

attys-comm

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1 Hierarchical Index

1.1 Class Hierarchy

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

AttysCommBase	5
AttysComm	2
AttysCommListener	19
AttysCommMessage	19
AttysScan	20
AttysScanListener	22

2 Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

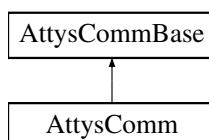
AttysComm	2
AttysCommBase	5
AttysCommListener	19
AttysCommMessage	19
AttysScan	20
AttysScanListener	22

3 Class Documentation

3.1 AttysComm Class Reference

```
#include <AttysComm.h>
```

Inheritance diagram for AttysComm:



Public Member Functions

- [AttysComm](#) (void * _btAddr=NULL, int _btAddrLen=0)
- virtual void [connect](#) ()
- virtual void [closeSocket](#) ()
- virtual void [run](#) ()
- virtual void [quit](#) ()
- virtual void [sendSyncCommand](#) (const char *message, int waitForOK)
- virtual void [sendInit](#) ()
- virtual void [start](#) ()
- virtual void [receptionTimeout](#) ()
- unsigned char * [getBluetoothBinaryAddress](#) ()
- void [getBluetoothAddressString](#) (char *s)

Additional Inherited Members

3.1.1 Detailed Description

[AttysComm](#) contains all the necessary comms to talk to the Attys on Linux, Windows and Mac.

[AttysComm](#) class contains the device specific definitions and implements the abstract classes of [AttysCommBase](#). See [AttysCommBase](#) for the definitions there. Instances of this class are automatically created by [AttysScan](#) and the user can ignore definitions here. All relevant user functions are in [AttysCommBase](#). Use this class only if you have a fixed bluetooth address (Linux/Win) or a fixed bluetooth device (Mac) and won't need to scan for a bluetooth device.

3.1.2 Constructor & Destructor Documentation

3.1.2.1 AttysComm()

```
AttysComm::AttysComm (
    void * _btAddr = NULL,
    int _btAddrLen = 0 ) [inline]
```

Constructor: Win/Linux: takes the bluetooth device structure and its length as an argument. For Mac: just a pointer to the bluetooth device (needs typecast to *_btAddr) and provide no length.

3.1.3 Member Function Documentation

3.1.3.1 closeSocket()

```
virtual void AttysComm::closeSocket ( ) [virtual]
```

Closes the socket safely.

Implements [AttysCommBase](#).

3.1.3.2 connect()

```
virtual void AttysComm::connect ( ) [virtual]
```

Connects to the Attys by opening the socket. Throws char* exception if it fails.

Implements [AttysCommBase](#).

3.1.3.3 getBluetoothAdressString()

```
void AttysComm::getBluetoothAdressString (
    char * s ) [virtual]
```

returns the MAC address as a string.

Implements [AttysCommBase](#).

3.1.3.4 getBluetoothBinaryAdress()

```
unsigned char* AttysComm::getBluetoothBinaryAdress ( ) [virtual]
```

Returns an array of 14 bytes of the bluetooth address.

Implements [AttysCommBase](#).

3.1.3.5 quit()

```
virtual void AttysComm::quit ( ) [inline], [virtual]
```

Call this from the main activity to shut down the connection.

3.1.3.6 receptionTimeout()

```
virtual void AttysComm::receptionTimeout ( ) [virtual]
```

Called from the watchdog after a timeout. Do not call this directly.

Implements [AttysCommBase](#).

3.1.3.7 run()

```
virtual void AttysComm::run ( ) [virtual]
```

Thread which does the data acquisition. Do not call directly.

Implements [AttysCommBase](#).

3.1.3.8 sendInit()

```
virtual void AttysComm::sendInit ( ) [virtual]
```

Sends the init sequence to the Attys. Do not use unless you know exactly what you are doing.

Implements [AttysCommBase](#).

3.1.3.9 sendSyncCommand()

```
virtual void AttysComm::sendSyncCommand (
    const char * message,
    int waitForOK ) [virtual]
```

Sends a command to the Attys. Do not use unless you know exactly what you are doing.

Implements [AttysCommBase](#).

3.1.3.10 start()

```
virtual void AttysComm::start ( ) [virtual]
```

Starts the data acquisition by starting the main thread. and sending possibly init commands.

Reimplemented from [AttysCommBase](#).

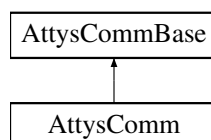
The documentation for this class was generated from the following file:

- [AttysComm.h](#)

3.2 AttysCommBase Class Reference

```
#include <AttysCommBase.h>
```

Inheritance diagram for AttysCommBase:



Public Member Functions

- [AttysCommBase](#) ()
- virtual [~AttysCommBase](#) ()
- void [setAdc_samplingrate_index](#) (int idx)
- int [getSamplingRateInHz](#) ()
- int [getAdc_samplingrate_index](#) ()
- float [getADCFullScaleRange](#) (int channel)
- void [setAdc0_gain_index](#) (int idx)
- void [setAdc1_gain_index](#) (int idx)
- void [setBiasCurrent](#) (int currIndex)
- int [getBiasCurrent](#) ()
- void [enableCurrents](#) (int pos_ch1, int neg_ch1, int pos_ch2)
- float [getAccelFullScaleRange](#) ()
- void [setAccel_full_scale_index](#) (int idx)
- float [getMagFullScaleRange](#) ()
- int [getIsCharging](#) ()
- virtual void [connect](#) ()=0
- virtual void [start](#) ()
- virtual void [closeSocket](#) ()=0
- int [hasActiveConnection](#) ()
- sample_p [getSampleFromBuffer](#) ()
- int [hasSampleAvailable](#) ()
- void [resetRingbuffer](#) ()
- void [registerCallback](#) ([AttysCommListener](#) *f)
- void [unregisterCallback](#) ()
- void [registerMessageCallback](#) ([AttysCommMessage](#) *f)
- void [unregisterMessageCallback](#) ()
- void [quit](#) ()
- virtual unsigned char * [getBluetoothBinaryAddress](#) ()=0
- virtual void [getBluetoothAddressString](#) (char *s)=0
- char * [getAttysName](#) ()
- void [setAttysName](#) (char *s)

Static Public Member Functions

- static float [phys2temperature](#) (float volt)

Public Attributes

- const std::string [CHANNEL_DESCRIPTION](#) [NCHANNELS]
- const std::string [CHANNEL_SHORT_DESCRIPTION](#) [NCHANNELS]
- std::string const [CHANNEL_UNITS](#) [NCHANNELS]
- const int [ADC_SAMPLINGRATE](#) [4] = { 125, 250, 500, 1000 }
- const int [ADC_GAIN_FACTOR](#) [7] = { 6, 1, 2, 3, 4, 8, 12 }
- const float [ADC_REF](#) = 2.42F
- const float [oneG](#) = 9.80665F
- const float [ACCEL_FULL_SCALE](#) [4] = { 2 * [oneG](#), 4 * [oneG](#), 8 * [oneG](#), 16 * [oneG](#) }
- const float [MAG_FULL_SCALE](#) = 4800.0E-6F

Static Public Attributes

- static const int [NCHANNELS](#) = 10
- static const int [nMem](#) = 1000 * 10
- static const int [INDEX_Acceleration_X](#) = 0
- static const int [INDEX_Acceleration_Y](#) = 1
- static const int [INDEX_Acceleration_Z](#) = 2
- static const int [INDEX_Magnetic_field_X](#) = 3
- static const int [INDEX_Magnetic_field_Y](#) = 4
- static const int [INDEX_Magnetic_field_Z](#) = 5
- static const int [INDEX_Analogue_channel_1](#) = 6
- static const int [INDEX_Analogue_channel_2](#) = 7
- static const int [INDEX_GPIO0](#) = 8
- static const int [INDEX_GPIO1](#) = 9
- static const int [ADC_RATE_125HZ](#) = 0
- static const int [ADC_RATE_250HZ](#) = 1
- static const int [ADC_RATE_500Hz](#) = 2
- static const int [ADC_RATE_1000Hz](#) = 3
- static const int [ADC_DEFAULT_RATE](#) = [ADC_RATE_250HZ](#)
- static const int [ADC_GAIN_6](#) = 0
- static const int [ADC_GAIN_1](#) = 1
- static const int [ADC_GAIN_2](#) = 2
- static const int [ADC_GAIN_3](#) = 3
- static const int [ADC_GAIN_4](#) = 4
- static const int [ADC_GAIN_8](#) = 5
- static const int [ADC_GAIN_12](#) = 6
- static const int [ADC_CURRENT_6NA](#) = 0
- static const int [ADC_CURRENT_22NA](#) = 1
- static const int [ADC_CURRENT_6UA](#) = 2
- static const int [ADC_CURRENT_22UA](#) = 3
- static const int [ADC_MUX_NORMAL](#) = 0
- static const int [ADC_MUX_SHORT](#) = 1
- static const int [ADC_MUX_SUPPLY](#) = 3
- static const int [ADC_MUX_TEMPERATURE](#) = 4
- static const int [ADC_MUX_TEST_SIGNAL](#) = 5
- static const int [ADC_MUX_ECG_EINTHOVEN](#) = 6
- static const int [ACCEL_2G](#) = 0
- static const int [ACCEL_4G](#) = 1
- static const int [ACCEL_8G](#) = 2
- static const int [ACCEL_16G](#) = 3
- static const int [MESSAGE_CONNECTED](#) = 0
- static const int [MESSAGE_ERROR](#) = 1
- static const int [MESSAGE_TIMEOUT](#) = 7
- static const int [MESSAGE_RECONNECTED](#) = 8
- static const int [MESSAGE_RECEIVING_DATA](#) = 9

3.2.1 Detailed Description

Platform independent definitions for the Attys

3.2.2 Constructor & Destructor Documentation

3.2.2.1 AttysCommBase()

```
AttysCommBase::AttysCommBase ( )
```

Constructor which is overloaded by [AttysComm](#).

3.2.2.2 ~AttysCommBase()

```
virtual AttysCommBase::~~AttysCommBase ( ) [virtual]
```

Destructor which releases memory and closes any open connection.

3.2.3 Member Function Documentation

3.2.3.1 closeSocket()

```
virtual void AttysCommBase::closeSocket ( ) [pure virtual]
```

Closes the socket safely.

Implemented in [AttysComm](#).

3.2.3.2 connect()

```
virtual void AttysCommBase::connect ( ) [pure virtual]
```

Connects to the Attys by opening the socket. Throws char* exception if it fails.

Implemented in [AttysComm](#).

3.2.3.3 enableCurrents()

```
void AttysCommBase::enableCurrents (
    int pos_ch1,
    int neg_ch1,
    int pos_ch2 ) [inline]
```

Switches bias currents on

3.2.3.4 getAccelFullScaleRange()

```
float AttysCommBase::getAccelFullScaleRange ( ) [inline]
```

Returns the accelerometer current full scale reading in m/s².

3.2.3.5 getAdc_samplingrate_index()

```
int AttysCommBase::getAdc_samplingrate_index ( ) [inline]
```

Gets the sampling rate in form for the index.

3.2.3.6 getADCFullScaleRange()

```
float AttysCommBase::getADCFullScaleRange (
    int channel ) [inline]
```

Gets the ADC full range. This depends on the gain setting of the ADC.

3.2.3.7 getAttysName()

```
char* AttysCommBase::getAttysName ( ) [inline]
```

Returns the name of the Attys

3.2.3.8 getBiasCurrent()

```
int AttysCommBase::getBiasCurrent ( ) [inline]
```

Gets the bias current as in index.

3.2.3.9 getBluetoothAdressString()

```
virtual void AttysCommBase::getBluetoothAdressString (
    char * s ) [pure virtual]
```

returns the MAC address as a string.

Implemented in [AttysComm](#).

3.2.3.10 getBluetoothBinaryAdress()

```
virtual unsigned char* AttysCommBase::getBluetoothBinaryAdress ( ) [pure virtual]
```

Returns an array of 14 bytes of the bluetooth address.

Implemented in [AttysComm](#).

3.2.3.11 getIsCharging()

```
int AttysCommBase::getIsCharging ( ) [inline]
```

Charging indicator. Returns one if charging.

3.2.3.12 getMagFullScaleRange()

```
float AttysCommBase::getMagFullScaleRange ( ) [inline]
```

Returns the full scale magnetometer in Tesla.

3.2.3.13 getSampleFromBuffer()

```
sample_p AttysCommBase::getSampleFromBuffer ( )
```

Gets a sample from the ringbuffer. This is a float* array of all channels.

3.2.3.14 getSamplingRateInHz()

```
int AttysCommBase::getSamplingRateInHz ( ) [inline]
```

Gets the sampling rate in Hz (not index number).

3.2.3.15 hasActiveConnection()

```
int AttysCommBase::hasActiveConnection ( ) [inline]
```

Returns one if the connection is active.

3.2.3.16 hasSampleAvailable()

```
int AttysCommBase::hasSampleAvailable ( ) [inline]
```

Is set to one if samples are available in the ringbuffer.

3.2.3.17 phys2temperature()

```
static float AttysCommBase::phys2temperature (
    float volt ) [inline], [static]
```

Temperature

3.2.3.18 quit()

```
void AttysCommBase::quit ( )
```

Call this from the main activity to shut down the connection.

3.2.3.19 registerCallback()

```
void AttysCommBase::registerCallback (
    AttysCommListener * f ) [inline]
```

Register a realtime callback function which is called whenever a sample has arrived. [AttysCommListener](#) is an abstract class which needs to implement hasSample().

3.2.3.20 registerMessageCallback()

```
void AttysCommBase::registerMessageCallback (
    AttysCommMessage * f ) [inline]
```

Callback which is called whenever a special error/event has occurred.

3.2.3.21 resetRingbuffer()

```
void AttysCommBase::resetRingbuffer ( ) [inline]
```

Resets the ringbuffer to zero content.

3.2.3.22 setAccel_full_scale_index()

```
void AttysCommBase::setAccel_full_scale_index (
    int idx ) [inline]
```

Sets the accelerometer full scale range using the index.

3.2.3.23 setAdc0_gain_index()

```
void AttysCommBase::setAdc0_gain_index (
    int idx ) [inline]
```

Gets the gain index for ADC1.

3.2.3.24 setAdc1_gain_index()

```
void AttysCommBase::setAdc1_gain_index (
    int idx ) [inline]
```

Gets the gain index for ADC2.

3.2.3.25 setAdc_samplingrate_index()

```
void AttysCommBase::setAdc_samplingrate_index (
    int idx ) [inline]
```

Sets the sampling rate using the sampling rate index numbers.

3.2.3.26 setAttysName()

```
void AttysCommBase::setAttysName (
    char * s ) [inline]
```

Sets the name of the Attys

3.2.3.27 setBiasCurrent()

```
void AttysCommBase::setBiasCurrent (
    int currIndex ) [inline]
```

Sets the bias current which can be switched on.

3.2.3.28 start()

```
virtual void AttysCommBase::start ( ) [inline], [virtual]
```

Starts the data acquisition by starting the main thread. and sending possibly init commands.

Reimplemented in [AttysComm](#).

3.2.3.29 unregisterCallback()

```
void AttysCommBase::unregisterCallback ( ) [inline]
```

Unregister the realtime sample callback.

3.2.3.30 unregisterMessageCallback()

```
void AttysCommBase::unregisterMessageCallback ( ) [inline]
```

Unregister the error/event callback.

3.2.4 Member Data Documentation

3.2.4.1 ACCEL_16G

```
const int AttysCommBase::ACCEL_16G = 3 [static]
```

Setting full scale range of the accelerometer to 16G.

3.2.4.2 ACCEL_2G

```
const int AttysCommBase::ACCEL_2G = 0 [static]
```

Setting full scale range of the accelerometer to 2G.

3.2.4.3 ACCEL_4G

```
const int AttysCommBase::ACCEL_4G = 1 [static]
```

Setting full scale range of the accelerometer to 4G.

3.2.4.4 ACCEL_8G

```
const int AttysCommBase::ACCEL_8G = 2 [static]
```

Setting full scale range of the accelerometer to 8G.

3.2.4.5 ACCEL_FULL_SCALE

```
const float AttysCommBase::ACCEL_FULL_SCALE[4] = { 2 * oneG, 4 * oneG, 8 * oneG, 16 * oneG }
```

Mapping of the index to the full scale accelerations.

3.2.4.6 ADC_CURRENT_22NA

```
const int AttysCommBase::ADC_CURRENT_22NA = 1 [static]
```

Bias current of 22nA.

3.2.4.7 ADC_CURRENT_22UA

```
const int AttysCommBase::ADC_CURRENT_22UA = 3 [static]
```

Bias current of 22uA.

3.2.4.8 ADC_CURRENT_6NA

```
const int AttysCommBase::ADC_CURRENT_6NA = 0 [static]
```

Bias current of 6nA.

3.2.4.9 ADC_CURRENT_6UA

```
const int AttysCommBase::ADC_CURRENT_6UA = 2 [static]
```

Bias current of 6uA.

3.2.4.10 ADC_DEFAULT_RATE

```
const int AttysCommBase::ADC_DEFAULT_RATE = ADC_RATE_250HZ [static]
```

Constant defining the default sampling rate (250Hz).

3.2.4.11 ADC_GAIN_1

```
const int AttysCommBase::ADC_GAIN_1 = 1 [static]
```

Gain index setting it to gain 6.

3.2.4.12 ADC_GAIN_12

```
const int AttysCommBase::ADC_GAIN_12 = 6 [static]
```

Gain index setting it to gain 6.

3.2.4.13 ADC_GAIN_2

```
const int AttysCommBase::ADC_GAIN_2 = 2 [static]
```

Gain index setting it to gain 2.

3.2.4.14 ADC_GAIN_3

```
const int AttysCommBase::ADC_GAIN_3 = 3 [static]
```

Gain index setting it to gain 3.

3.2.4.15 ADC_GAIN_4

```
const int AttysCommBase::ADC_GAIN_4 = 4 [static]
```

Gain index setting it to gain 4.

3.2.4.16 ADC_GAIN_6

```
const int AttysCommBase::ADC_GAIN_6 = 0 [static]
```

Gain index setting it to gain 6.

3.2.4.17 ADC_GAIN_8

```
const int AttysCommBase::ADC_GAIN_8 = 5 [static]
```

Gain index setting it to gain 5.

3.2.4.18 ADC_GAIN_FACTOR

```
const int AttysCommBase::ADC_GAIN_FACTOR[7] = { 6, 1, 2, 3, 4, 8, 12 }
```

Mmapping between index and actual gain.

3.2.4.19 ADC_MUX_ECG_EINTHOVEN

```
const int AttysCommBase::ADC_MUX_ECG_EINTHOVEN = 6 [static]
```

Multiplexer routing: both positive ADC inputs are connected together.

3.2.4.20 ADC_MUX_NORMAL

```
const int AttysCommBase::ADC_MUX_NORMAL = 0 [static]
```

Multiplexer routing is normal: ADC1 and ADC2 are connected to the sigma/delta.

3.2.4.21 ADC_MUX_SHORT

```
const int AttysCommBase::ADC_MUX_SHORT = 1 [static]
```

Multiplexer routing: inputs are short circuited.

3.2.4.22 ADC_MUX_SUPPLY

```
const int AttysCommBase::ADC_MUX_SUPPLY = 3 [static]
```

Multiplexer routing: inputs are connected to power supply.

3.2.4.23 ADC_MUX_TEMPERATURE

```
const int AttysCommBase::ADC_MUX_TEMPERATURE = 4 [static]
```

Multiplexer routing: ADC measures internal temperature.

3.2.4.24 ADC_MUX_TEST_SIGNAL

```
const int AttysCommBase::ADC_MUX_TEST_SIGNAL = 5 [static]
```

Multiplexer routing: ADC measures test signal.

3.2.4.25 ADC_RATE_1000Hz

```
const int AttysCommBase::ADC_RATE_1000Hz = 3 [static]
```

Constant defining sampling rate of 1000Hz (experimental).

3.2.4.26 ADC_RATE_125HZ

```
const int AttysCommBase::ADC_RATE_125HZ = 0 [static]
```

Constant defining sampling rate of 125Hz.

3.2.4.27 ADC_RATE_250HZ

```
const int AttysCommBase::ADC_RATE_250HZ = 1 [static]
```

Constant defining sampling rate of 250Hz.

3.2.4.28 ADC_RATE_500Hz

```
const int AttysCommBase::ADC_RATE_500Hz = 2 [static]
```

Constant defining sampling rate of 500Hz (experimental).

3.2.4.29 ADC_REF

```
const float AttysCommBase::ADC_REF = 2.42F
```

The voltage reference of the ADC in volts.

3.2.4.30 ADC_SAMPLINGRATE

```
const int AttysCommBase::ADC_SAMPLINGRATE[4] = { 125, 250, 500, 1000 }
```

Array of the sampling rates mapping the index to the actual sampling rate.

3.2.4.31 CHANNEL_DESCRIPTION

```
const std::string AttysCommBase::CHANNEL_DESCRIPTION[NCHANNELS]
```

Initial value:

```
= {
    "Acceleration X",
    "Acceleration Y",
    "Acceleration Z",
    "Magnetic field X",
    "Magnetic field Y",
    "Magnetic field Z",
    "Analogue channel 1",
    "Analogue channel 2",
    "DIN channel 0",
    "DIN channel 1",
    "Charging status"
}
```

Long descriptions of the channels.

3.2.4.32 CHANNEL_SHORT_DESCRIPTION

```
const std::string AttysCommBase::CHANNEL_SHORT_DESCRIPTION[NCHANNELS]
```

Initial value:

```
= {
    "Acc X",
    "Acc Y",
    "Acc Z",
    "Mag X",
    "Mag Y",
    "Mag Z",
    "ADC 1",
    "ADC 2",
    "DIN 0",
    "DIN 1",
}
```

Short descriptions of the channels.

3.2.4.33 CHANNEL_UNITS

```
std::string const AttysCommBase::CHANNEL_UNITS[NCHANNELS]
```

Initial value:

```
= {
    "m/s^2",
    "m/s^2",
    "m/s^2",
    "T",
    "T",
    "T",
    "V",
    "V",
    " ",
    " "
}
```

Units of the channels.

3.2.4.34 INDEX_Acceleration_X

```
const int AttysCommBase::INDEX_Acceleration_X = 0 [static]
```

Channel index for X Acceleration.

3.2.4.35 INDEX_Acceleration_Y

```
const int AttysCommBase::INDEX_Acceleration_Y = 1 [static]
```

Channel index for Y Acceleration.

3.2.4.36 INDEX_Acceleration_Z

```
const int AttysCommBase::INDEX_Acceleration_Z = 2 [static]
```

Channel index for Z Acceleration.

3.2.4.37 INDEX_Analogue_channel_1

```
const int AttysCommBase::INDEX_Analogue_channel_1 = 6 [static]
```

Index of analogue channel 1.

3.2.4.38 INDEX_Analogue_channel_2

```
const int AttysCommBase::INDEX_Analogue_channel_2 = 7 [static]
```

Index of analogue channel 2.

3.2.4.39 INDEX_GPIO0

```
const int AttysCommBase::INDEX_GPIO0 = 8 [static]
```

Index of the internal GPIO pin 1.

3.2.4.40 INDEX_GPIO1

```
const int AttysCommBase::INDEX_GPIO1 = 9 [static]
```

Index of the internal GPIO pin 2.

3.2.4.41 INDEX_Magnetic_field_X

```
const int AttysCommBase::INDEX_Magnetic_field_X = 3 [static]
```

Magnetic field in X direction.

3.2.4.42 INDEX_Magnetic_field_Y

```
const int AttysCommBase::INDEX_Magnetic_field_Y = 4 [static]
```

Magnetic field in Y direction.

3.2.4.43 INDEX_Magnetic_field_Z

```
const int AttysCommBase::INDEX_Magnetic_field_Z = 5 [static]
```

Magnetic field in Z direction.

3.2.4.44 MAG_FULL_SCALE

```
const float AttysCommBase::MAG_FULL_SCALE = 4800.0E-6F
```

Full scale range of the magnetometer in Tesla.

3.2.4.45 MESSAGE_CONNECTED

```
const int AttysCommBase::MESSAGE_CONNECTED = 0 [static]
```

Message callback: Connected.

3.2.4.46 MESSAGE_ERROR

```
const int AttysCommBase::MESSAGE_ERROR = 1 [static]
```

Message callback: Generic error.

3.2.4.47 MESSAGE_RECEIVING_DATA

```
const int AttysCommBase::MESSAGE_RECEIVING_DATA = 9 [static]
```

Message callback: Receiving data. One off once the connection has been set up.

3.2.4.48 MESSAGE_RECONNECTED

```
const int AttysCommBase::MESSAGE_RECONNECTED = 8 [static]
```

Message callback: Managed to reconnect.

3.2.4.49 MESSAGE_TIMEOUT

```
const int AttysCommBase::MESSAGE_TIMEOUT = 7 [static]
```

Message callback: Reception timeout detected by the watchdog.

3.2.4.50 NCHANNELS

```
const int AttysCommBase::NCHANNELS = 10 [static]
```

Total number of channels per samples.

3.2.4.51 nMem

```
const int AttysCommBase::nMem = 1000 * 10 [static]
```

Number of entries in the ringbuffer. Buffer for 10secs at 1kHz.

3.2.4.52 oneG

```
const float AttysCommBase::oneG = 9.80665F
```

One g in m/s².

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

- AttysCommBase.h

3.3 AttysCommListener Struct Reference

```
#include <AttysCommBase.h>
```

Public Member Functions

- virtual void [hasSample](#) (double, sample_p)=0

3.3.1 Detailed Description

Callback after a sample has arrived. The main class can for example inherit class and implement hasSample.

3.3.2 Member Function Documentation

3.3.2.1 hasSample()

```
virtual void AttysCommListener::hasSample (  
    double ,  
    sample_p ) [pure virtual]
```

Provides the timestamp and an array of all channels. This is an abstract method and needs to be overloaded with a real method doing the work.

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

- AttysCommBase.h

3.4 AttysCommMessage Struct Reference

```
#include <AttysCommBase.h>
```

Public Member Functions

- virtual void [hasMessage](#) (int, const char *)=0

3.4.1 Detailed Description

Callback after an error has occurred. This callback is in particular useful after a broken connection has been re-established.

3.4.2 Member Function Documentation

3.4.2.1 hasMessage()

```
virtual void AttysCommMessage::hasMessage (
    int ,
    const char * ) [pure virtual]
```

Provides the error number and a text message about the error.

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

- AttysCommBase.h

3.5 AttysScan Class Reference

```
#include <AttysScan.h>
```

Public Member Functions

- int [scan](#) (int maxAttys=1)
- void [registerCallback](#) (AttysScanListener *f)
- void [unregisterCallback](#) ()
- AttysComm * [getAttysComm](#) (int i)
- char * [getAttysName](#) (int i)
- int [getNAttysDevices](#) ()

Static Public Attributes

- static const int [SCAN_CONNECTED](#) = 0
- static const int [SCAN_SEARCHING](#) = 1
- static const int [SCAN_NODEV](#) = 2
- static const int [SCAN_SOCKETERR](#) = 3
- static const int [SCAN_CONNECTING](#) = 4
- static const int [SCAN_CONNECTERR](#) = 5
- static const int [MAX_ATTYS_DEVS](#) = 4

3.5.1 Detailed Description

Scans for Attys and creates instances of [AttysComm](#) for every detected/paired Attys. There is no need to create instances of [AttysComm](#) yourself. This is done by this class automatically.

3.5.2 Member Function Documentation

3.5.2.1 getAttysComm()

```
AttysComm* AttysScan::getAttysComm (
    int i ) [inline]
```

Obtains the pointer to a valid [AttysComm](#) class which has been successfully detected while scanning.

3.5.2.2 getAttysName()

```
char* AttysScan::getAttysName (
    int i ) [inline]
```

Gets the Attys name as reported by the bluetooth manager

3.5.2.3 getNAttysDevices()

```
int AttysScan::getNAttysDevices ( ) [inline]
```

Returns the number of Attys devices

3.5.2.4 registerCallback()

```
void AttysScan::registerCallback (
    AttysScanListener * f ) [inline]
```

Register callback which reports the scanning progress for example for a splash screen.

3.5.2.5 scan()

```
int AttysScan::scan (
    int maxAttys = 1 )
```

Scans for the specified number of devices and connects to them. By default only for one Attys. returns 0 on success

3.5.2.6 unregisterCallback()

```
void AttysScan::unregisterCallback ( ) [inline]
```

Unregisters the callback

3.5.3 Member Data Documentation

3.5.3.1 MAX_ATTYS_DEVS

```
const int AttysScan::MAX_ATTYS_DEVS = 4 [static]
```

Max number of Attys Devices

3.5.3.2 SCAN_CONNECTED

```
const int AttysScan::SCAN_CONNECTED = 0 [static]
```

Message index that the connection to an attys has been successful.

3.5.3.3 SCAN_CONNECTERR

```
const int AttysScan::SCAN_CONNECTERR = 5 [static]
```

Connection error during scanning

3.5.3.4 SCAN_CONNECTING

```
const int AttysScan::SCAN_CONNECTING = 4 [static]
```

In the process of connecting

3.5.3.5 SCAN_NODEV

```
const int AttysScan::SCAN_NODEV = 2 [static]
```

Message index that no Attys has been detected

3.5.3.6 SCAN_SEARCHING

```
const int AttysScan::SCAN_SEARCHING = 1 [static]
```

Message index that [AttysScan](#) is actively scanning

3.5.3.7 SCAN_SOCKETERR

```
const int AttysScan::SCAN_SOCKETERR = 3 [static]
```

Message that the socket could not be opened

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

- AttysScan.h

3.6 AttysScanListener Struct Reference

```
#include <AttysScan.h>
```

3.6.1 Detailed Description

Callback which reports the status of the scanner

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

- AttysScan.h

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