Software Release Notes -- ThinkRF C API Version 3.6.0

31 January 2018

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1 Introduction

This document describes version 3.6.0 of the ThinkRF C API – the Application Programming Interface for the C programming language for command, control and data acquisition using the ThinkRF WSA5000, R5500 and related products. This product is ThinkRF part number 35-0002, dated 31 January 2018.

This product is distributed as a single file archive in *.zip* format containing source code files that can be included in another application, built as a Dynamic Link Library (.DLL file) on Microsoft Windows or built as a shared library (.so file) on Linux.

This version of the API is compatible with all ThinkRF R5500, WSA5000 and related products using firmware current as of 31 January 2018.

2 Fixed Defects

The defects listed below have been fixed in this version.

1. Power spectrum data collection now works correctly. Functions *wsa_capture_power_spectrum()* and *wsa_plan_sweep()* have been completely rewritten.
2. Function *wsa_read_vrt_packet()* now cleans up properly after an error.
3. Possible null pointer dereferences are now handled properly in *_wsa_dev_init().*
4. Function *wsa_sweep_plan_load()* now cleans up properly after any previous sweep before starting a new sweep.
5. Function *wsa_compute_fft*() was fixed so it now handles complex data properly and works with ZIF mode. Other errors in this function were also removed.
6. Tests contained in files under folder *test/* have been cleaned up.
7. Numerous other smaller errors were fixed.

3 New Features

The following new features and capabilities were added to this version.

1 Examples of how to use this API have been added under directories *Examples/* and *test/src*.

2 Two new variables have been added to struct *wsa_power_spectrum_config*. These new variables, *fstart_actual* and *fstop_actual*, reflect the fact that the user's desired start and stop frequency for a sweep may not be exactly what is programmed into the device, due to tuning resolution, device bandwidth, etc. Variables *fstart_actual* and *fstop_actual* are the actual resulting limits of the users requested sweep. Note that the actual sweep range will never be less than the requested sweep range.

3 A new macro in file *wsa_debug.h*, *ENABLE_PRINTING,* now allows logging to the console to be disabled while still logging to a file.

4 Known Issues and Limitations

Following are the known limitations or other issues present in this version.

1 The message logging capability implemented in *wsa_debug.** is suspected to cause intermittent problems after hours of intense sweeping activity. To avoid potential issues, disable message logging using "*DEBUGLEVEL DNO*" in *wsa_debug.h*.

2 The source code has only been partially documented using Doxygen.

Document Revision History

This section summarizes document revision history.

Document Version	Release Date	Revisions and Notes
v1.0	31 January 2018	First release for C API 3.6.0.

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