2015 Test beam Run Control

Generated by Doxygen 1.8.9.1

Mon Apr 20 2015 21:39:37

Contents

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Hierarchical Index

1.1 Class Hierarchy

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

Chapter 2

Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

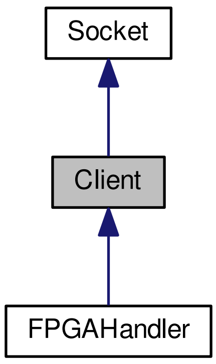
Chapter 3

Data Structure Documentation

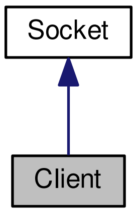
3.1 Client Class Reference

```
#include <Client.h>
```

Inheritance diagram for Client:



Collaboration diagram for Client:



Public Member Functions

- Client ()
- Client (int port)
- ∼Client ()
- bool Connect ()
- void Disconnect ()
- void Send (const Message &m) const
- void Receive ()
- virtual void ParseMessage (const SocketMessage &m)
- virtual SocketType GetType () const

Additional Inherited Members

3.1.1 Detailed Description

Client object used by the server to send/receive commands from the messenger/broadcaster.

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

24 Mar 2015

3.1.2 Constructor & Destructor Documentation

3.1.2.1 Client::Client ( ) `[inline]`

3.1.2.2 Client::Client (int *port*)

3.1.2.3 Client::∼Client ( )

3.1.3 Member Function Documentation

3.1.3.1 bool Client::Connect ( )

3.1.3.2 void Client::Disconnect ( )

3.1.3.3 virtual SocketType Client::GetType ( ) const `[inline]`, `[virtual]`

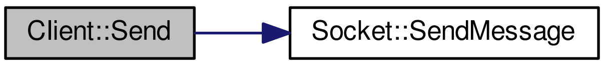
Reimplemented in FPGAHandler.

3.1.3.4 virtual void Client::ParseMessage (const SocketMessage & *m*) `[inline]`, `[virtual]`

3.1.3.5 void Client::Receive ( )

3.1.3.6 void Client::Send (const Message & *m*) const [inline]

Here is the call graph for this function:



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

- include/Client.h

3.2 Exception Class Reference

A simple exception handler.

```
#include <Exception.h>
```

Public Member Functions

- Exception (const char ∗from, std::string desc, ExceptionType type=Undefined, const int id=0)
- Exception (const char ∗from, const char ∗desc, ExceptionType type=Undefined, const int id=0)
- ∼Exception ()
- std::string From () const
- int ErrorNumber () const
- std::string Description () const
- ExceptionType Type () const
- std::string TypeString () const
- void Dump (std::ostream &os=std::cerr) const

3.2.1 Detailed Description

A simple exception handler.

Author

Laurent Forthomme laurent.forthomme@cern.ch

Date

24 Mar 2015

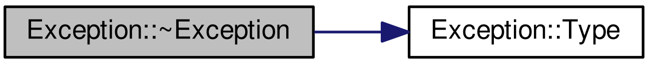
3.2.2 Constructor & Destructor Documentation

3.2.2.1 Exception::Exception (const char ∗ *from*, std::string *desc*, ExceptionType *type* = Undefined, const int *id* = 0) [inline]

3.2.2.2 Exception::Exception (const char ∗ *from*, const char ∗ *desc*, ExceptionType *type* = `Undefined`, const int *id* = `0`) `[inline]`

3.2.2.3 Exception::∼Exception ( ) `[inline]`

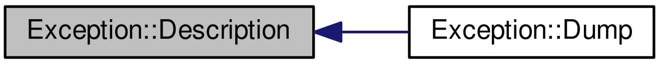
Here is the call graph for this function:



3.2.3 Member Function Documentation

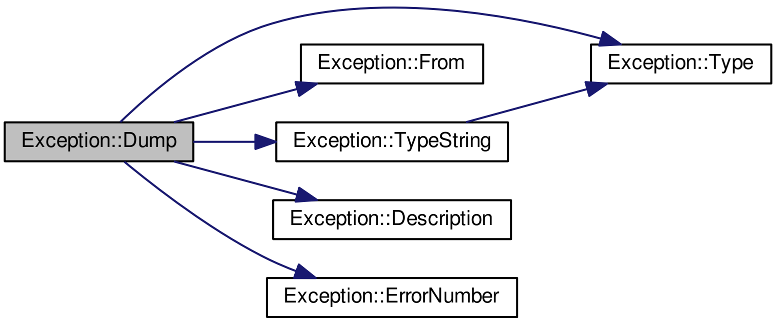
3.2.3.1 std::string Exception::Description ( ) const `[inline]`

Here is the caller graph for this function:



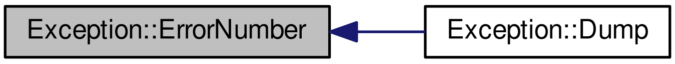
3.2.3.2 void Exception::Dump (std::ostream & *os* = `std::cerr`) const `[inline]`

Here is the call graph for this function:



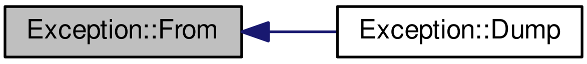
3.2.3.3 int Exception::ErrorNumber ( ) const [inline]

Here is the caller graph for this function:



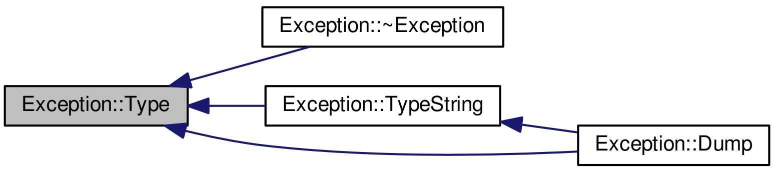
3.2.3.4 std::string Exception::From ( ) const [inline]

Here is the caller graph for this function:



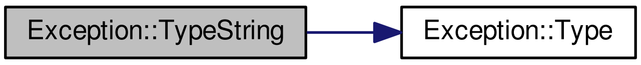
3.2.3.5 ExceptionType Exception::Type ( ) const [inline]

Here is the caller graph for this function:

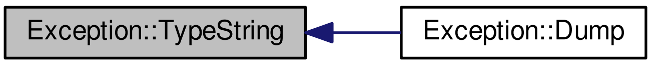


3.2.3.6 std::string Exception::TypeString ( ) const [inline]

Here is the call graph for this function:



Here is the caller graph for this function:



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

- include/Exception.h

3.3 file_header_t Struct Reference

```
#include <FPGAHandler.h>
```

Data Fields

- uint32_t magic
- uint32_t run_id
- uint32_t spill_id

3.3.1 Field Documentation

3.3.1.1 uint32_t file_header_t::magic

3.3.1.2 uint32_t file_header_t::run_id

3.3.1.3 uint32_t file_header_t::spill_id

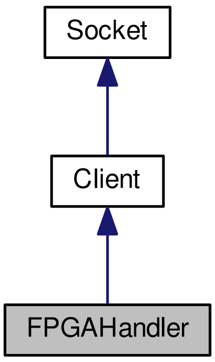
The documentation for this struct was generated from the following file:

- include/FPGAHandler.h

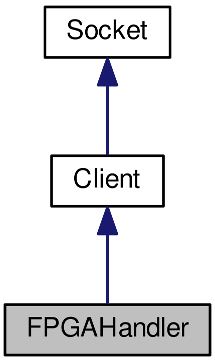
3.4 FPGAHandler Class Reference

```
#include <FPGAHandler.h>
```

Inheritance diagram for FPGAHandler:



Collaboration diagram for FPGAHandler:



Public Member Functions

- FPGAHandler (int port, const char ∗dev)
- virtual ∼FPGAHandler ()
- void OpenFile ()
- std::string GetFilename () const
- void SendConfiguration (const TDCConfiguration &c)
- TDCConfiguration ReadConfiguration ()
- void ReadBuffer ()
- SocketType GetType () const

Additional Inherited Members

3.4.1 Detailed Description

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

14 Apr 2015

3.4.2 Constructor & Destructor Documentation

3.4.2.1 FPGAHandler::FPGAHandler (int *port,* const char $*$ *dev*)

3.4.2.2 virtual FPGAHandler::∼FPGAHandler ( ) `[virtual]`

3.4.3 Member Function Documentation

3.4.3.1 std::string FPGAHandler::GetFilename ( ) const `[inline]`

3.4.3.2 SocketType FPGAHandler::GetType ( ) const `[inline]`, `[virtual]`

Reimplemented from Client.

3.4.3.3 void FPGAHandler::OpenFile ( )

3.4.3.4 void FPGAHandler::ReadBuffer ( )

3.4.3.5 TDCConfiguration FPGAHandler::ReadConfiguration ( )

3.4.3.6 void FPGAHandler::SendConfiguration (const TDCConfiguration & *c*)

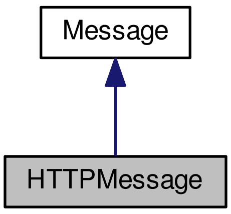
The documentation for this class was generated from the following file:

- include/FPGAHandler.h

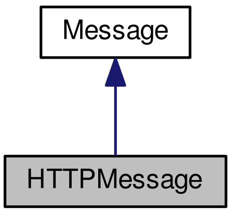
3.5 HTTPMessage Class Reference

`#include <HTTPMessage.h>`

Inheritance diagram for HTTPMessage:



Collaboration diagram for HTTPMessage:



Public Member Functions

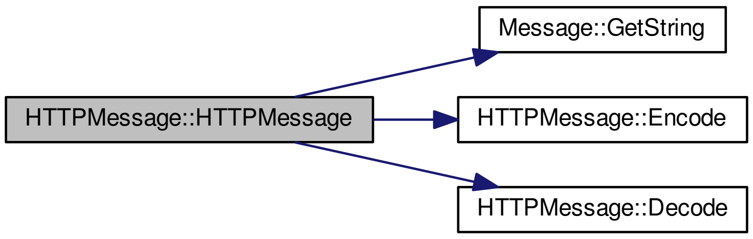
- HTTPMessage (WebSocket ∗ws, Message m, MessageAction a)
- HTTPMessage (WebSocket ∗ws, const char ∗msg, MessageAction a)
- void Decode ()
- void Encode ()
- MessageKey GetKey () const
- void Dump (std::ostream &os=std::cout) const

Additional Inherited Members

3.5.1 Constructor & Destructor Documentation

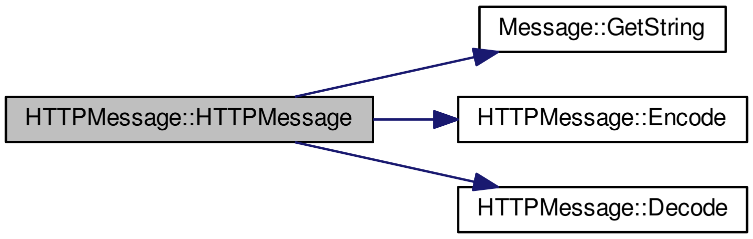
3.5.1.1 HTTPMessage::HTTPMessage (WebSocket ∗ *ws*, Message *m*, MessageAction *a*) `[inline]`

Here is the call graph for this function:



3.5.1.2 HTTPMessage::HTTPMessage (WebSocket ∗ *ws*, const char ∗ *msg*, MessageAction *a*) `[inline]`

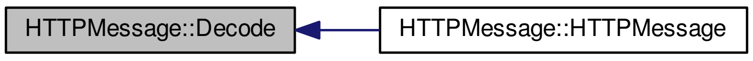
Here is the call graph for this function:



3.5.2 Member Function Documentation

3.5.2.1 void HTTPMessage::Decode ( ) `[inline]`

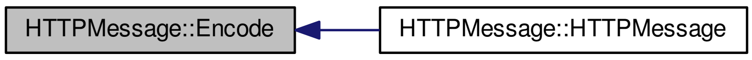
Here is the caller graph for this function:



3.5.2.2 void HTTPMessage::Dump (std::ostream & *os* = `std::cout`) const `[inline]`

3.5.2.3 void HTTPMessage::Encode ( ) `[inline]`

Here is the caller graph for this function:



3.5.2.4 MessageKey HTTPMessage::GetKey ( ) const `[inline]`

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

- include/HTTPMessage.h

3.6 ListenerInfo Struct Reference

`#include <Messenger.h>`

Data Fields

- std::string name
- SocketType type

3.6.1 Field Documentation

3.6.1.1 std::string ListenerInfo::name

3.6.1.2 SocketType ListenerInfo::type

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

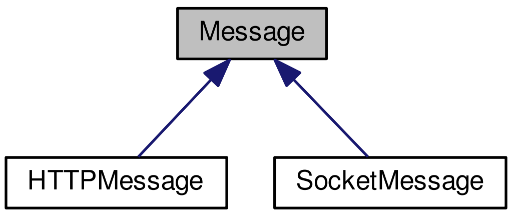
- include/Messenger.h

3.7 Message Class Reference

Base message type.

`#include <Message.h>`

Inheritance diagram for Message:



Public Member Functions

- Message ()
- Message (const char ∗msg)
- Message (std::string msg)
- ∼Message ()
- MessageKey GetKey () const
- std::string GetString () const
- bool IsFromWeb () const
- void Dump (std::ostream &os=std::cout) const

Protected Attributes

- std::string fString

3.7.1 Detailed Description

Base message type.

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

6 Apr 2015

3.7.2 Constructor & Destructor Documentation

3.7.2.1 Message::Message ( ) `[inline]`

3.7.2.2 Message::Message (const char ∗ *msg*) `[inline]`

3.7.2.3 Message::Message (std::string *msg*) `[inline]`

3.7.2.4 Message::∼Message ( ) `[inline]`

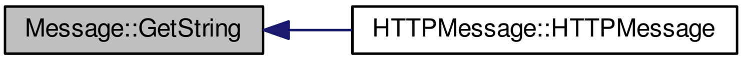
3.7.3 Member Function Documentation

3.7.3.1 void Message::Dump (std::ostream & *os* = `std::cout`) const `[inline]`

3.7.3.2 MessageKey Message::GetKey ( ) const `[inline]`

3.7.3.3 std::string Message::GetString ( ) const `[inline]`

Here is the caller graph for this function:



3.7.3.4 bool Message::IsFromWeb ( ) const `[inline]`

3.7.4 Field Documentation

3.7.4.1 std::string Message::fString `[protected]`

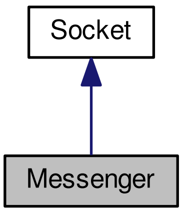
The documentation for this class was generated from the following file:

- include/Message.h

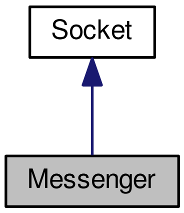
3.8 Messenger Class Reference

`#include <Messenger.h>`

Inheritance diagram for Messenger:



Collaboration diagram for Messenger:



Public Member Functions

- Messenger ()
- Messenger (int port)
- ∼Messenger ()
- bool Connect ()

  Connect the master.
- void Disconnect ()

  Remove the master.
- void Send (const Message &m, int sid) const

  Send any type of message to any client.
- MessageKey Receive ()

  Handle a message reception from a client.
- void Broadcast (const Message &m) const

  Emit a message to all clients connected through the socket.

Additional Inherited Members

3.8.1 Detailed Description

Messenger/broadcaster object used by the server to send/receive commands from the clients/listeners.

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

23 Mar 2015

3.8.2 Constructor & Destructor Documentation

3.8.2.1 Messenger::Messenger ( )

3.8.2.2 Messenger::Messenger (int *port*)

3.8.2.3 Messenger::∼Messenger ( )

3.8.3 Member Function Documentation

3.8.3.1 void Messenger::Broadcast (const **Message** & *m*) const

Emit a message to all clients connected through the socket.

Parameters

`in`	*m*	Message to transmit

3.8.3.2 bool Messenger::Connect ( )

Connect the master.

Connect this master to the socket for clients to be able to bind.

3.8.3.3 void Messenger::Disconnect ( )

Remove the master.

Remove this master from the socket, thus disconnecting automatically the clients connected.

3.8.3.4 MessageKey Messenger::Receive ( )

Handle a message reception from a client.

Returns

The key to the message received if successfully parsed

3.8.3.5 void Messenger::Send (const **Message** & *m,* int *sid*) const `[inline]`

Send any type of message to any client.

Parameters

`in`	*m*	Message to transmit
`in`	*sid*	Unique identifier of the client on this socket

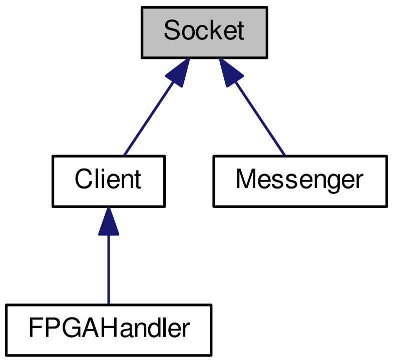
The documentation for this class was generated from the following file:

- include/Messenger.h

3.9 Socket Class Reference

`#include <Socket.h>`

Inheritance diagram for Socket:



Public Member Functions

- Socket ()
- Socket (int port)
- virtual ∼Socket ()
- void SetPort (int port)
- int GetPort () const

  Retrieve the port used for this socket.
- void AcceptConnections (Socket &socket)

  Accept connection from a client.
- void SelectConnections ()
- void SetSocketId (int sid)
- int GetSocketId () const
- SocketType GetSocketType (int sid) const
- bool IsWebSocket (int sid) const
- void DumpConnected () const

Protected Member Functions

- bool Start ()

  Start the socket.
- void Stop ()

  Terminates the socket and all attached communications.
- void Bind ()

  Bind a name to a socket.
- void PrepareConnection ()
- void Listen (int maxconn)

  Listen to incoming messages.
- void SendMessage (Message message, int id=-1) const

  Send a message on a socket.
- Message FetchMessage (int id=-1) const

  Receive a message from a socket.

Protected Attributes

- int fPort
- char fBuffer [MAX_WORD_LENGTH]
- SocketCollection fSocketsConnected
- fd_set fMaster

    Master file descriptor list.
- fd_set fReadFds

    Temp file descriptor list for select()

3.9.1 Detailed Description

General object providing all useful method to connect/bind/send/receive information through system sockets.

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

23 Mar 2015

3.9.2 Constructor & Destructor Documentation

3.9.2.1 Socket::Socket ( ) `[inline]`

3.9.2.2 Socket::Socket (int *port*)

3.9.2.3 virtual Socket::∼Socket ( ) `[virtual]`

3.9.3 Member Function Documentation

3.9.3.1 void Socket::AcceptConnections (Socket & *socket*)

Accept connection from a client.

Set the socket to accept connections any client transmitting through the socket

Parameters

`in,out`	*socket*	Master/client object to enable on the socket

3.9.3.2 void Socket::Bind ( ) `[protected]`

Bind a name to a socket.

Returns

Success of the operation

3.9.3.3 void Socket::DumpConnected ( ) const

3.9.3.4 Message Socket::FetchMessage (int *id* = `-1`) const `[protected]`

Receive a message from a socket.

Returns

Received message as a std::string

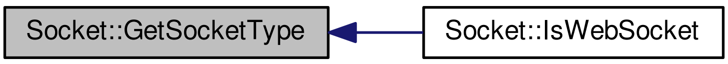
3.9.3.5 int Socket::GetPort ( ) const [inline]

Retrieve the port used for this socket.

3.9.3.6 int Socket::GetSocketId ( ) const [inline]

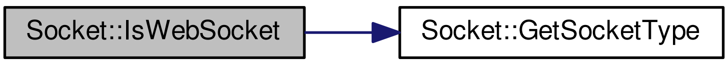
3.9.3.7 SocketType Socket::GetSocketType (int *sid*) const [inline]

Here is the caller graph for this function:



3.9.3.8 bool Socket::IsWebSocket (int *sid*) const [inline]

Here is the call graph for this function:



3.9.3.9 void Socket::Listen (int *maxconn*) [protected]

Listen to incoming messages.

Set the socket to listen to any message coming from outside

3.9.3.10 void Socket::PrepareConnection ( ) [protected]

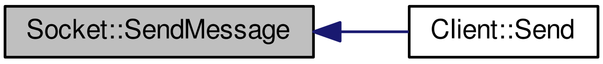
3.9.3.11 void Socket::SelectConnections ( )

Register all open file descriptors to read their communication through the socket

3.9.3.12 void Socket::SendMessage (Message *message,* int *id* = -1) const [protected]

Send a message on a socket.

Here is the caller graph for this function:



3.9.3.13 void Socket::SetPort (int *port*) [inline]

3.9.3.14 void Socket::SetSocketId (int *sid*) [inline]

3.9.3.15 bool Socket::Start ( ) [protected]

Start the socket.

Launch all mandatory operations to set the socket to be used

Returns

Success of the operation

3.9.3.16 void Socket::Stop ( ) [protected]

Terminates the socket and all attached communications.

3.9.4 Field Documentation

3.9.4.1 char Socket::fBuffer[MAX_WORD_LENGTH] [protected]

3.9.4.2 fd_set Socket::fMaster [protected]

Master file descriptor list.

3.9.4.3 int Socket::fPort [protected]

3.9.4.4 fd_set Socket::fReadFds [protected]

Temp file descriptor list for select()

3.9.4.5 SocketCollection Socket::fSocketsConnected [protected]

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

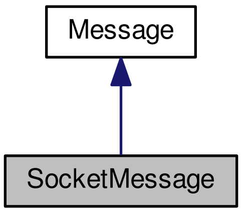
- include/Socket.h

3.10 SocketMessage Class Reference

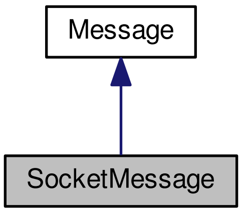
Socket-passed message type.

`#include <SocketMessage.h>`

Inheritance diagram for SocketMessage:



Collaboration diagram for SocketMessage:



Public Member Functions

- SocketMessage ()
- SocketMessage (const Message &msg)
- SocketMessage (const char ∗msg_s)
- SocketMessage (std::string msg_s)
- SocketMessage (MessageKey key)
- SocketMessage (MessageKey key, const char ∗value)
- SocketMessage (MessageKey key, std::string value)
- SocketMessage (MessageKey key, const int value)
- SocketMessage (MessageKey key, const float value)
- SocketMessage (MessageKey key, const double value)
- SocketMessage (MessageMap msg_m)
- ∼SocketMessage ()
- void SetKeyValue (MessageKey key, std::string value)

    Send a string-valued message.

- void SetKeyValue (MessageKey key, const char ∗value)
- void SetKeyValue (MessageKey key, int int_value)

  Send an integer-valued message.
- void SetKeyValue (MessageKey key, float float_value)

  Send an float-valued message.
- void SetKeyValue (MessageKey key, double double_value)

  Send an double-valued message.
- std::string GetString () const
- MessageKey GetKey () const
- std::string GetValue () const
- int GetIntValue () const
- VectorValue GetVectorValue () const
- void Dump (std::ostream &os=std::cout) const

Additional Inherited Members

3.10.1 Detailed Description

Socket-passed message type.

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

26 Mar 2015

3.10.2 Constructor & Destructor Documentation

3.10.2.1 SocketMessage::SocketMessage ( ) `[inline]`

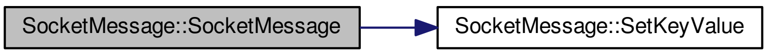
3.10.2.2 SocketMessage::SocketMessage (const Message & *msg*) `[inline]`

3.10.2.3 SocketMessage::SocketMessage (const char ∗ *msg_s*) `[inline]`

3.10.2.4 SocketMessage::SocketMessage (std::string *msg_s*) `[inline]`

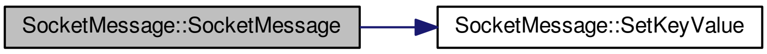
3.10.2.5 SocketMessage::SocketMessage (MessageKey *key*) `[inline]`

Here is the call graph for this function:



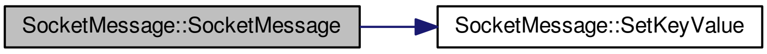
3.10.2.6 SocketMessage::SocketMessage (MessageKey *key*, const char ∗ *value*) [inline]

Here is the call graph for this function:



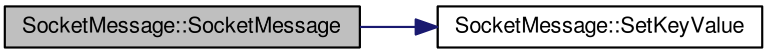
3.10.2.7 SocketMessage::SocketMessage (MessageKey *key*, std::string *value*) [inline]

Here is the call graph for this function:



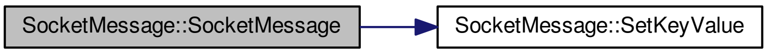
3.10.2.8 SocketMessage::SocketMessage (MessageKey *key*, const int *value*) [inline]

Here is the call graph for this function:



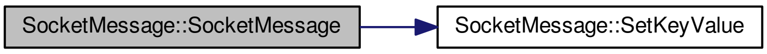
3.10.2.9 SocketMessage::SocketMessage (MessageKey *key*, const float *value*) [inline]

Here is the call graph for this function:



3.10.2.10 SocketMessage::SocketMessage (MessageKey *key*, const double *value*) [inline]

Here is the call graph for this function:



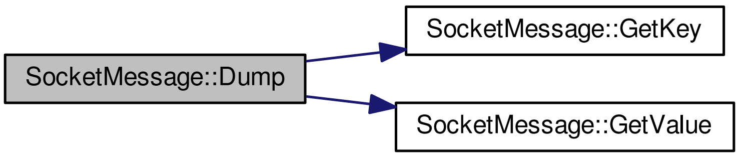
3.10.2.11 SocketMessage::SocketMessage (MessageMap *msg_m*) [inline]

3.10.2.12 SocketMessage::∼SocketMessage ( ) [inline]

3.10.3 Member Function Documentation

3.10.3.1 void SocketMessage::Dump (std::ostream & *os* = `std::cout`) const [inline]

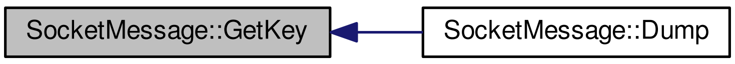
Here is the call graph for this function:



3.10.3.2 int SocketMessage::GetIntValue ( ) const [inline]

3.10.3.3 MessageKey SocketMessage::GetKey ( ) const [inline]

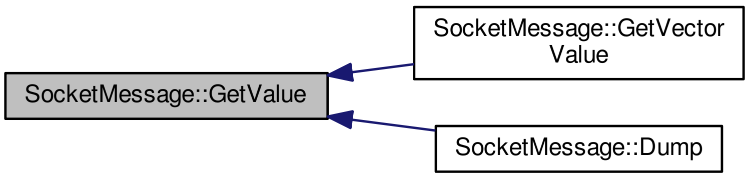
Here is the caller graph for this function:



3.10.3.4 std::string SocketMessage::GetString ( ) const [inline]

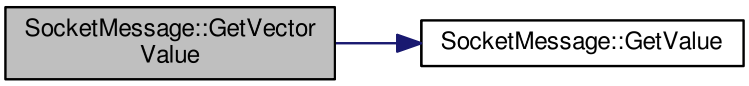
3.10.3.5 std::string SocketMessage::GetValue ( ) const [inline]

Here is the caller graph for this function:



3.10.3.6 VectorValue SocketMessage::GetVectorValue ( ) const [inline]

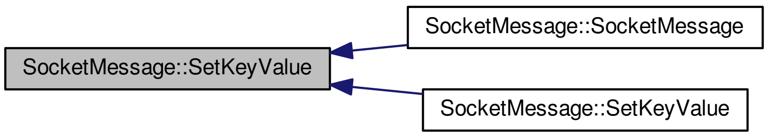
Here is the call graph for this function:



3.10.3.7 void SocketMessage::SetKeyValue (MessageKey *key*, std::string *value*) [inline]

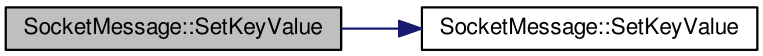
Send a string-valued message.

Here is the caller graph for this function:


SocketMessage::SetKeyValue
SocketMessage::SocketMessage
SocketMessage::SetKeyValue

3.10.3.8 void SocketMessage::SetKeyValue (MessageKey *key*, const char ∗ *value*) `[inline]`

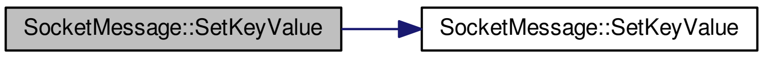
Here is the call graph for this function:



3.10.3.9 void SocketMessage::SetKeyValue (MessageKey *key*, int *int_value*) `[inline]`

Send an integer-valued message.

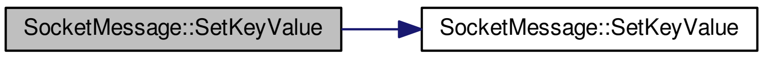
Here is the call graph for this function:



3.10.3.10 void SocketMessage::SetKeyValue (MessageKey *key*, float *float_value*) `[inline]`

Send an float-valued message.

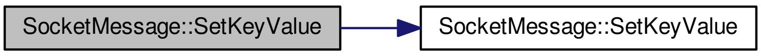
Here is the call graph for this function:



3.10.3.11 void SocketMessage::SetKeyValue (MessageKey *key*, double *double_value*) `[inline]`

Send an double-valued message.

Here is the call graph for this function:



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

- include/SocketMessage.h

3.11 TDCConfiguration Class Reference

```
#include <TDCConfiguration.h>
```

Public Types

- enum EdgeResolution {
  E_100PS =0, E_200PS, E_400PS, E_800PS,
  E_1600PS, E_3120PS, E_6250PS, E_12500PS }
- enum DeadTime { DT_5NS =0, DT_10NS, DT_30NS, DT_100NS }
- enum WidthResolution {
  W_100PS =0, W_200PS, W_400PS, W_800PS,
  W_1p6NS, W_3p2NS, W_6p25NS, W_12p5NS,
  W_25NS, W_50NS, W_100NS, W_200NS,
  W_400NS, W_800NS }

Public Member Functions

- TDCConfiguration ()
- virtual ∼TDCConfiguration ()
- void SetWord (const unsigned int i, const word_t word)

  Set one single word in the configuration.
- word_t GetWord (const unsigned int i) const

  Retrieve one single word from the configuration.
- uint8_t GetNumWords () const

  Number of words in the configuration.
- void SetEdgeResolution (const EdgeResolution r)
- EdgeResolution GetEdgeResolution () const
- void SetMaxEventSize (unsigned int sz)

  Set the maximum number of hits per event.
- uint8_t GetMaxEventSize () const

  Extract the maximum number of hits per event.
- void SetRejectFIFOFull (bool rej=true)

  Reject hits when readout FIFO full.
- bool GetRejectFIFOFull () const

  Are hits rejected when readout FIFO is full?
- void SetChannelOffset (int channel, uint16_t offset)

- uint16_t GetChannelOffset (int channel)
- void SetAllChannelsOffset (uint16_t offset)
- void SetDLLAdjustment (int tap, uint8_t adj)
- uint8_t GetDLLAdjustment (int tap)
- void SetRCAdjustment (int tap, uint8_t adj)
- uint8_t GetRCAdjustment (int tap)
- void SetWidthResolution (const WidthResolution r)
- WidthResolution GetWidthResolution () const
- void SetDeadTime (const DeadTime dt)
- DeadTime GetDeadTime () const
- void SetLeadingMode (const bool lead=true)

  Enable the detection of leading edges.
- bool GetLeadingMode () const

  Extract the status for the detection of leading edges.
- void SetTrailingMode (const bool trail=true)

  Enable/disable the detection of trailing edges.
- bool GetTrailingMode () const

  Extract the status for the detection of trailing edges.
- void SetTriggerMatchingMode (const bool trig=true)
- bool GetTriggerMatchingMode () const
- void SetEdgesPairing (const bool pair=true)
- bool GetEdgesPairing () const
- void Dump (std::ostream &os=std::cout) const

3.11.1 Detailed Description

Object handling the configuration word provided by/to the HPTDC chip

Author

Laurent Forthomme `laurent.forthomme@cern.ch`

Date

16 Apr 2015

3.11.2 Member Enumeration Documentation

3.11.2.1 enum TDCConfiguration::DeadTime

Enumerator

DT_5NS

DT_10NS

DT_30NS

DT_100NS

3.11.2.2 enum TDCConfiguration::EdgeResolution

Enumerator

E_100PS

E_200PS

E_400PS

E_800PS

E_1600PS

E_3120PS

E_6250PS

E_12500PS

3.11.2.3 enum TDCConfiguration::WidthResolution

Enumerator

W_100PS

W_200PS

W_400PS

W_800PS

W_1p6NS

W_3p2NS

W_6p25NS

W_12p5NS

W_25NS

W_50NS

W_100NS

W_200NS

W_400NS

W_800NS

3.11.3 Constructor & Destructor Documentation

3.11.3.1 TDCConfiguration::TDCConfiguration ( )

3.11.3.2 virtual TDCConfiguration::∼TDCConfiguration ( ) `[inline]`, `[virtual]`

3.11.4 Member Function Documentation

3.11.4.1 void TDCConfiguration::Dump (std::ostream & *os* = `std::cout`) const

3.11.4.2 uint16_t TDCConfiguration::GetChannelOffset (int *channel*) `[inline]`

3.11.4.3 DeadTime TDCConfiguration::GetDeadTime ( ) const `[inline]`

3.11.4.4 uint8_t TDCConfiguration::GetDLLAdjustment (int *tap*) `[inline]`

3.11.4.5 EdgeResolution TDCConfiguration::GetEdgeResolution ( ) const `[inline]`

3.11.4.6 bool TDCConfiguration::GetEdgesPairing ( ) const [inline]

3.11.4.7 bool TDCConfiguration::GetLeadingMode ( ) const [inline]

Extract the status for the detection of leading edges.

3.11.4.8 uint8_t TDCConfiguration::GetMaxEventSize ( ) const [inline]

Extract the maximum number of hits per event.

3.11.4.9 uint8_t TDCConfiguration::GetNumWords ( ) const [inline]

Number of words in the configuration.

Return the number of words making up the full configuration word.

3.11.4.10 uint8_t TDCConfiguration::GetRCAdjustment (int *tap*) [inline]

3.11.4.11 bool TDCConfiguration::GetRejectFIFOFull ( ) const [inline]

Are hits rejected when readout FIFO is full?

Extract whether or not hits are rejected once FIFO is full.

3.11.4.12 bool TDCConfiguration::GetTrailingMode ( ) const [inline]

Extract the status for the detection of trailing edges.

3.11.4.13 bool TDCConfiguration::GetTriggerMatchingMode ( ) const [inline]

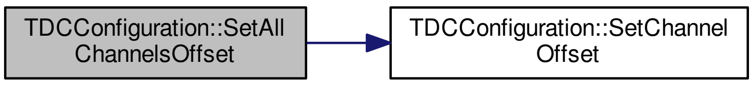
3.11.4.14 WidthResolution TDCConfiguration::GetWidthResolution ( ) const [inline]

3.11.4.15 word_t TDCConfiguration::GetWord (const unsigned int *i*) const [inline]

Retrieve one single word from the configuration.

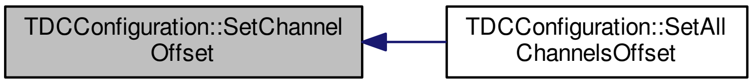
3.11.4.16 void TDCConfiguration::SetAllChannelsOffset (uint16_t *offset*) [inline]

Here is the call graph for this function:


TDCConfiguration::SetAll ChannelsOffset
TDCConfiguration::SetChannel Offset

3.11.4.17 void TDCConfiguration::SetChannelOffset (int *channel*, uint16_t *offset*) [inline]

Here is the caller graph for this function:


TDCConfiguration::SetChannel Offset
TDCConfiguration::SetAll ChannelsOffset

3.11.4.18 void TDCConfiguration::SetDeadTime (const DeadTime *dt*) [inline]

3.11.4.19 void TDCConfiguration::SetDLLAdjustment (int *tap*, uint8_t *adj*) [inline]

3.11.4.20 void TDCConfiguration::SetEdgeResolution (const EdgeResolution *r*) [inline]

3.11.4.21 void TDCConfiguration::SetEdgesPairing (const bool *pair* = `true`) [inline]

3.11.4.22 void TDCConfiguration::SetLeadingMode (const bool *lead* = `true`) [inline]

Enable the detection of leading edges.

3.11.4.23 void TDCConfiguration::SetMaxEventSize (unsigned int *sz*) [inline]

Set the maximum number of hits per event.

Set the maximum number of hits that can be recorded for each event. It is always rounded to the next power of 2 (in the range 0-128), and if bigger than 128 then set to unimited.

3.11.4.24 void TDCConfiguration::SetRCAdjustment (int *tap*, uint8_t *adj*) [inline]

3.11.4.25 void TDCConfiguration::SetRejectFIFOFull (bool *rej* = `true`) [inline]

Reject hits when readout FIFO full.

Set whether or not hits are rejected once FIFO is full.

3.11.4.26 void TDCConfiguration::SetTrailingMode (const bool *trail* = `true`) [inline]

Enable/disable the detection of trailing edges.

3.11.4.27 void TDCConfiguration::SetTriggerMatchingMode (const bool *trig* = `true`) [inline]

3.11.4.28 void TDCConfiguration::SetWidthResolution (const WidthResolution *r*) [inline]

3.11.4.29 void TDCConfiguration::SetWord (const unsigned int *i*, const word_t *word*) [inline]

Set one single word in the configuration.

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

- include/TDCConfiguration.h

3.12 TDCEvent Class Reference

```
#include <TDCEvent.h>
```

Public Types

- enum EventType {
  Invalid =-1, GroupHeader =0, GroupTrailer, TDCHeader,
  TDCTrailer, LeadingEdge, TrailingEdge, Error,
  Debug }

Public Member Functions

- TDCEvent (const uint32_t &word)
- virtual ∼TDCEvent ()
- EventType GetType () const

  Type of packet read out from the TDC.
- unsigned int GetTDCId () const

  Programmed identifier of master TDC.
- uint16_t GetEventId () const

  Event identifier from event counter.
- uint16_t GetWordCount () const

  Total number of words in event (including headers and trailers)
- uint16_t GetBunchId () const

  Bunch identifier of trigger (or trigger time tag)
- uint32_t GetLeadingTime (bool pair=false) const

  Leading edge measurement in programmed time resolution.
- uint8_t GetWidth () const

  Width of pulse in programmed time resolution.
- uint32_t GetTrailingTime () const

  Trailing edge measurement in programmed time resolution.
- uint16_t GetErrorFlags () const

  Return error flags if an error condition has been detected.

3.12.1 Member Enumeration Documentation

3.12.1.1 enum TDCEvent::EventType

Enumerator

Invalid

GroupHeader

GroupTrailer

TDCHeader

TDCTrailer

LeadingEdge

TrailingEdge

Error

Debug

3.12.2 Constructor & Destructor Documentation

3.12.2.1 TDCEvent::TDCEvent (const uint32_t & *word*) [inline]

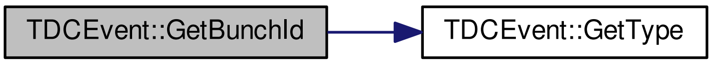
3.12.2.2 virtual TDCEvent::∼TDCEvent ( ) [inline], [virtual]

3.12.3 Member Function Documentation

3.12.3.1 uint16_t TDCEvent::GetBunchId ( ) const [inline]

Bunch identifier of trigger (or trigger time tag)

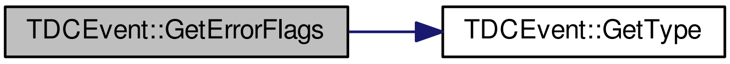
Here is the call graph for this function:



3.12.3.2 uint16_t TDCEvent::GetErrorFlags ( ) const [inline]

Return error flags if an error condition has been detected.

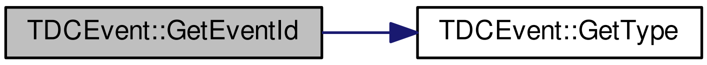
Here is the call graph for this function:



3.12.3.3 uint16_t TDCEvent::GetEventId ( ) const [inline]

Event identifier from event counter.

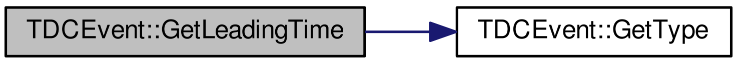
Here is the call graph for this function:



3.12.3.4 uint32_t TDCEvent::GetLeadingTime (bool *pair* = `false`) const `[inline]`

Leading edge measurement in programmed time resolution.

Here is the call graph for this function:



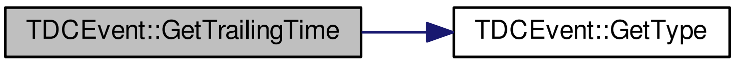
3.12.3.5 unsigned int TDCEvent::GetTDCId ( ) const `[inline]`

Programmed identifier of master TDC.

3.12.3.6 uint32_t TDCEvent::GetTrailingTime ( ) const `[inline]`

Trailing edge measurement in programmed time resolution.

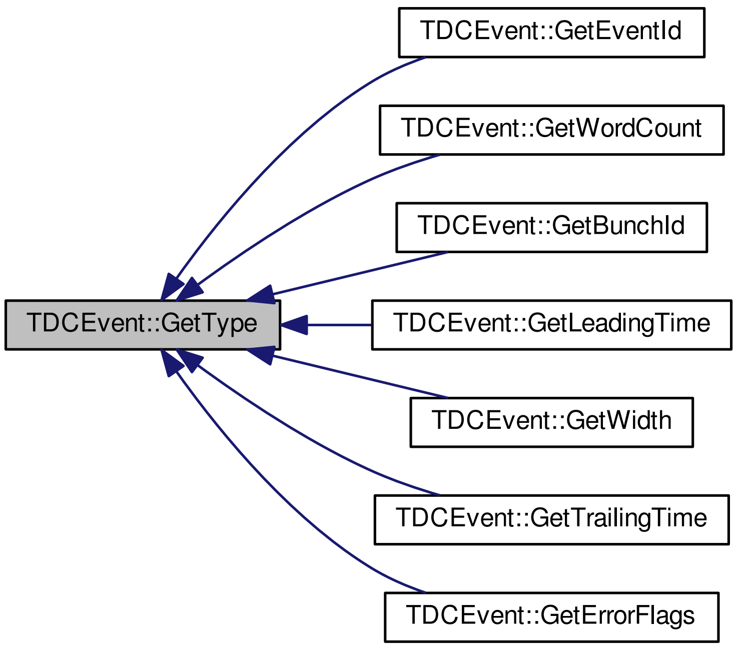
Here is the call graph for this function:



3.12.3.7 EventType TDCEvent::GetType ( ) const `[inline]`

Type of packet read out from the TDC.

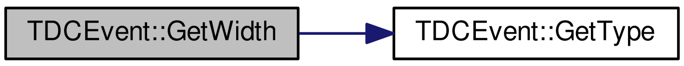
Here is the caller graph for this function:



3.12.3.8 uint8_t TDCEvent::GetWidth ( ) const [inline]

Width of pulse in programmed time resolution.

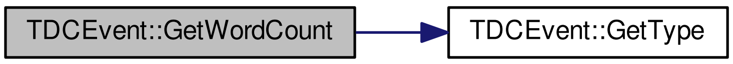
Here is the call graph for this function:



3.12.3.9 uint16_t TDCEvent::GetWordCount ( ) const [inline]

Total number of words in event (including headers and trailers)

Here is the call graph for this function:



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

- include/TDCEvent.h

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