

The Mediatek logo consists of the word "MEDIATEK" in a bold, sans-serif font, colored orange. It is positioned inside a white parallelogram that is tilted to the right.

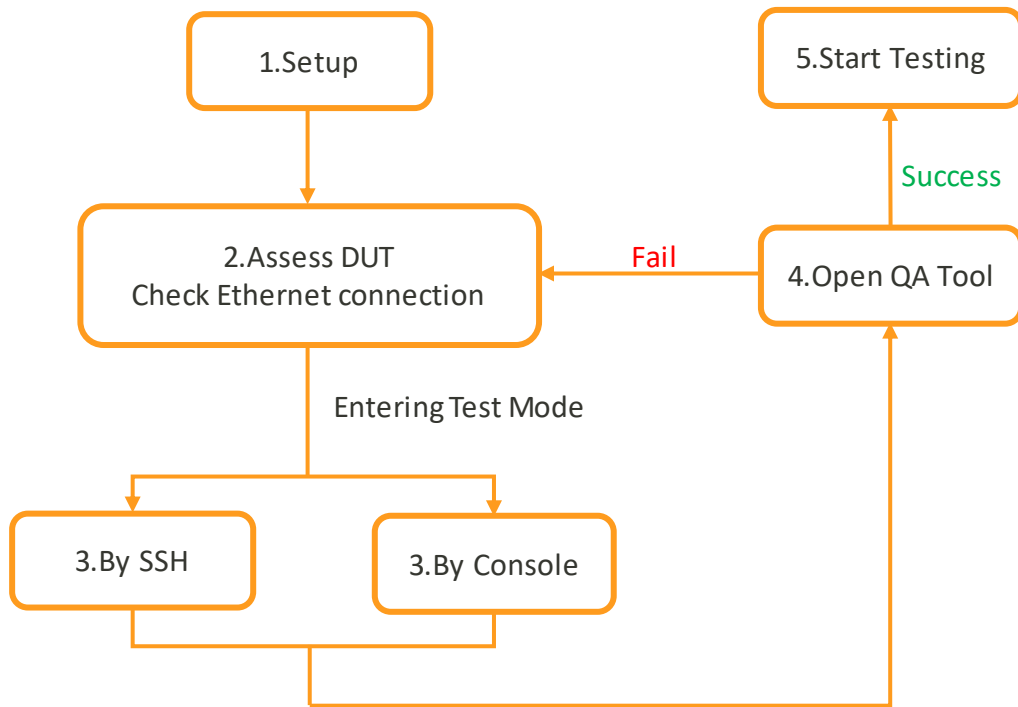
MEDIATEK

[WiFi8 Blackhawk] QA Tool User Guide

Outline

1. QA tool flow
2. TX Setting
 - 1) TX Setting_SU concurrent
 - 2) TX Setting_SU puncture
 - 3) TX Setting_MRU_MU_OFDMA_puncture
 - 4) TX Setting_MRU_MU_OFDMA
3. RX Setting
4. EEPROM

1.QA Tool Enable Flow



***Important: You need to install WinPCAP if it is your first time using.**



WinPCAP installation

Link: <https://www.winpcap.org/install/default.htm>

The last official WinPcap release was 4.1.3

For the list of changes, refer to the [changelog](#).

Version 4.1.3 [Installer for Windows](#)

Driver +DLLs

Supported platforms:

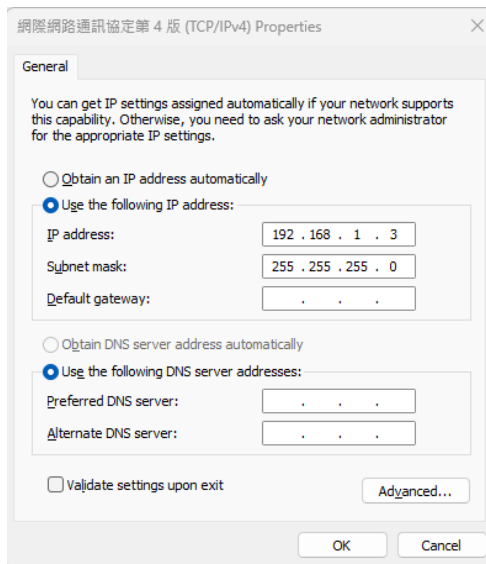
- NONE. WinPcap is entirely unsupported and may have compatibility issues with the latest versions of Windows.

Previously supported platforms:

- Windows NT4/2000
- Windows XP/2003/Vista/2008/Win7/2008R2/Win8 (x86 and x64)

Setup

- DUT Default IP: 192.168.1.1
- To connect to DUT, the network IP should be set to the same IP domain.
(ex: ex: 192.168.1.2 or 192.168.1.3 or 192.1.xx...)



Make sure the DUT is connected to the testing PC/notebook.

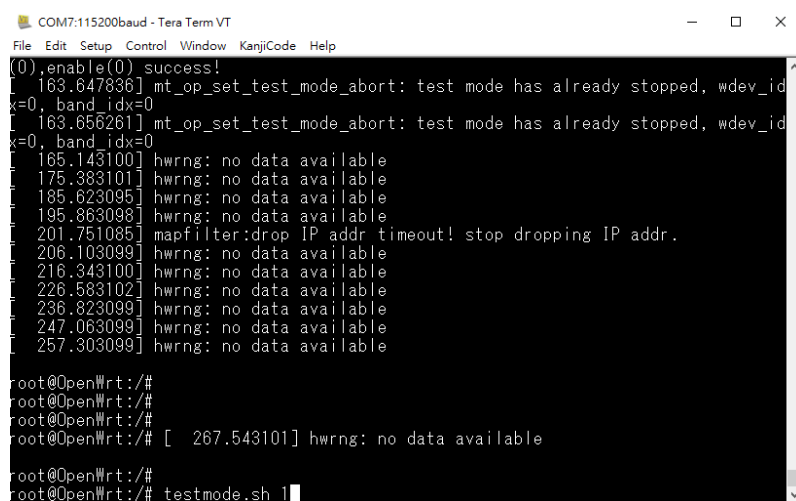
- Open command window.
- Key in “**ping 192.168.1.1 -t**” to ping DUT continuously.

3.Entering Test Mode_1

Default → Normal mode

Entering test mode : Cmd "testmode.sh 1"

Test mode :



```
COM7:115200baud - Tera Term VT
File Edit Setup Control Window KanjiCode Help
[0].enable(0) success!
[ 163.647836] mt_op_set_test_mode_abort: test mode has already stopped, wdev_id
x=0, band_idx=0
[ 163.656261] mt_op_set_test_mode_abort: test mode has already stopped, wdev_id
x=0, band_idx=0
[ 165.143100] hwrng: no data available
[ 175.383101] hwrng: no data available
[ 185.623095] hwrng: no data available
[ 195.863098] hwrng: no data available
[ 201.751085] mapfilter:drop IP addr timeout! stop dropping IP addr.
[ 206.103099] hwrng: no data available
[ 216.343100] hwrng: no data available
[ 226.583102] hwrng: no data available
[ 236.823099] hwrng: no data available
[ 247.063099] hwrng: no data available
[ 257.303099] hwrng: no data available
root@OpenWrt:/#
root@OpenWrt:/#
root@OpenWrt:/#
root@OpenWrt:/# [ 267.543101] hwrng: no data available
root@OpenWrt:/#
root@OpenWrt:/# testmode.sh 1
```

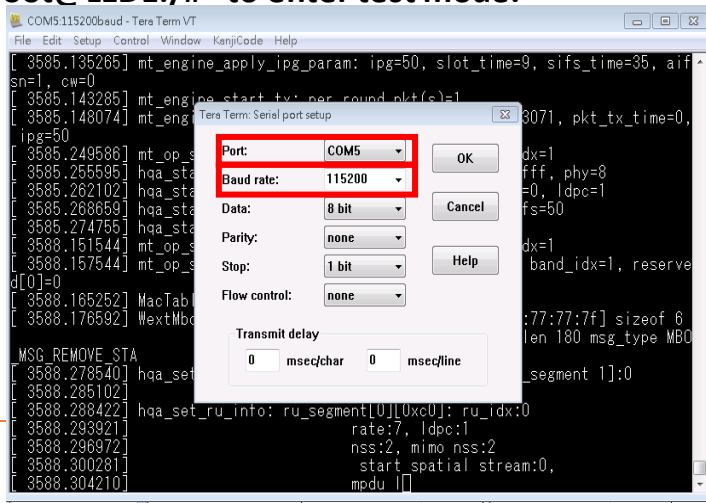
Entering Test Mode_2

1. Via SSH (using Ethernet cable)

- Key-in “ssh root@192.168.1.1”.
- Key in "ated" right after "root@LEDE:~#" to enter test mode.

2. By Console

- Select the port, and set the baud rate to 115200.
- Key in "ated" right after "root@LEDE:/#" to enter test mode.



Access via SSH could NOT be established.

- When it's not able to be accessed by SSH, please
 - Key in "`ssh-keygen -R 192.168.1.1`" to remove the RSA key.

```
C:\>ssh root@192.168.1.1
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@   WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!   @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle attack)!
It is also possible that a host key has just been changed.
The fingerprint for the RSA key sent by the remote host is
SHA256:z0m3p/i/reaEW04slcVctrYHtq8pRtKqWnuj0ds/Ms.
Please contact your system administrator.
Add correct host key in C:\Users\...\ssh/known_hosts to get rid of this message.
Offending RSA key in C:\Users\...\ssh/known_hosts:1
RSA host key for 192.168.1.1 has changed and you have requested strict checking.
Host key verification failed.
C:\>
```

- Then Key-in "`ssh root@192.168.1.1`".

```
C:\>ssh-keygen -R 192.168.1.1
# Host 192.168.1.1 found: line 1
C:\Users\...\ssh/known_hosts updated.
Original contents retained as C:\Users\...\ssh/known_hosts.old

C:\>ssh root@192.168.1.1
The authenticity of host '192.168.1.1 (192.168.1.1)' can't be established.
RSA key fingerprint is SHA256:z0m3p/i/reaEW04slcVctrYHtq8pRtKqWnuj0ds/Ms.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.1.1' (RSA) to the list of known hosts.

BusyBox v1.33.1 (2021-08-11 20:12:26 UTC) built-in shell (ash)

  _ _ _ _ _
 | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | _ | | | | | | | | | | | | | | | | |
 | |_| |_| |_| |_| |_| |_| |_| |_| |_| |_| |_| |_| |_| |_| |_|
  |_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|
    W I R E L E S S   F R E E D O M

OpenWrt 21.02-SNAPSHOT, r0+16268-750b966866

-----
WARNING!
There is no root password defined on this device!
Use the "passwd" command to set up a new password
in order to prevent unauthorized SSH logins.
-----
root@OpenWrt:~#
```

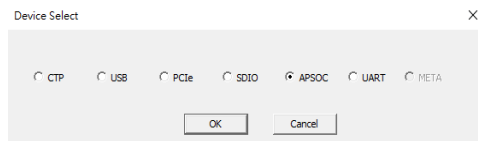
Open QA Tool

- Open “QATool_Dbg.exe”.

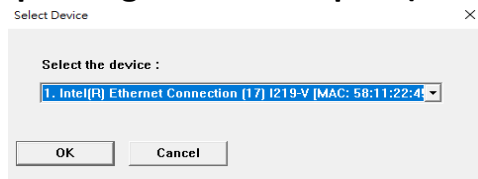
*If you can't launch QA tool (popup can't find wpcap.dll message), please install WinPcap.

QA_7990.ini	2022/5/18 下午 02:07	組態設定	2 KB
QA_66310.ini	2022/5/18 上午 11:18	組態設定	1 KB
QATool_Dbg.exe	2022/6/20 上午 11:11	應用程式	15,624 KB

- Choose “APSOC”.



- Select the corresponding network adapter (connected to DUT).



- Press OK



Start Using QA Tool

MT7999 QA 0.0.2.110 FFFF:FFFF:FFFF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | RU Page | Combo Case Page | Settings Page | About

Cal ID: 0.RC_CAL | Cal Count: 1 | RF Type: MT7999 :: 4 T 4 R

Channel: 6 2437-MHz | Mode: OFDM | Rate: MCS=7; 54 Mbp | System BW: 20 | Per-Pkt BW: 20 | Primary Sel: 0 | LTF+GI:

☒ TX0/RX0 ☒ TX1/RX1 ☒ TX2/RX2 ☒ TX3/RX3

UEQ: None

Channel Switch Mode: None | Sub Primary Sel: 0

Sub Band Sel: 6 2437-MHz

TX

Reset counter

Tx | Rx

☐ TSSI | ☐ DPD | BCC | Nss: 4 | Spatial Idx:

TX frame setting

FC (2)	Dur (2)	Address1(6)Dest	Address2(6)Source	Address3(6)BSSID	Seq (2)
0800	0000	FFFFFFFFFFFF	001122334455	001122334455	0000

MPDU Tx Length: 1024

Repeat Pattern(3): AA

Inter Packet Gap (us): 50

TX Power0 (Dec) (0.5dB): 14.0

Start TX | Transmitted: 0 | Conti. Tx: 0:NORMAL MO

TX Tone: Single | DC | +W/F(only one)

Freq. Offset: 36

RX

User: 0001 | Start RX | TFF | FilteredPacket Length: 1000 | Disable

BandInfo | Antenna Info | User Info | Common Info

Name	Value
PER	100.0 %
RJOK	0
RJOK/Sec	0
MAC Mlddy	0
FCS err	0
CCK PD Count	93
CCK SIG Error	0
OFDM PD Count	13
OFDM ITAQ Error	13
CCK SPD Error	92
OFDM SIG Error	0
CCK FCS Error	1
OFDM FCS Error	0
CCK MDRDY	1
OFDM MDRDY	0
Length Mismatch	0
FCS OK Cnt	0
All lengthMismatchCount	0
AllMachMlddy	1
AllFCSerr	1
AllFCSpass	0

Page	Usage
1.TX/RX Band 2	6G Band TX/RX, 5x4
2.EEPROM	Read/Write/Save EEPROM
3. MAC BBP	Read/Write/Save MAC CR, Read thermal
4.RU Page	MU/TB Setting Details

2.TX Setting_SU - 11a/b/g/n/ac/ax/be/bn

MT7999 QA 0.0.2.110 FFFFFFFF:FFFF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | RU Page | Combo Case Page | Settings Page | About |

1 Channel 6 2437-MHz

2 Mode OFDM Rate MCS=7; 54 Mb/s System BW 20 Per-Pkt BW 20 Primary Sel 0

3 Test Mode

4 LTF+GI

5 ☒ TX0/RX0 ☒ TX1/RX1 ☒ TX2/RX2 ☒ TX3/RX3

11 UEQ None

12 Channel Switch Mode Sub Primary Sub Band Sel 6 2437-MHz

14 Reset counter

6 BCC

7 Nss 4

8 MPDU Tx Length Packet Tx Time(us) Tx Symbol

9 TX Power0 (Dec) (0.5dB) Hex -64.0 to 63.5 14.0 1C

13 at 0 ☒ Inter Packet Gap (us) 50 ☐ Duty Cycle

Start TX Transmitted: 0 ☐ Conti. Tx 0:NORMAL MO

10 Freq. Offset 36

- 1 Select Channel
(Remember to stop TX before switching channel)
- 2 Mode & rate
- 3 BW & location
- 4 LTF+GI
- 5 RF path
- 6 LDPCx2 or LDPC or BCC($\leq$ RU242)
(check: LDPC/non-check: BCC)*
- 7 Nss
- 8 TX length/Package time
(For Regulations power table testing, choose packet TX time > 3000us)
- 9 Power DAC (Dec/Hex,0.5dB)
- 10 Frequency Offset (Default from EEPROM)
- 11 UEQ mode select
- 12 Channel switch mode select (None/DSO/NPCA)
- 13 Start TX
- 14 Reset TX/RX counter

* : Annotation

1 : Essential steps

1 : Function

Blue : noteworthy items

2-1).TX Setting_SU concurrent

Setting band0/1/2 TX setting

- 1 Start band0 TX
- 2 Start band1 TX
- 3 Start band2 TX

MT7999 QA 0.0.2.110 FF-FFFF-FFFF

Band0, 4x4

TX/RX Band 0 | TX/RX Mode | TX/RX Rate | TX/RX System BW | TX/RX Per-Pk BW | TX/RX Primary Sel | TX/RX LTF+GI

Channel: 62437-MHz | Mode: UHR_MU_SU | Rate: MCS23=23 | System BW: 20 | Per-Pk BW: 20 | Primary Sel: 0 | LTF+GI: 3.4+3.2u

TX0/RX0 | TX1/RX1 | TX2/RX2 | TX3/RX3

UEQ: None | Channel Switch M: None | Sub Band Sel: 62437-MHz

PunctureValue: 0 | Reset counter: 0

Tx | Rx | TSSI: BCC | Nss: 4 | Spatial Idx: 1

TX frame setting: FC (2): 0800 | Dur (2): 0000 | Address1(8)Dest: FFFFFFFF | Address2(8)Source: 001122334455 | Address3(8)BSSID: 001122334455 | Seq (2): 0000

Payload: Random(1) | Repeat Pattern(3): AA | MPDU Tx Length: 256 | Packet Tx Time(us): 1000 | Tx Symbol: 1000

TX Power0 (Dec) (0.5dB): Hex -64.0 to 63.5 | 14.0 | 1000

TX Power1 (Dec) (0.5dB): Hex -64.0 to 63.5 | 14.0 | 1000

TX Power2 (Dec) (0.5dB): Hex -64.0 to 63.5 | 14.0 | 1000

TX Power3 (Dec) (0.5dB): Hex -64.0 to 63.5 | 14.0 | 1000

Start TX: Transmitted: 0 | Contrl Tx: 0 | Normal MO: 0

TX Tone: Single | DC | VIF(only one)

Freq Offset: 36

MT7999 QA 0.0.2.110 FF-FFFF-FFFF

Band1, 4x5

TX/RX Band 1 | TX/RX Mode | TX/RX Rate | TX/RX System BW | TX/RX Per-Pk BW | TX/RX Primary Sel | TX/RX LTF+GI

Channel: 196480-MHz | Mode: UHR_MU_SU | Rate: MCS23=23 | System BW: 20 | Per-Pk BW: 20 | Primary Sel: 0 | LTF+GI: 3.4+3.2u

TX0/RX0 | TX1/RX1 | TX2/RX2 | TX3/RX3 | RX4

UEQ: None | Channel Switch M: None | Sub Band Sel: 196480-MHz

PunctureValue: 0 | Reset counter: 0

Tx | Rx | TSSI: BCC | Nss: 4 | Spatial Idx: 1

TX frame setting: FC (2): 0800 | Dur (2): 0000 | Address1(8)Dest: FFFFFFFF | Address2(8)Source: 001122334455 | Address3(8)BSSID: 001122334455 | Seq (2): 0000

Payload: Random(1) | Repeat Pattern(3): AA | MPDU Tx Length: 256 | Packet Tx Time(us): 1000 | Tx Symbol: 1000

TX Power0 (Dec) (0.5dB): Hex -64.0 to 63.5 | 12.5 | 1000

TX Power1 (Dec) (0.5dB): Hex -64.0 to 63.5 | 12.5 | 1000

TX Power2 (Dec) (0.5dB): Hex -64.0 to 63.5 | 12.5 | 1000

TX Power3 (Dec) (0.5dB): Hex -64.0 to 63.5 | 12.5 | 1000

TX Power4 (Dec) (0.5dB): Hex -64.0 to 63.5 | 12.5 | 1000

Start TX: Transmitted: 0 | Contrl Tx: 0 | Normal MO: 0

TX Tone: Single | DC | VIF(only one)

Freq Offset: 39

MT7999 QA 0.0.2.110 FF-FFFF-FFFF

Band2, 4x5

TX/RX Band 2 | TX/RX Mode | TX/RX Rate | TX/RX System BW | TX/RX Per-Pk BW | TX/RX Primary Sel | TX/RX LTF+GI

Channel: 95995-MHz | Mode: UHR_MU_SU | Rate: MCS23=23 | System BW: 20 | Per-Pk BW: 20 | Primary Sel: 0 | LTF+GI: 3.4+3.2u

TX0/RX0 | TX1/RX1 | TX2/RX2 | TX3/RX3 | RX4

UEQ: None | Channel Switch M: None | Sub Band Sel: 95995-MHz

PunctureValue: 0 | Reset counter: 0

Tx | Rx | TSSI: BCC | Nss: 4 | Spatial Idx: 1

TX frame setting: FC (2): 0800 | Dur (2): 0000 | Address1(8)Dest: FFFFFFFF | Address2(8)Source: 001122334455 | Address3(8)BSSID: 001122334455 | Seq (2): 0000

Payload: Random(1) | Repeat Pattern(3): AA | MPDU Tx Length: 256 | Packet Tx Time(us): 1000 | Tx Symbol: 1000

TX Power0 (Dec) (0.5dB): Hex -64.0 to 63.5 | 11.0 | 1000

TX Power1 (Dec) (0.5dB): Hex -64.0 to 63.5 | 11.0 | 1000

TX Power2 (Dec) (0.5dB): Hex -64.0 to 63.5 | 11.0 | 1000

TX Power3 (Dec) (0.5dB): Hex -64.0 to 63.5 | 11.0 | 1000

TX Power4 (Dec) (0.5dB): Hex -64.0 to 63.5 | 11.0 | 1000

Start TX: Transmitted: 0 | Contrl Tx: 0 | Normal MO: 0

TX Tone: Single | DC | VIF(only one)

Freq Offset: 39

2-2).TX Setting_SU puncture

- 1 Select Channel
- 2 mode:EHT_MU_SU/UHR_MU_SU
- 3 Rate
- 4 *BW:>=80
- 5 Select Puncture Value
- 6 Start TX

Puncture pattern refers to the following form below:

White : puncture location
Green : signal

20MHz segment	#1	#2	#3	#4	#5	#6	#7	#8
20	0							
40	0							
80	0							
	1							
	2							
	3							
	4							
160	0							
	1							
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							

20MHz segment	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
0																
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
19																
20																
21																
22																
23																
24																

MT7999 QA 0.0.2.110 FF-FFFF-FFFF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | RU Page | Combo Case Page | Settings Page | About

1 Select Channel: Channel 9 5995-MHz

2 mode: EHT_MU_SU

3 Rate: MCS23=23

4 System: 320

5 Puncture Value: 0

6 Start TX: Transmitted

TX frame setting

FC (2): 0800, Dur (2): 0000, Address1(6)Dest: FFFFFFFF, Address2(6)Source: 001122334455, Address3(6)BSSID: 001122334455, Seq (2): 0000

MPDU Tx Length: 4096

TX Power0 (Dec) (0.5dB): Hex -64.0 to 11.0

2-3).TX Setting_MRU_MU_OFDMA_puncture

MT7999 QA 0.0.2.110 FF:FF:FF:FF:FF:FF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | **RU Page** | Combo Case Page | Settings Page | About

Cal ID Cal Count 1
0.RC_CAL Cal Test Mode

RF Type
MT7999 :: 4 T 5 R

Channel 9 5995-MHz

Mode Rate System BW Per-Pkt BW Primary Sel LTF+GI
UHR_MU_DL_OFDMA MCS23=23; 320 320 0 3:4x+3.2u

☒ TX0/RX0 ☒ TX1/RX1 ☒ TX2/RX2 ☒ TX3/RX3 ☒ RX4

UEQ None

Channel Switch Mode
None

Sub Band Sel
9 5995-MHz

Reset counter

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0: Punctured
1: Un-Punctured

Tx Rx

☐ TSSI ☐ DPD LDPC Nss 4 Spatial Idx

TX frame setting

FC (2)	Dur (2)	Address1(6)Dest	Address2(6)Source	Address3(6)BSSID	Seq (2)
0800	0000	FFFFFFFFFFFF	001122334455	001122334455	0000

MPDU Tx Length
Packet Tx Time(us)
Tx Symbol

Repeat Pattern(3)
AA 4096

☒ Random(1)

Repeat 0 ☒ Inter Packet Gap (us) 50 ☐ Duty Cycle

TX Power0 (Dec) (0.5dB) Hex
-64.0 to 63.5 11.0 16

Start TX Transmitted: 0 ☐ Conti. Tx 0:NORMAL MO

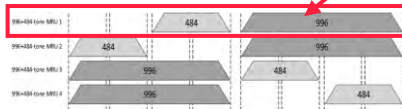
TX Tone
☐ TX Tone Single DC +WF(only one)

Freq. Offset 39

1 Select EHT_MU_DL_OFDMA or UHR_MU_DL_OFDMA
2 Select BW
3 Go to RU Page

- **example**

1 MU-MIMO RU 996+484 in 160MHz



1 Select RU 996+484 in the 160MHz allocation & RU index, then add to the segment (refer to [appendix 1~2](#)).

(refer to [appendix 1~2](#)).

2 Press set

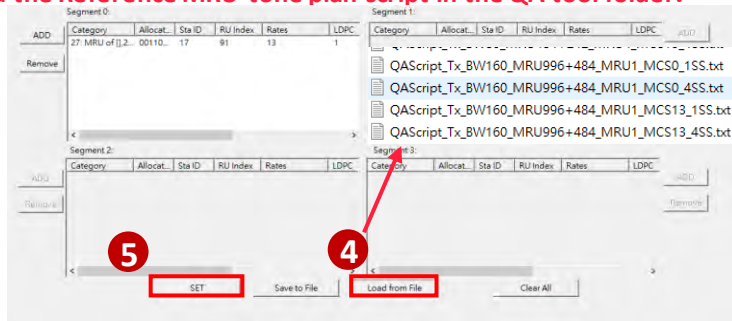
3 Return to the TX/RX page, select the puncture location, and start TX.

[illegible]

RU Page (TX_MRU_MU_OFDMA_puncture)-method 2

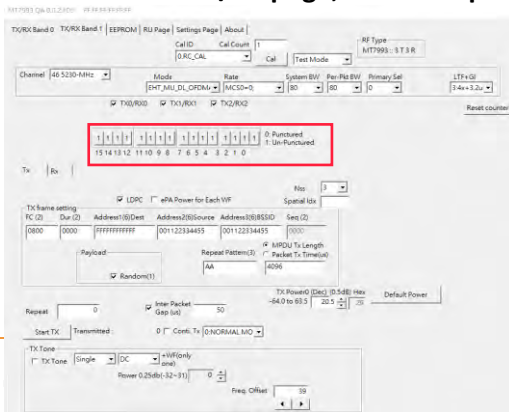
④ Select Load from file and use the reference setting.

You can find the Reference MRU tone plan script in the QA tool folder.



⑤ Press set

⑥ Return to the TX/RX page, select the puncture location, and start TX.



BW320																
20MHz segment	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
MU puncture location	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

2-4).TX Setting EHT/UMR_MRU_MU_OFDMA

MT7999 QA 0.0.2.110 FF:FF:FF:FF:FF:FF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | **RU Page** | Combo Case Page | Settings Page | About

Cal ID Cal Count 1
0.RC_CAL Cal Test Mode

RF Type MT7999 :: 4 T 5 R

Channel 9 5995-MHz

Mode Rate System BW Per-Pkt BW Primary Sel LTF+GI
UHR_MU_DL_OFDMA MCS23=23; 320 320 0 3:4x+3.2u

☒ TX0/RX0 ☒ TX1/RX1 ☒ TX2/RX2 ☒ TX3/RX3 ☒ RX4

UEQ None

Channel Switch Mode None

Sub Band Sel 9 5995-MHz

Reset counter

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

0: Punctured
1: Un-Punctured

Tx Rx

☐ TSSI ☒ DPD LDPC Nss 4 Spatial Idx

TX frame setting

FC (2)	Dur (2)	Address1(6)Dest	Address2(6)Source	Address3(6)BSSID	Seq (2)
0800	0000	FFFFFFFFFFFF	001122334455	001122334455	0000

MPDU Tx Length
Repeat Pattern(3) AA 4096

☒ Random(1)

TX Power0 (Dec) (0.5dB) Hex
-64.0 to 63.5 11.0 16

Repeat 0 ☒ Inter Packet Gap (us) 50 ☐ Duty Cycle

Start TX Transmitted: 0 ☐ Conti. Tx 0:NORMAL MO

TX Tone
☐ TX Tone Single DC +WF(only one)

Freq. Offset 39

1 Select EHT_MU_DL_OFDMA or UHR_MU_DL_OFDMA
2 Select BW
3 Go to RU Page

RU Page (EHT/UHR_MRU_MU_OFDMA)

4 Select Band: 2 for the 6G band

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC BBP | RF Page | RU Page | Combo Case Page | Settings Page | About

4 RU Band: 2 Preamble: UHR_MU_DL_OFDMA BW: 320 Packet BW: 320 ☐ STBCOn ☒ dRUSupported ☐ APPDU

Category:	Allocation (binary):	Sta ID:	RU Idx	MCS	PwrBoost Factor	MU Nss	LDPC	Nss	Stream Idx	Length	dRU BW	UEQ
Disable	010000000	888	94	MCS7=7;	0	1	BCC	4	1	-1	20	None
Disable					0	1		4	1	1024	20	None
Disable					0	1		4	1	1024	20	None
Disable					0	1		4	1	1024	20	None
0: Disable					0	1		4	1	1024	20	None

*For DC RU.

Select RU Category for each BW20 or MRU.

5 Add RU to the segment. (Each segment represents BW80 bandwidth.) and press SET.

Segments

Segment 0: dRU

ADD	Category	Alloca.	Sta ID	RU Index	Rates	LDPC	N
Remove							

Segment 1: dRU

ADD	Category	Alloca.	Sta ID	RU Index	Rates	LDPC	N
Remove							

Segment 2: dRU

ADD	Category	Alloca.	Sta ID	RU Index	Rates	LDPC	N
Remove							

Segment 3: dRU

ADD	Category	Alloca.	Sta ID	RU Index	Rates	LDPC	N
Remove							

SET Save to File Load from File Clear All

6 Return to the TX/RX page and start transmission.

RU Page (EHT/UHR_MRU_MU_OFDMA)

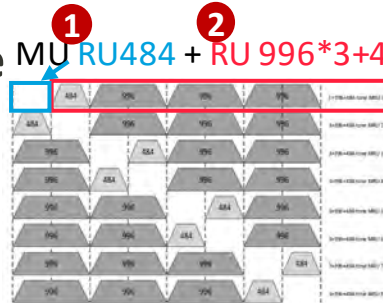
RU Category selection.

The screenshot shows the 'RU Page' configuration interface. At the top, there are tabs for 'TX/RX Band 0', 'TX/RX Band 1', 'TX/RX Band 2', 'EEPROM', 'MAC BPP', 'RF Page', 'RU Page', 'Combo Case Page', 'Settings Page', and 'About'. The 'RU Page' is currently selected. Below the tabs, there are several configuration fields: 'Band' (set to 2), 'Preamble' (set to UHR_MU_DL_OFDMA), 'Packet BW' (set to 320), 'STBCOn' (unchecked), 'dRUSupported' (checked), and 'APPDO' (unchecked). Below these fields is a table with columns: 'Category', 'Allocation (binary)', 'Sta ID', 'RU Idx', 'MCS', 'PwrBoost Factor', 'MU Nss', 'LDPC', 'Nss', 'Stream Idx', 'Length', 'dRU BW', and 'UEQ'. The first row of the table is highlighted with a red box. The first row contains the following values: 'Disable', '010000000', '888', '94', 'MCS7=7', '0', '1', 'BCC', '4', '1', '1', '1024', '20', and 'None'. The other rows in the table have similar values, with 'Disable' in the 'Category' column and '0' in the 'PwrBoost Factor' column.

- 1 Refer to the allocation table to select the RU Category for each BW20 or MRU.
- 2 Check the RU Index and segment mapping.
- 3 Select detail settings*
 1. RU MCS rate
 2. Power Boost Factor = 0
 3. Set MU Nss, Nss = Stream Number
 4. LDPC: check for 2xLDPC, LDPC, non-check for BCC
 5. No corrections needed, the text appears to be a notation or a technical instruction rather than a sentence requiring grammatical correction.
 6. Stream Idx: select 1
 7. Length settings
 8. dRU setting
 9. UEQ mode setting

RU Page (TX EHT/UHR-OFDMA-MRU)

- example MU RU484 + RU 996*3+484 in 320MHz



Each segment represents BW80 bandwidth.

PS 160subfield	B0 of the RU allocation subfield	Segment
0	0	1
0	1	2
1	0	3
1	1	4

No corrections needed, the provided text appears to be a technical term or acronym and does not contain any grammatical errors.

- Select RU484 allocation and RU index, then add to segment (refer to appendix 1-2).

56-63 (000111000-000111111)	Validate	8
64-71 (001000y ₁ y ₂)	242	8
72-79 (001001y ₁ y ₂)	484	8
80-87 (001010y ₁ y ₂)	996	8

Select Band:	2
Category:	12: RU484*1
Allocation (binary):	001001000
Sta ID:	65
MCS:	MCS13+13
PurBoost Factor:	0
MU Nss:	1
LDPC:	4
Nss:	1
Stream Ids:	8192

PS160 subfield	B0 of the RU Allocation subfield	B7-B1 of the RU Allocation subfield	Bandwidth (MHz)	RU or MRU size	RU or MRU index	PHY RU or MRU index
0-3	80 MHz subfield where the MRU is located	0-47	20, 40, 80, 160, or 320	RU1 to RU16 respectively	37+N*RU index	
65			40, 80, 160, or 320	RU1	2*N*RU index	
66			80, 160, or 320	RU2		
67			80, 160, or 320	RU3		

- Select RU 996*3+484 in the 320MHz allocation & RU index, and add it to the segment (refer to appendix 1-2).

192-199 (011000y ₁ y ₂)	MRU of [484-996-996-996, including 3*996+484-tone MRU-1	8
--	---	---

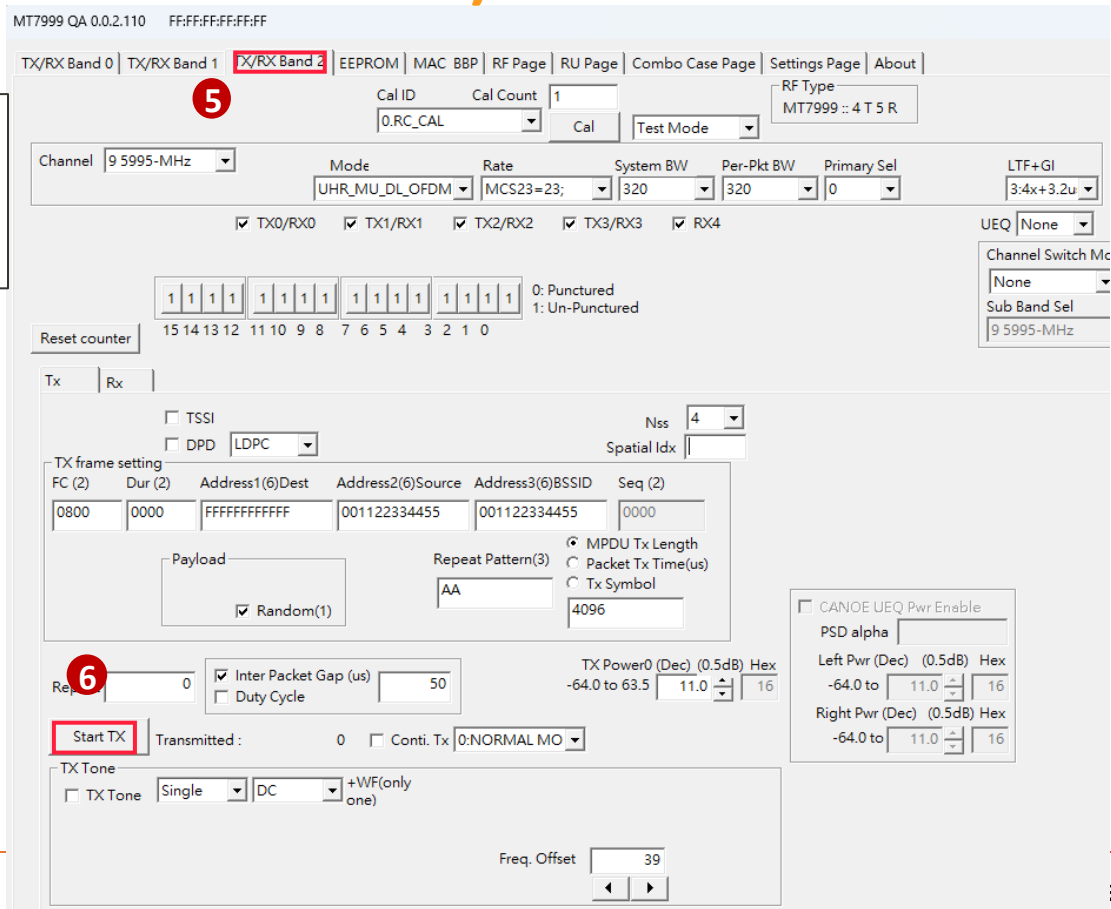
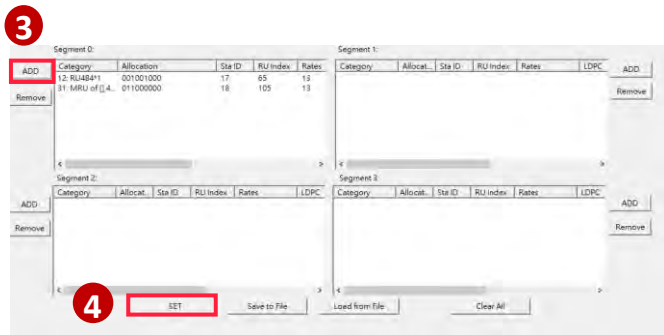
Select Band:	2
Category:	31: MRU of [484,996,996,996
Allocation (binary):	011000000
Sta ID:	105
MCS:	MCS7+7
PurBoost Factor:	0
MU Nss:	1
LDPC:	4
Nss:	1
Stream Ids:	57344

PS160 subfield	B0 of the RU Allocation subfield	B7-B1 of the RU Allocation subfield	Bandwidth (MHz)	RU or MRU size	RU or MRU index	PHY RU or MRU index
0	0				MRU1 and MRU2, respectively	
0	1				MRU3 and MRU4, respectively	
1	0	105, 106	320	3*996+484	MRU5 and MRU6, respectively	MRU index
1	1				MRU7 and MRU8, respectively	

RU Page (TX EHT/UHR-OFDMA-MRU)

- example

- 3 Add RU to segment.
- 4 Press set.
- 5 Return to TX/RX page.
- 6 Start TX



3.RX Setting

MT7999 QA 0.0.2.110 FF:FF:FF:FF:FF:FF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC_BB_P | RF Page | RU Page | Combo Case Page | Settings Page | About |

Cal ID Cal Count 1
0_RC_CAL

Test Mode

Channel 9 5995-MHz

Mode UHR_MU_SU

Rate MCS13=13

System BW 20

Per-Pkt BW 20

Primary Sel 0

LTF+GI 3-4x+3.2u

UEQ None

Tx PE: 16 us

Set

PunctureValue 0

Reset counter

Select RF Path

Select bandwidth

Start RX

User 0001

FilteredPacket Length 1000

Disable

BandInfo | Antenna Info | User Info | Common Info

Name	Value
PER	0.0 %
RXOK	0
RXOK/Sec	0
MAC Mdrdy	0
FCS err	0
CCK PD Count	0
CCK SIG Error	0
OFDM PD Count	0
OFDM TAQ Error	0
CCK SFD Error	0
OFDM SIG Error	0
CCK FCS Error	0
OFDM FCS Error	0
CCK MDRDY	0
OFDM MDRDY	0
Length Mismatch	0
FCS OK Cnt	0
AllLengthMismatchCount	0
AllMacMdrdy	0
AllFCSerr	0
AllFCSPass	0

RU Settings Block

Sta ID 888

RU Arrange

Get

A-MPDU Num 1

FAGC RSSI Path 0

RX Vector Idx 1 0

RX Vector Idx 2 0

RDD

RDD Stop

Num 0

InSel 0

Enable RXV

Enable RDD

Enable Recal

Start RDD

RX Vector Dump

RDD Dump

Recal Dump

Rx IQ Verification

RX IQ testcase file

save pattern

Start Radar

Radar Dump

ICS Type Sel

The number of successfully received packets will be displayed in the “RX OK” area.

11BN RX STA ID setting

MT7999 QA 0.0.2.110 FF:FF:FF:FF:FF:FF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | EEPROM | MAC_BB | RF Page | RU Page | Combo Case Page | Settings Page | About |

Cal ID Cal Count 1 RF Type MT7999::4 T 5 R

0.RC_CAL Cal Test Mode

Channel 9 5995-MHz

Mode Rate System BW Per-Pkt BW Primary Sel

UHR_MU_SU MCS13=13; 20 20 0

LTF+GI 3.4x+3.2u

☒ TX0/RX0 ☒ TX1/RX1 ☒ TX2/RX2 ☒ TX3/RX3 ☒ RX4

UEQ None Tx PE: 16 us Set

PunctureValue 0

Reset counter

Channel Switch Mode Sub Primary Sel

None 0

Sub Band Sel 9 5995-MHz

Tx Rx

User 0001 Start BX FFT FilteredPacket Length 1000 Disable

BandInfo | Antenna Info | User Info | Common Info

Name	Value
PER	0.0 %
RXOK	0
RXOK/Sec	0
MAC Mdrdy	0
FCS err	0
CCK PD Count	0
CCK SIG Error	0
OFDM PD Count	0
OFDM TAO Error	0
CCK SFD Error	0
OFDM SIG Error	0
CCK FCS Error	0
OFDM FCS Error	0
CCK MDRDY	0
OFDM MDRDY	0
Length Mismatch	0
FCS OK Cnt	0
AllLengthMismatchCount	0
AllMacMdrdy	0
AllFCSerr	0
AllFCSPass	0

FAGC RSSI Path 0 RX Vector Idx 1 0 RX Vector Idx 2 0

RDD

RDD Stop Num 0 InSel 0

☐ Enable RXV ☐ Enable RDD ☐ Enable Recal

Start RDD

RX Vector Dump RDD Dump Recal Dump

Rx IQ Verification

RX IQ testcase file

☐ save pattern

Start Radar Radar Dump

ICS Type Sel

RU Settings Block

Sta ID 888 RU Arrange

A-MPDU Num 1

RU Settings Block

Sta ID 888 RU Arrange PFD Info

STA ID follows tester pattern information.

Ex: IQxel STA ID 888

Itest STA ID 1

RX Related Parameter

➤ VSG Panel

VSG1

VSG Settings

Frequency: 5500 MHz

Power Level: -60 dBm / dBv

Sampling Rate: 80 MHz

Waveforms

Loaded Wave: Load Upload

/user/Waveform_1SSEHTMU_SU_BW20MCS0C

Count: 1000 Stop Play

CW Wave RF(off) RF(on)

Tx

☐ SGI ☐ STBC ☐ LDPC Nss: 4 Spatial Idx: ☐ HWTX

TX frame setting

FC (2)	Dur (2)	Address1 (6)Dest	Address2 (6)Source	Address3 (6)SSID	Seq (2)
0800	0000	FFFFFFFFFFFF	000000000000	001122334455	0000

Payload: ☐ Random(1) Repeat Pattern(3): AA

MPDU Tx Length: ☐ Packet Tx Time: 1024

TX Power0 (Dec) (0.5dB) Flex: -32.0 to 31.5 21.5 28

Repeat: 0 ☒ Inter Packet Gap (us): 50

Start TX Transmitted: 0

RX

User: 0001 Stop RX FilteredPack

BandInfo Antenna Info User Info Common Info

Name	Value
RSSI 0	-59
Inst RSSI WB 0	-67
Inst RSSI IB 0	-64
RSSI 1	0
Inst RSSI WB 1	-128
Inst RSSI IB 1	-128
RSSI 2	0
Inst RSSI WB 2	-128
Inst RSSI IB 2	-128
RSSI 3	0

RSSI value tolerance: +/- 3 dB

BandInfo Antenna Info User Info Common Info

Name	Value
PER	0.0 %
RXOK	683756
RXOK/Sec	2206
CCK PD Count	0
OFDM PD Count	65535
CCK FCS Error	0
OFDM FCS Error	285

PER (%)

4.EEPROM

MT7999 QA 0.0.2.110 FF:FF:FF:FF:FF:FF

TX/RX Band 0 | TX/RX Band 1 | TX/RX Band 2 | **EEPROM** | MAC BBP | RF Page | RU Page | Combo Case Page | Settings Page | About

EEPROM Type: Flash

Single Read/Write Mode
☒ READ ☐ WRITE

Offset: 0000
Value: 00
Length: 0000
R/W

Write Back Done FLASH_MODE

➤ EEPROM contents

00000000	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000010	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000020	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000030	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000040	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000050	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000060	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000070	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000080	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000090	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000A0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000B0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000C0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000D0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000E0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000F0	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000100	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000110	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Read ALL

Load File

☐ Keep Current TxPower

Save As...

NVM Type: EEPROM

☐ EEPROM Buffer Mode

☐ Disable Write Warning

☐ eFuse Mode

Remember to write back to Flash.
become effective after rebooting the
DUT

Upload a new EEPROM bin file to overwrite existing
contents.

Save the current contents of EEPROM to a file.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC regulations restrict the operation of this device to indoor use only.

The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet in the 5.925-6.425 GHz band.

Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.