



FCC RADIO TEST REPORT

FCC ID : QYLAX210NG
Equipment : WLAN Module
Brand Name : Getac
Model Name : AX210NGW
Applicant : Getac Technology Corporation.
5F., Building A, No. 209, Sec. 1, Nangang Rd.,
Nangang Dist., Taipei City 11568, Taiwan, R.O.C.
Standard : FCC Part 15 Subpart E §15.407

The product was received on Nov. 15, 2021 and testing was performed from Dec. 02, 2021 to Feb. 10, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR1O0537F	01	Initial issue of report	Jan. 27, 2022
FR1O0537F	02	1. Revise description 2. Add test data	Feb. 11, 2022
FR1O0537F	03	Revise Brand Name, SKU List, Test Mode, description and List of Measuring Equipment	Mar. 01, 2022



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403(i) 15.407(a)(10)	26dB Emission Bandwidth	-	See Note
-	2.1049	99% Occupied Bandwidth	-	See Note
3.1	15.407(a)(8)	Maximum Conducted Output Power	Reporting only	-
3.1	15.407(a)(8)	Fundamental Maximum EIRP	Pass	-
-	15.407(a)(8)	Fundamental Power Spectral Density	-	See Note
-	15.407(b)(6)	In-Band Emissions (Channel Mask)	-	See Note
3.2	15.407(d)(6)	Contention Based Protocol	Pass	-
3.3	15.407(b)	Unwanted Emissions	Pass	-
3.4	15.207	AC Conducted Emission	Pass	-
3.5	15.203 15.407(a)	Antenna Requirement	Pass	-

Note: The module (Model: AX210NGW) makes no difference after verifying output power, this report reuses test data from the module report.

Declaration of Conformity:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Uncertainty of Evaluation"
Comments and Explanations:
The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Yun Huang

Report Producer: Vivian Hsu



1 General Description

1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, and Wi-Fi 6GHz 802.11a/n/ac/ax

Product Feature	
Sample 1	EUT with Host 1
Sample 2	EUT with Host 2
Sample 3	EUT with Host 3
Sample 4	EUT with Host 4
Sample 5	EUT with Host 5
Antenna Type	WLAN: <Main>: PIFA Antenna <Aux.>: PIFA Antenna Bluetooth: PIFA Antenna

Antenna information		
5925 MHz ~ 6425 MHz	Peak Gain (dBi)	Main: 3.57 Aux.: 2.69
6425 MHz ~ 6525 MHz	Peak Gain (dBi)	Main: 0.23 Aux.: -0.52
6525 MHz ~ 6875 MHz	Peak Gain (dBi)	Main: -0.44 Aux.: -0.35
6875 MHz ~ 7125 MHz	Peak Gain (dBi)	Main: -0.96 Aux.: -1.32

Remark:

1. The above EUT's information is declared by manufacturer. Please refer to Comments and Explanations in report summary.
2. MIMO Ant. Main + Aux. Directional Gain is a calculated result from MIMO Ant. Main and MIMO Ant. Aux. The formula used in calculation is documented in section 3.5.
3. Power of MIMO Ant. Main + Ant. Aux. is a calculated result from sum of the power MIMO Ant. Main and MIMO Ant. Aux.



The product was installed into Notebook (Brand Name: Getac, Model Name: X600, X600 Pro X600Y (Y= 10 characters, Y can be 0-9, a-z, A-Z, “-“, “_” or blank for marketing purpose and no impact safety related critical components and constructions.)) during test, which can be referred the following information:

Host Information	
Host 1	SKU A
Host 2	SKU B
Host 3	SKU C
Host 4	SKU D
Host 5	SKU E

SKU List					
DVT SKUs	SKU A (STD)	SKU B (STD)	SKU C (STD)	SKU D (Pro)	SKU E (Pro)
CPU	I5-11500H	I5-11500H	I5-11500H	I7-11850H	I7-11850H
Display	B156HTN03.8 , AUO	B156HTN03.8 , AUO	B156HTN03.8 , AUO	B156HTN03.8 , AUO	B156HTN03.8 , AUO
Camera	FO20FF-790H , FOXLINK	FO20FF-790H , FOXLINK	FO20FF-790H , FOXLINK	FN20FF-679H, FOXLINK	FN20FF-679H, FOXLINK
MXM	w/o MXM	Nvidia RTX3000	Nvidia GTX1650	Nvidia RTX3000	Nvidia GTX1650
Memory	16GB	16GB	16GB	32GB	32GB
Main storage	512GB	512GB	512GB	1TB	1TB
Second storage	512GB	512GB	512GB	1TB	1TB
Third storage	512GB	512GB	512GB	1TB	1TB
Touch pad	TP-PCT3854	TP-PCT3854	TP-PCT3854	TP-PCT3854	TP-PCT3854
Smart card	Yes	Yes	Yes	Yes	Yes
SD card	No	No	No	Yes	Yes
PCMCIA/EXPRESS card	PCMCIA	PCMCIA	PCMCIA	N/A	N/A
Wifi+BT	AX210NGW	AX210NGW	AX210NGW	AX210NGW	AX210NGW
WWAN	w/o WWAN	EM7511	EM7511	EM7511	EM7511
GPS/GNSS	Mc-1010-V2b	combo with WWAN	combo with WWAN	combo with WWAN	combo with WWAN
AC adapter	FSP150-ABBN3	FSP230-AJAN3	FSP230-AJAN3	FSP230-AJAN3	FSP230-AJAN3
	THP0K15W4A5-1 G	THP0K23W4A5-1 G	THP0K23W4A5-1 G	THP0K23W4A5-1 G	THP0K23W4A5-1 G
FPR	ETU-811JG	ETU-811JG	ETU-811JG	N/A	ETU-811JG
RFID	NA	NA	NA	NA	NA
Main Battery	BP3S2P3450P-0 2	BP3S2P3450P-0 2	BP3S2P3450P-0 2	BP3S2P3450P-0 2	BP3S2P3450P-0 2
Optional IO	RS232	RS232	RS232	VGA	VGA
Pass through	No	No	No	Yes	Yes
Expansion	NA	NA	NA	RS232/RS422 x1	RS232/RS422 x1
				PCMCIA x1 + Express card x1	PCMCIA x1 + Express card x1
ODD	NA	NA	NA	BDR-UD03ASW, PIONEER	BDR-UD03ASW, PIONEER
2nd Battery	NA	NA	NA	BP3S2P2100S-0 3	BP3S2P2100S-0 3
Connectivity module	NA	NA	NA	4 RJ45 module	4 RJ45 module



1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH11-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW3786

1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

BW 20M	Channel	1	5	9	13	17	21	25	29
	Freq. (MHz)	5955	5975	5995	6015	6035	6055	6075	6095
BW 40M	Channel	3		11		19		27	
	Freq. (MHz)	5965		6005		6045		6085	
BW 80M	Channel	7				23			
	Freq. (MHz)	5985				6065			
BW 160M	Channel	15							
	Freq. (MHz)	6025							

BW 20M	Channel	33	37	41	45	49	53	57	61
	Freq. (MHz)	6115	6135	6155	6175	6195	6215	6235	6255
BW 40M	Channel	35		43		51		59	
	Freq. (MHz)	6125		6165		6205		6245	
BW 80M	Channel	39				55			
	Freq. (MHz)	6145				6225			
BW 160M	Channel	47							
	Freq. (MHz)	6185							

BW 20M	Channel	65	69	73	77	81	85	89	93
	Freq. (MHz)	6275	6295	6315	6335	6355	6375	6395	6415
BW 40M	Channel	67		75		83		91	
	Freq. (MHz)	6285		6325		6365		6405	
BW 80M	Channel	71				87			
	Freq. (MHz)	6305				6385			
BW 160M	Channel	79							
	Freq. (MHz)	6345							



BW 20M	Channel	97	101	105	109	113	117	121	125
	Freq. (MHz)	6435	6455	6475	6495	6515	6535	6555	6575
BW 40M	Channel	99		107		115		123	
	Freq. (MHz)	6445		6485		6525		6565	
BW 80M	Channel	103				119			
	Freq. (MHz)	6465				6545			
BW 160M	Channel	111							
	Freq. (MHz)	6505							

BW 20M	Channel	129	133	137	141	145	149	153	157
	Freq. (MHz)	6595	6615	6635	6655	6675	6695	6715	6735
BW 40M	Channel	131		139		147		155	
	Freq. (MHz)	6605		6645		6685		6725	
BW 80M	Channel	135				151			
	Freq. (MHz)	6625				6705			
BW 160M	Channel	143							
	Freq. (MHz)	6665							

BW 20M	Channel	161	165	169	173	177	181	185	189
	Freq. (MHz)	6755	6775	6795	6815	6835	6855	6875	6895
BW 40M	Channel	163		171		179		187	
	Freq. (MHz)	6765		6805		6845		6885	
BW 80M	Channel	167				183			
	Freq. (MHz)	6785				6865			
BW 160M	Channel	175							
	Freq. (MHz)	6825							

BW 20M	Channel	193	197	201	205	209	213	217	221
	Freq. (MHz)	6915	6935	6955	6975	6995	7015	7035	7055
BW 40M	Channel	195		203		211		219	
	Freq. (MHz)	6925		6965		7005		7045	
BW 80M	Channel	199				215			
	Freq. (MHz)	6945				7025			
BW 160M	Channel	207							
	Freq. (MHz)	6985							



BW 20M	Channel	225	229
	Freq. (MHz)	7075	7095
BW 40M	Channel	227	
	Freq. (MHz)	7085	

2.2 Test Mode

This device does not support Wi-Fi 6GHz partial RU.

The final test modes consider the modulation and the worst data rates as shown in the table below.

Single Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0
802.11ac VHT160	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0

MIMO Mode

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0
802.11ac VHT160	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0



Test Cases	
AC Conducted Emission	Mode 1: WLAN (6GHz) Link + Bluetooth Link + H-Pattern + Earphone + Battery 1 + USB Cable (Charging from AC Adapter 1) for Sample 1 Mode 2: LTE Band 7 Link + WLAN (6GHz) Link + Bluetooth Link + H-Pattern + Earphone + Battery 1 + USB Cable (Charging from AC Adapter 2) for Sample 2 Mode 3: LTE Band 7 Link + WLAN (6GHz) Link + Bluetooth Link + H-Pattern + Earphone + Battery 1 + Battery 2 + USB Cable (Charging from AC Adapter 4) for Sample 4 Mode 4: LTE Band 7 Link + WLAN (6GHz) Link + Bluetooth Link + H-Pattern + Earphone + Battery 1 + Battery 2 + USB Cable (Charging from AC Adapter 4) for Sample 5
Remark: 1. The worst case of Conducted Emission is mode 2; only the test data of it was reported. 2. For Radiated Test Cases, the tests were performed with Adapter 2, Battery 1, and Sample 2.	



Ch. #		UNII-5 (5925-6425 MHz)	UNII-6 (6425-6525 MHz)	UNII-7 (6525-6875 MHz)	UNII-8 (6875-7125 MHz)
		802.11n HT20	802.11n HT20	802.11n HT20	802.11n HT20
L	Low	-	-	-	-
M	Middle	-	-	-	-
H	High	-	-	-	229
Straddle		-	-	-	-

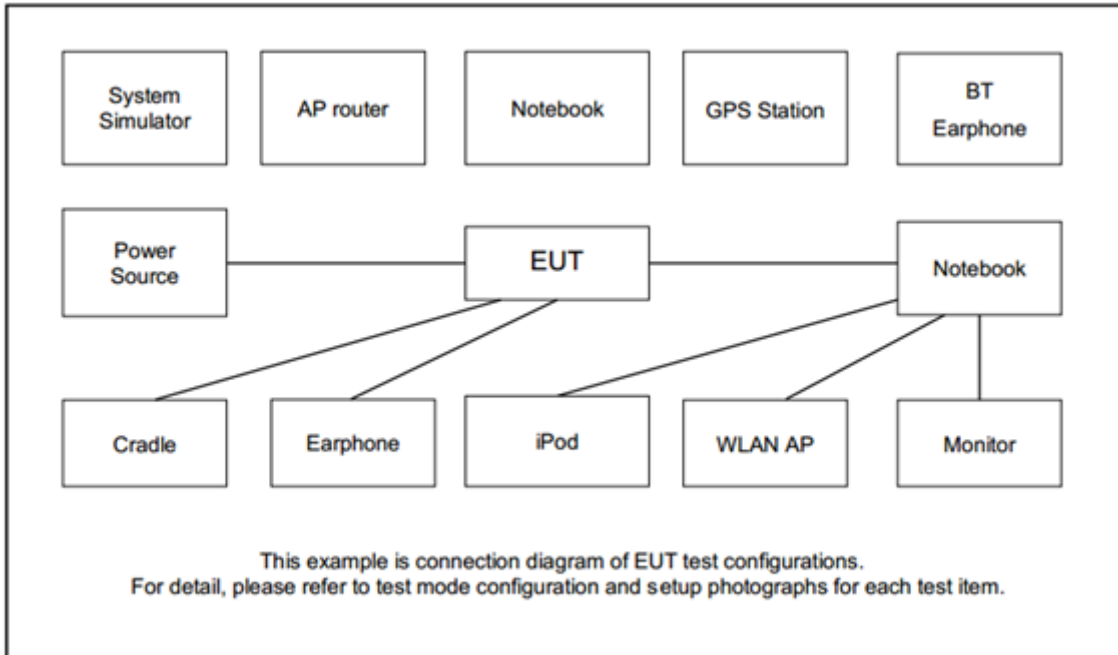
Ch. #		UNII-5 (5925-6425 MHz)	UNII-6 (6425-6525 MHz)	UNII-7 (6525-6875 MHz)	UNII-8 (6875-7125 MHz)
		802.11ax HE40	802.11ax HE40	802.11ax HE40	802.11ax HE40
L	Low	003	-	-	-
M	Middle	-	-	-	-
H	High	-	-	-	-
Straddle		-	-	-	-

Ch. #		UNII-5 (5925-6425 MHz)	UNII-6 (6425-6525 MHz)	UNII-7 (6525-6875 MHz)	UNII-8 (6875-7125 MHz)
		802.11ax HE80	802.11ax HE80	802.11ax HE80	802.11ax HE80
L	Low	007		-	-
M	Middle	-		-	-
H	High	-		-	-
Straddle		-	-	-	-

Ch. #		UNII-5 (5925-6425 MHz)	UNII-6 (6425-6525 MHz)	UNII-7 (6525-6875 MHz)	UNII-8 (6875-7125 MHz)
		802.11ax HE160	802.11ax HE160	802.11ax HE160	802.11ax HE160
L	Low	015			
M	Middle	-			
H	High	-			
Straddle		-	-	-	-

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	WLAN AP	ASUS	GT-AXE11000	MSQ-RTAXJF00	N/A	Unshielded,1.8m
4.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
5.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P : Unshielded, 1.2m DC O/P : Shielded, 1.8m

2.5 EUT Operation Test Setup

The RF test items, utility “DRTU Version 22.21070.0.0-OEM.DRTU12463” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum conducted Output Power and Fundamental Maximum EIRP Measurement

3.1.1 Limit of Fundamental Maximum EIRP

<FCC 14-30 CFR 15.407>

(a)(8) For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

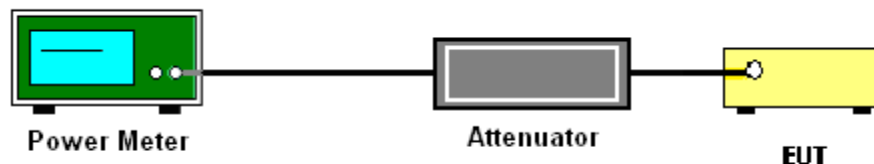
3.1.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.1.4 Test Setup



3.1.5 Test Result of Fundamental Maximum EIRP

Please refer to Appendix A.



3.2 Contention Based Protocol

3.2.1 Limit of Contention Based Protocol

<FCC 14-30 CFR 15.407>

(d)(6) Indoor access points, subordinate devices and client devices operating in the 5.925-7.125 GHz band must employ a contention-based protocol.

FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain. To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

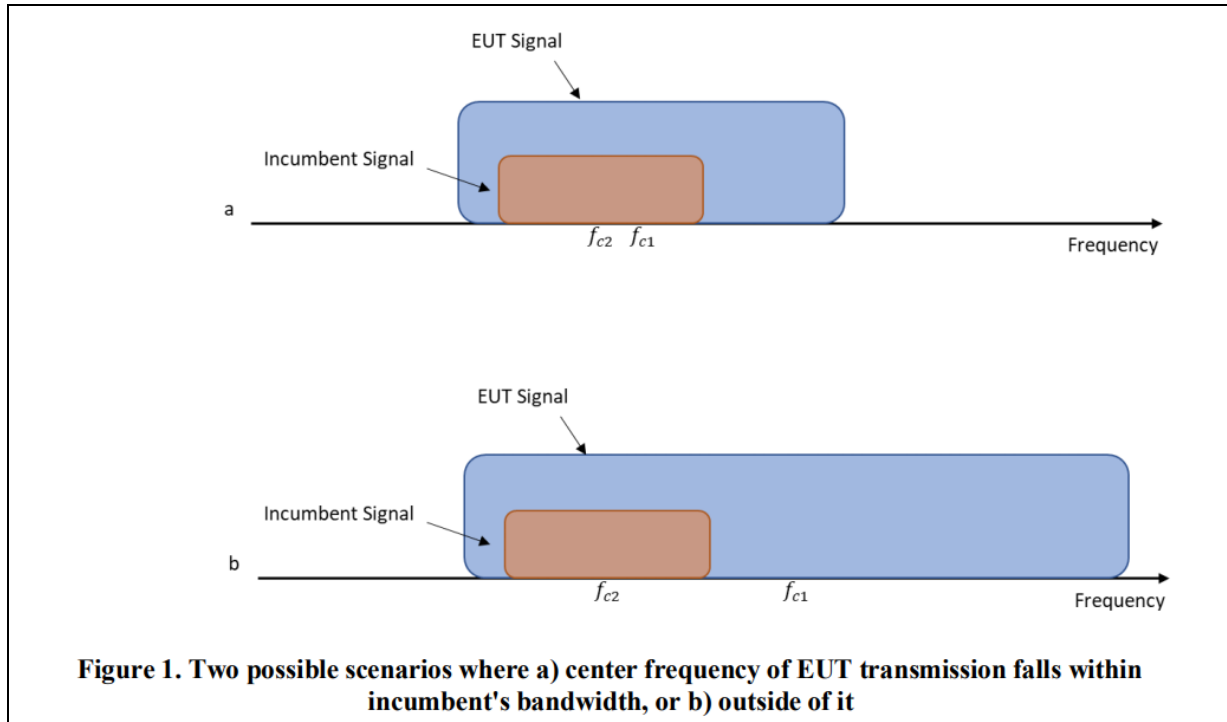
where:

BW_{EUT} : Transmission bandwidth of EUT signal

BW_{Inc} : Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)

f_{c1} : Center frequency of EUT transmission

f_{c2} : Center frequency of simulated incumbent signal



3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

The testing follows FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v01.

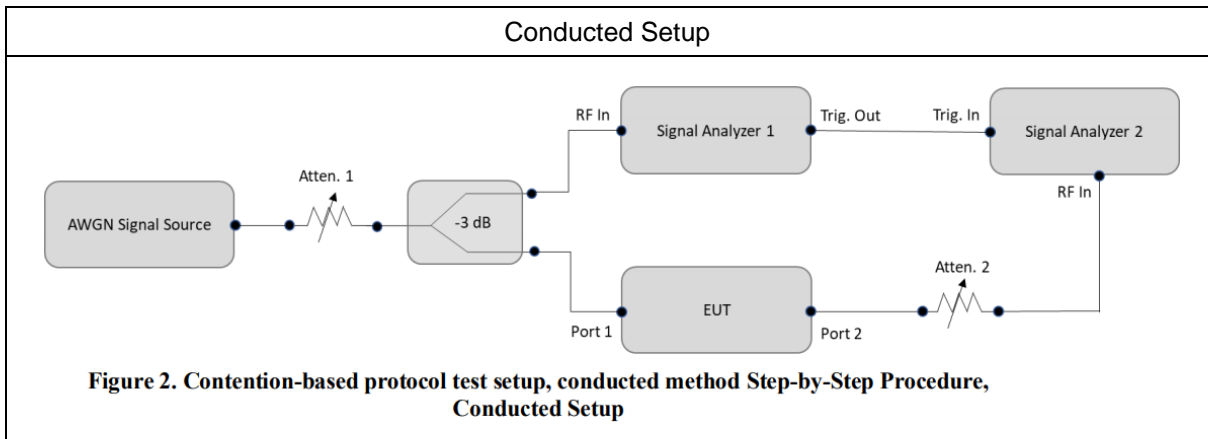
Section I) Contention Based Protocol

Conducted method Step-by-Step Procedure, Conducted Setup

1. Configure the EUT to transmit with a constant duty cycle.
2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
3. 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.
4. Connect the output port of the EUT to the signal analyzer 2, as shown in test setup Figure 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
5. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.
6. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
7. 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 as shown in test setup Figure 2.

8. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
9. 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.
10. (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.
11. Refer to Table 1 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 5, choose a different center frequency for the AWGN signal and repeat the process.
12. For the contention-based protocol test where only one channel in each supported sub-band needs to be tested. The narrowest and widest bandwidth in each channel shall be measured EUT was driven in MIMO mode, the interferer level was injected to both chains to monitor the performance, while the interferer level is determined according the lowest antenna gain among both antennas (i.e, lower interferer level).

3.2.4 Test Setup



3.2.5 Support Unit used in test configuration and system

Instrument	Brand Name	Model No.	Characteristics
WLAN AP	NETGEAR	RAXE500	Dual Band AP
Notebook	Acer	N15C1	LAN



3.2.6 Test Summary of Contention Based Protocol Test

Test Engineer :	Kai Liao	Temperature :	24~26°C
		Relative Humidity :	45~50%

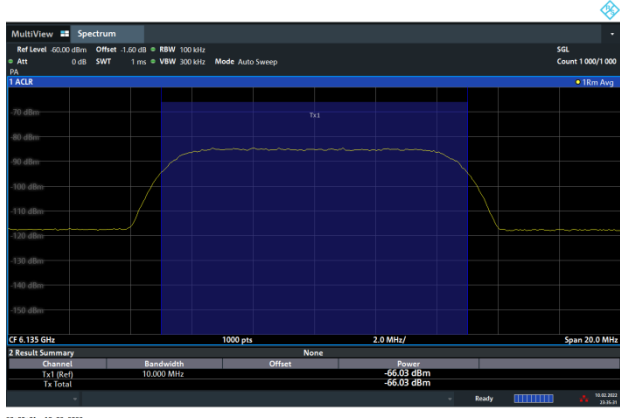
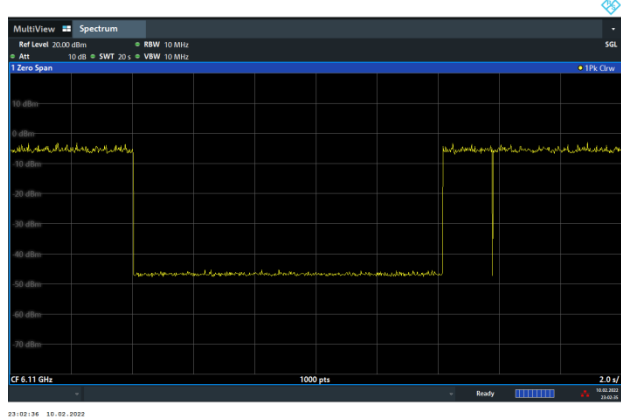
Band	Channel Freq. (MHz)	Channel BW (MHz)	Incumbent freq. (MHz)	Measured Detection level (dBm)	Detection Rate (%)	Regulated Threshold level (dBm)	Margin (dB)
UNII Band 5	6135	20	6135	-66.03	100	-59.31	6.72
	6185	160	6110	-72.06	100	-59.31	12.75
			6185	-66.77	100	-59.31	7.46
			6260	-65.8	100	-59.31	6.49
UNII Band 6	6455	20	6455	-66.79	100	-62.52	4.27
	6505	160	6430	-73.1	100	-62.52	10.58
			6505	-67.05	100	-62.52	4.53
			6580	-65.53	100	-62.52	3.01
UNII Band 7	6695	20	6695	-66.38	100	-62.44	3.94
	6665	160	6590	-66.61	100	-62.44	4.17
			6665	-69.43	100	-62.44	6.99
			6740	-73.04	100	-62.44	10.6
UNII Band 8	7015	20	7015	-65.89	100	-63.32	2.57
	6985	160	6910	-65.97	100	-63.32	2.65
			6985	-68.19	100	-63.32	4.87
			7060	-71.94	100	-63.32	8.62

Note: Threshold Level (TL) = -62dBm + minimum antenna gain



3.2.7 Test Plots of Contention Based Protocol Test

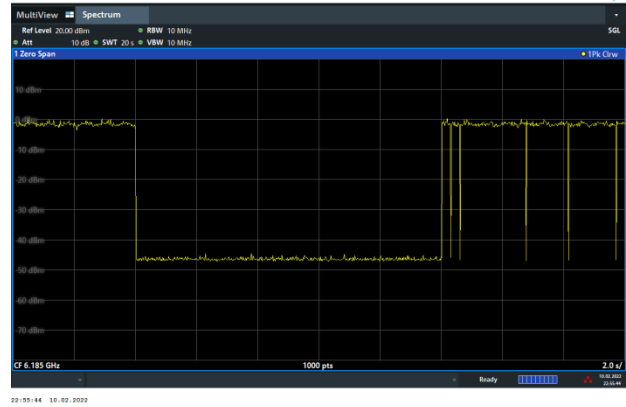
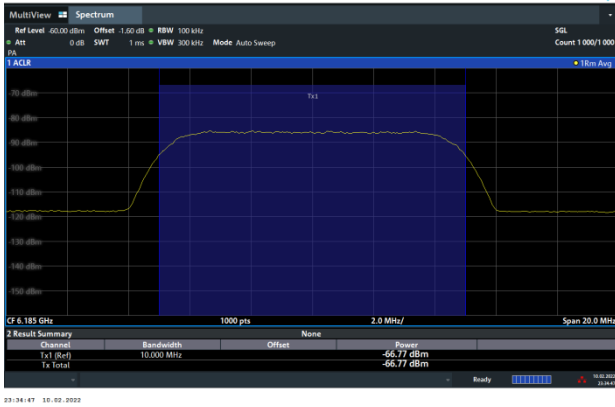
Contention Based Protocol Result Plots on U-NII 5 (AWGN Interference)

<p>802.11ax (HE20) / 6135MHz Threshold Level (TL) = -66.03dBm</p>	<p>802.11ax (HE20) / CH37 Test result is pass due to no transmission occur.</p>																														
 <table border="1"><thead><tr><th>Channel</th><th>Bandwidth</th><th>Offset</th><th>None</th><th>Power</th></tr></thead><tbody><tr><td>Tx1 (Ref)</td><td>10.000 MHz</td><td></td><td></td><td>-66.03 dBm</td></tr><tr><td>Tx Total</td><td></td><td></td><td></td><td>-66.03 dBm</td></tr></tbody></table>	Channel	Bandwidth	Offset	None	Power	Tx1 (Ref)	10.000 MHz			-66.03 dBm	Tx Total				-66.03 dBm	 <table border="1"><thead><tr><th>Channel</th><th>Bandwidth</th><th>Offset</th><th>None</th><th>Power</th></tr></thead><tbody><tr><td>Tx1 (Ref)</td><td>10.000 MHz</td><td></td><td></td><td>-66.03 dBm</td></tr><tr><td>Tx Total</td><td></td><td></td><td></td><td>-66.03 dBm</td></tr></tbody></table>	Channel	Bandwidth	Offset	None	Power	Tx1 (Ref)	10.000 MHz			-66.03 dBm	Tx Total				-66.03 dBm
Channel	Bandwidth	Offset	None	Power																											
Tx1 (Ref)	10.000 MHz			-66.03 dBm																											
Tx Total				-66.03 dBm																											
Channel	Bandwidth	Offset	None	Power																											
Tx1 (Ref)	10.000 MHz			-66.03 dBm																											
Tx Total				-66.03 dBm																											
<p>802.11ax (HE160) / 6110MHz (Lower edge) Threshold Level (TL) = -72.06dBm</p>	<p>802.11ax (HE160) / CH47 (Lower edge) Test result is pass due to no transmission occur.</p>																														
 <table border="1"><thead><tr><th>Channel</th><th>Bandwidth</th><th>Offset</th><th>None</th><th>Power</th></tr></thead><tbody><tr><td>Tx1 (Ref)</td><td>10.000 MHz</td><td></td><td></td><td>-72.06 dBm</td></tr><tr><td>Tx Total</td><td></td><td></td><td></td><td>-72.06 dBm</td></tr></tbody></table>	Channel	Bandwidth	Offset	None	Power	Tx1 (Ref)	10.000 MHz			-72.06 dBm	Tx Total				-72.06 dBm	 <table border="1"><thead><tr><th>Channel</th><th>Bandwidth</th><th>Offset</th><th>None</th><th>Power</th></tr></thead><tbody><tr><td>Tx1 (Ref)</td><td>10.000 MHz</td><td></td><td></td><td>-72.06 dBm</td></tr><tr><td>Tx Total</td><td></td><td></td><td></td><td>-72.06 dBm</td></tr></tbody></table>	Channel	Bandwidth	Offset	None	Power	Tx1 (Ref)	10.000 MHz			-72.06 dBm	Tx Total				-72.06 dBm
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Channel	Bandwidth	Offset	None	Power																											
Tx1 (Ref)	10.000 MHz			-72.06 dBm																											
Tx Total				-72.06 dBm																											



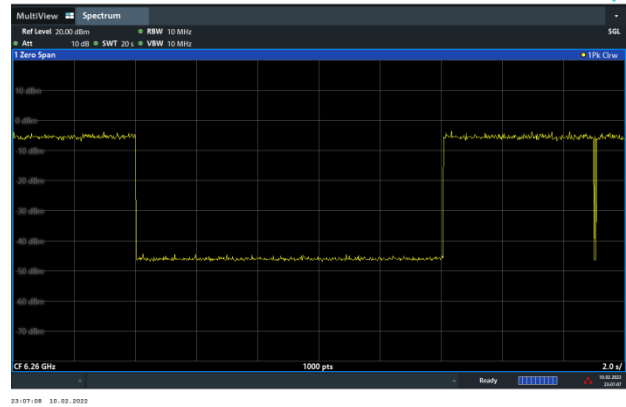
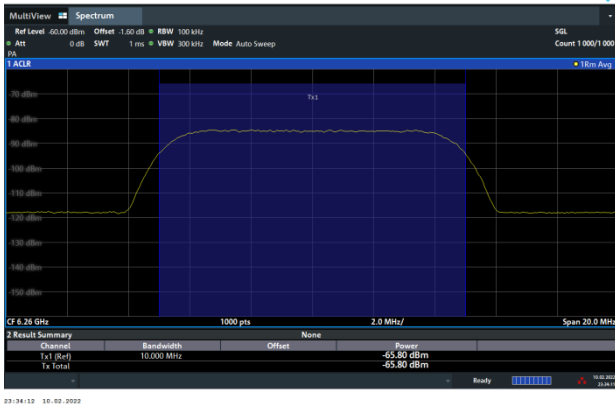
802.11ax (HE160) / 6185MHz (Middle)
Threshold Level (TL) = -66.77dBm

802.11ax (HE160) / CH47 (Middle)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6260MHz (Upper edge)
Threshold Level (TL) = -65.8dBm

802.11ax (HE160) / CH47 (Upper edge)
Test result is pass due to no transmission occur.

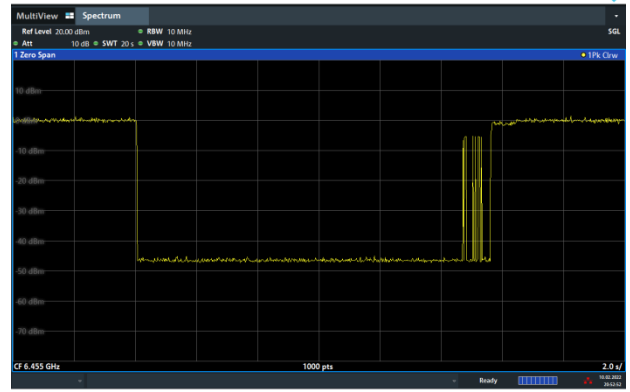
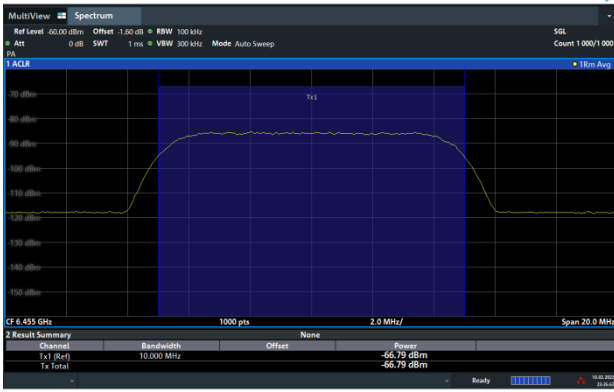




Contention Based Protocol Result Plots on U-NII 6 (AWGN Interference)

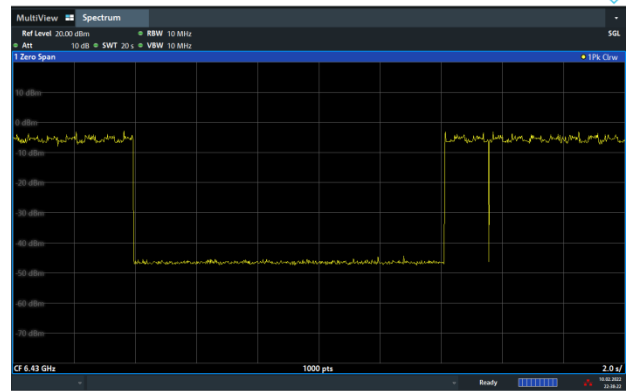
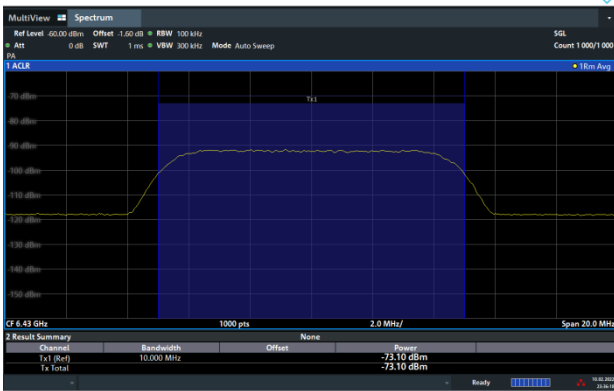
802.11ax (HE20) / 6455MHz
Threshold Level (TL) = -66.79dBm

802.11ax (HE20) / CH101
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6430MHz (Lower edge)
Threshold Level (TL) = -73.1dBm

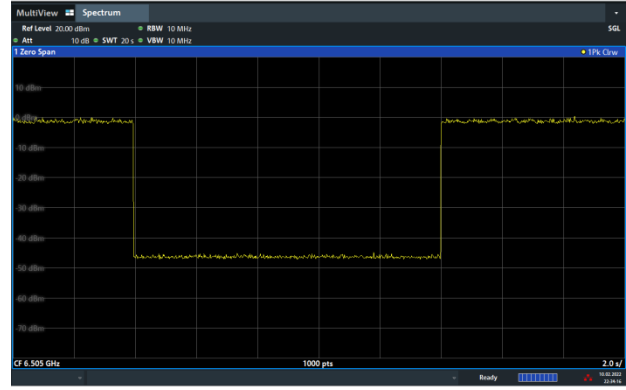
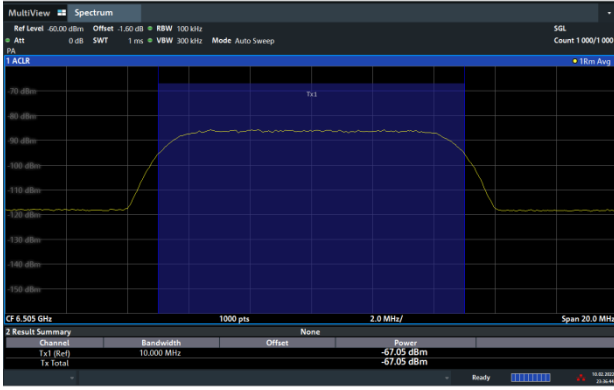
802.11ax (HE160) / CH111 (Lower edge)
Test result is pass due to no transmission occur.





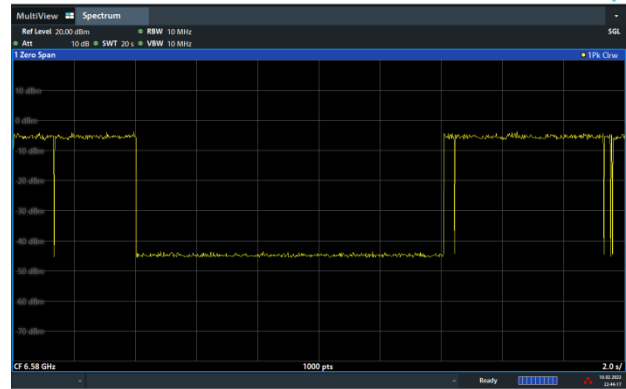
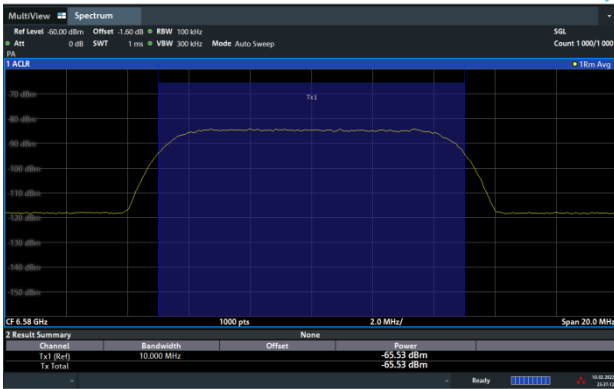
802.11ax (HE160) / 6505MHz (Middle)
Threshold Level (TL) = -67.05dBm

802.11ax (HE160) / CH111 (Middle)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6580MHz (Upper edge)
Threshold Level (TL) = -65.53dBm

802.11ax (HE160) / CH111 (Upper edge)
Test result is pass due to no transmission occur.

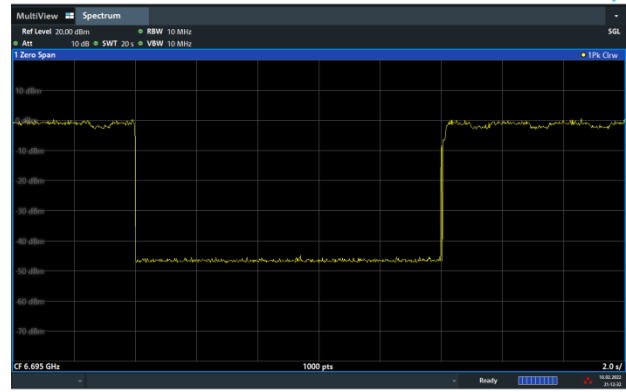
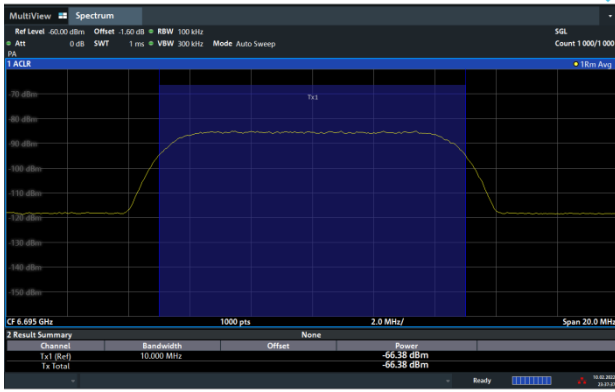




Contention Based Protocol Result Plots on U-NII 7 (AWGN Interference)

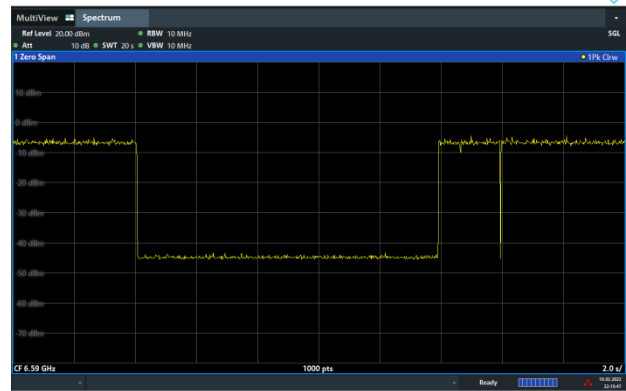
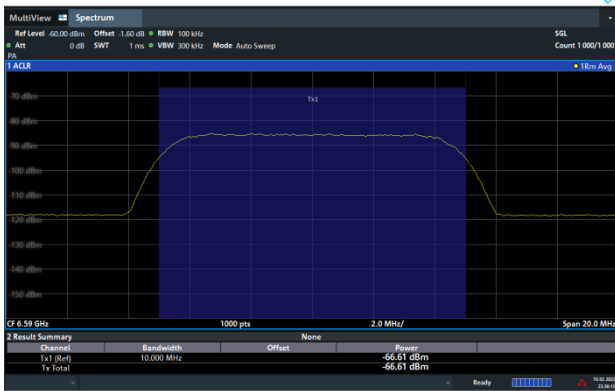
802.11ax (HE20) / 6695MHz
Threshold Level (TL) = -66.38dBm

802.11ax (HE20) / CH149
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6590MHz (Lower edge)
Threshold Level (TL) = -66.61dBm

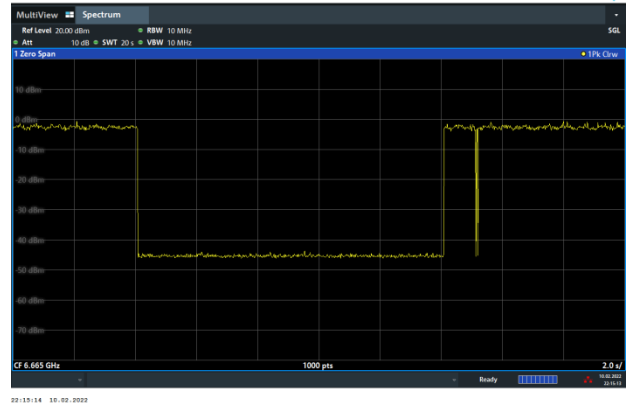
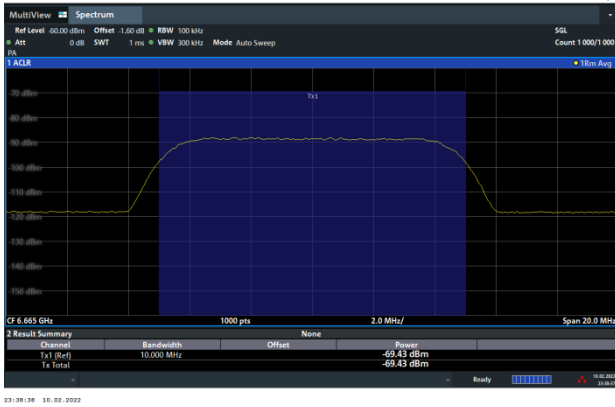
802.11ax (HE160) / CH143 (Lower edge)
Test result is pass due to no transmission occur.





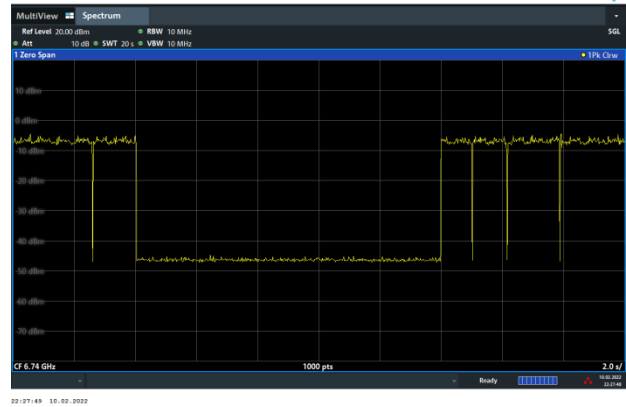
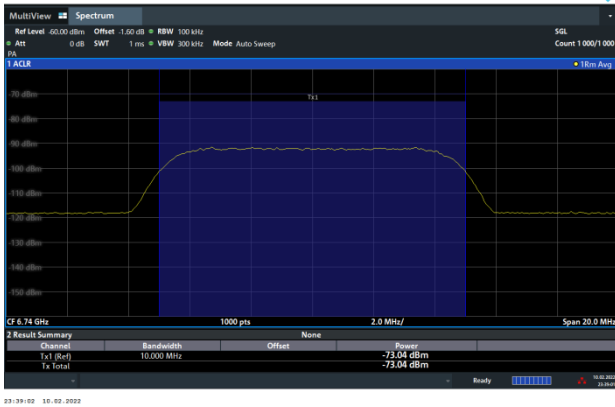
802.11ax (HE160) / 6665MHz (Middle)
Threshold Level (TL) = -69.43dBm

802.11ax (HE160) / CH143 (Middle)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6740MHz (Upper edge)
Threshold Level (TL) = -73.04dBm

802.11ax (HE160) / CH143 (Upper edge)
Test result is pass due to no transmission occur.

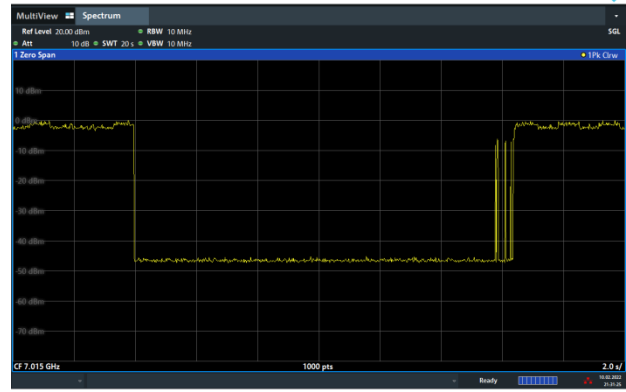
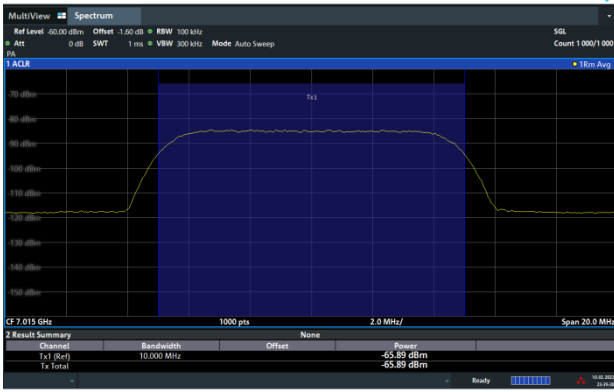




Contention Based Protocol Result Plots on U-NII 8 (AWGN Interference)

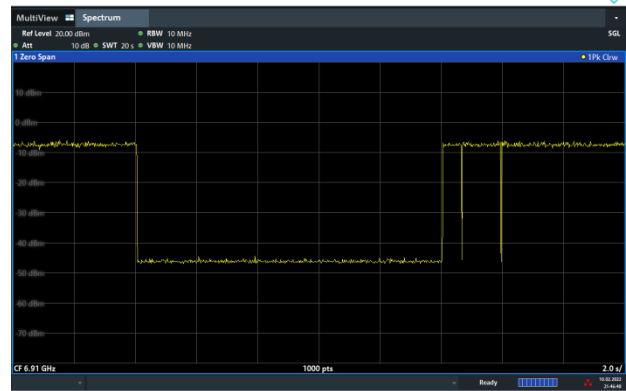
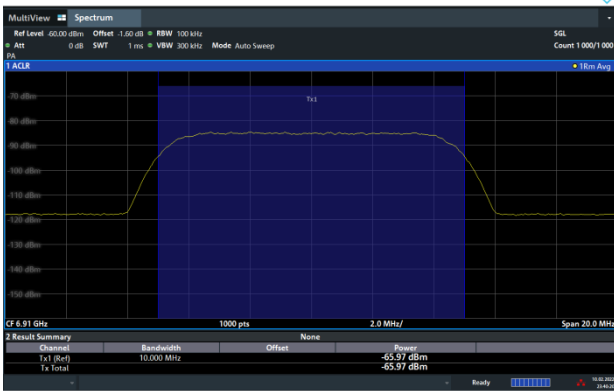
802.11ax (HE20) / 7015MHz
Threshold Level (TL) = -65.89dBm

802.11ax (HE20) / CH213
Test result is pass due to no transmission occur.



802.11ax (HE160) / 6910MHz (Lower edge)
Threshold Level (TL) = -65.97dBm

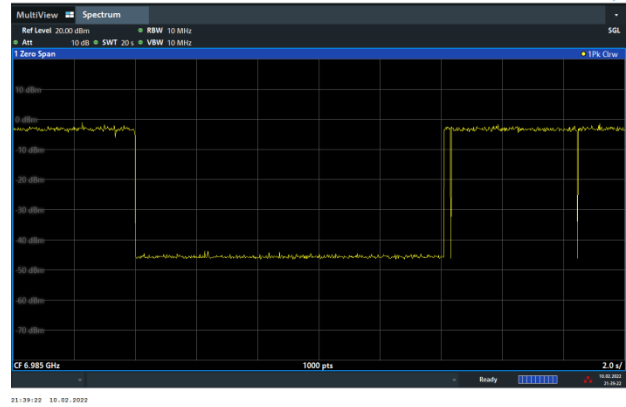
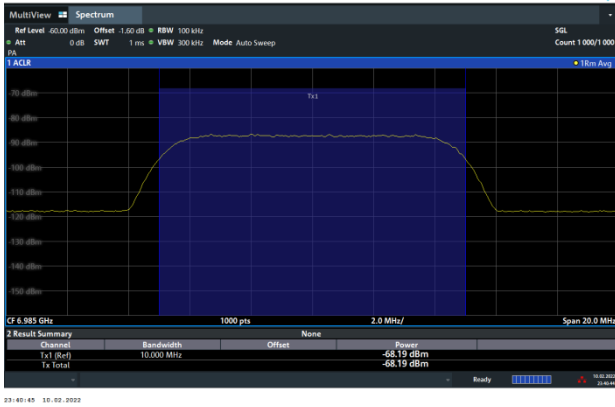
802.11ax (HE160) / CH207 (Lower edge)
Test result is pass due to no transmission occur.





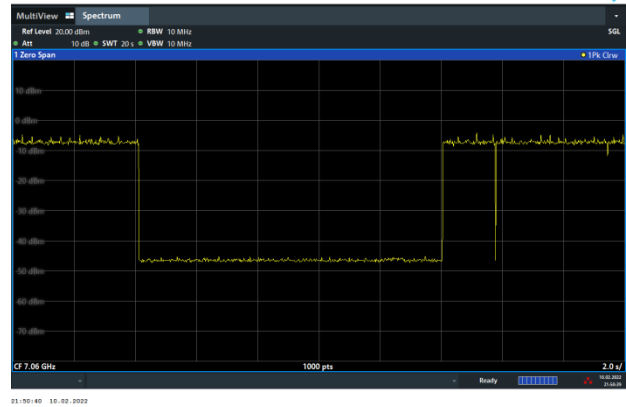
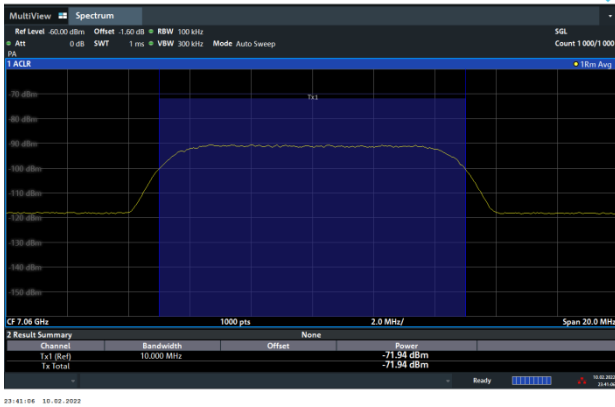
802.11ax (HE160) / 6985MHz (Middle)
Threshold Level (TL) = -68.19dBm

802.11ax (HE160) / CH207 (Middle)
Test result is pass due to no transmission occur.



802.11ax (HE160) / 7060MHz (Upper edge)
Threshold Level (TL) = -71.94dBm

802.11ax (HE160) / CH207 (Upper edge)
Test result is pass due to no transmission occur.





3.3 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.3.1 Limit of Unwanted Emissions

- (1) For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27 (RMS)	68.3
- 7 (Peak)	88.3

According 987594 D02 U-NII 6GHz EMC Measurement v01 section G:

Unwanted emissions outside of restricted bands are measured with a RMS detector.

In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.



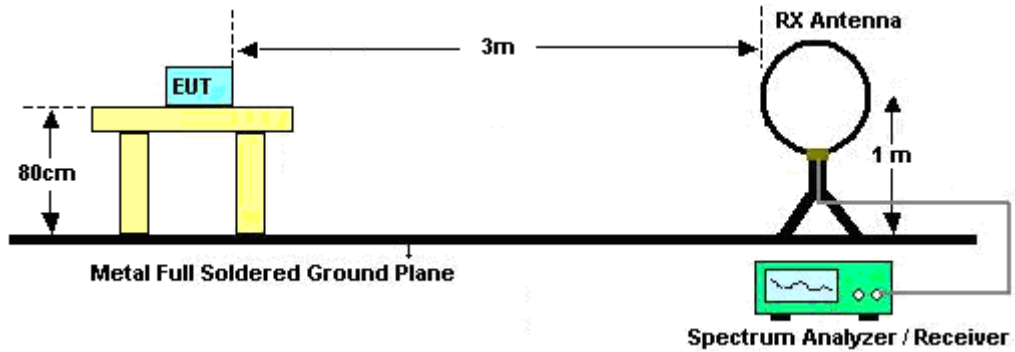
3.3.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as "-".

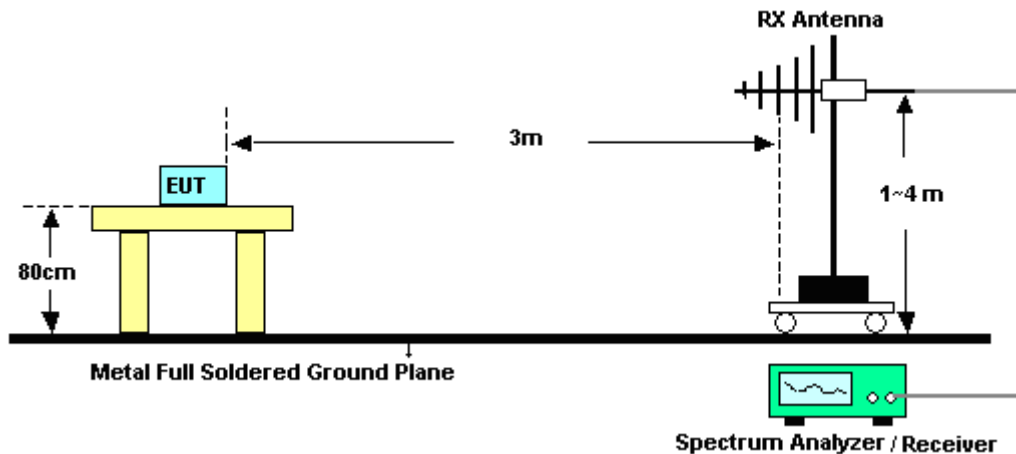
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.

3.3.4 Test Setup

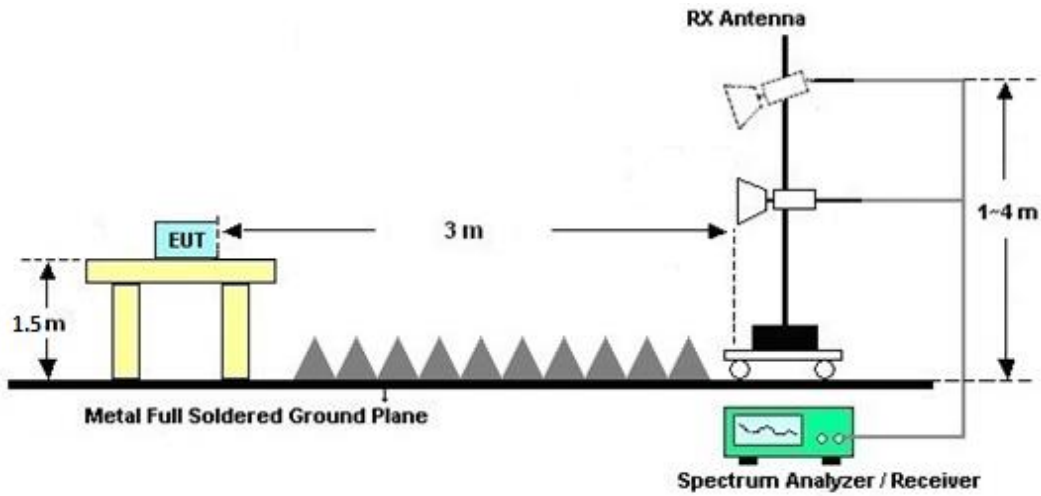
For radiated emissions below 30MHz



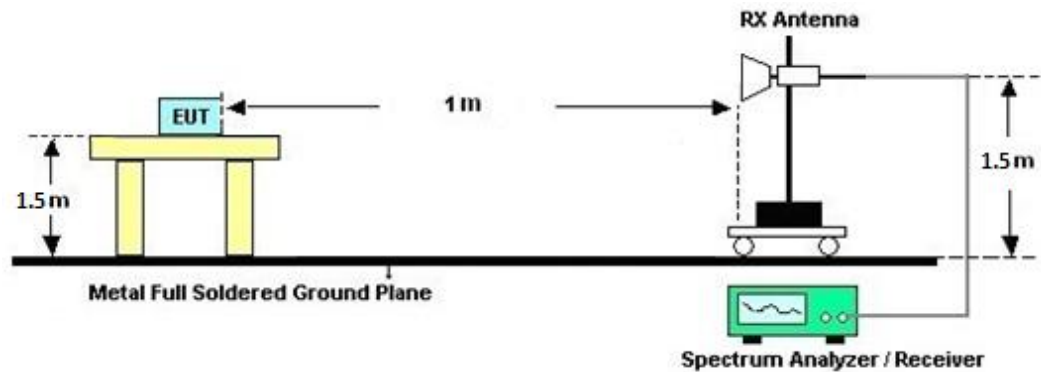
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.3.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.3.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.3.7 Duty Cycle

Please refer to Appendix E.

3.3.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.



3.4 AC Conducted Emission Measurement

3.4.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

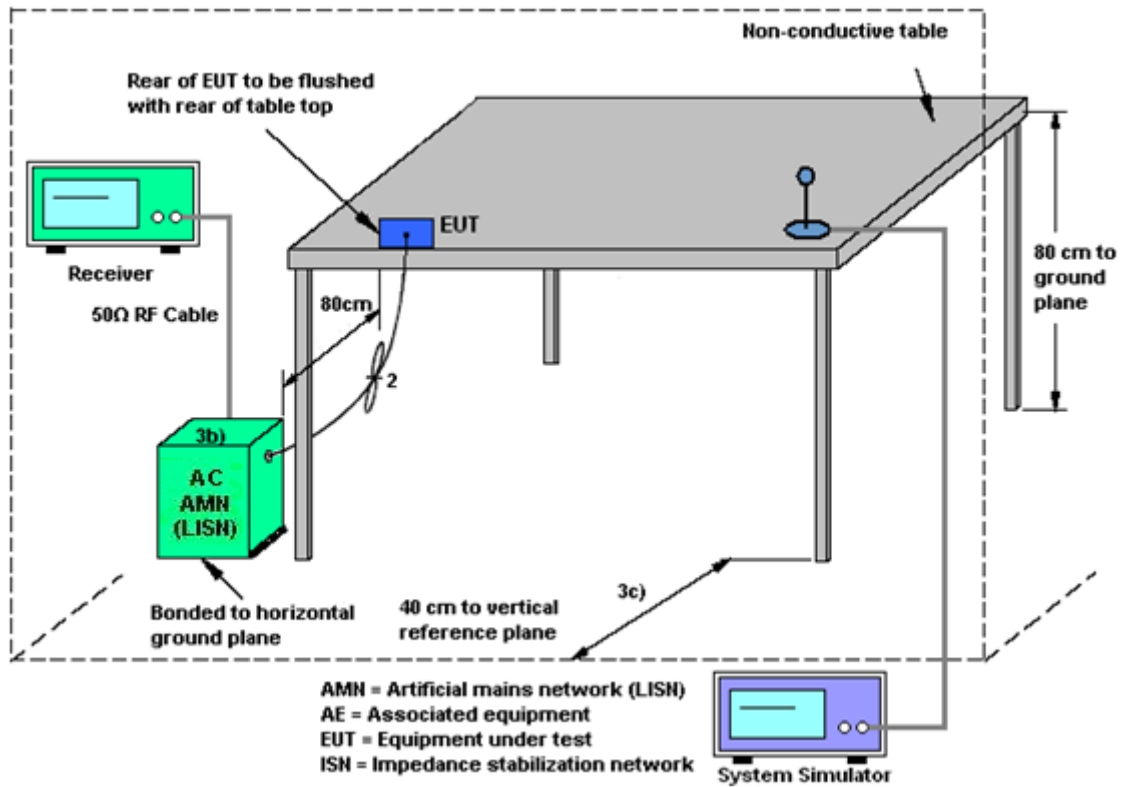
3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.4.4 Test Setup



3.4.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.5 Antenna Requirements

3.5.1 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.5.2 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The directional gain “DG” is calculated as following table.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;

G_k is the gain in dBi of the k th antenna.



			DG for Power (dBi)	DG for PSD (dBi)
	Main (dBi)	Aux. (dBi)		
5925 MHz ~ 6425 MHz	3.57	2.69	3.57	6.15
6425 MHz ~ 6525 MHz	0.23	-0.52	0.23	2.87
6525 MHz ~ 6875 MHz	-0.44	-0.35	-0.35	2.62
6875 MHz ~ 7125 MHz	-0.96	-1.32	-0.96	1.87

Calculation example:

For the band 5925~6425MHz, the DG for PSD is derived from formula is

$$10 \times \log \left\{ \left[10^{(3.57 \text{ dBi} / 20)} + 10^{(2.69 \text{ dBi} / 20)} \right]^2 / 2 \right\}$$

= 6.15 dBi



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 09, 2021	Dec. 27, 2021~Dec. 28, 2021	Oct. 08, 2022	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1326	1GHz~18GHz	Oct. 25, 2021	Dec. 27, 2021~Dec. 28, 2021	Oct. 24, 2022	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303B	TP140325	N/A	Nov. 26, 2021	Dec. 27, 2021~Dec. 28, 2021	Nov. 25, 2022	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Dec. 27, 2021~Dec. 28, 2021	Sep. 06, 2022	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Nov. 10, 2021	Dec. 27, 2021~Dec. 28, 2021	Nov. 09, 2022	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800055007	1GHz~18GHz	Jun. 16, 2021	Dec. 27, 2021~Dec. 28, 2021	Jun. 15, 2022	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 15, 2021	Dec. 27, 2021~Dec. 28, 2021	Oct. 14, 2022	Radiation (03CH11-HY)
Notch Filter	Wainwright	WRCQV14-5425-5825-6525-6925-60SS	SN1	N/A	Jan. 08, 2021	Dec. 27, 2021~Dec. 28, 2021	Jan. 07, 2022	Radiation (03CH11-HY)
Notch Filter	Wainwright	WRCQV14-6025-6425-7125-7525-60SS	SN2	N/A	Jan. 08, 2021	Dec. 27, 2021~Dec. 28, 2021	Jan. 07, 2022	Radiation (03CH11-HY)
Filter	Wainwright	WHW2-7100-10000-18000-40CC	SN2	10GHz High Pass Filter	May 25, 2021	Dec. 27, 2021~Dec. 28, 2021	May 24, 2022	Radiation (03CH11-HY)
Filter	Wainwright	WLK4-1000-1530-8000-40SS	SN11	1.53GHz Low Pass Filter	Sep. 13, 2021	Dec. 27, 2021~Dec. 28, 2021	Sep. 12, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 11, 2021	Dec. 27, 2021~Dec. 28, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY4274/2	30MHz~40GHz	Mar. 11, 2021	Dec. 27, 2021~Dec. 28, 2021	Mar. 10, 2022	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102/SUCOFLEX X 104	811852/4,MY2859/2,MY9837/4PE	30MHz~18GHz	Nov. 15, 2021	Dec. 27, 2021~Dec. 28, 2021	Nov. 14, 2022	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Dec. 27, 2021~Dec. 28, 2021	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Dec. 27, 2021~Dec. 28, 2021	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Dec. 27, 2021~Dec. 28, 2021	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.09824_20191225	RK-000992	N/A	N/A	Dec. 27, 2021~Dec. 28, 2021	N/A	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	371607	9kHz~1GHz	Jul. 05, 2021	Dec. 27, 2021~Dec. 28, 2021	Jul. 04, 2022	Radiation (03CH11-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Dec. 02, 2021~Dec. 10, 2021	Nov. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Dec. 02, 2021~Dec. 10, 2021	Aug. 29, 2022	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW191204(BOX8)	N/A	Jan. 07, 2021	Dec. 02, 2021~Dec. 10, 2021	Jan. 06, 2022	Conducted (TH05-HY)
Power Meter	Agilent	E4416A	GB41292344	N/A	Jan. 14, 2021	Dec. 02, 2021~Dec. 10, 2021	Jan. 13, 2022	Conducted (TH05-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 12, 2021~ Jan. 11, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Dec. 12, 2021~ Jan. 11, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	Dec. 12, 2021~ Jan. 11, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Dec. 12, 2021~ Jan. 11, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Dec. 12, 2021~ Jan. 11, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Dec. 12, 2021~ Jan. 11, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Dec. 12, 2021~ Dec. 29, 2021	Dec. 30, 2021	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Dec. 30, 2021~ Jan. 11, 2022	Dec. 29, 2022	Conduction (CO05-HY)
Signal Generator (Interferer)	Rohde & Schwarz	SMW200A	109425	100kHz~7.5GHz	Jan. 13, 2022	Feb. 10, 2022	Jan. 12, 2023	CBP (DF02-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV3044	101048	10Hz~44GHz	Apr. 20, 2021	Feb. 10, 2022	Apr. 19, 2022	CBP (DF02-HY)
Power Divider	Woken	2Way Divider	DCMB1KW7A1	0.5GHz-18GHz	Calibration from System	Feb. 10, 2022	Calibration from System	CBP (DF02-HY)
Power Divider	Woken	2Way Divider	DCMB1KW7A2	0.5GHz-18GHz	Calibration from System	Feb. 10, 2022	Calibration from System	CBP (DF02-HY)
Coupler	Woken	10dB 30W SMA	DOM5CIW3A1	0.5-18GHz	Calibration from System	Feb. 10, 2022	Calibration from System	CBP (DF02-HY)
Power Divider	Woken	3Way SMA Power Divder Rated to 20W	STI08-0010(#2)	2GHz-8GHz	Calibration from System	Feb. 10, 2022	Calibration from System	CBP (DF02-HY)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.9 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Junyu Jhou	Temperature:	22.6~24.3	°C
Test Date:	2021/12/2~2021/12/10	Relative Humidity:	48.2~52.5	%

Remark: For Conducted Test Items, Ant. 1 means Chain A (Aux.) and Ant. 2 means Chain B (Main).

TEST RESULTS DATA
EIRP Power Table

FCC Band V single antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	5955	4.50	4.40	-	2.69	3.57	7.19	7.97	24.00	Pass
HT20	MCS0	1	5955	4.70	4.50		2.69	3.57	7.39	8.07	24.00	Pass
HT40	MCS0	1	5965	7.50	7.80		2.69	3.57	10.19	11.37	24.00	Pass
VHT80	MCS0	1	5985	10.60	10.00		2.69	3.57	13.29	13.57	24.00	Pass
VHT160	MCS0	1	6025	13.40	12.90		2.69	3.57	16.09	16.47	24.00	Pass

FCC Band V MIMO												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HT20	MCS0	2	5955	1.60	1.30	4.46	3.57		8.03	24.00	Pass	
HT40	MCS0	2	5965	4.60	4.20	7.41	3.57		10.98	24.00	Pass	
VHT80	MCS0	2	5985	6.90	6.60	9.76	3.57		13.33	24.00	Pass	
VHT160	MCS0	2	6025	10.50	10.00	13.27	3.57		16.84	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band VI single antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	6475	4.40	4.10	-	-0.52	0.23	3.88	4.33	24.00	Pass
HT20	MCS0	1	6475	4.40	4.00		-0.52	0.23	3.88	4.23	24.00	Pass
HT40	MCS0	1	6445	7.30	6.90		-0.52	0.23	6.78	7.13	24.00	Pass
VHT80	MCS0	1	6465	10.90	10.20		-0.52	0.23	10.38	10.43	24.00	Pass

FCC Band VI MIMO												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HT20	MCS0	2	6475	-0.20	-0.10	2.86	0.23		3.09	24.00	Pass	
HT40	MCS0	2	6445	4.20	4.00	7.11	0.23		7.34	24.00	Pass	
VHT80	MCS0	2	6465	7.50	7.20	10.36	0.23		10.59	24.00	Pass	

FCC Band VI straddle channel single antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HT40	MCS0	1	6525	7.80	7.50	-	-0.52	0.23	7.28	7.73	24.00	Pass
VHT160	MCS0	1	6505	13.80	13.50		-0.52	0.23	13.28	13.73	24.00	Pass

FCC Band VI straddle channel MIMO												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HT40	MCS0	2	6525	4.90	4.60	7.76	0.23		7.99	24.00	Pass	
VHT160	MCS0	2	6505	10.50	10.40	13.46	0.23		13.69	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band VII single antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	6535	4.20	4.10	-	-0.35	-0.44	3.85	3.66	24.00	Pass
HT20	MCS0	1	6535	4.70	4.00		-0.35	-0.44	4.35	3.56	24.00	Pass
VHT80	MCS0	1	6625	10.90	10.70		-0.35	-0.44	10.55	10.26	24.00	Pass
VHT160	MCS0	1	6665	13.40	13.50		-0.35	-0.44	13.05	13.06	24.00	Pass

FCC Band VII MIMO												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HT20	MCS0	2	6535	1.50	1.00	4.27	-0.35		3.92	24.00	Pass	
VHT80	MCS0	2	6625	7.40	7.20	10.31	-0.35		9.96	24.00	Pass	
VHT160	MCS0	2	6665	10.30	9.90	13.11	-0.35		12.76	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band VIII single antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	1	7095	4.40	4.30	-	-1.32	-0.96	3.08	3.34	24.00	Pass
HT20	MCS0	1	7095	4.60	4.50		-1.32	-0.96	3.28	3.54	24.00	Pass
HT40	MCS0	1	7085	7.90	7.70		-1.32	-0.96	6.58	6.74	24.00	Pass
VHT80	MCS0	1	7025	10.90	10.60		-1.32	-0.96	9.58	9.64	24.00	Pass
VHT160	MCS0	1	6985	14.00	12.60		-1.32	-0.96	12.68	11.64	24.00	Pass

FCC Band VIII MIMO												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
				Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HT20	MCS0	2	7095	1.70	1.80	4.76	-0.96		3.80	24.00	Pass	
HT40	MCS0	2	7085	4.90	4.60	7.76	-0.96		6.80	24.00	Pass	
VHT80	MCS0	2	7025	7.40	7.00	10.21	-0.96		9.25	24.00	Pass	
VHT160	MCS0	2	6985	10.60	9.90	13.27	-0.96		12.31	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band V single antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE20	MCS0	1	5955	Full	4.90	4.80	-	2.69	3.57	7.59	8.37	24.00	Pass
HE40	MCS0	1	5965	Full	7.40	7.80		2.69	3.57	10.09	11.37	24.00	Pass
HE80	MCS0	1	5985	Full	11.10	10.00		2.69	3.57	13.79	13.57	24.00	Pass
HE160	MCS0	1	6025	Full	13.80	13.80		2.69	3.57	16.49	17.37	24.00	Pass

FCC Band V MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HE20	MCS0	2	5955	Full	-0.10	1.10	3.55	3.57		7.12	24.00	Pass	
HE40	MCS0	2	5965	Full	4.50	4.00	7.27	3.57		10.84	24.00	Pass	
HE80	MCS0	2	5985	Full	8.00	7.60	10.81	3.57		14.38	24.00	Pass	
HE160	MCS0	2	6025	Full	10.30	9.60	12.97	3.57		16.54	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band VI single antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE20	MCS0	1	6475	Full	4.70	4.00	-	-0.52	0.23	4.18	4.23	24.00	Pass
HE40	MCS0	1	6445	Full	7.70	7.50		-0.52	0.23	7.18	7.73	24.00	Pass
HE80	MCS0	1	6465	Full	10.70	9.80		-0.52	0.23	10.18	10.03	24.00	Pass

FCC Band VI MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HE20	MCS0	2	6475	Full	1.40	1.00	4.21	0.23		4.44	24.00	Pass	
HE40	MCS0	2	6445	Full	4.70	4.10	7.42	0.23		7.65	24.00	Pass	
HE80	MCS0	2	6465	Full	7.60	6.70	10.18	0.23		10.41	24.00	Pass	

FCC Band VI straddle channel single antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE40	MCS0	1	6525	Full	7.70	7.60	-	-0.52	0.23	7.18	7.83	24.00	Pass
HE160	MCS0	1	6505	Full	13.80	13.70		-0.52	0.23	13.28	13.93	24.00	Pass

FCC Band VI straddle channel MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HE40	MCS0	2	6525	Full	4.50	4.30	7.41	0.23		7.64	24.00	Pass	
HE160	MCS0	2	6505	Full	10.90	10.60	13.76	0.23		13.99	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

FCC Band VII single antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE20	MCS0	1	6535	Full	4.60	4.40	-	-0.35	-0.44	4.25	3.96	24.00	Pass
HE80	MCS0	1	6625	Full	10.90	10.80		-0.35	-0.44	10.55	10.36	24.00	Pass
HE160	MCS0	1	6665	Full	13.60	13.40		-0.35	-0.44	13.25	12.96	24.00	Pass

FCC Band VII MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HE20	MCS0	2	6535	Full	1.70	0.90	4.33	-0.35		3.98	24.00	Pass	
HE80	MCS0	2	6625	Full	7.70	7.60	10.66	-0.35		10.31	24.00	Pass	
HE160	MCS0	2	6665	Full	10.60	10.20	13.41	-0.35		13.06	24.00	Pass	

TEST RESULTS DATA
EIRP Power Table

Band VIII single antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE20	MCS0	1	7095	Full	4.70	5.00	-	-1.32	-0.96	3.38	4.04	24.00	Pass
HE40	MCS0	1	7085	Full	7.90	7.90		-1.32	-0.96	6.58	6.94	24.00	Pass
HE80	MCS0	1	7025	Full	11.10	10.70		-1.32	-0.96	9.78	9.74	24.00	Pass
HE160	MCS0	1	6985	Full	13.90	12.80		-1.32	-0.96	12.58	11.84	24.00	Pass

Band VIII MIMO													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	SUM			
HE20	MCS0	2	7095	Full	1.60	0.80	4.23	-0.96		3.27	24.00	Pass	
HE40	MCS0	2	7085	Full	4.10	4.10	7.11	-0.96		6.15	24.00	Pass	
HE80	MCS0	2	7025	Full	7.30	7.70	10.51	-0.96		9.55	24.00	Pass	
HE160	MCS0	2	6985	Full	10.90	9.70	13.35	-0.96		12.39	24.00	Pass	



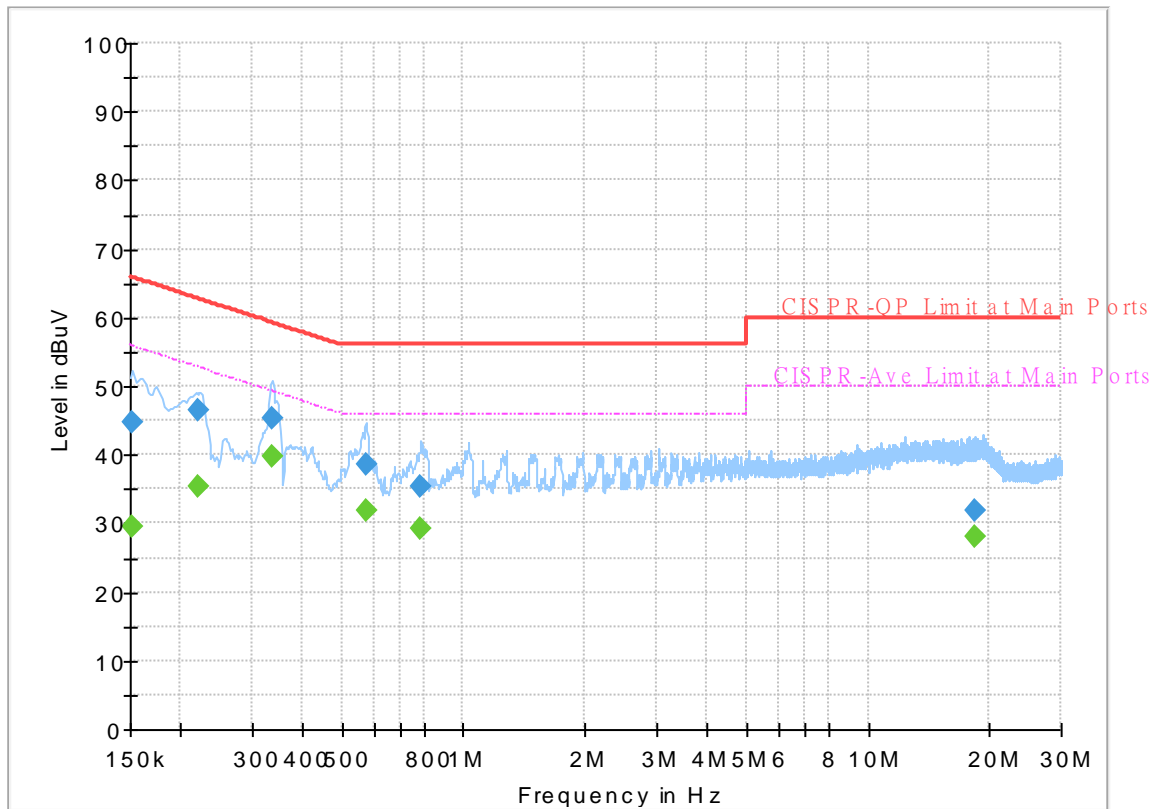
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26°C
		Relative Humidity :	45~55%

EUT Information

Report NO : 100537
 Test Mode : Mode 2
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



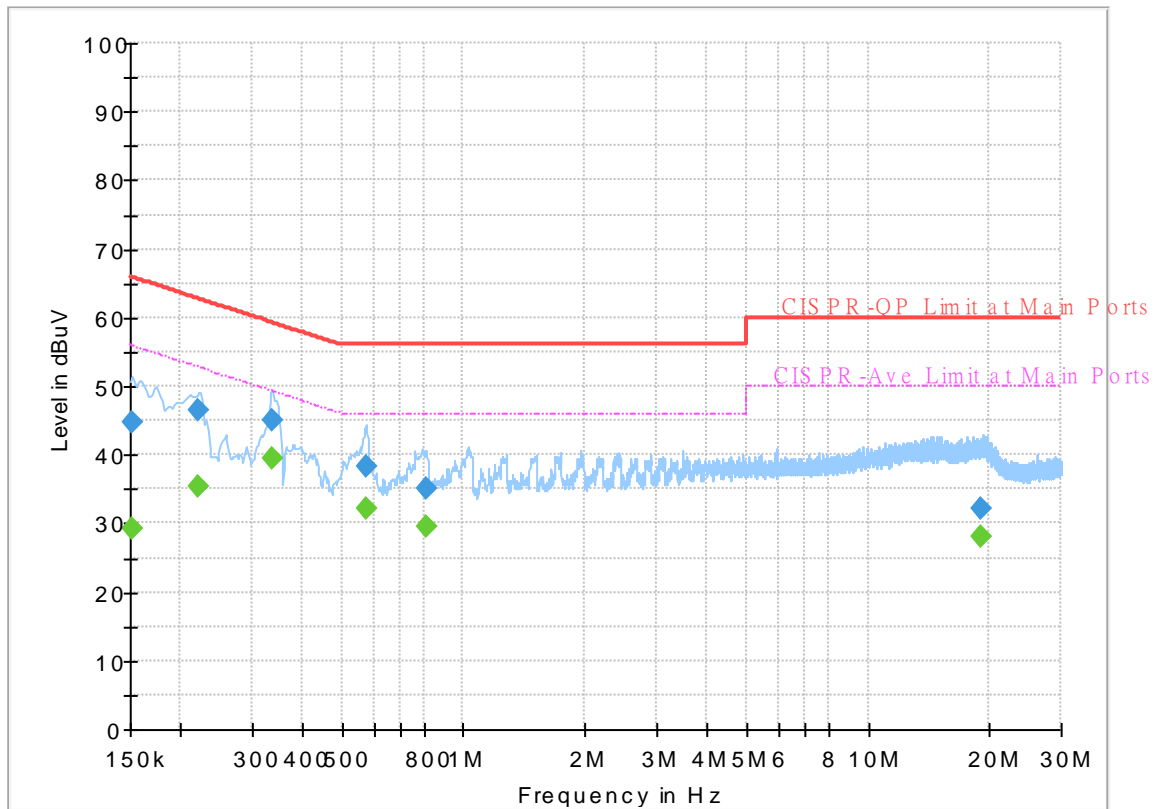
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	29.41	55.88	26.47	L1	OFF	19.6
0.152250	44.82	---	65.88	21.06	L1	OFF	19.6
0.222000	---	35.39	52.74	17.35	L1	OFF	19.6
0.222000	46.41	---	62.74	16.33	L1	OFF	19.6
0.336750	---	39.76	49.28	9.52	L1	OFF	19.6
0.336750	45.26	---	59.28	14.02	L1	OFF	19.6
0.573000	---	31.99	46.00	14.01	L1	OFF	19.8
0.573000	38.49	---	56.00	17.51	L1	OFF	19.8
0.786750	---	29.37	46.00	16.63	L1	OFF	20.0
0.786750	35.26	---	56.00	20.74	L1	OFF	20.0
18.460500	---	27.99	50.00	22.01	L1	OFF	20.4
18.460500	31.82	---	60.00	28.18	L1	OFF	20.4

EUT Information

Report NO : 100537
 Test Mode : Mode 2
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	29.36	55.88	26.52	N	OFF	19.6
0.152250	44.72	---	65.88	21.16	N	OFF	19.6
0.222000	---	35.28	52.74	17.46	N	OFF	19.6
0.222000	46.41	---	62.74	16.33	N	OFF	19.6
0.336750	---	39.59	49.28	9.69	N	OFF	19.6
0.336750	45.02	---	59.28	14.26	N	OFF	19.6
0.573000	---	32.18	46.00	13.82	N	OFF	19.8
0.573000	38.37	---	56.00	17.63	N	OFF	19.8
0.809250	---	29.44	46.00	16.56	N	OFF	20.0
0.809250	35.18	---	56.00	20.82	N	OFF	20.0
19.047750	---	28.07	50.00	21.93	N	OFF	20.5
19.047750	32.06	---	60.00	27.94	N	OFF	20.5



Appendix C. Radiated Spurious Emission

Test Engineer :	James Chiu and Troye Hsieh	Temperature :	20.3~21.1°C
		Relative Humidity :	57.3~67.5%

Remark: For Radiated Spurious Emission Test Items, Ant. 1 means Chain A (Aux.) and Ant. 2 means Chain B (Main).

Band 5 - 5925~6425MHz

WIFI 802.11ax HE160 Full (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE160 Full CH 15 6025MHz		5892.84	63.29	-24.91	88.2	51.66	32.67	12.52	33.56	205	70	P	H	
		5908.52	54.43	-13.77	68.2	42.75	32.72	12.53	33.57	205	70	A	H	
	*	6025	102.59	-	-	90.74	32.85	12.6	33.6	205	70	P	H	
	*	6025	92.57	-	-	80.72	32.85	12.6	33.6	205	70	A	H	
													H	
													H	
			5899.88	59.17	-29.03	88.2	47.51	32.7	12.52	33.56	199	261	P	V
			5897.64	49.59	-18.61	68.2	37.94	32.69	12.52	33.56	199	261	A	V
		*	6025	98.02	-	-	86.17	32.85	12.6	33.6	199	261	P	V
		*	6025	89.22	-	-	77.37	32.85	12.6	33.6	199	261	A	V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 5 5925~6425MHz
WIFI 802.11ax HE160 Full (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 15 6025MHz		11295	43.83	-30.17	74	48.75	39.69	17.24	61.85	-	-	P	H
		12050	44.94	-29.06	74	51.06	39.05	17.9	63.07	-	-	P	H
		14488	45.39	-28.61	74	47.68	41.3	19.43	63.02	-	-	P	H
		17976	51.98	-22.02	74	39.89	46.42	22.33	56.66	-	-	P	H
		17976	42.09	-11.91	54	30	46.42	22.33	56.66	-	-	A	H
		18075	33.91	-40.09	74	55.61	37.85	-3.72	55.83	-	-	P	H
		11295	43.87	-30.13	74	48.79	39.69	17.24	61.85	-	-	P	V
		12050	44.16	-29.84	74	50.28	39.05	17.9	63.07	-	-	P	V
		14488	45.59	-28.41	74	47.88	41.3	19.43	63.02	-	-	P	V
		17976	52.22	-21.78	74	40.13	46.42	22.33	56.66	-	-	P	V
	17976	42.09	-11.91	54	30	46.42	22.33	56.66	-	-	A	V	
	18075	34.07	-39.93	74	55.77	37.85	-3.72	55.83	-	-	P	V	

Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. The emission level close to 18GHz is checked that the average emission level is noise floor only.
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**Emission below 1GHz
WIFI 802.11ax HE160 Full (LF @ 3m)**

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		54.25	23.15	-16.85	40	41.87	12.43	1.13	32.28	-	-	P	H
		140.58	29.08	-14.42	43.5	42.38	17.18	1.79	32.27	-	-	P	H
		155.13	30.44	-13.06	43.5	44.25	16.56	1.88	32.25	-	-	P	H
		556.71	35.33	-10.67	46	38.48	25.77	3.51	32.43	-	-	P	H
		717.73	34.43	-11.57	46	35.94	26.84	4.02	32.37	-	-	P	H
		834.13	30.48	-15.52	46	29.72	28.46	4.35	32.05	-	-	P	H
													H
													H
													H
													H
													H
													H
													V
		30	32.57	-7.43	40	39.83	24.27	0.79	32.32	-	-	P	V
		54.25	26.28	-13.72	40	45	12.43	1.13	32.28	-	-	P	V
		157.07	29.2	-14.3	43.5	43.15	16.41	1.89	32.25	-	-	P	V
		419.94	37.25	-8.75	46	44.08	22.53	3.05	32.41	-	-	P	V
		509.18	39	-7	46	44.13	23.88	3.35	32.36	-	-	P	V
		675.05	32.2	-13.8	46	34.41	26.34	3.89	32.44	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
													V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only. 												



Band 5 - 5925~6425MHz

WIFI 802.11ax HE160 Full (Band Edge @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE160 Full CH 15 6025MHz		5897.96	57.45	-30.75	88.2	45.8	32.69	12.52	33.56	197	289	P	H	
		5897.32	47.21	-20.99	68.2	35.56	32.69	12.52	33.56	197	289	A	H	
	*	6025	99.58	-	-	87.73	32.85	12.6	33.6	197	289	P	H	
	*	6025	90.07	-	-	78.22	32.85	12.6	33.6	197	289	A	H	
													H	
														H
			5889.96	56.87	-31.33	88.2	45.25	32.66	12.52	33.56	190	77	P	V
			5908.52	46.63	-21.57	68.2	34.95	32.72	12.53	33.57	190	77	A	V
	*		6025	98.85	-	-	87	32.85	12.6	33.6	190	77	P	V
	*		6025	88.85	-	-	77	32.85	12.6	33.6	190	77	A	V
														V
														V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 5 5925~6425MHz

WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI Ant. 2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 15 6025MHz		11295	44.92	-29.08	74	49.84	39.69	17.24	61.85	-	-	P	H
		12050	44.22	-29.78	74	50.34	39.05	17.9	63.07	-	-	P	H
		14488	45.03	-28.97	74	47.32	41.3	19.43	63.02	-	-	P	H
		17992	51.85	-22.15	74	39.46	46.67	22.34	56.62	-	-	P	H
		17992	42.41	-11.59	54	30.02	46.67	22.34	56.62	-	-	A	H
		18075	35.08	-38.92	74	56.78	37.85	-3.72	55.83	-	-	P	H
		11296	43.9	-30.1	74	48.82	39.7	17.24	61.86	-	-	P	V
		12050	43.76	-30.24	74	49.88	39.05	17.9	63.07	-	-	P	V
		14480	45.05	-28.95	74	47.36	41.3	19.42	63.03	-	-	P	V
		17984	52.53	-21.47	74	40.3	46.54	22.33	56.64	-	-	P	V
	17984	42.26	-11.74	54	30.03	46.54	22.33	56.64	-	-	A	V	
	18075	34.07	-39.93	74	55.77	37.85	-3.72	55.83	-	-	P	V	

Remark	<ol style="list-style-type: none"> 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.
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**Band 5 - 5925~6425MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE40 Full CH 03 5965MHz		5861.7	52.52	-35.68	88.2	41.01	32.55	12.51	33.55	200	98	P	H	
		5924.7	42.25	-25.95	68.2	30.54	32.75	12.53	33.57	200	98	A	H	
	*	5965	101.67	-	-	89.9	32.8	12.55	33.58	200	98	P	H	
	*	5965	89.82	-	-	78.05	32.8	12.55	33.58	200	98	A	H	
													H	
													H	
			5886	52.19	-36.01	88.2	40.59	32.64	12.52	33.56	123	360	P	V
			5899.32	41.95	-26.25	68.2	30.29	32.7	12.52	33.56	123	360	A	V
	*		5965	96.75	-	-	84.98	32.8	12.55	33.58	123	360	P	V
	*		5965	87.35	-	-	75.58	32.8	12.55	33.58	123	360	A	V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 5 5925~6425MHz

WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE40 Full CH 03 5965MHz		11296	43.78	-30.22	74	48.7	39.7	17.24	61.86	-	-	P	H	
		11930	44.54	-29.46	74	50.71	38.9	17.8	62.87	-	-	P	H	
		14480	45.61	-28.39	74	47.92	41.3	19.42	63.03	-	-	P	H	
		17895	51.79	-22.21	74	41.28	45.12	22.24	56.85	-	-	P	H	
		17895	41.54	-12.46	54	31.03	45.12	22.24	56.85	-	-	A	H	
														H
			11295	44.26	-29.74	74	49.18	39.69	17.24	61.85	-	-	P	V
			11930	44.73	-29.27	74	50.9	38.9	17.8	62.87	-	-	P	V
			14488	45.32	-28.68	74	47.61	41.3	19.43	63.02	-	-	P	V
			17895	50.07	-23.93	74	39.56	45.12	22.24	56.85	-	-	P	V
		17895	41.45	-12.55	54	30.94	45.12	22.24	56.85	-	-	A	V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. The emission level close to 18GHz is checked that the average emission level is noise floor only. 													



Band 5 5925~6425MHz

WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE80 Full CH 07 5985MHz		5917.48	52.53	-35.67	88.2	40.84	32.73	12.53	33.57	200	99	P	H	
		5925	42.68	-25.52	68.2	30.97	32.75	12.53	33.57	200	99	A	H	
	*	5985	100.51	-	-	88.75	32.8	12.55	33.59	200	99	P	H	
	*	5985	91.07	-	-	79.31	32.8	12.55	33.59	200	99	A	H	
													H	
													H	
			5890.76	51.79	-36.41	88.2	40.17	32.66	12.52	33.56	113	360	P	V
			5924.52	42.18	-26.02	68.2	30.47	32.75	12.53	33.57	113	360	A	V
	*		5985	99.31	-	-	87.55	32.8	12.55	33.59	113	360	P	V
	*		5985	88.4	-	-	76.64	32.8	12.55	33.59	113	360	A	V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 5 5925~6425MHz

WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE80 Full CH 07 5985MHz		11295	44.62	-29.38	74	49.54	39.69	17.24	61.85	-	-	P	H	
		11970	44.45	-29.55	74	50.66	38.9	17.84	62.95	-	-	P	H	
		14488	44.55	-29.45	74	46.84	41.3	19.43	63.02	-	-	P	H	
		17955	51	-23	74	39.33	46.08	22.3	56.71	-	-	P	H	
		17955	42.72	-11.28	54	31.05	46.08	22.3	56.71	-	-	A	H	
														H
			11296	44.84	-29.16	74	49.76	39.7	17.24	61.86	-	-	P	V
			11970	44.83	-29.17	74	51.04	38.9	17.84	62.95	-	-	P	V
			14480	46.07	-27.93	74	48.38	41.3	19.42	63.03	-	-	P	V
			17955	50.8	-23.2	74	39.13	46.08	22.3	56.71	-	-	P	V
		17955	42.6	-11.4	54	30.93	46.08	22.3	56.71	-	-	A	V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. The emission level close to 18GHz is checked that the average emission level is noise floor only. 													



Band 5 5925~6425MHz

WIFI 802.11ax HE160 Full (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)	
802.11ax HE160 Full CH 15 6025MHz		5919.4	54.14	-34.06	88.2	42.44	32.74	12.53	33.57	200	101	P	H	
		5925	45.18	-23.02	68.2	33.47	32.75	12.53	33.57	200	101	A	H	
	*	6025	100.5	-	-	88.65	32.85	12.6	33.6	200	101	P	H	
	*	6025	90.32	-	-	78.47	32.85	12.6	33.6	200	101	A	H	
													H	
														H
			5861.16	53.76	-34.44	88.2	42.26	32.54	12.51	33.55	110	0	P	V
			5924.84	43.37	-24.83	68.2	31.66	32.75	12.53	33.57	110	0	A	V
	*		6025	100.16	-	-	88.31	32.85	12.6	33.6	110	0	P	V
	*		6025	90.21	-	-	78.36	32.85	12.6	33.6	110	0	A	V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 5 5925~6425MHz

WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE160 Full CH 15 6025MHz		11296	44.95	-29.05	74	49.87	39.7	17.24	61.86	-	-	P	H
		12050	44.33	-29.67	74	50.45	39.05	17.9	63.07	-	-	P	H
		14488	45.22	-28.78	74	47.51	41.3	19.43	63.02	-	-	P	H
		17960	52.3	-21.7	74	40.53	46.16	22.31	56.7	-	-	P	H
		17960	41.8	-12.2	54	30.03	46.16	22.31	56.7	-	-	A	H
		18075	35.08	-38.92	74	56.78	37.85	-3.72	55.83	-	-	P	H
		11295	44.71	-29.29	74	49.63	39.69	17.24	61.85	-	-	P	V
		12050	44.14	-29.86	74	50.26	39.05	17.9	63.07	-	-	P	V
		14480	46.25	-27.75	74	48.56	41.3	19.42	63.03	-	-	P	V
		17976	51.65	-22.35	74	39.56	46.42	22.33	56.66	-	-	P	V
	17976	42.3	-11.7	54	30.21	46.42	22.33	56.66	-	-	A	V	
	18075	35.5	-38.5	74	57.2	37.85	-3.72	55.83	-	-	P	V	

Remark	<ol style="list-style-type: none"> 1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.
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**Band 8 - 6875~7125MHz
WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 229 7095MHz	*	7095	97.99	-	-	82.28	35.98	13.99	34.26	200	186	P	H
	*	7095	89.61	-	-	73.9	35.98	13.99	34.26	200	186	A	H
		7197	57.06	-31.14	88.2	41.03	36.39	13.97	34.33	200	186	P	H
		7158.6	46.43	-21.77	68.2	30.43	36.32	13.98	34.3	200	186	A	H
													H
													H
	*	7095	96.82	-	-	81.11	35.98	13.99	34.26	100	12	P	V
	*	7095	89	-	-	73.29	35.98	13.99	34.26	100	12	A	V
		7150.6	57.17	-31.03	88.2	41.19	36.3	13.98	34.3	100	12	P	V
		7168.52	46.4	-21.8	68.2	30.39	36.34	13.98	34.31	100	12	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 8 - 6875~7125MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 229 7095MHz		11295	43.4	-30.6	74	48.82	39.19	17.24	61.85	-	-	P	H
		14190	45.66	-42.54	88.2	49.39	40.65	19.05	63.43	-	-	P	H
		14480	44.43	-29.57	74	47.64	40.4	19.42	63.03	-	-	P	H
		17976	48.4	-25.6	74	39.92	42.81	22.33	56.66	-	-	P	H
		17976	38.5	-15.5	54	30.02	42.81	22.33	56.66	-	-	A	H
		21285	35.53	-38.47	74	54.85	38.67	-3.29	54.7	-	-	P	H
		11296	44.36	-29.64	74	49.79	39.19	17.24	61.86	-	-	P	V
		14190	45.29	-42.91	88.2	49.02	40.65	19.05	63.43	-	-	P	V
		14480	44.38	-29.62	74	47.59	40.4	19.42	63.03	-	-	P	V
		17984	48.35	-25.65	74	39.79	42.87	22.33	56.64	-	-	P	V
		17984	38.58	-15.42	54	30.02	42.87	22.33	56.64	-	-	A	V
	21285	36.34	-37.66	74	55.66	38.67	-3.29	54.7	-	-	P	V	

Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. The emission level close to 18GHz is checked that the average emission level is noise floor only.
---------------	--



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
5955MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 - = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 - = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 - = 55.45 (dBμV/m)
2. Over Limit(dB)
 - = Level(dBμV/m) – Limit Line(dBμV/m)
 - = 55.45(dBμV/m) – 74(dBμV/m)
 - = -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
 - = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 - = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 - = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 - = 43.54(dBμV/m) – 54(dBμV/m)
 - = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission

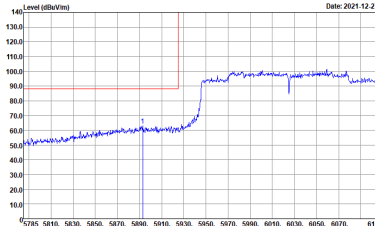
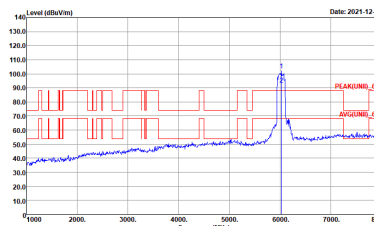
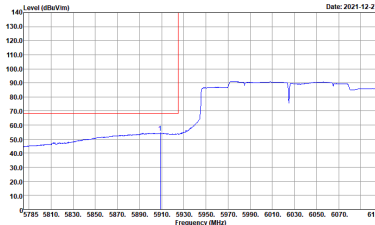
Test Engineer :	James Chiu and Troye Hsieh	Temperature :	20.3~21.1°C
		Relative Humidity :	57.3~67.5%

Remark: For Radiated Spurious Emission Plots Test Items, Ant. 1 means Chain A (Aux.) and Ant. 2 means Chain B (Main).

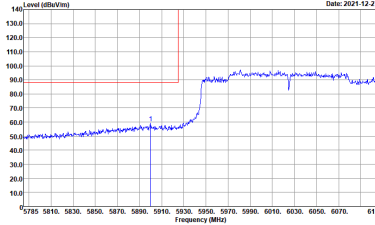
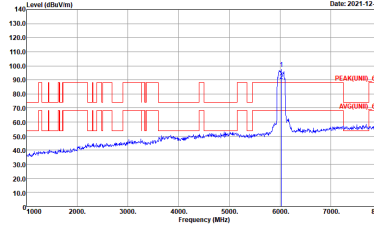
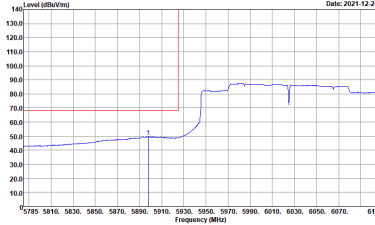


Band 5 - 5925~6425MHz

WIFI 802.11ax HE160 Full (Band Edge @ 3m)

WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	Left blank



WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1	Vertical	Fundamental
Peak	 <p>Date: 2021-12-27</p> <p>Site : 03CH11-HY Condition : PEAK_RE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL :RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Date: 2021-12-27</p> <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 VERTICAL :RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Date: 2021-12-27</p> <p>Site : 03CH11-HY Condition : AVG_RE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL :RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	Left blank



Band 5 - 5925~6425MHz
WIFI 802.11ax HE160 Full (Harmonic @ 3m)

WIFI	Band 5 5925~6425MHz Harmonic @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH11-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBHA9170576 HORIZONTAL</p>	<p>Site : 03CH11-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBHA9170576 VERTICAL</p>



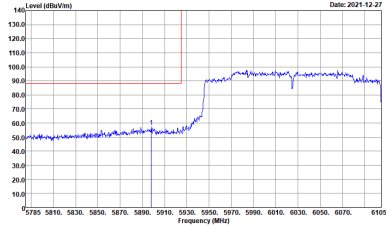
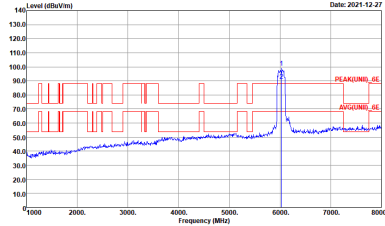
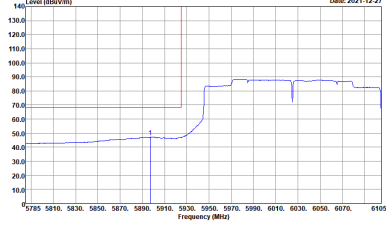
Emission below 1GHz
 5GHz WIFI 802.11ax HE160 Full (LF)

WIFI	5GHz WIFI	
ANT	802.11ax HE160 Full LF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH11-HY Condition : QP 3m BE-LOG 35414-211009 HORIZONTAL</p>	<p>Site : 03CH11-HY Condition : QP 3m BE-LOG 35414-211009 VERTICAL</p>



Band 5 - 5925~6425MHz

WIFI 802.11ax HE160 Full (Band Edge @ 3m)

WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
2	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.000kHz SWT:Auto</p>	Left blank



WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
2	Vertical	Fundamental
Peak	<p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	<p>Site : 03CH11-HY Condition : AV6_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank

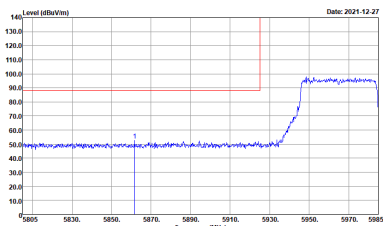
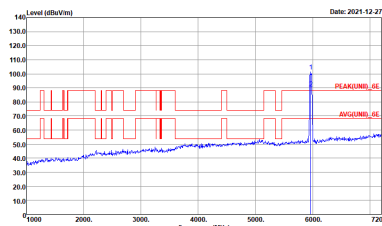
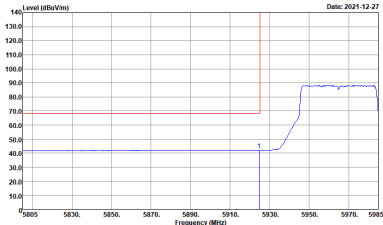


Band 5 - 5925~6425MHz
WIFI 802.11ax HE160 Full (Harmonic @ 3m)

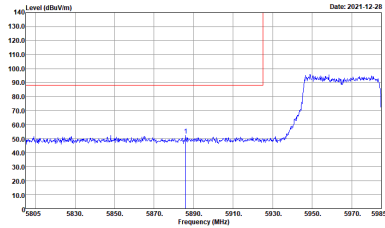
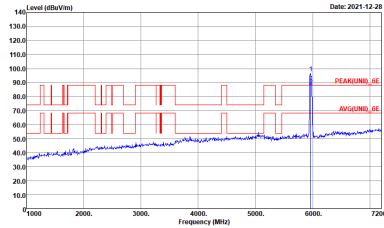
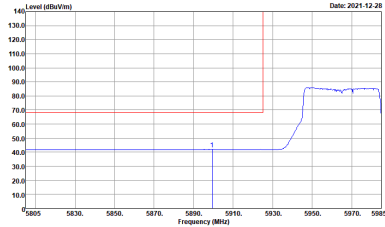
WIFI	Band 5 5925~6425MHz Harmonic @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 1m SHF ANT_BBHA9170576 HORIZONTAL</p>	<p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 1m SHF ANT_BBHA9170576 VERTICAL</p>



Band 5 - 5925~6425MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

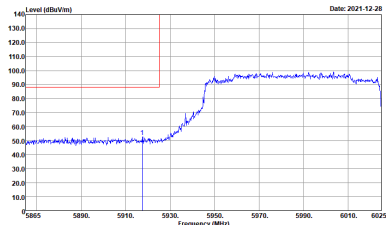
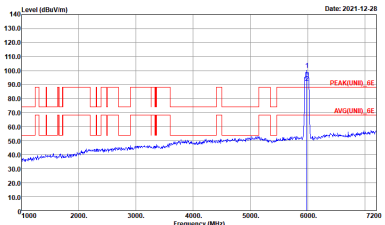
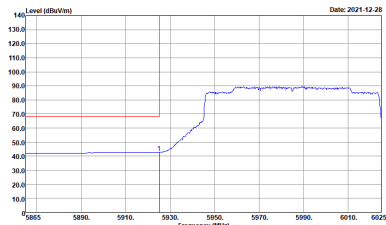
WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 5965MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AV6_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.000kHz SWT:Auto</p>	Left blank



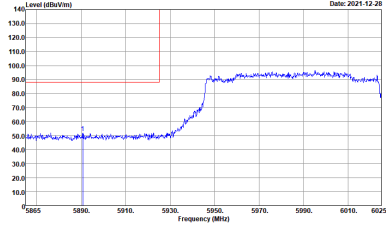
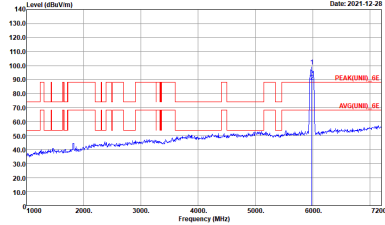
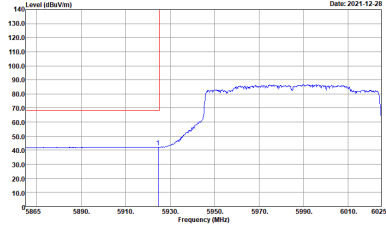
WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 5965MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AV6_BE(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



Band 5 5925~6425MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

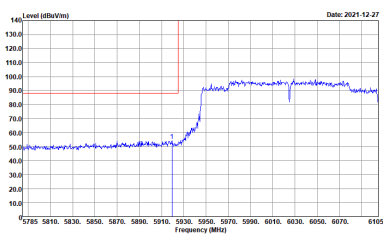
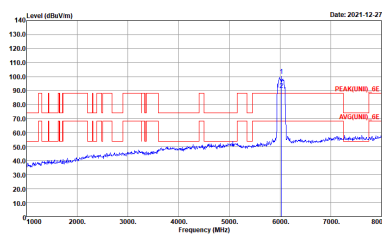
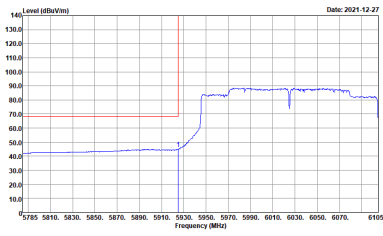
WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH07 5985MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



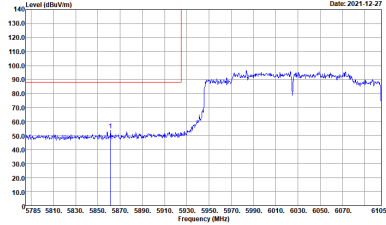
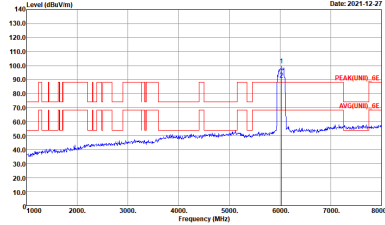
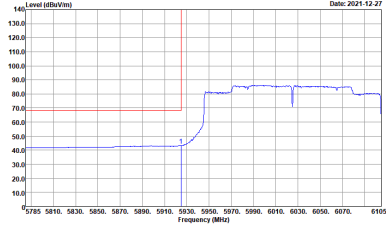
WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH07 5985MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AV6_BE(UNIT1)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	Left blank



**Band 5 5925~6425MHz
WIFI 802.11ax HE160 Full (Band Edge @ 3m)**

WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AVG_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



WIFI	Band 5 5925~6425MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AV6_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



Band 5 - 5925~6425MHz

WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI	Band 5 5925~6425MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH03 5965MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH11-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBHA9170576 HORIZONTAL</p>	<p>Site : 03CH11-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBHA9170576 VERTICAL</p>



Band 5 5925~6425MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	Band 5 5925~6425MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH07 5985MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH11-FY Condition : PEAKUN11_6E 1m SHF ANT_BBHA9170576 HORIZONTAL</p>	<p>Site : 03CH11-FY Condition : PEAKUN11_6E 1m SHF ANT_BBHA9170576 VERTICAL</p>



**Band 5 5925~6425MHz
WIFI 802.11ax HE160 Full (Harmonic @ 3m)**

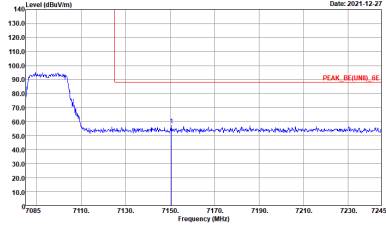
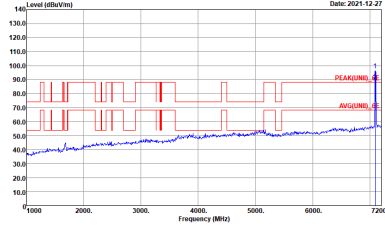
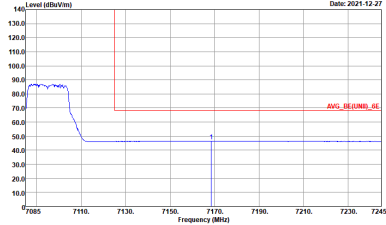
WIFI	Band 5 5925~6425MHz Harmonic @ 3m	
ANT	802.11ax HE160 Full CH15 6025MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH11-FY Condition : PEAKUN11_6E 1m SHF ANT_BBHA9170576 HORIZONTAL</p>	<p>Site : 03CH11-FY Condition : PEAKUN11_6E 1m SHF ANT_BBHA9170576 VERTICAL</p>



Band 8 - 6875~7125MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11n HT20 CH229 7095MHz	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH11-HY Condition : AV6_BE(UNIT)_6E 3m 91200_1326_20211025 HORIZONTAL : RBW:1000.000kHz VBW:0.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	Band 8 6875~7125MHz Band Edge @ 3m	
ANT	802.11n HT20 CH229 7095MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH11-HY Condition : PEAK_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH11-HY Condition : PEAK(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH11-HY Condition : AV6_BE(UNIT)_6E 3m 91200_1326_20211025 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p>	Left blank



Band 8 - 6875~7125MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Band 8 6875~7125MHz Harmonic @ 3m	
ANT	802.11n HT20 CH229 7095MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH15-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBH49170576 HORIZONTAL</p>	<p>Site : 03CH15-HY Condition : PEAK(UNII)_6E 1m SHF ANT_BBH49170576 VERTICAL</p>

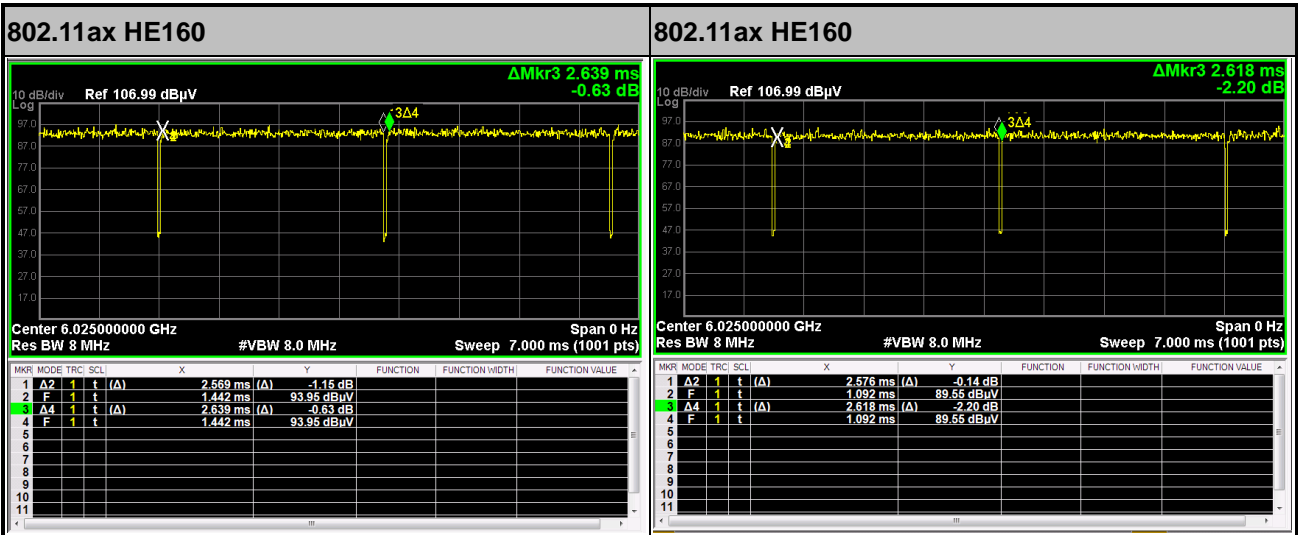


Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting
1	5GHz 802.11ax HE160 Full RU	97.35	2569	0.39	1kHz
2	5GHz 802.11ax HE160 Full RU	98.40	-	-	10Hz
1+2	5GHz 802.11n HT20	99.25	-	-	10Hz
1+2	5GHz 802.11ax HE40 Full RU	98.99	-	-	10Hz
1+2	5GHz 802.11ax HE80 Full RU	99.13	-	-	10Hz
1+2	5GHz 802.11ax HE160 Full RU	99.01	-	-	10Hz

<Ant. 1>

<Ant. 2>





MIMO <Ant. 1+2>

