AW-XB547NF

IEEE 802.11a/b/g/n/ac/ax Wireless LAN with Bluetooth 5.2 LGA Module

Wi-Fi(PCIe)+Bluetooth(USB)

Linux OS

RF Test Commands User Guide

Rev. 0.2

(For Standard)

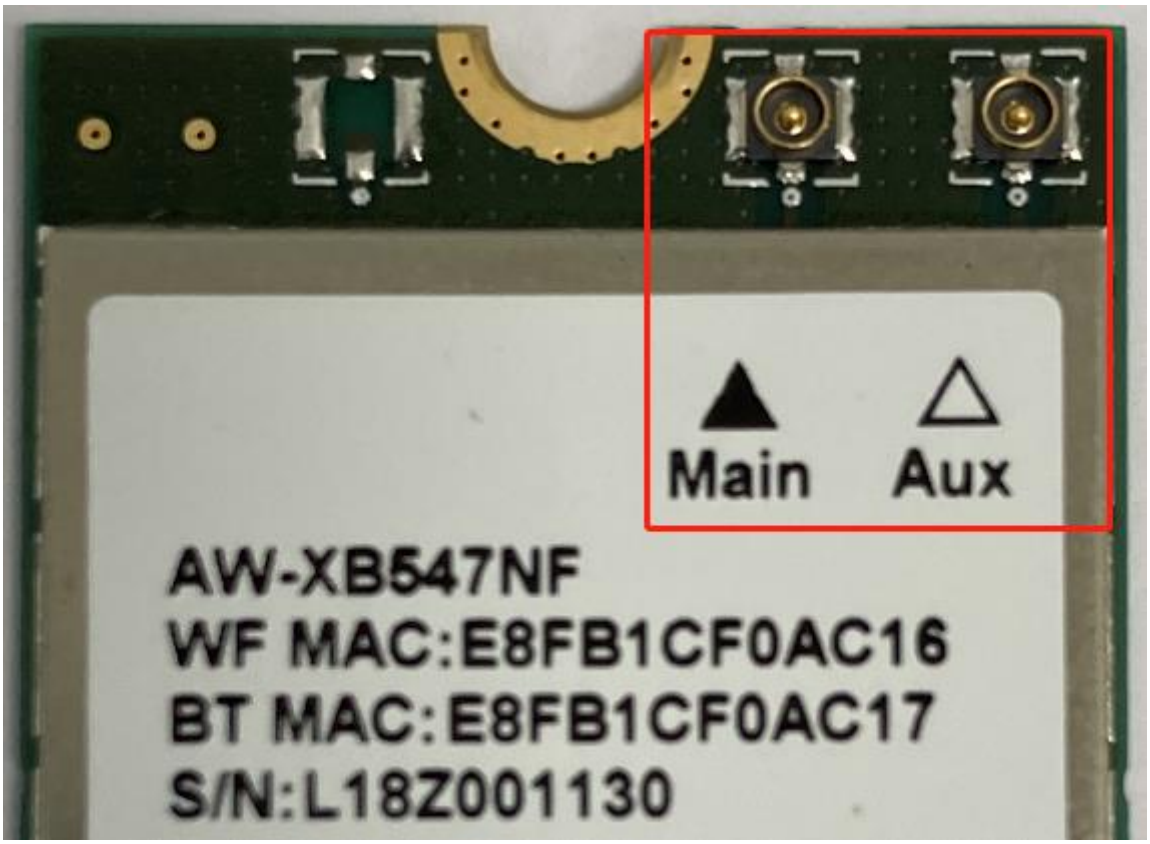
Revision History

Version	Revision Date	Description	Initials	Approved
0.1	2022/08/25	● Initial Version	Wiley.Zhu	
0.2	2023/03/15	● Update BLE Continue Tx command	Wiley.Zhu	

Table of Contents

1. AW-XB547NF Antenna ports configuration

Antenna	I-PEX MHF4 Connector Receptacle (20449) ANT1(AUX) : WiFi/Bluetooth → TX/RX ANT2(Main) : WiFi → TX/RX



2. Wi-Fi RF test commands

Test environment settings:

请把 Wi-Fi 测试工具 rtwpriv 复制到机器，并修改 rtwpriv 的运行权限。

cp rtwpriv /usr/sbin/rtwpriv
chmod 755 /usr/sbin/rtwpriv

Wi-Fi Tx commands introduce:

rtwpriv wlp5s0 mp_start

//Start mp mode
rtwpriv wlp5s0 1 0 a 11M 1 2000
//第一位设置信道，1 代表信道 1；
//第二位设置带宽，0 代表 20M 带宽，1 代表 40M 带宽，2 代表 80M 带宽；
//第三位设置天线，a 代表天线 Main，b 代表天线 Aux，ab 代表 2x2 天线 Main 和 Aux；
//第四位设置速率，11M 代表 802.11b 模式的 11M 速率（1M--11M），
54M 代表 802.11g 模式的 54M 速率（6M--54M），
HTMCS7 代表 802.11n 1x1 模式的 MCS 速率（HTMCS0--HTMCS7），
HTMCS15 代表 802.11n 2x2 模式的 MCS 速率（HTMCS8--HTMCS15），
VHT1MCS9 代表 802.11ac 模式的 MCS 速率（VHT1MCS0--VHT1MCS9），
HE1MCS11 代表 802.11ax 模式的 MCS 速率（HE1MCS0--HE1MCS11）；
//第五位设置发射模式，1 代表 Packet Tx，2 代表 Continuous Tx，3 代表 Single Tone。
rtwpriv wlp5s0 mp_txpower dbm=19
//设置发射功率，dbm=19 代表 19dBm
rtwpriv wlp5s0 stop
//停止发射

Wi-Fi Rx commands introduce:
rtwpriv wlp5s0 mp_start
//Start mp mode
rtwpriv wlp5s0 mp_channel 36
//设置信道，36 代表信道 36
rtwpriv wlp5s0 mp_ant_rx a
//设置天线，a 代表天线 Main，b 代表天线 Aux，ab 代表 2x2 天线 Main 和 Aux
rtwpriv wlp5s0 mp_bandwidth 40M=0,shortGI=0
//设置带宽，40M=0 代表 20MHz 带宽，40M=1 代表 40MHz 带宽，40M=2 代表 80MHz 带宽
rtwpriv wlp5s0 mp_arx start
//开始 Rx 接收测试
rtwpriv wlp5s0 mp_reset_stats
//复位 Rx 接收包计数器
**********测试仪器发送 Wi-Fi 数据包**********
rtwpriv wlp5s0 mp_arx phy

//统计 Rx 接收数据包
rtwpriv wlp5s0 mp_stop
//停止测试

2.1. Main Port 2.4GHz Wi-Fi packet Tx commands

1. Main Port Wi-Fi Tx on Channel 1 at 19dBm with an 802.11b 11Mbps data rate in 2.4GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 a 11M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=19
rtwpriv wlp5s0 stop

---

2. Main Port Wi-Fi Tx on Channel 1 at 18dBm with an 802.11g 54Mbps data rate in 2.4GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 a 54M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop

---

3. Main Port Wi-Fi Tx on Channel 1 at 17dBm with an 802.11n MCS7 data rate in 2.4GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 a HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

4. Main Port Wi-Fi Tx on Channel 3 at 17dBm with an 802.11n MCS7 data rate in 2.4GHz 40MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 3 1 a HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

5. Main Port Wi-Fi Tx on Channel 1 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 a HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

6. Main Port Wi-Fi Tx on Channel 3 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 3 1 a HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

2.2. Aux Port 2.4GHz Wi-Fi packet Tx commands

1. Aux Port Wi-Fi Tx on Channel 1 at 19dBm with an 802.11b 11Mbps data rate in 2.4GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 b 11M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=19
rtwpriv wlp5s0 stop
```

---

2. Aux Port Wi-Fi Tx on Channel 1 at 18dBm with an 802.11g 54Mbps data rate in 2.4GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 b 54M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop
```

---

3. Aux Port Wi-Fi Tx on Channel 1 at 17dBm with an 802.11n MCS7 data rate in 2.4GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 b HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

4. Aux Port Wi-Fi Tx on Channel 3 at 17dBm with an 802.11n MCS7 data rate in 2.4GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 3 1 b HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

5. Aux Port Wi-Fi Tx on Channel 1 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 b HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

6. Aux Port Wi-Fi Tx on Channel 3 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 3 1 b HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

2.3. Main Ports 5GHz Wi-Fi packet Tx commands

1. Main Port Wi-Fi Tx on Channel 36 at 18dBm with an 802.11a 54Mbps data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 a 54M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop
```

---

2. Main Port Wi-Fi Tx on Channel 36 at 17dBm with an 802.11n MCS7 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 a HTMCS7 1 2000
```

```
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

3. Main Port Wi-Fi Tx on Channel 38 at 17dBm with an 802.11n MCS7 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 a HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

4. Main Port Wi-Fi Tx on Channel 36 at 16dBm with an 802.11ac MCS8 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 a VHT1MCS8 1 2000
rtwpriv wlp5s0 mp_txpower dbm=16
rtwpriv wlp5s0 stop
```

---

5. Main Port Wi-Fi Tx on Channel 38 at 15dBm with an 802.11ac MCS9 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 a VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop
```

---

6. Main Port Wi-Fi Tx on Channel 42 at 15dBm with an 802.11ac MCS9 data rate in 5GHz 80MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 a VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop
```

---

7. Main Port Wi-Fi Tx on Channel 36 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 a HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

8. Main Port Wi-Fi Tx on Channel 38 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 a HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

9. Main Port Wi-Fi Tx on Channel 42 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 80MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 a HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

2.4. Aux Port 5GHz Wi-Fi packet Tx Commands

1. Aux Port Wi-Fi Tx on Channel 36 at 18dBm with an 802.11a 54Mbps data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 b 54M 1 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop
```

---

2. Aux Port Wi-Fi Tx on Channel 36 at 17dBm with an 802.11n MCS7 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 b HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

3. Aux Port Wi-Fi Tx on Channel 38 at 17dBm with an 802.11n MCS7 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
```

```
rtwpriv wlp5s0 38 1 b HTMCS7 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop
```

---

4. Aux Port Wi-Fi Tx on Channel 36 at 16dBm with an 802.11ac MCS8 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 b VHT1MCS8 1 2000
rtwpriv wlp5s0 mp_txpower dbm=16
rtwpriv wlp5s0 stop
```

---

5. Aux Port Wi-Fi Tx on Channel 38 at 15dBm with an 802.11ac MCS9 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 b VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop
```

---

6. Aux Port Wi-Fi Tx on Channel 42 at 15dBm with an 802.11ac MCS9 data rate in 5GHz 80MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 b VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop
```

---

7. Aux Port Wi-Fi Tx on Channel 36 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 b HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

8. Aux Port Wi-Fi Tx on Channel 38 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 b HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
```

rtwpriv wlp5s0 stop

---

9. Aux Port Wi-Fi Tx on Channel 42 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 80MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 b HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop

2.5. Main+Aux Port 2.4GHz Wi-Fi packet Tx Commands

---

1. Main+Aux Port Wi-Fi Tx on Channel 1 at 17dBm with an 802.11n MCS15 data rate in 2.4GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 ab HTMCS15 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

2. Main+Aux Port Wi-Fi Tx on Channel 3 at 17dBm with an 802.11n MCS15 data rate in 2.4GHz 40MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 3 1 ab HTMCS15 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

3. Main+Aux Port Wi-Fi Tx on Channel 1 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 ab HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop

---

4. Main+Aux Port Wi-Fi Tx on Channel 3 at 13dBm with an 802.11ax MCS11 data rate in 2.4GHz 40MHz BW mode

rtwpriv wlp5s0 mp_start

rtwpriv wlp5s0 3 1 ab HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop

2.6. Main+Aux Ports 5GHz Wi-Fi packet Tx Commands

---

1. Main+Aux Port Wi-Fi Tx on Channel 36 at 17dBm with an 802.11n MCS15 data rate in 5GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 ab HTMCS15 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

2. Main+Aux Port Wi-Fi Tx on Channel 38 at 17dBm with an 802.11n MCS15 data rate in 5GHz 40MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 ab HTMCS15 1 2000
rtwpriv wlp5s0 mp_txpower dbm=17
rtwpriv wlp5s0 stop

---

3. Main+Aux Port Wi-Fi Tx on Channel 36 at 16dBm with an 802.11ac MCS8 data rate in 5GHz 20MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 ab VHT1MCS8 1 2000
rtwpriv wlp5s0 mp_txpower dbm=16
rtwpriv wlp5s0 stop

---

4. Main+Aux Port Wi-Fi Tx on Channel 38 at 15dBm with an 802.11ac MCS9 data rate in 5GHz 40MHz BW mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 ab VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop

---

5. Main+Aux Port Wi-Fi Tx on Channel 42 at 15dBm with an 802.11ac MCS9 data rate in

5GHz 80MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 ab VHT1MCS9 1 2000
rtwpriv wlp5s0 mp_txpower dbm=15
rtwpriv wlp5s0 stop
```

---

6. Main+Aux Port Wi-Fi Tx on Channel 36 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 20MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 ab HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

7. Main+Aux Port Wi-Fi Tx on Channel 38 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 40MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 38 1 ab HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

---

8. Main+Aux Port Wi-Fi Tx on Channel 42 at 13dBm with an 802.11ax MCS11 data rate in 5GHz 80MHz BW mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 42 2 ab HE1MCS11 1 2000
rtwpriv wlp5s0 mp_txpower dbm=13
rtwpriv wlp5s0 stop
```

2.7. Main Port Wi-Fi single tone/CW Tx commands

1. Main Port WiFi CW Tx on Channel 1 in 2.4GHz

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 a 11M 3 2000
rtwpriv wlp5s0 mp_txpower dbm=19
rtwpriv wlp5s0 stop
```

---

2. Main Port WiFi CW Tx on Channel 36 in 5GHz

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 a 54M 3 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop
```

2.8. Aux Port Wi-Fi single tone/CW Tx commands

1. Aux Port WiFi CW Tx on Channel 1 in 2.4GHz

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 1 0 b 11M 3 2000
rtwpriv wlp5s0 mp_txpower dbm=19
rtwpriv wlp5s0 stop
```

---

2. Aux Port WiFi CW Tx on Channel 36 in 5GHz

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 36 0 b 54M 3 2000
rtwpriv wlp5s0 mp_txpower dbm=18
rtwpriv wlp5s0 stop
```

2.9. Main Port Wi-Fi Rx sensitivity commands

1. Main Port WiFi Rx on Channel 1 in 802.11a/b/g/n/ac/ax 20MHz BW Mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 1
rtwpriv wlp5s0 mp_ant_rx a
rtwpriv wlp5s0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop
```

---

2. Main Port WiFi Rx on Channel 3 in 802.11n/ac/ax 40MHz BW Mode

```
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 3
```

rtwpriv wlp5s0 mp_ant_rx a
rtwpriv wlp5s0 mp_bandwidth 40M=1,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

---

3. Main Port WiFi Rx on Channel 42 in 802.11ac/ax 80MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 42
rtwpriv wlp5s0 mp_ant_rx a
rtwpriv wlp5s0 mp_bandwidth 40M=2,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

2.10. Aux Port Wi-Fi Rx sensitivity commands

1. Aux Port WiFi Rx on Channel 1 in 802.11a/b/g/n/ac/ax 20MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 1
rtwpriv wlp5s0 mp_ant_rx b
rtwpriv wlp5s0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

---

2. Aux Port WiFi Rx on Channel 3 in 802.11n/ac/ax 40MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 3
rtwpriv wlp5s0 mp_ant_rx b
rtwpriv wlp5s0 mp_bandwidth 40M=1,shortGI=0
rtwpriv wlp5s0 mp_arx start

rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

---

3. Aux Port WiFi Rx on Channel 42 in 802.11ac/ax 80MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 42
rtwpriv wlp5s0 mp_ant_rx b
rtwpriv wlp5s0 mp_bandwidth 40M=2,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

2.11. Main+Aux Ports WiFi Rx sensitivity commands

1. Main+Aux Port WiFi Rx on Channel 1 in 802.11 n/ac/ax 20MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 1
rtwpriv wlp5s0 mp_ant_rx ab
rtwpriv wlp5s0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

---

2. Main+Aux Port WiFi Rx on Channel 3 in 802.11n/ac/ax 40MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 3
rtwpriv wlp5s0 mp_ant_rx ab
rtwpriv wlp5s0 mp_bandwidth 40M=1,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy

rtwpriv wlp5s0 mp_stop

---

3. Main+Aux Port WiFi Rx on Channel 42 in 802.11ac/ax 80MHz BW Mode

rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_channel 42
rtwpriv wlp5s0 mp_ant_rx ab
rtwpriv wlp5s0 mp_bandwidth 40M=2,shortGI=0
rtwpriv wlp5s0 mp_arx start
rtwpriv wlp5s0 mp_reset_stats
**********测试仪器发送WiFi数据包**********
rtwpriv wlp5s0 mp_arx phy
rtwpriv wlp5s0 mp_stop

---

3. Bluetooth RF test commands

Test environment settings:

请把 Bluetooth 测试工具 rtlbtmp 和测试 firmware 复制到机器，并修改 rtlbtmp 的运行权限。

cp mp_rtl8852b_fw /lib/firmware/
cp mp_rtl8852b_config /lib/firmware/
cp rtlbtmp /usr/sbin/
chmod 755 /usr/sbin/rtlbtmp

设置 Bluetooth 天线端口:

ifconfig wlp5s0 up
rtwpriv wlp5s0 mp_start
rtwpriv wlp5s0 mp_btc_path bt
rtwpriv wlp5s0 mp_ant_tx a

运行 Bluetooth 测试工具 rtlbtmp，并执行以下指令 enable Bluetooth RF 测试功能:

rtlbtmp
enable usb:/dev/rtk_btusb

```
root@test-PC:~# rtlbtmp
::::::::::::::::::::::::::::::::::::::::::::::::
::::::: Bluetooth MP Test Tool Starting 2022.06.20 :::::::
> enable usb:/dev/rtk_btusb
> enable[Success:0]
```

3.1. Bluetooth classic/EDR test mode commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_Exec 1
　　//Start Test mode
bt_mp_Exec 0
　　//Stop Test mode

3.2. Bluetooth classic/EDR packet Tx commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;2,0x08;3,0x07;4,0x00;6,0xFF;7,0x00;9,0x3FFFF;11,0x000000c6967e
　　//1,0x00　0x00 代表 Channel00, Channel 范围是 0~78 (十六进制表示, 0x4e 代表 Channel78, 0x27 代表 Channel39)
　　//2,0x08　0x08 代表是 Packet Type 是 3DH5, 0x02 代表是 Packet Type 是 DH5, 0x05 代表是 Packet Type 是 2DH5
　　//3,0x07　0x07 代表 BT Payload 是 PRBS9, 0x00 代表 BT Payload 是 All0, 0x01 代表 BT Payload 是 All1, 0x02 代表 BT Payload 是 0101
bt_mp_Exec 30
　　//Start BT Packet Tx
bt_mp_Exec 31
　　//Stop BT Packet Tx

3.3. Bluetooth classic/EDR continuous Tx commands

bt_mp_Exec 0

bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;2,0x08;3,0x07;4,0x00;6,0x7F;7,0x00;9,0x3FFFF;11,0x000000c6967e

//1,0x00 0 代表 Channel00, Channel 范围是 0~78 (十六进制表示, 0x4e 代表 Channel78, 0x27 代表 Channel39)

//2,0x08 0x08 代表是 Packet Type 是 3DH5, 0x02 代表是 Packet Type 是 DH5, 0x05 代表是 Packet Type 是 2DH5

//3,0x07 0x07 代表 BT Payload 是 PRBS9, 0x00 代表 BT Payload 是 All0, 0x01 代表 BT Payload 是 All1, 0x02 代表 BT Payload 是 0101

bt_mp_Exec 34
//Start BT Continue Tx
bt_mp_Exec 35
//Stop BT Continue Tx

3.4. Bluetooth BLE 1Mbps packet Tx commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;2,0x09;3,0x00;7,0x00;9,0x3FFFF;11,0x000000c6967e;15,0x25;16,1

//1,0x00 0x00 代表 Channel00, Channel 范围是 0~39 (十六进制表示, 0x13 代表 Channel19, 0x27 代表 Channel39)

//2,0x09 代表是 Packet BLE

//3,0x00 0x00 代表 BLE Payload 是 PRBS9, 0x04 代表 BLE Payload 是 All1, 0x05 代表 BLE Payload 是 All0, 0x07 代表 BLE Payload 是 0101

//16,1 1 代表 BLE 1M, 2 代表 BLE 2M

bt_mp_Exec 22
//Start BLE Packet Tx
bt_mp_Exec 24
//Stop BLE Packet Tx

3.5. Bluetooth BLE 2Mbps packet Tx commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;2,0x09;3,0x00;7,0x00;9,0x3FFFF;11,0x000000c6967e;15,0x25;16,2

//1,0x00 0x00 代表 Channel00, Channel 范围是 0~39 (十六进制表示, 0x13 代表 Channel19, 0x27 代表 Channel39)

//2,0x09 代表是 Packet BLE

//3,0x00 0x00 代表 BLE Payload 是 PRBS9, 0x04 代表 BLE Payload 是 All1, 0x05 代表 BLE Payload 是 All0, 0x07 代表 BLE Payload 是 0101

//16,2 1 代表 BLE 1M, 2 代表 BLE 2M

bt_mp_Exec 22

//Start BLE Packet Tx

bt_mp_Exec 24

//Stop BLE Packet Tx

3.6. Bluetooth BLE 1Mbps continuous Tx commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;3,0x00;15,0xFF;16,1

//1,0x00 0x00 代表 Channel00, Channel 范围是 0~39 (十六进制表示,0x13 代表 Channel19,0x27 代表 Channel39)

//3,0x00 0x00 代表 BLE Payload 是 PRBS9, 0x04 代表 BLE Payload 是 All1, 0x05 代表 BLE Payload 是 All0, 0x07 代表 BLE Payload 是 0101

//16,1 1 代表 BLE 1M, 2 代表 BLE 2M

bt_mp_Exec 28

//Start BLE Continuous Tx

bt_mp_Exec 29

//Stop BLE Continuous Tx

3.7. Bluetooth BLE 2Mbps continuous Tx commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 1,0x00;3,0x00;15,0xFF;16,2

//1,0x00 0x00 代表 Channel00, Channel 范围是 0~39 (十六进制表示, 0x13 代表 Channel19, 0x27 代表 Channel39)

//3,0x00 0x00 代表 BLE Payload 是 PRBS9, 0x04 代表 BLE Payload 是 All1, 0x05 代表 BLE Payload 是 All0, 0x07 代表 BLE Payload 是 0101

```
        //16,2    1 代表 BLE 1M, 2 代表 BLE 2M
bt_mp_Exec 28
        //Start BLE Continue Tx
bt_mp_Exec 29
        //Stop BLE Continue Tx
```

3.8. Bluetooth classic/EDR hopping mode Tx commands

```
bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 2,0x08;6,0x7F;7,0x00;10,0x00;18,0,78
        //2,0x08    0x08 代表是 Packet Type 是 3DH5, 0x02 代表是 Packet Type 是 DH5, 0x05 代表是
Packet Type 是 2DH5
        //10,0x00    代表 Enable Hopping Mode
bt_mp_Exec 21
        //Start BT Hopping Mode
bt_mp_Exec 0
        //Stop BT Hopping Mode
```

3.9. Bluetooth BLE hopping mode Tx commands

```
bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
bt_mp_Report 17
bt_mp_SetParam 2,0x09;10,0x00;6,0x7F;7,0x00;18,0,39
        //2,0x09    代表是 Packet BLE
        //10,0x00    代表 Enable Hopping Mode
bt_mp_Exec 21
        //Start BLE Hopping Mode
bt_mp_Exec 0
        //Stop BLE Hopping Mode
```

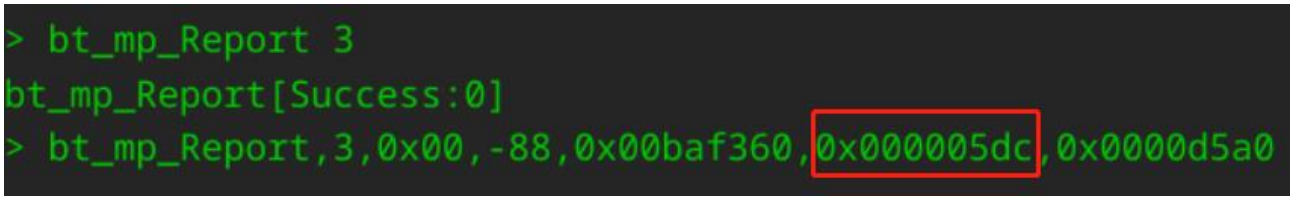
3.10. Bluetooth/BLE single tone/CW Tx commands

```
bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_Exec 38
```

bt_mp_Report 17
bt_mp_SetParam 1,0x00;2,0x08;3,0x00;4,0x00;5,0x3F;6,0xFF;7,0xFF;11,0x000000c6967e
//1,0x00 0x00 代表 Channel00, Channel 范围是 0~78 (十六进制表示,0x4e 代表 Channel78)
bt_mp_Exec 34
//Start BT Single Tone
bt_mp_Exec 35
//Stop BT Single Tone

3.11. Bluetooth classic/EDR packet Rx sensitivity commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_SetParam 1,0x00;2,0x08;3,0x07;6,0x80;11,0x000000c6967e
//1,0x00 0 代表 Channel00, Channel 范围是 0~78 (十六进制表示, 0x4e 代表 Channel78, 0x27 代表 Channel39)
//2,0x08 0x08 代表是 Packet Type 是 3DH5, 0x02 代表是 Packet Type 是 DH5, 0x05 代表是 Packet Type 是 2DH5
//3,0x07 0x07 代表 BT Payload 是 PRBS9, 0x00 代表 BT Payload 是 All0, 0x01 代表 BT Payload 是 All1, 0x02 代表 BT Payload 是 0101
bt_mp_Exec 32
//Start BT Packet Rx
**********测试仪器发送 Bluetooth 数据包**********
bt_mp_Report 3
//Report BT Rx number of packets
bt_mp_Exec 33
//Stop BT Packet Rx



e.g. 5dc(hex) that received 1500 packets

3.12. Bluetooth BLE Packet Rx sensitivity commands

bt_mp_Exec 0
bt_mp_SetParam 18,1
bt_mp_Exec 40
bt_mp_SetParam 1,0x00;16,0x01;17,0x00
//1,0x00 0x00 代表 Channel00, Channel 范围是 0~39（十六进制表示,0x13 代表 Channel19,0x27 代表 Channel39）；

//16,0x01 0x01 代表 BLE 1M, 0x02 代表 BLE 2M

bt_mp_Exec 23

//Start BLE Packet Rx

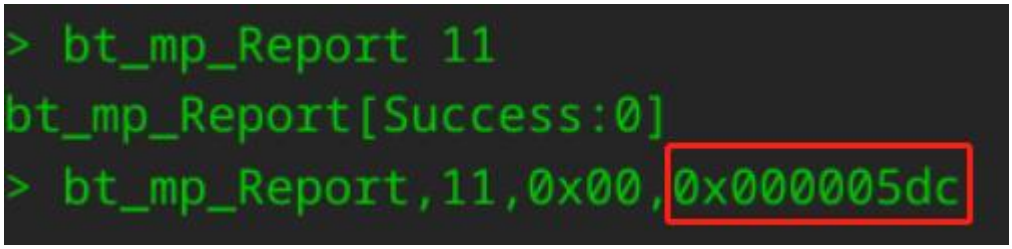
**********测试仪器发送 BLE 数据包**********

bt_mp_Exec 24

//Stop BT Packet Rx

bt_mp_Report 11

//Report LE Rx number of packets



e.g. 5dc(hex) that received 1500 packets