TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: **47 CFR FCC Part 15, Subpart E (Section 15.407)**

Report No.:	RFBBQZ-WTW-P23070188-2
FCC ID:	PY323200598
Product:	Orbi WiFi 7 Router, Orbi WiFi 7 Satellite (Refer to item 3.1 for the more details)
Brand:	NETGEAR
Model No.:	RBE771
Series Model:	RBE770 (Refer to item 3.1 for the more details)
Received Date:	2023/7/11
Test Date:	2023/8/25 ~ 2024/1/18
Issued Date:	2024/3/22
Applicant and Manufacturer:	NETGEAR, Inc.
Address:	350 East Plumeria Drive San Jose, CA 95134
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Approved by: Jeremy Lin , **Date:** 2024/3/22

Jeremy Lin / Project Engineer

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Prepared by : Vera Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P23070188-2	Original Release	2024/3/22

1 Certificate

Product:	Orbi WiFi 7 Router, Orbi WiFi 7 Satellite (Refer to item 3.1 for the more details)
Brand:	NETGEAR
Test Model:	RBE771
Series Model:	RBE770 (Refer to item 3.1 for the more details)
Sample Status:	Engineering Sample
Applicant and Manufacturer:	NETGEAR, Inc.
Test Date:	2023/8/25 ~ 2024/1/18
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 KDB 291074 D02 EMC Measurement v01 KDB 789033 D02 General UNII Test Procedure New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -17.46 dB at 0.25000 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.2 dB at 51.09 MHz
15.407(b)(5) 15.407(b)(10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -0.1 dB at 5645.90 MHz
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	1 GHz ~ 18 GHz	2.29 dB
Power Spectral Density	1 GHz ~ 18 GHz	2.29 dB
6 dB Bandwidth	-	206.5 Hz
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.88 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.64 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Orbi WiFi 7 Router, Orbi WiFi 7 Satellite
Brand	NETGEAR
Test Model	RBE771
Series Model	RBE770
Model Difference	Refer to Note
Status of EUT	Engineering Sample
Power Supply Rating	Refer to Note as below
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode 4096QAM for OFDMA in 11be EHT mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps 802.11be: up to 2882 Mbps
Operating Frequency	5.815 GHz ~ 5.885 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20): 3 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40), 802.11be (EHT40): 2 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80): 1 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160): 1
Output Power	**CDD Mode:** EIRP: 1291.219 mW (31.11 dBm) **Beamforming Mode:** EIRP: 2371.374 mW (33.75 dBm)
EUT Category	Indoor access point + subordinate for UNII-4

Note:

1. All models are listed as below.

Brand	Product	Model	Difference
NETGEAR	Orbi WiFi 7 Router	RBE771	Four 2.5G Ethernet ports (1 WAN + 3 LAN)
	Orbi WiFi 7 Satellite	RBE770	Two 2.5G Ethernet ports (2 LAN)

2. The EUT uses following accessories.

AC Adapter 1	Brand	NETGEAR
	Model	ADS-40FPC-12 12030E
	Part Number	332-11700-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US/EU/AU
	Color	White
AC Adapter 2	Brand	NETGEAR
	Model	2AED030FC
	Part Number	332-11713-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A 30W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US/EU/AU
	Color	White
AC Adapter 3	Brand	NETGEAR
	Model	AD2150F10
	Part Number	332-11093-02
	AC Input	100-120V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US
	Color	White
AC Adapter 4	Brand	NETGEAR
	Model	AD2150M20
	Part Number	332-11099-06
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A 42W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US
	Color	White
AC Adapter 5	Brand	NETGEAR
	Model	AD2150M20
	Part Number	332-11099-05
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 3.5A 42W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU, AU
	Color	White
AC Adapter 6	Brand	NETGEAR
	Model	ADS-40FPC-12 12030E
	Part Number	332-11699-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU
	Color	Black

AC Adapter 7	Brand	NETGEAR
	Model	2AED030FC
	Part Number	332-11712-01
	AC Input	100-240V, ~50/60Mhz Max. 1.0A
	DC Output	12V, 2.5A 30W
	DC Output Cable	1.8m non-shielded and without core
	Plug	US, EU
	Color	Black
Ethernet Cable	Brand	NETGEAR
	Model	312-10133-01
	Signal Line	2m, Unshielded

* After pretesting, Adapter 1 was the worst case and chosen for final test.

* The design of Adapter 1 and Adapter 6 are identical. The difference between them is Exterior color.

* The design of Adapter 2 and Adapter 7 are identical. The difference between them is Exterior color.

* The design of Adapter 4 and Adapter 5 are identical. The difference between them are Adapter 4 is adding more safety logos on the rating label.

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type	Connector Type	Frequency Range	Antenna Gain (dBi)	
			Chain 0	Chain 1
Dipole	ipex(MHF)	5850 ~ 5895 MHz	4.22	4.04

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a MIMO function:

5 GHz Band			
Modulation Mode	Beamforming Mode	TX & RX Configuration	
802.11a	Not Support	2TX	2RX
802.11n (HT20)	Support	2TX	2RX
802.11n (HT40)	Support	2TX	2RX
802.11ac (VHT20)	Support	2TX	2RX
802.11ac (VHT40)	Support	2TX	2RX
802.11ac (VHT80)	Support	2TX	2RX
802.11ac (VHT160)	Support	2TX	2RX
802.11ax (HE20)	Support	2TX	2RX
802.11ax (HE40)	Support	2TX	2RX
802.11ax (HE80)	Support	2TX	2RX
802.11ax (HE160)	Support	2TX	2RX
802.11be (EHT20)	Support	2TX	2RX
802.11be (EHT40)	Support	2TX	2RX
802.11be (EHT80)	Support	2TX	2RX
802.11be (EHT160)	Support	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz), 802.11ac mode for 20 MHz (40 MHz, 80 MHz, 160 MHz), 802.11ax mode for 20 MHz (40 MHz, 80 MHz, 160 MHz) and 802.11be mode for 20 MHz (40 MHz, 80 MHz, 160 MHz), therefore the investigated worst case to representative mode in test report.
4. The EUT device modulation technique OFDMA does not support partial RUs (resource units) and channel puncturing/bandwidth reduction mechanisms.

3.3 Channel List

3 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20), 802.11be (EHT20):

Channel	Frequency	Channel	Frequency	Channel	Frequency
*169	5845 MHz	173	5865 MHz	177	5885 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40), 802.11be (EHT40):

Channel	Frequency	Channel	Frequency
*167	5835 MHz	175	5875 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80), 802.11be (EHT80):

Channel	Frequency
*171	5855 MHz

1 channel is provided for 802.11ac (VHT160), 802.11ax (HE160), 802.11be (EHT160):

Channel	Frequency
*163	5815 MHz

Note: * U-NII-3 & -4 span channels.

3.4 Test Mode Applicability and Tested Channel Detail

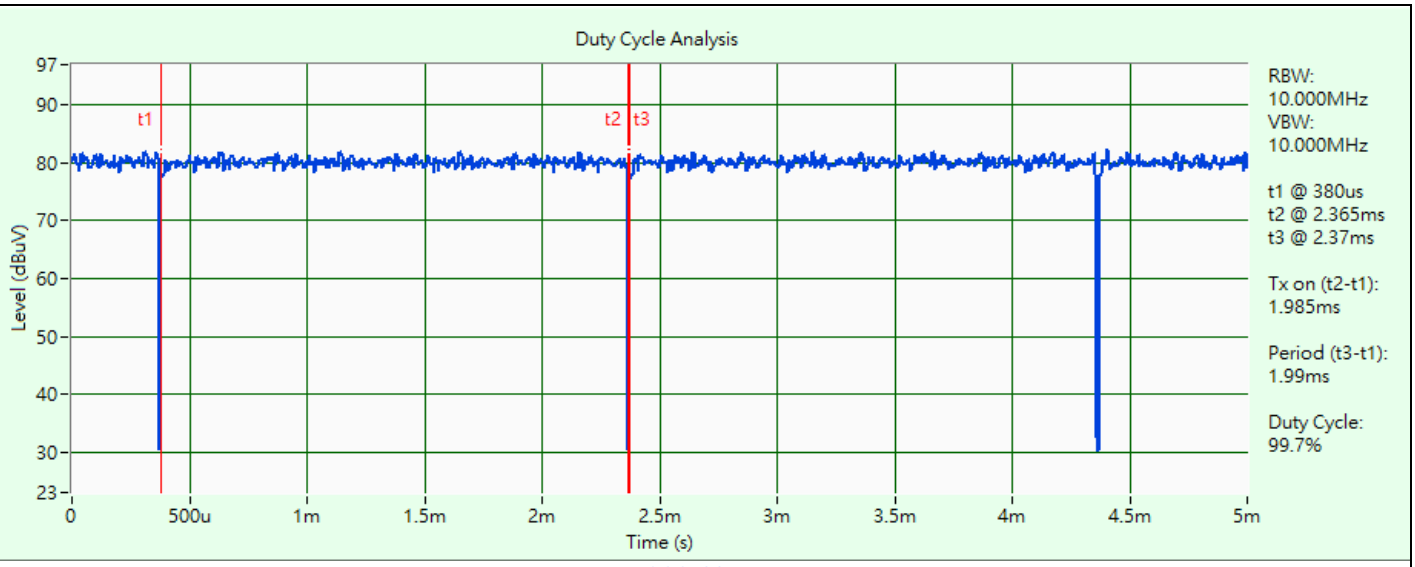
Pre-Scan:	The AC Adapter has the following models: ADS-40FPC-12 12030E / 2AED030FC / AD2150F10 / AD2150M20. Pre-scan these models of AC Adapters and find the worst case as a representative test condition.
Worst Case:	1. AC Adapter Worst Condition: ADS-40FPC-12 12030E 2. The EUT is usually used standing that and was therefore chosen for Unwanted Emissions.

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

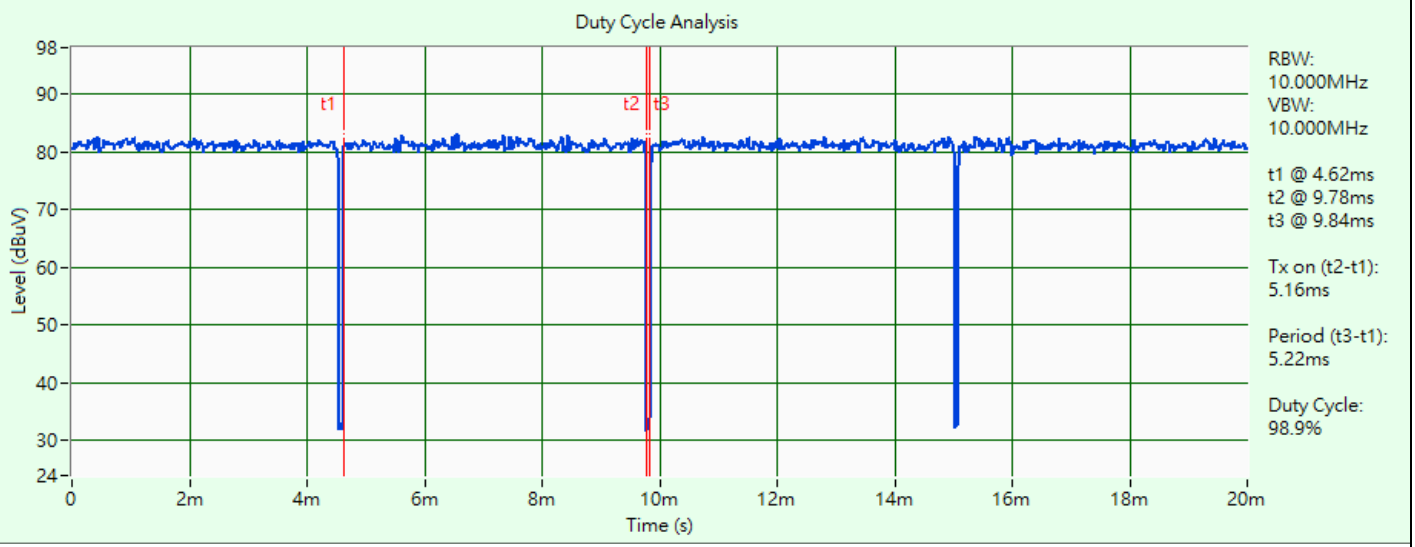
Test Item	EUT Configure Mode	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s
		802.11be (EHT20)	CDD & Beamforming	169, 173, 177	BPSK	MCS0
		802.11be (EHT40)	CDD & Beamforming	167, 175	BPSK	MCS0
		802.11be (EHT80)	CDD & Beamforming	171	BPSK	MCS0
		802.11be (EHT160)	CDD & Beamforming	163	BPSK	MCS0
Power Spectral Density	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s
		802.11be (EHT20)	CDD & Beamforming	169, 173, 177	BPSK	MCS0
		802.11be (EHT40)	CDD & Beamforming	167, 175	BPSK	MCS0
		802.11be (EHT80)	CDD & Beamforming	171	BPSK	MCS0
		802.11be (EHT160)	CDD & Beamforming	163	BPSK	MCS0
6 dB Bandwidth	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s
		802.11be (EHT20)	CDD	169, 173, 177	BPSK	MCS0
		802.11be (EHT40)	CDD	167, 175	BPSK	MCS0
		802.11be (EHT80)	CDD	171	BPSK	MCS0
		802.11be (EHT160)	CDD	163	BPSK	MCS0
Frequency Stability	A	802.11a	-	173	un-modulation	-
AC Power Conducted Emissions	A, B	802.11a	CDD	169	BPSK	MCS0
Unwanted Emissions below 1 GHz	A, B	802.11a	CDD	169	BPSK	MCS0
Unwanted Emissions above 1 GHz	A	802.11a	CDD	169, 173, 177	BPSK	6Mb/s
		802.11be (EHT20)	CDD	169, 173, 177	BPSK	MCS0
		802.11be (EHT40)	CDD	167, 175	BPSK	MCS0
		802.11be (EHT80)	CDD	171	BPSK	MCS0
		802.11be (EHT160)	CDD	163	BPSK	MCS0
EUT Configure Mode:	A	EUT (Model: RBE771) powered by Adapter 1				
	B	EUT (Model: RBE770) powered by Adapter 1				

3.5 Duty Cycle of Test Signal

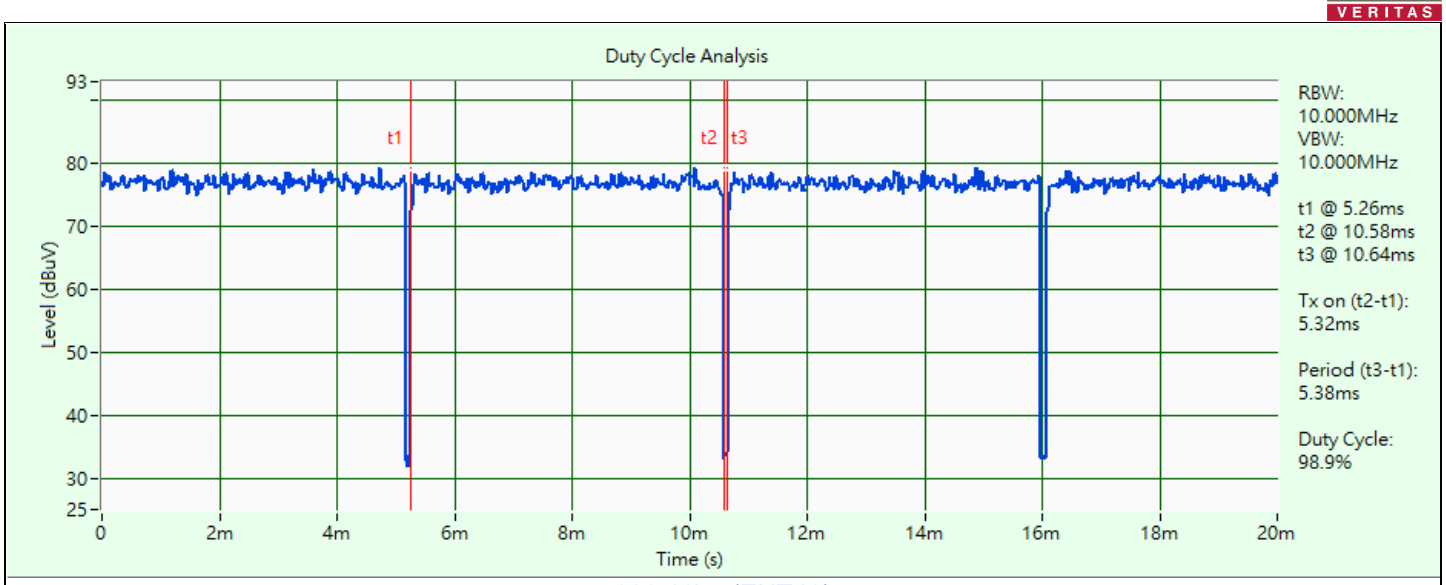
802.11a: Duty cycle = 1.985 ms / 1.99 ms x 100% = 99.7%
802.11be (EHT20): Duty cycle = 5.16 ms / 5.22 ms x 100% = 98.9%
802.11be (EHT40): Duty cycle = 5.32 ms / 5.38 ms x 100% = 98.9%
802.11be (EHT80): Duty cycle = 5.42 ms / 5.5 ms x 100% = 98.5%
802.11be (EHT160): Duty cycle = 5.2 ms / 5.28 ms x 100% = 98.5%



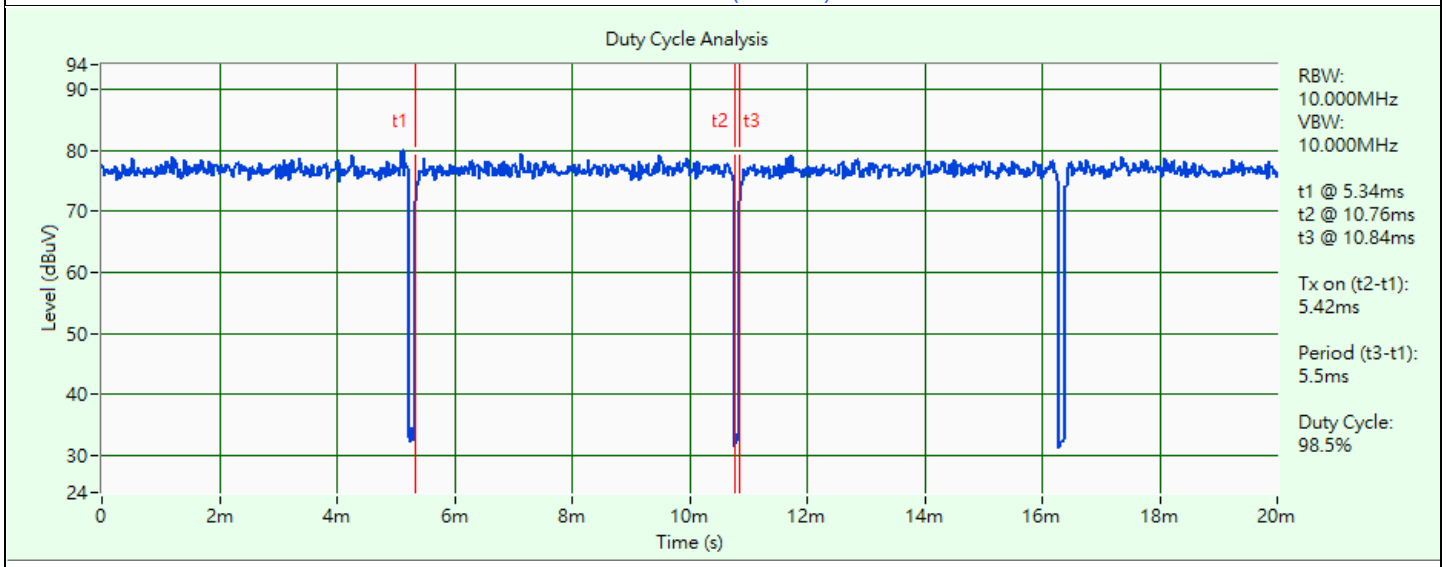
802.11a



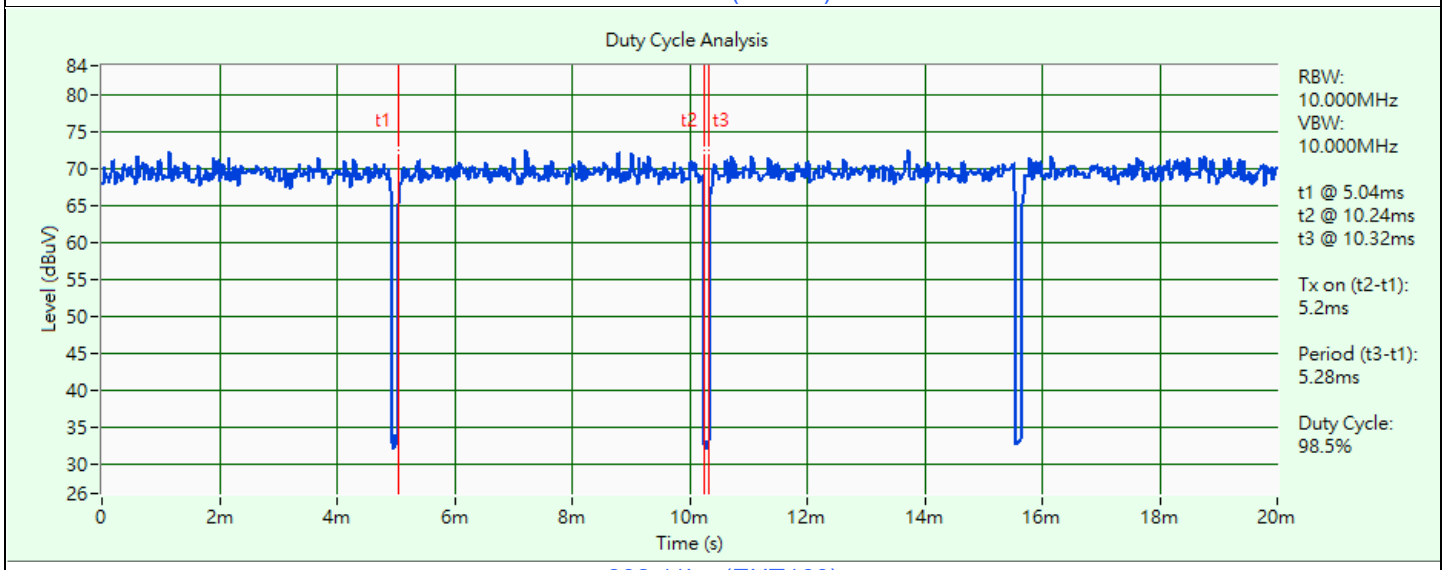
802.11be (EHT20)



802.11be (EHT40)



802.11be (EHT80)



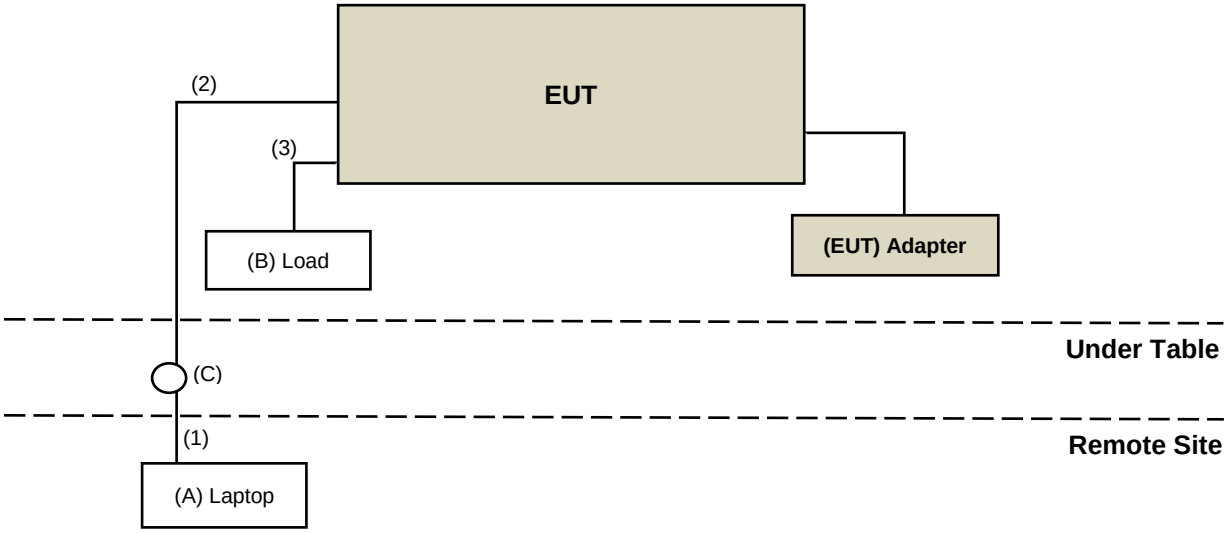
802.11be (EHT160)

3.6 Test Program Used and Operation Descriptions

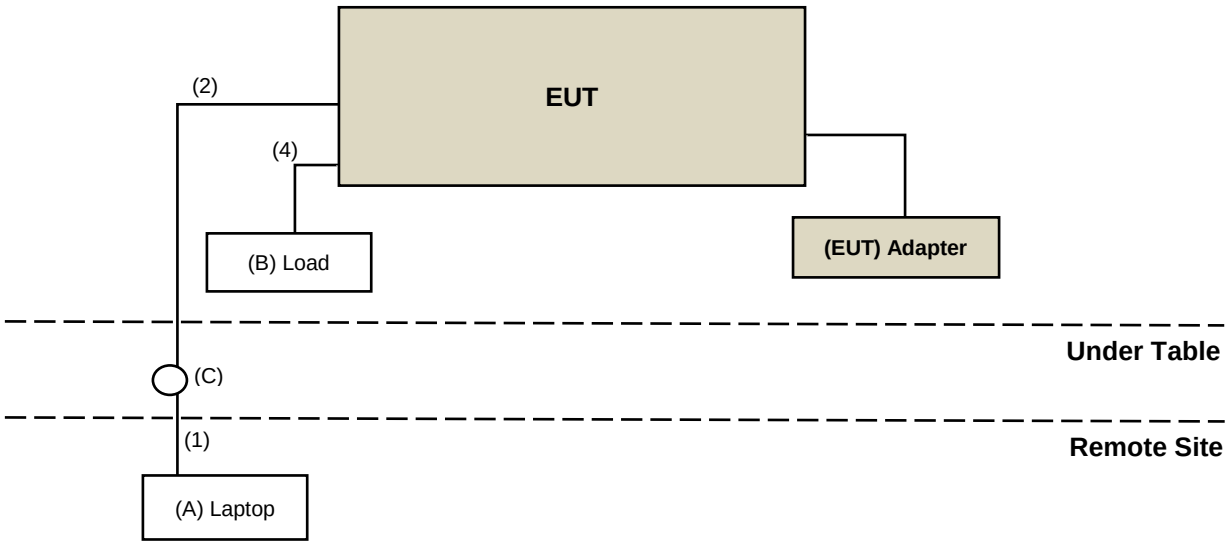
Controlling software QSPR Version 5.0-00202 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



Mode B



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	2RL3YW1	NA	Provided by Lab
B.	Load	N/A	N/A	N/A	N/A	Provided by Lab
C.	LAN to LAN	N/A	N/A	N/A	N/A	Provided by Lab

No.	Cable Descriptions	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Qty.)	Remark
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	Ethernet Cable	1	2	No	0	Accessory of EUT
3.	RJ-45 Cable	3	1.5	No	0	Provided by Lab
4.	RJ-45 Cable	1	2	No	0	Supplied by applicant

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-408	2023/11/12	2024/11/11
Preamplifier Keysight	83017A	MY53270295	2023/5/7	2024/5/6
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	2023/5/7	2024/5/6
	Sucoflex 104	MY 13380+295012/04	2023/5/7	2024/5/6
Signal & Spectrum Analyzer R&S	FSW43	101582	2023/4/13	2024/4/12
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2023/12/22 ~ 2024/1/18

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Signal & Spectrum Analyzer R&S	FSV3044	101504	2023/6/5	2024/6/4
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/1/14 ~ 2024/1/18

4.4 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Supply JIN YIH Technology	6905S	1720444	N/A	N/A
Digital Multimeter Fluke	87-III	70360742	2023/7/6	2024/7/5
Signal & Spectrum Analyzer R&S	FSV3044	101504	2023/6/5	2024/6/4
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Terchy	HRM-120RF	931022	2023/12/19	2024/12/18

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/1/14 ~ 2024/1/18

4.5 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance HUBER+SUHNER	E1-011276	01	2023/2/1	2024/1/31
	E1-011312	10	2023/1/30	2024/1/29
	E1-011591	17	2023/2/1	2024/1/31
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2023/11/7	2024/11/6
EMI Test Receiver R&S	ESCI	100613	2023/12/4	2024/12/3
Fixed Attenuator Mini-Circuits	HAT-10+	PAD-COND1-01	2023/1/7 2024/1/6	2024/1/6 2025/1/5
LISN R&S	ENV216	101826	2023/3/23	2024/3/22
	ESH3-Z5	100311	2023/9/6	2024/9/5
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2023/1/7 2024/1/6	2024/1/6 2025/1/5
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2023/8/31	2024/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2024/1/5 ~ 2024/1/15

4.6 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-155	2023/10/13	2024/10/12
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
Preamplifier Agilent	8447D	2944A10631	2023/5/7	2024/5/6
Preamplifier EMCI	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable Woken	8D-FB	Cable-CH4-01	2023/7/8	2024/7/7
Signal & Spectrum Analyzer R&S	FSW43	101582	2023/4/13	2024/4/12
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2024/1/4 ~ 2024/1/15

4.7 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower inn-co GmbH	MA 4000	010303	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
EMI Test Receiver R&S	ESR3	102782	2022/12/12 2023/12/7	2023/12/11 2024/12/6
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-408	2022/11/13 2023/11/12	2023/11/12 2024/11/11
	BBHA 9170	9170-480	2022/11/13 2023/11/12	2023/11/12 2024/11/11
		BBHA9170241	2022/10/20 2023/10/16	2023/10/19 2024/10/15
		BBHA9170243	2022/11/13 2023/11/12	2023/11/12 2024/11/11
Preamplifier EMCI	EMC 184045	980116	2022/10/1 2023/9/27	2023/9/30 2024/9/26
Preamplifier Keysight	83017A	MY53270295	2023/5/7	2024/5/6
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2023/7/8	2024/7/7
	EMC102-KM-KM-3000	150929	2023/7/8	2024/7/7
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	2023/5/7	2024/5/6
	Sucoflex 104	MY 13380+295012/04	2023/5/7	2024/5/6
Signal & Spectrum Analyzer R&S	FSW43	101582	2023/4/13	2024/4/12
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table BV ADT	TT100	TT93021705	N/A	N/A
Turn Table Controller BV ADT	SC100	SC93021705	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 3.
2. Tested Date: 2023/8/25 ~ 2023/12/28

5 Limits of Test Items

5.1 RF Output Power

Device Category	Limit (Max Average Power)
Indoor access point	EIRP 36 dBm
Subordinate device	EIRP 36 dBm
Client device	EIRP 30 dBm
Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.	

5.2 Power Spectral Density

Device Category	Limit
Indoor access point	EIRP 20 dBm/MHz
Subordinate device	EIRP 20 dBm/MHz
Client device	EIRP 14 dBm/MHz
Note: For all U-NII-4 and U-NII-3 & -4 span channels shall met above EIRP values.	

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Frequency Stability

The frequency of the carrier signal shall be maintained within band of operation.

5.5 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.6 Unwanted Emissions below 1 GHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.7 Unwanted Emissions above 1 GHz

(i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of −7 dBm/MHz at or above 5.925 GHz.

(ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of −5 dBm/MHz and shall decrease linearly to an e.i.r.p. of −27 dBm/MHz at or above 5.925 GHz.

(iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of −27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

Note:

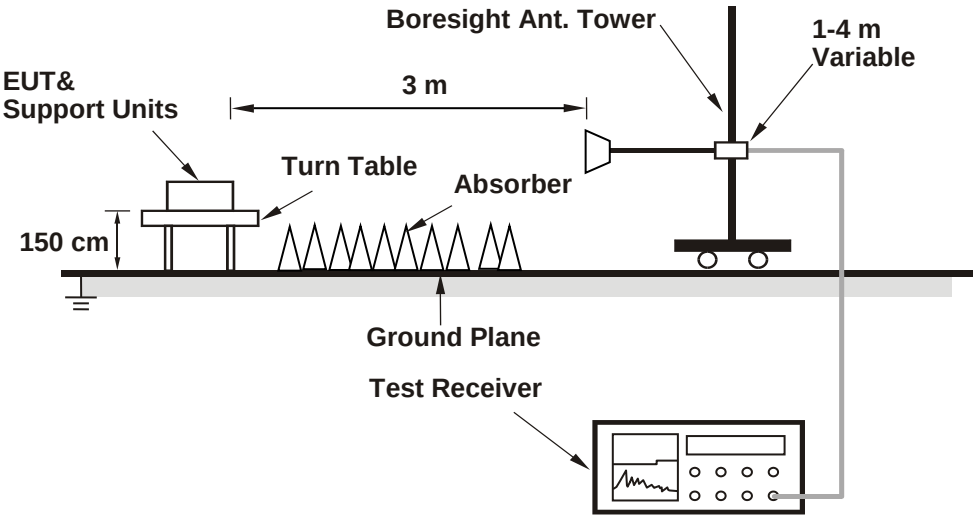
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup



6.1.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters 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. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.

e. Follow ANSI C63.10 section 12.7.3, EIRP Value (dBm) = Field Strength Value (dBuV / m) + Correction Factor @ 3 m.

f. Correction Factor (dB) @ 3 m = 20log(D) – 104.77 = -95.23 dB; where D is the measurement distance @3 m.

Spectrum analyzer setting as below:
Method SA-1

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.

b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS

c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

d. Sweep time = auto, trigger set to “free run”.

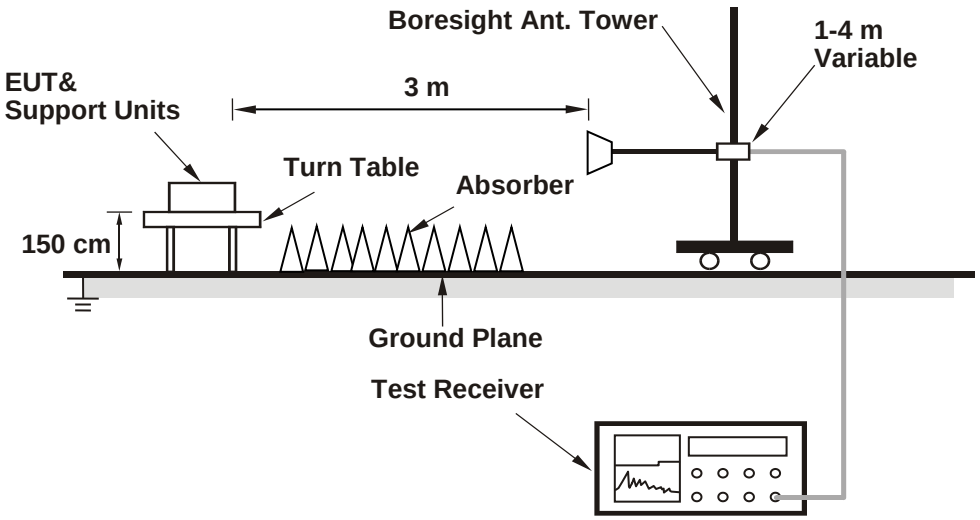
e. Trace average at least 100 traces in power averaging mode.

f. Record the max value

Note: When measuring power, use compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters 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. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP level.

e. Follow ANSI C63.10 section 12.7.3, EIRP Value (dBm) = Field Strength Value (dBuV/m) + Correction Factor @ 3 m.

f. Correction Factor (dB) @ 3 m = 20log(D) – 104.77; where D is the measurement distance @3 m = -95.23 dB

Spectrum analyzer setting as below:
Method SA-1

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.

b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS

c. Sweep points ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

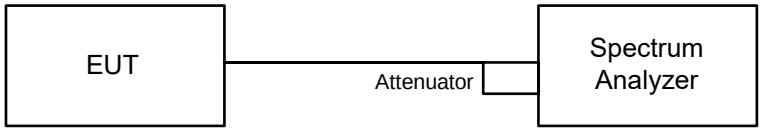
d. Sweep time = auto, trigger set to “free run”.

e. Trace average at least 100 traces in power averaging mode.

f. Record the max value

6.3 6 dB Bandwidth

6.3.1 Test Setup

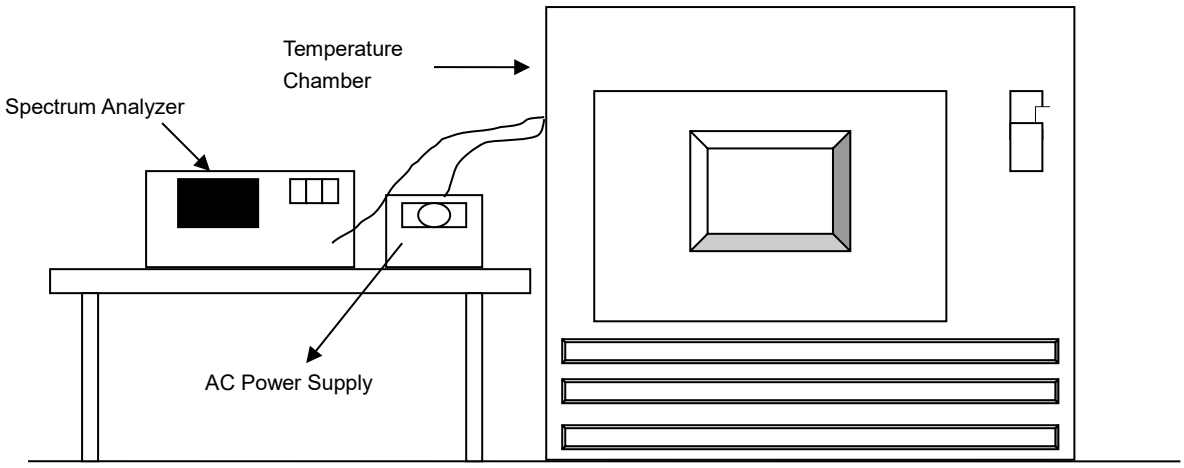


6.3.2 Test Procedure

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.

6.4 Frequency Stability

6.4.1 Test Setup

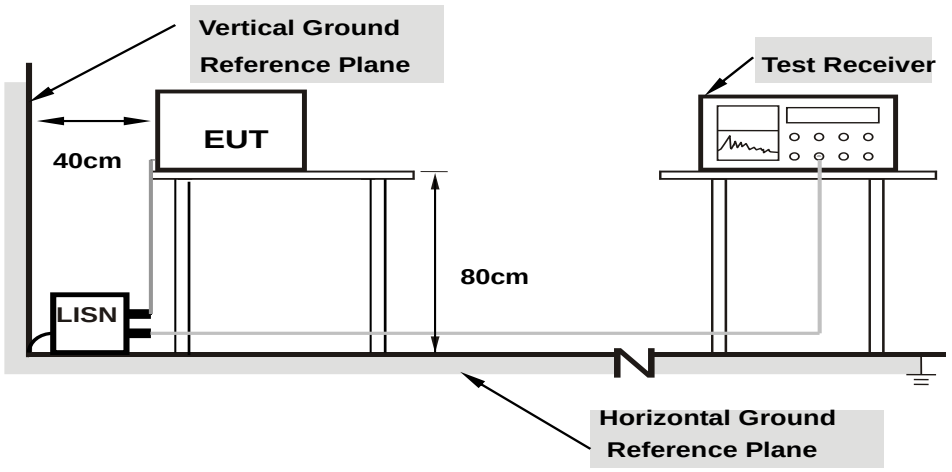


6.4.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.5 AC Power Conducted Emissions

6.5.1 Test Setup



Note: 1.Support units were connected to second LISN.

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

6.5.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of table and 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.

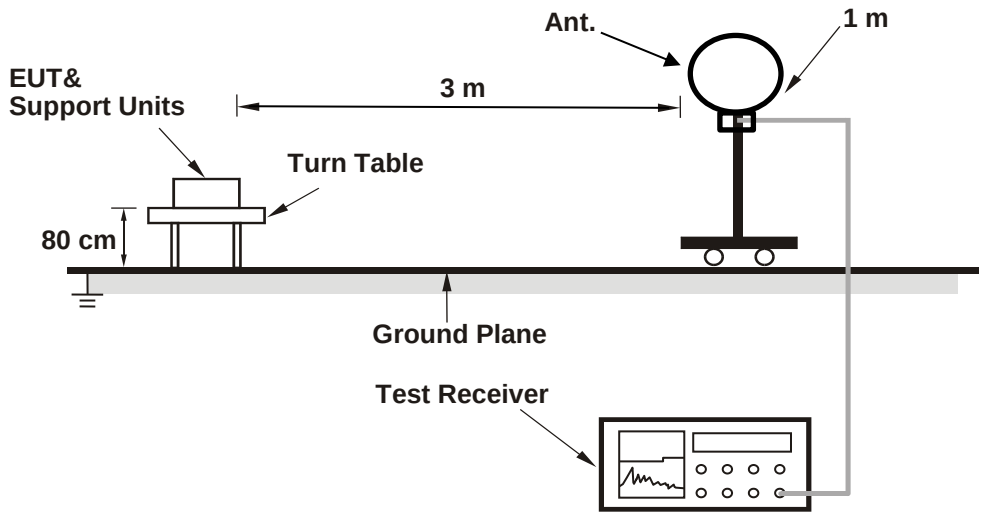
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

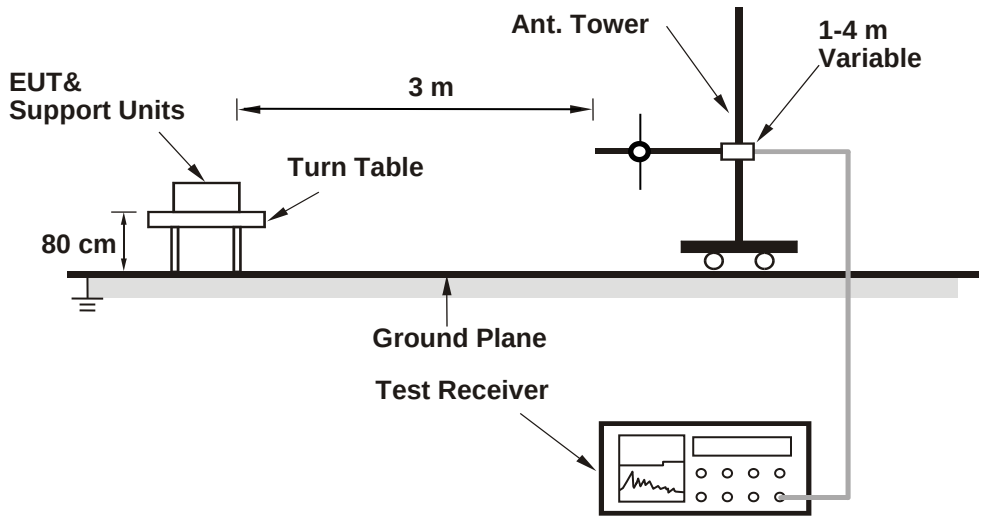
6.6 Unwanted Emissions below 1 GHz

6.6.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.6.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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. Parallel, perpendicular, and ground-parallel 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters 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.

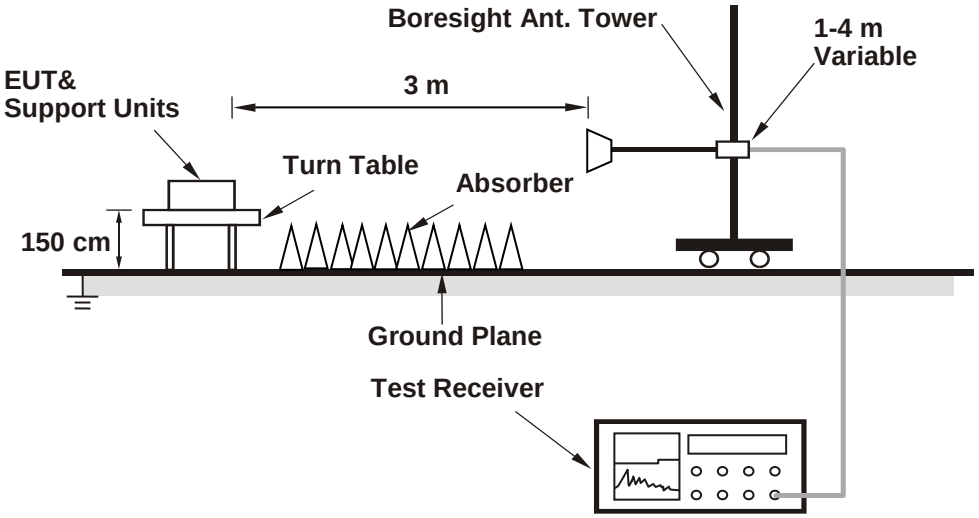
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.7 Unwanted Emissions above 1 GHz

6.7.1 Test Setup



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

6.7.2 Test Procedure

a. The EUT was placed on the top of a rotating table 1.5 meters 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 peak and average detects 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.

Notes:

1. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
2. For fundamental and harmonic signal measurement, 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.
3. All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang

802.11a CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
169	5845	126.34	-95.23	**1291.219**	**31.11**	36	Pass
173	5865	126.24	-95.23	1261.828	31.01	36	Pass
177	5885	124.19	-95.23	787.046	28.96	36	Pass

802.11be (EHT20) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
169	5845	126.26	-95.23	1267.652	31.03	36	Pass
173	5865	126.09	-95.23	1218.99	30.86	36	Pass
177	5885	124.16	-95.23	781.628	28.93	36	Pass

802.11be (EHT40) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
167	5835	126.12	-95.23	1227.439	30.89	36	Pass
175	5875	124.21	-95.23	790.679	28.98	36	Pass

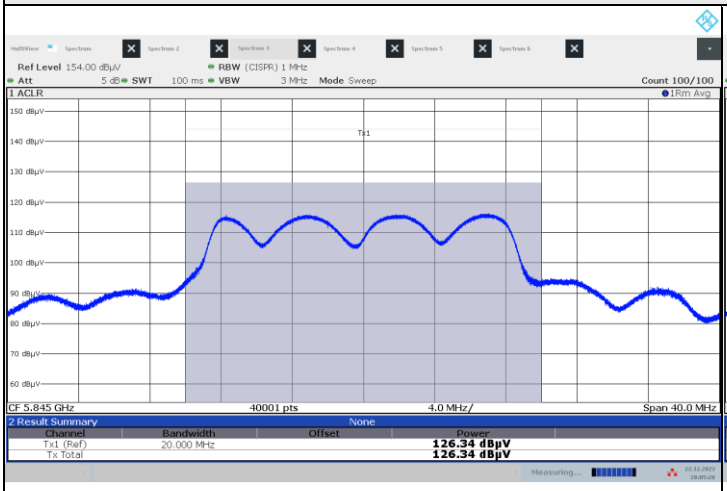
802.11be (EHT80) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
171	5855	122.88	-95.23	582.103	27.65	36	Pass

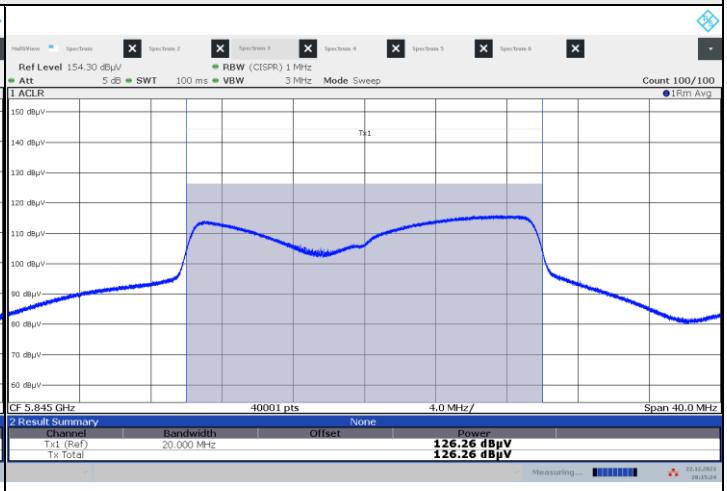
802.11be (EHT160) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
163	5815	121.03	-95.23	380.189	25.80	36	Pass

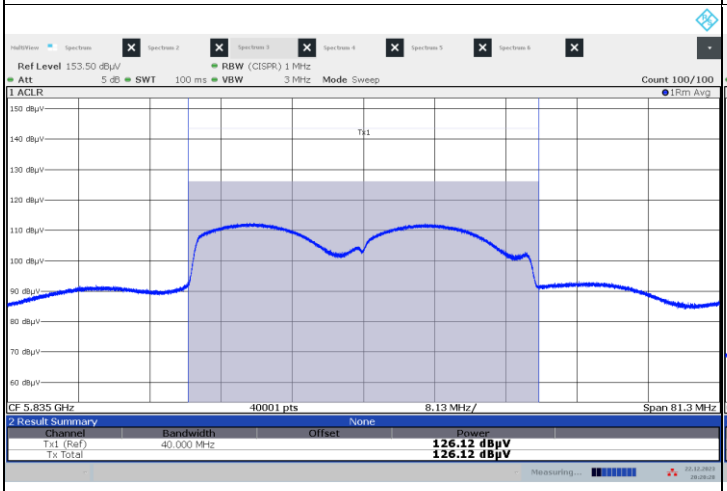
Spectrum Plot of Maximum Value



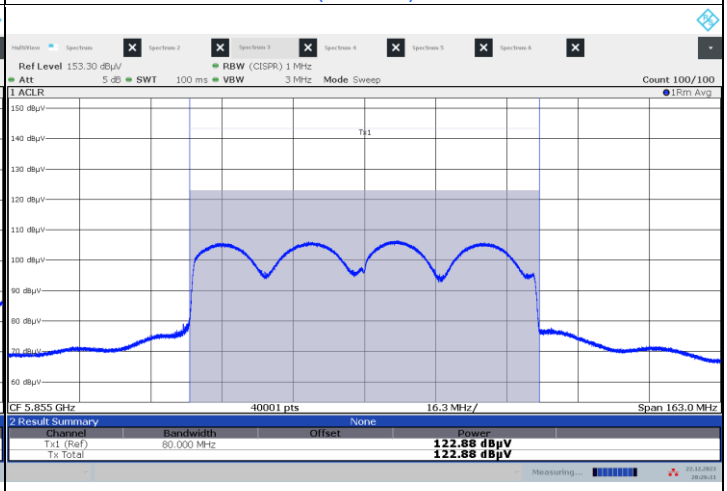
802.11a : CH 169



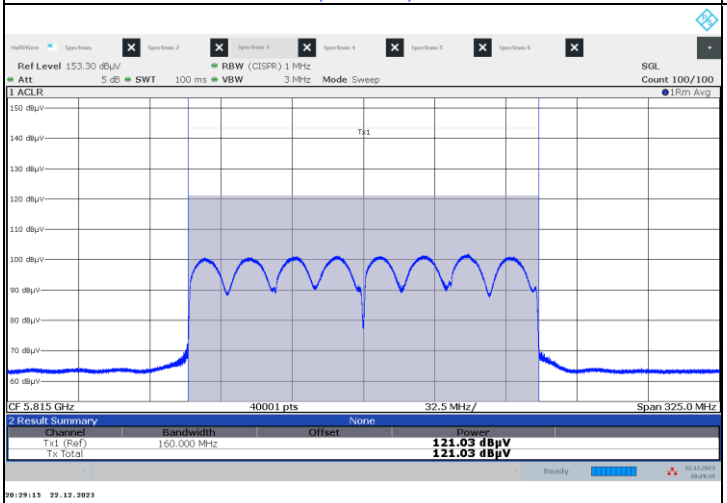
802.11be (EHT20) : CH 169



802.11be (EHT40) : CH 167



802.11be (EHT80) : CH 171



802.11be (EHT160) : CH 163

802.11be (EHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
169	5845	128.98	-95.23	**2371.374**	**33.75**	36	Pass
173	5865	128.84	-95.23	2296.149	33.61	36	Pass
177	5885	126.96	-95.23	1489.361	31.73	36	Pass

802.11be (EHT40) Beamforming

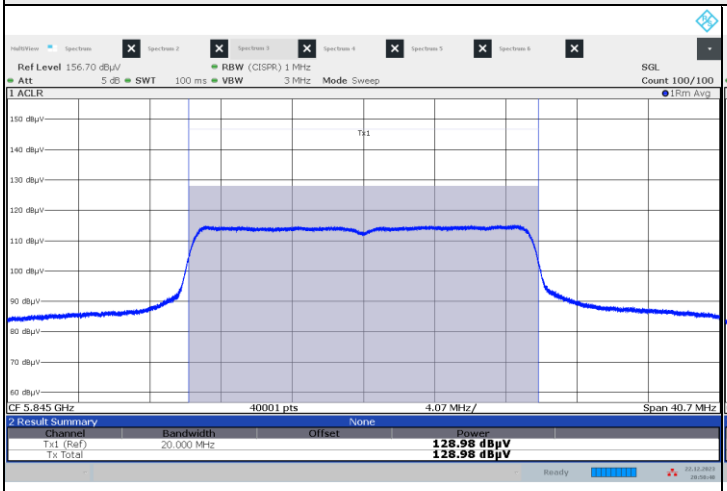
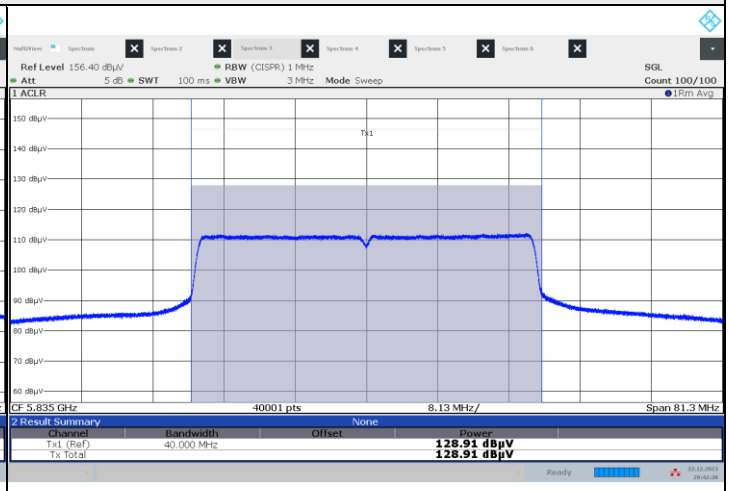
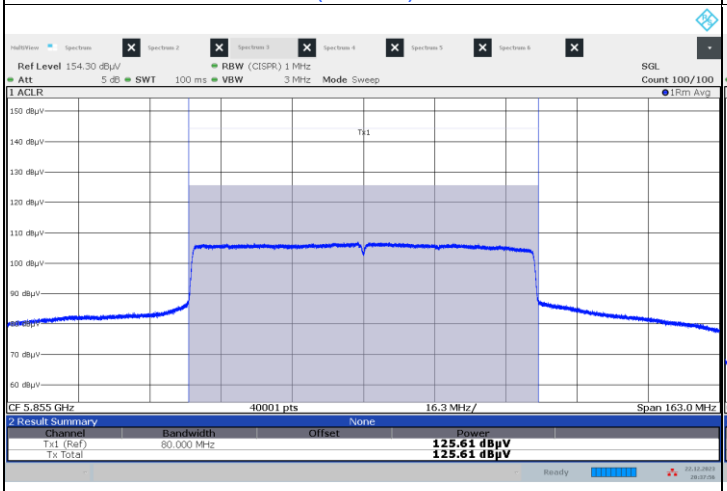
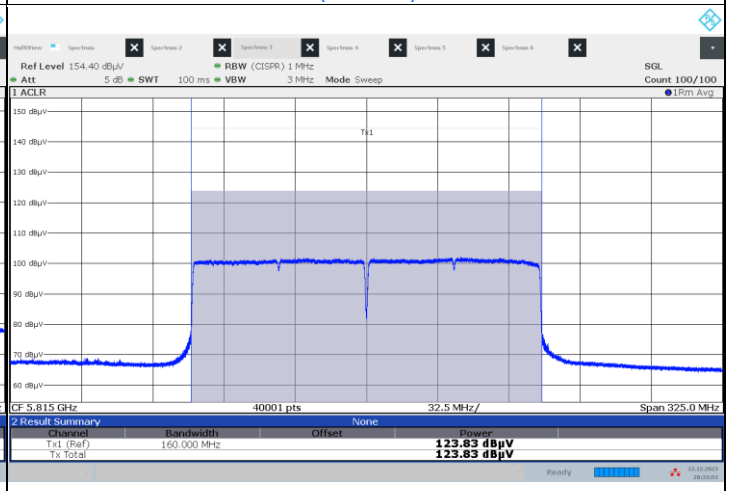
Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
167	5835	128.91	-95.23	2333.458	33.68	36	Pass
175	5875	126.82	-95.23	1442.115	31.59	36	Pass

802.11be (EHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
171	5855	125.61	-95.23	1091.44	30.38	36	Pass

802.11be (EHT160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
163	5815	123.83	-95.23	724.436	28.60	36	Pass

Spectrum Plot of Maximum Value	
 802.11be (EHT20) : CH 169	 802.11be (EHT40) : CH 167
 802.11be (EHT80) : CH 171	 802.11be (EHT160) : CH 163

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang

802.11a CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
169	5845	115.18	-95.23	19.95	20	Pass
173	5865	115.07	-95.23	19.84	20	Pass
177	5885	114.48	-95.23	19.25	20	Pass

802.11be (EHT20) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
169	5845	115.09	-95.23	19.86	20	Pass
173	5865	115.02	-95.23	19.79	20	Pass
177	5885	110.89	-95.23	15.66	20	Pass

802.11be (EHT40) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
167	5835	112.06	-95.23	16.83	20	Pass
175	5875	109.74	-95.23	14.51	20	Pass

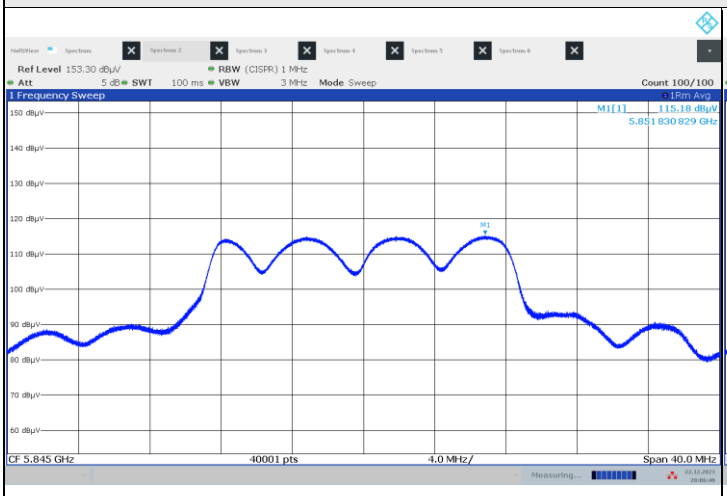
802.11be (EHT80) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
171	5855	105.90	-95.23	10.67	20	Pass

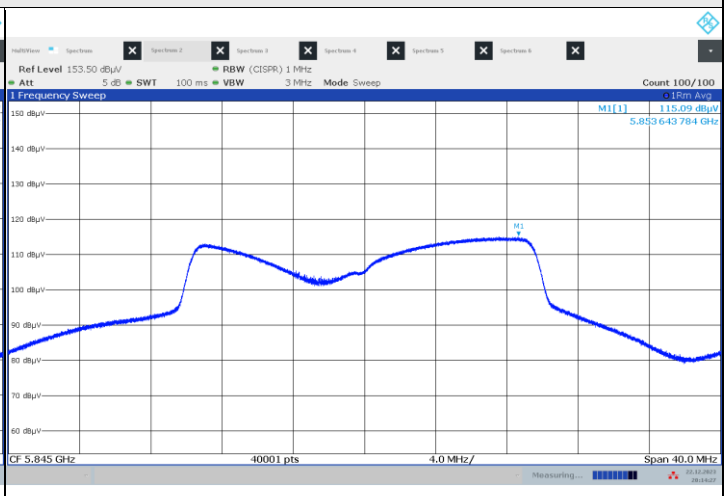
802.11be (EHT160) CDD

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
163	5815	100.79	-95.23	5.56	20	Pass

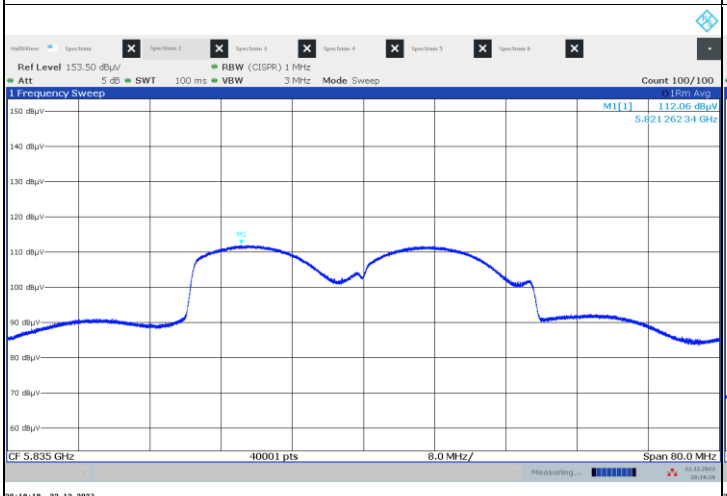
Spectrum Plot of Maximum Value



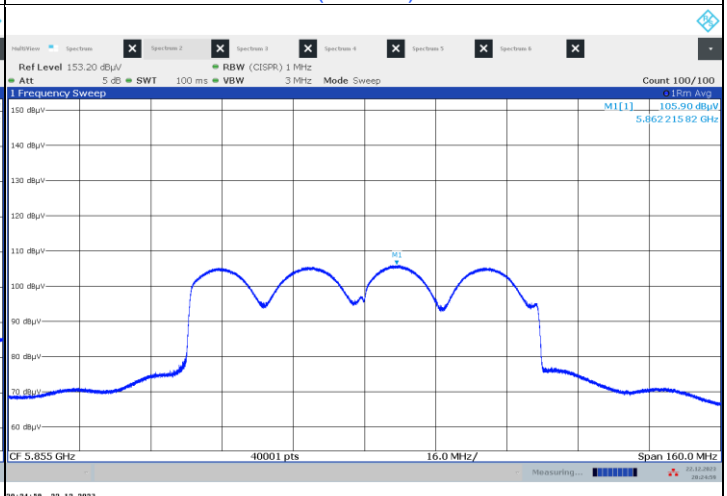
802.11a : CH 169



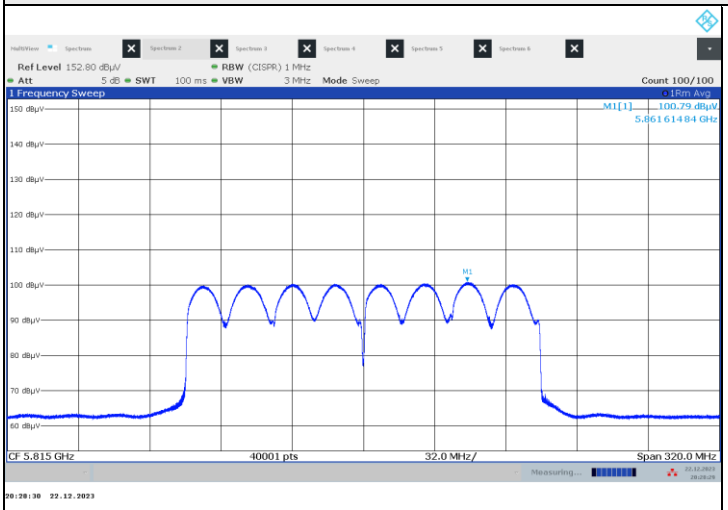
802.11be (EHT20) : CH 169



802.11be (EHT40) : CH 167



802.11be (EHT80) : CH 171

Spectrum Plot of Maximum Value	
 802.11be (EHT160) : CH 163	

802.11be (EHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
169	5845	115.06	-95.23	19.83	20	Pass
173	5865	114.93	-95.23	19.70	20	Pass
177	5885	110.86	-95.23	15.63	20	Pass

802.11be (EHT40) Beamforming

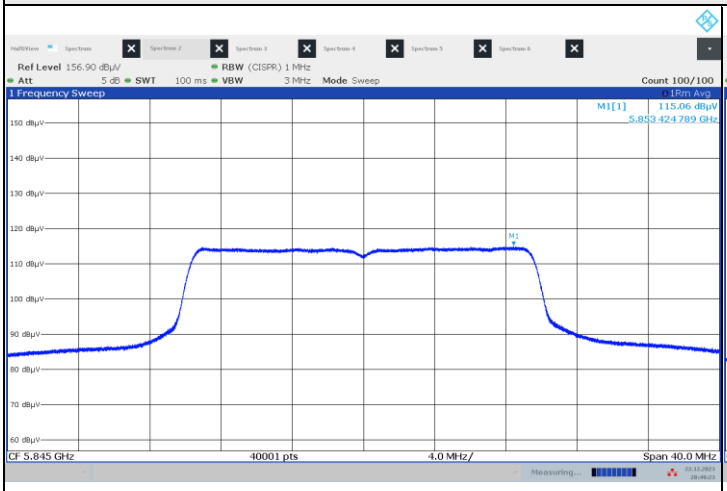
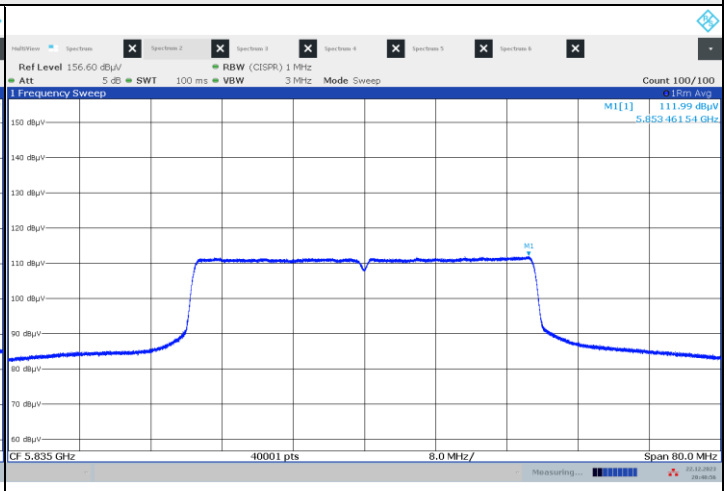
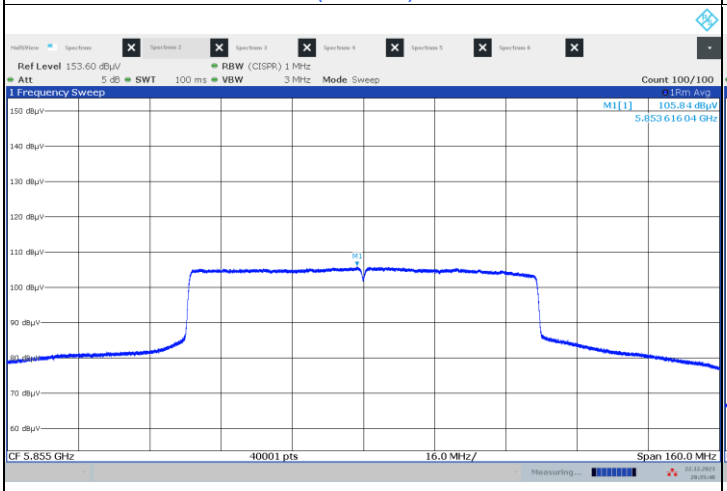
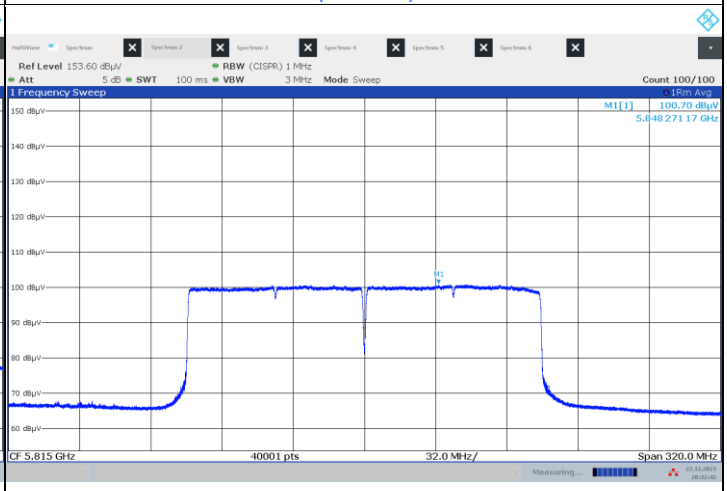
Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
167	5835	111.99	-95.23	16.76	20	Pass
175	5875	109.69	-95.23	14.46	20	Pass

802.11be (EHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
171	5855	105.84	-95.23	10.61	20	Pass

802.11be (EHT160) Beamforming

Chan.	Chan. Freq. (MHz)	Field Strength (dBuV/m)	Correction Factor (dB)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Test Result
163	5815	100.70	-95.23	5.47	20	Pass

Spectrum Plot of Maximum Value	
	
802.11be (EHT20) : CH 169	802.11be (EHT40) : CH 167
	
802.11be (EHT80) : CH 171	802.11be (EHT160) : CH 163

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	16.40	16.38	0.5	Pass
173	5865	16.39	16.38	0.5	Pass
177	5885	16.39	16.37	0.5	Pass

802.11be (EHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
169	5845	19.10	19.10	0.5	Pass
173	5865	19.11	19.14	0.5	Pass
177	5885	19.12	19.13	0.5	Pass

802.11be (EHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
167	5835	38.24	38.17	0.5	Pass
175	5875	38.24	38.13	0.5	Pass

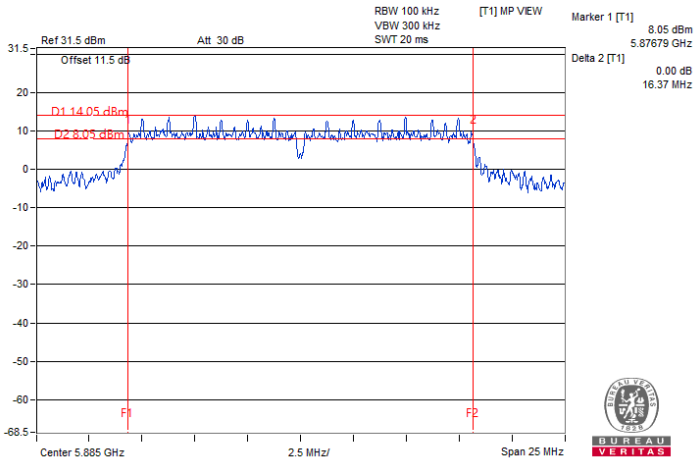
802.11be (EHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
171	5855	78.34	78.21	0.5	Pass

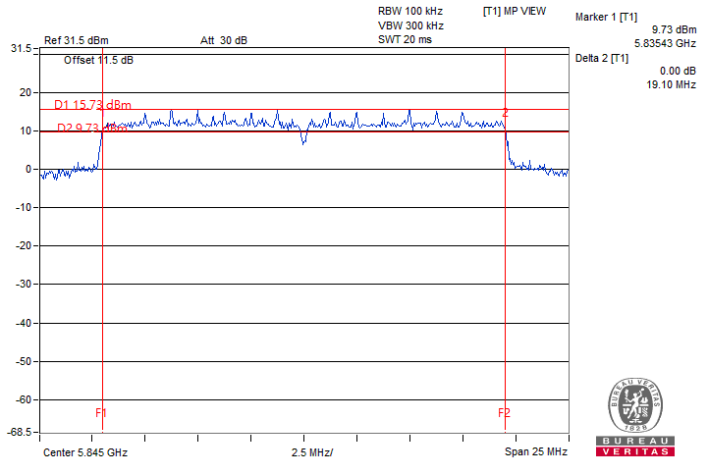
802.11be (EHT160)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Test Result
		Chain 0	Chain 1		
163	5815	158.53	158.28	0.5	Pass

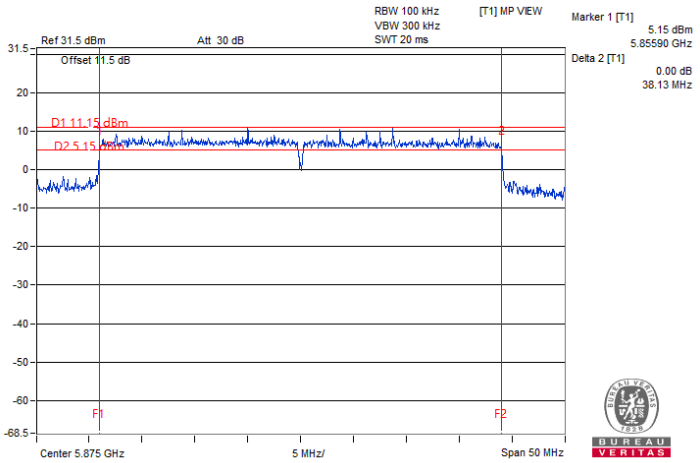
Spectrum Plot of Minimum Value



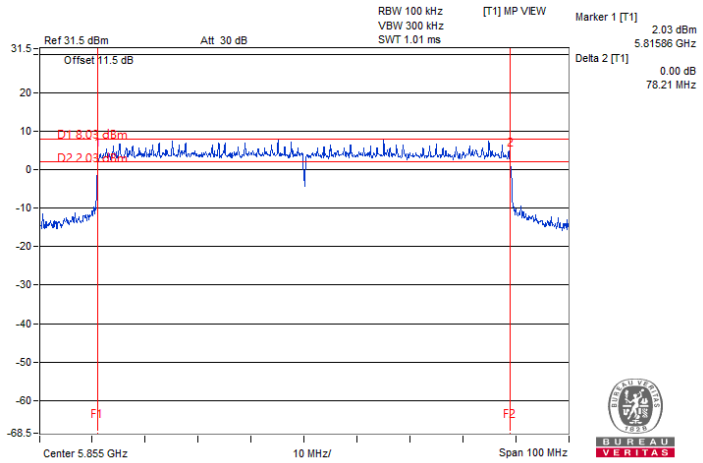
802.11a / Chain 1 : CH 177



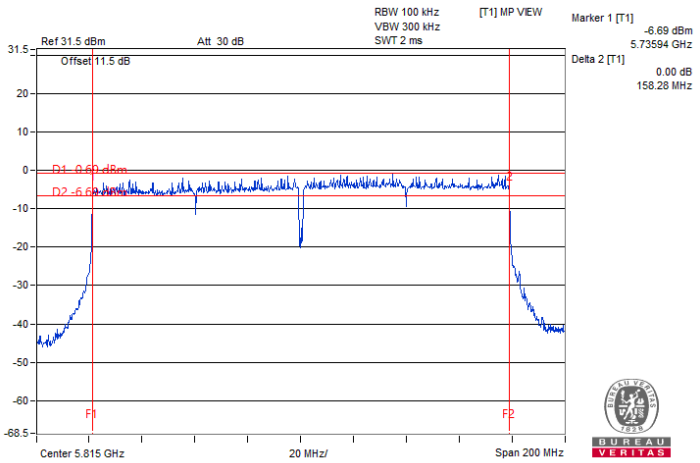
802.11be (EHT20) / Chain 0 : CH 169



802.11be (EHT40) / Chain 1 : CH 175



802.11be (EHT80) / Chain 1 : CH 171



802.11be (EHT160) / Chain 1 : CH 163

7.4 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Matthew Yang

Frequency Stability Versus Temperature									
Operating Frequency: 5865 MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
35	120	5865.0082	Pass	5865.0047	Pass	5865.0062	Pass	5865.0048	Pass
30	120	5865.027	Pass	5865.0295	Pass	5865.0294	Pass	5865.0267	Pass
20	120	5864.9746	Pass	5864.973	Pass	5864.9734	Pass	5864.9764	Pass
10	120	5864.9833	Pass	5864.9827	Pass	5864.9847	Pass	5864.9844	Pass
0	120	5864.9738	Pass	5864.9765	Pass	5864.9756	Pass	5864.9764	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5865 MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5864.9662	Pass	5864.9678	Pass	5864.9644	Pass	5864.9688	Pass
	120	5864.9746	Pass	5864.973	Pass	5864.9734	Pass	5864.9764	Pass
	102	5864.966	Pass	5864.9654	Pass	5864.9629	Pass	5864.9631	Pass

7.5 AC Power Conducted Emissions

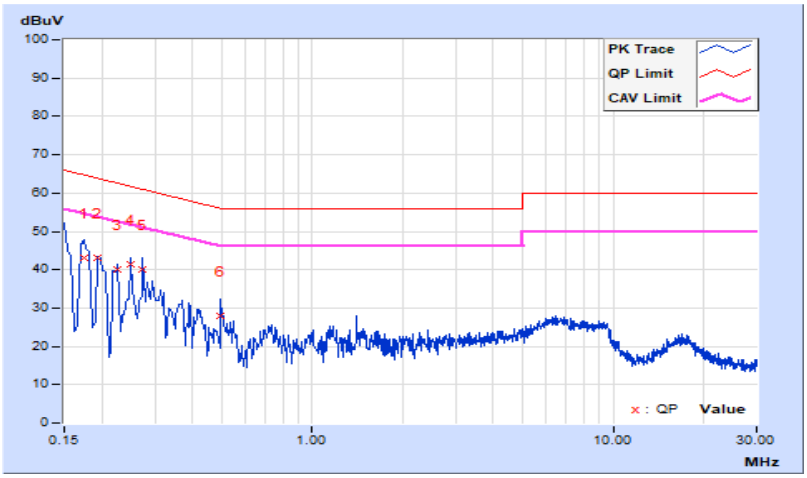
Mode A

RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Luis Lee		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17400	9.68	33.51	20.43	43.19	30.11	64.77	54.77	-21.58	-24.66
2	0.19400	9.70	33.38	19.68	43.08	29.38	63.86	53.86	-20.78	-24.48
3	0.22600	9.71	30.52	17.34	40.23	27.05	62.60	52.60	-22.37	-25.55
4	0.25000	9.72	31.83	21.34	41.55	31.06	61.76	51.76	-20.21	-20.70
5	0.27400	9.73	30.39	18.55	40.12	28.28	61.00	51.00	-20.88	-22.72
6	0.49800	9.80	18.11	7.75	27.91	17.55	56.03	46.03	-28.12	-28.48

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

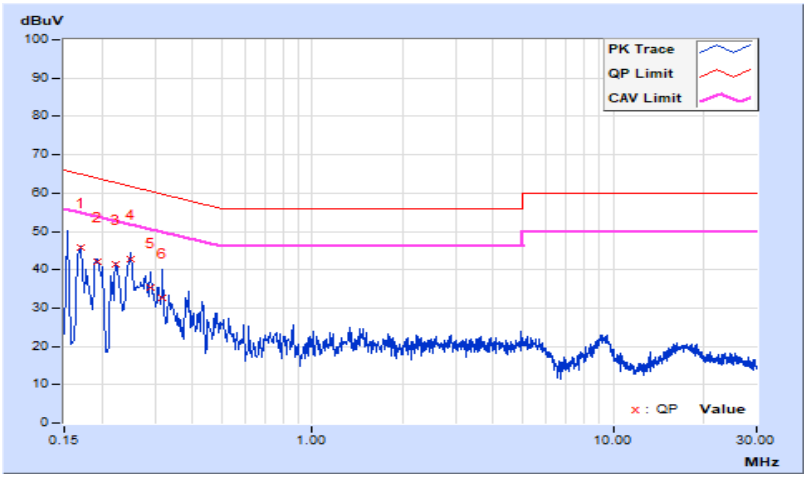


RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 66% RH
Tested By	Luis Lee		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16977	9.68	36.01	22.74	45.69	32.42	64.97	54.97	-19.28	-22.55
2	0.19265	9.69	32.52	19.93	42.21	29.62	63.92	53.92	-21.71	-24.30
3	0.22200	9.71	31.73	20.21	41.44	29.92	62.74	52.74	-21.30	-22.82
4	**0.25000**	**9.72**	**32.94**	**24.58**	**42.66**	**34.30**	**61.76**	**51.76**	**-19.10**	**-17.46**
5	0.29000	9.73	25.50	14.83	35.23	24.56	60.52	50.52	-25.29	-25.96
6	0.31800	9.74	23.05	10.63	32.79	20.37	59.76	49.76	-26.97	-29.39

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



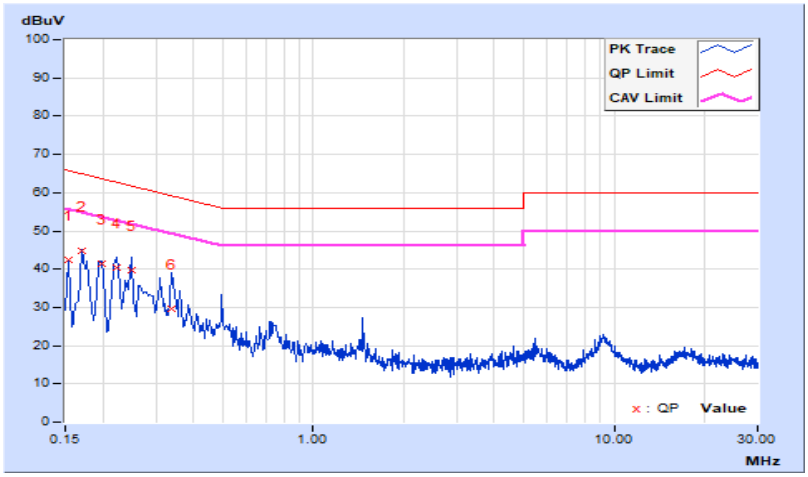
Mode B

RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.68	32.66	17.66	42.34	27.34	65.78	55.78	-23.44	-28.44
2	0.17000	9.69	35.22	21.27	44.91	30.96	64.96	54.96	-20.05	-24.00
3	0.19728	9.70	31.60	17.01	41.30	26.71	63.72	53.72	-22.42	-27.01
4	0.22200	9.71	30.78	18.58	40.49	28.29	62.74	52.74	-22.25	-24.45
5	0.25000	9.73	29.87	22.24	39.60	31.97	61.76	51.76	-22.16	-19.79
6	0.33800	9.78	19.91	7.83	29.69	17.61	59.25	49.25	-29.56	-31.64

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

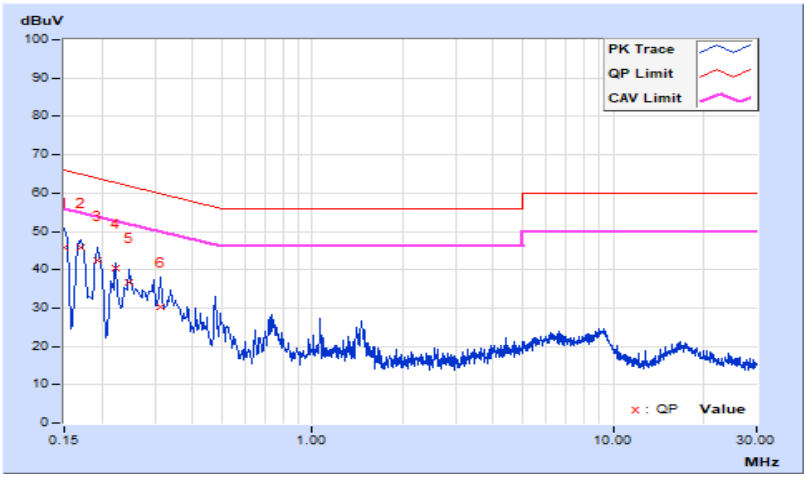


RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.68	36.13	15.92	45.81	25.60	66.00	56.00	-20.19	-30.40
2	0.16977	9.69	36.16	21.08	45.85	30.77	64.97	54.97	-19.12	-24.20
3	0.19400	9.70	32.67	18.62	42.37	28.32	63.86	53.86	-21.49	-25.54
4	0.22200	9.72	30.73	18.16	40.45	27.88	62.74	52.74	-22.29	-24.86
5	0.24600	9.73	26.84	17.75	36.57	27.48	61.89	51.89	-25.32	-24.41
6	0.31400	9.78	20.67	9.65	30.45	19.43	59.86	49.86	-29.41	-30.43

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



7.6 Unwanted Emissions below 1 GHz

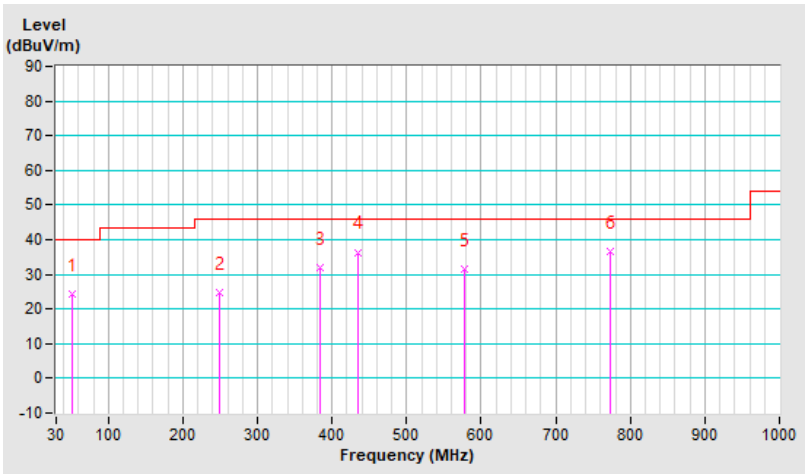
Mode A

RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	51.09	24.4 QP	40.0	-15.6	1.50 H	183	33.0	-8.6
2	249.30	24.6 QP	46.0	-21.4	1.50 H	96	33.8	-9.2
3	384.26	31.9 QP	46.0	-14.1	1.01 H	153	37.8	-5.9
4	434.87	36.4 QP	46.0	-9.6	1.50 H	145	41.3	-4.9
5	578.26	31.6 QP	46.0	-14.4	1.50 H	147	33.7	-2.1
6	772.26	36.6 QP	46.0	-9.4	1.01 H	254	34.3	2.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

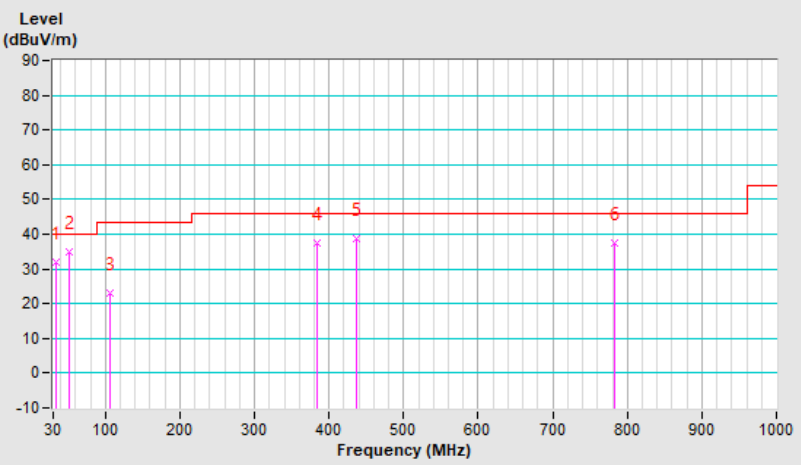


RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.22	31.9 QP	40.0	-8.1	1.00 V	222	41.9	-10.0
2	**51.09**	**34.8 QP**	**40.0**	**-5.2**	**1.00 V**	**317**	**43.4**	**-8.6**
3	105.91	23.1 QP	43.5	-20.4	1.49 V	75	35.3	-12.2
4	384.26	37.3 QP	46.0	-8.7	1.49 V	308	43.2	-5.9
5	436.28	38.6 QP	46.0	-7.4	1.00 V	78	43.5	-4.9
6	782.10	37.4 QP	46.0	-8.6	1.00 V	349	35.0	2.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



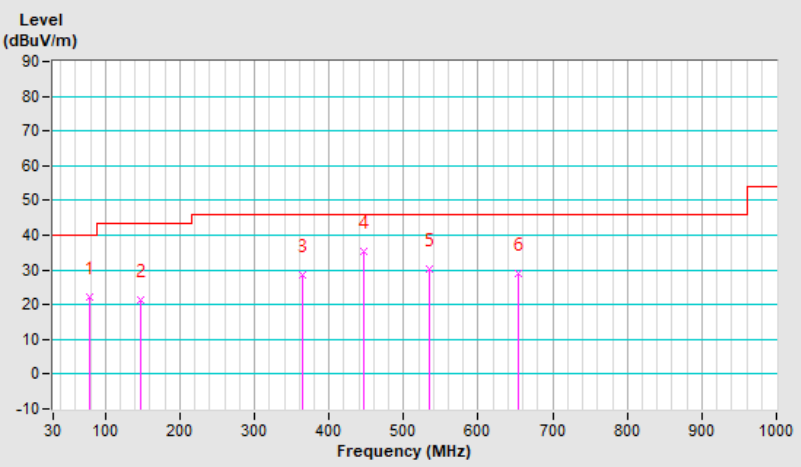
Mode B

RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	79.20	22.3 QP	40.0	-17.7	1.01 H	115	35.1	-12.8
2	146.68	21.4 QP	43.5	-22.1	1.01 H	19	30.0	-8.6
3	364.58	28.7 QP	46.0	-17.3	1.01 H	142	35.0	-6.3
4	446.12	35.2 QP	46.0	-10.8	1.50 H	174	40.0	-4.8
5	534.68	30.2 QP	46.0	-15.8	1.50 H	129	33.5	-3.3
6	654.17	28.8 QP	46.0	-17.2	1.50 H	342	29.3	-0.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

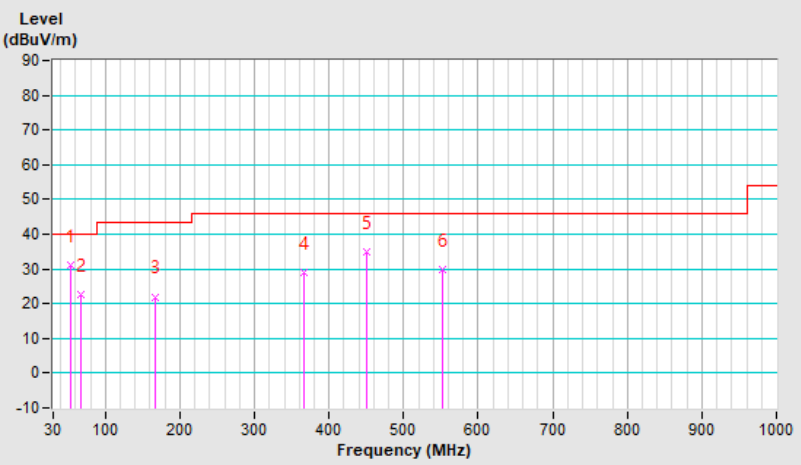


RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Titan Hsu		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	53.90	31.3 QP	40.0	-8.7	1.00 V	317	40.2	-8.9
2	66.55	22.6 QP	40.0	-17.4	1.49 V	65	32.7	-10.1
3	166.36	22.0 QP	43.5	-21.5	1.49 V	71	30.7	-8.7
4	365.99	28.8 QP	46.0	-17.2	1.49 V	199	35.0	-6.2
5	450.33	35.0 QP	46.0	-11.0	1.00 V	324	39.7	-4.7
6	552.96	30.0 QP	46.0	-16.0	1.00 V	98	32.9	-2.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.7 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 169：5845 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	61.3 PK	68.2	-6.9	1.52 H	95	48.0	13.3
2	*5845.00	117.8 PK			1.52 H	95	73.1	44.7
3	*5845.00	108.4 AV			1.52 H	95	63.7	44.7
4	#5925.00	68.9 PK	88.2	-19.3	1.52 H	95	54.8	14.1
5	11690.00	62.6 PK	74.0	-11.4	2.15 H	169	40.0	22.6
6	11690.00	49.9 AV	54.0	-4.1	2.15 H	169	27.3	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	62.0 PK	68.2	-6.2	1.55 V	107	48.7	13.3
2	*5845.00	123.5 PK			1.55 V	107	78.8	44.7
3	*5845.00	113.5 AV			1.55 V	107	68.8	44.7
4	#5926.10	72.3 PK	88.2	-15.9	1.55 V	107	58.2	14.1
5	11690.00	62.7 PK	74.0	-11.3	2.18 V	166	40.1	22.6
6	11690.00	50.0 AV	54.0	-4.0	2.18 V	166	27.4	22.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11a	Channel	CH 173：5865 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.5 PK	68.2	-7.7	1.52 H	96	47.2	13.3
2	*5865.00	117.9 PK			1.52 H	96	73.2	44.7
3	*5865.00	108.2 AV			1.52 H	96	63.5	44.7
4	#5925.00	71.8 PK	88.2	-16.4	1.52 H	96	57.7	14.1
5	11730.00	62.5 PK	74.0	-11.5	3.30 H	195	40.2	22.3
6	11730.00	49.8 AV	54.0	-4.2	3.30 H	195	27.5	22.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.8 PK	68.2	-7.4	1.55 V	108	47.5	13.3
2	*5865.00	124.0 PK			1.55 V	108	79.3	44.7
3	*5865.00	113.7 AV			1.55 V	108	69.0	44.7
4	#5932.00	73.0 PK	88.2	-15.2	1.55 V	108	58.8	14.2
5	11730.00	62.7 PK	74.0	-11.3	2.19 V	163	40.4	22.3
6	11730.00	49.9 AV	54.0	-4.1	2.19 V	163	27.6	22.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11a	Channel	CH 177：5885 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	61.2 PK	68.2	-7.0	1.83 H	95	47.9	13.3
2	*5885.00	116.2 PK			1.83 H	95	71.5	44.7
3	*5885.00	106.7 AV			1.83 H	95	62.0	44.7
4	#5895.00	92.1 PK	110.2	-18.1	1.83 H	95	78.1	14.0
5	#5925.00	64.0 PK	88.2	-24.2	1.83 H	95	49.9	14.1
6	11770.00	61.7 PK	74.0	-12.3	3.25 H	199	39.9	21.8
7	11770.00	49.3 AV	54.0	-4.7	3.25 H	199	27.5	21.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	61.6 PK	68.2	-6.6	1.55 V	108	48.3	13.3
2	*5885.00	123.3 PK			1.55 V	108	78.6	44.7
3	*5885.00	112.6 AV			1.55 V	108	67.9	44.7
4	#5895.00	93.8 PK	110.2	-16.4	1.55 V	108	79.8	14.0
5	#5925.00	68.7 PK	88.2	-19.5	1.55 V	108	54.6	14.1
6	11770.00	62.2 PK	74.0	-11.8	2.11 V	179	40.4	21.8
7	11770.00	49.6 AV	54.0	-4.4	2.11 V	179	27.8	21.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE20)	Channel	CH 169：5845 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.4 PK	68.2	-7.8	1.83 H	96	47.1	13.3
2	*5845.00	121.0 PK			1.83 H	96	76.3	44.7
3	*5845.00	108.2 AV			1.83 H	96	63.5	44.7
4	#5925.00	70.5 PK	88.2	-17.7	1.83 H	96	56.4	14.1
5	11690.00	62.4 PK	74.0	-11.6	3.14 H	192	39.8	22.6
6	11690.00	50.1 AV	54.0	-3.9	3.14 H	192	27.5	22.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	62.3 PK	68.2	-5.9	1.66 V	108	49.0	13.3
2	*5845.00	125.2 PK			1.66 V	108	80.5	44.7
3	*5845.00	112.9 AV			1.66 V	108	68.2	44.7
4	#5932.50	74.4 PK	88.2	-13.8	1.66 V	108	60.2	14.2
5	11690.00	62.6 PK	74.0	-11.4	2.22 V	174	40.0	22.6
6	11690.00	50.2 AV	54.0	-3.8	2.22 V	174	27.6	22.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE20)	Channel	CH 173：5865 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.5 PK	68.2	-7.7	1.83 H	101	47.2	13.3
2	*5865.00	120.2 PK			1.83 H	101	75.5	44.7
3	*5865.00	107.8 AV			1.83 H	101	63.1	44.7
4	#5925.00	74.4 PK	88.2	-13.8	1.83 H	101	60.3	14.1
5	11730.00	62.5 PK	74.0	-11.5	3.24 H	196	40.2	22.3
6	11730.00	49.7 AV	54.0	-4.3	3.24 H	196	27.4	22.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	62.0 PK	68.2	-6.2	1.66 V	108	48.7	13.3
2	*5865.00	125.0 PK			1.66 V	108	80.3	44.7
3	*5865.00	112.7 AV			1.66 V	108	68.0	44.7
4	#5925.00	75.6 PK	88.2	-12.6	1.66 V	108	61.5	14.1
5	11730.00	62.7 PK	74.0	-11.3	2.36 V	176	40.4	22.3
6	11730.00	49.9 AV	54.0	-4.1	2.36 V	176	27.6	22.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE20)	Channel	CH 177：5885 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.8 PK	68.2	-7.4	1.83 H	101	47.5	13.3
2	*5885.00	119.3 PK			1.83 H	101	74.6	44.7
3	*5885.00	107.7 AV			1.83 H	101	63.0	44.7
4	#5895.00	107.5 PK	110.2	-2.7	1.83 H	101	93.5	14.0
5	#5925.00	78.1 PK	88.2	-10.1	1.83 H	101	64.0	14.1
6	11770.00	62.0 PK	74.0	-12.0	3.02 H	193	40.2	21.8
7	11770.00	49.3 AV	54.0	-4.7	3.02 H	193	27.5	21.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	61.5 PK	68.2	-6.7	1.59 V	105	48.2	13.3
2	*5885.00	125.0 PK			1.59 V	105	80.3	44.7
3	*5885.00	112.2 AV			1.59 V	105	67.5	44.7
4	#5895.00	109.0 PK	110.2	-1.2	1.59 V	105	95.0	14.0
5	#5925.00	78.9 PK	88.2	-9.3	1.59 V	105	64.8	14.1
6	11770.00	62.3 PK	74.0	-11.7	2.29 V	164	40.5	21.8
7	11770.00	49.7 AV	54.0	-4.3	2.29 V	164	27.9	21.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE40)	Channel	CH 167：5835 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	66.5 PK	68.2	-1.7	1.84 H	97	53.2	13.3
2	*5835.00	118.2 PK			1.84 H	97	73.5	44.7
3	*5835.00	105.8 AV			1.84 H	97	61.1	44.7
4	#5925.00	77.7 PK	88.2	-10.5	1.84 H	97	63.6	14.1
5	11670.00	62.6 PK	74.0	-11.4	3.25 H	199	40.1	22.5
6	11670.00	50.0 AV	54.0	-4.0	3.25 H	199	27.5	22.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	67.2 PK	68.2	-1.0	1.54 V	115	53.9	13.3
2	*5835.00	124.0 PK			1.54 V	115	79.3	44.7
3	*5835.00	110.8 AV			1.54 V	115	66.1	44.7
4	#5933.50	82.3 PK	88.2	-5.9	1.54 V	115	68.1	14.2
5	11670.00	62.9 PK	74.0	-11.1	2.28 V	160	40.4	22.5
6	11670.00	50.3 AV	54.0	-3.7	2.28 V	160	27.8	22.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE40)	Channel	CH 175：5875 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	60.2 PK	68.2	-8.0	1.85 H	96	46.9	13.3
2	*5875.00	116.0 PK			1.85 H	96	71.3	44.7
3	*5875.00	103.6 AV			1.85 H	96	58.9	44.7
4	#5895.00	96.5 PK	110.2	-13.7	1.85 H	96	82.5	14.0
5	#5925.00	81.5 PK	88.2	-6.7	1.85 H	96	67.4	14.1
6	11750.00	62.2 PK	74.0	-11.8	3.36 H	198	40.3	21.9
7	11750.00	49.1 AV	54.0	-4.9	3.36 H	198	27.2	21.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	64.1 PK	68.2	-4.1	1.62 V	112	50.8	13.3
2	*5875.00	119.8 PK			1.62 V	112	75.1	44.7
3	*5875.00	108.1 AV			1.62 V	112	63.4	44.7
4	#5922.87	89.4 PK	89.8	-0.4	1.62 V	112	75.3	14.1
5	#5925.00	84.4 PK	88.2	-3.8	1.62 V	112	70.3	14.1
6	11750.00	62.4 PK	74.0	-11.6	2.33 V	168	40.5	21.9
7	11750.00	49.5 AV	54.0	-4.5	2.33 V	168	27.6	21.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE80)	Channel	CH 171：5855 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	65.3 PK	68.2	-2.9	1.86 H	95	52.0	13.3
2	*5855.00	112.0 PK			1.86 H	95	67.3	44.7
3	*5855.00	99.5 AV			1.86 H	95	54.8	44.7
4	#5925.00	80.2 PK	88.2	-8.0	1.86 H	95	66.1	14.1
5	11710.00	62.4 PK	74.0	-11.6	3.14 H	185	40.0	22.4
6	11710.00	49.7 AV	54.0	-4.3	3.14 H	185	27.3	22.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5643.00	67.9 PK	68.2	-0.3	1.58 V	111	54.7	13.2
2	*5855.00	117.0 PK			1.58 V	111	72.3	44.7
3	*5855.00	104.2 AV			1.58 V	111	59.5	44.7
4	#5935.00	81.0 PK	88.2	-7.2	1.58 V	111	66.8	14.2
5	11710.00	62.8 PK	74.0	-11.2	2.13 V	168	40.4	22.4
6	11710.00	50.0 AV	54.0	-4.0	2.13 V	168	27.6	22.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	802.11ax (HE160)	Channel	CH 163：5815 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 66% RH
Tested By	Luis Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	62.8 PK	68.2	-5.4	1.85 H	95	49.5	13.3
2	*5815.00	107.1 PK			1.85 H	95	62.3	44.8
3	*5815.00	95.2 AV			1.85 H	95	50.4	44.8
4	#5925.00	68.6 PK	88.2	-19.6	1.85 H	95	54.5	14.1
5	11630.00	62.9 PK	74.0	-11.1	3.22 H	192	40.2	22.7
6	11630.00	49.9 AV	54.0	-4.1	3.22 H	192	27.2	22.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**#5645.90**	**68.1 PK**	**68.2**	**-0.1**	**1.54 V**	**115**	**54.8**	**13.3**
2	*5815.00	113.6 PK			1.54 V	115	68.8	44.8
3	*5815.00	100.6 AV			1.54 V	115	55.8	44.8
4	#5940.00	72.0 PK	88.2	-16.2	1.54 V	115	57.8	14.2
5	11630.00	63.0 PK	74.0	-11.0	2.19 V	192	40.3	22.7
6	11630.00	50.2 AV	54.0	-3.8	2.19 V	192	27.5	22.7

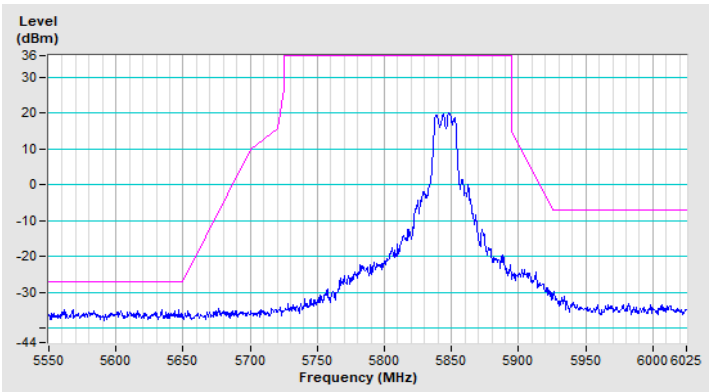
Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
6. " # ": The radiated frequency is out of the restricted band.

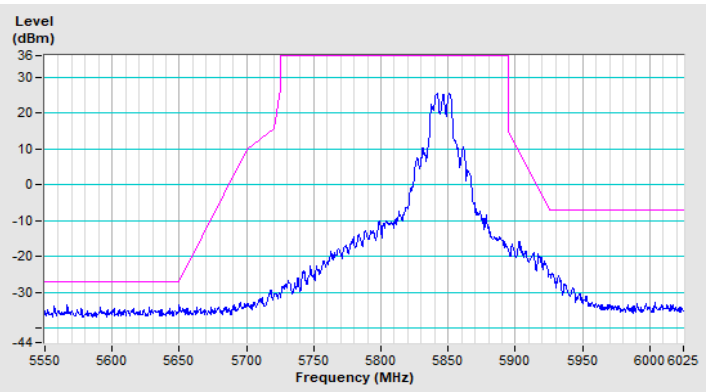
Plot of Band Edge

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11a Channel 169

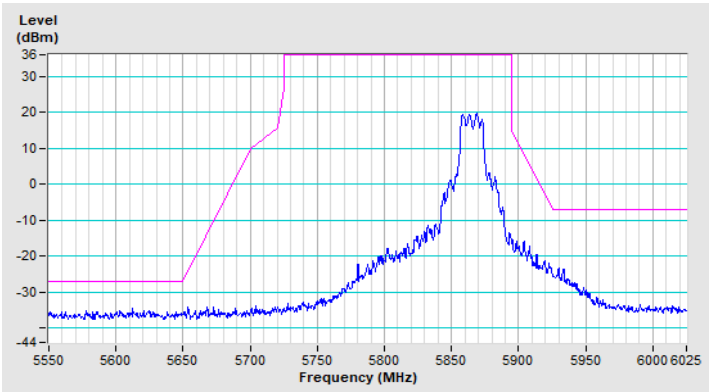


Horizontal (Peak)

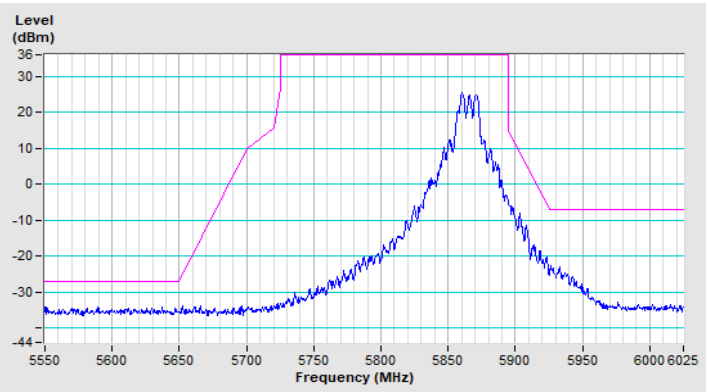


Vertical (Peak)

802.11a Channel 173

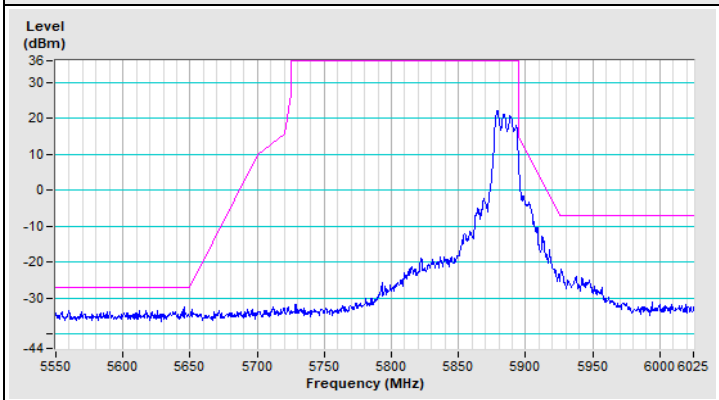


Horizontal (Peak)

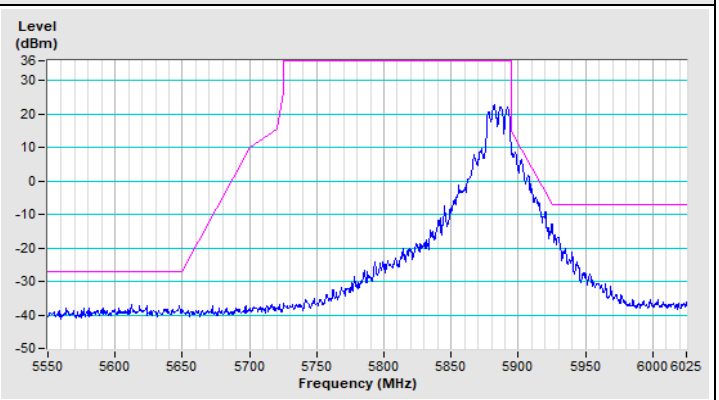


Vertical (Peak)

802.11a Channel 177



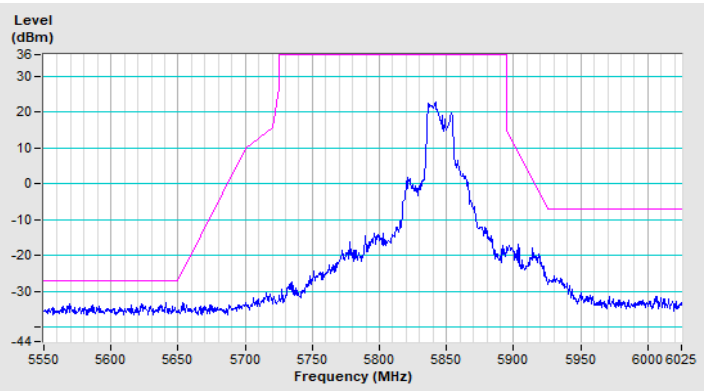
Horizontal (Peak)



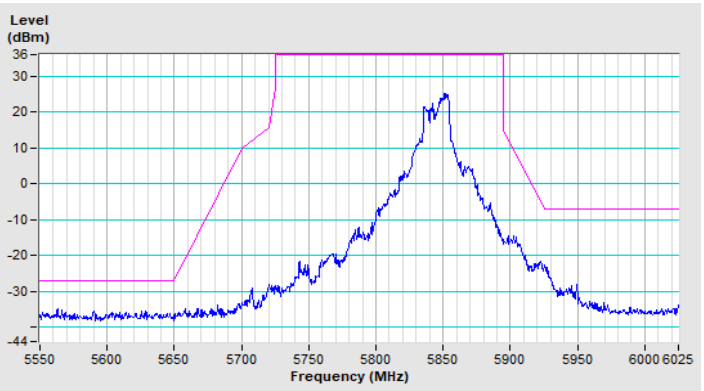
Vertical (Peak)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE20) Channel 169

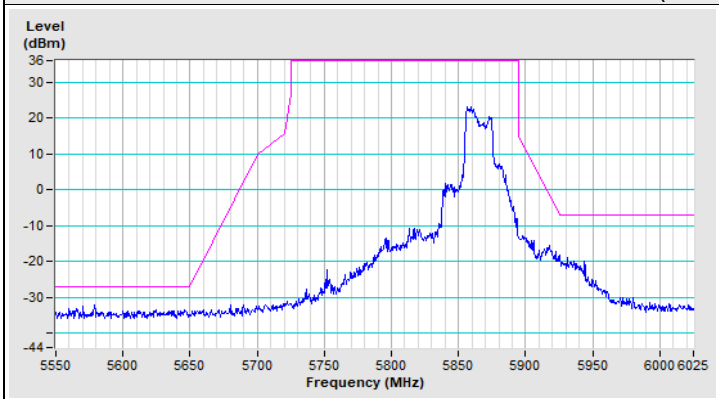


Horizontal (Peak)

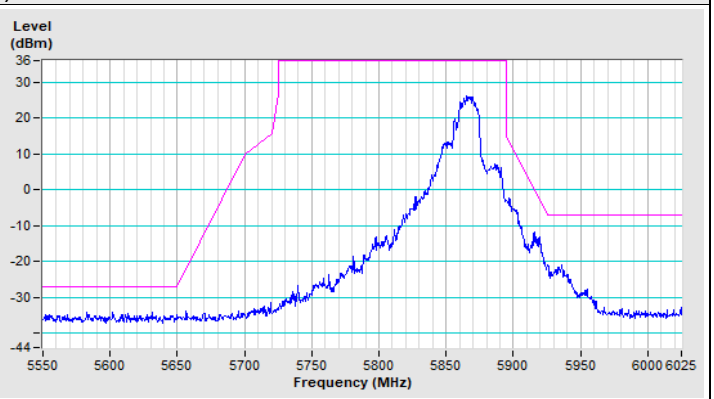


Vertical (Peak)

802.11ax (HE20) Channel 173

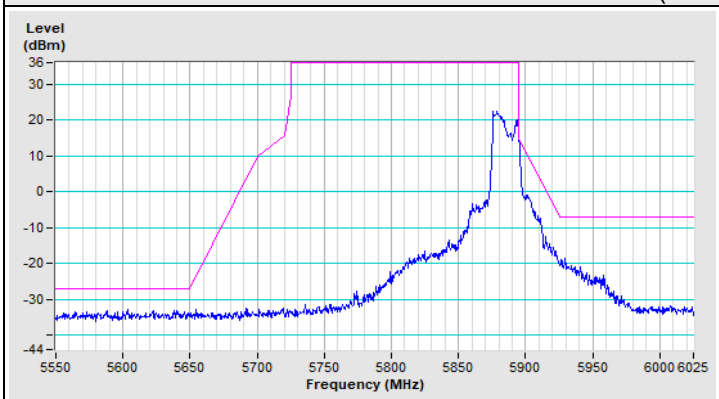


Horizontal (Peak)

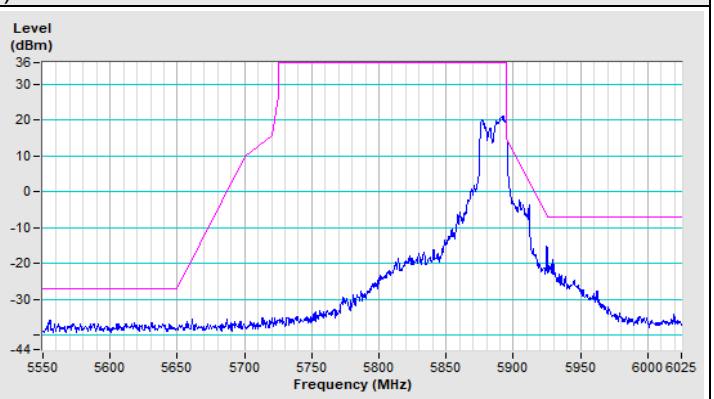


Vertical (Peak)

802.11ax (HE20) Channel 177



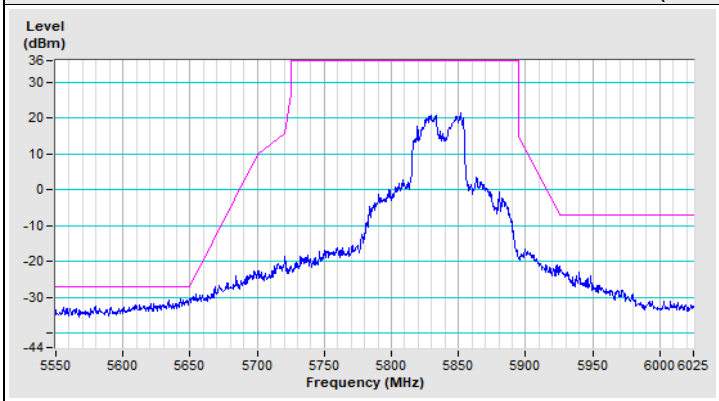
Horizontal (Peak)



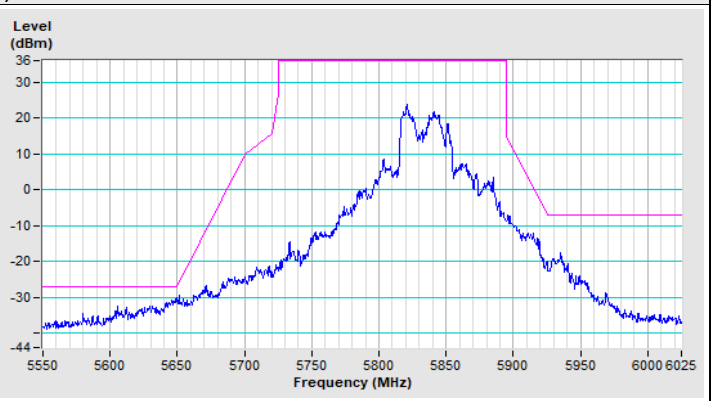
Vertical (Peak)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE40) Channel 167

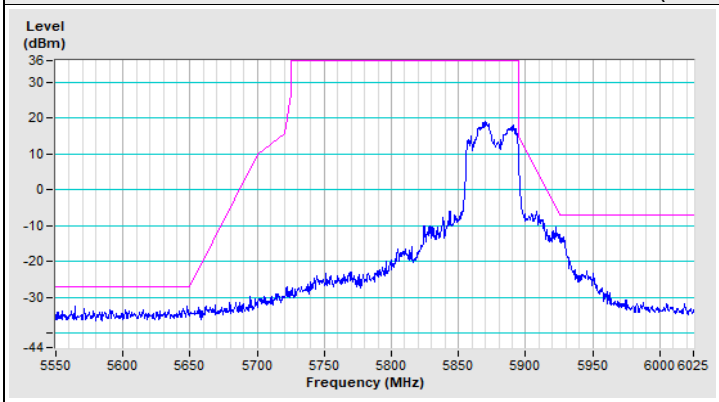


Horizontal (Peak)

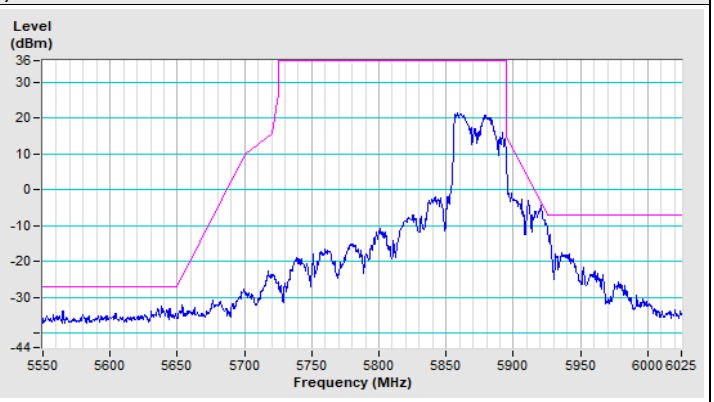


Vertical (Peak)

802.11ax (HE40) Channel 175



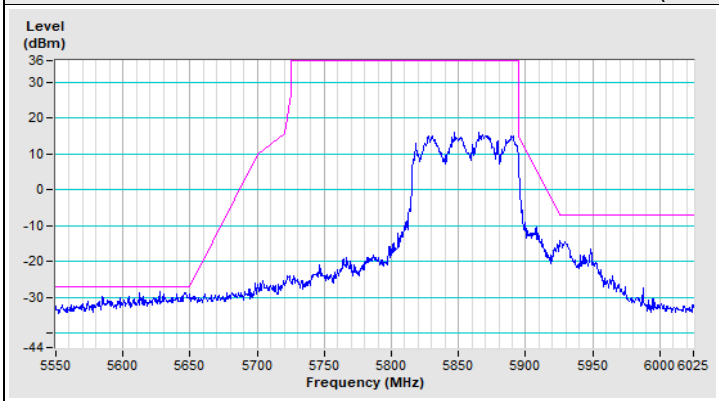
Horizontal (Peak)



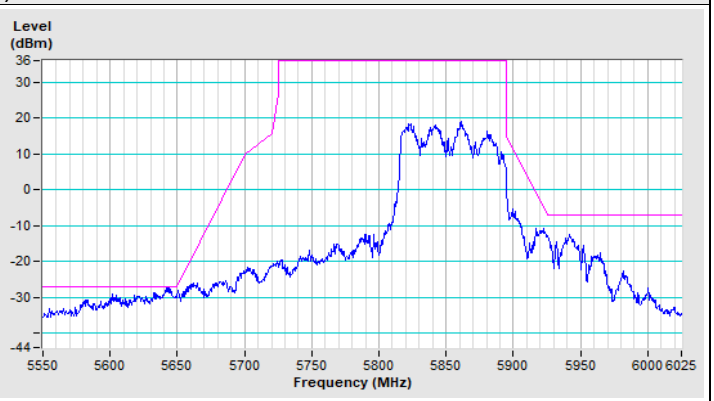
Vertical (Peak)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE80) Channel 171



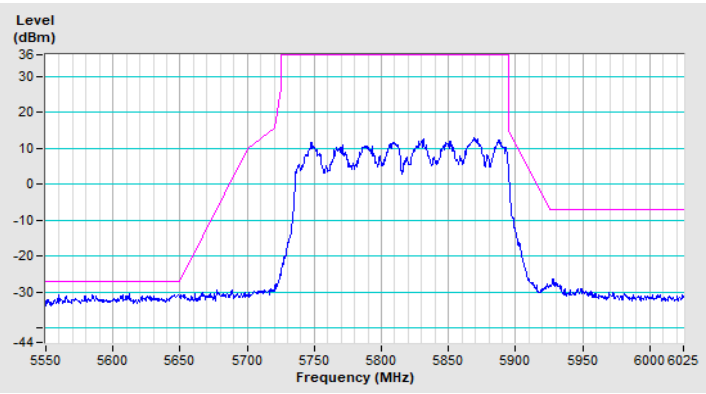
Horizontal (Peak)



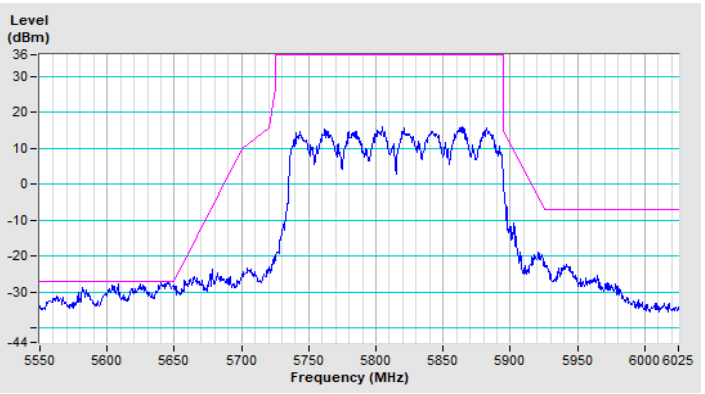
Vertical (Peak)

Frequency Range	5.55 GHz ~ 6.025 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak

802.11ax (HE160) Channel 163



Horizontal (Peak)



Vertical (Peak)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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Web Site: http://ee.bureauveritas.com.tw

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

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