FCC Test Report

Report No.:	RFBARR-WTW-P20110181L
FCC ID:	RAS-MT7921K
Test Model:	MT7921K
Received Date:	2021/12/7
Test Date:	2021/12/18
Issued Date:	2021/12/29
Applicant:	MediaTek Inc.
Address:	No. 1, Dusing 1st Rd., Hsinchu Science Park Hsinchu City 30078 Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RFBARR-WTW-P20110181L	Original release.	2021/12/29

1 Certificate of Conformity

Product:	2TX 11ax (WiFi6E) + BT/BLE Combo Card
Brand:	MediaTek
Test Model:	MT7921K
Sample Status:	Engineering sample
Applicant:	MediaTek Inc.
Test Date:	2021/12/18
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Vivian Huang , **Date:** 2021/12/29

Vivian Huang / Specialist

Approved by : , **Date:** 2021/12/29

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(8)	AC Power Conducted Emissions	NA	Refer to Note 1 below
15.407(b)(5)(8)	Radiated Emissions	NA	Refer to Note 1 below
15.407(b)(6)	In-Band Emission (Mask)	NA	Refer to Note 1 below
15.407(a)(4/5/6/7/8)	Max Average Transmit Power	NA	Refer to Note 1 below
15.407(a)(10)	Emission Bandwidth Measurement	NA	Refer to Note 1 below
15.407(a)(4/5/6/7/8)	Peak Power Spectral Density	NA	Refer to Note 1 below
15.407 (d)(6)	Contention-based Protocol.	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	NA	Refer to Note 1 below
15.407(a)(7)(8)	Dual Client- Proper Power Adjustment	N/A	Device associates with low power indoor AP only.
15.407(d)(5)	Operational restrictions for 6 GHz U-NII devices	NA	Refer to Note 1 below
15.203	Antenna Requirement	Pass	Antenna connector is R-SMA or i-pex(MHF) or RP SMA PLUG or IPEX-4L not a standard connector.

Note:

1. Contention-based Protocol was performed for this addendum. The others testing data refer to original test report.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	2TX 11ax (WiFi6E) + BT/BLE Combo Card
Brand	MediaTek
Test Model	MT7921K
Status of EUT	Engineering sample
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	5.955 ~ 6.415GHz, 6.435 ~ 6.525GHz, 6.525 ~ 6.875GHz, 6.875 ~ 7.115GHz
Number of Channel	802.11ax (HE20): 59 802.11ax (HE40): 29 802.11ax (HE80): 14
Output Power	**5.955 ~ 6.415GHz:** 10.446 mW (EIRP: 14.95 dBm / 31.26 mW) **6.435 ~ 6.525GHz:** 10.988 mW (EIRP: 14.70 dBm / 29.512 mW) **6.525 ~ 6.875GHz:** 10.743 mW (EIRP: 14.92 dBm / 31.046 mW) **6.875 ~ 7.115GHz:** 11.986 mW (EIRP: 14.88 dBm / 30.761 mW)
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC Class II change. The difference compared with the Report No: RFBARR-WTW-P20110181H as the following:
   - ◆ Add antenna sets (Refer to note 4).
2. According to above conditions, therefore only the Contention-based Protocol test item need to be performed, and all data was verified to meet the requirements.
3. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (5GHz)	Bluetooth
2	WLAN (6GHz)	Bluetooth
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

4. The antennas provided to the EUT, please refer to the following table:

Original

Ant. Set	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)	Cable Loss (dB)	Excluding Cable Loss Ant. Gain (dBi)
1	Chain0	Cortec	AN2450-4902BRS	2.42 3.87	2.4~2.4835 5.15~5.85	Dipole	R-SMA	150	2.4~2.4835GHz : 0.5 5.15~5.85GHz : 0.8	2.92 4.67
	Chain1	Cortec	AN2450-4902BRS	2.42 3.87	2.4~2.4835 5.15~5.85	Dipole	R-SMA	150	2.4~2.4835GHz : 0.5 5.15~5.85GHz : 0.8	2.92 4.67
2	Chain0	PSA	RFMTA340718EMLB302	3.18 4.92	2.4~2.4835 5.15~5.85	PIFA	i-pex(MHF)	200	included cable loss	-
	Chain1	PSA	RFMTA340718EMLB302	3.18 4.92	2.4~2.4835 5.15~5.85	PIFA	i-pex(MHF)	200	included cable loss	-
3	Chain0	PSA	RFMTA311020EMMB301	1.71 4.82 3.31	2.4~2.4835 5.15~5.85 5.92~7.125	PIFA	i-pex(MHF)	200	-	-
	Chain1	PSA	RFMTA311020EMMB301	1.71 4.82 3.31	2.4~2.4835 5.15~5.85 5.92~7.125	PIFA	i-pex(MHF)	200	-	-
4	Chain0	PSA	RFMTA311020EMMB301_V02	1.71 4.82 4.76 4.29 4.61 4.09	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	i-pex(MHF)	200	-	-
	Chain1	PSA	RFMTA311020EMMB301_V02	1.71 4.82 4.76 4.29 4.61 4.09	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	i-pex(MHF)	200	-	-
5	Chain0	VSO	JR2Q00340-1	1.62 3.2 3.93 3.61 3.61 3.14	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	Dipole	RP SMA PLUG	40	-	-
	Chain1	VSO	JR2Q00340-1	1.62 3.2 3.93 3.61 3.61 3.14	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	Dipole	RP SMA PLUG	40	-	-
6	Chain0	Luxshare-ICT	LA9RF059-CS-H (Main)	0.3 1.3 1.2	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	925	-	-
	Chain1	Luxshare-ICT	LA9RF059-CS-H (Aux)	-1.10 -1.10 1.4	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	876	-	-
7	Chain0	ASUS	14008-02650500 Main ant.	1.03 2.07 2.80	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	800	-	-
	Chain1	ASUS	14008-02650500 Aux ant.	2.27 2.01 3.08	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	800	-	-

Ant. Set	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)	Cable Loss (dB)	Excluding Cable Loss Ant. Gain (dBi)
6	Chain0	Luxshare-ICT	LA9RF059-CS-H (Main)	0.3 1.3 1.2	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	SMA R/P Plug	925	-	-
	Chain1	Luxshare-ICT	LA9RF059-CS-H (Aux)	-1.10 -1.10 1.4	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	SMA R/P Plug	876	-	-
7	Chain0	ASUS	14008-02650500 Main ant.	1.03 2.07 2.80	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	800	-	-
	Chain1	ASUS	14008-02650500 Aux ant.	2.27 2.01 3.08	2.4~2.4835 5.15~5.85 5.925~7.125	Dipole	RP SMA PLUG	800	-	-
8	Chain0	MSI	WA-P-LE-02-045 (Main)	2.24 2.68 3.01 -1.23 -1.96 -3.68	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	IPEX-4L	190	2.4~2.4835GHz: 0.72 5.15~5.85GHz: 1.12 5.925~6.425 GHz: 1.21 6.425~6.525 GHz: 1.19 6.525~6.875 GHz: 1.21 6.875~7.125 GHz: 1.29	2.96 3.8 4.22 0.04 0.75 2.39
	Chain1	MSI	WA-P-LE-02-046 (Aux)	-2.96 1.16 0.99 -2.31 -2.54 -7.44	2.4~2.4835 5.15~5.85 5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	IPEX-4L	325	2.4~2.4835GHz: 1.3 5.15~5.85GHz: 2.16 5.925~6.425 GHz: 2.2 6.425~6.525 GHz: 2.23 6.525~6.875 GHz: 2.25 6.875~7.125 GHz: 2.34	1.66 3.32 3.19 0.08 0.29 -5.1

Newly

Ant. Set	RF Chain No.	Brand	Model	Ant. Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type	Cable Length (mm)	Cable Loss (dB)	Excluding Cable Loss Ant. Gain (dBi)
9	Chain0	PSA	RFPCA460632IMMB701	-13.20 -13.67 -13.67 -13.09	5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	Dipole	IPEX	320	-	-
	Chain1	PSA	RFPCA460632IMMB701	-13.20 -13.67 -13.67 -13.09	5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	Dipole	IPEX	320	-	-
10	Chain0	PSA	RFMTA421230IMMB701	-13.92 -13.91 -13.91 -14.46	5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	IPEX	300	-	-
	Chain1	PSA	RFMTA421230IMMB701	-13.92 -13.91 -13.91 -14.46	5.925~6.425 6.425~6.525 6.525~6.875 6.875~7.125	PIFA	IPEX	300	-	-

Note: The Antenna Set 10 was selected for the final test.

5. The EUT incorporates a MIMO function:

6GHz Band		
Modulation Mode	**TX & RX Configuration**	
802.11a	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
7. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5925 ~ 6425MHz (U-NII-5 band)

24 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5955 MHz	5	5975 MHz	9	5995 MHz	13	6015 MHz
17	6035 MHz	21	6055 MHz	25	6075 MHz	29	6095 MHz
33	6115 MHz	37	6135 MHz	41	6155 MHz	45	6175 MHz
49	6195 MHz	53	6215 MHz	57	6235 MHz	61	6255 MHz
65	6275 MHz	69	6295 MHz	73	6315 MHz	77	6335 MHz
81	6355 MHz	85	6375 MHz	89	6395 MHz	93	6415 MHz

12 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	5965 MHz	11	6005 MHz	19	6045 MHz	27	6085 MHz
35	6125 MHz	43	6165 MHz	51	6205 MHz	59	6245 MHz
67	6285 MHz	75	6325 MHz	83	6365 MHz	91	6405 MHz

6 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
7	5985 MHz	23	6065 MHz	39	6145 MHz	55	6225 MHz
71	6305 MHz	87	6385 MHz				

FOR 6425 ~ 6525MHz (U-NII-6 band)

5 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
97	6435 MHz	101	6455 MHz	105	6475 MHz	109	6495 MHz
113	6515 MHz						

3 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
99	6445 MHz	107	6485 MHz	*115	6525 MHz

1 channel is provided for 802.11ax (HE80):

Channel	Frequency
103	6465 MHz

FOR 6525 ~ 6875MHz (U-NII-7 band)

18 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
117	6535 MHz	121	6555 MHz	125	6575 MHz	129	6595 MHz
133	6615 MHz	137	6635 MHz	141	6655 MHz	145	6675 MHz
149	6695 MHz	153	6715 MHz	157	6735 MHz	161	6755 MHz
165	6775 MHz	169	6795 MHz	173	6815 MHz	177	6835 MHz
181	6855 MHz	*185	6875 MHz				

8 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
123	6565 MHz	131	6605 MHz	139	6645 MHz	147	6685 MHz
155	6725 MHz	163	6765 MHz	171	6805 MHz	179	6845 MHz

5 channels are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
*119	6545 MHz	135	6625 MHz	151	6705 MHz	167	6785 MHz
*183	6865 MHz						

FOR 6875 ~ 7125MHz (U-NII-8 band):

12 channels are provided for 802.11a, 802.11ax (HE20):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
189	6895 MHz	193	6915 MHz	197	6935 MHz	201	6955 MHz
205	6975 MHz	209	6995 MHz	213	7015 MHz	217	7035 MHz
221	7055 MHz	225	7075 MHz	229	7095 MHz	233	7115 MHz

6 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
*187	6885 MHz	203	6965 MHz
195	6925 MHz	227	7085 MHz
219	7045 MHz	211	7005 MHz

2 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
199	6945 MHz	215	7025 MHz

Note: * mean this's straddle channel.

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To	Description
	CBP	
-	√	-

Where **CBP:**Contention Based Protocol

Contention Based Protocol Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE20)	5955-6415	1 to 93	1	OFDMA	BPSK	MCS0
	6435-6525	97 to 113	97	OFDMA	BPSK	MCS0
	6525-6855	117 to 185	129	OFDMA	BPSK	MCS0
	6875-7115	189 to 233	193	OFDMA	BPSK	MCS0
802.11ax (HE80)	5955-6415	7 to 87	7	OFDMA	BPSK	MCS0
	6435-6525	103 to 119	103	OFDMA	BPSK	MCS0
	6525-6855	119 to 183	135	OFDMA	BPSK	MCS0
	6875-7025	183 to 215	199	OFDMA	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
CBP	25deg. C, 60%RH	120Vac, 60Hz	Tobey Chen

3.3 Description of Support Units

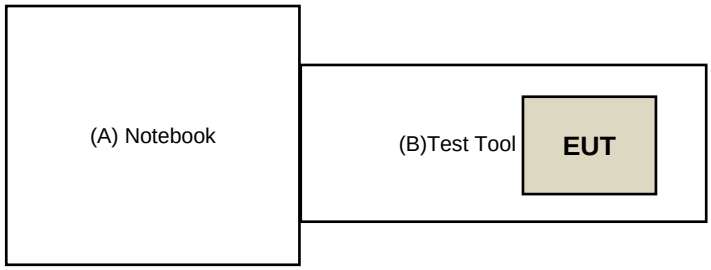
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5520	8Y4DMQ1	FCC DoC Approved	Provided by Lab
B.	Test Tool	MediaTek	MTK1849	NA	NA	Supplied by client

Note:

1. All power cords of the above support units are non-shielded (1.8m).

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standard

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test Standard:
FCC Part 15, Subpart E (15.407)
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:
KDB 987594 D02 EMC Measurement v01r01
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

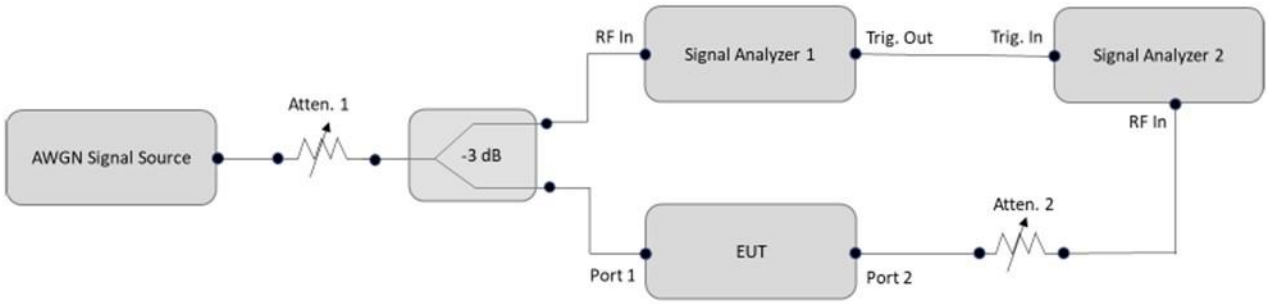
4 Test Types and Results

4.1 Contention Based Protocol Measurement

4.1.1 Limits of Contention Based Protocol Measurement

Unlicensed indoor low-power devices must detect co-channel radio frequency power that is at least -62 dBm (The threshold is referenced to a 0 dBi antenna gain.) or lower. Additionally, indoor low-power devices must detect co-channel energy with 90% or greater certainty.

4.1.2 Test Setup



4.1.3 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSW8	101497	2021/8/25	2022/8/24
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
MXG X-Series RF Vector Signal Generator Agilent	N5182B	MY59100182	2021/4/22	2022/4/21
N5182BU KEYSIGHT	N5182BX07	MY59360203	2021/12/10	2022/12/09
Power Splitter/combiner Mini-Circuits	ZFRSC-123-S+	F698501347_01	2021/1/27	2022/1/26

NOTE: 1. The test was performed in Femtocell room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: 2021/12/18

4.1.4 Test Procedure

a. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
b. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters (set as following section 4.7.5 EUT operating condition).

c. Determine number of times detection threshold test as following table,

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leqq BW_{Inc}$	Once	Same as EUT transmission
$BW_{Inc} < BW_{EUT} \leqq 2xBW_{Inc}$	Once	Contained within BW_{EUT}
$2xBW_{Inc} < BW_{EUT} \leqq 4xBW_{Inc}$	Twice. (Incumbent transmission is contained within BW_{EUT})	Closely to the lower edge and upper edge of the EUT Channel
$BW_{EUT} > 4xBW_{Inc}$	Three times	Closely to the lower edge ,in the middle and upper edge of the EUT Channel

d. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use step c table to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
e. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT.
f. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
g. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
h. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
i. Refer to step c table to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step d, choose a different center frequency for the AWGN signal and repeat the process.

4.1.5 EUT Operating Condition

Set the EUT to transmit with a constant duty cycle and relative operating parameters which including power level, operating frequency,modulation and bandwidth.

4.1.6 Test Results

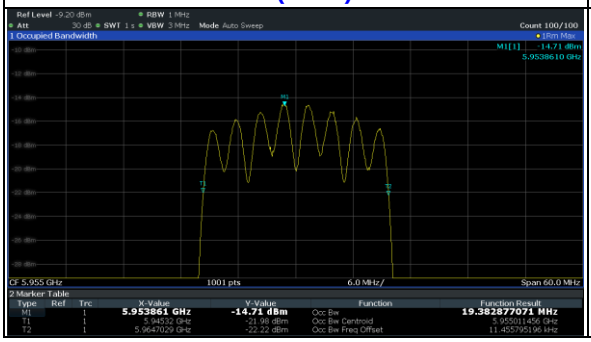
For U-NII-5 band

Contention Based Protocol Measurement									
Measurement Mode：		Conducted measurement		**The Incumbent Signal(AWGN) Level(dBm) :**			-82	at the antenna connector	
Device Type：		Indoor Client		**Antenna Gain(dBi) :**			-14.46		
Operation Mode	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Number of Times**	**Number of Detected**	**Detection Rate**	**Minimum Limit**	**Pass/Fail**
802.11ax	20	1	5955	5955	10	10	100%	90%	Pass
	80	7	5985	5950	10	10	100%	90%	Pass
				5985	10	10	100%	90%	Pass
				6020	10	10	100%	90%	Pass
Result	Complied								

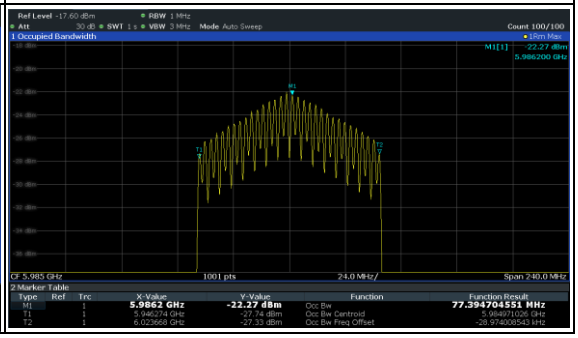
Lowest Interference (AWGN) Level Check							
Operation Band	**Operation Mode**	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Threshold Level (dBm)**	**EUT Status**
U-NII 5	802.11ax	20	1	5955	5955	-83	Start transmitting
		80	7	5985	5950	-83	Start transmitting
					5985	-83	Start transmitting
					6020	-83	Start transmitting

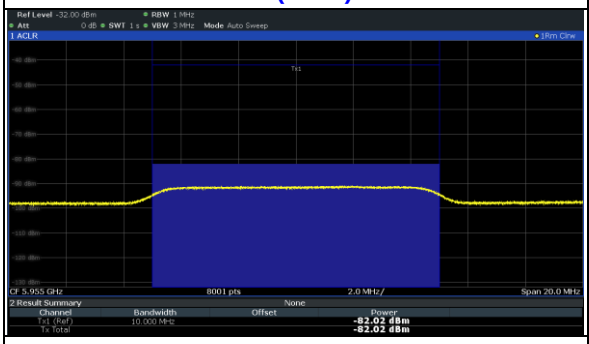
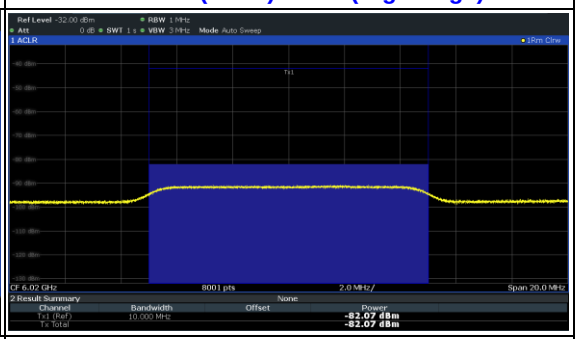
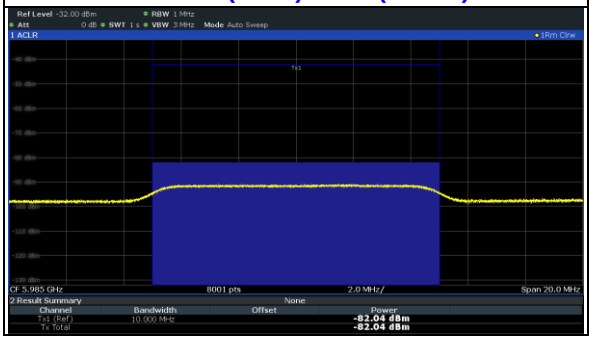
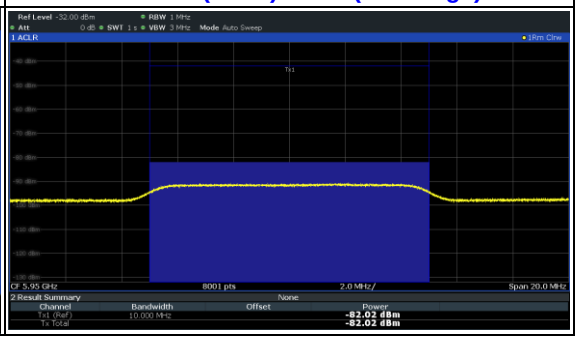
Plots of EUT Tx waveform

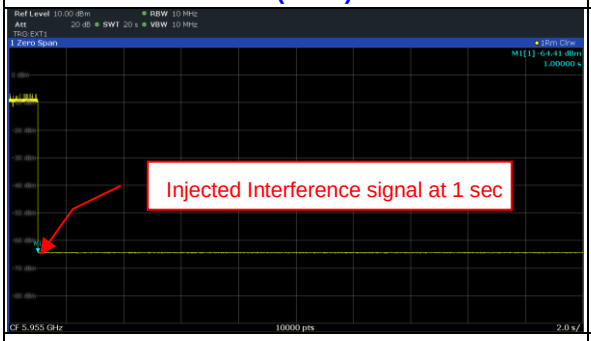
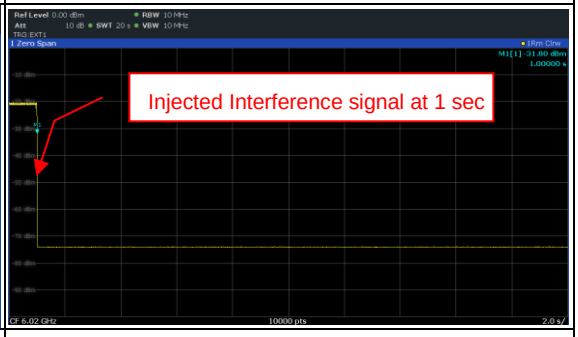
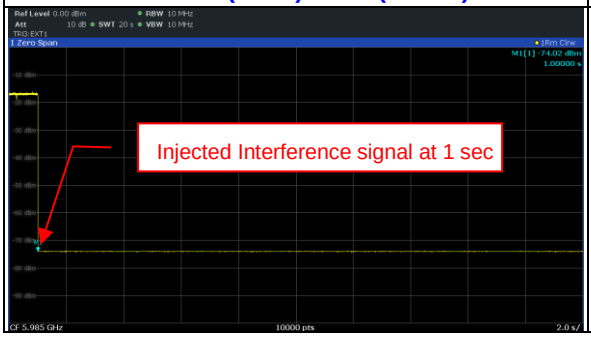
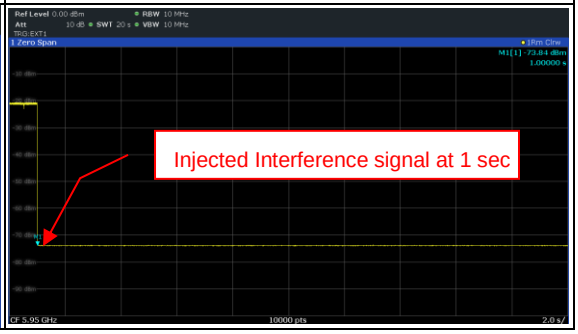
802.11ax (HE20) / CH1



802.11ax (HE80) / CH7



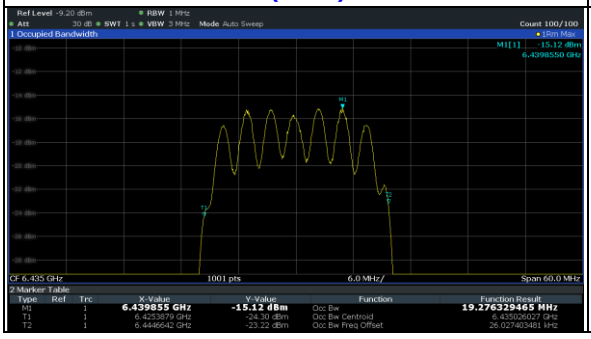
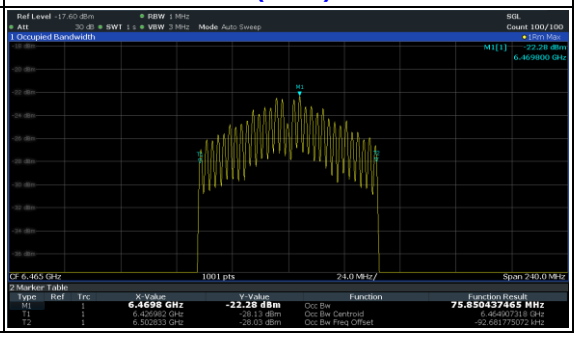
Plots of Incumbent signal(AWGN) Level	
802.11ax (HE20) / CH1	**802.11ax (HE80) / CH7 (High Edge)**
	
802.11ax (HE80) / CH7 (Middle)	**802.11ax (HE80) / CH7 (Low Edge)**
	

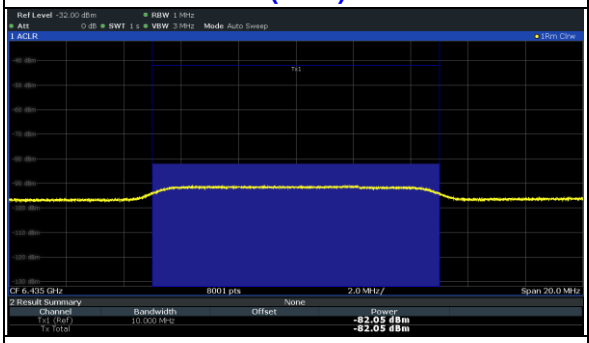
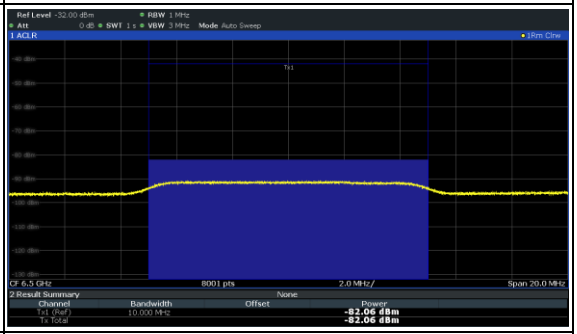
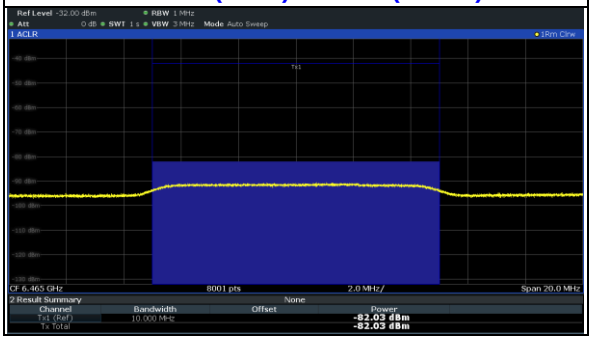
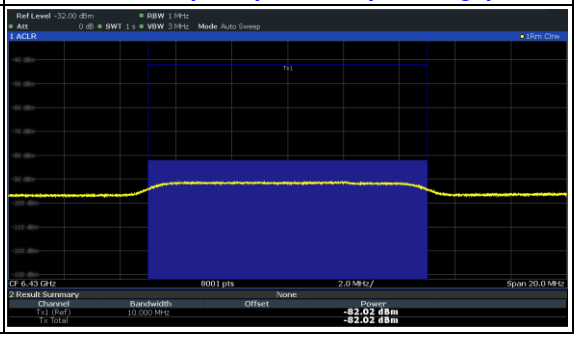
Plots of EUT ceased transmission in the time domain	
802.11ax (HE20) / CH1	**802.11ax (HE80) / CH7 (High Edge)**
	
802.11ax (HE80) / CH7 (Middle)	**802.11ax (HE80) / CH7 (Low Edge)**
	

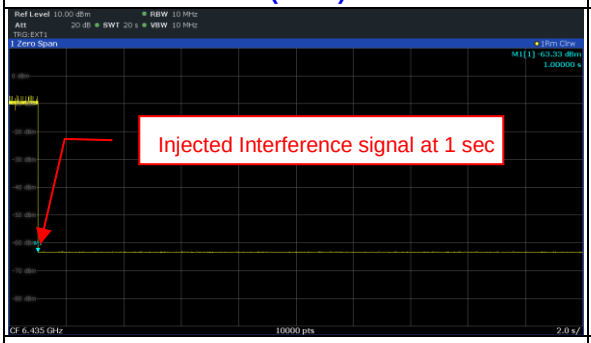
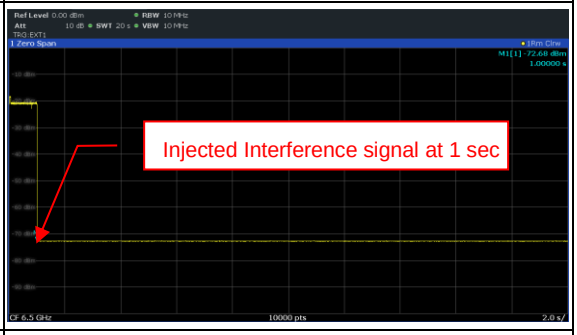
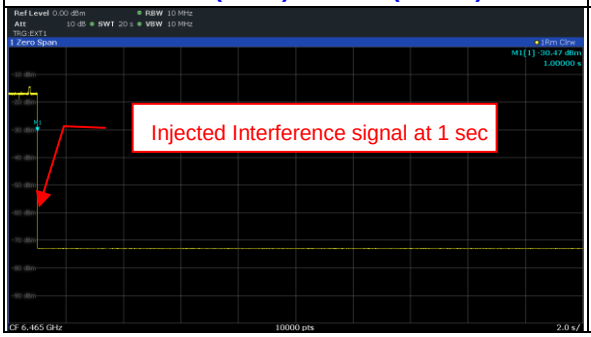
For U-NII-6 band

Contention Based Protocol Measurement									
Measurement Mode：		Conducted measurement		**The Incumbent Signal(AWGN) Level(dBm) :**			-82	at the antenna connector	
Device Type：		Indoor Client		**Antenna Gain(dBi) :**			-14.46		
Operation Mode	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Number of Times**	**Number of Detected**	**Detection Rate**	**Minimum Limit**	**Pass/Fail**
802.11ax	20	97	6435	6435	10	10	100%	90%	Pass
	80	103	6465	6430	10	10	100%	90%	Pass
				6465	10	10	100%	90%	Pass
				6500	10	10	100%	90%	Pass
Result	Complied								

Lowest Interference (AWGN) Level Check							
Operation Band	**Operation Mode**	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Threshold Level (dBm)**	**EUT Status**
U-NII 6	802.11ax	20	97	6435	6435	-83	Start transmitting
		80	103	6465	6430	-83	Start transmitting
					6465	-83	Start transmitting
					6500	-83	Start transmitting

Plots of EUT Tx waveform	
802.11ax (HE20) / CH97	**802.11ax (HE80) / CH103**
	

Plots of Incumbent signal(AWGN) Level	
802.11ax (HE20) / CH97	**802.11ax (HE80) / CH103 (High Edge)**
	
802.11ax (HE80) / CH103 (Middle)	**802.11ax (HE80) / CH103 (Low Edge)**
	

Plots of EUT ceased transmission in the time domain	
802.11ax (HE20) / CH97	**802.11ax (HE80) / CH103 (High Edge)**
	
802.11ax (HE80) / CH103 (Middle)	**802.11ax (HE80) / CH103 (Low Edge)**
	

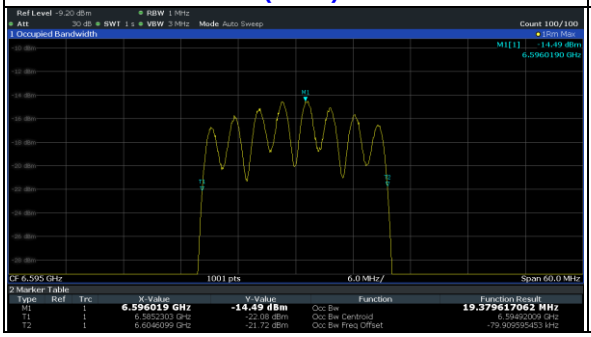
For U-NII-7 band

Contention Based Protocol Measurement									
Measurement Mode：		Conducted measurement		**The Incumbent Signal(AWGN) Level(dBm) :**			-82	at the antenna connector	
Device Type：		Indoor Client		**Antenna Gain(dBi) :**			-14.46		
Operation Mode	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Number of Times**	**Number of Detected**	**Detection Rate**	**Minimum Limit**	**Pass/Fail**
802.11ax	20	129	6595	6595	10	10	100%	90%	Pass
	80	135	6625	6590	10	10	100%	90%	Pass
				6625	10	10	100%	90%	Pass
				6660	10	10	100%	90%	Pass
Result	Complied								

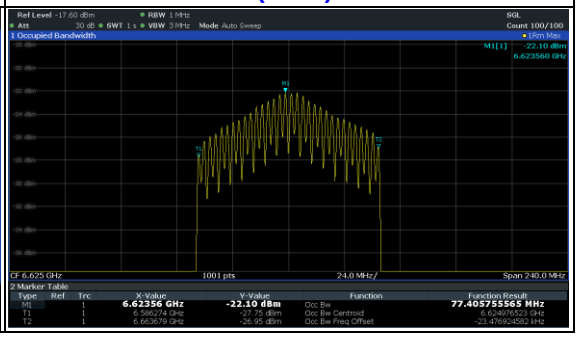
Lowest Interference (AWGN) Level Check							
Operation Band	**Operation Mode**	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Threshold Level (dBm)**	**EUT Status**
U-NII 7	802.11ax	20	129	6595	6595	-83	Start transmitting
		80	135	6625	6590	-83	Start transmitting
					6625	-83	Start transmitting
					6660	-83	Start transmitting

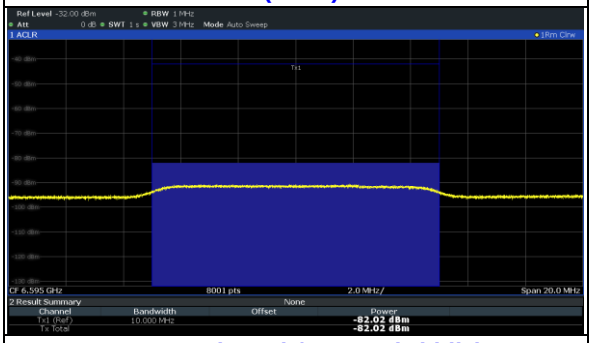
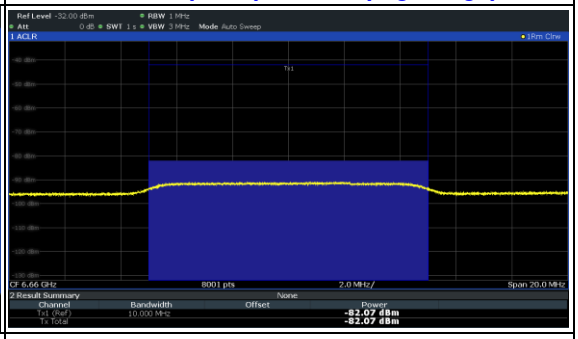
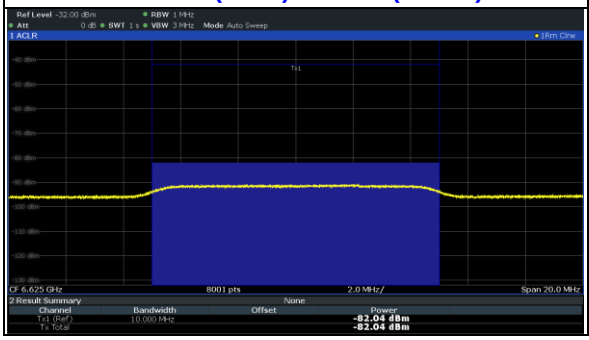
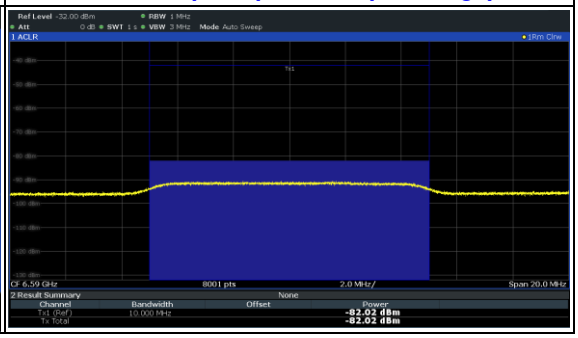
Plots of EUT Tx waveform

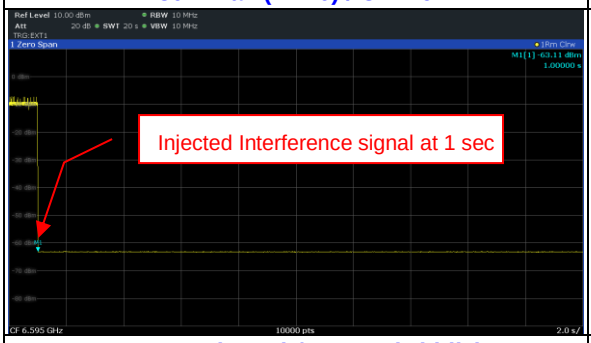
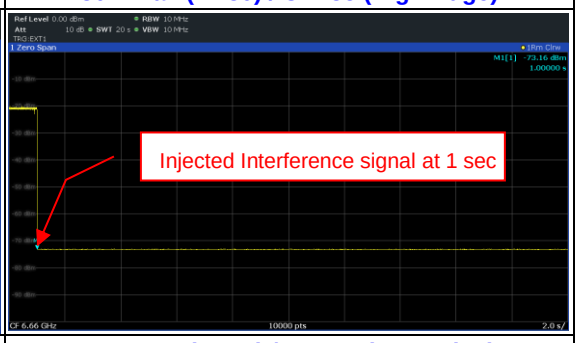
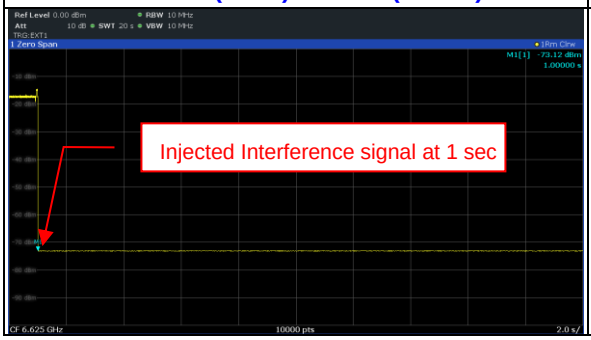
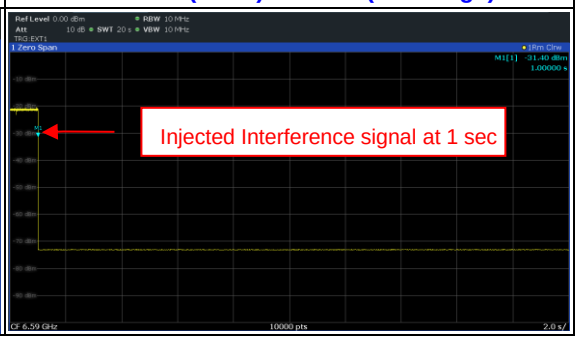
802.11ax (HE20) / CH129



802.11ax (HE80) / CH135



Plots of Incumbent signal(AWGN) Level	
802.11ax (HE20) / CH129	**802.11ax (HE80) / CH135 (High Edge)**
	
802.11ax (HE80) / CH135 (Middle)	**802.11ax (HE80) / CH135 (Low Edge)**
	

Plots of EUT ceased transmission in the time domain	
802.11ax (HE20) / CH129	**802.11ax (HE80) / CH135 (High Edge)**
	
802.11ax (HE80) / CH135 (Middle)	**802.11ax (HE80) / CH135 (Low Edge)**
	

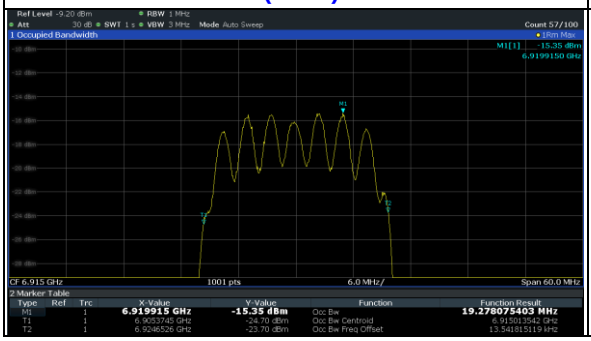
For U-NII-8 band

Contention Based Protocol Measurement									
Measurement Mode：		Conducted measurement		**The Incumbent Signal(AWGN) Level(dBm) :**			-82	at the antenna connector	
Device Type：		Indoor Client		**Antenna Gain(dBi) :**			-14.46		
Operation Mode	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Number of Times**	**Number of Detected**	**Detection Rate**	**Minimum Limit**	**Pass/Fail**
802.11ax	20	193	6915	6915	10	10	100%	90%	Pass
	80	199	6945	6910	10	10	100%	90%	Pass
				6945	10	10	100%	90%	Pass
				6980	10	10	100%	90%	Pass
Result	Complied								

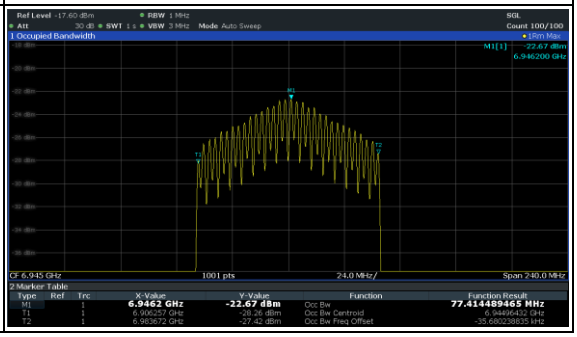
Lowest Interference (AWGN) Level Check							
Operation Band	**Operation Mode**	**Channel Bandwidth (MHz)**	**Channel Number**	**Channel Frequency (MHz)**	**AWGN Signal Frequency (MHz)**	**Threshold Level (dBm)**	**EUT Status**
U-NII 8	802.11ax	20	193	6915	6915	-83	Start transmitting
		80	199	6945	6910	-83	Start transmitting
					6945	-83	Start transmitting
					6980	-83	Start transmitting

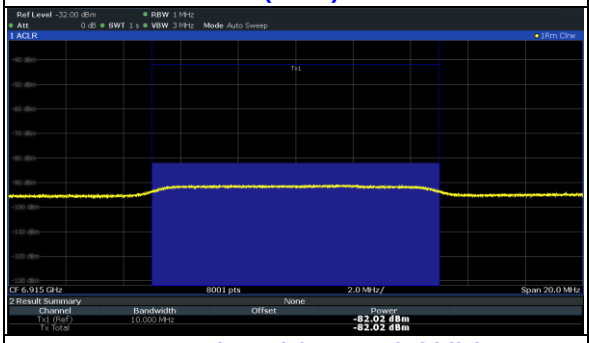
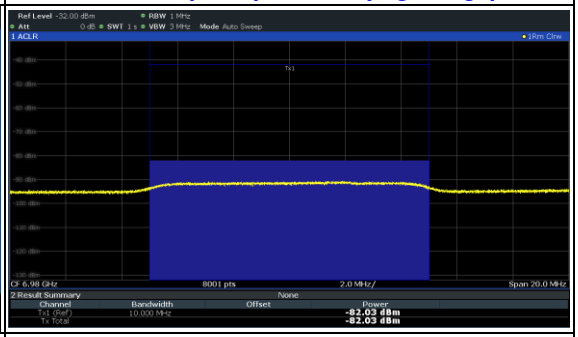
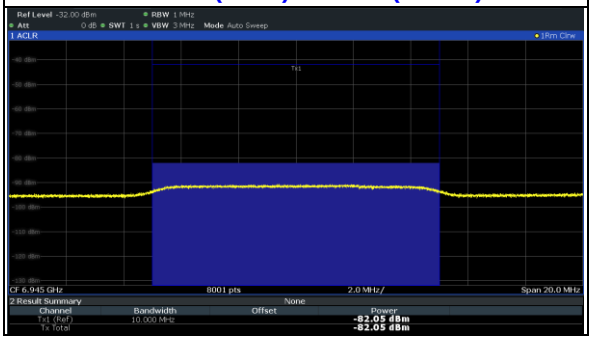
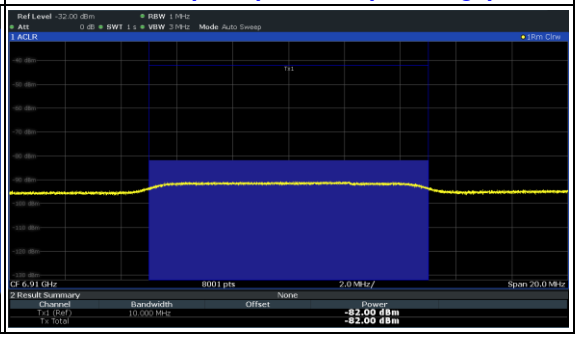
Plots of EUT Tx waveform

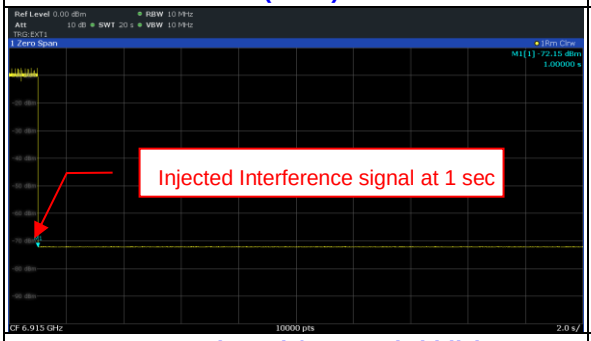
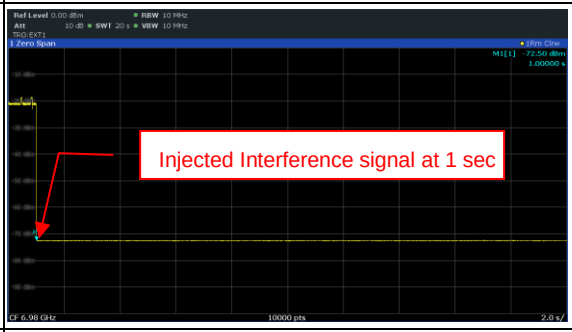
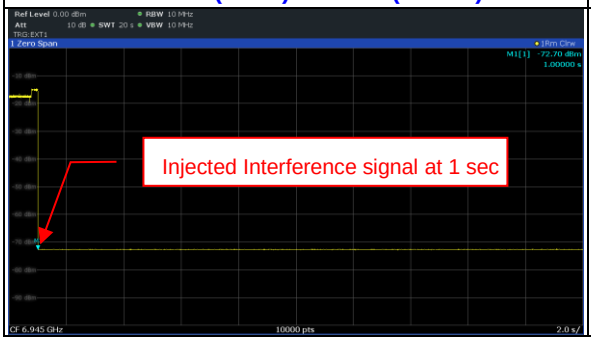
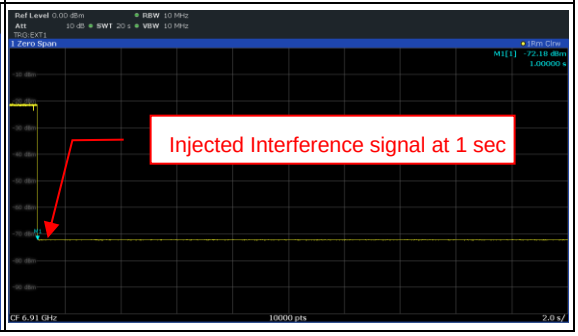
802.11ax (HE20) / CH193



802.11ax (HE80) / CH199



Plots of Incumbent signal(AWGN) Level	
802.11ax (HE20) / CH193	**802.11ax (HE80) / CH199 (High Edge)**
	
802.11ax (HE80) / CH199 (Middle)	**802.11ax (HE80) / CH199 (Low Edge)**
	

Plots of EUT ceased transmission in the time domain	
802.11ax (HE20) / CH193	**802.11ax (HE80) / CH199 (High Edge)**
	
802.11ax (HE80) / CH199 (Middle)	**802.11ax (HE80) / CH199 (Low Edge)**
	

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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