WSA4000 CLI (Command Line Interface) Program Documentation

Generated by Doxygen 1.7.4

Tue Aug 16 2011 15:21:46

Contents

1 Introduction

This documentation, compiled using Doxygen, shows in details the code structure of the CLI (Command Line Interface) tool.

The following diagram illustrates the different layers involved in interfacing with a WSA on the PC side.

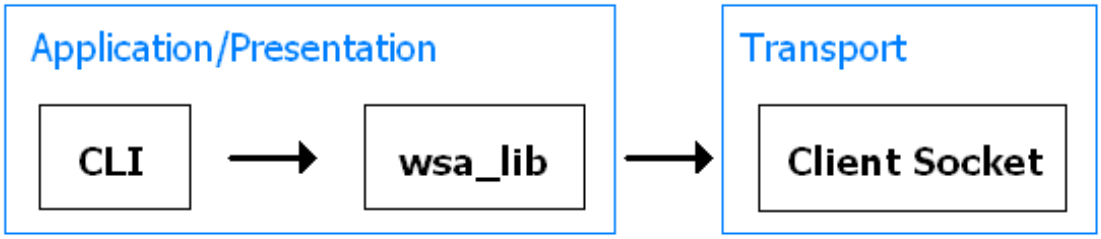


Figure 1: Interface Layers to WSA on PC Side

The wsa_lib is the main gateway to a WSA box in the application/ presentation layer, in which the CLI tool would belong. The wsa_lib has, in brief, functions to open, close, send/receive commands, querry the WSA box status, and gets data. In this CLI version, wsa_lib calls the wsa_client's functions in the transport layer to establish TCP/IP specific connections. Other connection methods such as USB could be added to the transport layer. The wsa_lib, then, abstracts away the interface method from any application/presentation level calling it. The CLI, hence, is a direct example of how the wsa_lib library could be used.

The WSA4000 CLI is designed using mixed C/C++ languages. The CLI when executed will run in a Windows command promt console.

2 Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

3 Data Structure Documentation

3.1 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]

3.1.1 Detailed Description

This structure stores WSA information.

3.1.2 Field Documentation

3.1.2.1 char fw_version

The firmware version currently in the WSA.

3.1.2.2 char prod_name

WSA product name.

3.1.2.3 char prod_serial

WSA product serial number.

3.1.2.4 char prod_version

WSA product version number.

3.1.2.5 char rfe_name

WSA product name.

3.1.2.6 char rfe_version

WSA product version number.

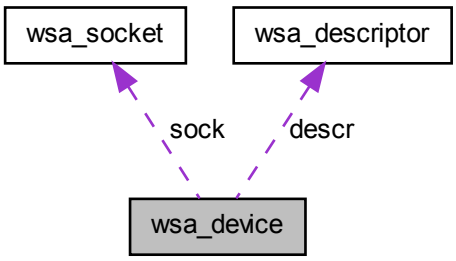
The documentation for this struct was generated from the following files:

- wsa_lib.h
- wsa_lib.txt

3.2 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

3.2.1 Detailed Description

A structure containing the components associate with each WSA device.

3.2.2 Field Documentation

3.2.2.1 struct wsa_descriptor descr

The information component of the WSA, stored in wsa_descriptor.

3.2.2.2 struct wsa_socket sock

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

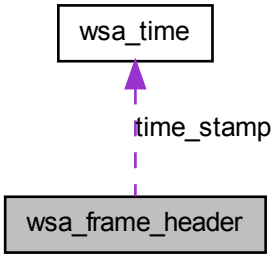
The documentation for this struct was generated from the following files:

- wsa_lib.h
- wsa_lib.txt

3.3 wsa_frame_header Struct Reference

This structure contains header information related to each frame read by wsa_read_-data().

Collaboration diagram for wsa_frame_header:



Data Fields

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

3.3.1 Detailed Description

This structure contains header information related to each frame read by wsa_read_-data().

3.3.2 Field Documentation

3.3.2.1 uint32_t frame_size

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

3.3.2.2 uint64_t freq

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

3.3.2.3 char gain

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

3.3.2.4 struct wsa_time time_stamp

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

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

- wsa_lib.h
- wsa_lib.txt

3.4 wsa_resp Struct Reference

This structure contains the response information for each query.

Data Fields

- int32_t status
- char * **result**

3.4.1 Detailed Description

This structure contains the response information for each query.

3.4.2 Field Documentation

3.4.2.1 int32_t status

The status of the query. Positive number when success, negative when failed.

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

- wsa_lib.h
- wsa_lib.txt

3.5 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

3.5.1 Detailed Description

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

3.5.2 Field Documentation

3.5.2.1 SOCKET cmd

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

3.5.2.2 SOCKET data

The data socket used for streaming of data

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

- wsa_lib.h
- wsa_lib.txt

3.6 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

3.6.1 Detailed Description

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

3.6.2 Field Documentation

3.6.2.1 int32_t nsec

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

3.6.2.2 int32_t sec

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

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

- wsa_lib.h
- wsa_lib.txt

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