Prüfbericht-Nr.: *Test report no.:*	CN22QGFA (P15E-WiFi6G) 001	**Auftrags-Nr.:** *Order no.*:	238545743	Seite 1 von 46 *Page 1 of 46*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-07-15	
Auftraggeber: *Client:*	Acer Incorporated 8F, 88, Sec. 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan			
Prüfgegenstand: *Test item:*	Predator Connect Wi-Fi Router			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	W6			
Auftrags-Inhalt: *Order content*:	FCC Part 15E Test report (WiFi 6GHz)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart E Section 15.407			

Wareneingangsdatum: *Date of sample receipt:*	2022-07-11
Prüfmuster-Nr.: *Test sample no:*	A003297660-017 A003297660-015
Prüfzeitraum: *Testing period:*	2022-08-19 - 2022-10-06
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories
Prüfergebnis*: *Test result*:*	Pass

überprüft von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2022-11-11	Ethan Shao	**Ausstellungsdatum:** *Issue date:* 2022-11-11	Brenda Chen
Stellung / *Position:*	Assistant Project Engineer	**Stellung** / *Position:*	Senior Project Manager

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.203	Antenna Requirement	Pass
5.1.2	15.407(a)	Maximum e.i.r.p.	Pass
5.1.3	15.407(a)	Emission Bandwidth	Pass
5.1.4	15.407(g)	Frequency Stability	Pass
5.1.5	15.407(a)	Maximum Power Spectral Density (e.i.r.p.)	Pass
5.1.6	15.407(b)	Radiated Spurious Emissions	Pass
5.1.7	15.407(b)	In-Band Emissions (Channel Mask)	Pass
5.1.8	15.407(d)	Contention-Based Protocol	Pass
5.2.1	15.207	Mains Conducted Emission	Pass

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Contents

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN22QGFA (P15E-WiFi6G) 001	Original Release	2022-11-11

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix A - Test Result of Conducted_CDD
Appendix B - Test Result of Conducted_Beamforming
Appendix C - Test Result of Radiated Emissions & Mains Conducted Emission_CDD
Appendix D - Test Result of Radiated Emissions_Beamforming
Appendix E - Contention-Based Protocol
Appendix SP - Photographs of Test Setup
Appendix EP - Photographs of EUT

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart E Section 15.407
ANSI C63.10:2013
KDB 789033 D02 General UNII Test Procedures New Rules v02r01
KDB 987594 D02 U-NII 6 GHz EMC Measurement v01r01
KDB 662911 D01 Multiple Transmitter Output v02r01

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 180491
ISED Registration No.: 25563

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of k=2 to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (9 kHz ~ 30 MHz)	± 1.15 dB
Radiated Emission (30 MHz ~ 200 MHz)	± 1.30 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.30 dB
Radiated Emission (1 GHz ~ 18 GHz)	± 1.54 dB
Radiated Emission (18 GHz ~ 40 GHz)	± 2.52 dB
Mains Conducted Emission	± 1.65 dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Predator Connect Wi-Fi Router. It contains a WLAN compatible module enabling the user to communicate data through a Wireless interface.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	Predator Connect Wi-Fi Router
Type Identification	W6
FCC ID	HLZW6

Technical Specification of EUT

Item	EUT information	
Operating Frequency	Band 5: 5955 MHz ~ 6415 MHz Band 6: 6435 MHz ~ 6525 MHz Band 7: 6525 MHz ~ 6875 MHz Band 8: 6875 MHz ~ 7115 MHz	
Channel Number	Band 5~8: 59 for 802.11ax HE20 29 for 802.11ax HE40 14 for 802.11ax HE80 7 for 802.11ax HE160	
Data Rate	802.11ax: up to MCS11	
Operation Voltage	Adapter input 100-240 Vac, output 12 Vdc	
Modulation	OFDM/OFDMA : (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)	
Maximum EIRP Output Power (dBm)	CDD	5955 ~ 6415 MHz: 24.34 6435 ~ 6525 MHz: 23.94 6525 ~ 6875 MHz: 24.46 6875 ~ 7115 MHz: 24.84
	Beamforming	5955 ~ 6415 MHz: 27.72 6435 ~ 6525 MHz: 27.32 6525 ~ 6875 MHz: 27.46 6875 ~ 7115 MHz: 27.57
Antenna Information	Refer to 5.1.1	
Accessory Device	Refer to 4.4	

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output expected by the customer and is going to be fixed on the firmware of the final end product.

Table for Parameters of Test Software Setting

<CDD>

802.11ax HE20		802.11ax HE40		802.11ax HE80		802.11ax HE160	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
1	6.5	3	9	7	12.5	15	13.5
45	6.5	43	9	39	12	47	14
93	6.5	91	9	87	13	79	14
97	6	99	8.5	103	12.5	*111	14.5
105	6.5	107	9	*119	13	143	15.5
113	6.5	*115	9.5	135	13	*175	15.5
117	6.5	123	9.5	151	12.5	207	15
149	7.5	155	9.5	167	13		
181	7.5	179	9.5	183*	12.5		
185*	7.5	*187	9.5	199	12.5		
189	7.5	195	9.5	215	12.5		
209	7.5	211	9.5				
233	-2	227	9.5				

*Note : Straddle Channel

<Beamforming>

802.11ax HE20		802.11ax HE40		802.11ax HE80		802.11ax HE160	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
1	10	3	17	7	23	15	27
45	10	43	17	39	23	47	26
93	10	91	17	87	23	79	28
97	9	99	15	103	23	*111	28
105	9	107	16	*119	23	143	30
113	11	*115	18	135	23	*175	30
117	10	123	18	151	23	207	30
149	12	155	17	167	23		
181	13	179	17	183*	23		
185*	13	*187	17	199	23		
189	13	195	17	215	23		
209	12	211	17				
233	0	227	17				

*Note : Straddle Channel

4.2 Carrier Frequency and Channel

Band	Channel	Frequency (MHz)	802.11ax HE20	802.11ax HE40	802.11ax HE80	802.11ax HE160
U-NII-5 (Band 5)	1	5955	V			
	3	5965		V		
	5	5975	V			
	7	5985			V	
	9	5995	V			
	11	6005		V		
	13	6015	V			
	15	6025				V
	17	6035	V			
	19	6045		V		
	21	6055	V			
	23	6065			V	
	25	6075	V			
	27	6085		V		
	29	6095	V			
	33	6105	V			
	35	6115		V		
	37	6135	V			
	39	6145			V	
	41	6155	V			
	43	6165		V		
	45	6175	V			
	47	6185				V
	49	6195	V			
	51	6205		V		
	53	6215	V			
	55	6225			V	
	57	6235	V			
	59	6245		V		
	61	6255	V			
	65	6275	V			
	67	6285		V		
	69	6295	V			
	71	6305			V	
	73	6315	V			
	75	6325		V		
	77	6335	V			
	79	6345				V
	81	6355	V			
	83	6365		V		
	85	6375	V			
	87	6385			V	

Band	Channel	Frequency (MHz)	802.11ax HE20	802.11ax HE40	802.11ax HE80	802.11ax HE160
U-NII-5 (Band 5)	89	6395	V			
	91	6405		V		
	93	6415	V			
U-NII-6 (Band 6)	97	6435	V			
	99	6445		V		
	101	6455	V			
	103	6465			V	
	105	6475	V			
	107	6485		V		
	109	6495	V			
	113	6515	V			
Straddle Channel	111	6505				V
	115	6525		V		
	119	6545			V	
U-NII-7 (Band 7)	117	6535	V			
	121	6555	V			
	123	6565		V		
	125	6575	V			
	129	6595	V			
	131	6605		V		
	133	6615	V			
	135	6625			V	
	137	6635	V			
	139	6645		V		
	141	6655	V			
	143	6665				V
	145	6675	V			
	147	6685		V		
	149	6695	V			
	151	6705			V	
	153	6715	V			
	155	6725		V		
	157	6735	V			
	161	6755	V			
	163	6765		V		
	165	6775	V			
	167	6785			V	
	169	6795	V			
	171	6805		V		
	173	6815	V			
	177	6835	V			
	179	6845		V		
	181	6855	V			
Straddle Channel	175	6825				V
	183	6865			V	
	185	6875	V			
	187	6885		V		

Band	Channel	Frequency (MHz)	802.11ax HE20	802.11ax HE40	802.11ax HE80	802.11ax HE160
U-NII-8 (Band 8)	189	6895	V			
	193	6915	V			
	195	6925		V		
	197	6935	V			
	199	6945			V	
	201	6955	V			
	203	6965		V		
	205	6975	V			
	207	6985				V
	209	6995	V			
	211	7005		V		
	213	7015	V			
	215	7025			V	
	217	7035	V			
	219	7045		V		
	221	7055	V			
	225	7075	V			
	227	7085		V		
	229	7095	V			
	233	7115	V			

4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with LAN interface which makes it possible to control them through a test software installed on a notebook computer.
This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	MT7906 QA 0.0.2.88 for Test mode MTK commend for Beamforming

The samples were used as follows:
A003297660-017
A003297660-015
Full test was applied on all test modes, but only worst case was shown.

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers.

Modulation Mode	Tx Function
802.11ax HE20	2TX (MIMO)
802.11ax HE40	2TX (MIMO)
802.11ax HE80	2TX (MIMO)
802.11ax HE160	2TX (MIMO)

EUT Configure Mode	Applicable To				Description
	Antenna Port Conducted Measurement	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
-	√	√	√	√	-

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when position on **Z-plane**.
2. "-" means no effect.

Antenna Port Conducted Measurement

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency (MHz)	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11ax HE20	5925-6425	1 to 93	1, 45, 93	NSS1 MCS0
-		6425-6525	97 to 113	97, 105, 113	
-		6525-6875	117 to 185	117, 149 ,181, 185	
-		6875-7125	189 to 233	189, 209, 233	
-	802.11ax HE40	5925-6425	3 to 91	3, 43, 91	NSS1 MCS0
-		6425-6525	99 to 115	99, 107, 115	
-		6525-6875	123 to 187	123, 155, 179, 187	
-		6875-7125	195 to 227	195, 211, 227	
-	802.11ax HE80	5925-6425	7 to 87	7, 39, 87	NSS1 MCS0
-		6425-6525	103 to 119	103, 119	
-		6525-6875	135 to 183	135, 151, 167, 183	
-		6875-7125	199 to 215	199, 215	
-	802.11ax HE160	5925-6425	15 to 79	15, 47, 79	NSS1 MCS0
-		6425-6525	111	111	
-		6525-6875	143 to 175	143, 175	
-		6875-7125	207	207	

Radiated Spurious Emissions (Above 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency (MHz)	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11ax HE20	5925-6425	1 to 93	1, 45, 93	NSS1 MCS0
-		6425-6525	97 to 113	97, 105, 113	
-		6525-6875	117 to 185	117, 149 ,181, 185	
-		6875-7125	189 to 233	189, 209, 233	
-	802.11ax HE40	5925-6425	3 to 91	3, 43, 91	NSS1 MCS0
-		6425-6525	99 to 115	99, 107, 115	
-		6525-6875	123 to 187	123, 155, 179, 187	
-		6875-7125	195 to 227	195, 211, 227	
-	802.11ax HE80	5925-6425	7 to 87	7, 39, 87	NSS1 MCS0
-		6425-6525	103 to 119	103, 119	
-		6525-6875	135 to 183	135, 151, 167, 183	
-		6875-7125	199 to 215	199, 215	
-	802.11ax HE160	5925-6425	15 to 79	15, 47, 79	NSS1 MCS0
-		6425-6525	111	111	
-		6525-6875	143 to 175	143, 175	
-		6875-7125	207	207	

Radiated Spurious Emissions (Below 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Frequency (MHz)	Available Channel	Tested Channel	Date Rate (Mbps)
CDD	802.11ax HE160	6525-6875	143 to 175	175	NSS1 MCS0
Beamforming	802.11ax HE160	5925-6425	15 to 79	15	NSS1 MCS0

Mains Conducted Emission Test

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode
-	WLAN 2.4 GHz + WLAN 5 GHz + WLAN 6E

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	23.2-25.5 °C	59-68 %	Nick Guan & Andy Chen
Radiated Spurious Emissions above 1 GHz	23.4-24.9 °C	61-63 %	Ivan Chiang
Radiated Spurious Emissions below 1 GHz	23.4-24.9 °C	61-63 %	Ivan Chiang
Mains Conducted Emission	21 °C	50 %	Ray Huang

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

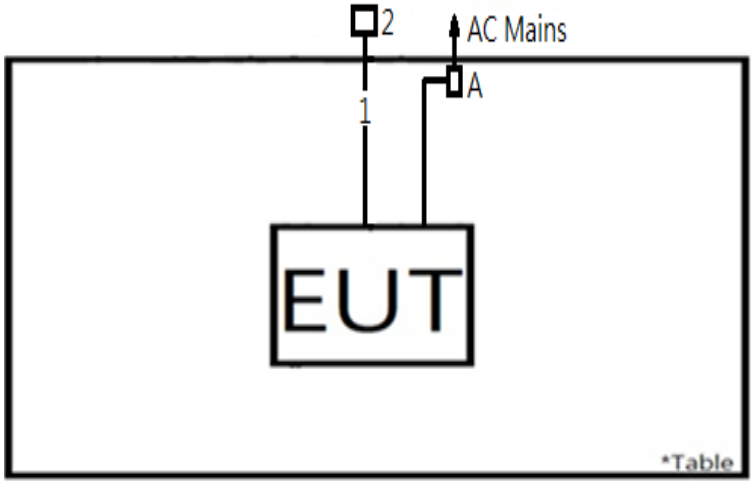
No.	Product	Brand	Model	Description
A	Adapter	Asian Power Devices INC.	WA-36W12FU	I/P: 100-240 Vac, 50/60 Hz, 0.9 A O/P: 12 Vdc, 3 A

Support Unit

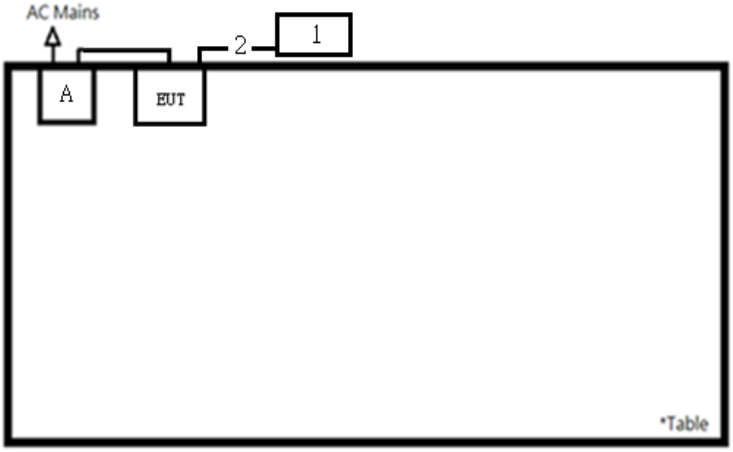
Support Unit								
No	Description	Brand	Model	S/N	Shielded	Ferrite Core (Qty)	Length (cm)	Remark
1	LAN Cable	TUV	TUV-001	NO	YES	NO	300	Radiated
2	Notebook	HP	15s-du0007TX	CND93662WV	-	-	-	
1	Notebook	Lenovo	81BL	MP1DCD6Y	-	-	-	Mains Conducted
2	LAN Cable	TUV	TUV-01	NO	NO	NO	300	

4.5 Test Setup Diagram

<Radiated Spurious Emissions mode>



<Mains Conducted Emission mode>

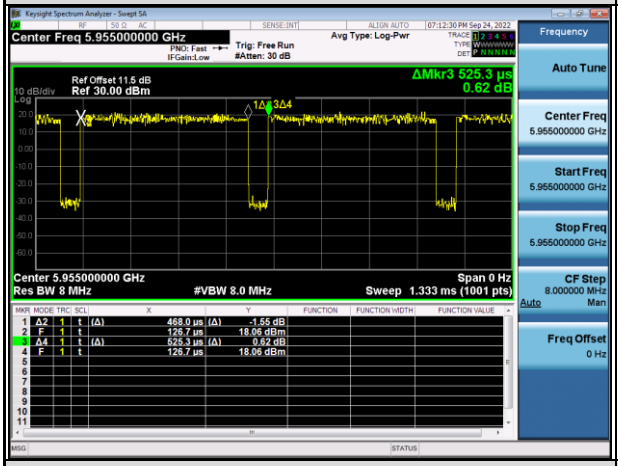


4.6 Duty Cycle of Test Signal

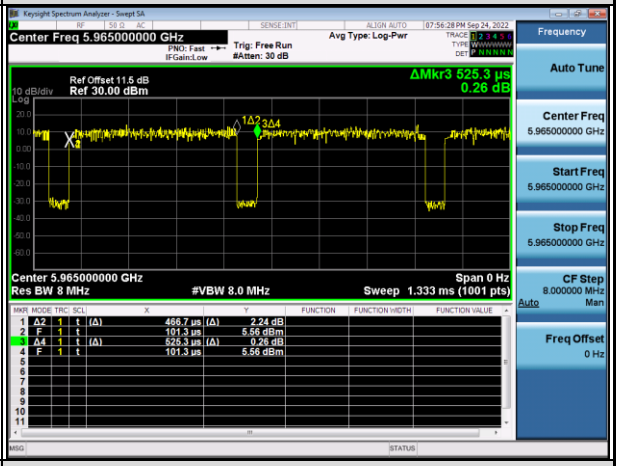
Mode	Band	On + Off Time (ms)	On Time (ms)	Duty Cycle (%)	Duty Factor (dB)
CDD	802.11ax HE20	0.525	0.468	89.09	0.50
	802.11ax HE40	0.525	0.467	88.84	0.51
	802.11ax HE80	0.525	0.468	89.09	0.50
	802.11ax HE160	0.525	0.468	89.09	0.50
Beamforming	802.11ax HE20	4.110	3.790	92.21	0.35
	802.11ax HE40	1.950	1.920	98.46	0.07
	802.11ax HE80	0.978	0.945	96.63	0.15
	802.11ax HE160	0.533	0.500	93.92	0.27

CDD

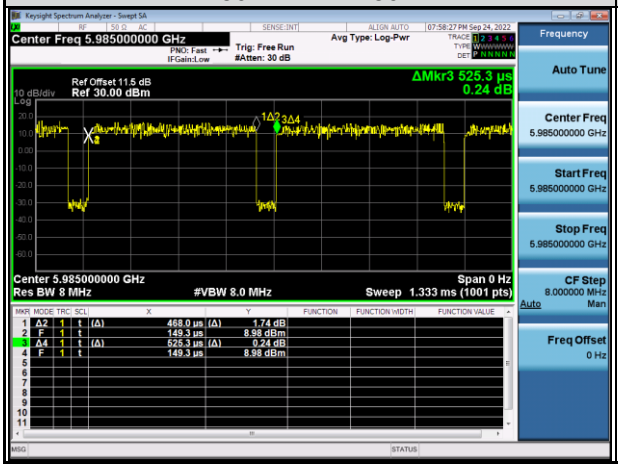
802.11ax HE20



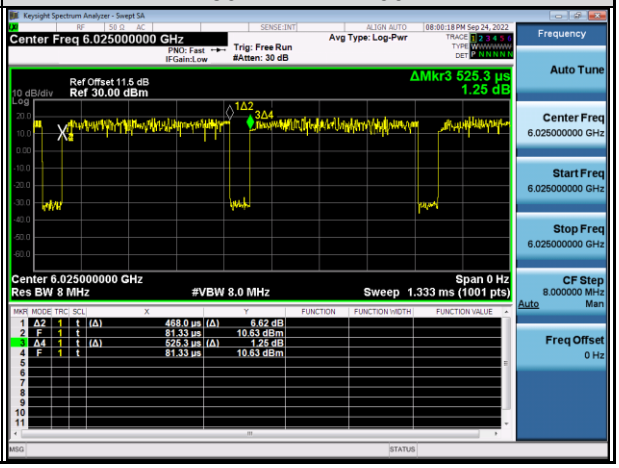
802.11ax HE40

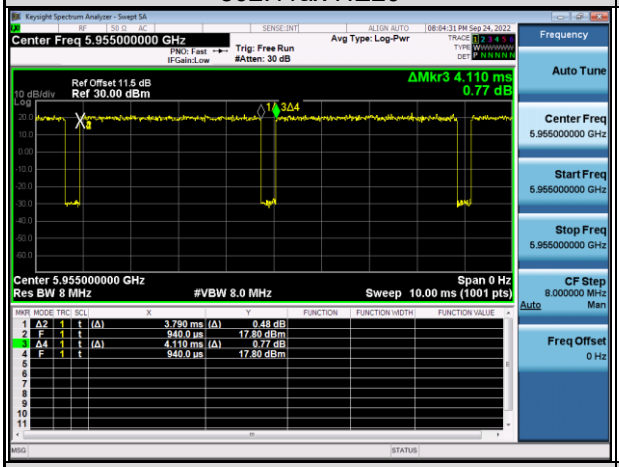
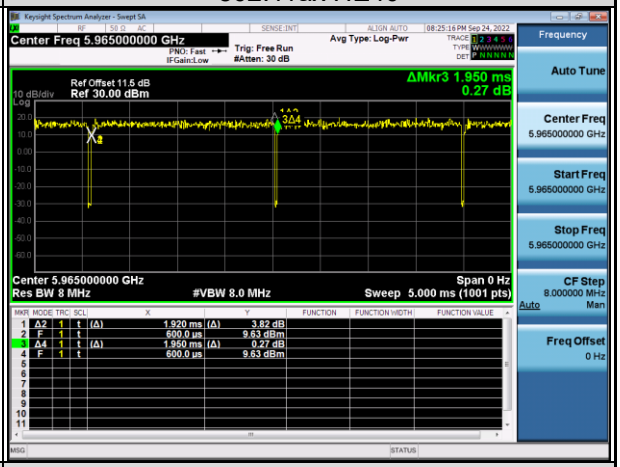
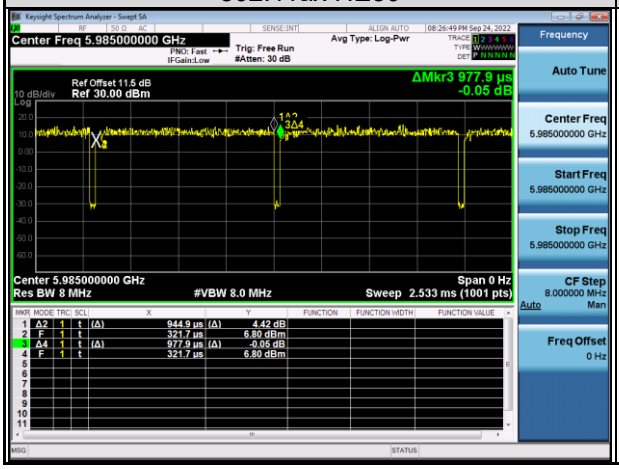
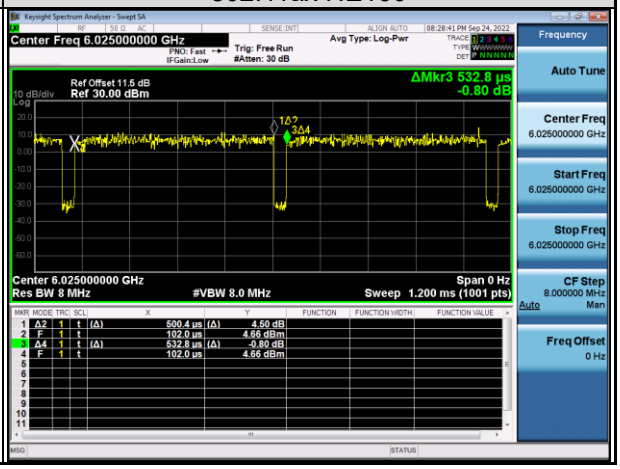


802.11ax HE80



802.11ax HE160



Beamforming	
802.11ax HE20	802.11ax HE40
	
802.11ax HE80	802.11ax HE160
	

5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

The gain value is derived from Antenna datasheet, the EUT's antenna specifications are described as below. The antenna is used with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

ANT		Gain (dBi)				Antenna Type
		Band 5	Band 6	Band 7	Band 8	
8		3.78	3.25	3.77	4.32	Dipole
9		3.38	2.93	2.65	2.76	Dipole
Max Peak Gain		3.78	3.25	3.77	4.32	-
CDD Mode	Power Directional Gain	3.78	3.25	3.77	4.32	-
	PSD Directional Gain	6.59	6.10	6.24	6.59	-
Beamforming Mode	Power Directional Gain	6.59	6.10	6.24	6.59	-
	PSD Directional Gain	6.59	6.10	6.24	6.59	-

Note: PSD Directional Gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}]$

Minimum antenna gain for Contention-Based Protocol

ANT	Gain (dBi)				Antenna Type
	Band 5	Band 6	Band 7	Band 8	
8	3.23	3.02	3.34	2.92	Dipole
9	2.98	2.61	1.97	1.99	Dipole

Refer to EUT photo for details.

5.1.2 Maximum e.i.r.p.

Limit

Frequency Band	EUT Category	Limit
5.925 ~ 7.125 GHz	Indoor Access Point	The maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.
5.925 ~ 6.425 GHz 6.525 ~ 6.875 GHz	Standard Power AP & Fixed Client Device	The maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
5.925 ~ 7.125 GHz	Subordinate Device	Operating under the control of an indoor access point: The maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.
5.925 ~ 6.425 GHz 6.525 ~ 6.875 GHz	Standard Power Client Devices	Except for fixed client devices, operating under the control of a standard power access point: The maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.
5.925 ~ 7.125 GHz	Indoor Client Devices	Operating under the control of an indoor access point: The maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

Kind of Test Site Shielded room

Test Setup

Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Power Meter	Anritsu	ML2495A	1901008	2022/3/15	2023/3/14	2022/8/19	2022/10/5
Power Sensor	Anritsu	MA2411B	1725269	2022/3/15	2023/3/14	2022/8/19	2022/10/5

Test Procedures

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

Test Result

For U-NII-5 to U-NII-8

<CDD>

<802.11ax HE20>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
1	5955	8.22	9.07	11.68	14.71	15.46	30.00
45	6175	9.01	8.12	11.60	14.45	15.38	30.00
93	6415	7.82	7.41	10.63	11.56	14.41	30.00
97	6435	8.26	8.43	11.36	13.67	14.61	30.00
105	6475	9.29	9.48	12.40	17.36	15.65	30.00
113	6515	8.88	8.76	11.83	15.24	15.08	30.00
117	6535	8.73	8.62	11.69	14.74	15.46	30.00
149	6695	9.13	8.82	11.99	15.81	15.76	30.00
181	6855	9.14	8.65	11.91	15.53	15.68	30.00
*185	6875	9.01	8.36	11.71	14.82	15.48	30.00
*185	6875	9.01	8.36	11.71	14.82	16.03	30.00
189	6895	8.92	8.11	11.54	14.27	15.86	30.00
209	6995	9.00	8.21	11.63	14.57	15.95	30.00
233	7115	-1.17	-2.13	1.39	1.38	5.71	30.00

*Note : Straddle Channel

<802.11ax HE40>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
3	5965	11.32	12.24	14.81	30.30	18.59	30.00
43	6165	12.28	11.24	14.80	30.21	18.58	30.00
91	6405	11.15	10.79	13.98	25.03	17.76	30.00
99	6445	11.66	11.64	14.66	29.24	17.91	30.00
107	6485	12.07	12.01	15.05	31.99	18.30	30.00
*115	6525	11.87	11.70	14.80	30.17	18.05	30.00
*115	6525	11.87	11.70	14.80	30.17	18.57	30.00
123	6565	11.79	11.84	14.83	30.38	18.60	30.00
155	6725	10.76	10.42	13.60	22.93	17.37	30.00
179	6845	11.02	10.53	13.79	23.95	17.56	30.00
*187	6885	10.95	10.23	13.62	22.99	17.39	30.00
*187	6885	10.95	10.23	13.62	22.99	17.94	30.00
195	6925	11.09	10.27	13.71	23.49	18.03	30.00
211	7005	10.81	10.02	13.44	22.10	17.76	30.00
227	7085	10.32	9.34	12.87	19.35	17.19	30.00

*Note : Straddle Channel

<802.11ax HE80>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
7	5985	14.34	14.78	17.58	57.23	21.36	30.00
39	6145	14.92	13.95	17.47	55.88	21.25	30.00
87	6385	14.81	14.52	17.68	58.58	21.46	30.00
103	6465	14.97	15.15	18.07	64.14	21.32	30.00
*119	6545	14.79	14.82	17.82	60.47	21.07	30.00
*119	6545	14.79	14.82	17.82	60.47	21.59	30.00
135	6625	15.26	14.97	18.13	64.98	21.90	30.00
151	6705	15.24	14.87	18.07	64.11	21.84	30.00
167	6785	15.63	15.01	18.34	68.26	22.11	30.00
*183	6865	15.18	14.55	17.89	61.47	21.66	30.00
*183	6865	15.18	14.55	17.89	61.47	22.21	30.00
199	6945	15.21	14.39	17.83	60.67	22.15	30.00
215	7025	14.94	14.17	17.58	57.31	21.90	30.00

*Note : Straddle Channel

<802.11ax HE160>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
15	6025	17.32	17.77	20.56	113.79	24.34	30.00
47	6185	17.26	17.41	20.35	108.29	24.13	30.00
79	6345	17.24	16.73	20.00	100.06	23.78	30.00
*111	6505	17.62	17.74	20.69	117.24	23.94	30.00
*111	6505	17.62	17.74	20.69	117.24	24.46	30.00
143	6665	17.66	17.28	20.48	111.80	24.25	30.00
*175	6825	17.84	17.16	20.52	112.81	24.29	30.00
*175	6825	17.84	17.16	20.52	112.81	24.84	30.00
207	6985	17.22	16.42	19.85	96.58	24.17	30.00

*Note : Straddle Channel

<Beamforming>

<802.11ax HE20>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
1	5955	7.58	8.49	11.07	12.79	17.66	30.00
45	6175	8.29	7.48	10.91	12.34	17.50	30.00
93	6415	7.38	7.01	10.21	10.49	16.80	30.00
97	6435	8.13	7.99	11.07	12.80	17.17	30.00
105	6475	8.23	8.11	11.18	13.12	17.28	30.00
113	6515	8.61	8.53	11.58	14.39	17.68	30.00
117	6535	7.80	7.73	10.78	11.95	17.02	30.00
149	6695	8.19	7.95	11.08	12.83	17.32	30.00
181	6855	8.66	8.15	11.42	13.88	17.66	30.00
*185	6875	8.67	8.03	11.37	13.72	17.61	30.00
*185	6875	8.67	8.03	11.37	13.72	17.96	30.00
189	6895	8.62	7.83	11.25	13.35	17.84	30.00
209	6995	8.19	7.40	10.82	12.09	17.41	30.00
233	7115	-0.18	-1.14	2.38	1.73	8.97	30.00

*Note : Straddle Channel

<802.11ax HE40>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
3	5965	11.24	12.19	14.75	29.86	21.34	30.00
43	6165	12.58	11.61	15.13	32.60	21.72	30.00
91	6405	11.37	11.01	14.20	26.33	20.79	30.00
99	6445	11.41	11.47	14.45	27.86	20.55	30.00
107	6485	11.85	11.96	14.92	31.01	21.02	30.00
*115	6525	12.12	12.00	15.07	32.14	21.17	30.00
*115	6525	12.12	12.00	15.07	32.14	21.31	30.00
123	6565	12.10	12.13	15.13	32.55	21.37	30.00
155	6725	12.32	11.99	15.17	32.87	21.41	30.00
179	6845	12.44	11.85	15.17	32.85	21.41	30.00
*187	6885	12.35	11.48	14.95	31.24	21.19	30.00
*187	6885	12.35	11.48	14.95	31.24	21.54	30.00
195	6925	12.48	11.59	15.07	32.12	21.66	30.00
211	7005	12.13	11.31	14.75	29.85	21.34	30.00
227	7085	11.38	10.41	13.93	24.73	20.52	30.00

*Note : Straddle Channel

<802.11ax HE80>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
7	5985	13.76	14.20	17.00	50.07	23.59	30.00
39	6145	15.18	14.20	17.73	59.26	24.32	30.00
87	6385	14.14	13.80	16.98	49.93	23.57	30.00
103	6465	14.77	14.93	17.86	61.11	23.96	30.00
*119	6545	14.19	14.18	17.20	52.42	23.30	30.00
*119	6545	14.19	14.18	17.20	52.42	23.44	30.00
135	6625	14.78	14.55	17.68	58.57	23.92	30.00
151	6705	15.17	14.85	18.02	63.46	24.26	30.00
167	6785	15.05	14.46	17.78	59.91	24.02	30.00
*183	6865	15.04	14.40	17.74	59.46	23.98	30.00
*183	6865	15.04	14.40	17.74	59.46	24.33	30.00
199	6945	15.02	14.19	17.64	58.01	24.23	30.00
215	7025	14.36	13.58	17.00	50.09	23.59	30.00

*Note : Straddle Channel

<802.11ax HE160>

Channel	Channel Frequency (MHz)	Average Output Power (dBm)		Total Power		EIRP Power (dBm)	EIRP Limit (dBm)
		Ant 8	Ant 9	(dBm)	(mW)		
15	6025	17.96	18.28	21.13	129.81	27.72	30.00
47	6185	17.25	17.41	20.34	108.17	26.93	30.00
79	6345	18.03	17.62	20.84	121.34	27.43	30.00
*111	6505	18.16	18.26	21.22	132.45	27.32	30.00
*111	6505	18.16	18.26	21.22	132.45	27.46	30.00
143	6665	18.10	17.68	20.91	123.18	27.15	30.00
*175	6825	18.36	17.55	20.98	125.43	27.22	30.00
*175	6825	18.36	17.55	20.98	125.43	27.57	30.00
207	6985	17.96	17.13	20.58	114.16	27.17	30.00

*Note : Straddle Channel

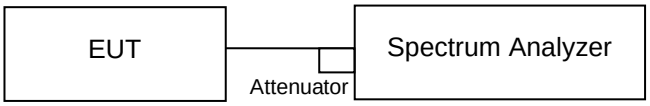
5.1.3 Emission Bandwidth

Limit

The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Agilent	N9010A	MY53470241	2022/6/15	2023/6/14	2022/8/19	2022/10/5

Test Procedure

a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Sample or PEAK.
d. Trace mode = max hold.
e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
f. For 99% Bandwidth Measurement, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sample. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

Test Results

Please refer to Appendix A~B.

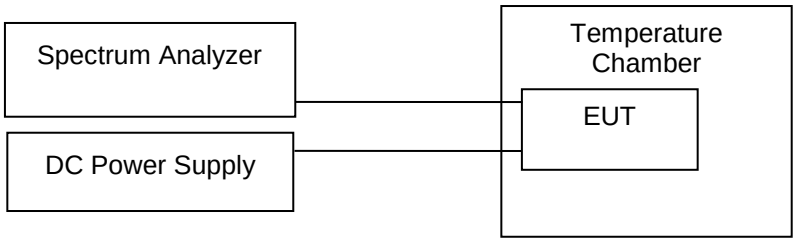
5.1.4 Frequency Stability

Limit

Ensure that the emission bandwidth is maintained within the band of operation under all conditions of normal operation.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Agilent	N9010A	MY53470241	2022/6/15	2023/6/14	2022/8/19	2022/10/5

Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Results

Frequency (MHz)	6175			
Voltage (Vac)	Measurement Frequency (MHz)			Max. Deviation (ppm)
121	6175.00492			0.797
110	6175.00347			0.562
99	6175.00637			1.032
Temperature (°C)	Measurement Frequency (MHz)			
	0 Minute	2 Minute	5 Minute	10 Minute
40	6174.95601	6174.9424	6174.94153	6174.94182
30	6174.962711	6174.963034	6174.96477	6174.965253
20	6175.00347	6174.98958	6174.97685	6174.96758
10	6175.009233	6175.009411	6175.009856	6175.009946
0	6175.005861	6175.006709	6175.00693	6175.008787
-10	6175.00521	6175.011	6175.01621	6175.02171
Max. Deviation (ppm)	7.124	9.328	9.469	9.422

Frequency (MHz)	6475			
Voltage (Vac)	Measurement Frequency (MHz)			Max. Deviation (ppm)
121	6474.96527			5.364
110	6474.96382			5.588
99	6474.96643			5.185
Temperature (°C)	Measurement Frequency (MHz)			
	0 Minute	2 Minute	5 Minute	10 Minute
40	6474.93748	6474.9398	6474.94038	6474.94124
30	6474.938017	6474.938319	6474.938495	6474.941825
20	6474.96382	6474.95919	6474.95687	6474.95456
10	6474.975253	6474.980767	6474.988169	6474.994147
0	6474.998897	6474.999004	6475.006881	6475.010441
-10	6475.02836	6475.0246	6475.0246	6475.02402
Max. Deviation (ppm)	9.656	9.526	9.499	9.075

Frequency (MHz)	6695			
Voltage (Vac)	Measurement Frequency (MHz)			Max. Deviation (ppm)
121	6694.95456			6.787
110	6694.95398			6.874
99	6694.95514			6.701
Temperature (°C)	Measurement Frequency (MHz)			
	0 Minute	2 Minute	5 Minute	10 Minute
40	6694.9369	6694.93951	6694.9398	6694.94009
30	6694.940221	6694.940523	6694.944122	6694.944139
20	6694.95398	6694.9534	6694.95282	6694.95253
10	6694.9661	6694.968376	6694.973014	6694.973992
0	6695.01857	6695.019123	6695.019727	6695.020492
-10	6695.03126	6695.02808	6695.02808	6695.02808
Max. Deviation (ppm)	10.219	9.796	9.749	9.702

Frequency (MHz)	6995			
Voltage (Vac)	Measurement Frequency (MHz)			Max. Deviation (ppm)
121	6994.95195			6.869
110	6994.95109			6.992
99	6994.95311			6.703
Temperature (°C)	Measurement Frequency (MHz)			
	0 Minute	2 Minute	5 Minute	10 Minute
40	6994.93459	6994.93777	6994.93777	6994.93806
30	6994.934704	6994.935324	6994.935348	6994.935605
20	6994.95109	6994.94588	6994.94038	6994.93575
10	6994.968249	6994.973778	6994.998402	6994.999262
0	6995.000206	6995.001648	6995.009466	6995.012629
-10	6995.03502	6995.0301	6995.02952	6995.02952
Max. Deviation (ppm)	10.102	9.989	9.985	9.945

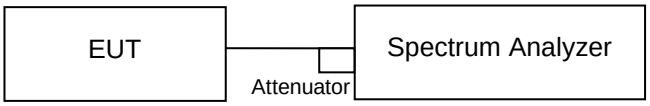
5.1.5 Maximum Power Spectral Density (e.i.r.p.)

Limit

Frequency Band	EUT Category	Limit
5.925 ~ 7.125 GHz	Indoor Access Point	The maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band.
5.925 ~ 6.425 GHz 6.525 ~ 6.875 GHz	Standard Power AP & Fixed Client Device	The maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band.
5.925 ~ 7.125 GHz	Subordinate Device	The maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band.
5.925 ~ 6.425 GHz 6.525 ~ 6.875 GHz	Standard Power Client Devices	Except for fixed client devices, operating under the control of a standard power access point: The maximum power spectral density must not exceed 17 dBm e.i.r.p. in any 1-megahertz band.
5.925 ~ 7.125 GHz	Indoor Client Devices	Operating under the control of an indoor access point: The maximum power spectral density must not exceed −1 dBm e.i.r.p. in any 1-megahertz band.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Agilent	N9010A	MY53470241	2022/6/15	2023/6/14	2022/8/19	2022/10/5

Test Procedure

For U-NII-5 to U-NII-8 band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add 10 log (1/duty cycle)

For MIMO mode, calculation method follows FCC KDB 662911 Method 2) a) of power density measurement using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

Test Results

Please refer to Appendix A~B.

5.1.6 Radiated Spurious Emissions

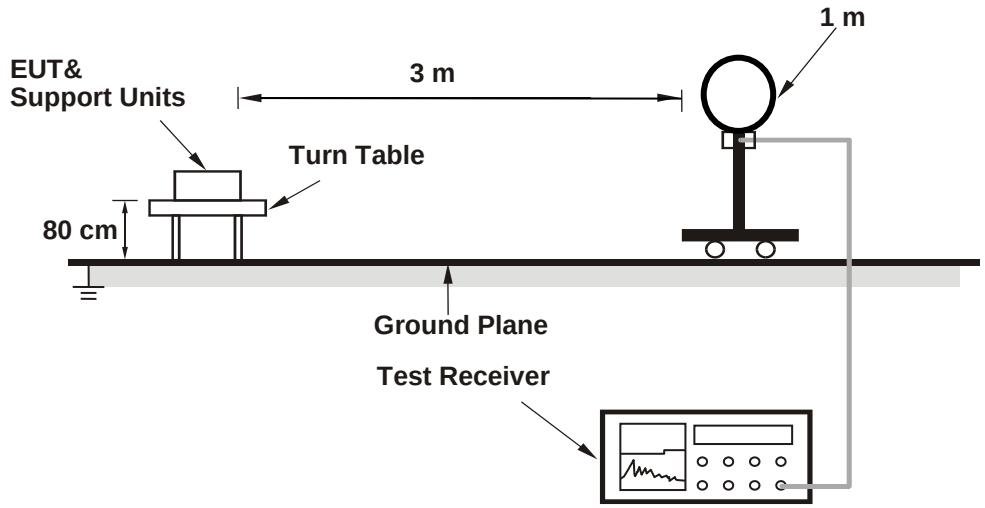
Limit

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.
Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

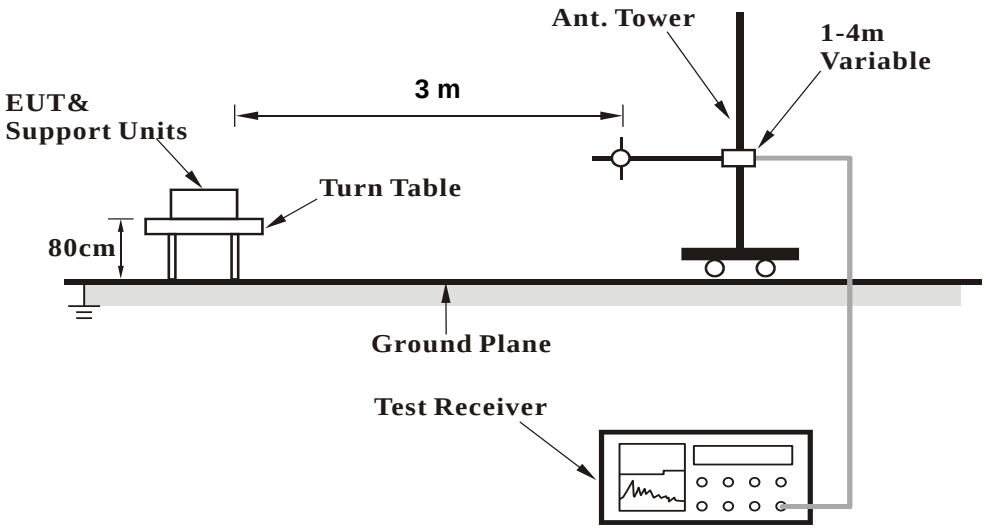
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

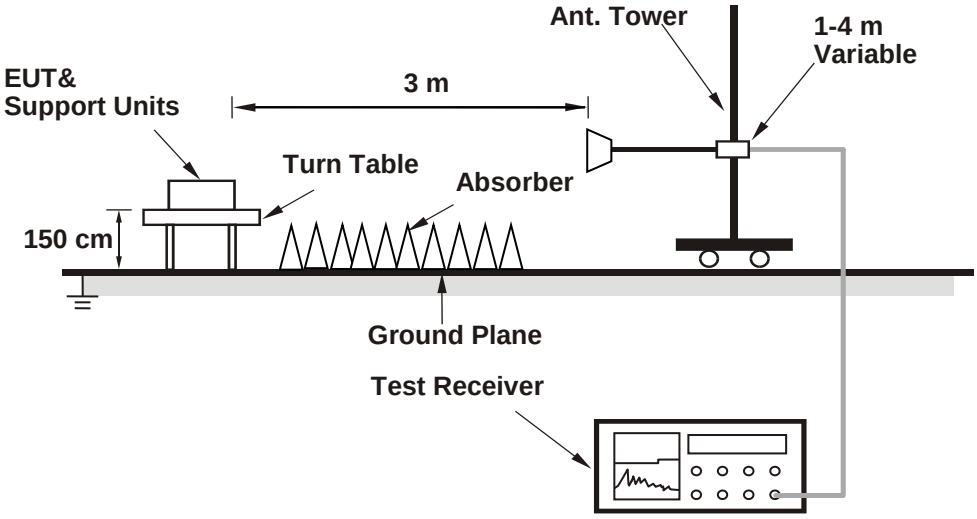
<Radiated Emissions below 30 MHz>



<Radiated Emissions 30 MHz to 1 GHz>



<Radiated Emissions above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Above 1 GHz					
Signal Analyzer	R&S	FSV40	101508	2022/4/13	2023/4/12
Horn Antenna	ETS-Lindgren	3117	00218929	2021/11/25	2022/11/24
HF-AMP + AC source	EMCI	EMC051845SE	980635	2022/1/20	2023/1/19
HF-AMP + AC source	EMCI	EMC184045SE	980656	2022/1/20	2023/1/19
Horn Antenna	SCHWARZBECK	BBHA 9170	00887	2022/3/29	2023/3/28
Test Software	Audix E3	15914a_20191106 tuv	PK-001087	N/A	N/A
30 MHz ~ 1 GHz					
Receiver	R&S	ESR7	102108	2022/4/28	2023/4/27
Bilog Antenna	SCHWARZBECK	VULB-9168	00950	2022/4/6	2023/4/5
LF-AMP	Agilent	8447D	2944A107722	2022/3/22	2023/3/21
Test Software	Audix E3	15914a_20191106 tuv	PK-001087	N/A	N/A
Below 30 MHz					
Receiver	R&S	ESR7	102108	2022/4/28	2023/4/27
Loop Antenna	SCHWARZBECK	FMZB 1519B	00215	2021/12/8	2022/12/7
Test Software	Audix E3	15914a_20191106 tuv	PK-001087	N/A	N/A

Test Procedures

For Radiated Emissions below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The Radiated Emissions testing was performed in the X(E1), Y(H) and Z(E2) axis orientation. The worst-case Axis orientation is recorded in this test report.

Test Results

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix C~D.

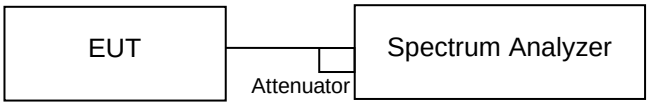
5.1.7 In-Band Emissions (Channel Mask)

Limit

For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Agilent	N9010A	MY53470241	2022/6/15	2023/6/14	2022/8/19	2022/10/5

Test Procedures

1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2013.
3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013. (This will be used to determine the channel edge.)
4. Measure the power spectral density (which will be used for emissions mask reference) using the
   following procedure:
   a) Set the span to encompass the entire 26 dB EBW of the signal.
   b) Set RBW = same RBW used for 26 dB EBW measurement.
   c) Set VBW ≥ 3 X RBW
   d) Number of points in sweep ≥ [2 X span / RBW].
   e) Sweep time = auto.
   f) Detector = RMS (i.e., power averaging)
   g) Trace average at least 100 traces in power averaging (rms) mode.
   h) Use the peak search function on the instrument to find the peak of the spectrum.
5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW.
6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
   a. Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
   b. Suppressed by 28 dB at one channel bandwidth from the channel center.
   c. Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

Test Results

Please refer to Appendix A~B..

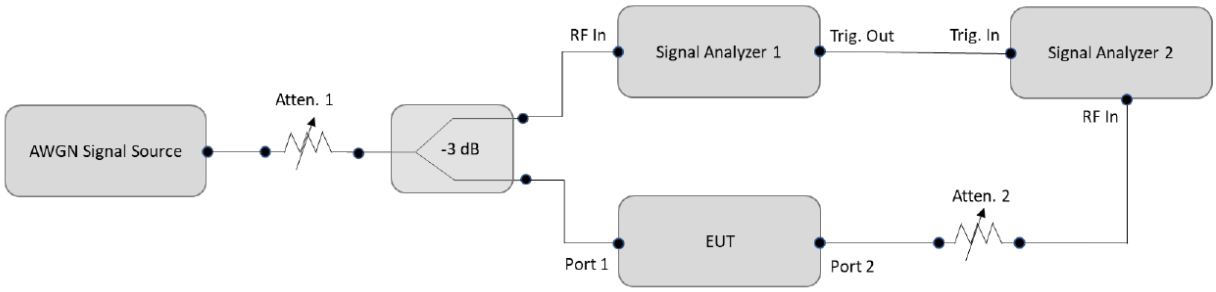
5.1.8 Contention-Based Protocol

Limit

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 (in which incumbent signal is transmitted) and stay off the incumbent channel as long as detected radio frequency power is equal to or greater than the threshold. The -62 dBm threshold is referenced to a 0 dBi antenna gain.
Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Keysight	N9000B	MY54200207	2022/1/10	2023/1/9	2022/11/4	2022/11/7
MXG Vector Signal Generator	Agilent	N5182B	MY53050524	2022/3/9	2023/3/8	2022/11/4	2022/11/7

Test Procedures

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.
   Connect the output port of the EUT to the signal analyzer 2, as shown in Test Setup. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.
4. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step 2.

5. 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.

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:
BWEUT: Transmission bandwidth of EUT signal
BWInc: Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)
$fc1$: Center frequency of EUT transmission
$fc2$: Center frequency of simulated incumbent signal

6. 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.
7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
8. 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.
9. (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.
10. 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.

Test Results

<802.11ax HE20>

Contention Based protocol Measurement_802.11ax 20MHz									
UNII Band	Test Channel	Freq. (MHz)	Interference Frequency (MHz)	Threshold level of AWGN interference (dBm)	Number of Times	Number of Detected	Detection Rate (%)	Limit (%)	Test Result
5	45	6175	6175	-72.98	10	10	100	90	Pass
6	105	6475	6475	-73.61	10	10	100	90	Pass
7	149	6695	6695	-73.97	10	10	100	90	Pass
8	209	6995	6995	-74.99	10	10	100	90	Pass

Interference(AWGN) Level Check						
UNII Band	Test Channel	Freq. (MHz)	Interference Frequency (MHz)	AWGN signal level (ON) (dBm)	AWGN signal level (Minimal) (dBm)	AWGN signal level (OFF) (dBm)
5	45	6175	6175	-84.98	-82.98	-72.98
6	105	6475	6475	-84.61	-83.61	-73.61
7	149	6695	6695	-83.97	-80.97	-73.97
8	209	6995	6995	-83.99	-82.99	-74.99

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

<802.11ax HE160>

Contention Based protocol Measurement_802.11ax 160MHz									
UNII Band	Test Channel	Freq. (MHz)	Interference Frequency (MHz)	Threshold level of AWGN interference (dBm)	Number of Times	Number of Detected	Detection Rate (%)	Limit (%)	Test Result
5	47	6185	6110	-71.98	10	10	100	90	Pass
			6185	-68.98	10	10	100	90	Pass
			6260	-67.98	10	10	100	90	Pass
6	111	6505	6430	-70.61	10	10	100	90	Pass
			6505	-73.61	10	10	100	90	Pass
			6580	-69.61	10	10	100	90	Pass
7	143	6665	6590	-66.97	10	10	100	90	Pass
			6665	-69.97	10	10	100	90	Pass
			6740	-66.97	10	10	100	90	Pass
8	207	6985	6910	-69.99	10	10	100	90	Pass
			6985	-73.99	10	10	100	90	Pass
			7060	-66.99	10	10	100	90	Pass

Interference(AWGN) Level Check						
UNII Band	Test Channel	Freq. (MHz)	Interference Frequency (MHz)	AWGN signal level (ON) (dBm)	AWGN signal level (Minimal) (dBm)	AWGN signal level (OFF) (dBm)
5	47	6185	6110	-84.98	-72.98	-71.98
			6185	-84.98	-81.98	-68.98
			6260	-84.98	-71.98	-67.98
6	111	6505	6430	-84.61	-71.61	-70.61
			6505	-84.61	-82.61	-73.61
			6580	-84.61	-71.61	-69.61
7	143	6665	6590	-83.97	-69.97	-66.97
			6665	-84.97	-83.97	-69.97
			6740	-83.97	-68.97	-66.97
8	207	6985	6910	-83.99	-70.99	-69.99
			6985	-83.99	-79.99	-73.99
			7060	-83.99	-68.99	-66.99

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

Please refer to Appendix E for the details.

5.2 Mains Emission

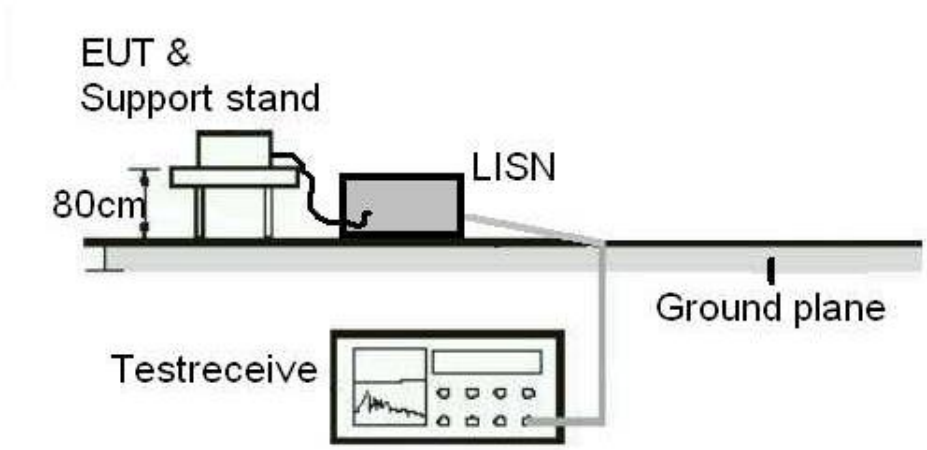
5.2.1 Mains Conducted Emission

Limit

Mains Conducted emissions as defined in RSS-Gen 8.8 must comply with the mains conducted emission limits.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Test Period: 2022-10-06

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Two-Line V-Network	Rohde & Schwarz	ENV216	101938	2022/9/22	2023/9/21
EMI Test Receiver	R&S	ESCI	1816063	2021/11/15	2022/11/14

Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

Test Results

Please refer to Appendix C.