

FCC Test Report

Report No.: RFBARR-WTW-P20110181H

FCC ID: RAS-MT7921K

Test Model: MT7921K

Received Date: Jul. 29, 2021

Test Date: Aug. 06, 2021

Issued Date: Aug. 11, 2021

Applicant: MediaTek Inc.

Address: No. 1, Duxing 1st Rd., East District, Hsinchu City 300, Taiwan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RFBARR-WTW-P20110181H	Original release.	Aug. 11, 2021

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: Aug. 06, 2021

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 RF characteristics under the conditions specified in this report.

Prepared by :


Polly Chien / Specialist

Date:

Aug. 11, 2021

Approved by :


Bruce Chen / Senior Engineer

Date:

Aug. 11, 2021

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	N/A	Refer to Note 1 below
15.407(b)(5)(8)	Radiated Emissions	N/A	Refer to Note 1 below
15.407(b)(6)	In-Band Emission (Mask)	N/A	Refer to Note 1 below
15.407(a)(4/5/6/7/8)	Max Average Transmit Power	N/A	Refer to Note 1 below
15.407(a)(10)	Emission Bandwidth Measurement	N/A	Refer to Note 1 below
15.407(a)(4/5/6/7/8)	Peak Power Spectral Density	N/A	Refer to Note 1 below
15.407 (d)(6)	Contention-based Protocol	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	N/A	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	N/A	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 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 1GHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 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	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 in 2.4GHz 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.472GHz 5GHz: 5.18~5.32GHz, 5.50~5.72GHz, 5.745 ~ 5.825GHz 6GHz: 5.955 ~ 6.415GHz, 6.435 ~ 6.525GHz, 6.525 ~ 6.875GHz, 6.875 ~ 7.115GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 13 802.11n (HT40), VHT40, 802.11ax (HE40): 9 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 25 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 12 802.11ac (VHT80), 802.11ax (HE80): 6 6GHz: 802.11a/802.11ax (HE20): 59 802.11ax (HE40): 29 802.11ax (HE80): 14
Output Power	2.412 ~ 2.472 GHz: 815.903 mW 5.18 ~ 5.24 GHz: 143.816 mW 5.26 ~ 5.32GHz: 147.866 mW 5.5 ~ 5.72GHz: 156.514 mW 5.745 ~ 5.825 GHz: 193.138 mW 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-P20110181F-5 as the following:

◆ Software change.

2. The Software changes only affect the characteristics of CBP, according to the original report that we apply the worst condition of gain for CBP testing item (assumed antenna gain -20dBi).

3. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	Bluetooth
2	WLAN (5GHz / 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:

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	2.4~2.48355.15~5.85 5.92~7.125	PIFA	i-pex(MHF)	200	-	-
	Chain1	PSA	RFMTA311020EMMB301	1.71 4.82 3.31	2.4~2.48355.15~5.85 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	-	-

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	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	-	-

* 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.

5. The EUT incorporates a MIMO function:

2.4GHZ BAND		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX
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

Note:

1. The EUT doesn't support beamforming function.
2. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report.

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.

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

2 channel is provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
103	6465 MHz	*119	6545 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				

9 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
*187	6885 MHz						

4 channels are provided for 802.11ax (HE80):

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
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

5 channels are provided for 802.11ax (HE40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
195	6925 MHz	203	6965 MHz	211	7005 MHz
219	7045 MHz	227	7085 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
	6435-6515	97 to 113	97	OFDMA	BPSK	MCS0
	6535-6875	117 to 185	129	OFDMA	BPSK	MCS0
	6875-7115	185 to 233	193	OFDMA	BPSK	MCS0
802.11ax (HE80)	5985-6385	7 to 87	7	OFDMA	BPSK	MCS0
	6465-6525	103 to 119	103	OFDMA	BPSK	MCS0
	6545-6865	119 to 183	151	OFDMA	BPSK	MCS0
	6855-7025	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	Matthew Yang

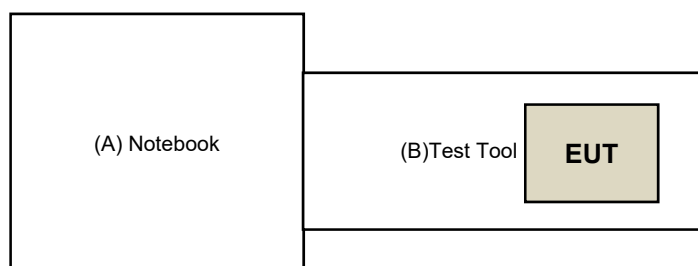
3.3 Description of Support Units

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	E5410	1HC2XM1	FCC DoC Approved	-
B.	Test Tool	Media Tek	MTK1849	NA	NA	Supplied by client

Note: 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.

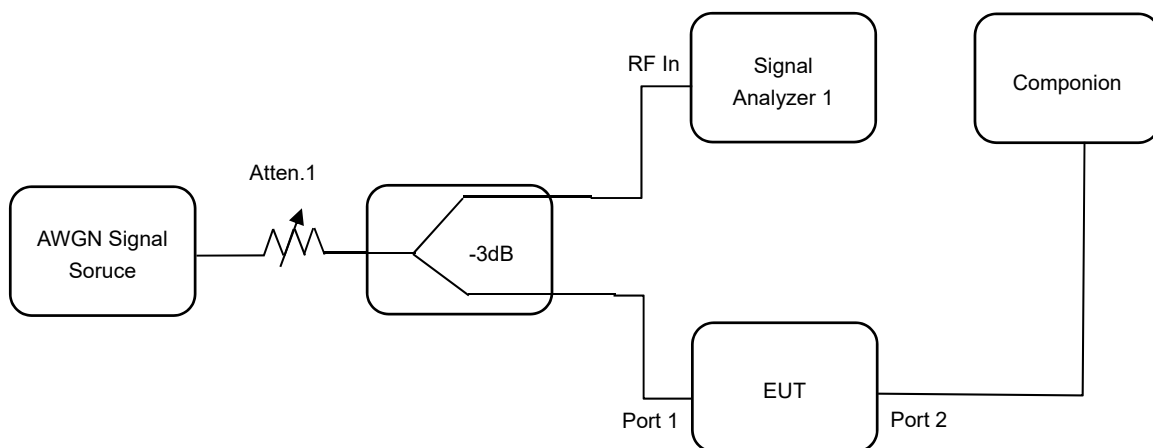
4 Test Types and Results

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
MXG Vector signal generator KEYSIGHT	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
Power Splitter/combiner Mini-Circuits	ZN2PD-9G	ZN2PD-9G	Jun. 24, 2020	Jun. 23, 2022
PXA Signal Analyzer KEYSIGHT	N9030B	MY57140938	Mar. 09, 2021	Mar. 08, 2022
N5182BU KEYSIGHT	N5182BU	MY59360204	Jan. 11, 2021	Jan. 10, 2022

NOTE: 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested Date: Aug. 06, 2021

4.1.4 Test Procedure

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

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

- 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.
- 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.
- Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
- 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.
- (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.
- 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

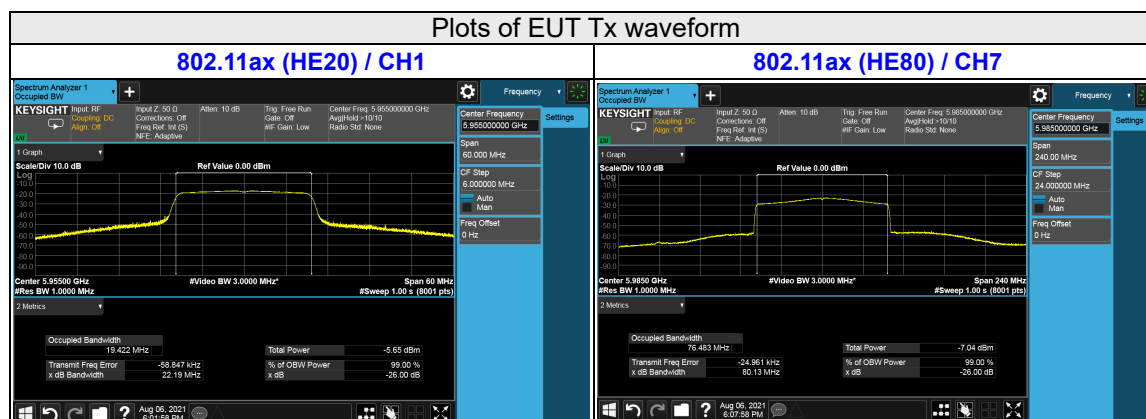
Set the EUT to transmit with a constant duty cycle and relative operating parameters which including power level, operating frequency, modulation and bandwidth.

4.1.6 Test Results

For U-NII-5 band

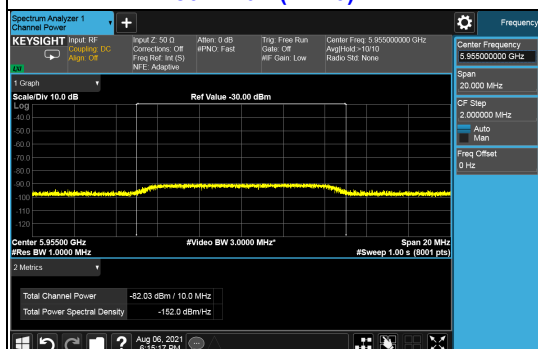
Contention Based Protocol Measurement									
Measurement Mode :		Conducted measurement		Device Type :		Indoor Client		at the antenna connector	
The lowest Incumbent Signal Level (ISL) at which EUT has ceased transmission (dBm)				-82		Antenna Gain :		-20	dBi
Operation Band	Operation Mode	Operation Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit
U-NII 5	802.11ax	20	1	5955	5955	10	10	100%	90%
		80	7	5985	5950	10	10	100%	90%
					5985	10	10	100%	90%
					6020	10	10	100%	90%
Result	Complied								

Note: A more stringent test level assuming a -20dBi antenna gain was used (-62dBm + -20dBi antenna gain = -82dBm).

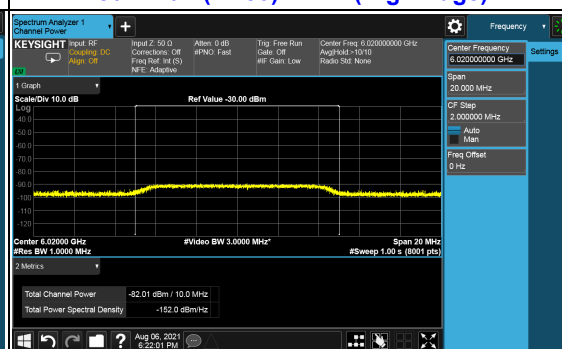


Plots of Incumbent signal (AWGN) level

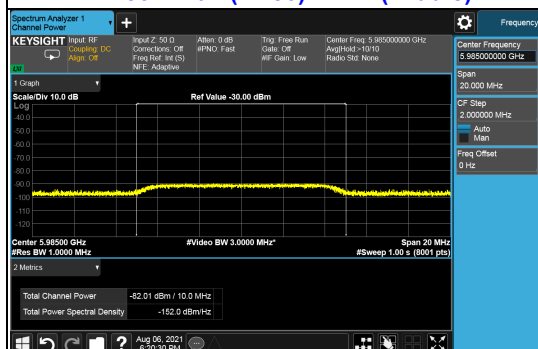
802.11ax (HE20) / CH1



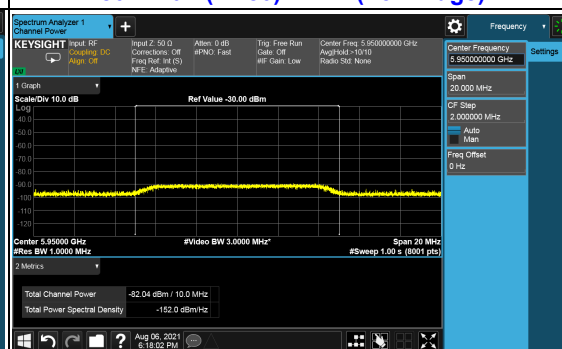
802.11ax (HE80) / CH7 (High Edge)



802.11ax (HE80) / CH7 (Middle)

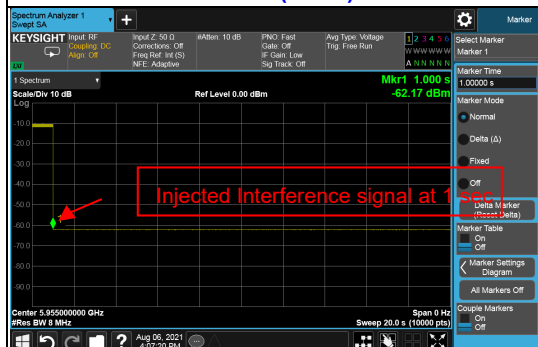


802.11ax (HE80) / CH7 (Low Edge)

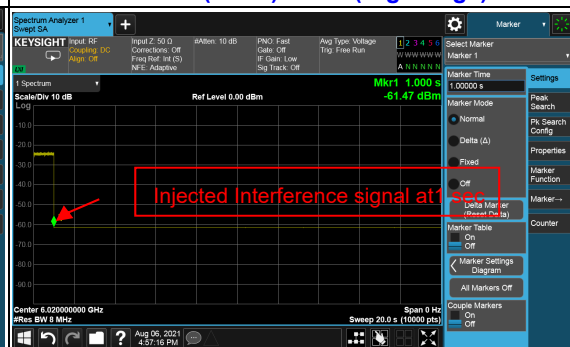


Plots of EUT ceased transmission in the time domain

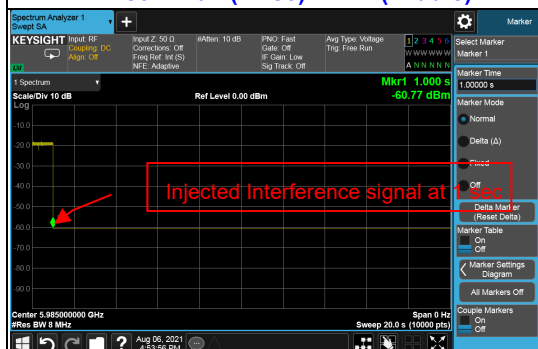
802.11ax (HE20) / CH1



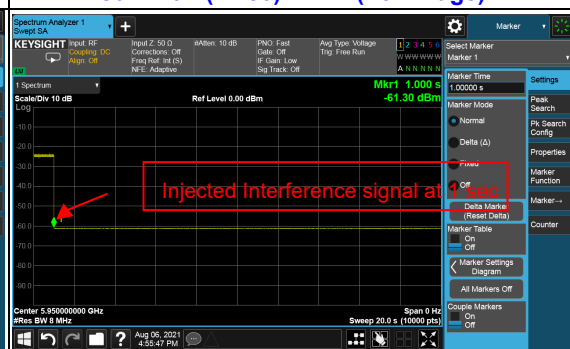
802.11ax (HE80) / CH7 (High Edge)



802.11ax (HE80) / CH7 (Middle)



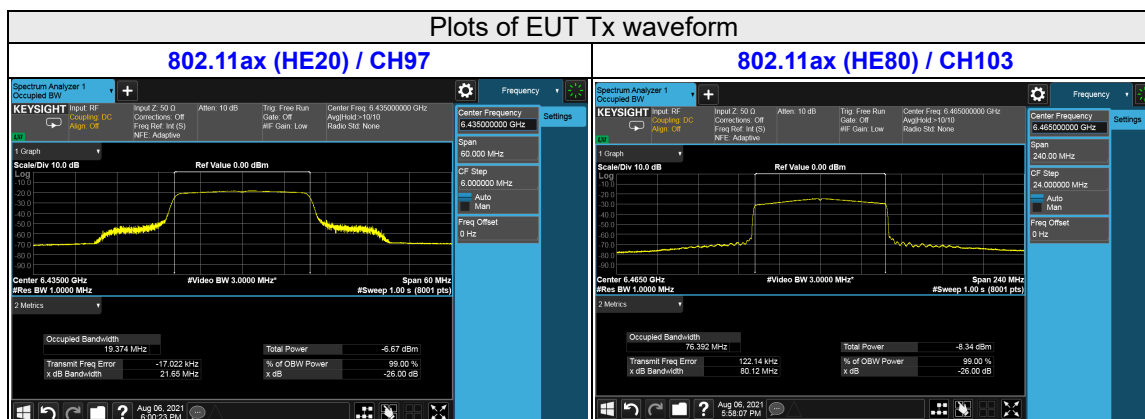
802.11ax (HE80) / CH7 (Low Edge)



For U-NII-6 band

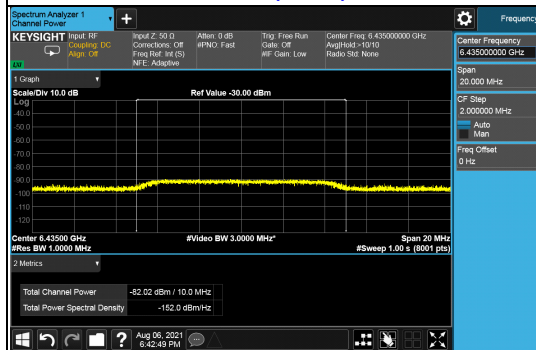
Contention Based Protocol Measurement									
Measurement Mode :		Conducted measurement		Device Type :		Indoor Client		at the antenna connector	
The lowest Incumbent Signal Level (ISL) at which EUT has ceased transmission (dBm)				-82		Antenna Gain :		-20	dBm
Operation Band	Operation Mode	Operation Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit
U-NII 6	802.11ax	20	97	6435	6435	10	10	100%	90%
		80	103	6465	6430	10	10	100%	90%
					6465	10	10	100%	90%
					6500	10	10	100%	90%
Result	Complied								

Note: A more stringent test level assuming a -20dBi antenna gain was used (-62dBm + -20dBi antenna gain = -82dBm).

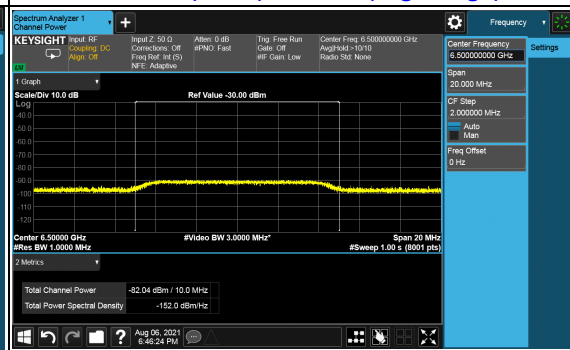


Plots of Incumbent signal (AWGN) level

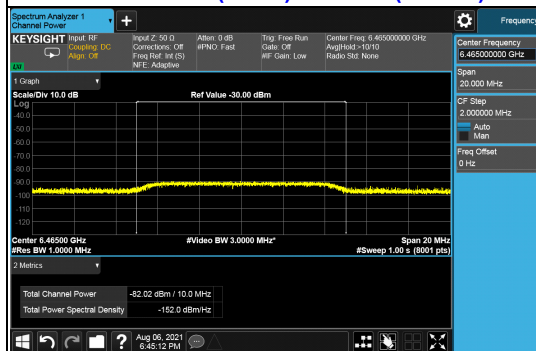
802.11ax (HE20) / CH97



802.11ax (HE80) / CH103 (High Edge)



802.11ax (HE80) / CH103 (Middle)

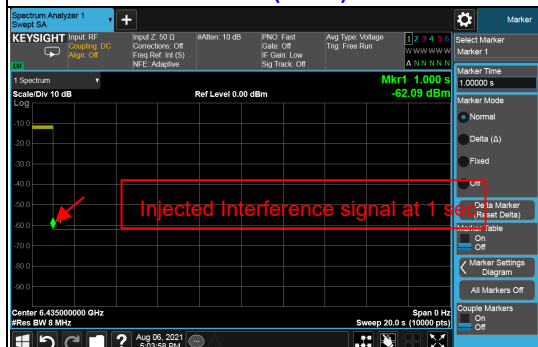


802.11ax (HE80) / CH103 (Low Edge)

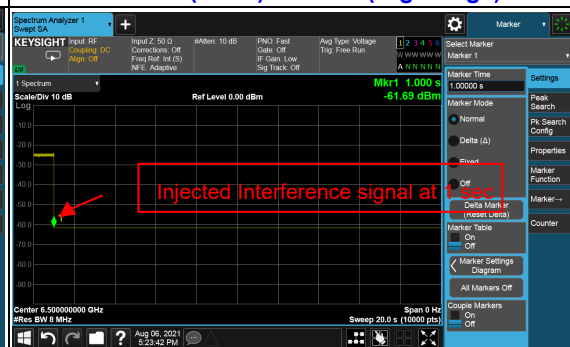


Plots of EUT ceased transmission in the time domain

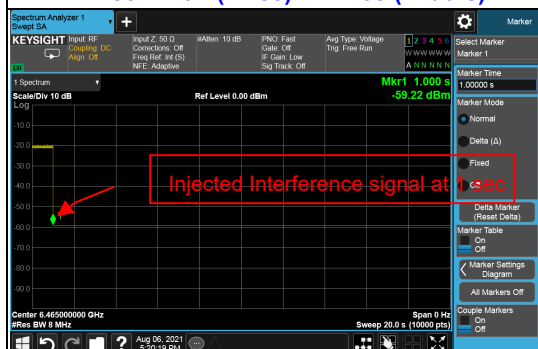
802.11ax (HE20) / CH97



802.11ax (HE80) / CH103 (High Edge)



802.11ax (HE80) / CH103 (Middle)



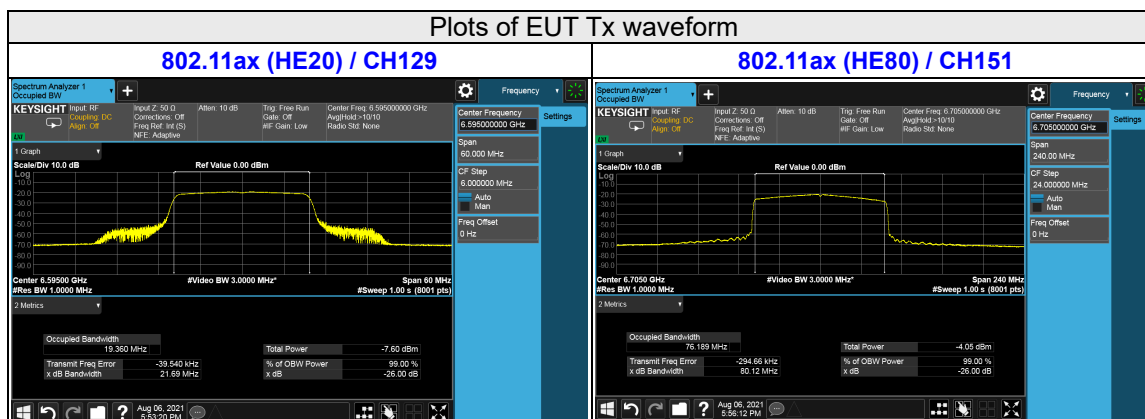
802.11ax (HE80) / CH103 (Low Edge)



For U-NII-7 band

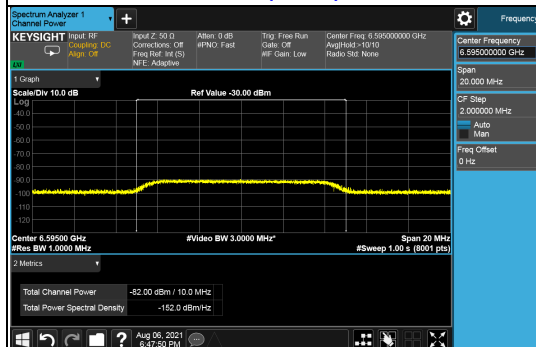
Contention Based Protocol Measurement									
Measurement Mode :		Conducted measurement		Device Type :		Indoor Client		at the antenna connector	
The lowest Incumbent Signal Level (ISL) at which EUT has ceased transmission (dBm)				-82		Antenna Gain :		-20	dBi
Operation Band	Operation Mode	Operation Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit
U-NII 7	802.11ax	20	129	6595	6595	10	10	100%	90%
		80	151	6705	6670	10	10	100%	90%
					6705	10	10	100%	90%
					6740	10	10	100%	90%
Result	Complied								

Note: A more stringent test level assuming a -20dBi antenna gain was used (-62dBm + -20dBi antenna gain = -82dBm).

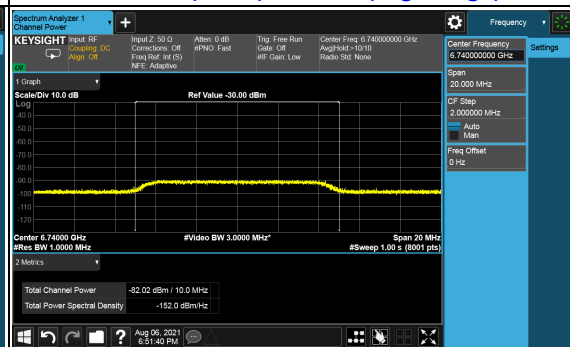


Plots of Incumbent signal (AWGN) level

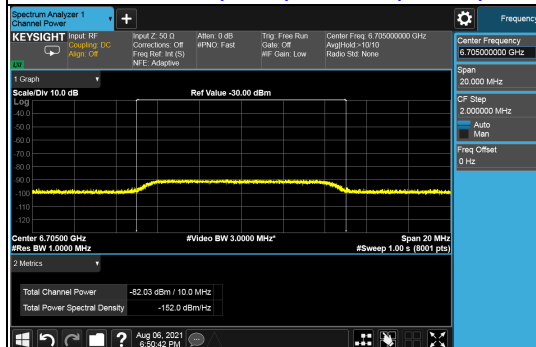
802.11ax (HE20) / CH129



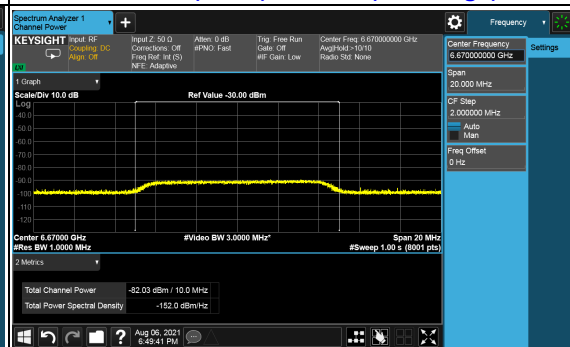
802.11ax (HE80) / CH151 (High Edge)



802.11ax (HE80) / CH151 (Middle)

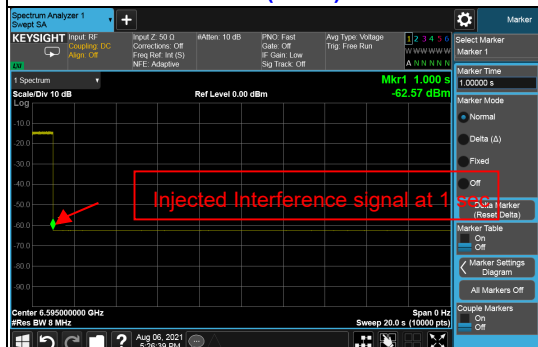


802.11ax (HE80) / CH151 (Low Edge)

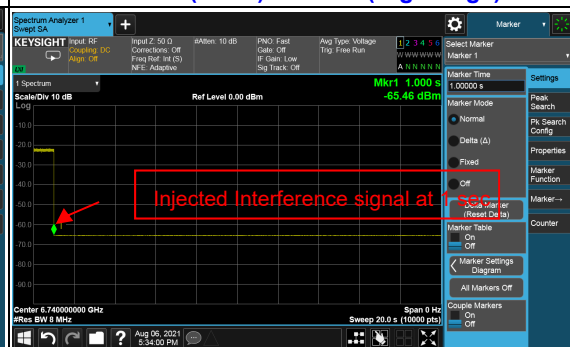


Plots of EUT ceased transmission in the time domain

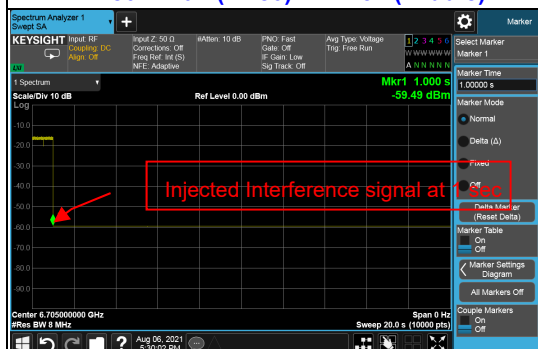
802.11ax (HE20) / CH129



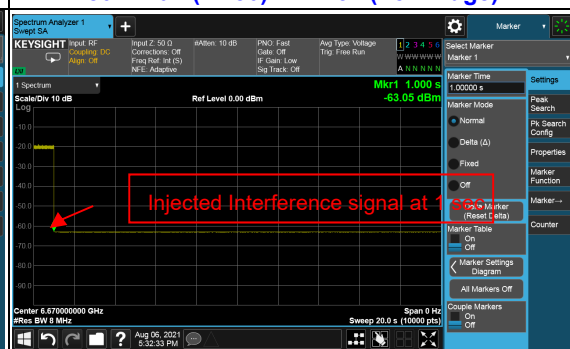
802.11ax (HE80) / CH151 (High Edge)



802.11ax (HE80) / CH151 (Middle)



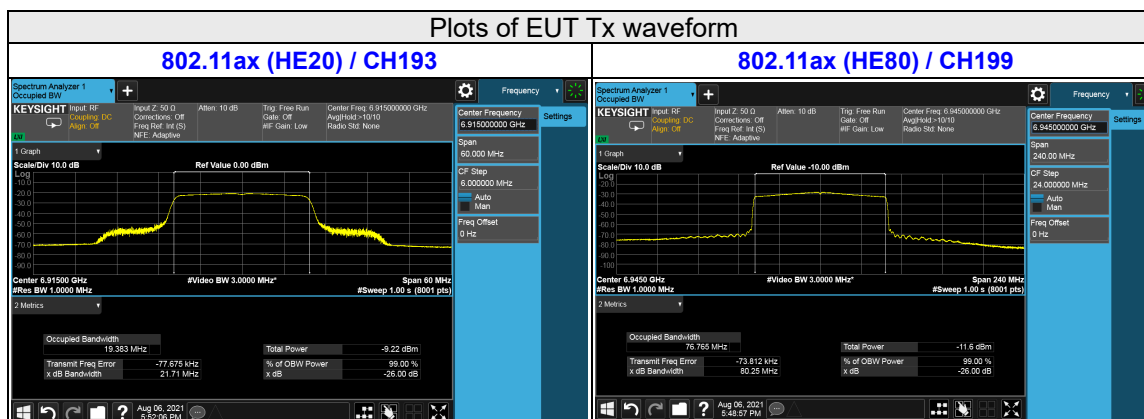
802.11ax (HE80) / CH151 (Low Edge)



For U-NII-8 band

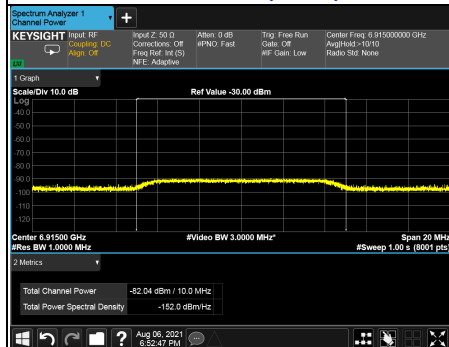
Contention Based Protocol Measurement									
Measurement Mode :		Conducted measurement		Device Type :		Indoor Client		at the antenna connector	
The lowest Incumbent Signal Level (ISL) at which EUT has ceased transmission (dBm)				-82		Antenna Gain :		-20	dBi
Operation Band	Operation Mode	Operation Bandwidth (MHz)	Channel Number	Channel Frequency (MHz)	Test Signals Frequency (MHz)	Number of Times	Number of Detected	Detection Rate	Limit
U-NII 8	802.11ax	20	193	6915	6915	10	10	100%	90%
		80	199	6945	6910	10	10	100%	90%
					6945	10	10	100%	90%
					6980	10	10	100%	90%
Result	Complied								

Note: A more stringent test level assuming a -20dBi antenna gain was used (-62dBm + -20dBi antenna gain = -82dBm).

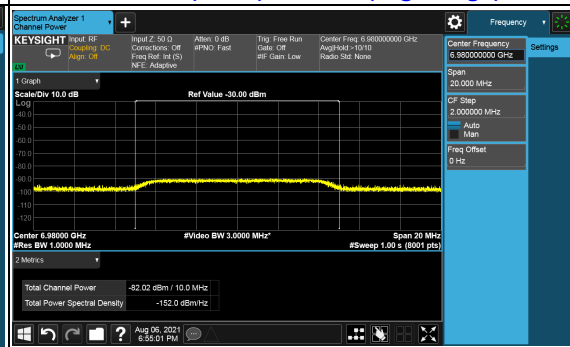


Plots of Incumbent signal (AWGN) level

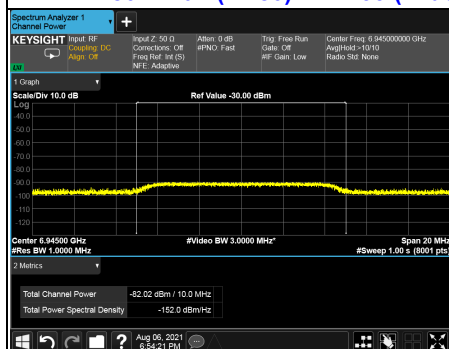
802.11ax (HE20) / CH193



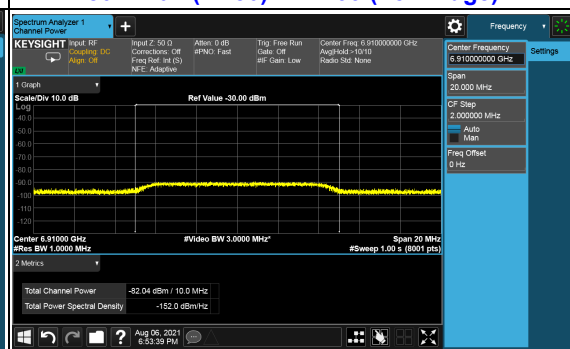
802.11ax (HE80) / CH199 (High Edge)

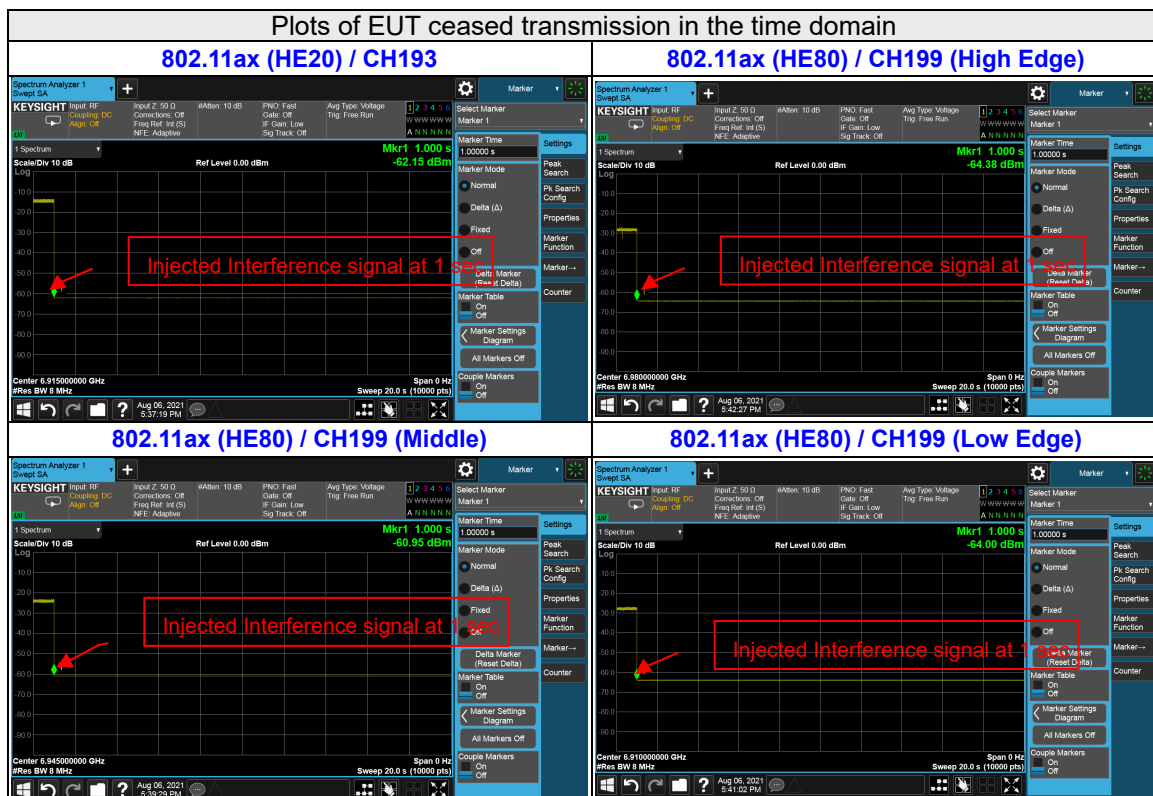


802.11ax (HE80) / CH199 (Middle)



802.11ax (HE80) / CH199 (Low Edge)





5 Pictures of Test Arrangements

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

Appendix A– 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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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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