

8.68.1.12 `#define SGUI_GRAM_FG 0x00000000`

8.68.1.13 `#define SGUI_SPECT_BG 0x00ffffff`

8.68.1.14 `#define SGUI_SPECT_FG 0x000000ff`

8.68.1.15 `#define SGUI_TYPE_ITEMS 7`

8.68.1.16 `#define SGUI_WINDOW_ITEMS 13`

8.68.1.17 `#define SGUI_WINLEN_ITEMS 10`

8.68.1.18 `#define SGUI_REMOVE_NOISE_ITEMS 5`

8.68.1.19 `#define SGUI_PALETTE_ITEMS 9`

### 8.68.2 Enumeration Type Documentation

8.68.2.1 anonymous enum

Fit types available.

Enumeration values:

`SGUI_FIT_NONE`

**SGULFIT\_NEIGHBOR**  
**SGULFIT\_AVERAGE**

**8.68.2.2 anonymous enum**

Palettes available.

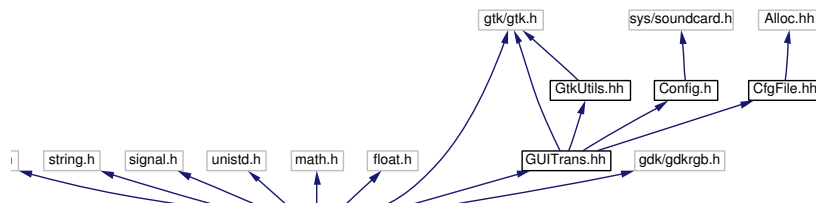
**Enumeration values:**

**SGULPAL\_BW**  
**SGULPAL\_HSV**  
**SGULPAL\_LIGHT**  
**SGULPAL\_TEMP**  
**SGULPAL\_DIR**  
**SGULPAL\_GREEN**  
**SGULPAL\_GREEN2**  
**SGULPAL\_PUREGREEN**  
**SGULPAL\_WB**

## 8.69 GUITrans.cc File Reference

```
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <math.h>
#include <float.h>
#include <gtk/gtk.h>
#include <gdk/gdkrgb.h>
#include "GUITrans.hh"
```

Include dependency graph for GUITrans.cc:



### Functions

- int [main](#) (int argc, char \*argv[ ])
- gboolean [WrapOnDelete](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- void [WrapOnConnectClick](#) (GtkButton \*gbSender, gpointer gpData)

### Variables

- const char \* [cpWindowTxt](#) = "Locate"
- const char \* [cpLServerTxt](#) = "Server"
- const char \* [cpBConnectTxt](#) = "Connect"
- [clGUITransient](#) [GUITransient](#)

## 8.69.1 Function Documentation

8.69.1.1 `int main (int argc, char * argv[])`

8.69.1.2 `gboolean WrapOnDelete (GtkWidget * gwSender, GdkEvent * geEvent, gpointer gpData)`

8.69.1.3 `void WrapOnConnectClick (GtkButton * gbSender, gpointer gpData)`

## 8.69.2 Variable Documentation

8.69.2.1 `const char* cpWindowTxt = "Locate" [static]`

8.69.2.2 `const char* cpLServerTxt = "Server" [static]`

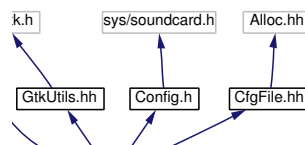
8.69.2.3 `const char* cpBConnectTxt = "Connect" [static]`

8.69.2.4 `cIGUITransient GUITransient`

## 8.70 GUITrans.hh File Reference

```
#include <gtk/gtk.h>
#include "Config.h"
#include "CfgFile.hh"
#include "GtkUtils.hh"
```

Include dependency graph for GUITrans.hh:



This graph shows which files directly or indirectly include this file:

[ins.cc](#)

## Compounds

- class [clGUITransient](#)

## Defines

- #define [GUITRANS\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ
- #define [GUITRANS\\_VER\\_MIN](#) GLOBAL\_VERSMIN
- #define [GUITRANS\\_VER\\_PL](#) GLOBAL\_VERSPL
- #define [GUITRANS\\_WSPACING](#) 8
- #define [GUITRANS\\_ENTRY\\_WIDTH](#) 80
- #define [GUITRANS\\_SERVER\\_MAXLEN](#) 256
- #define [GUITRANS\\_LOCATE\\_BG](#) 0x00000000
- #define [GUITRANS\\_LOCATE\\_FG](#) 0x00ffffff
- #define [GUITRANS\\_PALETTE\\_ITEMS](#) 9

## Enumerations

- enum {  
     GUITRANS\_PAL\_BW = 0, GUITRANS\_PAL\_HSV = 1, GUITRANS\_PAL\_-  
     LIGHT = 2, GUITRANS\_PAL\_TEMP = 3,  
     GUITRANS\_PAL\_DIR = 4, GUITRANS\_PAL\_GREEN = 5, GUITRANS\_PAL\_-  
     GREEN2 = 6, GUITRANS\_PAL\_PUREGREEN = 7,  
     GUITRANS\_PAL\_WB = 8 }

*Available palettes.*

### 8.70.1 Define Documentation

**8.70.1.1** `#define GUITRANS_VER_MAJ GLOBAL_VERSMAJ`

**8.70.1.2** `#define GUITRANS_VER_MIN GLOBAL_VERSMIN`

**8.70.1.3** `#define GUITRANS_VER_PL GLOBAL_VERSPL`

**8.70.1.4** `#define GUITRANS_WSPACING 8`

**8.70.1.5** `#define GUITRANS_ENTRY_WIDTH 80`

**8.70.1.6** `#define GUITRANS_SERVER_MAXLEN 256`

**8.70.1.7** `#define GUITRANS_LOCATE_BG 0x00000000`

**8.70.1.8** `#define GUITRANS_LOCATE_FG 0x00ffffff`

**8.70.1.9** `#define GUITRANS_PALETTE_ITEMS 9`

### 8.70.2 Enumeration Type Documentation

#### 8.70.2.1 anonymous enum

*Available palettes.*

**Enumeration values:**

**GUITRANS\_PAL\_BW**

**GUITRANS\_PAL\_HSV**

**GUITRANS\_PAL\_LIGHT**

**GUITRANS\_PAL\_TEMP**

**GUITRANS\_PAL\_DIR**

**GUITRANS\_PAL\_GREEN**

**GUITRANS\_PAL\_GREEN2**



**GUITRANS\_PAL\_PUREGREEN**

**GUITRANS\_PAL\_WB**

## 8.71 Level.cc File Reference

```
#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <math.h>
#include <float.h>
#include <unistd.h>
#include <sys/time.h>
#include "Level.hh"
```

Include dependency graph for Level.cc:



### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bDebug](#) = false
- bool [bDaemon](#) = false
- [clLevel](#) \* [Level](#)

#### 8.71.1 Function Documentation

8.71.1.1 void [SigHandler](#) (int *iSigNum*)

8.71.1.2 int [main](#) (int *argc*, char \* *argv*[ ])

#### 8.71.2 Variable Documentation

8.71.2.1 bool [bDebug](#) = false [static]

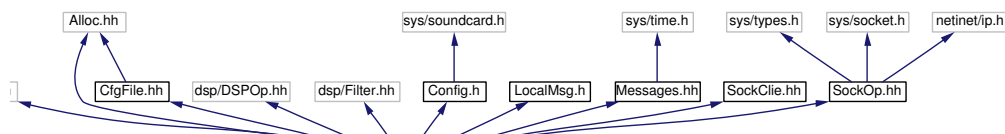
8.71.2.2 bool [bDaemon](#) = false [static]

8.71.2.3 [clLevel](#)\* [Level](#)

## 8.72 Level.hh File Reference

```
#include <limits.h>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for Level.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clLevel](#)  
*Level server.*

## Defines

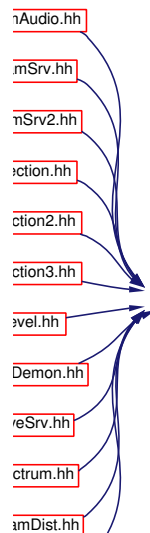
- #define [LEVEL\\_FILTER\\_WINDOW](#) true

### **8.72.1 Define Documentation**

**8.72.1.1 #define LEVEL\_FILTER\_WINDOW true**

## 8.73 LocalMsg.h File Reference

This graph shows which files directly or indirectly include this file:



### Compounds

- struct [\\_stRawDataFirst](#)  
*Header from streamdist server.*
- struct [\\_stRawDataReq](#)  
*Request to streamdist server.*

### Typedefs

- typedef [\\_stRawDataFirst](#) stRawDataFirst  
*Header from streamdist server.*
- typedef [\\_stRawDataFirst](#) \* stpRawDataFirst  
*Header from streamdist server.*
- typedef [\\_stRawDataReq](#) stRawDataReq  
*Request to streamdist server.*
- typedef [\\_stRawDataReq](#) \* stpRawDataReq  
*Request to streamdist server.*

### 8.73.1 Typedef Documentation

#### 8.73.1.1 typedef struct [\\_stRawDataFirst](#) stRawDataFirst

Header from streamdist server.

#### 8.73.1.2 typedef struct [\\_stRawDataFirst](#) \* stpRawDataFirst

Header from streamdist server.

#### 8.73.1.3 typedef struct [\\_stRawDataReq](#) stRawDataReq

Request to streamdist server.

#### 8.73.1.4 typedef struct [\\_stRawDataReq](#) \* stpRawDataReq

Request to streamdist server.

## 8.74 Locate.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <float.h>
#include <signal.h>
#include <unistd.h>
#include "Locate.hh"
```

Include dependency graph for Locate.cc:



### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])
- void [MasterSigHandler](#) (int iSigNum)
- void \* [WrapProcessThread](#) (void \*vpParam)
- void \* [WrapServeClientThread](#) (void \*vpParam)

### Variables

- bool [bDebug](#) = false
- int [iNodeCount](#)
- int [iRank](#)
- [clMPIProc MPIProc](#)
- [clLocate \\* Locate](#)
- [clSubLocate \\* SubLocate](#)

### 8.74.1 Function Documentation

8.74.1.1 void SigHandler (int *iSigNum*)

8.74.1.2 int main (int *argc*, char \* *argv*[])

8.74.1.3 void MasterSigHandler (int *iSigNum*)

8.74.1.4 void\* WrapProcessThread (void \* *vpParam*)

8.74.1.5 void\* WrapServeClientThread (void \* *vpParam*)

### 8.74.2 Variable Documentation

8.74.2.1 bool **bDebug** = false [static]

8.74.2.2 int **iNodeCount** [static]

8.74.2.3 int **iRank** [static]

8.74.2.4 **clMPIProc MPIProc**

8.74.2.5 **clLocate\* Locate**

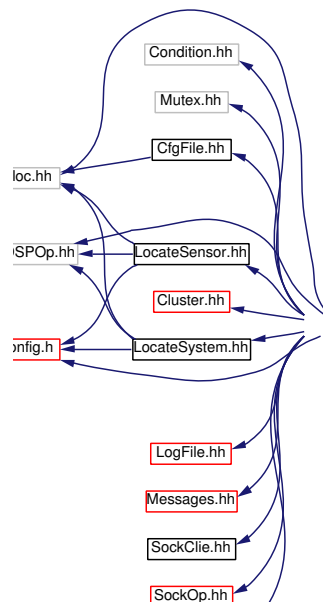
8.74.2.6 **clSubLocate\* SubLocate**



## 8.75 Locate.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "Cluster.hh"
#include "LocateSensor.hh"
#include "LocateSystem.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SockServ.hh"
```

Include dependency graph for Locate.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- struct [\\_stDirCfg](#)  
*Configuration information message for subnodes.*
- class [clLocate](#)  
*Master node for locate server.*
- class [clSubLocate](#)  
*Slave nodes for locate server.*

## Defines

- #define [LOCATE\\_HOSTNAME\\_MAXLEN](#) 256
- #define [LOCATE\\_CONTROL\\_TAG](#) 1
- #define [LOCATE\\_PARAM\\_TAG](#) 2
- #define [LOCATE\\_NORMAL\\_TAG](#) 3
- #define [LOCATE\\_CTRL\\_ACK](#) 0
- #define [LOCATE\\_CTRL\\_STOP](#) 1

## Typedefs

- typedef [\\_stDirCfg](#) [stDirCfg](#)  
*Configuration information message for subnodes.*
- typedef [\\_stDirCfg](#) \* [stpDirCfg](#)  
*Configuration information message for subnodes.*

### 8.75.1 Define Documentation

8.75.1.1 `#define LOCATE_HOSTNAME_MAXLEN 256`

8.75.1.2 `#define LOCATE_CONTROL_TAG 1`

8.75.1.3 `#define LOCATE_PARAM_TAG 2`

8.75.1.4 `#define LOCATE_NORMAL_TAG 3`

8.75.1.5 `#define LOCATE_CTRL_ACK 0`

8.75.1.6 `#define LOCATE_CTRL_STOP 1`

### 8.75.2 Typedef Documentation

8.75.2.1 `typedef struct \_stDirCfg stDirCfg`

Configuration information message for subnodes.

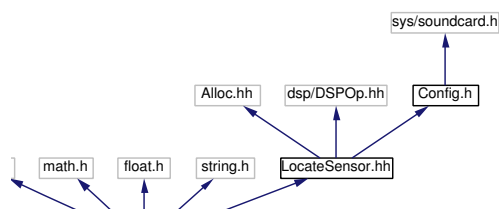
8.75.2.2 `typedef struct \_stDirCfg * stpDirCfg`

Configuration information message for subnodes.

## 8.76 LocateSensor.cc File Reference

```
#include <stdio.h>
#include <math.h>
#include <float.h>
#include <string.h>
#include "LocateSensor.hh"
```

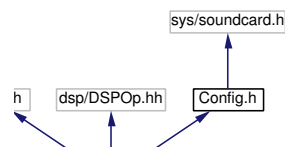
Include dependency graph for LocateSensor.cc:



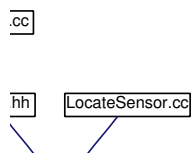
## 8.77 LocateSensor.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
```

Include dependency graph for LocateSensor.hh:



This graph shows which files directly or indirectly include this file:



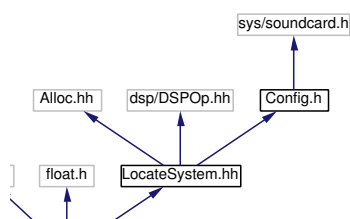
## Compounds

- class [clLocateSensor](#)  
*Sensor matrix processing for locating sound sources.*

## 8.78 LocateSystem.cc File Reference

```
#include <math.h>
#include <float.h>
#include "LocateSystem.hh"
```

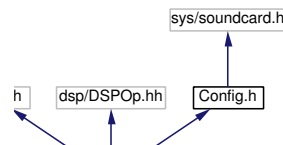
Include dependency graph for LocateSystem.cc:



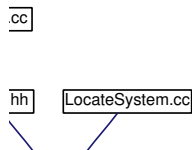
## 8.79 LocateSystem.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
```

Include dependency graph for LocateSystem.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clLocateSystem](#)  
*Result combining of locate matrixes.*

### Defines

- #define [LOCATESYSTEM\\_HH](#)

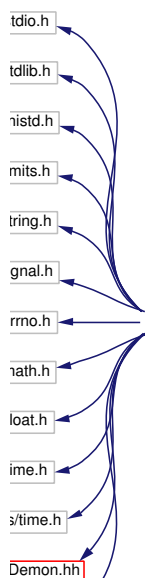
#### 8.79.1 Define Documentation

##### 8.79.1.1 #define LOCATESYSTEM\_HH

## 8.80 LofarDemon.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <signal.h>
#include <errno.h>
#include <math.h>
#include <float.h>
#include <time.h>
#include <sys/time.h>
#include "LofarDemon.hh"
#include "DC-Block.h"
```

Include dependency graph for LofarDemon.cc:



## Defines

- `#define LOFAR_NWINS 12`



## Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

## Variables

- bool [bDebug](#)
- bool [bDaemonProc](#)
- [clLofarDemon](#) \* [LofarDemon](#)
- const char \* [cpaWindowFuncs](#) [ ]

### 8.80.1 Define Documentation

#### 8.80.1.1 `#define LOFAR_NWINS 12`

### 8.80.2 Function Documentation

#### 8.80.2.1 void [SigHandler](#) (int *iSigNum*)

#### 8.80.2.2 int [main](#) (int *argc*, char \* *argv*[ ])

### 8.80.3 Variable Documentation

#### 8.80.3.1 bool [bDebug](#) [static]

#### 8.80.3.2 bool [bDaemonProc](#) [static]

#### 8.80.3.3 [clLofarDemon](#)\* [LofarDemon](#)

#### 8.80.3.4 const char\* [cpaWindowFuncs](#)[ ] [static]

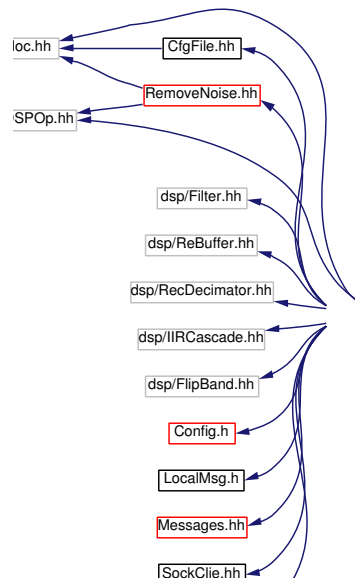
#### Initial value:

```
{  
    "Rectangle",  
    "Bartlett",  
    "Blackman",  
    "Blackman-Harris",  
    "Cosine tapered",  
    "Exponential",  
    "Flat-top",  
    "Hamming",  
    "Hanning",  
    "Kaiser",  
    "Kaiser-Bessel",  
    "Tukey" }
```

## 8.81 LofarDemon.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include <dsp/ReBuffer.hh>
#include <dsp/RecDecimator.hh>
#include <dsp/IIRCascade.hh>
#include <dsp/FlipBand.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "Messages.hh"
#include "RemoveNoise.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for LofarDemon.hh:



This graph shows which files directly or indirectly include this file:



emon.cc

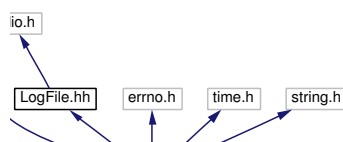
## Compounds

- class [clLofarDemon](#)  
*LOFAR/DEMON calculation server.*

## 8.82 LogFile.cc File Reference

```
#include <stdio.h>
#include <errno.h>
#include <time.h>
#include <string.h>
#include "LogFile.hh"
```

Include dependency graph for LogFile.cc:



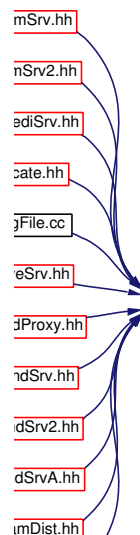
## 8.83 LogFile.hh File Reference

```
#include <stdio.h>
```

Include dependency graph for LogFile.hh:

.h

This graph shows which files directly or indirectly include this file:



## Compounds

- class [clLogFile](#)  
*Log file class.*

## Defines

- #define [LOGFILE\\_NOERROR](#) 0

### **8.83.1 Define Documentation**

**8.83.1.1 #define LOGFILE\_NOERROR 0**

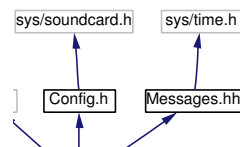
## 8.84 Messages.cc File Reference

```
#include <stdio.h>
```

```
#include "Config.h"
```

```
#include "Messages.hh"
```

Include dependency graph for Messages.cc:



## 8.85 Messages.hh File Reference

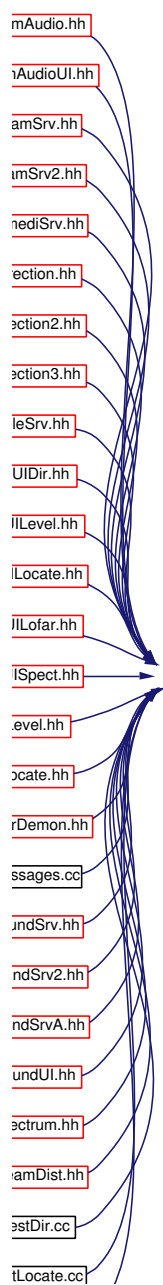
```
#include <sys/time.h>
```

Include dependency graph for Messages.hh:

sys.h

This graph shows which files directly or indirectly include this file:





## Compounds

- struct `_stSoundStart`

*Header message from soundsrv.*

- struct [\\_stSpectReq](#)  
*Spectrum: request.*
- struct [\\_stSpectRes](#)  
*Spectrum: result.*
- struct [\\_stDirReq](#)  
*Direction: request.*
- struct [\\_stDirRes](#)  
*Direction: result.*
- struct [\\_stDirReq2](#)  
*Direction3: request.*
- struct [\\_stDirRes2](#)  
*Direction3: result.*
- struct [\\_stLofarReq](#)  
*LOFAR: request.*
- struct [\\_stLofarRes](#)  
*LOFAR: result.*
- struct [\\_stBeamAudioReq](#)  
*BeamAudio: request.*
- struct [\\_stBeamAudioFirst](#)  
*BeamAudio: result header.*
- struct [\\_stBeamAudioRes](#)  
*BeamAudio: result.*
- struct [\\_stLevelReq](#)  
*Level: request.*
- struct [\\_stLevelRes](#)  
*Level: result.*
- struct [\\_stLocateHdr](#)  
*Locate: results header.*
- struct [\\_stLocateRes](#)  
*Locate: result.*
- class [clBaseMsg](#)

*Base class for all message handling.*

- class [clSoundMsg](#)  
*Sound server communication.*
- class [clSpectMsg](#)  
*Spectrum server communication.*
- class [clDirMsg](#)  
*Direction server communication.*
- class [clDirMsg2](#)  
*Direction server communication 2 (for locate/direction3).*
- class [clLofarMsg](#)  
*LOFAR/DEMON server communication.*
- class [clBeamAudioMsg](#)  
*BeamAudio server communication.*
- class [clLevelMsg](#)  
*Level server communication.*
- class [clLocateMsg](#)  
*Locate server communication.*

## Defines

- #define [MSG\\_FALSE](#) 0
- #define [MSG\\_TRUE](#) 1

## Typedefs

- typedef [\\_stSoundStart](#) [stSoundStart](#)  
*Header message from soundsrv.*
- typedef [\\_stSoundStart](#) \* [stpSoundStart](#)  
*Header message from soundsrv.*
- typedef [\\_stSpectReq](#) [stSpectReq](#)  
*Spectrum: request.*
- typedef [\\_stSpectReq](#) \* [stpSpectReq](#)  
*Spectrum: request.*

- typedef [\\_stSpectRes](#) stSpectRes  
*Spectrum: result.*
- typedef [\\_stSpectRes](#) \* stpSpectRes  
*Spectrum: result.*
- typedef [\\_stDirReq](#) stDirReq  
*Direction: request.*
- typedef [\\_stDirReq](#) \* stpDirReq  
*Direction: request.*
- typedef [\\_stDirRes](#) stDirRes  
*Direction: result.*
- typedef [\\_stDirRes](#) \* stpDirRes  
*Direction: result.*
- typedef [\\_stDirReq2](#) stDirReq2  
*Direction3: request.*
- typedef [\\_stDirReq2](#) \* stpDirReq2  
*Direction3: request.*
- typedef [\\_stDirRes2](#) stDirRes2  
*Direction3: result.*
- typedef [\\_stDirRes2](#) \* stpDirRes2  
*Direction3: result.*
- typedef [\\_stLofarReq](#) stLofarReq  
*LOFAR: request.*
- typedef [\\_stLofarReq](#) \* stpLofarReq  
*LOFAR: request.*
- typedef [\\_stLofarRes](#) stLofarRes  
*LOFAR: result.*
- typedef [\\_stLofarRes](#) \* stpLofarRes  
*LOFAR: result.*
- typedef [\\_stBeamAudioReq](#) stBeamAudioReq  
*BeamAudio: request.*

- typedef [\\_stBeamAudioReq](#) \* [stpBeamAudioReq](#)  
*BeamAudio: request.*
- typedef [\\_stBeamAudioFirst](#) [stBeamAudioFirst](#)  
*BeamAudio: result header.*
- typedef [\\_stBeamAudioFirst](#) \* [stpBeamAudioFirst](#)  
*BeamAudio: result header.*
- typedef [\\_stBeamAudioRes](#) [stBeamAudioRes](#)  
*BeamAudio: result.*
- typedef [\\_stBeamAudioRes](#) \* [stpBeamAudioRes](#)  
*BeamAudio: result.*
- typedef [\\_stLevelReq](#) [stLevelReq](#)  
*Level: request.*
- typedef [\\_stLevelReq](#) \* [stpLevelReq](#)  
*Level: request.*
- typedef [\\_stLevelRes](#) [stLevelRes](#)  
*Level: result.*
- typedef [\\_stLevelRes](#) \* [stpLevelRes](#)  
*Level: result.*
- typedef [\\_stLocateHdr](#) [stLocateHdr](#)  
*Locate: results header.*
- typedef [\\_stLocateHdr](#) \* [stpLocateHdr](#)  
*Locate: results header.*
- typedef [\\_stLocateRes](#) [stLocateRes](#)  
*Locate: result.*
- typedef [\\_stLocateRes](#) \* [stpLocateRes](#)  
*Locate: result.*

## Enumerations

- enum { [MSG\\_SOUND\\_COMPRESS\\_NONE](#) = 0, [MSG\\_SOUND\\_COMPRESS\\_FLAC](#) = 1 }  
*Sound: compression.*

- enum {  
MSG\_SPECT\_TYPE\_FFT = 0, MSG\_SPECT\_TYPE\_MRFFT = 1, MSG\_-  
SPECT\_TYPE\_GABOR = 2, MSG\_SPECT\_TYPE\_WVD = 3,  
MSG\_SPECT\_TYPE\_HANKEL = 4, MSG\_SPECT\_TYPE\_AUTOCORR = 5,  
MSG\_SPECT\_TYPE\_CEPSTRUM = 6 }  
*Spectrum: type.*
- enum {  
MSG\_SPECT\_WND\_RECT = 0, MSG\_SPECT\_WND\_BARTLETT = 1, MSG\_-  
SPECT\_WND\_BLACKMAN = 2, MSG\_SPECT\_WND\_BM\_HAR = 3,  
MSG\_SPECT\_WND\_COS\_TAPER = 4, MSG\_SPECT\_WND\_EXP = 5, MSG\_-  
SPECT\_WND\_FLATTOP = 6, MSG\_SPECT\_WND\_GEN\_COS = 7,  
MSG\_SPECT\_WND\_HAMMING = 8, MSG\_SPECT\_WND\_HANNING = 9,  
MSG\_SPECT\_WND\_KAISER = 10, MSG\_SPECT\_WND\_KALBES = 11,  
MSG\_SPECT\_WND\_TUKEY = 12 }  
*Spectrum: window.*
- enum {  
MSG\_SPECT\_BNER\_NONE = 0, MSG\_SPECT\_BNER\_TPSW = 1, MSG\_-  
SPECT\_BNER\_OTA = 2, MSG\_SPECT\_BNER\_DIFF = 3,  
MSG\_SPECT\_BNER\_IDIFF = 4 }  
*Spectrum: background noise estimation and removal.*
- enum { MSG\_DIR\_ALG\_BEAM = 1, MSG\_DIR\_ALG\_CORR = 2, MSG\_DIR\_-  
ALG\_SPECT = 4 }  
*Direction: algorithm.*
- enum { MSG\_DIR\_SCAL\_LIN = 0, MSG\_DIR\_SCAL\_LOG = 1, MSG\_DIR\_-  
SCAL\_EXP = 2, MSG\_DIR\_SCAL\_SIN = 3 }  
*Direction: scaling.*
- enum {  
MSG\_DIR\_BNER\_NONE = 0, MSG\_DIR\_BNER\_TPSW = 1, MSG\_DIR\_-  
BNER\_OTA = 2, MSG\_DIR\_BNER\_DIFF = 3,  
MSG\_DIR\_BNER\_IDIFF = 4 }  
*Direction: background noise estimation and removal.*
- enum { MSG\_LOFAR\_TYPE\_FFT = 0, MSG\_LOFAR\_TYPE\_CEPSTRUM = 1,  
MSG\_LOFAR\_TYPE\_AUTOCORR = 2 }  
*LOFAR: type.*
- enum {  
MSG\_LOFAR\_WIN\_RECT = 0, MSG\_LOFAR\_WIN\_BARTLETT = 1, MSG\_-  
LOFAR\_WIN\_BLACKMAN = 2, MSG\_LOFAR\_WIN\_BM\_HARRIS = 3,

```
MSG_LOFAR_WIN_COS_TAPER = 4, MSG_LOFAR_WIN_EXP = 5, MSG_-
LOFAR_WIN_FLATTOP = 6, MSG_LOFAR_WIN_HAMMING = 7,
MSG_LOFAR_WIN_HANNING = 8, MSG_LOFAR_WIN_KAISER = 9, MSG_-
LOFAR_WIN_KALBES = 10, MSG_LOFAR_WIN_TUKEY = 11 }
```

*LOFAR: window.*

- enum {  
MSG\_LOFAR\_BNER\_NONE = 0, MSG\_LOFAR\_BNER\_TPSW = 1, MSG\_-  
LOFAR\_BNER\_OTA = 2, MSG\_LOFAR\_BNER\_DIFF = 3,  
MSG\_LOFAR\_BNER\_IDIFF = 4, MSG\_LOFAR\_BNER\_STDDEV = 5 }

*LOFAR: background noise estimation and removal.*

- enum {  
MSG\_LOFAR\_CLIP\_NONE = 0, MSG\_LOFAR\_CLIP\_LOW = 1, MSG\_-  
LOFAR\_CLIP\_BOTH = 2, MSG\_LOFAR\_CLIP\_MEAN = 3,  
MSG\_LOFAR\_CLIP\_MEDIAN = 4, MSG\_LOFAR\_CLIP\_10DB = 5, MSG\_-  
LOFAR\_CLIP\_20DB = 6, MSG\_LOFAR\_CLIP\_50P = 7,  
MSG\_LOFAR\_CLIP\_75P = 8, MSG\_LOFAR\_CLIP\_OFFSET = 9, MSG\_-  
LOFAR\_CLIP\_OFFSET2 = 10, MSG\_LOFAR\_CLIP\_OFFSET3 = 11,  
MSG\_LOFAR\_CLIP\_SLIDING = 12 }

*LOFAR: predefined clipping functions.*

- enum {  
MSG\_LEVEL\_ALG\_PEAK = 0, MSG\_LEVEL\_ALG\_RMS = 1, MSG\_LEVEL\_-  
ALG\_MEAN = 2, MSG\_LEVEL\_ALG\_MEDIAN = 3,  
MSG\_LEVEL\_ALG\_STDDEV = 4 }

*Level: algorithm.*

## 8.85.1 Define Documentation

**8.85.1.1** `#define MSG_FALSE 0`

**8.85.1.2** `#define MSG_TRUE 1`

## 8.85.2 Typedef Documentation

**8.85.2.1** `typedef struct _stSoundStart stSoundStart`

Header message from soundsrv.

**8.85.2.2** `typedef struct _stSoundStart * stpSoundStart`

Header message from soundsrv.

**8.85.2.3    typedef struct [\\_stSpectReq](#) stSpectReq**

Spectrum: request.

**8.85.2.4    typedef struct [\\_stSpectReq](#) \* stpSpectReq**

Spectrum: request.

**8.85.2.5    typedef struct [\\_stSpectRes](#) stSpectRes**

Spectrum: result.

**8.85.2.6    typedef struct [\\_stSpectRes](#) \* stpSpectRes**

Spectrum: result.

**8.85.2.7    typedef struct [\\_stDirReq](#) stDirReq**

Direction: request.

**8.85.2.8    typedef struct [\\_stDirReq](#) \* stpDirReq**

Direction: request.

**8.85.2.9    typedef struct [\\_stDirRes](#) stDirRes**

Direction: result.

**8.85.2.10    typedef struct [\\_stDirRes](#) \* stpDirRes**

Direction: result.

**8.85.2.11    typedef struct [\\_stDirReq2](#) stDirReq2**

Direction3: request.

This is used by locate server.

**8.85.2.12    typedef struct [\\_stDirReq2](#) \* stpDirReq2**

Direction3: request.

This is used by locate server.



**8.85.2.13** typedef struct [\\_stDirRes2](#) stDirRes2

Direction3: result.

This is used by locate server.

**8.85.2.14** typedef struct [\\_stDirRes2](#) \* stpDirRes2

Direction3: result.

This is used by locate server.

**8.85.2.15** typedef struct [\\_stLofarReq](#) stLofarReq

LOFAR: request.

**8.85.2.16** typedef struct [\\_stLofarReq](#) \* stpLofarReq

LOFAR: request.

**8.85.2.17** typedef struct [\\_stLofarRes](#) stLofarRes

LOFAR: result.

**8.85.2.18** typedef struct [\\_stLofarRes](#) \* stpLofarRes

LOFAR: result.

**8.85.2.19** typedef struct [\\_stBeamAudioReq](#) stBeamAudioReq

BeamAudio: request.

**8.85.2.20** typedef struct [\\_stBeamAudioReq](#) \* stpBeamAudioReq

BeamAudio: request.

**8.85.2.21** typedef struct [\\_stBeamAudioFirst](#) stBeamAudioFirst

BeamAudio: result header.

**8.85.2.22** typedef struct [\\_stBeamAudioFirst](#) \* stpBeamAudioFirst

BeamAudio: result header.

**8.85.2.23**    **typedef struct** [\\_stBeamAudioRes](#) [stBeamAudioRes](#)

BeamAudio: result.

**8.85.2.24**    **typedef struct** [\\_stBeamAudioRes](#) \* [stpBeamAudioRes](#)

BeamAudio: result.

**8.85.2.25**    **typedef struct** [\\_stLevelReq](#) [stLevelReq](#)

Level: request.

**8.85.2.26**    **typedef struct** [\\_stLevelReq](#) \* [stpLevelReq](#)

Level: request.

**8.85.2.27**    **typedef struct** [\\_stLevelRes](#) [stLevelRes](#)

Level: result.

**8.85.2.28**    **typedef struct** [\\_stLevelRes](#) \* [stpLevelRes](#)

Level: result.

**8.85.2.29**    **typedef struct** [\\_stLocateHdr](#) [stLocateHdr](#)

Locate: results header.

**8.85.2.30**    **typedef struct** [\\_stLocateHdr](#) \* [stpLocateHdr](#)

Locate: results header.

**8.85.2.31**    **typedef struct** [\\_stLocateRes](#) [stLocateRes](#)

Locate: result.

**8.85.2.32**    **typedef struct** [\\_stLocateRes](#) \* [stpLocateRes](#)

Locate: result.

## 8.85.3 Enumeration Type Documentation

### 8.85.3.1 anonymous enum

Sound: compression.

Enumeration values:

**MSG\_SOUND\_COMPRESS\_NONE**

**MSG\_SOUND\_COMPRESS\_FLAC**

### 8.85.3.2 anonymous enum

Spectrum: type.

Enumeration values:

**MSG\_SPECT\_TYPE\_FFT**

**MSG\_SPECT\_TYPE\_MRFFT**

**MSG\_SPECT\_TYPE\_GABOR**

**MSG\_SPECT\_TYPE\_WVD**

**MSG\_SPECT\_TYPE\_HANKEL**

**MSG\_SPECT\_TYPE\_AUTOCORR**

**MSG\_SPECT\_TYPE\_CEPSTRUM**

### 8.85.3.3 anonymous enum

Spectrum: window.

Enumeration values:

**MSG\_SPECT\_WND\_RECT**

**MSG\_SPECT\_WND\_BARTLETT**

**MSG\_SPECT\_WND\_BLACKMAN**

**MSG\_SPECT\_WND\_BM\_HAR**

**MSG\_SPECT\_WND\_COS\_TAPER**

**MSG\_SPECT\_WND\_EXP**

**MSG\_SPECT\_WND\_FLATTOP**

**MSG\_SPECT\_WND\_GEN\_COS**

**MSG\_SPECT\_WND\_HAMMING**

**MSG\_SPECT\_WND\_HANNING**

**MSG\_SPECT\_WND\_KAISER**

**MSG\_SPECT\_WND\_KAI\_BES**

**MSG\_SPECT\_WND\_TUKEY**

**8.85.3.4 anonymous enum**

Spectrum: background noise estimation and removal.

**Enumeration values:**

**MSG\_SPECT\_BNER\_NONE**

**MSG\_SPECT\_BNER\_TPSW**

**MSG\_SPECT\_BNER\_OTA**

**MSG\_SPECT\_BNER\_DIFF**

**MSG\_SPECT\_BNER\_IDIFF**

**8.85.3.5 anonymous enum**

Direction: algorithm.

**Enumeration values:**

**MSG\_DIR\_ALG\_BEAM**

**MSG\_DIR\_ALG\_CORR**

**MSG\_DIR\_ALG\_SPECT**

**8.85.3.6 anonymous enum**

Direction: scaling.

**Enumeration values:**

**MSG\_DIR\_SCAL\_LIN**

**MSG\_DIR\_SCAL\_LOG**

**MSG\_DIR\_SCAL\_EXP**

**MSG\_DIR\_SCAL\_SIN**

**8.85.3.7 anonymous enum**

Direction: background noise estimation and removal.

**Enumeration values:**

**MSG\_DIR\_BNER\_NONE**

**MSG\_DIR\_BNER\_TPSW**

**MSG\_DIR\_BNER\_OTA**

**MSG\_DIR\_BNER\_DIFF**

**MSG\_DIR\_BNER\_IDIFF**

#### 8.85.3.8 anonymous enum

LOFAR: type.

Enumeration values:

**MSG\_LOFAR\_TYPE\_FFT**

**MSG\_LOFAR\_TYPE\_CEPSTRUM**

**MSG\_LOFAR\_TYPE\_AUTOCORR**

#### 8.85.3.9 anonymous enum

LOFAR: window.

Enumeration values:

**MSG\_LOFAR\_WIN\_RECT**

**MSG\_LOFAR\_WIN\_BARTLETT**

**MSG\_LOFAR\_WIN\_BLACKMAN**

**MSG\_LOFAR\_WIN\_BM\_HARRIS**

**MSG\_LOFAR\_WIN\_COS\_TAPER**

**MSG\_LOFAR\_WIN\_EXP**

**MSG\_LOFAR\_WIN\_FLATTOP**

**MSG\_LOFAR\_WIN\_HAMMING**

**MSG\_LOFAR\_WIN\_HANNING**

**MSG\_LOFAR\_WIN\_KAISER**

**MSG\_LOFAR\_WIN\_KAI\_BES**

**MSG\_LOFAR\_WIN\_TUKEY**

#### 8.85.3.10 anonymous enum

LOFAR: background noise estimation and removal.

Enumeration values:

**MSG\_LOFAR\_BNER\_NONE**

**MSG\_LOFAR\_BNER\_TPSW**

**MSG\_LOFAR\_BNER\_OTA**

**MSG\_LOFAR\_BNER\_DIFF**

**MSG\_LOFAR\_BNER\_IDIFF**

**MSG\_LOFAR\_BNER\_STDDEV**

**8.85.3.11 anonymous enum**

LOFAR: predefined clipping functions.

**Enumeration values:**

**MSG\_LOFAR\_CLIP\_NONE**  
**MSG\_LOFAR\_CLIP\_LOW**  
**MSG\_LOFAR\_CLIP\_BOTH**  
**MSG\_LOFAR\_CLIP\_MEAN**  
**MSG\_LOFAR\_CLIP\_MEDIAN**  
**MSG\_LOFAR\_CLIP\_10DB**  
**MSG\_LOFAR\_CLIP\_20DB**  
**MSG\_LOFAR\_CLIP\_50P**  
**MSG\_LOFAR\_CLIP\_75P**  
**MSG\_LOFAR\_CLIP\_OFFSET**  
**MSG\_LOFAR\_CLIP\_OFFSET2**  
**MSG\_LOFAR\_CLIP\_OFFSET3**  
**MSG\_LOFAR\_CLIP\_SLIDING**

**8.85.3.12 anonymous enum**

Level: algorithm.

**Enumeration values:**

**MSG\_LEVEL\_ALG\_PEAK**  
**MSG\_LEVEL\_ALG\_RMS**  
**MSG\_LEVEL\_ALG\_MEAN**  
**MSG\_LEVEL\_ALG\_MEDIAN**  
**MSG\_LEVEL\_ALG\_STDDEV**

## 8.86 Palette.cc File Reference

```
#include "Palette.hh"
```

Include dependency graph for Palette.cc:

h

.hh

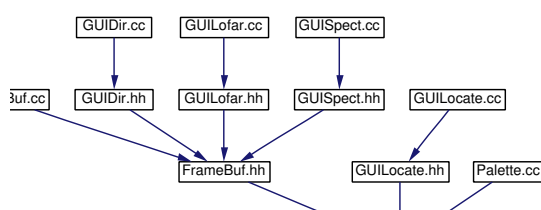
## 8.87 Palette.hh File Reference

```
#include <Alloc.hh>
```

Include dependency graph for Palette.hh:

h

This graph shows which files directly or indirectly include this file:



## Compounds

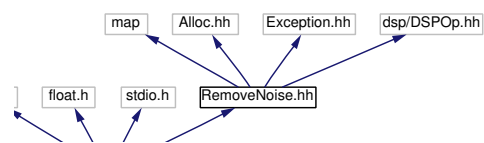
- class `clPalette`  
*RGB palette class.*



## 8.88 RemoveNoise.cc File Reference

```
#include <math.h>
#include <float.h>
#include <stdio.h>
#include "RemoveNoise.hh"
```

Include dependency graph for RemoveNoise.cc:



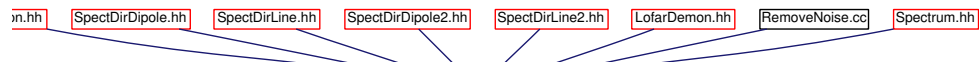
## 8.89 RemoveNoise.hh File Reference

```
#include <map>
#include <Alloc.hh>
#include <Exception.hh>
#include <dsp/DSPOp.hh>
```

Include dependency graph for RemoveNoise.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- class [clSortedArray](#)  
*Class for array of sorted values with insert/remove functionality.*
- class [clSortedArray.clXSortedArray](#)
- class [clRemoveNoise](#)  
*Background noise estimation and removal.*

### Typedefs

- typedef std::map< double, long > [ValueMap\\_t](#)
- typedef std::map< float, long > [ValueMapf\\_t](#)

#### 8.89.1 Typedef Documentation

8.89.1.1 typedef std::map<double, long> [ValueMap\\_t](#)

8.89.1.2 typedef std::map<float, long> [ValueMapf\\_t](#)

## 8.90 SaveSrv.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <signal.h>
#include <limits.h>
#include <errno.h>
#include <time.h>
#include <string.h>
#include <unistd.h>
#include <fcntl.h>
#include <sched.h>
#include <sys/types.h>
#include <sys/stat.h>
#include "SockClie.hh"
#include "SaveSrv.hh"
```

Include dependency graph for SaveSrv.cc:

### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bDaemon](#) = false
- const char \* [cpFileExt](#) [ ] = { "wav", "aiff", "flac" }
- const char [cpFLACMarker](#) [ ] = "fLaC"
- [clSaveSrv](#) [SaveSrv](#)

## 8.90.1 Function Documentation

8.90.1.1 void SigHandler (int *iSigNum*)

8.90.1.2 int main (int *argc*, char \* *argv*[])

## 8.90.2 Variable Documentation

8.90.2.1 bool **bDaemon** = false [static]

8.90.2.2 const char\* **cpFileExt**[] = { "wav", "aiff", "flac" } [static]

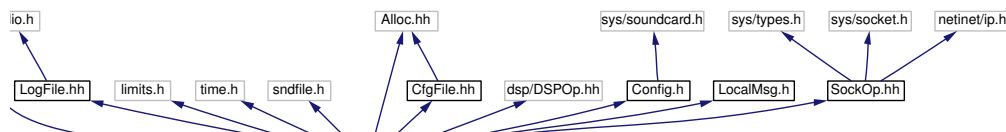
8.90.2.3 const char **cpFLACMarker**[] = "fLaC" [static]

8.90.2.4 **clSaveSrv** SaveSrv

## 8.91 SaveSrv.hh File Reference

```
#include <stdio.h>
#include <limits.h>
#include <time.h>
#include <sndfile.h>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "SockOp.hh"
```

Include dependency graph for SaveSrv.hh:



This graph shows which files directly or indirectly include this file:

v.cc

## Compounds

- class [clSaveSrv](#)  
*Save server.*

## Defines

- #define [SAVS\\_SNDFILE\\_MSGLEN](#) 255
- #define [SAVS\\_LOGENTRY\\_SIZE](#) 255

- #define SAVS\_TIMELEN 12
- #define SAVS\_DEF\_FRAMELEN 8192
- #define SAVS\_DEF\_FILETIME 60

## Enumerations

- enum { SAVS\_FORMAT\_WAV = 0, SAVS\_FORMAT\_AIFF = 1, SAVS\_FORMAT\_FLAC = 2 }  
*File format.*
- enum { SAVS\_TYPE\_PCM = 0, SAVS\_TYPE\_FLOAT = 1, SAVS\_TYPE\_ADPCM = 2, SAVS\_TYPE\_MSADPCM = 3 }  
*File datatype.*

### 8.91.1 Define Documentation

8.91.1.1 #define SAVS\_SNDFILE\_MSGLEN 255

8.91.1.2 #define SAVS\_LOGENTRY\_SIZE 255

8.91.1.3 #define SAVS\_TIMELEN 12

8.91.1.4 #define SAVS\_DEF\_FRAMELEN 8192

8.91.1.5 #define SAVS\_DEF\_FILETIME 60

### 8.91.2 Enumeration Type Documentation

#### 8.91.2.1 anonymous enum

File format.

Enumeration values:

SAVS\_FORMAT\_WAV  
SAVS\_FORMAT\_AIFF  
SAVS\_FORMAT\_FLAC

#### 8.91.2.2 anonymous enum

File datatype.

Enumeration values:

SAVS\_TYPE\_PCM  
SAVS\_TYPE\_FLOAT

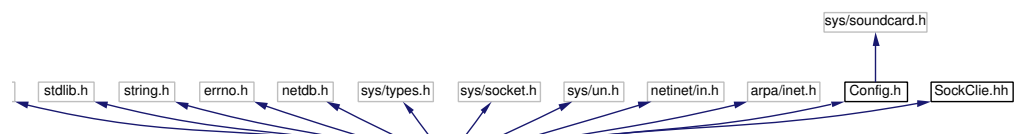
**SAVS\_TYPE\_ADPCM**

**SAVS\_TYPE\_MSADPCM**

## 8.92 SockClie.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <errno.h>
#include <netdb.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <sys/un.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "Config.h"
#include "SockClie.hh"
```

Include dependency graph for SockClie.cc:



### Defines

- #define [UNIX\\_PATH\\_MAX](#) 108

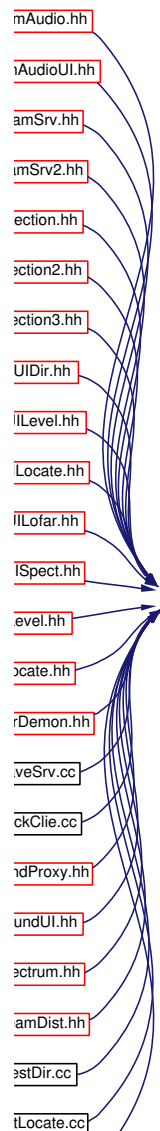
### 8.92.1 Define Documentation

#### 8.92.1.1 #define UNIX\_PATH\_MAX 108



## 8.93 SockClie.hh File Reference

This graph shows which files directly or indirectly include this file:



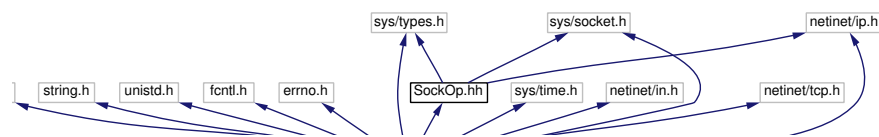
### Compounds

- class [clSockClie](#)  
*Socket client class.*

## 8.94 SockOp.cc File Reference

```
#include <stdio.h>
#include <string.h>
#include <unistd.h>
#include <fcntl.h>
#include <errno.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <sys/time.h>
#include <netinet/in.h>
#include <netinet/ip.h>
#include <netinet/tcp.h>
#include "SockOp.hh"
```

Include dependency graph for SockOp.cc:



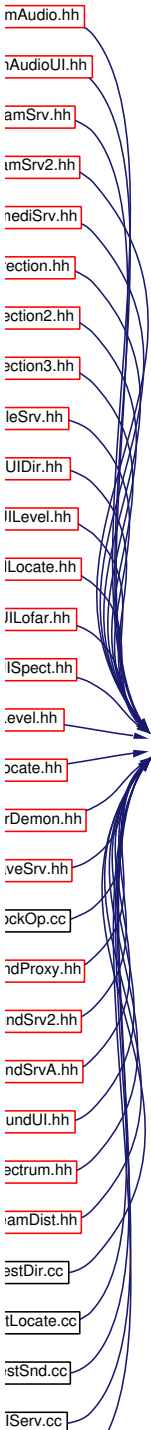
## 8.95 SockOp.hh File Reference

```
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/ip.h>
```

Include dependency graph for SockOp.hh:



This graph shows which files directly or indirectly include this file:



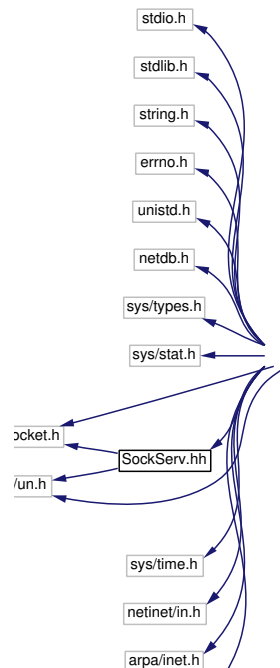
## Compounds

- class [clSockOp](#)  
*Socket I/O operations.*

## 8.96 SockServ.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <errno.h>
#include <unistd.h>
#include <netdb.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/socket.h>
#include <sys/un.h>
#include <sys/time.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "Config.h"
#include "SockServ.hh"
```

Include dependency graph for SockServ.cc:

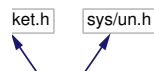


## 8.97 SockServ.hh File Reference

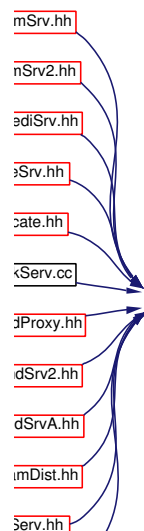
```
#include <sys/socket.h>
```

```
#include <sys/un.h>
```

Include dependency graph for SockServ.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clSockServ](#)  
*Socket server class.*

## Defines

- #define [UNIX\\_PATH\\_MAX](#) 108
- #define [SOCKSERV\\_LISTENQUEUE\\_LEN](#) 8

### **8.97.1 Define Documentation**

**8.97.1.1 #define UNIX\_PATH\_MAX 108**

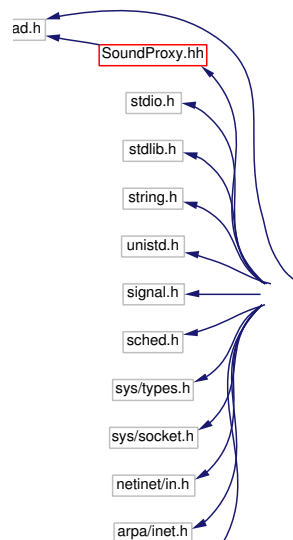
**8.97.1.2 #define SOCKSERV\_LISTENQUEUE\_LEN 8**



## 8.98 SoundProxy.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <signal.h>
#include <sched.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <glib.h>
#include "SoundProxy.hh"
```

Include dependency graph for SoundProxy.cc:



## Functions

- int [main](#) (int argc, char \*argv[ ])
- void \* [WrapSoundInThread](#) (void \*vpData)

- void \* [WrapWaitConnectThread](#) (void \*vpData)
- void \* [WrapServeClientThread](#) (void \*vpData)

## Variables

- bool [bDaemon](#)
- bool [bDebug](#)
- [clSoundProxy](#) \* [SoundProxy](#)

## 8.98.1 Function Documentation

8.98.1.1 int main (int *argc*, char \* *argv*[])

8.98.1.2 void\* [WrapSoundInThread](#) (void \* *vpData*)

8.98.1.3 void\* [WrapWaitConnectThread](#) (void \* *vpData*)

8.98.1.4 void\* [WrapServeClientThread](#) (void \* *vpData*)

## 8.98.2 Variable Documentation

8.98.2.1 bool [bDaemon](#) [static]

8.98.2.2 bool [bDebug](#) [static]

8.98.2.3 [clSoundProxy](#)\* [SoundProxy](#)

```
#include <pthread.h>
#include <limits.h>
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include "Config.h"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SockServ.hh"
```

```

graph LR
    i.h --> limits.h
    i.h --> Alloc.hh
    i.h --> CfgFile.hh
    limits.h --> Alloc.hh
    Alloc.hh --> CfgFile.hh
    CfgFile.hh --> Condition.hh
    Condition.hh --> Mutex.hh
    Mutex.hh --> Config.h
    Config.h --> LogFile.h
    LogFile.h --> SockClie.hh
    SockClie.hh --> SockOp.hh
    SockOp.hh --> SockServ.hh
  
```

Proxy.cc

- class `clSoundProxy`  
*Sound service proxy.*

- #define SP\_CONV\_BUF\_LEN 255

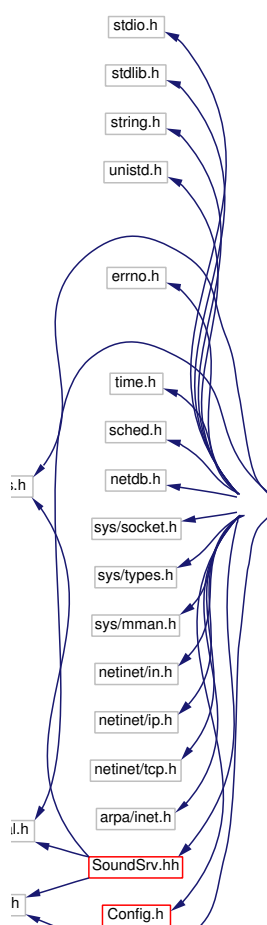
### **8.99.1 Define Documentation**

**8.99.1.1 #define SP\_CONV\_BUF\_LEN 255**

## 8.100 SoundSrv.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <errno.h>
#include <signal.h>
#include <time.h>
#include <sched.h>
#include <netdb.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <sys/mman.h>
#include <netinet/in.h>
#include <netinet/ip.h>
#include <netinet/tcp.h>
#include <arpa/inet.h>
#include <pth.h>
#include "Config.h"
#include "SoundSrv.hh"
```

Include dependency graph for SoundSrv.cc:



## Functions

- void \* [Input](#) (void \*vpNone)
- void \* [WaitConnect](#) (void \*vpNone)
- void \* [ServeClient](#) (void \*vpHandle)
- int [main](#) (int argc, char \*argv[ ])

## Variables

- [clSoundSrv](#) \* [SoundSrv](#)

## 8.100.1 Function Documentation

8.100.1.1 void\* Input (void \* *vpNone*)

8.100.1.2 void\* WaitConnect (void \* *vpNone*)

8.100.1.3 void\* ServeClient (void \* *vpHandle*)

8.100.1.4 int main (int *argc*, char \* *argv*[ ])

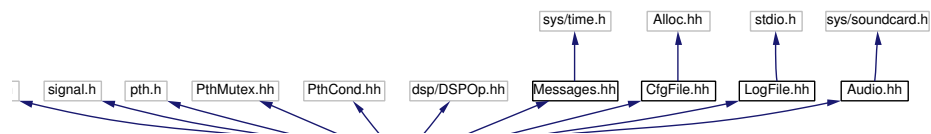
## 8.100.2 Variable Documentation

8.100.2.1 [clSoundSrv\\*](#) [SoundSrv](#)

## 8.101 SoundSrv.hh File Reference

```
#include <limits.h>
#include <signal.h>
#include <pth.h>
#include <PthMutex.hh>
#include <PthCond.hh>
#include <dsp/DSPOp.hh>
#include "Messages.hh"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "Audio.hh"
```

Include dependency graph for SoundSrv.hh:



This graph shows which files directly or indirectly include this file:

srv.cc

## Compounds

- class [clSoundSrv](#)  
*Sound card input server.*

## Defines

- #define [SS\\_PTH\\_MAJ](#) ((PTH\_VERSION&0xf00000)>>20)
- #define [SS\\_PTH\\_MIN](#) ((PTH\_VERSION&0xff000)>>12)
- #define [SS\\_PTH\\_PL](#) (PTH\_VERSION&0x0000ff)



### 8.101.1 Define Documentation

**8.101.1.1** `#define SS_PTH_MAJ ((PTH_VERSION&0xf00000)>>20)`

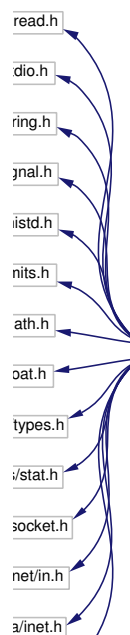
**8.101.1.2** `#define SS_PTH_MIN ((PTH_VERSION&0xff000)>>12)`

**8.101.1.3** `#define SS_PTH_PL (PTH_VERSION&0x0000ff)`

## 8.102 SoundSrv2.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <limits.h>
#include <math.h>
#include <float.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "SoundSrv2.hh"
```

Include dependency graph for SoundSrv2.cc:



## Functions

- int [main](#) (int argc, char \*argv[ ])
- void [SigHandler](#) (int iSigNum)
- void \* [WrapAudioInThread](#) (void \*vpParam)
- void \* [WrapServeClientThread](#) (void \*vpParam)

## Variables

- bool [bDaemon](#) = false
- [clSoundSrv2](#) [SoundSrv2](#)

### 8.102.1 Function Documentation

8.102.1.1 int [main](#) (int *argc*, char \* *argv*[ ])

8.102.1.2 void [SigHandler](#) (int *iSigNum*)

8.102.1.3 void\* [WrapAudioInThread](#) (void \* *vpParam*)

8.102.1.4 void\* [WrapServeClientThread](#) (void \* *vpParam*)

### 8.102.2 Variable Documentation

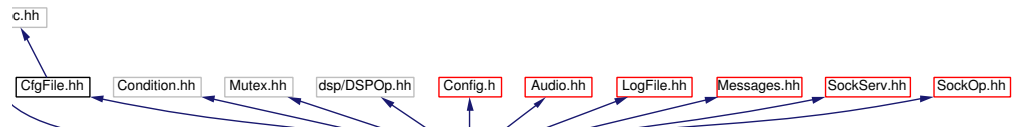
8.102.2.1 bool [bDaemon](#) = false [static]

8.102.2.2 [clSoundSrv2](#) [SoundSrv2](#)

### 8.103 SoundSrv2.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "Audio.hh"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockServ.hh"
#include "SockOp.hh"
```

Include dependency graph for SoundSrv2.hh:



This graph shows which files directly or indirectly include this file:

srv2.cc

### Compounds

- class [clSoundSrv2](#)  
*SoundServer2.*

### Defines

- #define [SS2\\_LOGENTRY\\_SIZE](#) 256
- #define [SS2\\_OSS\\_MAJOR](#)(x) ((x >> 16) & 0xff)

- `#define SS2_OSS_MINOR(x) ((x >> 8) & 0xff)`
- `#define SS2_OSS_PL(x) (x & 0xff)`

### 8.103.1 Define Documentation

**8.103.1.1** `#define SS2_LOGENTRY_SIZE 256`

**8.103.1.2** `#define SS2_OSS_MAJOR(x) ((x >> 16) & 0xff)`

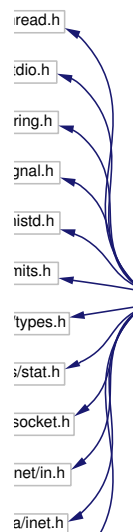
**8.103.1.3** `#define SS2_OSS_MINOR(x) ((x >> 8) & 0xff)`

**8.103.1.4** `#define SS2_OSS_PL(x) (x & 0xff)`

## 8.104 SoundSrvA.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "SoundSrvA.hh"
```

Include dependency graph for SoundSrvA.cc:



## Functions

- int [main](#) (int argc, char \*argv[ ])
- void [SigHandler](#) (int iSigNum)
- void \* [WrapAudioInThread](#) (void \*vpParam)
- void \* [WrapServeClientThread](#) (void \*vpParam)

## Variables

- bool `bDaemon` = false
- `clSoundSrvA` `SoundSrvA`

### 8.104.1 Function Documentation

8.104.1.1 `int main (int argc, char * argv [ ])`

8.104.1.2 `void SigHandler (int iSigNum)`

8.104.1.3 `void* WrapAudioInThread (void * vpParam)`

8.104.1.4 `void* WrapServeClientThread (void * vpParam)`

### 8.104.2 Variable Documentation

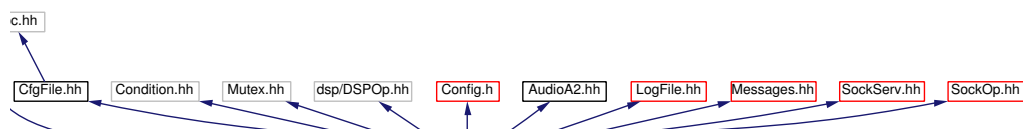
8.104.2.1 bool `bDaemon` = false [static]

8.104.2.2 `clSoundSrvA` `SoundSrvA`

## 8.105 SoundSrvA.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "AudioA2.hh"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockServ.hh"
#include "SockOp.hh"
```

Include dependency graph for SoundSrvA.hh:



This graph shows which files directly or indirectly include this file:

SoundSrvA.cc

## Compounds

- class [clSoundSrvA](#)  
*SoundServer for ALSA.*

## Defines

- #define [SSA\\_LOGENTRY\\_SIZE](#) 256



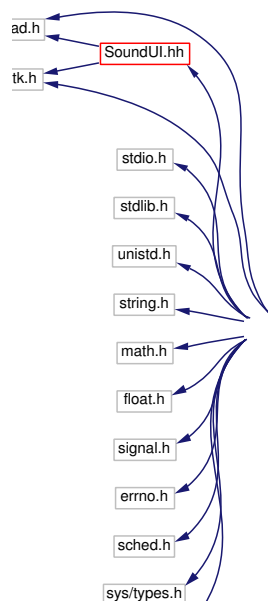
## **8.105.1 Define Documentation**

### **8.105.1.1 `#define SSA_LOGENTRY_SIZE 256`**

## 8.106 SoundUI.cc File Reference

```
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <string.h>
#include <math.h>
#include <float.h>
#include <signal.h>
#include <errno.h>
#include <sched.h>
#include <sys/types.h>
#include <sys/mman.h>
#include <gtk/gtk.h>
#include "SoundUI.hh"
```

Include dependency graph for SoundUI.cc:



## Functions

- int [main](#) (int argc, char \*argv[ ])
- gboolean [WrapOnDeleteEvent](#) (GtkWidget \*gwSender, GdkEvent \*geEvent, gpointer gpData)
- void [WrapOnClickedEvent](#) (GtkButton \*gbButton, gpointer gpData)
- gint [WrapOnTimeoutEvent](#) (gpointer gpData)
- void [WrapOnToggledEvent](#) (GtkToggleButton \*gtbToggleButton, gpointer gpData)
- void [WrapOnValueChangedEvent](#) (GtkAdjustment \*gaAdjustment, gpointer gpData)
- void [WrapOnApplyCurveClicked](#) (GtkButton \*gbButton, gpointer gpData)
- void [WrapOnMotionCurve](#) (GtkWidget \*gwSender, GdkEventMotion \*gemEvent, gpointer gpData)
- void \* [WrapSoundOutThread](#) (void \*vpData)
- void \* [WrapSoundInThread](#) (void \*vpData)

## Variables

- const char \* [cpWindowTxt](#) = "Sound UI"
- const char \* [cpChannelPfx](#) = "Channel"
- const char \* [cpLServerTxt](#) = "Server"
- const char \* [cpLChannelTxt](#) = "Channel"
- const char \* [cpBConnectTxt](#) = "Connect"
- const char \* [cpLInputLevelTxt](#) = "Average peak input level"
- const char \* [cpLEqTxt](#) = "Eq"
- const char \* [cpLOutputLevelTxt](#) = "Level"
- const char \* [cpBApplyCurveTxt](#) = "Apply curve"
- [clSoundUI](#) \* [SoundUI](#)



## 8.106.1 Function Documentation

- 8.106.1.1 `int main (int argc, char * argv [ ])`
- 8.106.1.2 `gboolean WrapOnDeleteEvent (GtkWidget * gwSender, GdkEvent * geEvent, gpointer gpData)`
- 8.106.1.3 `void WrapOnClickedEvent (GtkButton * gbButton, gpointer gpData)`
- 8.106.1.4 `gint WrapOnTimeoutEvent (gpointer gpData)`
- 8.106.1.5 `void WrapOnToggledEvent (GtkToggleButton * gtbToggleButton, gpointer gpData)`
- 8.106.1.6 `void WrapOnValueChangedEvent (GtkAdjustment * gaAdjustment, gpointer gpData)`
- 8.106.1.7 `void WrapOnApplyCurveClicked (GtkButton * gbButton, gpointer gpData)`
- 8.106.1.8 `void WrapOnMotionCurve (GtkWidget * gwSender, GdkEventMotion * gemEvent, gpointer gpData)`
- 8.106.1.9 `void* WrapSoundOutThread (void * vpData)`
- 8.106.1.10 `void* WrapSoundInThread (void * vpData)`

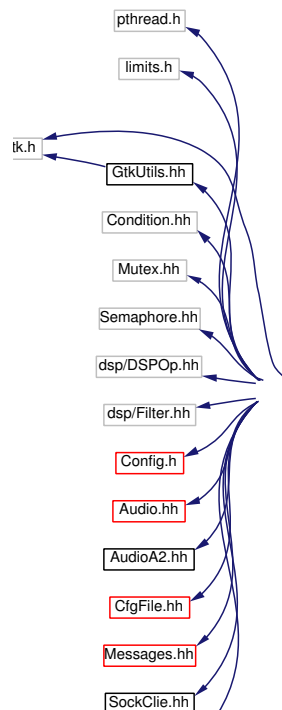
## 8.106.2 Variable Documentation

- 8.106.2.1 `const char* cpWindowTxt = "Sound UI" [static]`
- 8.106.2.2 `const char* cpChannelPfx = "Channel" [static]`
- 8.106.2.3 `const char* cpLServerTxt = "Server" [static]`
- 8.106.2.4 `const char* cpLChannelTxt = "Channel" [static]`
- 8.106.2.5 `const char* cpBConnectTxt = "Connect" [static]`
- 8.106.2.6 `const char* cpLInputLevelTxt = "Average peak input level" [static]`
- 8.106.2.7 `const char* cpLEqTxt = "Eq" [static]`
- 8.106.2.8 `const char* cpLOutputLevelTxt = "Level" [static]`
- 8.106.2.9 `const char* cpBApplyCurveTxt = "Apply curve" [static]`
- 8.106.2.10 `clSoundUI* SoundUI`

## 8.107 SoundUI.hh File Reference

```
#include <pthread.h>
#include <limits.h>
#include <gtk/gtk.h>
#include <Condition.hh>
#include <Mutex.hh>
#include <Semaphore.hh>
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include "Config.h"
#include "Audio.hh"
#include "AudioA2.hh"
#include "CfgFile.hh"
#include "GtkUtils.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for SoundUI.hh:



This graph shows which files directly or indirectly include this file:

Jl.cc

## Compounds

- class [clSoundChGUI](#)  
*Per channel GUI for [clSoundUI](#).*
- class [clSoundUI](#)  
*Sound user interface.*

## Defines

- #define [SUI\\_VER\\_MAJ](#) GLOBAL\_VERSMAJ

- #define `SUL_VER_MIN` GLOBAL\_VERSMIN
- #define `SUL_VER_PL` GLOBAL\_VERSPL
- #define `SUL_PADDING` 8
- #define `SUL_CONV_LEN` 256
- #define `SUL_SERV_MAXLEN` 255
- #define `SUL_CH_VALUE` 1.0
- #define `SUL_CH_LOWER` 1.0
- #define `SUL_CH_HIGHER` 16.0
- #define `SUL_IN_VALUE` 0.0
- #define `SUL_IN_LOWER` -72.0
- #define `SUL_IN_HIGHER` 0.0
- #define `SUL_OUT_VALUE` 0.0
- #define `SUL_OUT_LOWER` -72.0
- #define `SUL_OUT_HIGHER` 0.0
- #define `SUL_OUT_RANGE` 12.0
- #define `SUL_OUT_STEP` 0.1
- #define `SULEQ_RANGE` 12.0
- #define `SULEQ_STEP` 0.1
- #define `SULEQ_MAXOCTS` 15
- #define `SUL_FILTER_WINDOW` true



## 8.107.1 Define Documentation

8.107.1.1 `#define SUI_VER_MAJ GLOBAL_VERSMAJ`

8.107.1.2 `#define SUI_VER_MIN GLOBAL_VERSMIN`

8.107.1.3 `#define SUI_VER_PL GLOBAL_VERSPL`

8.107.1.4 `#define SUI_PADDING 8`

8.107.1.5 `#define SUI_CONV_LEN 256`

8.107.1.6 `#define SUI_SERV_MAXLEN 255`

8.107.1.7 `#define SUI_CH_VALUE 1.0`

8.107.1.8 `#define SUI_CH_LOWER 1.0`

8.107.1.9 `#define SUI_CH_HIGHER 16.0`

8.107.1.10 `#define SUI_IN_VALUE 0.0`

8.107.1.11 `#define SUI_IN_LOWER -72.0`

8.107.1.12 `#define SUI_IN_HIGHER 0.0`

8.107.1.13 `#define SUI_OUT_VALUE 0.0`

8.107.1.14 `#define SUI_OUT_LOWER -72.0`

8.107.1.15 `#define SUI_OUT_HIGHER 0.0`

8.107.1.16 `#define SUI_OUT_RANGE 12.0`

8.107.1.17 `#define SUI_OUT_STEP 0.1`

8.107.1.18 `#define SUI_EQ_RANGE 12.0`

8.107.1.19 `#define SUI_EQ_STEP 0.1`

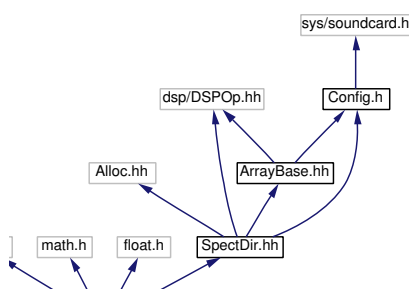
8.107.1.20 `#define SUI_EQ_MAXOCTS 15`

8.107.1.21 `#define SUI_FILTER_WINDOW true`

## 8.108 SpectDir.cc File Reference

```
#include <stdio.h>
#include <math.h>
#include <float.h>
#include "SpectDir.hh"
```

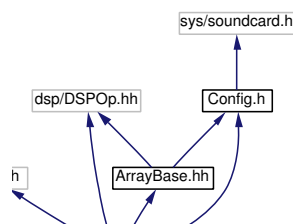
Include dependency graph for SpectDir.cc:



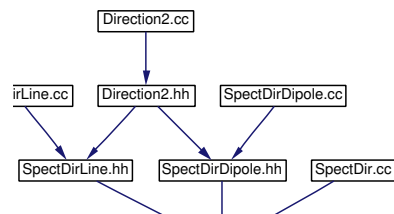
## 8.109 SpectDir.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "ArrayBase.hh"
```

Include dependency graph for SpectDir.hh:



This graph shows which files directly or indirectly include this file:



### Compounds

- struct [\\_stSpectDirRN](#)  
*SpectDir: Noise removal parameters.*
- class [clSpectDir](#)  
*Direction calculation from spectrum.*

### Typedefs

- typedef [\\_stSpectDirRN](#) [stSpectDirRN](#)  
*SpectDir: Noise removal parameters.*

- typedef [\\_stSpectDirRN](#) \* [stpSpectDirRN](#)  
*SpectDir: Noise removal parameters.*

## 8.109.1 Typedef Documentation

### 8.109.1.1 typedef struct [\\_stSpectDirRN](#) [stSpectDirRN](#)

SpectDir: Noise removal parameters.

### 8.109.1.2 typedef struct [\\_stSpectDirRN](#) \* [stpSpectDirRN](#)

SpectDir: Noise removal parameters.

## 8.110 SpectDir2.cc File Reference

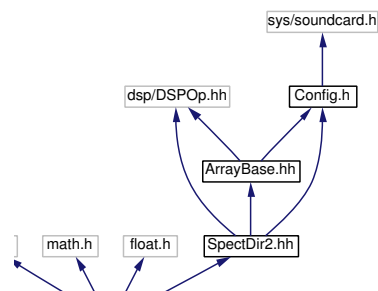
```
#include <stdio.h>
```

```
#include <math.h>
```

```
#include <float.h>
```

```
#include "SpectDir2.hh"
```

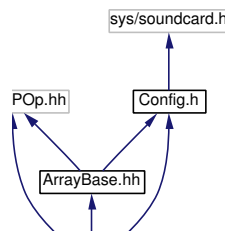
Include dependency graph for SpectDir2.cc:



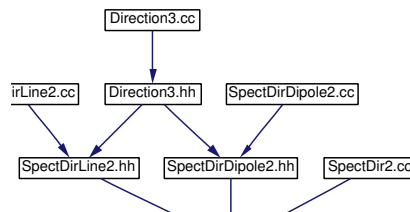
## 8.111 SpectDir2.hh File Reference

```
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "ArrayBase.hh"
```

Include dependency graph for SpectDir2.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- struct [\\_stSpectDir2RN](#)
- class [clSpectDir2](#)

*Direction calculation from spectrum.*

## Typedefs

- typedef [\\_stSpectDir2RN](#) [stSpectDir2RN](#)
- typedef [\\_stSpectDir2RN](#) \* [stpSpectDir2RN](#)

### 8.111.1 Typedef Documentation

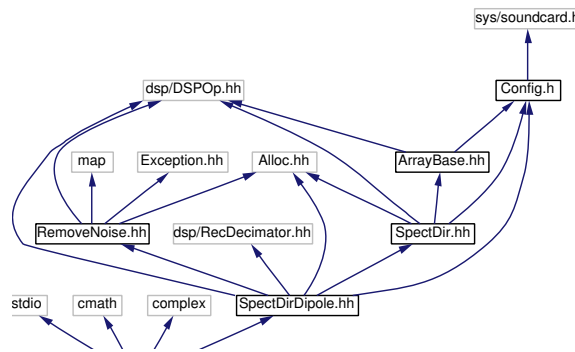
8.111.1.1 typedef struct [\\_stSpectDir2RN](#) [stSpectDir2RN](#)

8.111.1.2 typedef struct [\\_stSpectDir2RN](#) \* [stpSpectDir2RN](#)

## 8.112 SpectDirDipole.cc File Reference

```
#include <cstdio>
#include <cmath>
#include <complex>
#include "SpectDirDipole.hh"
```

Include dependency graph for SpectDirDipole.cc:

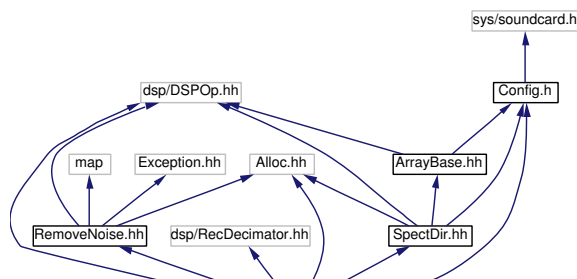




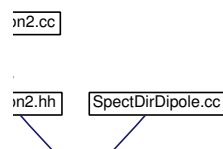
## 8.113 SpectDirDipole.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "RemoveNoise.hh"
#include "SpectDir.hh"
```

Include dependency graph for SpectDirDipole.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clSpectDirDipole](#)  
*Spectrum based direction finding for a dipole array.*

## Enumerations

- enum { [SDD\\_SCALE\\_LIN](#) = 0, [SDD\\_SCALE\\_LOG](#) = 1 }  
*Scaling type.*

- enum {  
    SDD\_BNER\_NONE = 0, SDD\_BNER\_TPSW = 1, SDD\_BNER\_OTA = 2, SDD\_-  
    BNER\_DIFF = 3,  
    SDD\_BNER\_IDIFF = 4 }

*Background noise estimation and removal type.*

## 8.113.1 Enumeration Type Documentation

### 8.113.1.1 anonymous enum

Scaling type.

**Enumeration values:**

**SDD\_SCALE\_LIN** Linear scaling.

**SDD\_SCALE\_LOG** Logarithmic (dB) scaling.

### 8.113.1.2 anonymous enum

Background noise estimation and removal type.

**Enumeration values:**

**SDD\_BNER\_NONE** No noise removal.

**SDD\_BNER\_TPSW** Two-Pass Split-Window.

**SDD\_BNER\_OTA** Order-Truncate-Average.

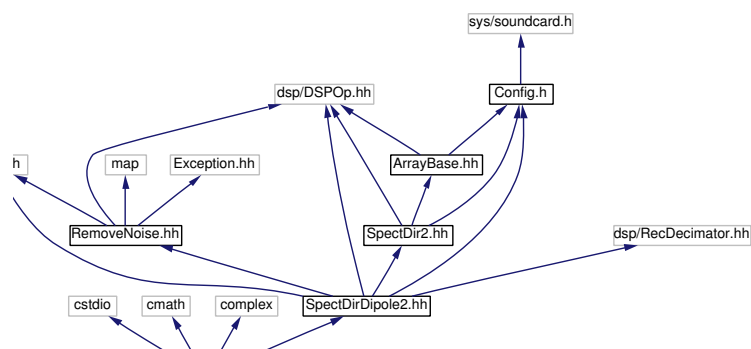
**SDD\_BNER\_DIFF** Differential.

**SDD\_BNER\_IDIFF** Inverse differential.

## 8.114 SpectDirDipole2.cc File Reference

```
#include <cstdio>
#include <cmath>
#include <complex>
#include "SpectDirDipole2.hh"
```

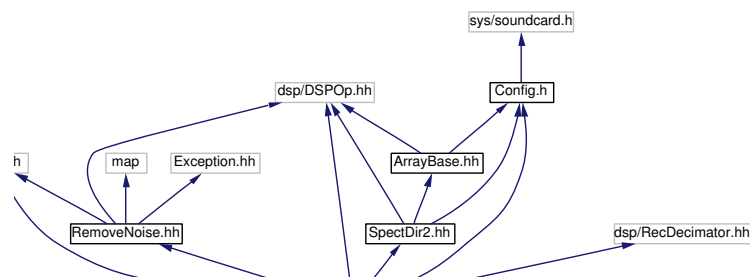
Include dependency graph for SpectDirDipole2.cc:



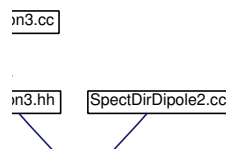
## 8.115 SpectDirDipole2.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "RemoveNoise.hh"
#include "SpectDir2.hh"
```

Include dependency graph for SpectDirDipole2.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class `clSpectDirDipole2`  
*Spectrum based direction finding for dipole array.*

## Enumerations

- enum { `SDD2_SCALE_LIN` = 0, `SDD2_SCALE_LOG` = 1 }
- enum {  
`SDD2_BNER_NONE` = 0, `SDD2_BNER_TPSW` = 1, `SDD2_BNER_OTA` = 2,  
`SDD2_BNER_DIFF` = 3,

```
SDD2_BNER_IDIFF = 4 }
```

## 8.115.1 Enumeration Type Documentation

### 8.115.1.1 anonymous enum

Enumeration values:

**SDD2\_SCALE\_LIN**

**SDD2\_SCALE\_LOG**

### 8.115.1.2 anonymous enum

Enumeration values:

**SDD2\_BNER\_NONE**

**SDD2\_BNER\_TPSW**

**SDD2\_BNER\_OTA**

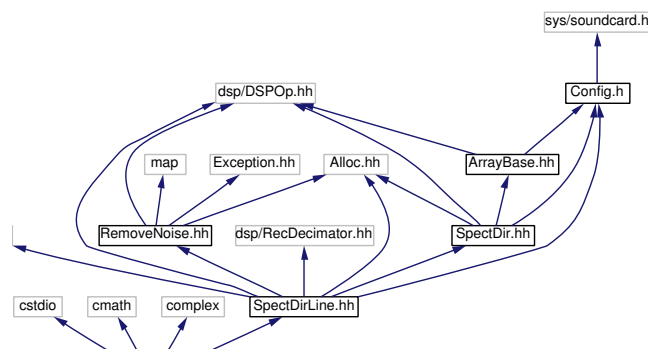
**SDD2\_BNER\_DIFF**

**SDD2\_BNER\_IDIFF**

## 8.116 SpectDirLine.cc File Reference

```
#include <cstdio>
#include <cmath>
#include <complex>
#include "SpectDirLine.hh"
```

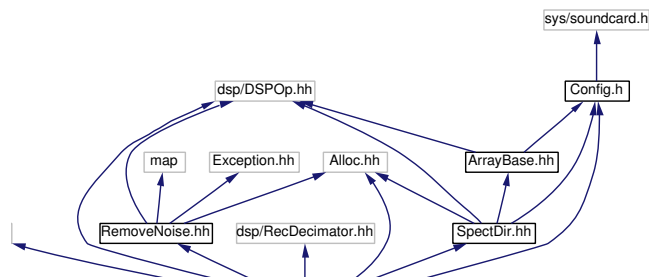
Include dependency graph for SpectDirLine.cc:



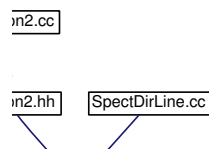
## 8.117 SpectDirLine.hh File Reference

```
#include <vector>
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "RemoveNoise.hh"
#include "SpectDir.hh"
```

Include dependency graph for SpectDirLine.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clSpectDirLine](#)  
*Spectrum based direction finding for a line array.*

## Enumerations

- enum { [SDL\\_SCALE\\_LIN](#) = 0, [SDL\\_SCALE\\_LOG](#) = 1 }  
*Scaling type.*

- enum {  
    SDL\_BNER\_NONE = 0, SDL\_BNER\_TPSW = 1, SDL\_BNER\_OTA = 2, SDL\_-  
    BNER\_DIFF = 3,  
    SDL\_BNER\_IDIFF = 4 }

*Background noise estimation and removal type.*

## 8.117.1 Enumeration Type Documentation

### 8.117.1.1 anonymous enum

Scaling type.

**Enumeration values:**

**SDL\_SCALE\_LIN** Linear scaling.

**SDL\_SCALE\_LOG** Logarithmic (dB) scaling.

### 8.117.1.2 anonymous enum

Background noise estimation and removal type.

**Enumeration values:**

**SDL\_BNER\_NONE** No noise removal.

**SDL\_BNER\_TPSW** Two-Pass Split-Window.

**SDL\_BNER\_OTA** Order-Truncate-Average.

**SDL\_BNER\_DIFF** Differential.

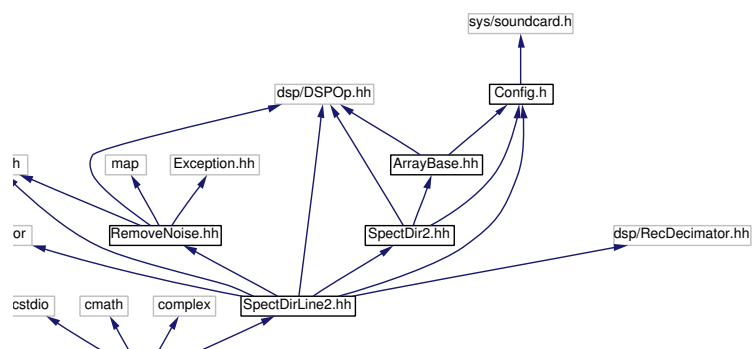
**SDL\_BNER\_IDIFF** Inverse differential.



## 8.118 SpectDirLine2.cc File Reference

```
#include <cstdio>
#include <cmath>
#include <complex>
#include "SpectDirLine2.hh"
```

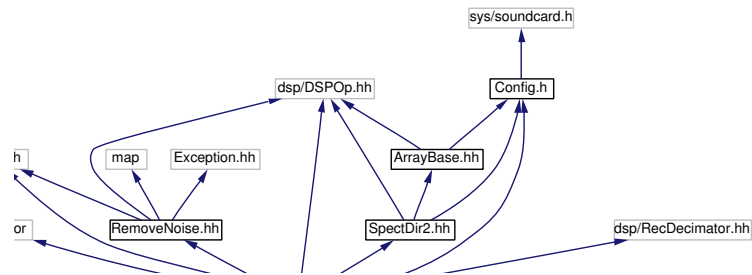
Include dependency graph for SpectDirLine2.cc:



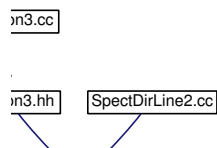
## 8.119 SpectDirLine2.hh File Reference

```
#include <vector>
#include <Alloc.hh>
#include <dsp/DSPop.hh>
#include <dsp/RecDecimator.hh>
#include "Config.h"
#include "RemoveNoise.hh"
#include "SpectDir2.hh"
```

Include dependency graph for SpectDirLine2.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class `clSpectDirLine2`  
*Spectrum based direction finding for line array.*

## Enumerations

- enum { **SDL2\_SCALE\_LIN** = 0, **SDL2\_SCALE\_LOG** = 1 }

- enum {  
    SDL2\_BNER\_NONE = 0, SDL2\_BNER\_TPSW = 1, SDL2\_BNER\_OTA = 2,  
    SDL2\_BNER\_DIFF = 3,  
    SDL2\_BNER\_IDIFF = 4 }

## 8.119.1 Enumeration Type Documentation

### 8.119.1.1 anonymous enum

Enumeration values:

    SDL2\_SCALE\_LIN

    SDL2\_SCALE\_LOG

### 8.119.1.2 anonymous enum

Enumeration values:

    SDL2\_BNER\_NONE

    SDL2\_BNER\_TPSW

    SDL2\_BNER\_OTA

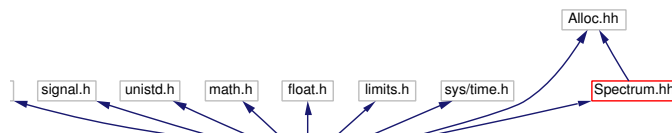
    SDL2\_BNER\_DIFF

    SDL2\_BNER\_IDIFF

## 8.120 Spectrum.cc File Reference

```
#include <stdio.h>
#include <signal.h>
#include <unistd.h>
#include <math.h>
#include <float.h>
#include <limits.h>
#include <sys/time.h>
#include <Alloc.hh>
#include "Spectrum.hh"
```

Include dependency graph for Spectrum.cc:



### Defines

- #define `SPECT_NWIN` 13

### Functions

- void `SigHandler` (int iSigNum)
- int `main` (int argc, char \*argv[ ])

### Variables

- bool `bDebug`
- bool `bDaemon`
- `clSpectrum` \* `Spectrum`
- const char \* `cpaWindowFuncs` [ ]

## 8.120.1 Define Documentation

### 8.120.1.1 `#define SPECT_NWIN 13`

## 8.120.2 Function Documentation

### 8.120.2.1 `void SigHandler (int iSigNum)`

### 8.120.2.2 `int main (int argc, char * argv[])`

## 8.120.3 Variable Documentation

### 8.120.3.1 `bool bDebug [static]`

### 8.120.3.2 `bool bDaemon [static]`

### 8.120.3.3 `clSpectrum* Spectrum`

### 8.120.3.4 `const char* cpaWindowFuncs[] [static]`

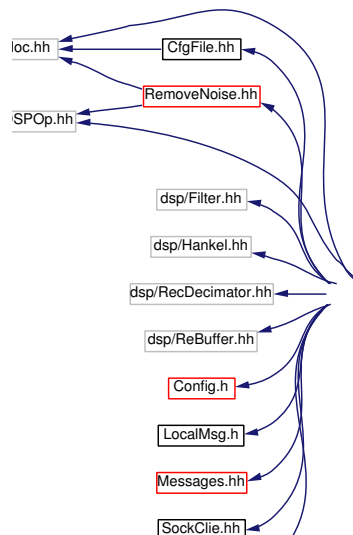
Initial value:

```
{  
    "Rectangle",  
    "Bartlett",  
    "Blackman",  
    "Blackman-Harris",  
    "Cosine tapered",  
    "Exponential",  
    "Flat-top",  
    "Generic cosine",  
    "Hamming",  
    "Hanning",  
    "Kaiser",  
    "Kaiser-Bessel",  
    "Tukey" }
```

## 8.121 Spectrum.hh File Reference

```
#include <Alloc.hh>
#include <dsp/DSPOp.hh>
#include <dsp/Filter.hh>
#include <dsp/Hankel.hh>
#include <dsp/RecDecimator.hh>
#include <dsp/ReBuffer.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "Messages.hh"
#include "RemoveNoise.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for Spectrum.hh:



This graph shows which files directly or indirectly include this file:



## Compounds

- class [clSpectrum](#)  
*Spectrum server.*

## 8.122 StreamDist.cc File Reference

```
#include <pthread.h>
#include <limits.h>
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <unistd.h>
#include <sys/types.h>
#include <sys/stat.h>
#include "StreamDist.hh"
```

Include dependency graph for StreamDist.cc:



### Functions

- int [main](#) (int argc, char \*argv[ ])
- void [SigHandler](#) (int iSigNum)
- void \* [WrapAudioInThread](#) (void \*vpParam)
- void \* [WrapServeClientThread](#) (void \*vpParam)

### Variables

- bool [bDaemon](#)
- [clStreamDist](#) [StreamDist](#)



### 8.122.1 Function Documentation

8.122.1.1 `int main (int argc, char * argv [ ])`

8.122.1.2 `void SigHandler (int iSigNum)`

8.122.1.3 `void* WrapAudioInThread (void * vpParam)`

8.122.1.4 `void* WrapServeClientThread (void * vpParam)`

### 8.122.2 Variable Documentation

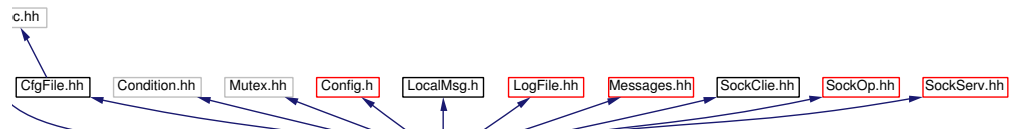
8.122.2.1 `bool bDaemon [static]`

8.122.2.2 `clStreamDist StreamDist`

## 8.123 StreamDist.hh File Reference

```
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "CfgFile.hh"
#include "LogFile.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
#include "SockServ.hh"
```

Include dependency graph for StreamDist.hh:



This graph shows which files directly or indirectly include this file:

Dist.cc

## Compounds

- class [clStreamDist](#)  
*Audio stream distributor.*

## Defines

- #define [SD\\_LOGENTRY\\_SIZE](#) 256
- #define [SD\\_HOSTADDR\\_MAX](#) 256

### 8.123.1 Define Documentation

8.123.1.1 `#define SD_LOGENTRY_SIZE 256`

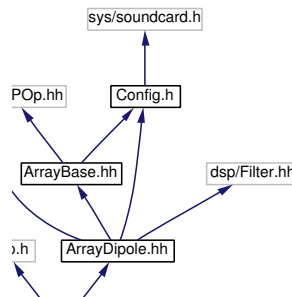
8.123.1.2 `#define SD_HOSTADDR_MAX 256`

## 8.124 TestArray.cc File Reference

```
#include <stdio.h>
```

```
#include "ArrayDipole.hh"
```

Include dependency graph for TestArray.cc:



### Functions

- int `main` (int argc, char \*argv[ ])

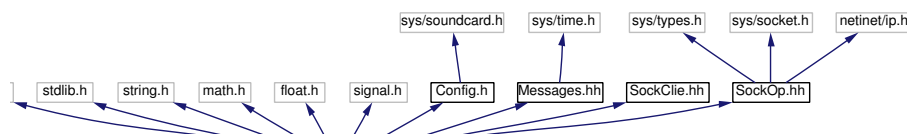
#### 8.124.1 Function Documentation

##### 8.124.1.1 int main (int argc, char \* argv[ ])

## 8.125 TestDir.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <float.h>
#include <signal.h>
#include "Config.h"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for TestDir.cc:



## Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

## Variables

- bool [bRun](#) = true

### 8.125.1 Function Documentation

8.125.1.1 void [SigHandler](#) (int *iSigNum*)

8.125.1.2 int [main](#) (int *argc*, char \* *argv*[ ])

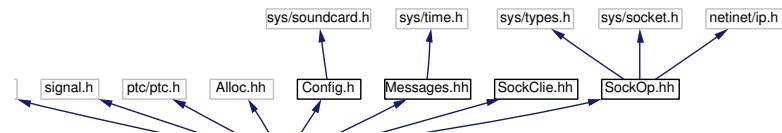
### 8.125.2 Variable Documentation

8.125.2.1 bool [bRun](#) = true

## 8.126 TestLocate.cc File Reference

```
#include <stdio.h>
#include <signal.h>
#include <ptc/ptc.h>
#include <Alloc.hh>
#include "Config.h"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for TestLocate.cc:



## Functions

- Format [Fmt](#) (32, 0x00ff0000, 0x0000ff00, 0x000000ff)
- void [SigHandler](#) (int iSigNum)
- void [PlotData](#) (Surface &Sfc, GDT \*fpData, int iWidth, int iHeight)
- int [main](#) (int argc, char \*argv[ ])

## Variables

- bool [bRun](#) = true
- Console [Con](#)

## 8.126.1 Function Documentation

8.126.1.1 Format Fmt (32, 0x00ff0000, 0x0000ff00, 0x000000ff)

8.126.1.2 void SigHandler (int *iSigNum*)

8.126.1.3 void PlotData (Surface & *Sfc*, GDT \* *fpData*, int *iWidth*, int *iHeight*)

8.126.1.4 int main (int *argc*, char \* *argv*[ ])

## 8.126.2 Variable Documentation

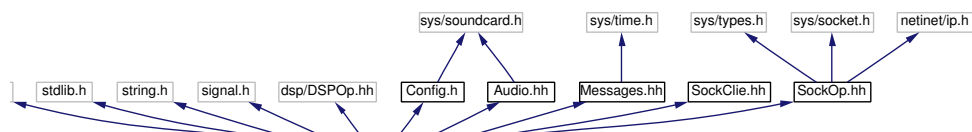
8.126.2.1 bool [bRun](#) = true

8.126.2.2 Console [Con](#)

## 8.127 TestSnd.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <signal.h>
#include <dsp/DSPOp.hh>
#include "Config.h"
#include "Audio.hh"
#include "Messages.hh"
#include "SockClie.hh"
#include "SockOp.hh"
```

Include dependency graph for TestSnd.cc:



### Functions

- void [SigHandler](#) (int iSignal)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bRun](#) = true

### 8.127.1 Function Documentation

8.127.1.1 void [SigHandler](#) (int *iSignal*)

8.127.1.2 int [main](#) (int *argc*, char \* *argv*[ ])

### 8.127.2 Variable Documentation

8.127.2.1 bool [bRun](#) = true



## 8.128 UIServ.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <signal.h>
#include <fcntl.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/wait.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "Config.h"
#include "UIServ.hh"
#include "SockOp.hh"
```

Include dependency graph for UIServ.cc:

### Functions

- void [SigHandler](#) (int iSigNum)
- int [main](#) (int argc, char \*argv[ ])

### Variables

- bool [bRun](#) = true
- [clUIServer](#) \* [UIServer](#)
- [clSockOp](#) \* [SOp](#)

### 8.128.1 Function Documentation

8.128.1.1 void SigHandler (int *iSigNum*)

8.128.1.2 int main (int *argc*, char \* *argv*[ ])

### 8.128.2 Variable Documentation

8.128.2.1 bool **bRun** = true

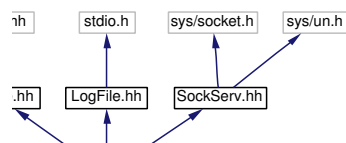
8.128.2.2 **clUIServer\*** **UIServer**

8.128.2.3 **clSockOp\*** **SOp**

## 8.129 UIServ.hh File Reference

```
#include "CfgFile.hh"
#include "LogFile.hh"
#include "SockServ.hh"
```

Include dependency graph for UIServ.hh:



This graph shows which files directly or indirectly include this file:

`.cc`

### Compounds

- class [cUIServer](#)  
*User interface server.*

### Defines

- #define [UIS\\_CONV\\_BUF\\_SIZE](#) 255

#### 8.129.1 Define Documentation

##### 8.129.1.1 #define UIS\_CONV\_BUF\_SIZE 255

## 8.130 XMMSOut.cc File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <math.h>
#include <float.h>
#include <limits.h>
#include <signal.h>
#include <unistd.h>
#include <sys/time.h>
#include "XMMSOut.hh"
```

Include dependency graph for XMMSOut.cc:



## Functions

- OutputPlugin \* [get\\_oplugin\\_info](#) (void)
- void [hasas\\_init](#) (void)
- void [hasas\\_about](#) (void)
- void [hasas\\_configure](#) (void)
- void [hasas\\_get\\_volume](#) (int \*, int \*)
- void [hasas\\_set\\_volume](#) (int, int)
- int [hasas\\_open\\_audio](#) (AFormat, int, int)
- void [hasas\\_write\\_audio](#) (void \*, int)
- void [hasas\\_close\\_audio](#) (void)
- void [hasas\\_flush](#) (int)
- void [hasas\\_pause](#) (short)
- int [hasas\\_buffer\\_free](#) (void)
- int [hasas\\_buffer\\_playing](#) (void)
- int [hasas\\_output\\_time](#) (void)
- int [hasas\\_written\\_time](#) (void)
- cIDynThreads< [cIXMMSOut](#) > [XMMSOutThreads](#) (XMMSOut)
- void [WrapOnAboutButton](#) (GtkButton \*gbSender, gpointer gpData)
- void [WrapOnButtonClick](#) (GtkButton \*gbSender, gpointer gpData)

## Variables

- OutputPlugin [hasas\\_op](#)
- [cIXMMSOut XMMSOut](#)
- const int [iDefBufferSize](#) = 65536
- const char \* [cpDefLocalSocket](#) = "streamdist.socket"
- const char \* [cpWinTitleTxt](#) = "HASAS streamdist settings"
- const char \* [cpLBufSizeTxt](#) = "Buffer size"
- const char \* [cpLLocalSocketTxt](#) = "Local socket"
- const char \* [cpBOkTxt](#) = "OK"
- const char \* [cpBCancelTxt](#) = "Cancel"

### 8.130.1 Function Documentation

- 8.130.1.1 `OutputPlugin * get_oplugin_info (void)`
- 8.130.1.2 `void hasas_init (void)`
- 8.130.1.3 `void hasas_about (void)`
- 8.130.1.4 `void hasas_configure (void)`
- 8.130.1.5 `void hasas_get_volume (int *, int *)`
- 8.130.1.6 `void hasas_set_volume (int, int)`
- 8.130.1.7 `int hasas_open_audio (AFormat, int, int)`
- 8.130.1.8 `void hasas_write_audio (void *, int)`
- 8.130.1.9 `void hasas_close_audio (void)`
- 8.130.1.10 `void hasas_flush (int)`
- 8.130.1.11 `void hasas_pause (short)`
- 8.130.1.12 `int hasas_buffer_free (void)`
- 8.130.1.13 `int hasas_buffer_playing (void)`
- 8.130.1.14 `int hasas_output_time (void)`
- 8.130.1.15 `int hasas_written_time (void)`
- 8.130.1.16 `clDynThreads<clXMMSOut> XMMSOutThreads (XMMSOut)`
- 8.130.1.17 `void WrapOnAboutButton (GtkButton * gbSender, gpointer gpData)`
- 8.130.1.18 `void WrapOnButtonClick (GtkButton * gbSender, gpointer gpData)`

### 8.130.2 Variable Documentation

#### 8.130.2.1 OutputPlugin [hasas\\_op](#)

Initial value:

```
{
    NULL,
    NULL,
    NULL,
    hasas_init,
    hasas_about,
```

```
    hasas_configure,  
    NULL,  
    NULL,  
    hasas_open_audio,  
    hasas_write_audio,  
    hasas_close_audio,  
    hasas_flush,  
    hasas_pause,  
    hasas_buffer_free,  
    hasas_buffer_playing,  
    hasas_output_time,  
    hasas_written_time  
}
```

#### 8.130.2.2 [cIXMMSOut XMMSOut](#)

**8.130.2.3** `const int iDefBufferSize = 65536` [static]

**8.130.2.4** `const char* cpDefLocalSocket = "streamdist.socket"` [static]

**8.130.2.5** `const char* cpWinTitleTxt = "HASAS streamdist settings"`  
[static]

**8.130.2.6** `const char* cpLBufSizeTxt = "Buffer size"` [static]

**8.130.2.7** `const char* cpLLocalSocketTxt = "Local socket"` [static]

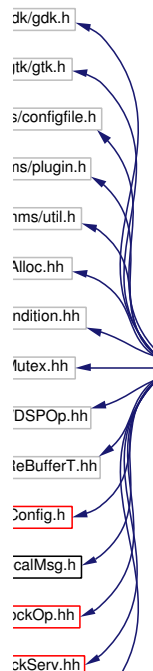
**8.130.2.8** `const char* cpBOkTxt = "OK"` [static]

**8.130.2.9** `const char* cpBCancelTxt = "Cancel"` [static]

### 8.131 XMMSOut.hh File Reference

```
#include <gdk/gdk.h>
#include <gtk/gtk.h>
#include <xmms/configfile.h>
#include <xmms/plugin.h>
#include <xmms/util.h>
#include <Alloc.hh>
#include <Condition.hh>
#include <Mutex.hh>
#include <dsp/DSPOp.hh>
#include <dsp/ReBufferT.hh>
#include "Config.h"
#include "LocalMsg.h"
#include "SockOp.hh"
#include "SockServ.hh"
#include "DynThreads.hh"
```

Include dependency graph for XMMSOut.hh:





This graph shows which files directly or indirectly include this file:

Out.cc

## Compounds

- class [cXMMSOut](#)

## Defines

- #define [XMMSOUT\\_DESCRIPTION](#) "HASAS streamdist"

### 8.131.1 Define Documentation

#### 8.131.1.1 #define XMMSOUT\_DESCRIPTION "HASAS streamdist"

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