TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFCDVB-WTW-P25040433-6
FCC ID:	QYLBE200NG
Product:	2x2 Wi-Fi and BT, M.2 2230 adapter card
Brand:	Getac
Model No.:	BE200NGW
Received Date:	2025/4/21
Test Date:	2025/5/14 ~ 2025/6/20
Issued Date:	2025/7/9
Applicant:	Getac Technology Corporation.
Address:	5F., Building A, No. 209, Sec.1, Nangang Rd.,Nangang Dist., Taipei City 115018, Taiwan, R.O.C.
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., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Approved by: Jeremy . Lin , **Date:** **2025/7/9**

Jeremy Lin / Project Engineer

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Prepared by : Gina Liu / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFCDVB-WTW-P25040433-6	Original release.	2025/7/9

1 Certificate

Product:	2x2 Wi-Fi and BT, M.2 2230 adapter card
Brand:	Getac
Test Model:	BE200NGW
Sample Status:	Engineering sample
Applicant:	Getac Technology Corporation.
Test Date:	2025/5/14 ~ 2025/6/20
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	N/A	Refer to Note
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -17.81 dB at 0.15000 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -1.6 dB at 74.62 MHz
15.407(b)(5) 15.407(b)(10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -6.2 dB at 11670.00 MHz and 11710.00 MHz
15.407(e)	6 dB Bandwidth	N/A	Refer to Note
15.203	Antenna Requirement	Pass	Antenna connector is MHF-4 not a standard connector.

Notes:

1. Only test item of RF Output Power, AC Power Conducted Emissions and Unwanted Emissions were performed for this report. Other testing data please refer to module report No.: 230526-08.TR11 (Brand: Intel® BE200NGW, Model: BE200NGW).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
RF Output Power	-	1.371 dB
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.90 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.44 dB
	30 MHz ~ 1 GHz	2.95 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 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	2x2 Wi-Fi and BT, M.2 2230 adapter card
Brand	Getac
Test Model	BE200NGW
Host Marketing Name (HMN)	V120,V120Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose)
Status of EUT	Engineering sample
Power Supply Rating	End-product: 19.0 Vdc (from adapter) 7.74 / 11.61 Vdc (from battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax mode 4096QAM for OFDMA in 11be mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	Up to 2401.9 Mbps (11ax mode) Up to 2882.4 Mbps (11be mode)
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	EIRP: 73.621 mW (18.67 dBm)

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model	Difference
Notebook	Getac	V120	Marketing purpose
		V120Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose)	

2. The End-product contains following accessory devices.

Item	Brand	Model	Specification
Battery 1	Getac	BP2S1P4070P	Power Rating : Rating: 7.74Vdc , 3800mAh, 29.42Wh Typical Capacity: 4070mAh, 31.51Wh
Battery 2	Getac	BP3S1P4070P	Power Rating : Rating: 11.61Vdc , 3800mAh, 44.12Wh Typical Capacity: 4070mAh, 47.26Wh
AC Adapter	FSP	FSP065-RBBN3	AC Input : 100-240 Vac； 50-60 Hz； 1.5 A DC Output : 19.0Vdc； 3.42A, 65.0W DC Output Cable : 1.45M / 1core AC Power Cord : 1.75M
Touch Pen	Getac	340GA8900001	-

*After the pretesting, battery 1 mode is found to be the worse case and therefore had been chosen for final test.

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna	2.4GHz 2400-2483.5 MHz	5.2GHz 5150-5250 MHz	5.3GHz 5250-5350 MHz	5.6GHz 5470-5725 MHz	5.8GHz 5725-5850 MHz	5.9GHz 5850-5895 MHz	6.2GHz 5925-6425 MHz	6.5GHz 6425-6525 MHz	6.7GHz 6525-6875 MHz	7.0GHz 6875-7125 MHz	Antenna Type	Connector Type
Main	2.23	2.25	2.25	2.48	2.48	1.44	2.4	2.28	2.28	1.57	PIFA	MHF-4
Aux.	2.48	1.67	1.67	2.12	2.12	1.42	2.41	2.41	1.99	1.82	PIFA	MHF-4

* 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	**TX & RX Configuration**	
802.11a	1TX	1RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ac (VHT160)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX
802.11ax (HE160)	2TX	2RX
802.11be (EHT20)	2TX	2RX
802.11be (EHT40)	2TX	2RX
802.11be (EHT80)	2TX	2RX
802.11be (EHT160)	2TX	2RX

Note:

1. 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 is the representative mode in test report.

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

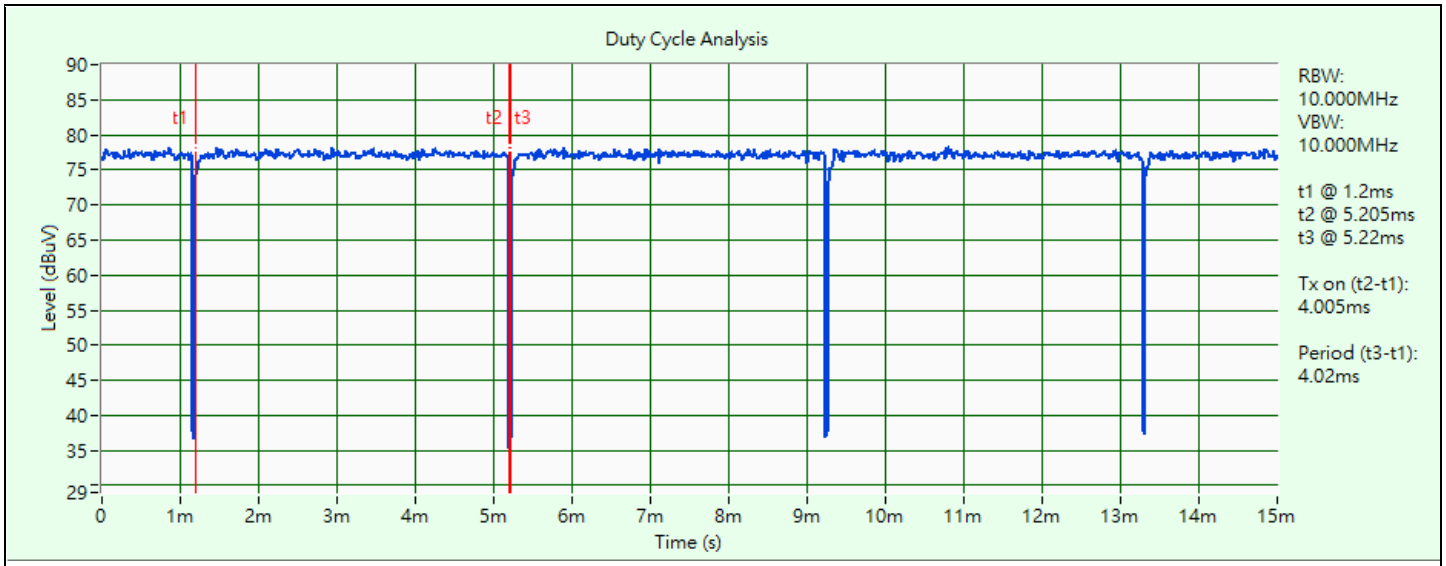
Pre-Scan:	1. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis/NB-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. X-axis/ Y-axis/ Z-axis/NB-axis Worst Condition:X-axis

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

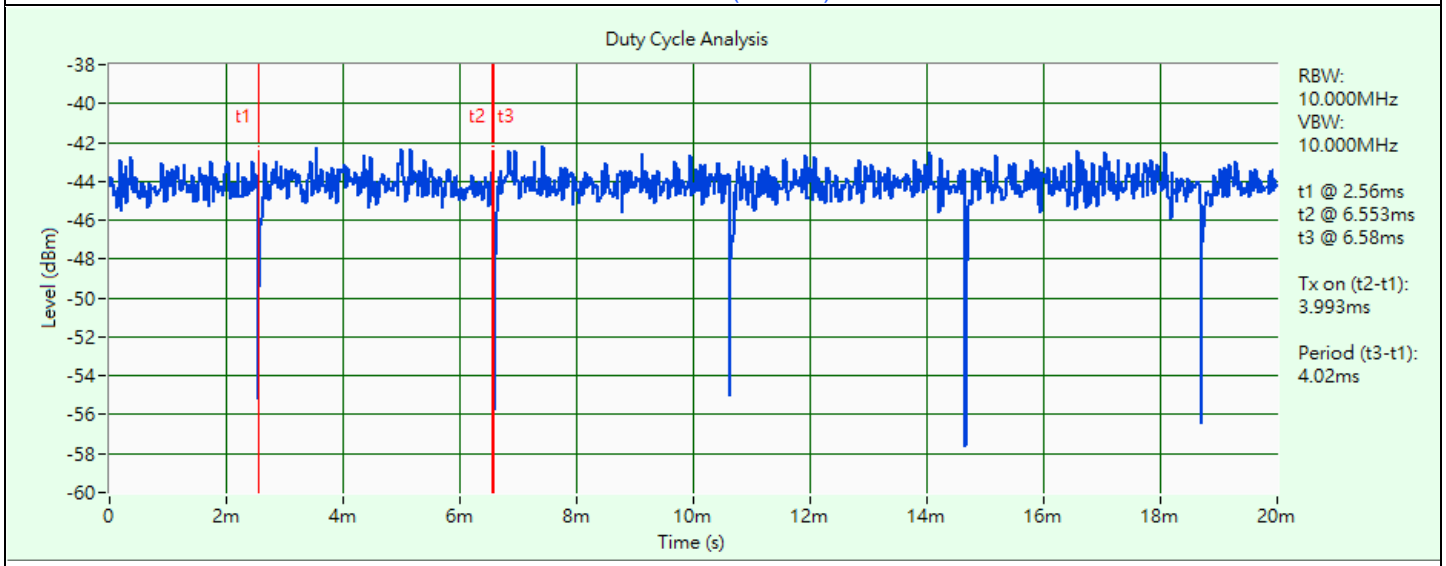
Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter	RU/MRU Index
RF Output Power	802.11a	1TX	169, 173, 177	BPSK	6Mb/s	NA
	802.11be (EHT20)	1TX	169, 173, 177	BPSK	MCS0	NA
	802.11be (EHT40)	1TX	167, 175	BPSK	MCS0	NA
	802.11be (EHT80)	1TX	171	BPSK	MCS0	NA
	802.11be (EHT160)	1TX	163	BPSK	MCS0	NA
	802.11be (EHT20)	2TX	169, 173, 177	BPSK	MCS0	NA
	802.11be (EHT40)	2TX	167, 175	BPSK	MCS0	NA
	802.11be (EHT80)	2TX	171	BPSK	MCS0	NA
	802.11be (EHT160)	2TX	163	BPSK	MCS0	NA
AC Power Conducted Emissions	802.11be (EHT80)	1TX	171	BPSK	MCS0	NA
Unwanted Emissions below 1 GHz	802.11be (EHT80)	1TX	171	BPSK	MCS0	NA
Unwanted Emissions above 1 GHz	802.11be (EHT80)	1TX	171	BPSK	MCS0	NA
	802.11be (EHT40)	2TX	167	BPSK	MCS0	NA

3.5 Duty Cycle of Test Signal

802.11be (EHT40): Duty cycle = 4.005 ms / 4.02 ms x 100% = 99.6%
802.11be (EHT80): Duty cycle = 3.993 ms / 4.02 ms x 100% = 99.3%



802.11be (EHT40)

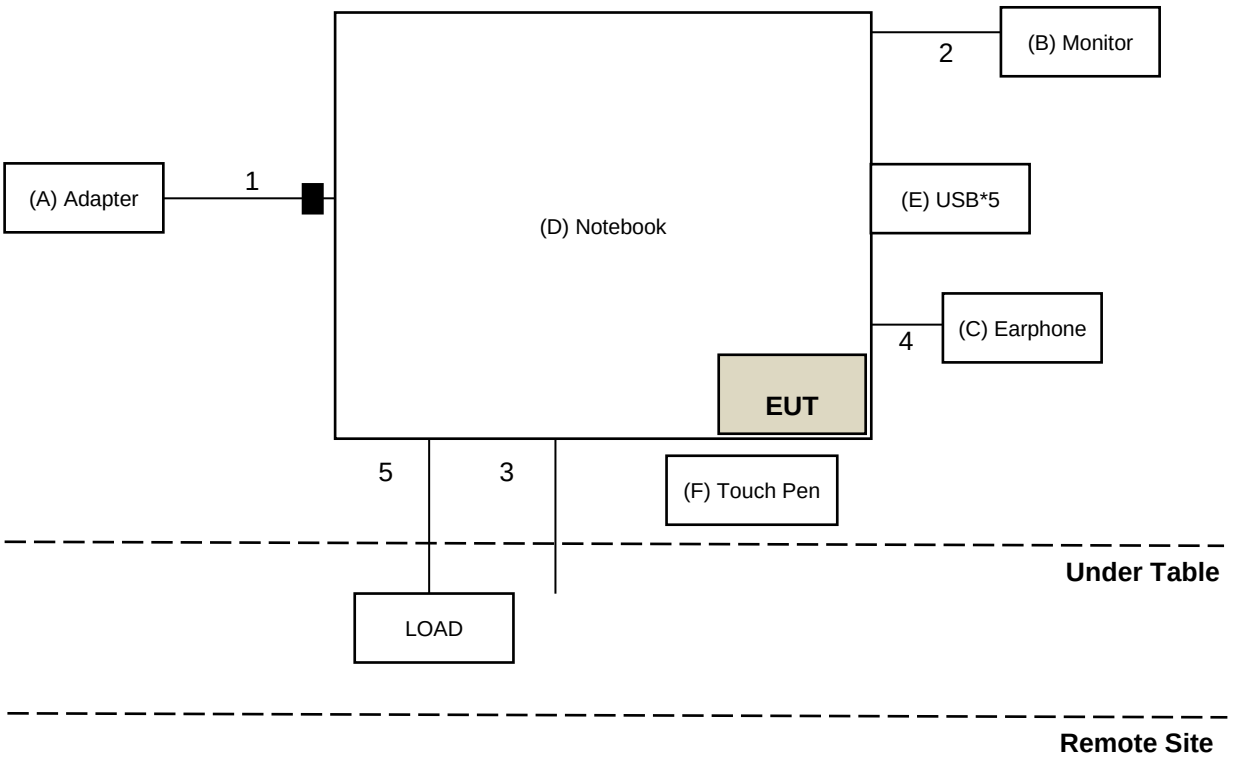


802.11be (EHT80)

3.6 Test Program Used and Operation Descriptions

Controlling software DRTU has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	FSP	FSP090-ABBN3	N/A	N/A	Supplied by applicant
B	Monitor	DELL	A14S2421HSXmTW	CN-01KWFW-WSL00-24C-711B	N/A	Provided by Lab
C	Earphone	APPLE	MB77PFEB	N/A	N/A	Provided by Lab
D	Notebook	Getac	V120	N/A	N/A	Supplied by applicant
E	USB*5	SanDisk	SDDDC3-032G	N/A	N/A	Provided by Lab
F	Touch Pen	Getac	340GA8900001	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.45	Y	1	Supplied by applicant
2	HDMI	1	1.8	Y	0	Provided by Lab
3	RS232	1	1.5	N	0	Provided by Lab
4	AUDIO	1	1.2	N	0	Provided by Lab
5	LAN	1	1.5	N	0	Provided by Lab

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
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
Peak Power Analyzer Keysight	8990B	MY51000485	2025/1/20	2026/1/19
Wideband Power Sensor Keysight	N1923A	MY58020002	2025/1/21	2026/1/20
		MY58140009	2025/1/21	2026/1/20

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/6/19

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance	E1-011279	04	2024/11/28	2025/11/27
	E1-011280	05	2024/11/28	2025/11/27
	E1-011311	09	2024/11/28	2025/11/27
DC-LISN Schwarzbeck	NNBM 8126G	8126G-069	2024/11/5	2025/11/4
EMI Test Receiver R&S	ESR3	102783	2024/12/17	2025/12/16
Fixed Attenuator STI	BNC5W10dB	PAD-COND2-01	2024/8/25	2025/8/24
LISN R&S	ESH2-Z5	100100	2025/3/5	2026/3/4
	ESH3-Z5	100312	2024/9/9	2025/9/8
RF Coaxial Cable Woken	5D-FB	Cable-cond2-01	2024/8/25	2025/8/24
Software BVADT	BVADT_Cond_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2024/8/28	2025/8/27

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2025/5/14

4.3 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-472	2024/10/14	2025/10/13
EXA Signal Analyzer Agilent	N9010A	MY52220207	2024/12/30	2025/12/29
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Agilent	N9038A	MY51210203	2024/8/27	2025/8/26
Preamplifier EMCI	EMC 330H	980112	2024/9/24	2025/9/23
	EMC001340	980201	2024/9/24	2025/9/23
RF Coaxial Cable Woken	8D-FB	Cable-Ch10-01	2024/9/24	2025/9/23
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2025/5/27

4.4 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn Max-Full	MFA-440H	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	7	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2024/12/30	2025/12/29
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-969	2024/11/10	2025/11/9
	BBHA 9170	148	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY51210203	2024/8/27	2025/8/26
Preamplifier EMCI	EMC 012645	980115	2024/9/24	2025/9/23
	EMC 184045	980116	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	2024/7/6	2025/7/5
	EMC102-KM-KM-3000	150929	2024/7/6	2025/7/5
	EMC104-SM-SM-8000+3000	171005	2024/9/24	2025/9/23
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	EMC104-SM-SM-1000(140807)	2024/9/24	2025/9/23
Software BV ADT	ADT_Radiated_V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MG-7802	N/A	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2025/6/20

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.	

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

5.2 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.

5.3 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).

5.4 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

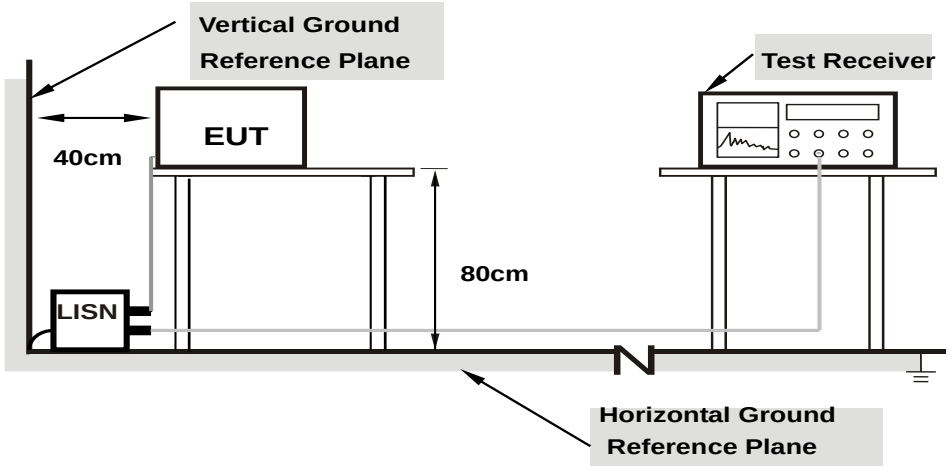
6.1.1 Test Setup

6.1.2 Test Procedure

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.

6.2 AC Power Conducted Emissions

6.2.1 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).

6.2.2 Test Procedure

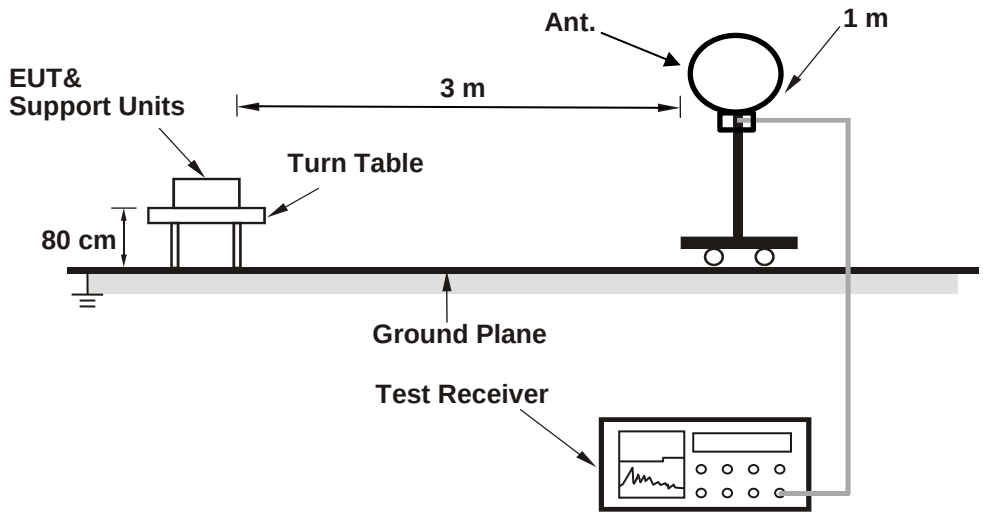
a. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The 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.

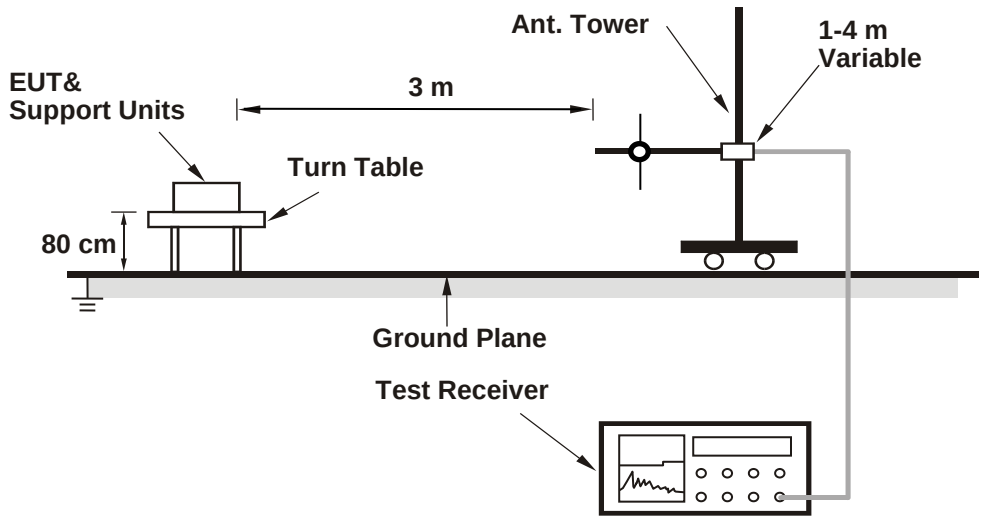
6.3 Unwanted Emissions below 1 GHz

6.3.1 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).

6.3.2 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.

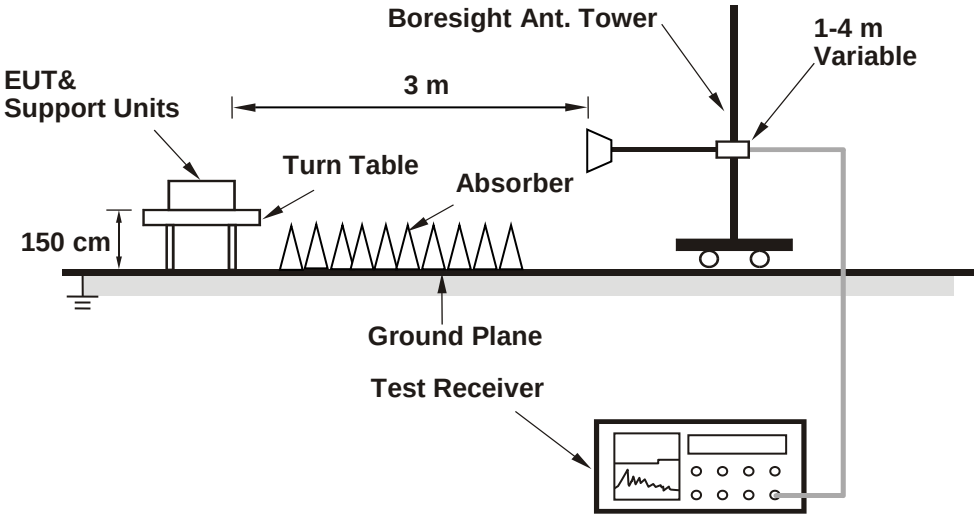
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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.

6.4 Unwanted Emissions above 1 GHz

6.4.1 Test Setup



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

6.4.2 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:	7.74 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Wayne Lin

1TX

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Antenna Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
169	5845	41.21	16.15	2.48	72.946	18.63	30	Pass
173	5865	40.832	16.11	1.44	56.885	17.55	30	Pass
177	5885	41.591	16.19	1.44	57.943	17.63	30	Pass

Notes:

1. For U-NII-3 & -4 span channel, The antenna gain is 2.48 dBi.
2. For U-NII-4, The antenna gain is 1.44 dBi.

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Antenna Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
169	5845	41.495	16.18	2.48	73.451	18.66	30	Pass
173	5865	41.4	16.17	1.44	57.677	17.61	30	Pass
177	5885	41.495	16.18	1.44	57.809	17.62	30	Pass

Notes:

1. For U-NII-3 & -4 span channel, The antenna gain is 2.48 dBi.
2. For U-NII-4, The antenna gain is 1.44 dBi.

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Antenna Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
167	5835	40.832	16.11	2.48	72.277	18.59	30	Pass
175	5875	41.591	16.19	1.44	57.943	17.63	30	Pass

Notes:

1. For U-NII-3 & -4 span channel, The antenna gain is 2.48 dBi.
2. For U-NII-4, The antenna gain is 1.44 dBi.

802.11be (EHT80)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Antenna Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
171	5855	41.591	16.19	2.48	73.621	18.67	30	Pass

Notes:

1. For U-NII-3 & -4 span channel, The antenna gain is 2.48 dBi.
2. For U-NII-4, The antenna gain is 1.44 dBi.

802.11be (EHT160)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Antenna Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
163	5815	41.305	16.16	2.48	73.114	18.64	30	Pass

Notes:

1. For U-NII-3 & -4 span channel, The antenna gain is 2.48 dBi.
2. For U-NII-4, The antenna gain is 1.44 dBi.

2TX

802.11be (EHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
169	5845	11.62	11.61	29.009	14.63	2.48	51.349	17.11	30	Pass
173	5865	11.63	11.68	29.278	14.67	1.44	40.789	16.11	30	Pass
177	5885	11.68	11.61	29.211	14.66	1.44	40.696	16.1	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3 & -4 span channel, The maximum gain is 2.48 dBi.
3. For U-NII-4, The maximum gain is 1.44 dBi.

802.11be (EHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
167	5835	11.65	11.75	29.584	14.71	2.48	52.367	17.19	30	Pass
175	5875	11.67	11.63	29.244	14.66	1.44	40.741	16.1	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3 & -4 span channel, The maximum gain is 2.48 dBi.
3. For U-NII-4, The maximum gain is 1.44 dBi.

802.11be (EHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
171	5855	11.68	11.67	29.412	14.69	2.48	52.062	17.17	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3 & -4 span channel, The maximum gain is 2.48 dBi.
3. For U-NII-4, The maximum gain is 1.44 dBi.

802.11be (EHT160)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Maximum Gain (dBi)	EIRP (mW)	EIRP (dBm)	EIRP Limit (dBm)	Test Result
		Chain 0	Chain 1							
163	5815	11.63	11.61	29.042	14.63	2.48	51.408	17.11	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-3 & -4 span channel, The maximum gain is 2.48 dBi.
3. For U-NII-4, The maximum gain is 1.44 dBi.

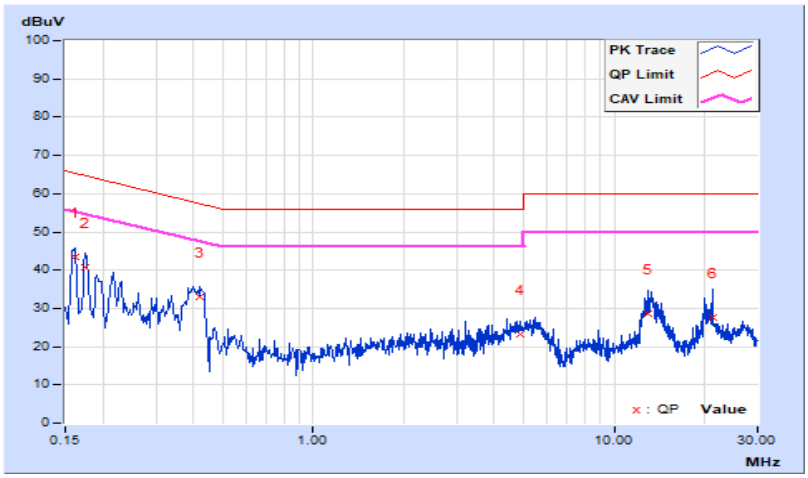
7.2 AC Power Conducted Emissions

RF Mode	802.11be (EHT80)	**Channel**	CH 171：5855 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, 71% RH
Tested By	Thomas Cheng		

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	0.16105	10.25	33.10	18.29	43.35	28.54	65.41	55.41	-22.06	-26.87
2	0.17400	10.26	30.57	16.23	40.83	26.49	64.77	54.77	-23.94	-28.28
3	0.42200	10.29	22.54	8.25	32.83	18.54	57.41	47.41	-24.58	-28.87
4	4.90600	10.42	12.86	3.89	23.28	14.31	56.00	46.00	-32.72	-31.69
5	12.91800	10.49	18.19	5.93	28.68	16.42	60.00	50.00	-31.32	-33.58
6	21.20200	10.61	16.92	6.09	27.53	16.70	60.00	50.00	-32.47	-33.30

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

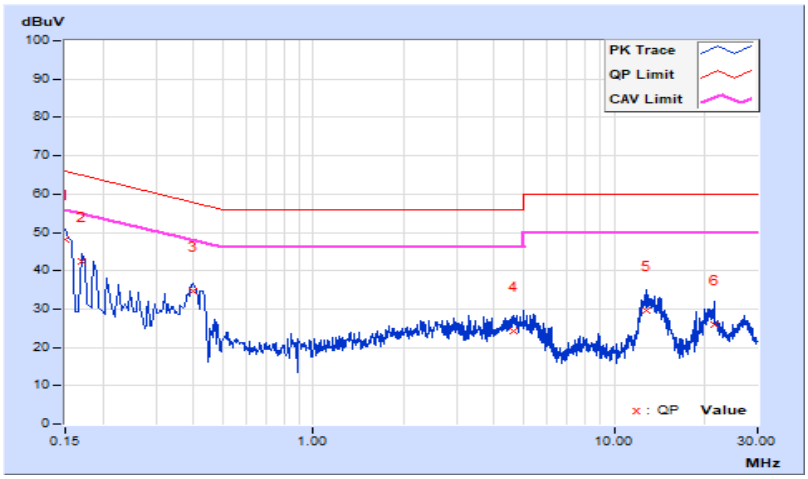


RF Mode	802.11be (EHT80)	**Channel**	CH 171：5855 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23 °C, 71% RH
Tested By	Thomas Cheng		

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**	**10.29**	**37.90**	**20.84**	**48.19**	**31.13**	**66.00**	**56.00**	**-17.81**	**-24.87**
2	0.17000	10.30	32.08	17.84	42.38	28.14	64.96	54.96	-22.58	-26.82
3	0.39655	10.32	24.30	18.64	34.62	28.96	57.93	47.93	-23.31	-18.97
4	4.61800	10.48	13.64	7.29	24.12	17.77	56.00	46.00	-31.88	-28.23
5	12.79400	10.62	18.90	10.53	29.52	21.15	60.00	50.00	-30.48	-28.85
6	21.45000	10.82	15.19	6.87	26.01	17.69	60.00	50.00	-33.99	-32.31

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



7.3 Unwanted Emissions below 1 GHz

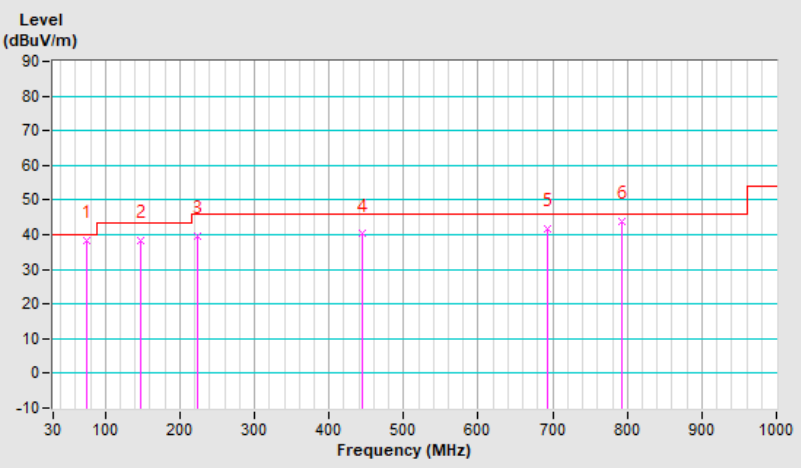
1TX

RF Mode	802.11be (EHT80)	**Channel**	CH 171：5855 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23 °C, 65% RH
Tested By	Thomas Cheng		

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	**74.62**	**38.4 QP**	**40.0**	**-1.6**	**2.00 H**	**231**	**54.0**	**-15.6**
2	147.37	38.3 QP	43.5	-5.2	2.00 H	271	50.6	-12.3
3	224.00	39.5 QP	46.0	-6.5	1.50 H	280	55.1	-15.6
4	445.16	40.2 QP	46.0	-5.8	1.99 H	197	47.9	-7.7
5	693.48	41.6 QP	46.0	-4.4	1.00 H	75	44.5	-2.9
6	792.42	43.9 QP	46.0	-2.1	1.00 H	12	44.7	-0.8

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 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.

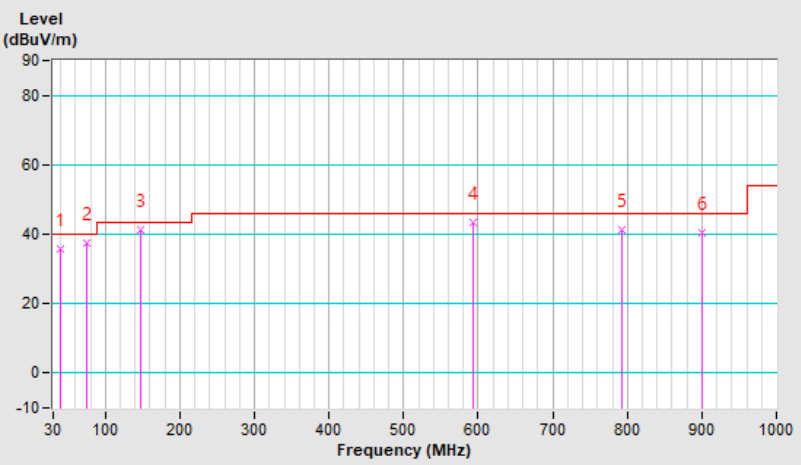


RF Mode	802.11be (EHT80)	**Channel**	CH 171：5855 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23 °C, 65% RH
Tested By	Thomas Cheng		

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	39.70	35.6 QP	40.0	-4.4	1.00 V	229	48.1	-12.5
2	74.62	37.6 QP	40.0	-2.4	1.50 V	219	53.2	-15.6
3	147.37	41.3 QP	43.5	-2.2	1.00 V	240	53.6	-12.3
4	593.57	43.4 QP	46.0	-2.6	1.00 V	55	48.4	-5.0
5	792.42	41.4 QP	46.0	-4.6	2.00 V	339	42.2	-0.8
6	900.09	40.4 QP	46.0	-5.6	1.00 V	233	40.7	-0.3

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.



7.4 Unwanted Emissions above 1 GHz

1TX

RF Mode	802.11be (EHT80)	**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=RMS
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23 °C, 65% RH
Tested By	Thomas Cheng		

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	58.9 PK	68.2	-9.3	2.43 H	255	52.7	6.2
2	*5855.00	106.3 PK			2.43 H	255	63.9	42.4
3	*5855.00	93.3 AV			2.43 H	255	50.9	42.4
4	#5925.00	59.7 PK	68.2	-8.5	2.43 H	255	53.0	6.7
5	11710.00	59.9 PK	74.0	-14.1	2.37 H	162	48.6	11.3
6	**11710.00**	**47.8 AV**	**54.0**	**-6.2**	**2.37 H**	**162**	**36.5**	**11.3**
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	59.1 PK	68.2	-9.1	2.27 V	113	52.9	6.2
2	*5855.00	101.2 PK			2.27 V	113	58.8	42.4
3	*5855.00	87.5 AV			2.27 V	113	45.1	42.4
4	#5925.00	59.9 PK	68.2	-8.3	2.27 V	113	53.2	6.7
5	11710.00	59.7 PK	74.0	-14.3	1.43 V	269	48.4	11.3
6	11710.00	47.6 AV	54.0	-6.4	1.43 V	269	36.3	11.3

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.

2TX

RF Mode	802.11be (EHT40)	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=RMS
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 65% RH
Tested By	Thomas Cheng		

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	59.1 PK	68.2	-9.1	2.35 H	277	52.9	6.2
2	*5835.00	104.7 PK			2.35 H	277	62.3	42.4
3	*5835.00	91.2 AV			2.35 H	277	48.8	42.4
4	#5925.00	59.2 PK	68.2	-9.0	2.35 H	277	52.5	6.7
5	11670.00	61.0 PK	74.0	-13.0	2.13 H	248	49.5	11.5
6	**11670.00**	**47.8 AV**	**54.0**	**-6.2**	**2.13 H**	**248**	**36.3**	**11.5**
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	58.5 PK	68.2	-9.7	2.51 V	188	52.3	6.2
2	*5835.00	98.3 PK			2.51 V	188	55.9	42.4
3	*5835.00	85.3 AV			2.51 V	188	42.9	42.4
4	#5925.00	59.4 PK	68.2	-8.8	2.51 V	188	52.7	6.7
5	11670.00	60.6 PK	74.0	-13.4	1.43 V	225	49.1	11.5
6	11670.00	47.3 AV	54.0	-6.7	1.43 V	225	35.8	11.5

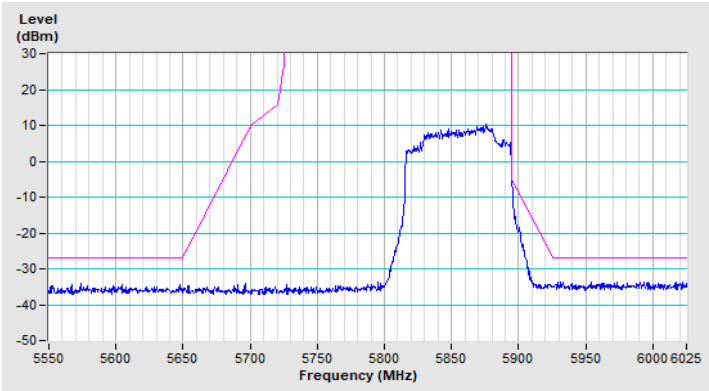
Remarks:

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.

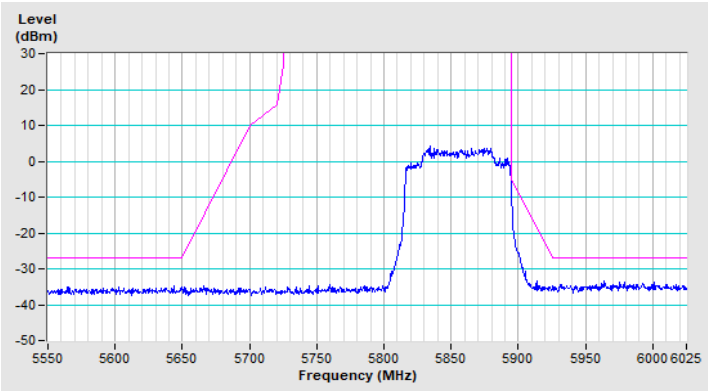
1TX

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

802.11be (EHT80) Channel 171



Horizontal (Peak)

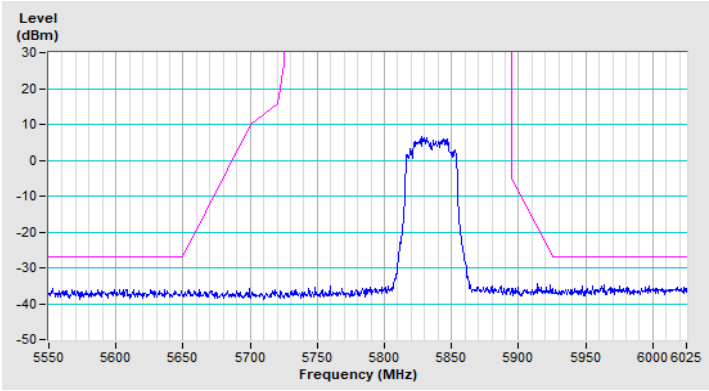


Vertical (Peak)

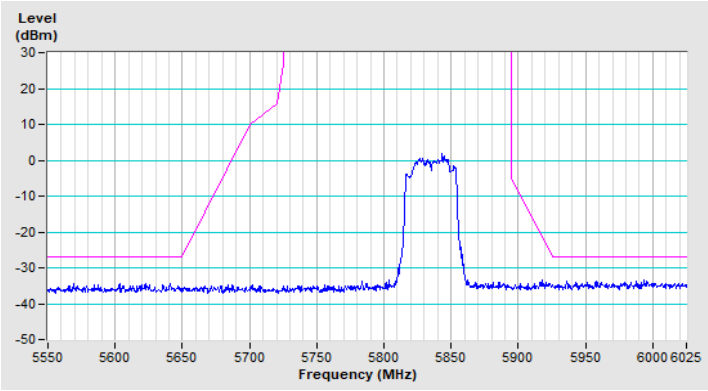
2TX

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

802.11be (EHT40) Channel 167



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

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