Type1LD ApplicationNote
RF Test

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Murata Manufacturing Co., Ltd.

Revision History

Revision Number	Release Date	Comments
Revision 1.0	2018/4/16	Initial

Contents

1. About this Document

1.1. Purpose and Scope

This document provides instructions to do a RF Test using Murata Type1LD EVB.

1.2. References documentation

N1-4629_Type1LD-Quick_Start_Guide.pdf

2. How to use RF Test Application

This section describes how to use RF Test application using Murata Type1LD.

RF Test application is located at <WICED-Studio>/43xxx_Wi-Fi/apps/test/mfg_test. This application is used to test the radio performance of the DUT and to assist with regulatory certification.

2.1. Creating a Build Target

Build the RF test application with following “Target name” field.

test.mfg_test-MurataType1LD download download_apps run

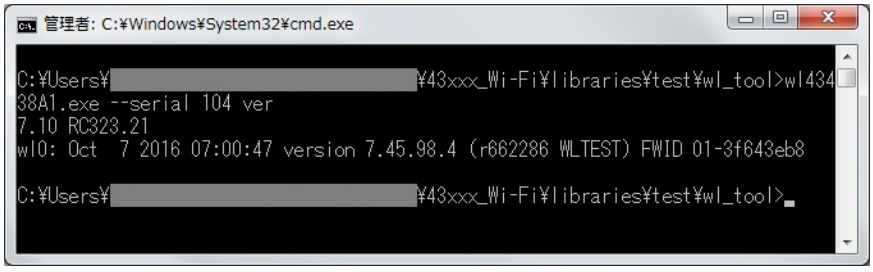
2.2. Using the Application

The following procedure is shawon as below.

A) Connect Type1LD EVB to your PC. And then, open “Windows Device Manager” to check the port number which Type1LD EVB is detected as “WICED USB Serial Port” (e.g. COM99).

B) Open “cmd.exe” and move to the following directory.
<WICED-Studio>\43xxx_Wi-Fi\libraries\test\wl_tool

C) Execute wl command as follows format.
wl --serial [port#] [command]



3. Test Script Example

This section shows the test script of wl commands.

3.1. 2.4GHz Transmit Testing

3.1.1. 802.11b / CCK11 / Channel 1 / 17 dbm

```
wl43438A1.exe --serial 99 down
wl43438A1.exe --serial 99 mpc 0
wl43438A1.exe --serial 99 phy_watchdog 0
wl43438A1.exe --serial 99 country ALL
wl43438A1.exe --serial 99 band b
wl43438A1.exe --serial 99 up
wl43438A1.exe --serial 99 scansuppress 1
wl43438A1.exe --serial 99 2g_rate -r 11 -b 20
wl43438A1.exe --serial 99 channel 1
wl43438A1.exe --serial 99 phy_forcecal 1
wl43438A1.exe --serial 99 txpwr1 -o -q 68
wl43438A1.exe --serial 99 pkteng_start 00:11:22:33:44:55 tx 20 1024 0
        >> for use script, add [pause] at this line
wl43438A1.exe --serial 99 pkteng_stop tx
```

3.1.2. 802.11g / 54Mbps / Channel 1 / 13 dbm

```
wl43438A1.exe --serial 99 down
wl43438A1.exe --serial 99 mpc 0
wl43438A1.exe --serial 99 phy_watchdog 0
wl43438A1.exe --serial 99 country ALL
wl43438A1.exe --serial 99 band b
wl43438A1.exe --serial 99 up
wl43438A1.exe --serial 99 scansuppress 1
wl43438A1.exe --serial 99 2g_rate -r 54 -b 20
wl43438A1.exe --serial 99 channel 1
wl43438A1.exe --serial 99 phy_forcecal 1
wl43438A1.exe --serial 99 txpwr1 -o -q 52
wl43438A1.exe --serial 99 pkteng_start 00:11:22:33:44:55 tx 20 1024 0
        >> for use script, add [pause] at this line
wl43438A1.exe --serial 99 pkteng_stop tx
```

3.1.3. 802.11n / MCS7 / HT20 / Channel 1 / 12 dbm

```
wl43438A1.exe --serial 99 down
wl43438A1.exe --serial 99 mpc 0
wl43438A1.exe --serial 99 phy_watchdog 0
wl43438A1.exe --serial 99 country ALL
wl43438A1.exe --serial 99 band b
wl43438A1.exe --serial 99 up
wl43438A1.exe --serial 99 scansuppress 1
wl43438A1.exe --serial 99 2g_rate -h 7 -b 20
wl43438A1.exe --serial 99 chanspec 1/20
wl43438A1.exe --serial 99 phy_forcecal 1
wl43438A1.exe --serial 99 txpwr1 -o -q 48
wl43438A1.exe --serial 99 pkteng_start 00:11:22:33:44:55 tx 20 1024 0
        >> for use script, add [pause] at this line
wl43438A1.exe --serial 99 pkteng_stop tx
```

3.2. 2.4GHz Receive Testing

```
wl43438A1.exe --serial 99 down
wl43438A1.exe --serial 99 mpc 0
wl43438A1.exe --serial 99 phy_watchdog 0
wl43438A1.exe --serial 99 country ALL
wl43438A1.exe --serial 99 band b
wl43438A1.exe --serial 99 up
wl43438A1.exe --serial 99 scansuppress 1
wl43438A1.exe --serial 99 channel 1
wl43438A1.exe --serial 99 phy_forcecal 1
wl43438A1.exe --serial 99 reset_cnts
wl43438A1.exe --serial 99 pkteng_start 00:11:22:33:44:55 rx
        >> for use script, add [pause] at this line
wl43438A1.exe --serial 99 counters
        >> 1. read rxdfrmocast/rxdfrmucastmbss for multi-cast/unicast packets take this as counter#1
        >> 2. Generate a waveform that contains [X] number of packets
wl43438A1.exe --serial 99 counters
        >> 1. read the same counter count again, take this as counter#2
        >> 2. PER% = {[X-(counter#2 – counter#1) ] / X } * 100%
wl43438A1.exe --serial 99 pkteng_stop rx
```

3.3. Carrier Wave

```
wl43438A1.exe --serial 99 down
wl43438A1.exe --serial 99 mpc 0
wl43438A1.exe --serial 99 phy_watchdog 0
wl43438A1.exe --serial 99 country ALL
wl43438A1.exe --serial 99 band b
wl43438A1.exe --serial 99 up
wl43438A1.exe --serial 99 scansuppress 1
wl43438A1.exe --serial 99 txpwr1 -o -q 68
wl43438A1.exe --serial 99 out
wl43438A1.exe --serial 99 fqacurcy 1
        >> for use script, add [pause] at this line
wl43438A1.exe --serial 99 fqacurcy 0
```

(END)