a module solution provider

Android MTS Release Note for WiLink8

Date: 2014/05/05

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Version History

Date	Version	Remark
2012/10/02	Ver.01	MTS command for 2.4G SISO 20Mhz
2012/10/18	Ver.02	ADD BT Command for TX & Test Mode
2012/10/24	Ver.2.1	ADD the insmod procedure for wl18xx SISO 20Mhz
2012/11/14	Ver.3.1	Add SISO HT-40Mhz TX command line
2012/11/22	Ver4.1	Add BT4.0 Test Command
2013/05/16	Ver4.2	Adjust WIFI command
2013/10/15	Ver4.3	Adjust WIFI power command
2013/12/25	Ver5.1	Add BDT BT Test Command and 5G-HT40 channel list
2013/12/26	Ver5.2	Add WIFI CW command.
2014/02/02	Ver5.3	Added Appendix-A WiLink 8 WiFi RF characteristic
2014/03/21	Ver6.3	Add BT Packet TX command for after Android 4.2. Add appendix-A WiLink 8 WiFi RF characteristic.
2014/4/10	Ver6.4	Adjust the HT-40 wifi command to fix the power limit issue.
2014/5/05	Ver6.5	Adjust WIFI “set_tx_power” command for HT-40 Adjust BT CON/PACKET TX command for after Android 4.2.
2015/08/11	Ver6.6	Add RX BER meter test command
2015/08/21	Ver6.7	Modified BT RX BER configuration.
2015/08/28	Ver6.8	Added how to covert “Total bits counted” for BT BER TX.
.2016/01/06	Ver6.9	1. Add BLE patch for BT/BLE MODULATION CON-TX and removed command “$ dut_mode_configure 1”. 2. Re-arranged the table of catelog
2016/01/14	Ver 7.0	Added BLE sample command in p31.

DIRECTORY

CALIBRATION

The production procedure involves chip calibration and creation of the nonvolatile storage (NVS) file.
The result of the procedure is a per-device .nvs file with specific data that calibrates the device.

Because the WL18xx hardware does most of the calibration by itself, chip calibration is not critical, although the tool provides commands for production line tests (PLTs).

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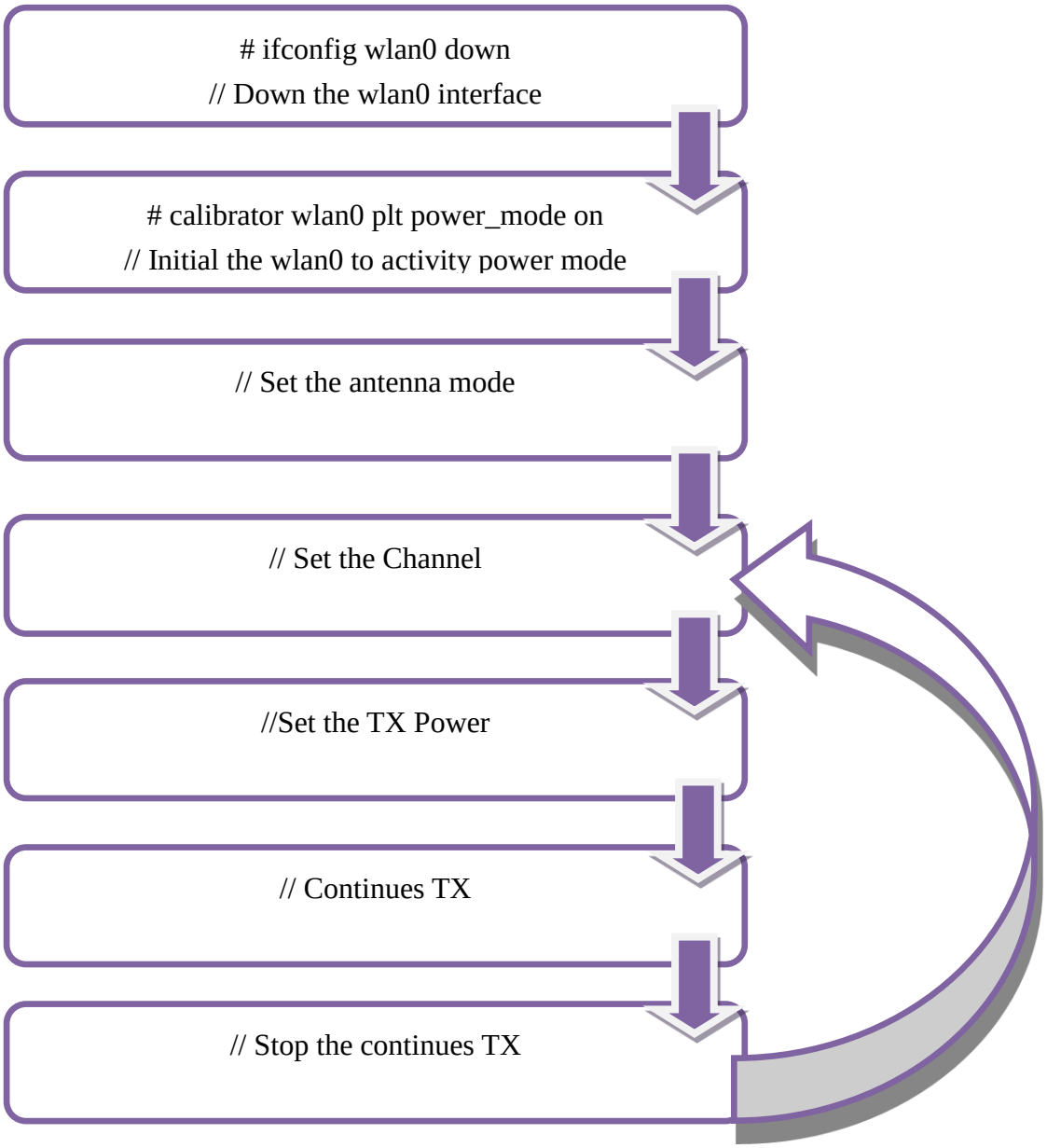
CONTINUOUSTX TEST

Tx test diagram

*Pease do the command stop Tx before you do the Tx test.



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Tx test command - SISO 20MHz

1. **Make sure wlan0 interface is down**

   $ ifconfig wlan0 down

2. **Initial the wlan0 to activity power mode**

   $ calibrator wlan0 plt power_mode on

3. **Set the antenna mode (2.4G)**

Parameter	Options	Description/comments
mac_prim_rx_chain	*set_antenna_mode_24G* 1 -- for BG1 2--- for BG2 *set_antenna_mode_5G* 1 -- for A1 2--- for A2	Set the primary RX route to the desired antenna.
mac_prim_tx_chain	1 -- for BG1 2--- for BG2	Set the primary TX route to the desired antenna. **N/A for 5G**
mac_rx_chain1_en	0 -- disabled 1 -- enabled	
mac_rx_chain2_en	0 -- disabled 1 -- enabled	For SISO mode + MRC, have both *mac_rx_chain1_en* and *mac_rx_chain2_en enabled.*
mac_tx_chain1_en	0 -- disabled 1 -- enabled	
mac_tx_chain2_en	0 -- disabled 1 -- enabled	**N/A for 5G**

$calibrator wlan0 wl18xx_plt set_antenna_mode_24G 1 1 1 0 1 0 → TX Antenna Slave

$calibrator wlan0 wl18xx_plt set_antenna_mode_24G 2 2 0 1 0 1 → TX Antenna Master

4. **Set the channel**

calibrator wlan0 wl18xx_plt tune_channel <Channel> <Band> <Bandwith>

Channel	Band		Bandwidth	
	value	value	value	description
1-14	0	2.4 GHz	0	No HT
8(J8), 12(J12), 16(J16), 36, 40, 44, 48, 34(J34), 38(J38), 42(J42), 46(J46),52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149,153, 157, 161, 165	1	5 GHz	1	HT 20MHz
			2	HT 40MHz upper
			3	HT 40MHz lower
16(J1), 12(J2), 8(J3), 4(J4)	2	4.9 GHz		

$ calibrator wlan0 wl18xx_plt tune_channel 1 0 0 -> 11B & 11G

$ calibrator wlan0 wl18xx_plt tune_channel 1 0 1 -> 11N-HT20

$ calibrator wlan0 wl18xx_plt tune_channel 1 0 3 -> 11N-HT40 (lower to ch:5)

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5. Set TX power

calibrator wlan0 wl18xx_plt set_tx_power <output_power> <level> <band> <**primary_channel**> <2nd_channel> <antenna> <non_serving_channel> <channel_limitation> <frontend_limit> <gain_calculation> <analog_gain_control_id> <post_dpd_gain>

$ calibrator wlan0 wl18xx_plt set_tx_power 20000 0 0 1 0 0 0 0 0 0 0 0 → set to 20 dBm.

About configure output power(gain / limit) value. Refer **Appendix-A [HT-20 Power limit characteristic]**.

6. Do continues TX

calibrator wlan0 wl18xx_plt start_tx <delay> <rate> <size> <mode> <data_type> <gi> <options1> <options2> <source MAC> <dest MAC> <20|40>

Please reference → **Appendix-B Con-TX Data-Rate command line**

Driver Version Command : Before R8.A6.02、**After R8.A6.06**

7. Stop the continues TX

$ calibrator wlan0 wl18xx_plt stop_tx

8. Set wlan0 to normal power mode

$ calibrator wlan0 plt power_mode off

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TX test command - SISO 40MHz (2.4G)

1. **Re insmod wl18xx driver and make sure wlan0 interface is down**
2. **Set to TX master antenna**
3. **Set the channel**

for example set to Channel 7

$ calibrator wlan0 wl18xx_plt tune_channel 7 0 2 →**upper channel**

$ calibrator wlan0 wl18xx_plt tune_channel 7 0 3 →**lower channel**

The **channel 7** lower center frequency will be 2.452GHz **< channel 9 >**

The **channel 7** upper center frequency will be 2.432GHz **< channel 5 >**

Primary Channel	40 MHz lower		40 MHz upper	
	Center	Blocks	Center	Blocks
1	3	1-7	Not Available	
2	4	1-8	Not Available	
3	5	1-9	Not Available	
4	6	2-10	Not Available	
5	7	3-11	3	1-7
6	8	4-12	4	1-8
7	9	5-13	5	1-9
8	10	6-13	6	2-10
9	11	7-13	7	3-11
10	Not Available		8	4-12
11	Not Available		9	5-13
12	Not Available		10	6-13
13	Not Available		11	7-13

4. **Set TX power**

for example set to Channel 7

$ calibrator wlan0 wl18xx_plt set_tx_power 20000 0 0 7 1 0 0 0 0 0 0 0 → set to upper channel .

$ calibrator wlan0 wl18xx_plt set_tx_power 20000 0 0 7 -1 0 0 0 0 0 0 0 → set to lower channel .

About configure output power(gain / limit) value. Refer **Appendix-A [HT-40 Power limit characteristic]**.

5. **SISO HT40 Continue TX (MCS0 ~ MCS7)**

$ calibrator wlan0 wl18xx_plt start_tx <delay> <rate> <size> <mode> <data_type> <gi> <options1> <options2> <source MAC> <dest MAC> <20|40>

for example <MCS 7 – HT40>

$ calibrator wlan0 wl18xx_plt start_tx 200 19 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 1

6. **Stop TX**

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TX test command - SISO 40MHz (5G)

1. **Re insmod wl18xx driver and make sure wlan0 interface is down**
2. **Set to TX master antenna**

   $ calibrator wlan0 wl18xx_plt set_antenna_mode_5G 1 0 0 1

3. **Set Channel**

for example set to Channel 102

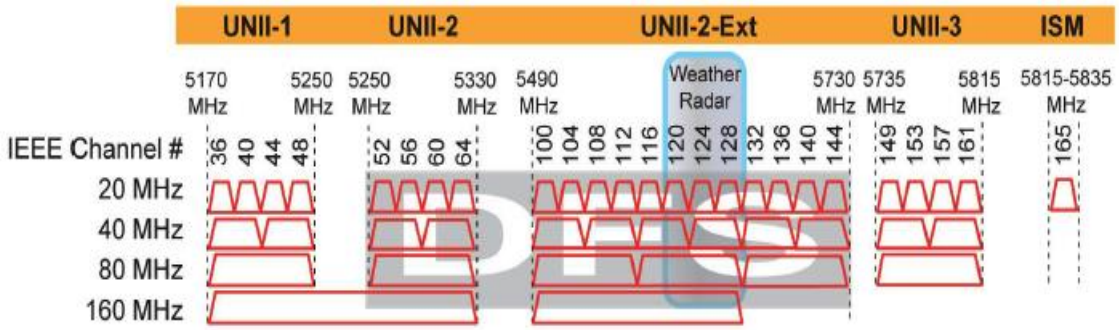
$ calibrator wlan0 wl18xx_plt tune_channel 104 1 2 →upper channel

$ calibrator wlan0 wl18xx_plt tune_channel 100 1 3 →lower channel

The **channel 100** lower center frequency will be 5.510GHz **< channel 102 >**

The **channel 104** upper center frequency will be 5.510GHz **< channel 102 >**

Primary Channel	Frequency	40 MHz lower		40 MHz upper	
		Center	Frequency	Center	Frequency
36	5180	38	5190	Not Available	
40	5200	Not Available		38	5190
44	5220	46	5230	Not Available	
48	5240	Not Available		46	5230
52	5260	54	5270	Not Available	
56	5280	Not Available		54	5270
60	5300	62	5310	Not Available	
64	5320	Not Available		62	5310
100	5500	102	5510	Not Available	
104	5520	Not Available		102	5510
108	5540	110	5550	Not Available	
112	5560	Not Available		110	5550
116	5580	118	5590	Not Available	
120	5600	Not Available		118	5590
124	5620	126	5630	Not Available	
128	5640	Not Available		126	5630
132	5660	134	5670	Not Available	
136	5680	Not Available		134	5670
140	5700	142	5710	Not Available	
144	5720	Not Available		142	5710
149	5745	151	5755	Not Available	
153	5765	Not Available		151	5755
157	5785	159	5795	Not Available	
161	5805	Not Available		159	5795



4. Set TX power

for example set to Channel 102

$ calibrator wlan0 wl18xx_plt set_tx_power 20000 0 1 104 1 0 0 0 0 0 0 0 → set to upper channel .

$ calibrator wlan0 wl18xx_plt set_tx_power 20000 0 1 100 -1 0 0 0 0 0 0 0 → set to lower channel .

5. SISO HT40 Continue TX (MCS0 ~ MCS7)

for example <MCS 7 – HT40>

$ calibrator wlan0 wl18xx_plt start_tx 200 19 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 1

6. Stop TX

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Tx test command - CW

1. **Re insmod wl18xx driver and make sure wlan0 interface is down**
2. **Select TX antenna**
3. **Set Channel**

Ex:

$ calibrator wlan0 wl18xx_plt tune_channel 1 0 0

4. **Set TX power**
5. **Start CW**

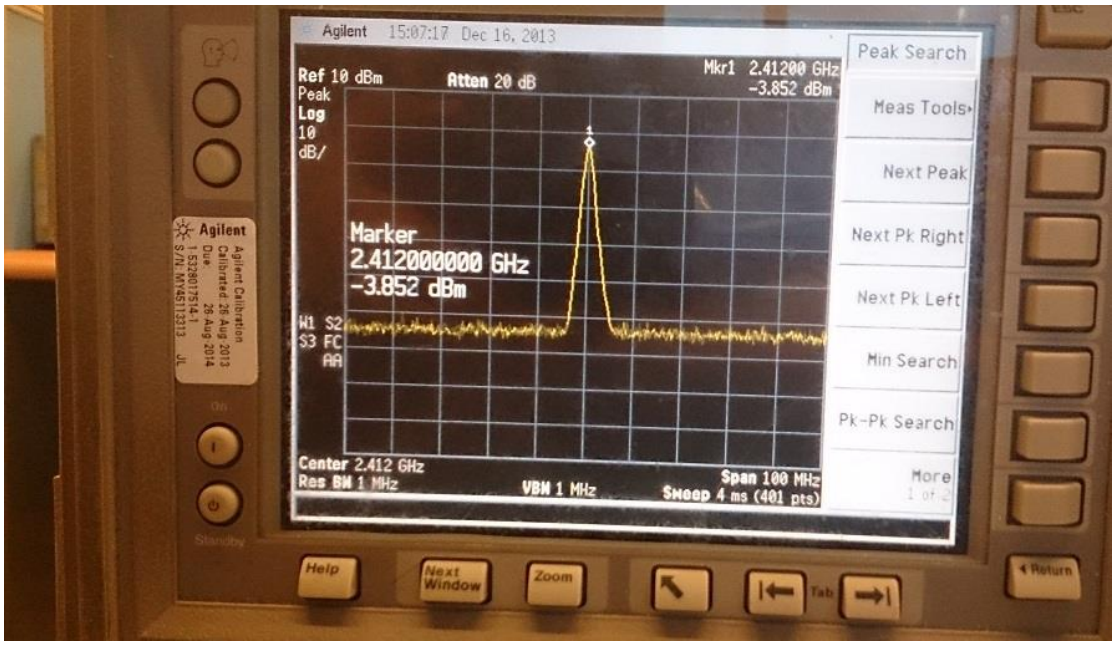
$ calibrator wlan0 wl18xx_plt phy_reg_write 0x22138 0x3c0

$ calibrator wlan0 wl18xx_plt phy_reg_write 0x22034 0x1

$ calibrator wlan0 wl18xx_plt phy_reg_write 0x2C100 0x1703

6. **Stop CW**

$ calibrator wlan0 plt power_mode off



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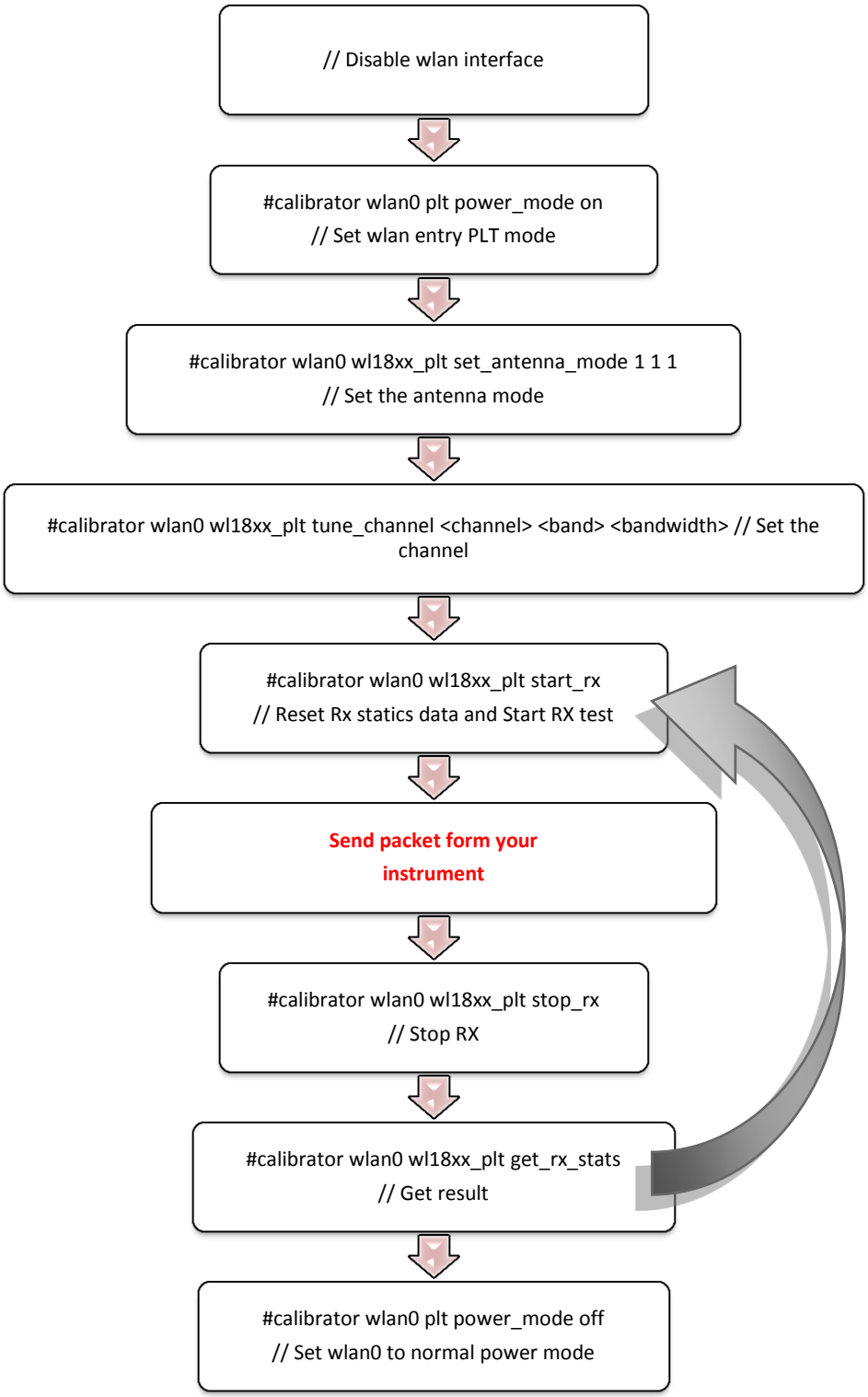
CONTINUOUS RX TEST

Rx test diagram



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Rx test command

1. Down the wlan0 interface

$ ifconfig wlan0 down

2. Set wlan0 to activity mode

$ calibrator wlan0 plt power_mode on

3. Set the antenna mode

Parameter	Options	Description/comments
mac_prim_rx_chain	*set_antenna_mode_24G* 1 — for BG1 2--- for BG2 *set_antenna_mode_5G* 1 — for A1 2--- for A2	Set the primary RX route to the desired antenna.
mac_prim_tx_chain	1 — for BG1 2--- for BG2	Set the primary TX route to the desired antenna. **N/A for 5G**
mac_rx_chain1_en	0 -- disabled 1 -- enabled	
mac_rx_chain2_en	0 -- disabled 1 -- enabled	For SISO mode + MRC, have both *mac_rx_chain1_en* and *mac_rx_chain2_en enabled.*
mac_tx_chain1_en	0 -- disabled 1 -- enabled	
mac_tx_chain2_en	0 -- disabled 1 -- enabled	**N/A for 5G**

$calibrator wlan0 wl18xx_plt set_antenna_mode_24G 1 1 1 0 1 0 → RX Antenna Slave.

$calibrator wlan0 wl18xx_plt set_antenna_mode_24G 2 2 0 1 0 1 → RX Antenna Master.

$ calibrator wlan0 wl18xx_plt set_antenna_mode_5G 1 1 0 0→ 5G RX Antenna Master.

$ calibrator wlan0 wl18xx_plt set_antenna_mode_5G 2 0 1 0→ 5G RX Antenna Slave.

4. Set the channel

Channel	Band		Bandwidth	
	value	value	value	description
1-14	0	2.4 GHz	0	No HT
8(J8), 12(J12), 16(J16), 36, 40, 44, 48, 34(J34), 38(J38), 42(J42), 46(J46),52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149,153, 157, 161, 165	1	5 GHz	1	HT 20MHz
			2	**HT 40MHz upper**
			3	**HT 40MHz lower**
16(J1), 12(J2), 8(J3), 4(J4)	2	4.9 GHz		

calibrator wlan0 wl18xx_plt tune_channel <channel> <band> <bandwidth>

e.g.

$ calibrator wlan0 wl18xx_plt tune_channel 1 0 1 → set to 2.4GHz, channel 1 , bandwidth 20 Mhz

$ calibrator wlan0 wl18xx_plt tune_channel 36 1 2 → set to 5GHz, channel 36 , bandwidth 40 Mhz upper channel.

5. **Reset Rx statics data and Start RX test**

   $ calibrator wlan0 wl18xx_plt start_rx

6. **Send packet form your instrument**

7. **Get result**

   $ calibrator wlan0 wl18xx_plt get_rx_stats

Ex: (For R8.A6.02 version)

```
RX statistics (status 0)
Total packets:   1000
FCS errors:      0
MAC mismatch:    0
Good packets:    1000
```

8. **Stop RX**

   $ calibrator wlan0 wl18xx_plt stop_rx

9. **Set wlan0 to normal power mode**

   $ calibrator wlan0 plt power_mode off

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THROUGHPUT TEST

IPERF TEST COMMAND

TCP Rx:

Laptop side: iperf -c <server-ip> -w256k -t20 -i1 (change the IP of STA)
DUT side: iperf -s -w256k

TCP Tx:

Laptop side: iperf -s -i2 -w256k
DUT side: iperf -c <server-ip> -w256k -t20 (change the IP of Laptop)

UDP Rx:

Laptop side: iperf -c <server-ip> -b130m -t20
(need to adjust push rate, the retry rate need less than 7%) (change the IP of STA)
DUT side: iperf -s -i2 -u

UDP Tx:

Laptop side: iperf -s -i1 -u
DUt side: iperf -c <server-ip> -b130m -t20 -i5
(need to adjust push rate, the retry rate need less than 7%) (change the IP of Laptop)

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BT TEST MODE

BT TEST MODE COMMAND (BEFORE ANDROID 4.2)

```
//Enable BT interface
$ hciconfig hci0 up

//Disable BT deep sleep mode
$ hcitool cmd 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

//Enable BT inquiry scan
$ hcitool cmd 0x03 0x1a 0x03

// Set Event Filter to allow all connections with role switch
$ hcitool cmd 0x03 0x05 0x02 0x00 0x03

// Enter BT test mode
$ hcitool cmd 0x06 0x03
```

BT TEST MODE COMMAND (AFTER ANDROID 4.2)

```
// Enter BDT mode
$ bdt

// Enable BT
$ enable

// Enable TestMode
$ dut_mode_configure 1
```

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BT CONTINUOUS TX MODE

BT MODULATION CON-TX (BEFORE ANDROID 4.2)

SET UP BT TEST

```
//Enable BT interface
```

$ hciconfig hci0 up

```
//Disable BT deep sleep mode
```

$ hcitool cmd 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

```
//Disable BT inquiry scan
```

$ hcitool cmd 0x03 0x1a 0x00

START CON_TX

$ hcitool cmd 0x3f 0x1CA <Frequency> <Modulution> <Pattern> <Power_Level> < Generator initialization value> <EDR Mask Value>

Detail please reference Appendix_C.

```
//CH 0 2402M
```

$ hcitool cmd 0x3f 0x1CA 0x62 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//CH 39 2441M
```

$ hcitool cmd 0x3f 0x1CA 0x89 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//CH 78 2480M
```

$ hcitool cmd 0x3f 0x1CA 0xb0 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
// Stop and Reset State
```

$ hcitool cmd 0x3f 0x188

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BT/BLE MODULATION CON-TX (AFTER ANDROID 4.2)

Pls apply patch bluetooth_test_mode_with_BLETX.patch

bluetooth_test_mode_with_BLETX.patch

Patch from: http://processors.wiki.ti.com/index.php/WL18xx_Bluedroid_Bluetooth_RF_Testing

SET UP BT TEST

```
// Enter BDT mode
```

$ bdt

```
//Enable BT
```

$ enable

```
//Disable BT deep sleep mode
```

$ dut_mode_send 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

```
//Disable BT inquiry scan
```

$ dut_mode_send 0x03 0x1a 0x00

```
//Disable the calibrations
```

$ dut_mode_send 0x3f 0x1fb 0x00 0x00 0x00 0x00 0x00 0x00 0x00

START CON_TX

$ dut_mode_send 0x3f 0x1CA <Frequency> <Modulution> <Pattern> <Power_Level> < Generator initialization value> <EDR Mask Value>

Detail please reference Appendix_C.

NOTE: <Modulution> changed to 0x04 is for BLE.

```
//CH 0 2402M
```

$ dut_mode_send 0x3f 0x1CA 0x62 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//CH 39 2441M
```

$ dut_mode_send 0x3f 0x1CA 0x89 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00

0x00 0x00

```
//CH 78 2480M
```

$ dut_mode_send 0x3f 0x1CA 0xb0 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//TX Stop
```

$ dut_mode_send 0x3f 0x0301 0x44 0x40 0x01 0x20 0x10 0x00

```
//Stop PN Generator
```

$ dut_mode_send 0x3f 0x0301 0x0c 0x90 0x01 0x20 0x00 0x00

```
//Stop and Reset State
```

$ dut_mode_send 0x3f 0x188

BT PACKET TX MODE

BT PACKET-TX (BEFORE ANDROID 4.2)

SET UP BT TEST

```
// Enable BT interface
```

$ hciconfig hci0 up

```
// Disable BT deep sleep mode
```

$ hcitool cmd 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

```
// Disable BT inquiry scan
```

$ hcitool cmd 0x03 0x1a 0x00

SINGLE FREQUENCY MODE

$ hcitool cmd 0x3f 0x1CC <ACL TX Packet Type> <Frequency Mode> <TX single Frequency> <RX single Frequency > <ACL TX Packet Data pattern> <Use Extended features> <ACL Packet Data Length> <Power level index> <Disable whitening> <PRBS9 Init Value>

Detail please reference Appendix_D.

```
// CH0 2402M
```

$ hcitool cmd 0x3f 0x1CC 0x00 0x03 0x62 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
// CH39 2441M
```

$ hcitool cmd 0x3f 0x1CC 0x00 0x03 0x89 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
// CH78 2480M
```

$ hcitool cmd 0x3f 0x1CC 0x00 0x03 0xb0 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
// Stop and Reset State
```

$ hcitool cmd 0x3f 0x188

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BT PACKET-TX (AFTER ANDROID 4.2)

SET UP BT TEST

```
// Enter BDT mode
```

$ bdt

```
//Enable BT
```

$ enable

```
//Disable BT deep sleep mode
```

$ dut_mode_send 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

```
//Disable BT inquiry scan
```

$ dut_mode_send 0x03 0x1a 0x00

```
//Disable the calibrations
```

$ dut_mode_send 0x3f 0x1fb 0x00 0x00 0x00 0x00 0x00 0x00 0x00

START CON_TX

$ dut_mode_send 0x3f 0x1CC <ACL TX Packet Type> <Frequency Mode> <TX single Frequency> <RX single Frequency > <ACL TX Packet Data pattern> <Use Extended features> <ACL Packet Data Length> <Power level index> <Disable whitening> <PRBS9 Init Value>

Detail please reference Appendix_D.

```
// CH0 2402M
```

$ dut_mode_send 0x3f 0x1CC 0x00 0x03 0x62 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
// CH39 2441M
```

$ dut_mode_send 0x3f 0x1CC 0x00 0x03 0x89 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
// CH78 2480M
```

$ dut_mode_send 0x3f 0x1CC 0x00 0x03 0xb0 0x09 0xff 0xff 0x02 0x00 0x1b 0x00 0x07 0x01 0xff 0x01

```
//TX Stop
```

```
$ dut_mode_send    0x3f 0x0301 0x44 0x40 0x01 0x20 0x10 0x00
```

```
//Stop PN Generator
$ dut_mode_send    0x3f 0x0301 0x0c 0x90 0x01 0x20 0x00 0x00

//Stop and Reset State
$ dut_mode_send 0x3f 0x188
```

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BT PACKET RX BER TEST

Pls test by TI Waveform file : BT_Mod_TI.zip

- **TEST FLOW:**

1. BT enable:

hciconfig hci0 up

hcitool cmd 0x03 0x1a 0x00

2. BT Stop & Reset command:

hcitool cmd 0x3f 0x188

3. BT Start Rx Command:

Pls refer section BT START RX COMMAND **in next page(p.19).**

4. BT Result:

Command: hcitool cmd 0x3f 0x113

- **BT START RX COMMAND:**

BT_MAC : 0x12 0x34 0x56 0x78 0x12 0x34

ACL Packet Type : follow DH1,3,5 changed

Packet Length: Pls refer below table :

Packet Type	Data Length
DM1	0 – 17
DH1	0 – 27
DM3	0 – 121
DH3	0 – 183
DM5	0 – 224
DH5	0 – 339

SDR: DM1, DH1, DM3, DH3, DM5, DH5
EDR 2 Mbps: 2-DH1, 2-DH3, 2-DH5
EDR 3 Mbps: 3-DH1, 3-DH3, 3-DH5.

Channel: 2402=0x00, 2439=0x3A, 2441=0x3B,2480=0x27…

Example : hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x01 0x1b 0x00 0xE9 0x03 0xff 0x01 0x01

***Paremeter 1~10. Pls refer Appendix-E for detail configuration and definition.**

1	Op code	0x3f 0x18
2	Frequency Channel	**0x00**
3	Reserved	0x00
4	BD Address	0x12 0x34 0x56 0x78 0x12 0x34
5	LT Address (0x01)	0x01
6	ACL TX packet type	0x01
7	Packet length	0x1b 0x00
8	Number of packets to be used for the BER test (0x0000-0xFFFF)	0xE9 0x03
9	PRBS initialize (0x1FF)	0xff 0x01
10	Poll period	0x01

SDR:

1DH1:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x01 0x1b 0x00 0xE9 0x03 0xff 0x01 0x01

1DH3:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x03 0x1b 0x00 0xE9 0x03 0xff 0x01

0x01

1DH5:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x05 0x1b 0x00 0xE9 0x03 0xff 0x01 0x01

EDR2:

2DH1:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x06 0xb7 0x00 0xE9 0x03 0xff 0x01 0x01

2DH3:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x07 0xb7 0x00 0xE9 0x03 0xff 0x01 0x01

2DH5:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x08 0xb7 0x00 0xE9 0x03 0xff 0x01 0x01

EDR3:

3DH1:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x09 0x53 0x01 0xE9 0x03 0xff 0x01 0x01

3DH3:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x0a 0x53 0x01 0xE9 0x03 0xff 0x01 0x01

3DH5:

hcitool cmd 0x3f 0x18b **0x00** 0x00 0x12 0x34 0x56 0x78 0x12 0x34 0x01 0x0b 0x53 0x01 0xE9 0x03 0xff 0x01 0x01

- **BT RESULT ANALYSIS**

(Display result command.)
Command: hcitool cmd 0x3f 0x113
==========
Format of Result as below:
01 13 FD 00 00 E8 03 00 00 00 00 00 00 00 00

13 FD : command opcode 0x**FD13**
00 : Status. 00 is Success.
00 : Finished at least 1 test
E8 03 : Total received packet: **0x03E8.** Changed to decimal => 0x03E8 = 1000
00 00 00 00 : Total bits counted. If you got this 98 4c 03 00 Then need to covert to **00 03 4C 98.** LSB should be first.
00 00 00 00 : Number of bits error found. LSB should be first.

Example on how to read the results of the test

The command is: HCI_VS_DRP_Read_BER_Meter_Result 0xFD13. It does not have any parameters.

After sending the HCI_VS_DRPb_BER_Meter_Start (assuming number of packets is 1000) command, read the results using HCI_VS_DRP_Read_BER_Meter_Result command.

Given below are actual example of a sample run. The parameters to validate if one cycle has completed is "Finished at least 1 test". It will increase sequentially upon completion of each cycle (1000 packets in this example)

First execution of HCI_VS_DRP_Read_BER_Meter_Result

```
Finished at least 1 test                        : 0x00
Number of packet received in current measurement  : 0x000000a2
Total bits counted                              : 0x00000000
Number of bits error found                              : 0x00000000
```

Second execution

```
Finished at least 1 test                        : 0x00
Number of packet received in current measurement  : 0x00000148
Total bits counted                              : 0x00000000
```

```
Number of bits error found                              : 0x00000000
```

Third execution - Now there is a valid result !!!

```
Finished at least 1 test                          : 0x01
Number of packet received in current measurement  : 0x000000b6
Total bits counted                                : 0x0000049e
Number of bits error found                              : 0x00000000
```

Note: Finished at least 1 test : 0x01 ---> after we receive 1000 packets

Note: Number of packet received in current test : 0x000000b6 is no longer relevant for the test which is completed.

Example as below:

[1DH1]

Instructment send: 1000 packets

DUT received result : 01 13 FD 00 00 E8 03 00 00 00 00 00 00 00 00

[3DH1]

Instructment send: 1000 packets

DUT received result : 01 13 FD 00 00 FA 00 00 00 00 00 00 00 00 00

Please Note !!!

(EDR3) 3DH1,3DH3,3DH5

The received packet amounts must multiplied by 4 then the result will be equal the output packet amounts.

BLE TX TEST

BLE TX TEST(BEFORE ANDROID 4.2)

TEST FLOW

1. Boot up the device
2. Enable BT
3. Type Con-TX command to output power

BT 4.0 CON-TX COMMAND LINE

```
# hciconfig hci0 up
# hcitool cmd 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64
# hcitool cmd 0x03 0x1a 0x00
```

START TEST BT4.0 POWER

Send HCI BLE Transmitter: Test TX Channel, PacketLength, PayloadType

```
# hcitool cmd 0x08 0x01E 0x00 0x25 0x02
```

```
# hcitool cmd 0x08 0x01E 0xAA 0xBB 0xCC
# 0xAA - Frequency Index: Ch1(2402)=0x00 ~ Ch40(2480)=0x27
        Freq = 2402 + 2k, for k = 0, 1, 2… 39
        BT 4.0: Bandwith-2Mhz  Ch :01~39 only
# 0xBB – Set packetLength up to 37 (0x25) bytes
# 0xCC - PayloadType: 0 - PRBS 9, 1 – FOFO, 2 – ZOZO, 3 - PRBS 15, 4 - All Ones, 5 - All Zeros, 6 – OFOF, 7 – OZOZ
```

SEND HCI_BLE_TEST_STOP

```
# hcitool cmd 0x08 0x01F
```

!! If you want to change BT power, please make sure BT Con-TX stop. (Send HCI BLE Test Stop)

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BLE TX TEST (AFTER ANDROID 4.2)

Transmitter Test

HCI Tester command format


```
Send_HCI_VS_DRPb_Enable_RF_Calibration_Enhanced 0xFDFB, 0x1, 0xFF, 0x80000000, 0x00
//disable RF Calibration
Send_HCI_BLE_Transmitter_Test 0x201e, 0x00, 0x00, 0
Send_HCI_BLE_Test_End 0x201f
```

Bluedrdid tool format:

```
bdt // Enter BDT mode
enable //Enable BT
dut_mode_send 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64  //Disable BT deep
sleep mode
dut_mode_send 0x03 0x1a 0x00 //Disable BT inquiry scan
dut_mode_send 0x3f 0x01fb 0x01 0xff 0x00 0x00 0x00 0x80 0x00 //disable RF Calibration
dut_mode_send 0x08 0x001e 0x00 0x00 0x00    //transmitter
dut_mode_send 0x08 0x001f //stop test
```

SAMPLE COMMAND

$ dut_mode_send 0x08 0x001e 0x00 0x25 0x00 //ch0
$ dut_mode_send 0x08 0x001e 0x13 0x25 0x00 //ch19
$ dut_mode_send 0x08 0x001e 0x27 0x25 0x00 //ch39

BLE RX TEST

BLE RX TEST(BEFORE ANDROID 4.2)

1. Enable BLE mode

- * HCI_VS_LE_Enable 0xFD5B, 1, 1

hcitool cmd 0x3f 0x15b 1 1

2. Clear Sync Counter(maybe for cc256x)

- * HCI_VS_Write_Hardware_Register 0xFF01, 0x0019324E, 0x0
- * Outgoing Dump: 01 01 ff 06 4e 32 19 00 00 00
- * Incoming Event: 04 0e 04 01 01 ff 00 (Command Complete Event)

hcitool cmd 0x3f 0x301 0x4e 0x32 0x19 0x00 0x00 0x00

6.1.5.2 HCI_VS_Write_Hardware_Register (0xFF01)

Command	Opcode	Command Parameters	Return Parameters
HCI_VS_Write_Write_Register	0xFF01	Register address Register value	Status

Description:

This command assigns a value to a hardware register.

Command parameters:

Register address	Size: 4 bytes
Value	**Parameter Description**
0xXXXXXXXX	Address of register

Register value	Size: 2 bytes
Value	**Parameter Description**
0xXXXX	Value to assign

Return parameters:

Status	Size: 1 byte
Value	**Parameter Description**
0x00 0x01 – 0xFF	Command succeeded Command failed

3. Start RX Scan

- * HCI_BLE_Receiver_Test 0x201d, RX_Channel, //00: 2402, 20:2442 39:2480

hcitool cmd 0x08 0x01d 0x00 //0x00: 2402, 0x14:2442 0x27:2480

4. Test End

- * HCI_BLE_Test_End 0x201f

hcitool cmd 0x08 0x01f

- So if it returns 01 1F 20 00 C1 CA => 0xCAC1 == 51905

5. Read Phy - Sync Counter Value(maybe for cc256x)

- * HCI_VS_Read_Hardware_Register 0xFF00, 0x0019324E

hcitool cmd 0x3f 0x300 0x4e 0x32 0x19 0x00

- The return hex will be like:

04 0E 01 00 FF 00 DC 05,
and the last two bytes are
received packets. For example,
dc 05 => == 5DC == 1500

BLE RX TEST(AFTER ANDROID 4.2)

HCI Tester command format

```
Send_HCI_VS_DRPb_Enable_RF_Calibration_Enhanced 0xFDFB, 0x1, 0xFF, 0x80000000, 0x00
//disable RF Calibration
Send_HCI_BLE_Receiver_Test 0x201d, 0x00
Send_HCI_BLE_Test_End 0x201f
```

Bluedrid HCI tool format:

```
bdt // Enter BDT mode
enable //Enable BT
dut_mode_send 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64  //Disable BT deep
sleep mode
dut_mode_send 0x03 0x1a 0x00 //Disable BT inquiry scan
dut_mode_send 0x3f 0x01fb 0x01 0xff 0x00 0x00 0x00 0x80 0x00 //disable RF Calibration
dut_mode_send 0x08 0x001d 0x00       //Send_HCI_BLE_Receiver_Test
dut_mode_send 0x08 0x001f    //Send_HCI_BLE_Test_End
```

BT MODULATION CON-TX (AFTER ANDROID 4.2)

SET UP BT TEST

```
// Enter BDT mode
```

$ bdt

```
//Enable BT
```

$ enable

$ dut_mode_configure 1

```
//Disable BT deep sleep mode
```

$ dut_mode_send 0x3f 0x10c 0x00 0x00 0x00 0xff 0xff 0xff 0xff 0x64

```
//Disable BT inquiry scan
```

$ dut_mode_send 0x03 0x1a 0x00

```
//Disable the calibrations
```

$ dut_mode_send 0x3f 0x1fb 0x00 0x00 0x00 0x00 0x00 0x00 0x00

START CON_TX

$ dut_mode_send 0x3f 0x1CA <Frequency> <Modulution> <Pattern> <Power_Level> < Generator initialization value> <EDR Mask Value>

Detail please reference Appendix_C.

```
//CH 0 2402M
```

$ dut_mode_send 0x3f 0x1CA 0x62 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//CH 39 2441M
```

$ dut_mode_send 0x3f 0x1CA 0x89 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//CH 78 2480M
```

$ dut_mode_send 0x3f 0x1CA 0xb0 0x09 0x01 0x00 0x07 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00

```
//Stop and Reset State
```

$ dut_mode_send 0x3f 0x188

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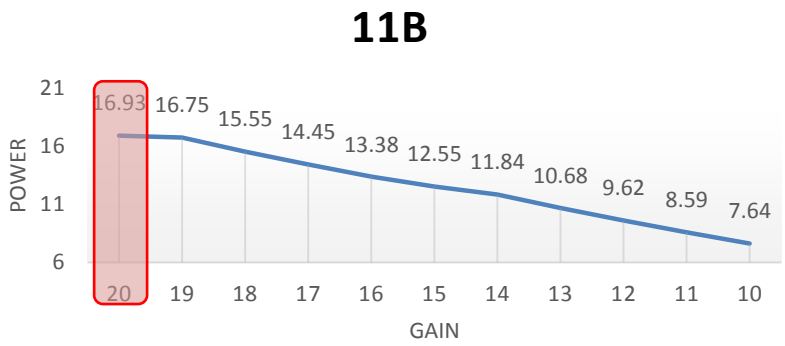
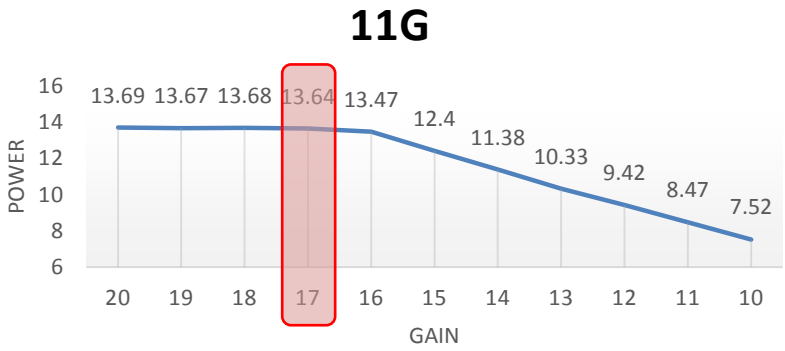
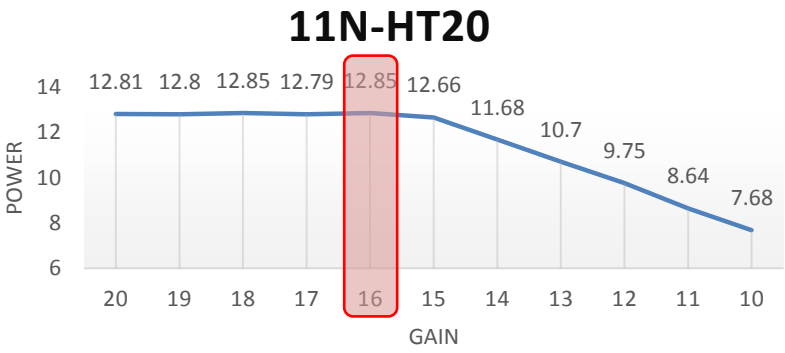
Appendix-A WiLink 8 WiFi RF characteristic

[HT-20 Power limit characteristic]

Channel-1												
Gain		20	19	18	17	16	15	14	13	12	11	10
Power	11B	16.93	16.75	15.55	14.45	13.38	12.55	11.84	10.68	9.62	8.59	7.64
	11G	13.69	13.67	13.68	13.64	13.47	12.4	11.38	10.33	9.42	8.47	7.52
	11N-HT20	12.81	12.8	12.85	12.79	12.85	12.66	11.68	10.7	9.75	8.64	7.68







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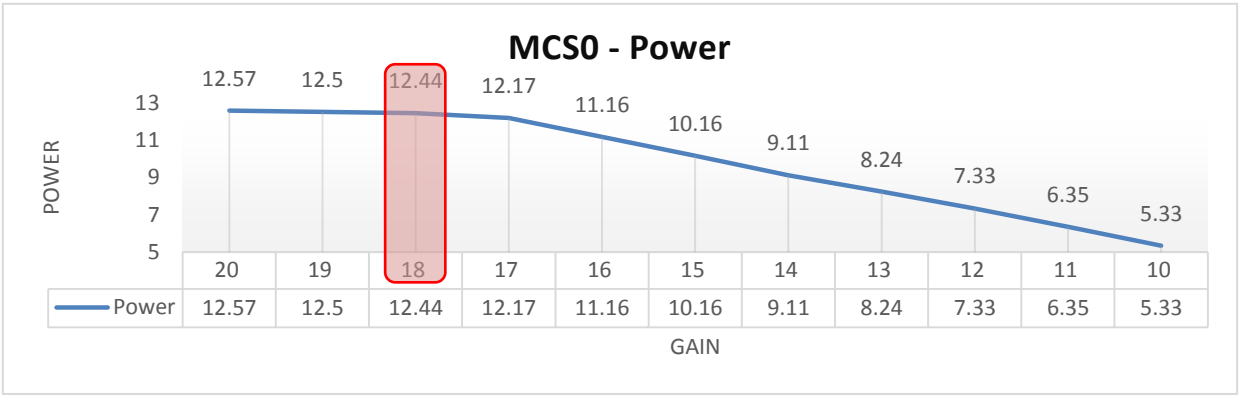
[HT-40 Power limit characteristic]

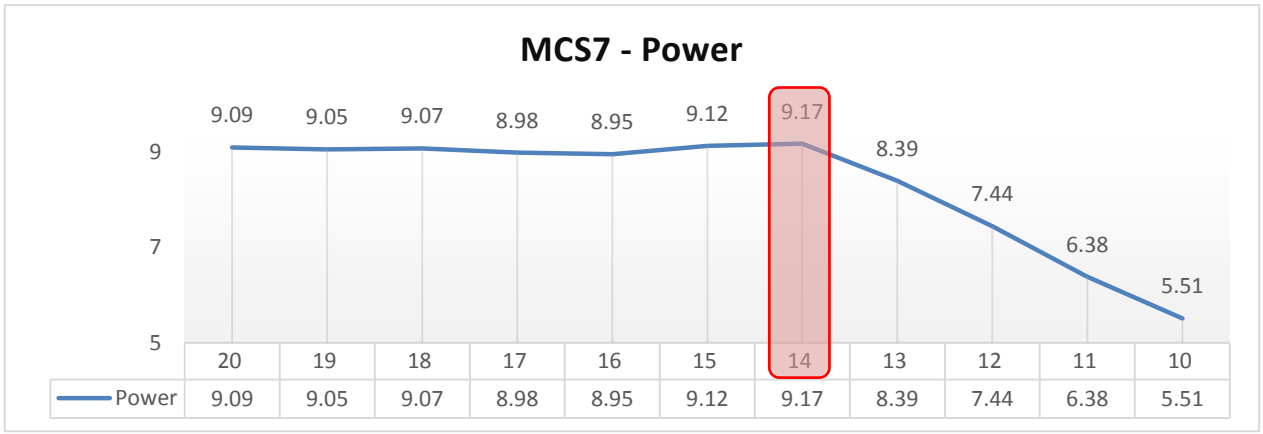
MCS-0 Power/EVM characteristic

MCS0											
Gain	20	19	18	17	16	15	14	13	12	11	10
power	12.57	12.5	12.44	12.17	11.16	10.16	9.11	8.24	7.33	6.35	5.33
EVM	-22.64	-22.85	-23.15	-23.28	-26.04	-28.19	-28.7	-27.22	-28.93	-31.62	-31.92



MCS-7 Power/EVM characteristic

MCS7											
Gain	20	19	18	17	16	15	14	13	12	11	10
power	9.09	9.05	9.07	8.98	8.95	9.12	9.17	8.39	7.44	6.38	5.51
EVM	-29.68	-29.48	-30.99	-30.84	-30.7	-29.39	-30.03	-30.72	-31.96	-32.17	-31.92



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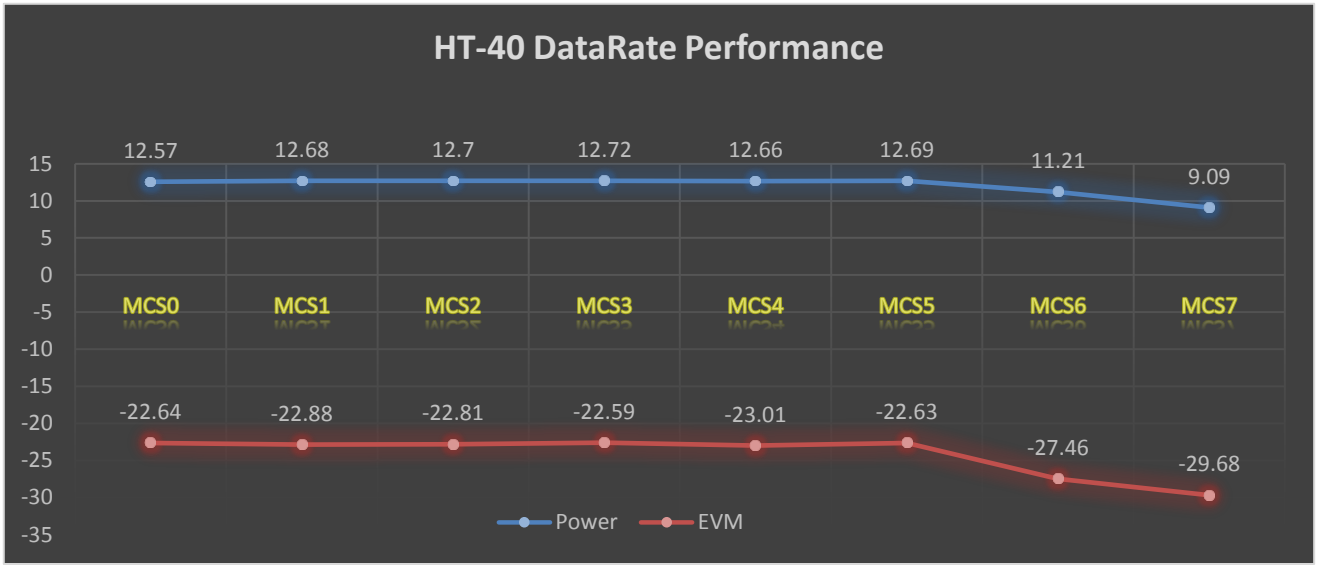
MCS-0 to MCS-7 max Pwr/EVM characteristic

	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Gain	20	20	20	20	20	20	20	20
Power	12.57	12.68	12.7	12.72	12.66	12.69	11.21	9.09
EVM	-22.64	-22.88	-22.81	-22.59	-23.01	-22.63	-27.46	-29.68



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Appendix-B Con-TX Data-Rate command line

Driver Version : Before R8.A6.02

802.11b

1M :

calibrator wlan0 wl18xx_plt start_tx 20 **0** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

2M :

calibrator wlan0 wl18xx_plt start_tx 20 **1** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

5.5M :

calibrator wlan0 wl18xx_plt start_tx 20 **2** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

11M :

calibrator wlan0 wl18xx_plt start_tx 20 **3** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

802.11g

6M :

calibrator wlan0 wl18xx_plt start_tx 20 **4** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

9M :

calibrator wlan0 wl18xx_plt start_tx 20 **5** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

12M :

calibrator wlan0 wl18xx_plt start_tx 20 **6** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

18M :

calibrator wlan0 wl18xx_plt start_tx 20 **7** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

24M :

calibrator wlan0 wl18xx_plt start_tx 20 **8** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

36M :

calibrator wlan0 wl18xx_plt start_tx 20 **9** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

48M :

calibrator wlan0 wl18xx_plt start_tx 20 **10** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

54M :

calibrator wlan0 wl18xx_plt start_tx 20 **11** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

802.11n

MCS0:

calibrator wlan0 wl18xx_plt start_tx 20 **12** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS1:

calibrator wlan0 wl18xx_plt start_tx 20 **13** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS2:

calibrator wlan0 wl18xx_plt start_tx 20 **14** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS3:

calibrator wlan0 wl18xx_plt start_tx 20 **15** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS4:

calibrator wlan0 wl18xx_plt start_tx 20 **16** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS5:

calibrator wlan0 wl18xx_plt start_tx 20 **17** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS6:

calibrator wlan0 wl18xx_plt start_tx 20 **18** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS7:

calibrator wlan0 wl18xx_plt start_tx 20 **19** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

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802.11b

1M :

calibrator wlan0 wl18xx_plt start_tx 200 **0** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

2M :

calibrator wlan0 wl18xx_plt start_tx 200 **1** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

5.5M :

calibrator wlan0 wl18xx_plt start_tx 200 **2** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

11M :

calibrator wlan0 wl18xx_plt start_tx 200 **3** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

802.11g

6M :

calibrator wlan0 wl18xx_plt start_tx 200 **4** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

9M :

calibrator wlan0 wl18xx_plt start_tx 200 **5** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

12M :

calibrator wlan0 wl18xx_plt start_tx 200 **6** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

18M :

calibrator wlan0 wl18xx_plt start_tx 200 **7** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

24M :

calibrator wlan0 wl18xx_plt start_tx 200 **8** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

36M :

calibrator wlan0 wl18xx_plt start_tx 200 **9** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

48M :

calibrator wlan0 wl18xx_plt start_tx 200 **10** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

54M :

calibrator wlan0 wl18xx_plt start_tx 200 **11** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

802.11n

MCS0:

calibrator wlan0 wl18xx_plt start_tx 200 **12** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS1:

calibrator wlan0 wl18xx_plt start_tx 200 **13** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS2:

calibrator wlan0 wl18xx_plt start_tx 200 **14** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS3:

calibrator wlan0 wl18xx_plt start_tx 200 **15** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS4:

calibrator wlan0 wl18xx_plt start_tx 200 **16** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS5:

calibrator wlan0 wl18xx_plt start_tx 200 **17** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS6:

calibrator wlan0 wl18xx_plt start_tx 200 **18** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

MCS7:

calibrator wlan0 wl18xx_plt start_tx 200 **19** 1000 0 0 0 0 0 00:00:DE:DE:BE:BE 12:34:56:78:90:AB 0

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Appendix-C

COMMAND TABLE

hcitool cmd 0x3f 0x1CA <Frequency> <Modulution> <Pattern> <Power_Level> < Generator initialization value> <EDR Mask Value>

Frequency Size: 2 byte	
Value	Parameter Description
0x62 0x09 ~ 0xB0 0x09	Freq= 2402 ~ Freq= 2480

Modulution Size: 1 byte	
Value	Parameter Description
0x00	CW
0x01	GFSK
0x02	p/4 DPSK (EDR 2M)
0x03	8 DPSK (EDR 3M)
0x04	BLE
0x05	ANT

Pattern Size: 1 byte	
Value	Parameter Description
0x00	PN9
0x01	PN15
0x02	ZOZO (101010101010101010)
0x03	All 1
0x04	All 0
0x05	F0F0 (1111000011110000)
0c06	FF00 (1111111100000000)
0c07	User-defined

Power level Size: 1 byte

Value	Parameter Description
0x00	Power Level 0
0x01	Power Level 1
0x02	Power Level 2
0x03	Power Level 3
0x04	Power Level 4
0x05	Power Level 5
0x06	Power Level 6
0x07	Power Level 7
0x08	Leakage：PA off

Generator initialization value

Size: 4 byte

Value	Parameter Description
0x00000000 ÷ 0x00FFFFFF	Generator initialization value. Used in GFSK and EDR mode (only for user-defined pattern)

EDR generator mask

Size: 4 byte

Value	Parameter Description
0x00000000 ÷ 0x00FFFFFF	PN generator mask value. Used only in EDR mode (only for user-defined pattern).

Back to BT_MODULATION_CON_TX_Before_4.2
BT_MODULATION_CON_TX_After_4.2

Appendix-D

COMMAND TABLE

$ hcitool cmd 0x3f 0x1CC <ACL TX Packet Type> <Frequency Mode> <TX single Frequency> <RX single Frequency > <ACL TX Packet Data pattern> <Use Extended features> <ACL Packet Data Length> <Power level index> <Disable whitening> <PRBS9 Init Value>

ACL TX Packet Type Size: 1 byte	
Value	Parameter Description
0x00	DM1
0x01	DH1
0x02	DM3
0x03	DH3
0x04	DM5
0x05	DH5
0x06	2-DH1
0x07	2-DH3
0x08	2-DH5
0x09	3-DH1
0x0A	3-DH3
0x0B	3-DH5

Frequency Mode Size: 1 byte	
Value	Parameter Description
0x00	Hopping
0x03	Single freq

TX single Frequency Size: 2 byte	
Value	Parameter Description
0x62 0x09 ~ 0xB0 0x09	2402 – 2480 MHz 0xFFFF no TX

RX single Frequency Size: 2 byte	
Value	Parameter Description
0x62 0x09 ~ 0xB0 0x09	2402 – 2480 MHz 0xFFFF no RX

ACL TX Packet Data Pattern Size: 1 byte	
Value	Parameter Description
0x00	All 0
0x01	All 1
0x02	ZOZO (101010101010101010)
0x03	F0F0 (1111000011110000)
0x04	Ordered
0x05	PRBS9 Random

Use Extended features Size: 1 byte	
Value	Parameter Description
0x00	Disable
0x01	Enable

ACL Packet Data Length Size: 2 byte	
Value	Parameter Description
0-17	DM1
0-27	DH1
0-121	DM3
0-183	DH3
0-224	DM5
0-339	DH5

Power level index Size: 1 byte	
Value	Parameter Description
0x00	Power Level 0

0x01	Power Level 1
0x02	Power Level 2
0x03	Power Level 3
0x04	Power Level 4
0x05	Power Level 5
0x06	Power Level 6
0x07	Power Level 7
0x08	Leakage：PA off

Disable whitening

Size: 1 byte

Value	Parameter Description
0x00	Enable
0x01	Disable

Use Extended features

Size: 1 byte

Value	Parameter Description
0x00 0x00 ~ 0xFF 0x01	0x0000 ~ 0x01FF

Back to BT_PACKET_CON_TX_Before_4.2
BT_PACKET_CON_TX_After_4.2

Appendix-E

HCI_VS_DRPb_BER_Meter_Start 0xFD8B, 0, 0, 0x341278563412, 1, 0x1, 27, 1000, 0x1FF, 0x1

The parameters of the first command (HCI_VS_DRPb_BER_Meter_Start) are:

1. Op code

- 0xFD8B

2. Frequency Channel

- 0-39: f=2402+(2*i)MHz
- 40-78: f=2403+2(i-40)MHz

3. Reserved (0x00)

4. BD Address

- Is expressed as Little Endian
- Must match the MAC (BD) address as specified by the transmitter

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- Actual MAC address of 12:34:56:78:12:34 would be 34:12:78:56:34:12

5. LT Address (0x01)

6. ACL TX packet type

- 0=DM1
- 1=DH1
- 2=DM3
- 3=DH3
- 4=DM5
- 5=DH5
- 6=2-DH1
- 7=2-DH3
- 8=2-DH5
- 9=3-DH1
- A=3-DH3

- B=3-DH5

7. Packet length

- DM1: 0-17
- DH1: 0-27
- DM3: 0-121
- DH3: 0-183
- DM5: 0-224
- DH5: 0-339

8. Number of packets to be used for the BER test (0x0000-0xFFFF)

9. PRBS initialize (0x1FF)

10. Poll period

- Poll period of 5 means that every fifth packet received is used in the BER calculation (longer test time)
- Poll period of 1 means every packet received is used in the BER calculation (shortest test time)