Standard WSA API Library

Generated by Doxygen 1.7.4

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Contents

1 Introduction

This documentation, compiled using Doxygen, describes in details the wsa_api library. The wsa_api provides functions to set/get particular settings or acquire data from the WSA. The wsa_api encodes the commands into SCPI syntax scripts, which are sent to a WSA through the wsa_lib library. Subsequently, it decodes any responses or packet coming back from the WSA through the wsa_lib. Thus, the API helps to abstract away SCPI syntax from the user.

Data frames passing back from the wsa_lib are in VRT format. This API will extract the information and the actual data frames within the VRT packet and makes them available in structures and buffers for users.

1.1 Limitations in v1.0:

The following features are not yet supported with the CLI:

- DC correction. Need Nikhil to clarify on that.
- IQ correction. Same as above.
- Automatic finding of a WSA box(s) on a network.
- Set sample sizes. 1024 size for now.
- Triggers.
- Gain calibrarion. TBD with triggers.
- USB interface method - might never be available.

1.2 How to use the library

The wsa_api is designed using mixed C/C++ languages. To use the library, you need to include the header file, wsa_api.h, in files that will use any of its functions to access a WSA, and a link to the wsa_api.lib.

2 Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

3 File Index

3.1 File List

Here is a list of all files with brief descriptions:

4 Data Structure Documentation

4.1 wsa_descriptor Struct Reference

This structure stores WSA information.

Data Fields

- char prod_name [50]
- char prod_serial [20]
- char prod_version [20]
- char rfe_name [20]
- char rfe_version [20]
- char fw_version [20]
- char intf_type [20]
- uint64_t inst_bw
- uint64_t max_sample_size

- uint64_t max_tune_freq
- uint64_t min_tune_freq

4.1.1 Field Documentation

4.1.1.1 char fw_version

The firmware version currently in the WSA.

4.1.1.2 uint64_t inst_bw

The WSA instantaneous bandwidth in Hz.

4.1.1.3 char intf_type

The interface method to a WSA. Available: "TCPIP" ("USB" TBD).

4.1.1.4 uint64_t max_sample_size

The maximum number of continuous I and Q data samples the WSA can capture per frame.

4.1.1.5 uint64_t max_tune_freq

The maximum frequency in Hz that a WSA's RFE can be tuned to.

4.1.1.6 uint64_t min_tune_freq

The minimum frequency in Hz that a WSA's RFE can be tuned to.

4.1.1.7 char prod_name

WSA product name.

4.1.1.8 char prod_serial

WSA product serial number.

4.1.1.9 char prod_version

WSA product version number.

4.1.1.10 char rfe_name

WSA product name.

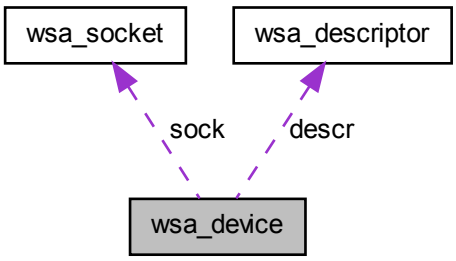
4.1.1.11 char rfe_version

WSA product version number.

4.2 wsa_device Struct Reference

A structure containing the components associate with each WSA device.

Collaboration diagram for wsa_device:



Data Fields

- struct wsa_descriptor descr
- struct wsa_socket sock

4.2.1 Field Documentation

4.2.1.1 struct wsa_descriptor descr

The information component of the WSA, stored in wsa_descriptor.

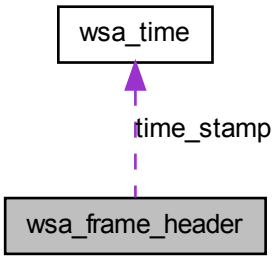
4.2.1.2 struct wsa_socket sock

The socket structure component of the WSA, used for TCPIP connection.

4.3 wsa_frame_header Struct Reference

This structure contains header information related to each frame read by wsa_get_frame().

Collaboration diagram for wsa_frame_header:



Data Fields

- char prod_serial [20]
- uint64_t freq
- char gain [10]
- uint32_t sample_size
- struct wsa_time time_stamp

4.3.1 Field Documentation

4.3.1.1 uint64_t freq

The center frequency (Hz) to which the RF PLL is tuned.

4.3.1.2 char gain

The amplification in the radio front end at the time a WSA data frame is captured.

4.3.1.3 char prod_serial

WSA product version number.

4.3.1.4 uint32_t sample_size

Number of {I, Q} samples pairs per WSA data frame.

4.3.1.5 struct wsa_time time_stamp

The time when a data frame capture begins, stored in wsa_time structure.

4.4 wsa_resp Struct Reference

This structure contains the response information for each query.

4.5 wsa_socket Struct Reference

A structure containing the socket parameters used for creating TCP/IP connection for control and data acquisition.

Data Fields

- SOCKET cmd
- SOCKET data

4.5.1 Field Documentation

4.5.1.1 SOCKET cmd

The command socket for command controls and queries. The string protocol used for this socket is HISLIP.

4.5.1.2 SOCKET data

The data socket used for streaming of data

4.6 wsa_time Struct Reference

This structure contains the time information. It is used for the time stamp in a frame header.

Data Fields

- int32_t sec
- uint32_t nsec

4.6.1 Field Documentation

4.6.1.1 int32_t nsec

Nanoseconds after the second (0 - 999 999 999).

4.6.1.2 int32_t sec

The number of seconds elapsed since 00:00 hours, Jan 1, 1970 UTC.

5 File Documentation

5.1 ReadMe.txt File Reference

Variables

- and information about the platforms
- and information about the configurations
- and information about the and project features selected with the Application Wizard wsa4000_cli cpp This is the main application source file Other standard files

5.1.1 Variable Documentation

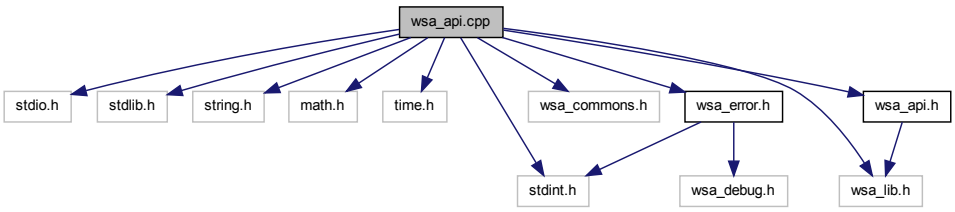
5.1.1.1 and information about the configurations

5.1.1.2 and information about the and project features selected with the Application Wizard wsa4000_cli cpp This is the main application source file Other standard files

5.1.1.3 and information about the platforms

5.2 wsa_api.cpp File Reference

Include dependency graph for wsa_api.cpp:



Functions

- int16_t wsa_verify_freq (struct wsa_device *dev, uint64_t freq)
- int16_t wsa_open (struct wsa_device *dev, char *intf_method)
- void wsa_close (struct wsa_device *dev)
- int16_t wsa_check_addr (char *ip_addr)
- int16_t wsa_list (char **wsa_list)
- int16_t wsa_is_connected (struct wsa_device *dev)
- int64_t wsa_get_freq (struct wsa_device *dev)
- int16_t wsa_set_freq (struct wsa_device *dev, uint64_t cfreq)
- float wsa_get_abs_max_amp (struct wsa_device *dev, wsa_gain gain)

- int64_t wsa_read_pkt (struct wsa_device ∗dev, struct wsa_frame_header ∗header, int16_t ∗i_buf, int16_t ∗q_buf, const uint64_t sample_size)
- wsa_gain wsa_get_gain (struct wsa_device ∗dev)
- int16_t wsa_set_gain (struct wsa_device ∗dev, wsa_gain gain)
- int16_t wsa_get_antenna (struct wsa_device ∗dev)
- int16_t wsa_set_antenna (struct wsa_device ∗dev, uint8_t port_num)
- int16_t wsa_get_bpf (struct wsa_device ∗dev)
- int16_t wsa_set_bpf (struct wsa_device ∗dev, uint8_t mode)
- int16_t wsa_get_lpf (struct wsa_device ∗dev)
- int16_t wsa_set_lpf (struct wsa_device ∗dev, uint8_t option)
- int16_t wsa_check_cal_mode (struct wsa_device ∗dev)
- int16_t wsa_run_cal_mode (struct wsa_device ∗dev, uint8_t mode)

5.2.1 Function Documentation

5.2.1.1 int16_t wsa_check_addr (char ∗ *ip_addr*)

Verify if the IP address or host name given is valid for the WSA.

Parameters

ip_addr	- A char pointer to the IP address or host name to be verified.

Returns

1 if the IP is valid, 0 if invalid (?), or a negative number on error.

Here is the call graph for this function:

5.2.1.2 int16_t wsa_check_cal_mode (struct wsa_device ∗ *dev*)

Checks if the RFE's internal calibration has finished or not.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 if the calibration is still running or 0 if completed, or a negative number on error.

5.2.1.3 void wsa_close (struct wsa_device * *dev*)

Closes the device handle if one is opened and stops any existing data capture.

Parameters

dev	- A pointer to a WSA device structure to be closed.

Returns

none

5.2.1.4 float wsa_get_abs_max_amp (struct wsa_device * *dev*, wsa_gain *gain*)

Gets the absolute maximum RF input level (dBm) for the WSA at the given gain setting.

Operating the unit at the absolute maximum may cause damage to the device.

Parameters

dev	- A pointer to the WSA device structure.
gain	- The gain setting of **wsa_gain** type at which the absolute maximum amplitude input level is to be retrieved.

Returns

The absolute maximum RF input level in dBm or negative error number.

5.2.1.5 int16_t wsa_get_antenna (struct wsa_device * *dev*)

Gets which antenna port is currently in used with the RFE board.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The antenna port number on success, or a negative number on error.

5.2.1.6 int16_t wsa_get_bpf (struct wsa_device * *dev*)

Gets the current mode of the RFE's internal BPF.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 (on), 0 (off), or a negative number on error.

5.2.1.7 int64_t wsa_get_freq (struct wsa_device * *dev*)

Retrieves the center frequency that the WSA is running at.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The frequency in Hz, or a negative number on error.

5.2.1.8 wsa_gain wsa_get_gain (struct wsa_device * *dev*)

Gets the current gain setting of the WSA.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The gain setting of wsa_gain type, or a negative number on error.

5.2.1.9 int16_t wsa_get_lpf (struct wsa_device * *dev*)

Gets the current mode of the RFE's internal LPF.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 (on), 0 (off), or a negative number on error.

5.2.1.10 int16_t wsa_is_connected (struct wsa_device * *dev*)

Indicates if the WSA is still connected to the PC.

Parameters

dev	- A pointer to the WSA device structure to be verified for the connection.

Returns

1 if it is connected, 0 if not connected, or a negative number if errors.

5.2.1.11 int16_t wsa_list (char ** *wsa_list*)

Count and print out the IPs of connected WSAs to the network? or the PC??? For now, will list the IPs for any of the connected devices to a PC?

Parameters

wsa_list	- A double char pointer to store (WSA???) IP addresses connected to a network???.

Returns

Number of connected WSAs (or IPs for now) on success, or a negative number on error.

5.2.1.12 int16_t wsa_open (struct wsa_device * *dev*, char * *intf_method*)

Establishes a connection of choice specified by the interface method to the WSA.

At success, the handle remains open for future access by other library methods until wsa_close() is called. When unsuccessful, the WSA will be closed automatically and an error is returned.

Parameters

dev	- A pointer to the WSA device structure to be opened.
intf_method	- A char pointer to store the interface method to the WSA. Possible methods: • With LAN, use: "TCPIP::<Ip address of the WSA>::HISLIP" • With USB, use: "USB" (check if supported with the WSA version used).

Returns

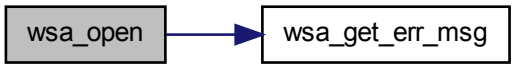
0 on success, or a negative number on error.

Errors:

Situations that will generate an error are:

- the selected connection type does not exist for the WSA product version.
- the WSA is not detected (has not been connected or powered up).
-

Here is the call graph for this function:



5.2.1.13 int64_t wsa_read_pkt (struct wsa_device * *dev*, struct wsa_frame_header * *header*, int16_t * *i_buf*, int16_t * *q_buf*, const uint64_t *sample_size*)

Reads a frame of data. *Each* frame consists of a header, and I and Q buffers of data of length determine by the **sample_size** parameter.

Parameters

dev	- A pointer to the WSA device structure.
header	- A pointer to **wsa_frame_header** structure to store information for the frame.
i_buf	- A 16-bit signed integer pointer for the unscaled, I data buffer with size specified by the sample_size.
q_buf	- A 16-bit signed integer pointer for the unscaled Q data buffer with size specified by the sample_size.
sample_size	- A 64-bit unsigned integer sample size (i.e. {I, Q} sample pairs) per data frame to be captured. The frame size is limited to a maximum number, **max_sample_size**, listed in the **wsa_descriptor** structure.

Returns

The number of data samples read upon success, or a negative number on error.

5.2.1.14 int16_t wsa_run_cal_mode (struct wsa_device * *dev*, uint8_t *mode*)

Runs the RFE'S internal calibration mode or cancel it.

While the calibration mode is running, no other commands should be running until the calibration is finished by using wsa_query_cal_mode(), or could be cancelled

Parameters

dev	- A pointer to the WSA device structure.
mode	- An integer mode of selection: 1 - Run, 0 - Cancel.

Returns

0 on success, or a negative number on error.

5.2.1.15 int16_t wsa_set_antenna (struct wsa_device * *dev*, uint8_t *port_num*)

Sets the antenna port to be used for the RFE board.

Parameters

dev	- A pointer to the WSA device structure.
port_num	- An integer port number to used. Available ports: 1, 2, 3. **Note:** When calibration mode is enabled through wsa_run_cal_mode(), these antenna ports will not be available. The selected port will resume when the calibration mode is set to off.

Returns

0 on success, or a negative number on error.

5.2.1.16 int16_t wsa_set_bpf (struct wsa_device * *dev*, uint8_t *mode*)

Sets the RFE's internal band pass filter (BPF) on or off (bypassing).

Parameters

dev	- A pointer to the WSA device structure.
mode	- An integer mode of selection: 0 - Off, 1 - On.

Returns

0 on success, or a negative number on error.

5.2.1.17 int16_t wsa_set_freq (struct wsa_device * *dev*, uint64_t *cfreq*)

Sets the WSA to the desired center frequency, **cfreq**.

Remarks

wsa_set_freq() will return error if trigger mode is already running. Use wsa_set_run_mode() with FREERUN to change.

Parameters

dev	- A pointer to the WSA device structure.
cfreq	- The center frequency to set, in Hz

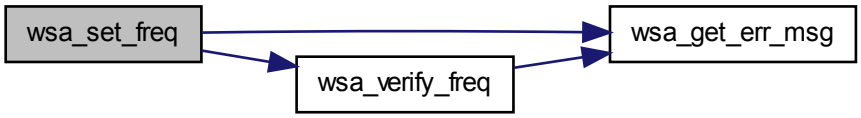
Returns

0 on success, or a negative number on error.

Errors:

- Set frequency when WSA is in trigger mode.
- Incorrect frequency resolution (check with data sheet).

Here is the call graph for this function:



5.2.1.18 int16_t wsa_set_gain (struct wsa_device * *dev*, wsa_gain *gain*)

Sets the **gain** (sensitivity) level for the radio front end of the WSA.

Parameters

dev	- A pointer to the WSA device structure.
gain	- The gain setting of type wsa_gain to set for WSA. Valid gain settings are HIGH, MEDIUM, LOW, ULOW.

Returns

0 on success, or a negative number on error.

5.2.1.19 int16_t wsa_set_lpf (struct wsa_device * *dev*, uint8_t *option*)

Sets the internal low pass filter (LPF) on or off (bypassing).

Parameters

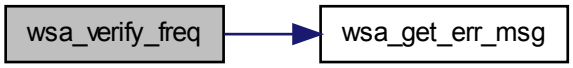
dev	- A pointer to the WSA device structure.
option	- An integer mode of selection: 0 - Off, 1 - On.

Returns

0 on success, or a negative number on error.

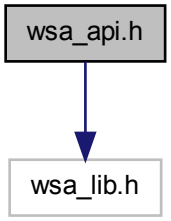
5.2.1.20 int16_t wsa_verify_freq (struct wsa_device * *dev*, uint64_t *freq*)

Here is the call graph for this function:

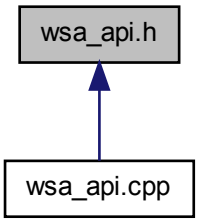


5.3 wsa_api.h File Reference

Include dependency graph for wsa_api.h:



This graph shows which files directly or indirectly include this file:



Data Structures

- struct wsa_descriptor

  This structure stores WSA information.
- struct wsa_time

  This structure contains the time information. It is used for the time stamp in a frame header.
- struct wsa_frame_header

  This structure contains header information related to each frame read by wsa_get_frame().
- struct wsa_socket

  A structure containing the socket parameters used for creating TCP/IP connection for control and data acquisition.
- struct wsa_device

  A structure containing the components associate with each WSA device.

Enumerations

- enum wsa_gain { HIGH = 1, MEDIUM, LOW, ULOW }

Functions

- int16_t wsa_open (struct wsa_device ∗dev, char ∗intf_method)
- void wsa_close (struct wsa_device ∗dev)
- int16_t wsa_check_addr (char ∗intf_method)
- int16_t wsa_list (char ∗∗wsa_list)
- int16_t wsa_is_connected (struct wsa_device ∗dev)
- float wsa_get_abs_max_amp (struct wsa_device ∗dev, wsa_gain gain)

- int64_t wsa_read_pkt (struct wsa_device ∗dev, struct wsa_frame_header ∗header, int16_t ∗i_buf, int16_t ∗q_buf, const uint64_t sample_size)
- int64_t wsa_get_freq (struct wsa_device ∗dev)
- int16_t wsa_set_freq (struct wsa_device ∗dev, uint64_t cfreq)
- wsa_gain wsa_get_gain (struct wsa_device ∗dev)
- int16_t wsa_set_gain (struct wsa_device ∗dev, wsa_gain gain)
- int16_t wsa_get_antenna (struct wsa_device ∗dev)
- int16_t wsa_set_antenna (struct wsa_device ∗dev, uint8_t port_num)
- int16_t wsa_get_bpf (struct wsa_device ∗dev)
- int16_t wsa_set_bpf (struct wsa_device ∗dev, uint8_t mode)
- int16_t wsa_get_lpf (struct wsa_device ∗dev)
- int16_t wsa_set_lpf (struct wsa_device ∗dev, uint8_t option)
- int16_t wsa_check_cal_mode (struct wsa_device ∗dev)
- int16_t wsa_run_cal_mode (struct wsa_device ∗dev, uint8_t mode)

5.3.1 Enumeration Type Documentation

5.3.1.1 enum wsa_gain

Defines the amplification available in the radio front end (RFE) of the WSA.

If an incorrect setting is specified, an error will be returned

Enumerator:

HIGH High RFE amplification. Value 1.

MEDIUM Medium RFE amplification.

LOW Low RFE amplification.

ULOW Ultralow RFE amplification.

5.3.2 Function Documentation

5.3.2.1 int16_t wsa_check_addr (char ∗ *ip_addr*)

Verify if the IP address or host name given is valid for the WSA.

Parameters

ip_addr	- A char pointer to the IP address or host name to be verified.

Returns

1 if the IP is valid, 0 if invalid (?), or a negative number on error.

Here is the call graph for this function:

5.3.2.2 int16_t wsa_check_cal_mode (struct wsa_device * *dev*)

Checks if the RFE's internal calibration has finished or not.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 if the calibration is still running or 0 if completed, or a negative number on error.

5.3.2.3 void wsa_close (struct wsa_device * *dev*)

Closes the device handle if one is opened and stops any existing data capture.

Parameters

dev	- A pointer to a WSA device structure to be closed.

Returns

none

5.3.2.4 float wsa_get_abs_max_amp (struct wsa_device * *dev*, wsa_gain *gain*)

Gets the absolute maximum RF input level (dBm) for the WSA at the given gain setting.

Operating the unit at the absolute maximum may cause damage to the device.

Parameters

dev	- A pointer to the WSA device structure.
gain	- The gain setting of **wsa_gain** type at which the absolute maximum amplitude input level is to be retrieved.

Returns

The absolute maximum RF input level in dBm or negative error number.

5.3.2.5 int16_t wsa_get_antenna (struct wsa_device * *dev*)

Gets which antenna port is currently in used with the RFE board.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The antenna port number on success, or a negative number on error.

5.3.2.6 int16_t wsa_get_bpf (struct wsa_device * *dev*)

Gets the current mode of the RFE's internal BPF.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 (on), 0 (off), or a negative number on error.

5.3.2.7 int64_t wsa_get_freq (struct wsa_device * *dev*)

Retrieves the center frequency that the WSA is running at.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The frequency in Hz, or a negative number on error.

5.3.2.8 wsa_gain wsa_get_gain (struct wsa_device * *dev*)

Gets the current gain setting of the WSA.

Parameters

dev	- A pointer to the WSA device structure.

Returns

The gain setting of wsa_gain type, or a negative number on error.

5.3.2.9 int16_t wsa_get_lpf (struct wsa_device * *dev*)

Gets the current mode of the RFE's internal LPF.

Parameters

dev	- A pointer to the WSA device structure.

Returns

1 (on), 0 (off), or a negative number on error.

5.3.2.10 int16_t wsa_is_connected (struct wsa_device * *dev*)

Indicates if the WSA is still connected to the PC.

Parameters

dev	- A pointer to the WSA device structure to be verified for the connection.

Returns

1 if it is connected, 0 if not connected, or a negative number if errors.

5.3.2.11 int16_t wsa_list (char ** *wsa_list*)

Count and print out the IPs of connected WSAs to the network? or the PC??? For now, will list the IPs for any of the connected devices to a PC?

Parameters

wsa_list	- A double char pointer to store (WSA???) IP addresses connected to a network???.

Returns

Number of connected WSAs (or IPs for now) on success, or a negative number on error.

5.3.2.12 int16_t wsa_open (struct wsa_device * *dev*, char * *intf_method*)

Establishes a connection of choice specified by the interface method to the WSA.

At success, the handle remains open for future access by other library methods until wsa_close() is called. When unsuccessful, the WSA will be closed automatically and an error is returned.

Parameters

dev	- A pointer to the WSA device structure to be opened.
intf_method	- A char pointer to store the interface method to the WSA. Possible methods: • With LAN, use: "TCPIP::<Ip address of the WSA>::HISLIP" • With USB, use: "USB" (check if supported with the WSA version used).

Returns

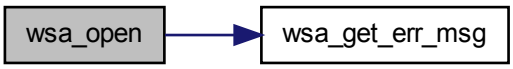
0 on success, or a negative number on error.

Errors:

Situations that will generate an error are:

- the selected connection type does not exist for the WSA product version.
- the WSA is not detected (has not been connected or powered up).
-

Here is the call graph for this function:



5.3.2.13 int64_t wsa_read_pkt (struct wsa_device * *dev*, struct wsa_frame_header * *header*, int16_t * *i_buf*, int16_t * *q_buf*, const uint64_t *sample_size*)

Reads a frame of data. *Each* frame consists of a header, and I and Q buffers of data of length determine by the **sample_size** parameter.

Parameters

dev	- A pointer to the WSA device structure.
header	- A pointer to **wsa_frame_header** structure to store information for the frame.
i_buf	- A 16-bit signed integer pointer for the unscaled, I data buffer with size specified by the sample_size.
q_buf	- A 16-bit signed integer pointer for the unscaled Q data buffer with size specified by the sample_size.
sample_size	- A 64-bit unsigned integer sample size (i.e. {I, Q} sample pairs) per data frame to be captured. The frame size is limited to a maximum number, **max_sample_size**, listed in the **wsa_descriptor** structure.

Returns

The number of data samples read upon success, or a negative number on error.

5.3.2.14 int16_t wsa_run_cal_mode (struct wsa_device * *dev*, uint8_t *mode*)

Runs the RFE'S internal calibration mode or cancel it.

While the calibration mode is running, no other commands should be running until the calibration is finished by using wsa_query_cal_mode(), or could be cancelled

Parameters

dev	- A pointer to the WSA device structure.
mode	- An integer mode of selection: 1 - Run, 0 - Cancel.

Returns

0 on success, or a negative number on error.

5.3.2.15 int16_t wsa_set_antenna (struct wsa_device * *dev*, uint8_t *port_num*)

Sets the antenna port to be used for the RFE board.

Parameters

dev	- A pointer to the WSA device structure.
port_num	- An integer port number to used. Available ports: 1, 2, 3. **Note:** When calibration mode is enabled through wsa_run_cal_mode(), these antenna ports will not be available. The selected port will resume when the calibration mode is set to off.

Returns

0 on success, or a negative number on error.

5.3.2.16 int16_t wsa_set_bpf (struct wsa_device * *dev*, uint8_t *mode*)

Sets the RFE's internal band pass filter (BPF) on or off (bypassing).

Parameters

dev	- A pointer to the WSA device structure.
mode	- An integer mode of selection: 0 - Off, 1 - On.

Returns

0 on success, or a negative number on error.

5.3.2.17 int16_t wsa_set_freq (struct wsa_device * *dev*, uint64_t *cfreq*)

Sets the WSA to the desired center frequency, **cfreq**.

Remarks

wsa_set_freq() will return error if trigger mode is already running. Use wsa_set_run_mode() with FREERUN to change.

Parameters

dev	- A pointer to the WSA device structure.
cfreq	- The center frequency to set, in Hz

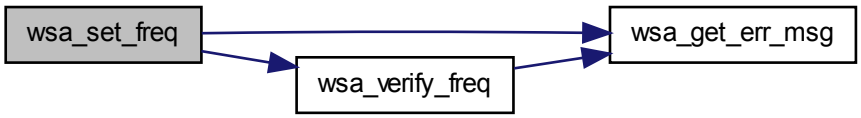
Returns

0 on success, or a negative number on error.

Errors:

- Set frequency when WSA is in trigger mode.
- Incorrect frequency resolution (check with data sheet).

Here is the call graph for this function:



5.3.2.18 int16_t wsa_set_gain (struct wsa_device * *dev*, wsa_gain *gain*)

Sets the **gain** (sensitivity) level for the radio front end of the WSA.

Parameters

dev	- A pointer to the WSA device structure.
gain	- The gain setting of type wsa_gain to set for WSA. Valid gain settings are HIGH, MEDIUM, LOW, ULOW.

Returns

0 on success, or a negative number on error.

5.3.2.19 int16_t wsa_set_lpf (struct wsa_device * *dev*, uint8_t *option*)

Sets the internal low pass filter (LPF) on or off (bypassing).

Parameters

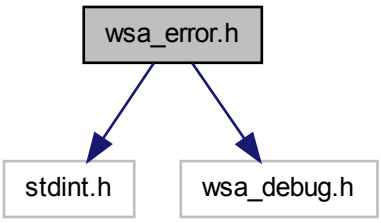
dev	- A pointer to the WSA device structure.
option	- An integer mode of selection: 0 - Off, 1 - On.

Returns

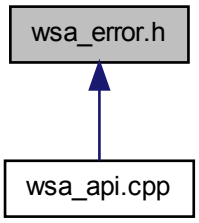
0 on success, or a negative number on error.

5.4 wsa_error.h File Reference

Include dependency graph for wsa_error.h:



This graph shows which files directly or indirectly include this file:



Defines

- #define LNEG_NUM (-10000)
- #define WSA_ERR_NOWSA (LNEG_NUM - 1)
- #define WSA_ERR_INVIPADDRESS (LNEG_NUM - 2)
- #define WSA_ERR_NOCTRLPIPE (LNEG_NUM - 3)
- #define WSA_ERR_UNKNOWNPRODSER (LNEG_NUM - 4)

- #define WSA_ERR_UNKNOWNPRODVSN (LNEG_NUM - 5)
- #define WSA_ERR_UNKNOWNFWRVSN (LNEG_NUM - 6)
- #define WSA_ERR_UNKNOWNRFEVSN (LNEG_NUM - 7)
- #define WSA_ERR_PRODOBSOLETE (LNEG_NUM - 8)
- #define WSA_ERR_WSANOTRDY (LNEG_NUM - 101)
- #define WSA_ERR_WSAINUSE (LNEG_NUM - 102)
- #define WSA_ERR_SETFAILED (LNEG_NUM - 103)
- #define WSA_ERR_OPENFAILED (LNEG_NUM - 104)
- #define WSA_ERR_INITFAILED (LNEG_NUM - 105)
- #define WSA_ERR_INVADCCORRVALUE (LNEG_NUM - 106)
- #define WSA_ERR_INVINTFMETHOD (LNEG_NUM - 201)
- #define WSA_ERR_INVIPHOSTADDRESS (LNEG_NUM - 202)
- #define WSA_ERR_USBNOTAVBL (LNEG_NUM - 203)
- #define WSA_ERR_USBOPENFAILED (LNEG_NUM - 204)
- #define WSA_ERR_USBINITFAILED (LNEG_NUM - 205)
- #define WSA_ERR_ETHERNETNOTAVBL (LNEG_NUM - 206)
- #define WSA_ERR_ETHERNETCONNECTFAILED (LNEG_NUM - 207)
- #define WSA_ERR_ETHERNETINITFAILED (LNEG_NUM - 209)
- #define WSA_ERR_INVAMP (LNEG_NUM - 301)
- #define WSA_ERR_NODATABUS (LNEG_NUM - 401)
- #define WSA_ERR_READFRAMEFAILED (LNEG_NUM - 402)
- #define WSA_ERR_INVSAMPLESIZE (LNEG_NUM - 403)
- #define WSA_ERR_FREQOUTOFBOUND (LNEG_NUM - 601)
- #define WSA_ERR_INVFREQRES (LNEG_NUM - 602)
- #define WSA_ERR_FREQSETFAILED (LNEG_NUM - 603)
- #define WSA_ERR_PLLLOCKFAILED (LNEG_NUM - 604)
- #define WSA_ERR_INVGAIN (LNEG_NUM - 801)
- #define WSA_ERR_INVRUNMODE (LNEG_NUM - 1001)
- #define WSA_ERR_INVTRIGID (LNEG_NUM - 1201)
- #define WSA_ERR_INVSTOPFREQ (LNEG_NUM - 1202)
- #define WSA_ERR_STARTOOB (LNEG_NUM - 1203)
- #define WSA_ERR_STOPOOB (LNEG_NUM - 1204)
- #define WSA_ERR_INVSTARTRES (LNEG_NUM - 1205)
- #define WSA_ERR_INVSTOPRES (LNEG_NUM - 1206)
- #define WSA_ERR_INVTRIGRANGE (LNEG_NUM - 1207)
- #define WSA_ERR_INVDWELL (LNEG_NUM - 1208)
- #define WSA_ERR_INVNUMFRAMES (LNEG_NUM - 1209)
- #define WSA_ERR_CMDSENDFAILED (LNEG_NUM - 1501)
- #define WSA_ERR_INVNUMBER (LNEG_NUM - 2000)
- #define WSA_ERR_INVREGADDR (LNEG_NUM - 2001)
- #define WSA_ERR_MALLOCFAILED (LNEG_NUM - 2002)
- #define WSA_ERR_UNKNOWN_ERROR (LNEG_NUM - 2003)

Functions

- const char * wsa_get_err_msg (int16_t err_id)

5.4.1 Define Documentation

5.4.1.1 #define LNEG_NUM (-10000)

5.4.1.2 #define WSA_ERR_CMDSENDFAILED (LNEG_NUM - 1501)

5.4.1.3 #define WSA_ERR_ETHERNETCONNECTFAILED (LNEG_NUM - 207)

5.4.1.4 #define WSA_ERR_ETHERNETINITFAILED (LNEG_NUM - 209)

5.4.1.5 #define WSA_ERR_ETHERNETNOTAVBL (LNEG_NUM - 206)

5.4.1.6 #define WSA_ERR_FREQOUTOFBOUND (LNEG_NUM - 601)

5.4.1.7 #define WSA_ERR_FREQSETFAILED (LNEG_NUM - 603)

5.4.1.8 #define WSA_ERR_INITFAILED (LNEG_NUM - 105)

5.4.1.9 #define WSA_ERR_INVADCCORRVALUE (LNEG_NUM - 106)

5.4.1.10 #define WSA_ERR_INVAMP (LNEG_NUM - 301)

5.4.1.11 #define WSA_ERR_INVDWELL (LNEG_NUM - 1208)

5.4.1.12 #define WSA_ERR_INVFREQRES (LNEG_NUM - 602)

5.4.1.13 #define WSA_ERR_INVGAIN (LNEG_NUM - 801)

5.4.1.14 #define WSA_ERR_INVINTFMETHOD (LNEG_NUM - 201)

5.4.1.15 #define WSA_ERR_INVIPADDRESS (LNEG_NUM - 2)

5.4.1.16 #define WSA_ERR_INVIPHOSTADDRESS (LNEG_NUM - 202)

5.4.1.17 #define WSA_ERR_INVNUMBER (LNEG_NUM - 2000)

5.4.1.18 #define WSA_ERR_INVNUMFRAMES (LNEG_NUM - 1209)

5.4.1.19 #define WSA_ERR_INVREGADDR (LNEG_NUM - 2001)

5.4.1.20 #define WSA_ERR_INVRUNMODE (LNEG_NUM - 1001)

5.4.1.21 #define WSA_ERR_INVSAMPLESIZE (LNEG_NUM - 403)

5.4.1.22 #define WSA_ERR_INVSTARTRES (LNEG_NUM - 1205)

5.4.1.23 #define WSA_ERR_INVSTOPFREQ (LNEG_NUM - 1202)

5.4.1.24 #define WSA_ERR_INVSTOPRES (LNEG_NUM - 1206)

5.4.1.25 #define WSA_ERR_INVTRIGID (LNEG_NUM - 1201)

5.4.1.26 #define WSA_ERR_INVTRIGRANGE (LNEG_NUM - 1207)

5.4.1.27 #define WSA_ERR_MALLOCFAILED (LNEG_NUM - 2002)

5.4.1.28 #define WSA_ERR_NOCTRLPIPE (LNEG_NUM - 3)

5.4.1.29 #define WSA_ERR_NODATABUS (LNEG_NUM - 401)

5.4.1.30 #define WSA_ERR_NOWSA (LNEG_NUM - 1)

5.4.1.31 #define WSA_ERR_OPENFAILED (LNEG_NUM - 104)

5.4.1.32 #define WSA_ERR_PLLLOCKFAILED (LNEG_NUM - 604)

5.4.1.33 #define WSA_ERR_PRODOBSOLETE (LNEG_NUM - 8)

5.4.1.34 #define WSA_ERR_READFRAMEFAILED (LNEG_NUM - 402)

5.4.1.35 #define WSA_ERR_SETFAILED (LNEG_NUM - 103)

5.4.1.36 #define WSA_ERR_STARTOOB (LNEG_NUM - 1203)

5.4.1.37 #define WSA_ERR_STOPOOB (LNEG_NUM - 1204)

5.4.1.38 #define WSA_ERR_UNKNOWN_ERROR (LNEG_NUM - 2003)

5.4.1.39 #define WSA_ERR_UNKNOWNFWRVSN (LNEG_NUM - 6)

5.4.1.40 #define WSA_ERR_UNKNOWNPRODSER (LNEG_NUM - 4)

5.4.1.41 #define WSA_ERR_UNKNOWNPRODVSN (LNEG_NUM - 5)

5.4.1.42 #define WSA_ERR_UNKNOWNRFEVSN (LNEG_NUM - 7)

5.4.1.43 #define WSA_ERR_USBINITFAILED (LNEG_NUM - 205)

5.4.1.44 #define WSA_ERR_USBNOTAVBL (LNEG_NUM - 203)

5.4.1.45 #define WSA_ERR_USBOPENFAILED (LNEG_NUM - 204)

5.4.1.46 #define WSA_ERR_WSAINUSE (LNEG_NUM - 102)

5.4.1.47 #define WSA_ERR_WSANOTRDY (LNEG_NUM - 101)

5.4.2 Function Documentation

5.4.2.1 const char* wsa_get_err_msg (int16_t *err_id*)

5.5 wsa_lib.txt File Reference

Contain some code documents for wsa_lib.h.

5.5.1 Detailed Description

Index