PARTIAL TEST REPORT
(SPOT CHECK)

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart E (Section 15.407)**
Report No.:	RFBDYS-WTW-P20080137B-1
FCC ID:	TVE-2317069
Product:	Secured Wireless Access Point
Brand:	Fortinet
Model No.:	FAP-231FL
Series Model:	FORTIAP-231FLxxxxxx, FortiAP 231FLxxxxxx, FAP-231FLxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)
Received Date:	2022/9/12
Test Date:	2022/9/19 ~ 2022/9/24
Issued Date:	2022/12/01
Applicant:	Fortinet, Inc.
Address:	899 Kifer Road, Sunnyvale, CA 94086 USA
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:** **2022/12/01**

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RFBDYS-WTW-P20080137B-1	Original release.	2022/12/01

1 Certificate

Product:	Secured Wireless Access Point
Brand:	Fortinet
Test Model:	FAP-231FL
Series Model:	FORTIAP-231FLxxxxxx, FortiAP 231FLxxxxxx, FAP-231FLxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)
Sample Status:	Engineering sample
Applicant:	Fortinet, Inc.
Test Date:	2022/9/19 ~ 2022/9/24
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407)
Measurement procedure:	ANSI C63.10-2013 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)(1/2/3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Power Spectral Density	Pass	Refer to note 1
15.407(e)	6 dB Bandwidth	Pass	Refer to note 1
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Refer to note 1
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -5.03 dB at 0.47000 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.1 dB at 53.28 MHz
15.407(b) (1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -2.2 dB at 11510.00 MHz
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

Note:
1. This report is a partial report. Therefore, only Output Power, AC Power Conducted Emission and Radiated Emissions were verified and recorded in this report. Other testing data please refer to the original BV CPS report no.: RFBDYS-WTW-P20080137-1.
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) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.99 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.6 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	Secured Wireless Access Point
Brand	Fortinet
Test Model	FAP-231FL
Series Model	FORTIAP-231FLxxxxxx, FortiAP 231FLxxxxxx, FAP-231FLxxxxxx (where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)
Model Difference	Refer to note
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from Adapter 54Vdc from PoE
Modulation Type	802.11a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20/40): up to MCS31 802.11ac (VHT20/40): up to MCS9 802.11ax: up to MCS11
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	5GHz traffic radio: 5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 Scanning radio: 5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	5180 ~ 5240MHz: 5G traffic radio: CDD Mode: 373.084 mW (25.72 dBm) 5G traffic radio: Beamforming Mode: 180.811 mW (22.57 dBm) Scanning radio: CDD Mode: 140.605 mW (21.48 dBm) 5745 ~ 5825MHz: 5G traffic radio: CDD Mode: 279.854 mW (24.47 dBm) 5G traffic radio: Beamforming Mode: 136.000 mW (21.34 dBm) Scanning radio: CDD Mode: 142.889 mW (21.55 dBm)
EUT Category	Indoor Access Point

Note:

1. This report is a supplementary report to the original BV CPS report no.: RFBDYS-WTW-P20080137-1. The differences compared with the original design is as below. Exhibit prepared for FCC Spot Check Verification report, the format, test items and amount of spot-check test data are decided by applicant's engineering judgment, for more details please refer to declaration letter exhibit. Therefore, only Output Power, AC Power Conducted Emission and Radiated Emissions were verified and recorded in this report. AC Power Conducted Emission and Radiated Emission tests according to original report radiated emission worst channel.

   Difference:

   a) Removing BLE and Zigbee antenna & function

2. The following models are provided to this EUT. The model FAP-231FL was chosen for final test.

Brand	Test Model	Series Model	Difference
Fortinet	FAP-231FL	FORTIAP-231FLxxxxxx, FortiAP 231FLxxxxxx, FAP-231FLxxxxxx	Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only.

3. The EUT consumes power from the following power supply. (Support unit only)

Adapter	
Brand	Asian Power Devices Inc.
Model	WA-30J12R
Input Power	100-240Vac, 50-60Hz, 0.9A MAX
Output Power	12Vdc, 2.5A
Power Line	1.5m cable without core attached on adapter

POE	
Brand	EnGenius
Model	EPA5006GPR
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A

4. The simultaneous operation mode was determined by client.

No	Mode
1	2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3)
3	5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3)

*5GHz traffic radio (Radio 2) and 5G Scanning radio (Radio 3) cannot transmit in the same band at same time.

2G traffic radio (Radio 1) and 2G Scanning radio (Radio 3) cannot transmit at same time.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type		PIFA	
Antenna Connector		i-pex(MHF)	
Antenna No.		Gain (dBi)	
		2.4~2.4835GHz	5.180~5.825GHz
1	Chain0	4.9	5.2
2	Chain1	3.8	5.5
3	Scan	4.0	5.1

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

2. The EUT incorporates a MIMO function:

Modulation Mode	CDD Mode	Beamforming Mode	TX Function	Radio
802.11a	Support	Not Support	2TX	5G traffic radio (Radio 2)
802.11n (HT20)	Support	Support	2TX	
802.11n (HT40)	Support	Support	2TX	
802.11ac (VHT20)	Support	Support	2TX	
802.11ac (VHT40)	Support	Support	2TX	
802.11ac (VHT80)	Support	Support	2TX	
802.11ax (HE20)	Support	Support	2TX	
802.11ax (HE40)	Support	Support	2TX	
802.11ax (HE80)	Support	Support	2TX	
802.11a	Support	Not Support	1TX	Scanning radio (Radio 3)
802.11n (HT20)	Support	Not Support	1TX	
802.11n (HT40)	Support	Not Support	1TX	
802.11ac (VHT20)	Support	Not Support	1TX	
802.11ac (VHT40)	Support	Not Support	1TX	
802.11ac (VHT80)	Support	Not Support	1TX	
Note: 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.				

3.3 Channel List

FOR 5180 ~ 5240 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) and 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80) and 802.11ax (HE80):

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) and 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80) and 802.11ax (HE80):

Channel	Frequency
155	5775 MHz

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. X-axis/ Y-axis/ Z-axis Worst Condition: Y-axis. 2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

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

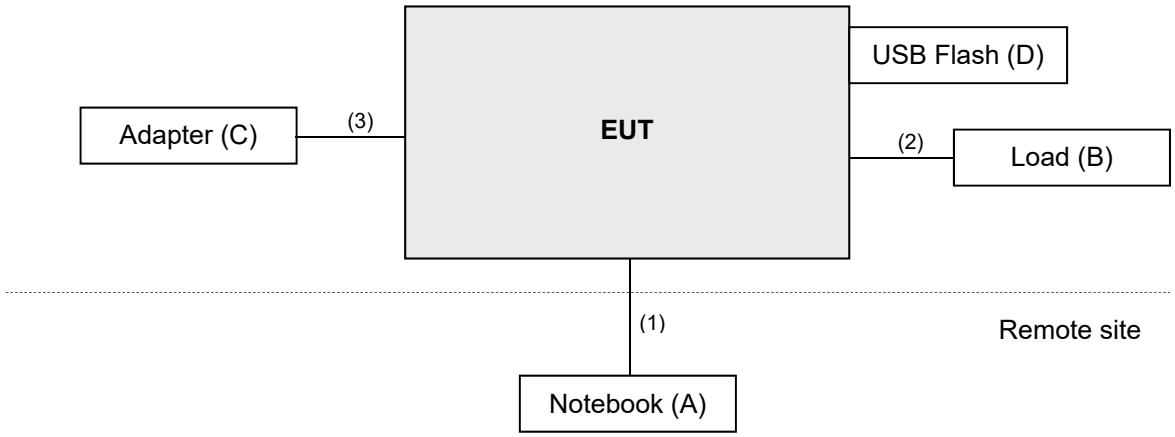
Test Item	EUT Configure Mode	Remark	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power	B	5G traffic radio	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
			802.11n (HT20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	6.5Mb/s
			802.11n (HT40)	CDD & Beamforming	38, 46, 151, 159	BPSK	13.5Mb/s
			802.11ac (VHT20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	6.5Mb/s
			802.11ac (VHT40)	CDD & Beamforming	38, 46, 151, 159	BPSK	13.5Mb/s
			802.11ac (VHT80)	CDD & Beamforming	42, 155	BPSK	65Mb/s
			802.11ax (HE20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	MCS0
			802.11ax (HE40)	CDD & Beamforming	38, 46, 151, 159	BPSK	MCS0
			802.11ax (HE80)	CDD & Beamforming	42, 155	BPSK	MCS0
		Scanning radio	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
			802.11n (HT20)	CDD & Beamforming	36, 40, 48, 149, 157, 165	BPSK	6.5Mb/s
			802.11n (HT40)	CDD & Beamforming	38, 46, 151, 159	BPSK	13.5Mb/s
			802.11ac (VHT80)	CDD & Beamforming	42, 155	BPSK	65Mb/s
AC Power Conducted Emissions	A, B	5G traffic radio	802.11a	CDD	48	BPSK	6Mb/s
	A, B	Scanning radio	802.11a	CDD	157	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	A, B	5G traffic radio	802.11a	CDD	48	BPSK	6Mb/s
	A, B	Scanning radio	802.11a	CDD	157	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	B	5G traffic radio	802.11a	CDD	48	BPSK	6Mb/s
			802.11ax (HE40)	CDD	151	BPSK	MCS0
	B	Scanning radio	802.11a	CDD	48, 157	BPSK	6Mb/s
EUT Configure Mode:	A		Power from adapter				
	B		Power from PoE				

3.5 Test Program Used and Operation Descriptions

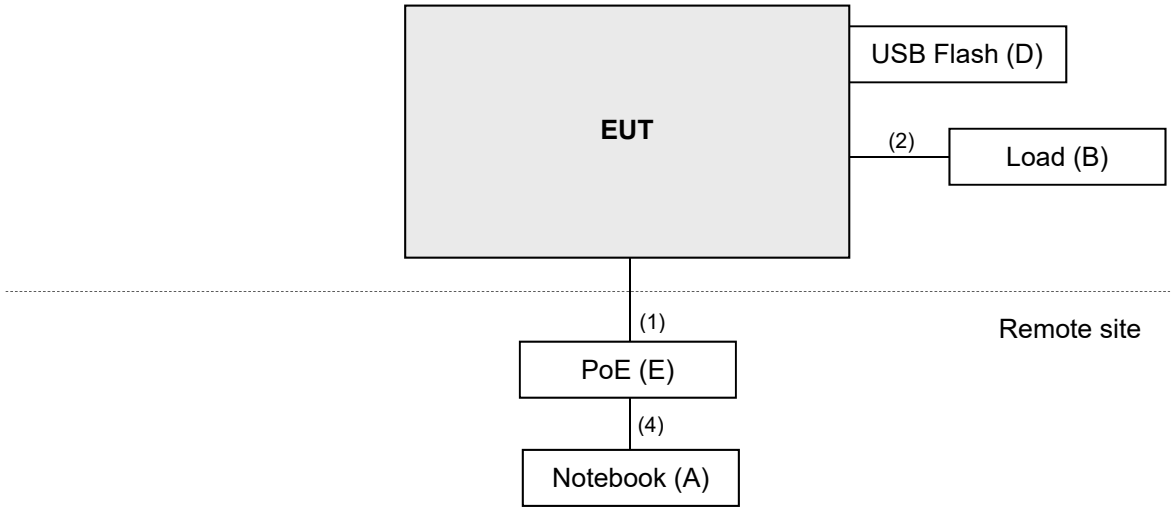
Controlling software QSPR has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.6 Connection Diagram of EUT and Peripheral Devices

Mode A



Mode B



3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	Lenovo	20J4 MD A003TW	PF-11H9AK	FCC DoC Approved	Provided by Lab
B.	Load	NA	NA	NA	NA	Provided by Lab
C.	Adapter	Asian Power Devices Inc.	WA-30J12R	NA	NA	Supplied by applicant
D.	USB Flash	Sandisk	NA	03	NA	Provided by Lab
E.	POE	EnGenius	EPA5006GPR	NA	NA	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	7.0	N	0	Provided by Lab
2.	RJ-45 Cable	2	1.5	N	0	Provided by Lab
3.	Power cable	1	1.5	-	0	Supplied by applicant
4.	RJ-45 Cable	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
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	2022/1/18	2023/1/17
Power sensor Keysight	U2021XA	MY55380009	2022/3/23	2023/3/22
Wideband Power Sensor(N1923A) KEYSIGHT	N1923A	MY58020002	2022/1/17	2023/1/16

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/9/24

4.2 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC-LISN SCHWARZBECK MESS-ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH3-Z5	100220	2021/11/25	2022/11/24
LISN ROHDE & SCHWARZ	ENV216	101826	2022/3/14	2023/3/13
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2022/1/15	2023/1/14
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver Rohde&Schwarz	ESCI	100613	2021/12/3	2022/12/2
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/8/31	2023/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. Tested Date: 2022/9/19 ~ 2022/9/21

4.3 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn BV ADT	AT100	AT93021705	N/A	N/A
Bi_Log Antenna Schwarbeck	VULB9168	9168-160	2021/10/28	2022/10/27
Loop Antenna TESEQ	HLA 6121	45745	2022/7/27	2023/7/26
Preamplifier Agilent	8447D	2944A10638	2022/5/14	2023/5/13
RF Coaxial Cable EMCI	5D-NM-BM	140903+140902	2022/1/15	2023/1/14
RF Coaxial Cable WOKEN	8D-FB	Cable-CH9-01	2022/5/14	2023/5/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/1/7	2023/1/6
Test Receiver Agilent	N9038A	MY51210203	2021/9/22	2022/9/21
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 4.
2. Tested Date: 2022/9/19 ~ 2022/9/21

4.4 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower &Turn BV ADT	AT100	AT93021705	N/A	N/A
Boresight antenna tower fixture BV	BAF-02	5	N/A	N/A
Horn Antenna Schwarzbeck	9120D	9120D-1169	2021/11/14	2022/11/13
	BBHA 9170	BBHA9170241	2021/10/26	2022/10/25
Pre-Ammlifier EMCI	EMC 184045	980116	2021/10/5	2022/10/4
Preamplifier Agilent	8449B	3008A02367	2022/2/16	2023/2/15
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2022/1/15	2023/1/14
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2022/1/15	2023/1/14
RF FLITER MICRO-TRONICS	BRM17690	004	2022/1/10	2023/1/9
	BRM50716	060	2022/1/10	2023/1/9
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Spectrum Analyzer R&S	FSW43	101867	2022/1/7	2023/1/6
Test Receiver Agilent	N9038A	MY51210203	2021/9/22	2022/9/21
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 4.
2. Tested Date: 2022/9/19

5 Limits of Test Items

5.1 RF Output Power

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	Mobile and Portable client device	250 mW (24 dBm)

Operation Band	Limit
U-NII-3	1 Watt (30 dBm)

Per KDB 662911 D01 Multiple Transmitter Output 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

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)
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).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="2">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3 m</td></tr>
<tr><td>PK: 74 (dBµV/m)</td><td>AV: 54 (dBµV/m)</td></tr>
<tr><td>Frequency Band</td><td>Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3 m</td></tr>
<tr><td>5150~5250 MHz</td><td>15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2 (dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td>15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td>15.407(b)(3)</td></tr>
<tr><td>5725~5850 MHz</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2 (dBµV/m) *1
PK: 105.2 (dBµV/m) *2
PK: 110.8 (dBµV/m) *3
PK: 122.2 (dBµV/m) *4</td></tr>
<tr><td colspan="4">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

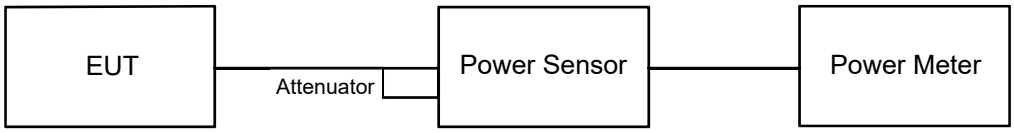
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

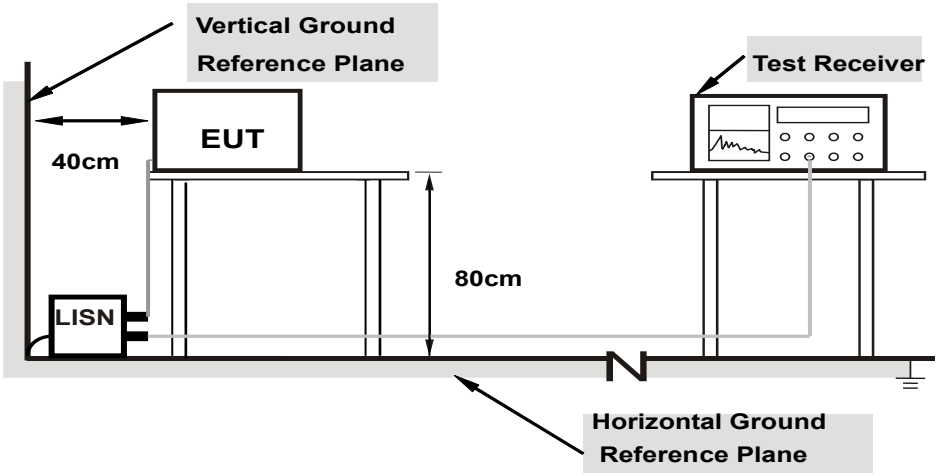


6.1.2 Test Procedure

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.

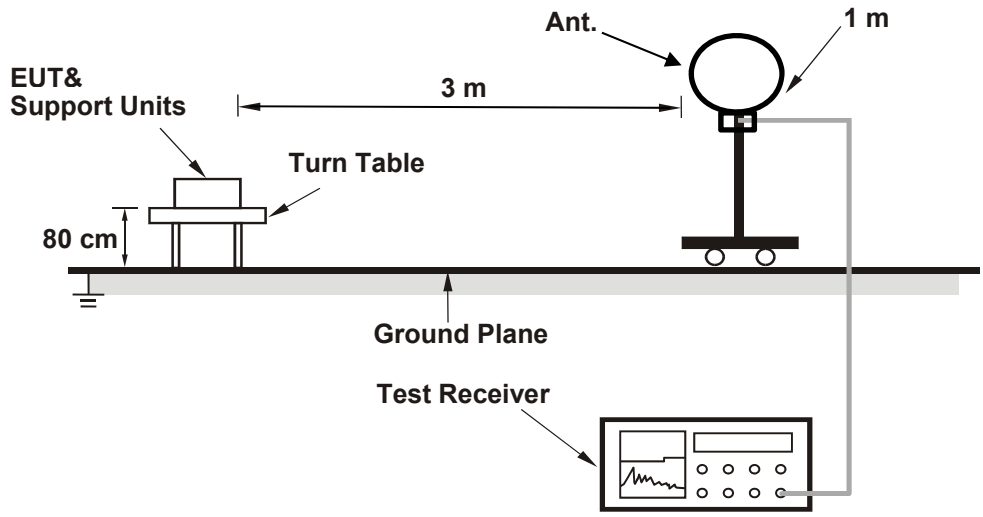
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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.

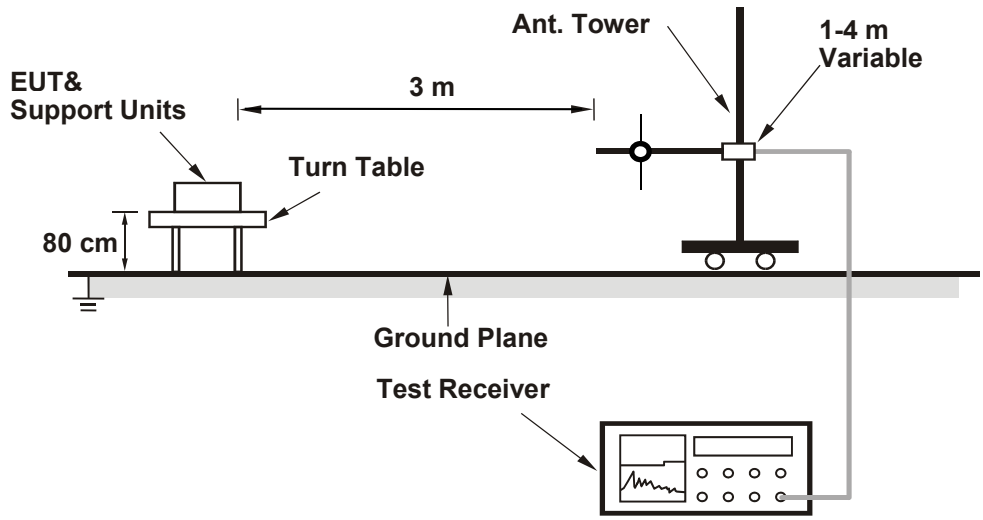
6.3 Unwanted Emissions below 1 GHz

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.

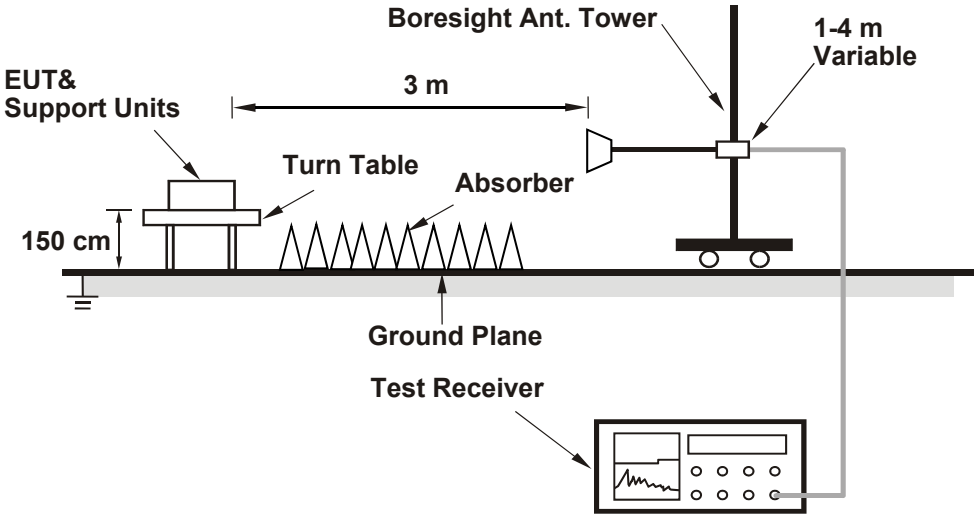
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

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:	120 Vac, 60 Hz	Environmental Conditions:	23°C, 63% RH	Tested By:	Tim Chen

5G traffic radio:

802.11a CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.95	21.74	305.955	24.86	30	Pass
40	5200	22.79	22.41	364.289	25.61	30	Pass
48	5240	22.86	22.55	373.084	25.72	30	Pass
149	5745	20.63	20.25	221.537	23.45	30	Pass
157	5785	20.11	20.10	204.894	23.12	30	Pass
165	5825	19.83	19.61	187.573	22.73	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.59	21.31	279.419	24.46	30	Pass
40	5200	22.05	21.86	313.786	24.97	30	Pass
48	5240	22.09	21.83	314.213	24.97	30	Pass
149	5745	21.00	20.48	237.579	23.76	30	Pass
157	5785	20.56	20.15	217.277	23.37	30	Pass
165	5825	20.10	19.76	196.953	22.94	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11n (HT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	21.40	21.23	270.778	24.33	30	Pass
46	5230	22.46	22.38	349.179	25.43	30	Pass
151	5755	21.62	21.13	274.929	24.39	30	Pass
159	5795	21.65	21.11	275.34	24.40	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.64	21.38	283.286	24.52	30	Pass
40	5200	22.07	21.88	315.235	24.99	30	Pass
48	5240	22.12	21.86	316.391	25.00	30	Pass
149	5745	21.05	20.50	239.552	23.79	30	Pass
157	5785	20.58	20.17	218.28	23.39	30	Pass
165	5825	20.13	19.78	198.099	22.97	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	21.45	21.26	273.296	24.37	30	Pass
46	5230	22.62	22.42	357.392	25.53	30	Pass
151	5755	21.69	21.15	277.887	24.44	30	Pass
159	5795	21.67	21.14	276.91	24.42	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	19.89	19.45	185.604	22.69	30	Pass
155	5775	20.57	20.29	220.93	23.44	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE20) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	21.66	21.41	284.911	24.55	30	Pass
40	5200	22.10	21.91	317.420	25.02	30	Pass
48	5240	22.15	21.92	319.656	25.05	30	Pass
149	5745	21.10	20.55	242.326	23.84	30	Pass
157	5785	20.64	20.22	221.074	23.45	30	Pass
165	5825	20.20	19.83	200.874	23.03	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE40) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	21.48	21.30	275.501	24.40	30	Pass
46	5230	22.67	22.46	361.124	25.58	30	Pass
151	5755	21.73	21.17	279.854	24.47	30	Pass
159	5795	21.70	21.16	278.528	24.45	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ax (HE80) CDD

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	19.98	19.47	188.052	22.74	30	Pass
155	5775	20.61	20.37	223.973	23.50	30	Pass

Notes:

1. Directional gain is the maximum gain of antennas.
2. For U-NII-1, the maximum gain is 5.5 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-3, the maximum gain is 5.5 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.62	18.22	139.152	21.43	27.49	Pass
40	5200	19.13	18.66	155.298	21.91	27.49	Pass
48	5240	19.04	18.77	155.503	21.92	27.49	Pass
149	5745	18.01	17.53	119.865	20.79	27.49	Pass
157	5785	17.36	17.17	106.57	20.28	27.49	Pass
165	5825	17.12	16.63	97.549	19.89	27.49	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11n (HT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	18.50	18.13	135.808	21.33	27.49	Pass
46	5230	19.51	19.34	175.232	22.44	27.49	Pass
151	5755	18.51	17.99	133.908	21.27	27.49	Pass
159	5795	18.43	17.93	131.75	21.20	27.49	Pass

Notes:

1. Directional gain = gain of antenna element + 10 log (2 of TX antenna elements)
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ac (VHT20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.65	18.25	140.117	21.46	27.49	Pass
40	5200	19.23	18.70	157.884	21.98	27.49	Pass
48	5240	19.07	18.81	156.756	21.95	27.49	Pass
149	5745	18.03	17.56	120.55	20.81	27.49	Pass
157	5785	17.40	17.21	107.556	20.32	27.49	Pass
165	5825	17.13	16.65	97.88	19.91	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ac (VHT40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	18.53	18.17	136.9	21.36	27.49	Pass
46	5230	19.62	19.38	178.318	22.51	27.49	Pass
151	5755	18.53	18.01	134.526	21.29	27.49	Pass
159	5795	18.52	17.96	133.639	21.26	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ac (VHT80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	16.73	16.57	92.492	19.66	27.49	Pass
155	5775	17.51	17.16	108.363	20.35	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ax (HE20) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
36	5180	18.67	18.29	141.074	21.49	27.49	Pass
40	5200	19.28	18.73	159.368	22.02	27.49	Pass
48	5240	19.08	18.84	157.469	21.97	27.49	Pass
149	5745	18.06	17.67	122.452	20.88	27.49	Pass
157	5785	17.42	17.23	108.052	20.34	27.49	Pass
165	5825	17.18	16.75	99.555	19.98	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ax (HE40) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
38	5190	18.58	18.27	139.254	21.44	27.49	Pass
46	5230	19.69	19.43	180.811	22.57	27.49	Pass
151	5755	18.56	18.03	135.313	21.31	27.49	Pass
159	5795	18.53	18.11	136.000	21.34	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

802.11ax (HE80) Beamforming

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Test Result
		Chain 0	Chain 1				
42	5210	16.77	16.62	93.453	19.71	27.49	Pass
155	5775	17.53	17.26	109.835	20.41	27.49	Pass

Notes:

1. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2]
2. For U-NII-1, the directional gain is 8.51 dBi > 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.
3. For U-NII-3, the directional gain is 8.51 dBi> 6 dBi, so the output power limit shall be reduced to 30-(8.51-6) = 27.49 dBm.

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	23°C, 63% RH	Tested By:	Tim Chen

Scanning radio:

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	90.365	19.56	30	Pass
40	5200	135.519	21.32	30	Pass
48	5240	140.605	21.48	30	Pass
149	5745	137.404	21.38	30	Pass
157	5785	142.889	21.55	30	Pass
165	5825	138.676	21.42	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 5.1 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 5.1 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	78.343	18.94	30	Pass
40	5200	131.522	21.19	30	Pass
48	5240	136.458	21.35	30	Pass
149	5745	137.404	21.38	30	Pass
157	5785	140.605	21.48	30	Pass
165	5825	142.889	21.55	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 5.1 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 5.1 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
38	5190	70.146	18.46	30	Pass
46	5230	128.825	21.10	30	Pass
151	5755	131.22	21.18	30	Pass
159	5795	131.522	21.19	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 5.1 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 5.1 dBi< 6 dBi, so the output power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
42	5210	26.182	14.18	30	Pass
155	5775	59.566	17.75	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 5.1 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 5.1 dBi< 6 dBi, so the output power limit shall not be reduced.

7.2 AC Power Conducted Emissions

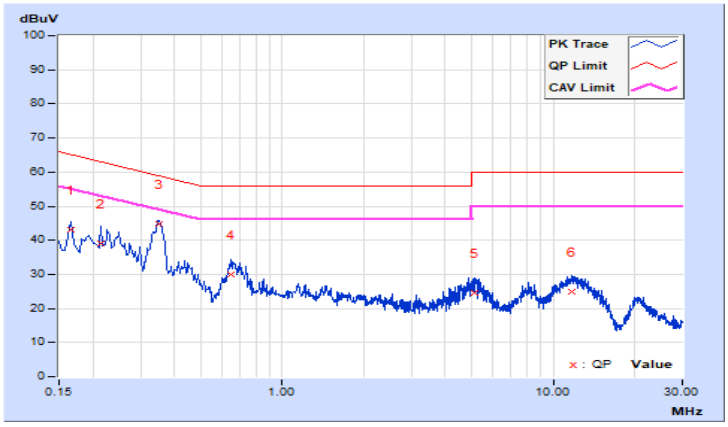
5G traffic radio:

RF Mode	TX 802.11a	**Channel**	CH 48：5240 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, 75% RH
Tested By	Rex Wang	**Test Mode**	A

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	0.16600	9.69	33.54	25.11	43.23	34.80	65.16	55.16	-21.93	-20.36
2	0.21400	9.73	29.31	21.51	39.04	31.24	63.05	53.05	-24.01	-21.81
3	0.34944	9.78	35.11	28.49	44.89	38.27	58.98	48.98	-14.09	-10.71
4	0.65000	9.82	20.02	14.64	29.84	24.46	56.00	46.00	-26.16	-21.54
5	5.12200	9.97	14.59	6.41	24.56	16.38	60.00	50.00	-35.44	-33.62
6	11.64600	10.08	14.70	8.92	24.78	19.00	60.00	50.00	-35.22	-31.00

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

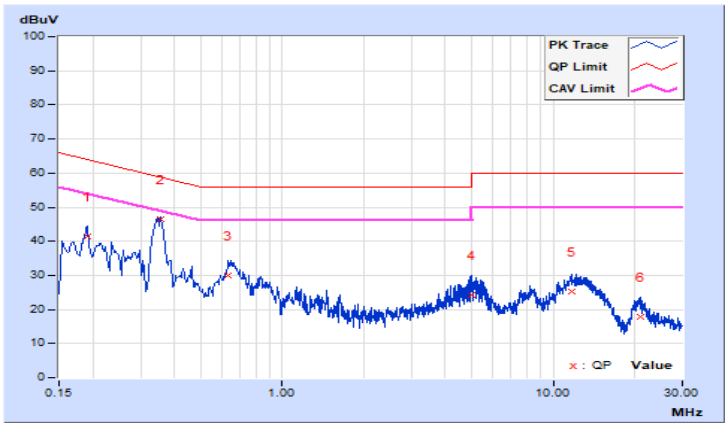


RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Rex Wang		

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	0.19000	9.71	31.72	23.85	41.43	33.56	64.04	54.04	-22.61	-20.48
2	0.35400	9.79	36.61	31.13	46.40	40.92	58.87	48.87	-12.47	-7.95
3	0.63000	9.83	19.97	14.60	29.80	24.43	56.00	46.00	-26.20	-21.57
4	4.97800	9.98	14.39	6.36	24.37	16.34	56.00	46.00	-31.63	-29.66
5	11.76600	10.09	15.10	9.72	25.19	19.81	60.00	50.00	-34.81	-30.19
6	20.89800	10.20	7.77	2.00	17.97	12.20	60.00	50.00	-42.03	-37.80

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

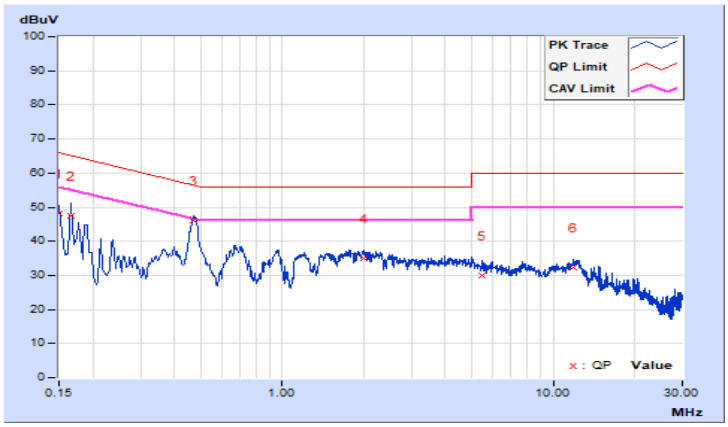


RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21.4°C, 68.1% RH
Tested By	Thomas Cheng	**Test Mode**	B

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	0.15000	9.68	38.54	25.60	48.22	35.28	66.00	56.00	-17.78	-20.72
2	0.16600	9.69	37.63	22.51	47.32	32.20	65.16	55.16	-17.84	-22.96
3	**0.47000**	**9.80**	**36.38**	**31.68**	**46.18**	**41.48**	**56.51**	**46.51**	**-10.33**	**-5.03**
4	2.00969	9.90	25.23	21.12	35.13	31.02	56.00	46.00	-20.87	-14.98
5	5.47000	9.98	19.96	14.31	29.94	24.29	60.00	50.00	-30.06	-25.71
6	11.87800	10.08	22.34	15.41	32.42	25.49	60.00	50.00	-27.58	-24.51

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

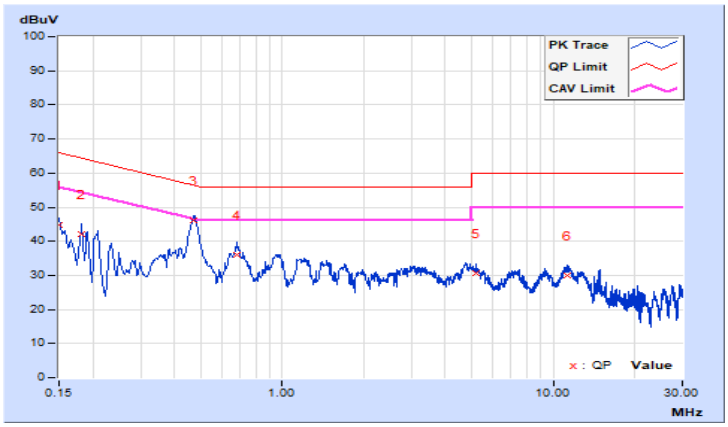


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21.4°C, 68.1% RH
Tested By	Thomas Cheng	Test Mode	B

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	35.08	25.16	44.76	34.84	66.00	56.00	-21.24	-21.16
2	0.18200	9.71	32.53	20.19	42.24	29.90	64.39	54.39	-22.15	-24.49
3	0.47310	9.82	36.31	31.34	46.13	41.16	56.46	46.46	-10.33	-5.30
4	0.67800	9.83	26.29	21.17	36.12	31.00	56.00	46.00	-19.88	-15.00
5	5.16600	9.99	20.74	12.41	30.73	22.40	60.00	50.00	-29.27	-27.60
6	11.31000	10.08	19.96	13.81	30.04	23.89	60.00	50.00	-29.96	-26.11

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



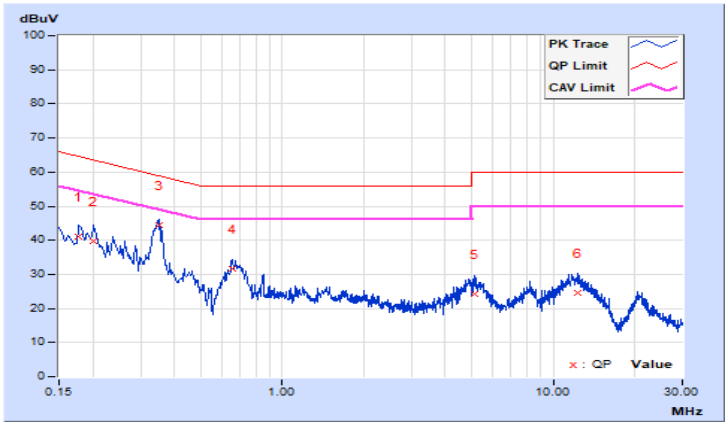
Scanning radio:

RF Mode	TX 802.11a	**Channel**	CH 157：5785 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, 75% RH
Tested By	Rex Wang	**Test Mode**	A

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	0.17800	9.70	31.51	20.77	41.21	30.47	64.58	54.58	-23.37	-24.11
2	0.20200	9.72	30.01	20.44	39.73	30.16	63.53	53.53	-23.80	-23.37
3	0.34944	9.78	34.73	28.01	44.51	37.79	58.98	48.98	-14.47	-11.19
4	0.65800	9.82	21.84	16.36	31.66	26.18	56.00	46.00	-24.34	-19.82
5	5.11400	9.97	14.11	6.06	24.08	16.03	60.00	50.00	-35.92	-33.97
6	12.35400	10.09	14.46	8.65	24.55	18.74	60.00	50.00	-35.45	-31.26

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

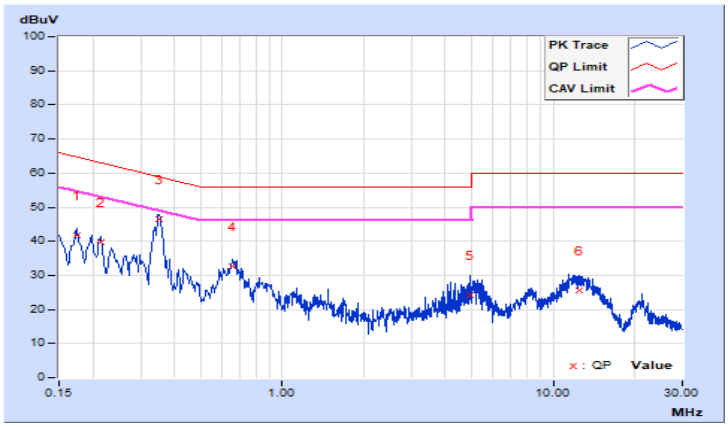


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Rex Wang	Test Mode	A

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	0.17400	9.70	32.05	21.85	41.75	31.55	64.77	54.77	-23.02	-23.22
2	0.21400	9.73	30.09	22.11	39.82	31.84	63.05	53.05	-23.23	-21.21
3	0.34944	9.79	36.77	30.33	46.56	40.12	58.98	48.98	-12.42	-8.86
4	0.65400	9.83	22.98	16.82	32.81	26.65	56.00	46.00	-23.19	-19.35
5	4.92600	9.98	14.14	6.16	24.12	16.14	56.00	46.00	-31.88	-29.86
6	12.49400	10.10	15.51	10.01	25.61	20.11	60.00	50.00	-34.39	-29.89

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

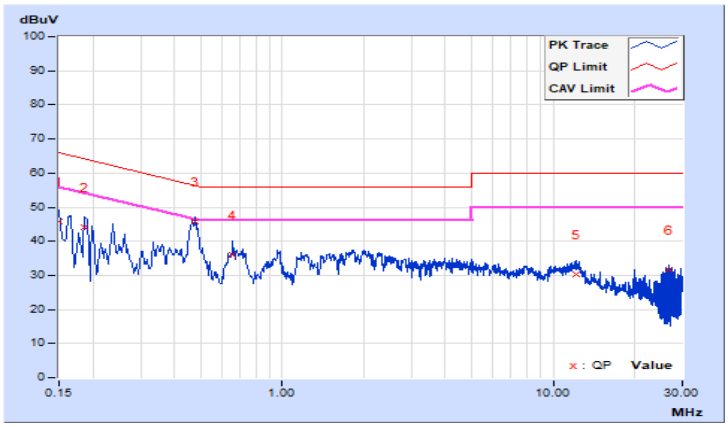


RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Rex Wang	**Test Mode**	B

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	0.15000	9.62	36.32	26.61	45.94	36.23	66.00	56.00	-20.06	-19.77
2	0.18600	9.63	34.35	20.30	43.98	29.93	64.21	54.21	-20.23	-24.28
3	0.47800	9.69	36.15	29.91	45.84	39.60	56.37	46.37	-10.53	-6.77
4	0.65800	9.69	26.17	21.30	35.86	30.99	56.00	46.00	-20.14	-15.01
5	12.13800	9.82	20.61	15.68	30.43	25.50	60.00	50.00	-29.57	-24.50
6	26.77000	9.87	21.88	20.75	31.75	30.62	60.00	50.00	-28.25	-19.38

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

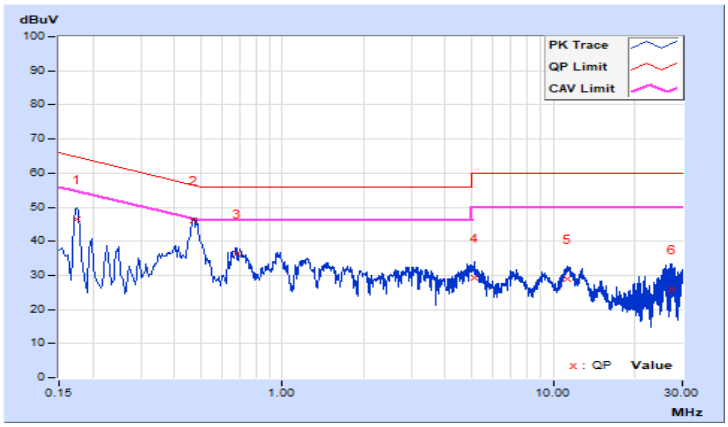


RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 75% RH
Tested By	Rex Wang	**Test Mode**	B

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	0.17384	9.63	36.94	22.30	46.57	31.93	64.77	54.77	-18.20	-22.84
2	0.46938	9.69	36.36	31.22	46.05	40.91	56.52	46.52	-10.47	-5.61
3	0.67800	9.69	26.55	21.57	36.24	31.26	56.00	46.00	-19.76	-14.74
4	5.10600	9.76	19.54	13.30	29.30	23.06	60.00	50.00	-30.70	-26.94
5	11.23400	9.82	19.08	13.89	28.90	23.71	60.00	50.00	-31.10	-26.29
6	27.52600	9.87	16.16	10.96	26.03	20.83	60.00	50.00	-33.97	-29.17

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

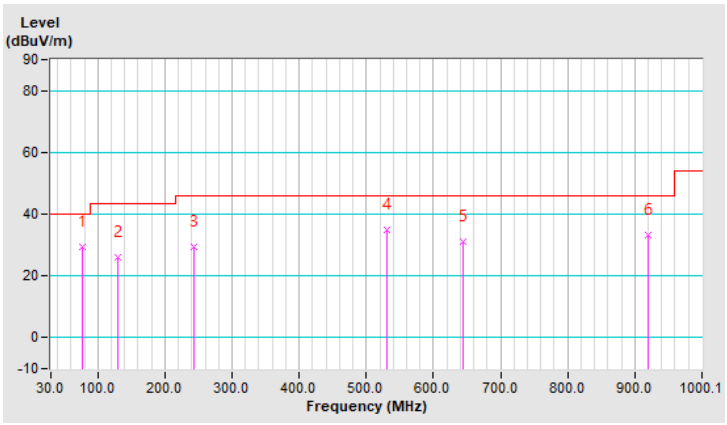
5G traffic radio:

RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 68% RH
Tested By	Thomas Cheng	**Test Mode**	A

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	76.56	29.3 QP	40.0	-10.7	2.63 H	230	46.1	-16.8
2	128.95	26.1 QP	43.5	-17.4	2.51 H	7	39.6	-13.5
3	243.42	29.2 QP	46.0	-16.8	3.20 H	330	43.8	-14.6
4	531.54	35.1 QP	46.0	-10.9	1.83 H	85	40.6	-5.5
5	644.07	30.9 QP	46.0	-15.1	3.90 H	295	33.4	-2.5
6	919.58	33.4 QP	46.0	-12.6	2.74 H	235	31.3	2.1

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

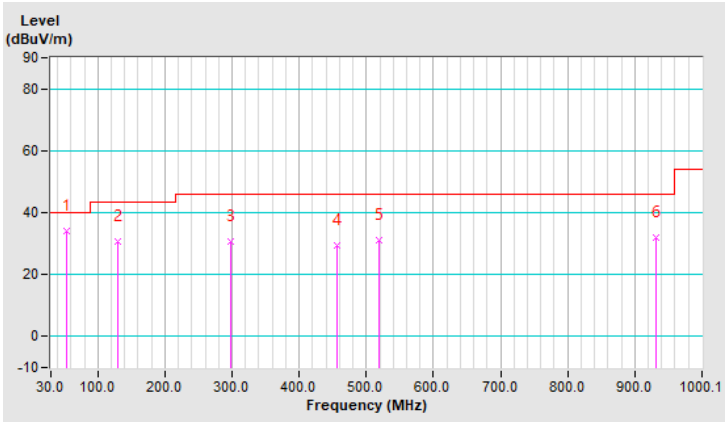


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Thomas Cheng	Test Mode	A

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	53.28	34.2 QP	40.0	-5.8	2.24 V	93	46.9	-12.7
2	128.95	30.6 QP	43.5	-12.9	1.33 V	172	44.1	-13.5
3	298.72	30.7 QP	46.0	-15.3	3.95 V	6	42.9	-12.2
4	455.87	29.4 QP	46.0	-16.6	1.69 V	235	36.6	-7.2
5	518.93	31.1 QP	46.0	-14.9	2.51 V	229	36.8	-5.7
6	931.22	31.9 QP	46.0	-14.1	1.85 V	351	29.6	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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

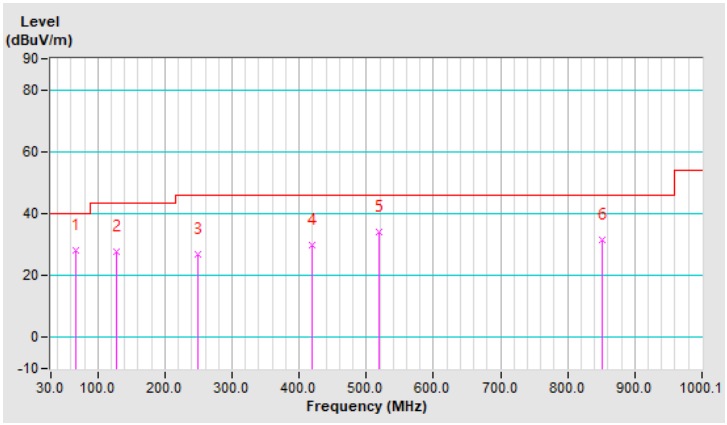


RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	21°C, 68% RH
Tested By	Thomas Cheng	Test Mode	B

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	67.83	28.3 QP	40.0	-11.7	1.94 H	152	42.9	-14.6
2	127.98	27.6 QP	43.5	-15.9	1.90 H	355	41.2	-13.6
3	249.24	26.7 QP	46.0	-19.3	3.95 H	162	41.2	-14.5
4	419.01	29.8 QP	46.0	-16.2	2.74 H	314	38.5	-8.7
5	518.93	34.2 QP	46.0	-11.8	1.48 H	340	39.9	-5.7
6	851.67	31.5 QP	46.0	-14.5	1.12 H	127	30.4	1.1

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

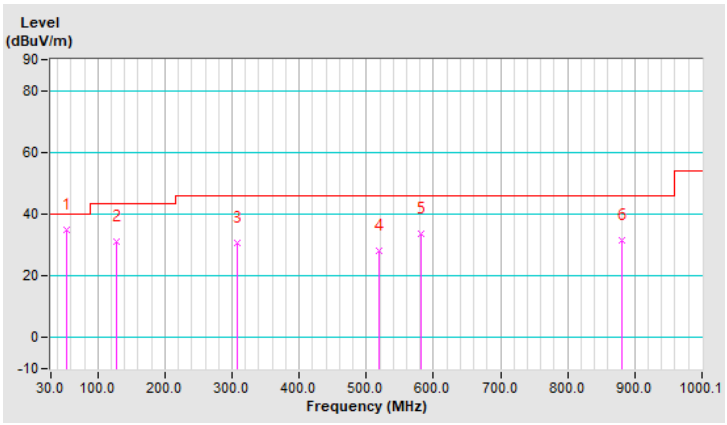


RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	21°C, 68% RH
Tested By	Thomas Cheng	**Test Mode**	B

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	**53.28**	**34.9 QP**	**40.0**	**-5.1**	**2.68 V**	**348**	**47.6**	**-12.7**
2	127.01	31.2 QP	43.5	-12.3	1.57 V	89	45.0	-13.8
3	307.45	30.7 QP	46.0	-15.3	2.34 V	255	42.4	-11.7
4	518.93	28.3 QP	46.0	-17.7	1.10 V	232	34.0	-5.7
5	581.02	33.7 QP	46.0	-12.3	2.48 V	102	37.9	-4.2
6	881.75	31.6 QP	46.0	-14.4	1.42 V	262	30.1	1.5

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



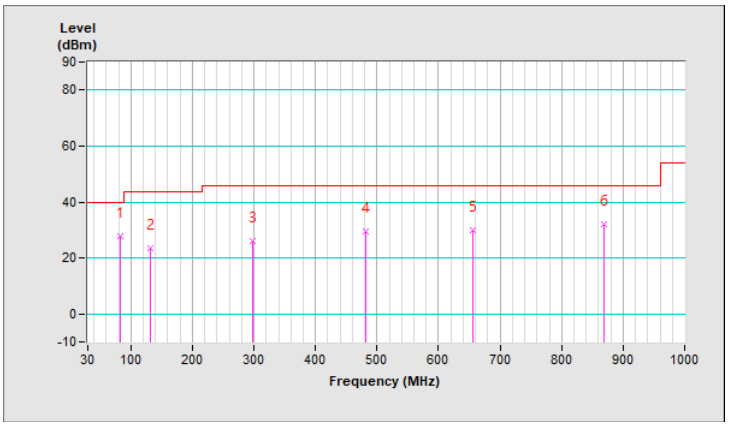
Scanning radio:

RF Mode	TX 802.11a	**Channel**	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	**Detector Function & Bandwidth**	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 67% RH
Tested By	Adair Peng	**Test Mode**	A

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	82.39	27.7 QP	40.0	-12.3	1.00 H	21	41.6	-13.9
2	131.86	23.6 QP	43.5	-19.9	1.50 H	34	33.5	-9.9
3	297.75	25.9 QP	46.0	-20.1	1.50 H	342	32.7	-6.8
4	481.10	29.3 QP	46.0	-16.7	2.00 H	111	32.1	-2.8
5	656.68	29.7 QP	46.0	-16.3	1.50 H	239	29.2	0.5
6	869.14	31.9 QP	46.0	-14.1	1.50 H	227	27.4	4.5

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

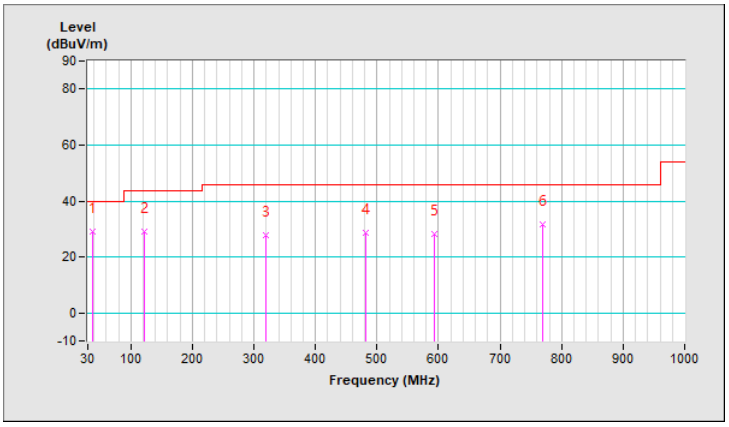


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng	Test Mode	A

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	37.76	29.2 QP	40.0	-10.8	1.50 V	143	38.7	-9.5
2	122.16	29.2 QP	43.5	-14.3	1.50 V	234	40.2	-11.0
3	319.09	27.9 QP	46.0	-18.1	2.00 V	42	34.2	-6.3
4	481.10	28.5 QP	46.0	-17.5	2.00 V	151	31.3	-2.8
5	593.63	28.1 QP	46.0	-17.9	2.00 V	23	28.5	-0.4
6	769.22	31.6 QP	46.0	-14.4	1.50 V	114	28.6	3.0

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

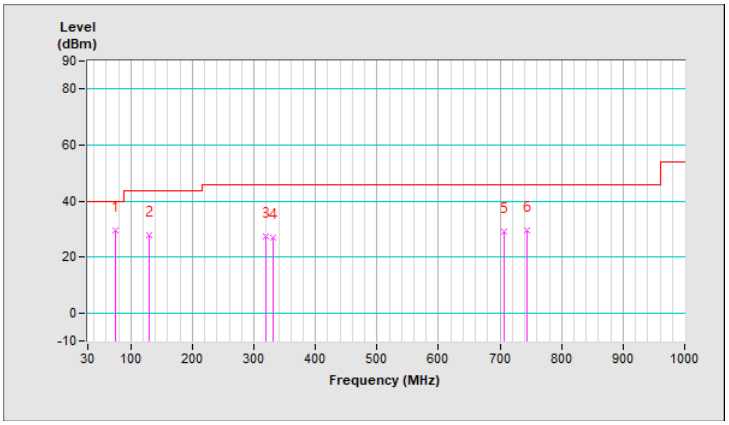


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng	Test Mode	B

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	75.59	29.4 QP	40.0	-10.6	1.50 H	338	41.7	-12.3
2	129.92	27.6 QP	43.5	-15.9	1.50 H	28	37.7	-10.1
3	319.09	27.4 QP	46.0	-18.6	2.00 H	79	33.7	-6.3
4	331.70	26.7 QP	46.0	-19.3	1.00 H	337	32.6	-5.9
5	706.16	29.0 QP	46.0	-17.0	1.00 H	297	27.9	1.1
6	743.99	29.4 QP	46.0	-16.6	1.00 H	24	27.2	2.2

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 emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

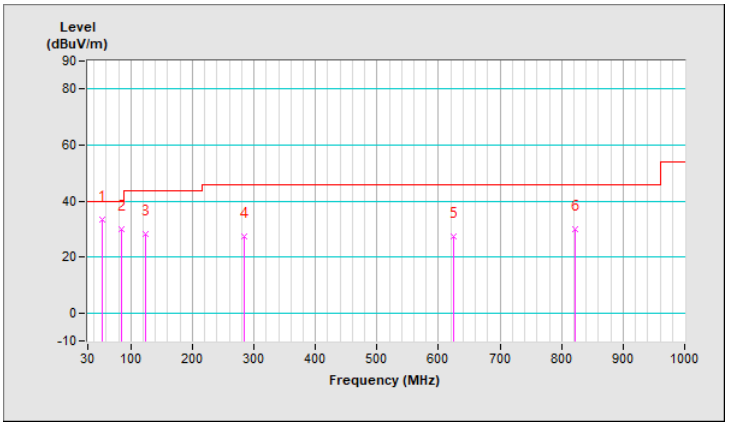


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng	Test Mode	B

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	53.28	33.3 QP	40.0	-6.7	1.00 V	297	42.3	-9.0
2	85.30	30.1 QP	40.0	-9.9	1.00 V	338	44.4	-14.3
3	123.13	28.3 QP	43.5	-15.2	1.50 V	31	39.1	-10.8
4	285.14	27.2 QP	46.0	-18.8	1.50 V	229	34.3	-7.1
5	623.70	27.3 QP	46.0	-18.7	1.50 V	127	27.1	0.2
6	821.60	30.1 QP	46.0	-15.9	2.00 V	77	26.4	3.7

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 of frequency range 30 MHz ~ 1 GHz.
5. The emission levels were very low against the limit of frequency range 9 kHz ~ 30 MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



7.4 Unwanted Emissions above 1 GHz

5G traffic radio:

RF Mode	TX 802.11a	**Channel**	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 67% RH
Tested By	Adair Peng		

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	*5240.00	119.1 PK			2.96 H	3	79.7	39.4
2	*5240.00	109.0 AV			2.96 H	3	69.6	39.4
3	5350.00	55.5 PK	74.0	-18.5	2.80 H	335	50.2	5.3
4	5350.00	43.4 AV	54.0	-10.6	2.80 H	335	38.1	5.3
5	#10480.00	60.2 PK	68.2	-8.0	2.38 H	359	42.9	17.3
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	*5240.00	113.9 PK			1.59 V	17	74.5	39.4
2	*5240.00	104.2 AV			1.59 V	17	64.8	39.4
3	5350.00	54.9 PK	74.0	-19.1	1.73 V	28	49.6	5.3
4	5350.00	42.7 AV	54.0	-11.3	1.73 V	28	37.4	5.3
5	#10480.00	59.8 PK	68.2	-8.4	1.99 V	52	42.5	17.3

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.

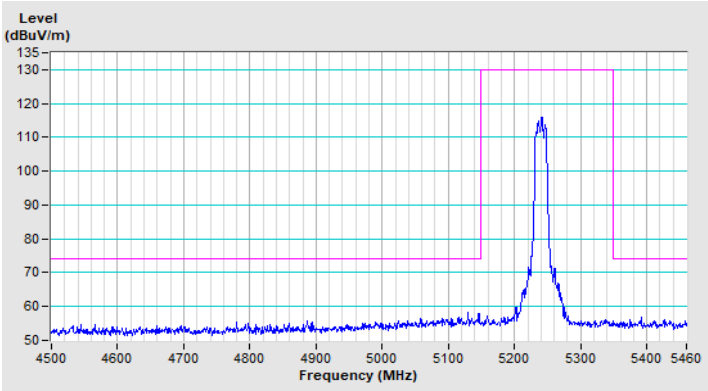
RF Mode	TX 802.11ax (HE40)	**Channel**	CH 151：5755 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 67% RH
Tested By	Adair Peng		

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	*5755.00	119.1 PK			2.29 H	295	78.6	40.5
2	*5755.00	105.8 AV			2.29 H	295	65.3	40.5
3	11510.00	64.3 PK	74.0	-9.7	1.43 H	31	46.3	18.0
4	**11510.00**	**51.8 AV**	**54.0**	**-2.2**	**1.43 H**	**31**	**33.8**	**18.0**
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	*5755.00	113.3 PK			1.69 V	20	72.8	40.5
2	*5755.00	99.8 AV			1.69 V	20	59.3	40.5
3	11510.00	65.0 PK	74.0	-9.0	1.98 V	45	47.0	18.0
4	11510.00	51.1 AV	54.0	-2.9	1.98 V	45	33.1	18.0

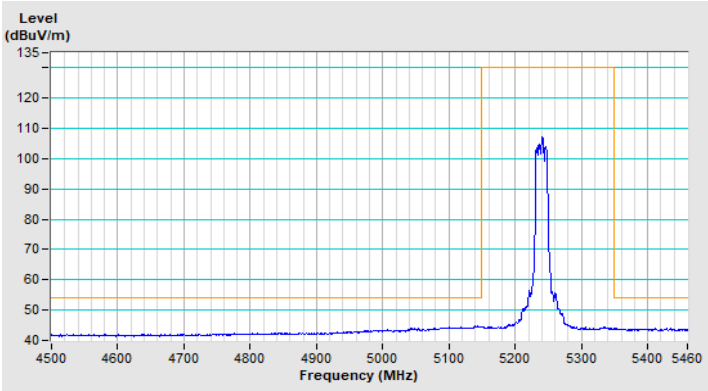
Remarks:

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.

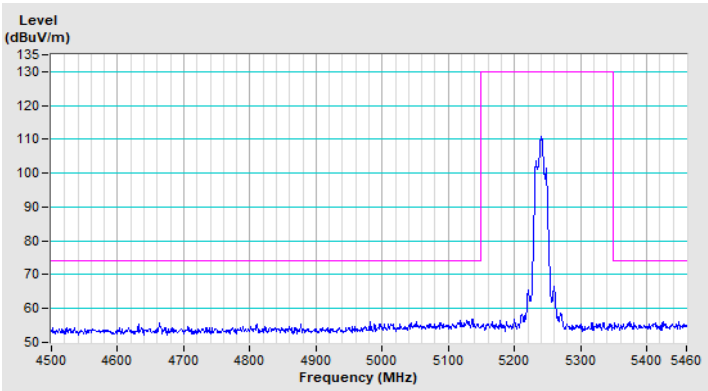
802.11a Channel 48



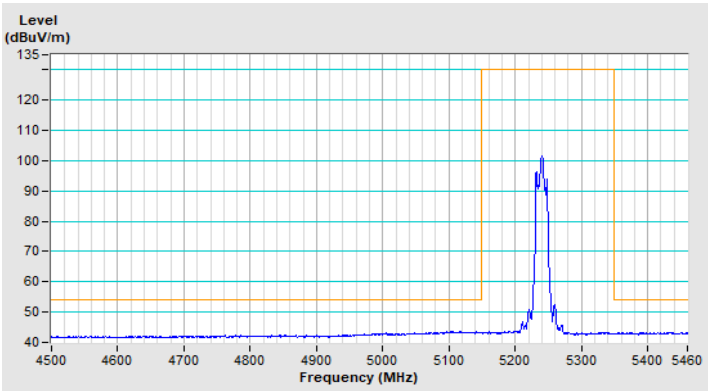
Horizontal (Peak)



Horizontal (Average)

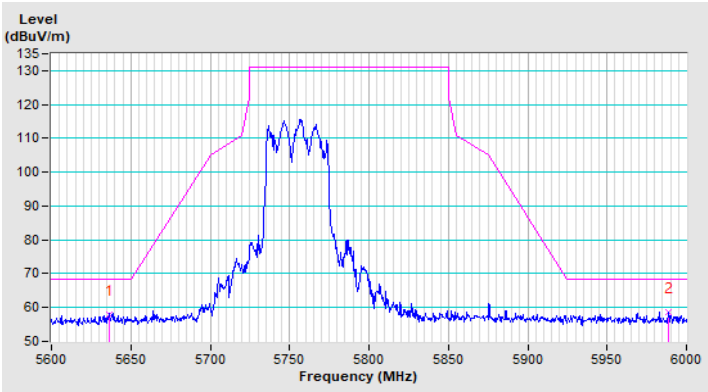


Vertical (Peak)

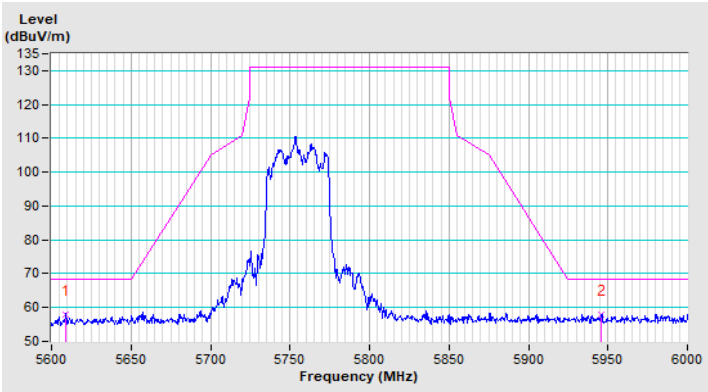


Vertical (Average)

802.11ax (HE40) Channel 151



Horizontal (Peak)



Vertical (Peak)

Scanning radio:

RF Mode	TX 802.11a	Channel	CH 48：5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Rex Wang		

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	*5240.00	109.7 PK			1.99 H	51	70.3	39.4
2	*5240.00	99.9 AV			1.99 H	51	60.5	39.4
3	5350.00	57.6 PK	74.0	-16.4	1.83 H	22	52.3	5.3
4	5350.00	43.6 AV	54.0	-10.4	1.83 H	22	38.3	5.3
5	#10480.00	62.9 PK	68.2	-5.3	2.77 H	269	45.6	17.3
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	*5240.00	116.9 PK			1.67 V	352	77.5	39.4
2	*5240.00	106.7 AV			1.67 V	352	67.3	39.4
3	5350.00	57.8 PK	74.0	-16.2	1.74 V	345	52.5	5.3
4	5350.00	43.8 AV	54.0	-10.2	1.74 V	345	38.5	5.3
5	#10480.00	60.3 PK	68.2	-7.9	2.91 V	185	43.0	17.3

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.

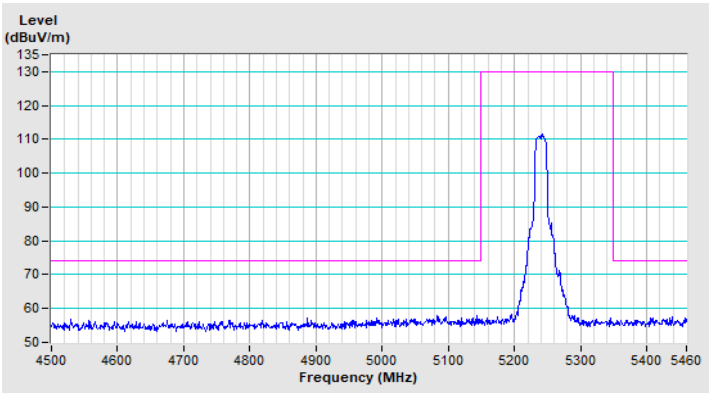
RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Rex Wang		

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	*5785.00	112.6 PK			1.52 H	54	72.0	40.6
2	*5785.00	102.8 AV			1.52 H	54	62.2	40.6
3	11570.00	59.9 PK	74.0	-14.1	2.61 H	252	42.1	17.8
4	11570.00	46.4 AV	54.0	-7.6	2.61 H	252	28.6	17.8
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	*5785.00	115.1 PK			1.86 V	347	74.5	40.6
2	*5785.00	104.1 AV			1.86 V	347	63.5	40.6
3	11570.00	60.0 PK	74.0	-14.0	2.29 V	153	42.2	17.8
4	11570.00	46.5 AV	54.0	-7.5	2.29 V	153	28.7	17.8

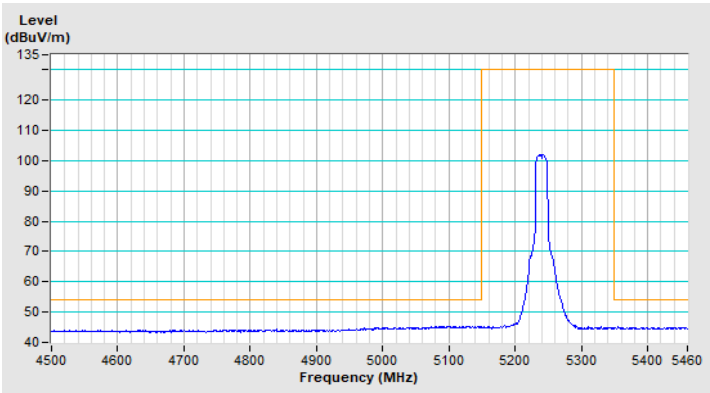
Remarks:

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.

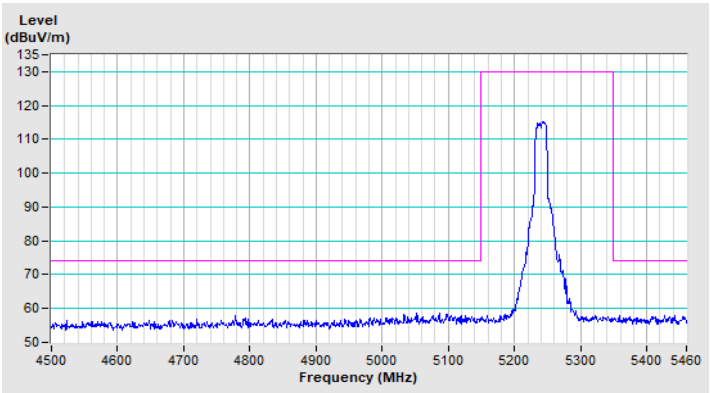
802.11a Channel 48



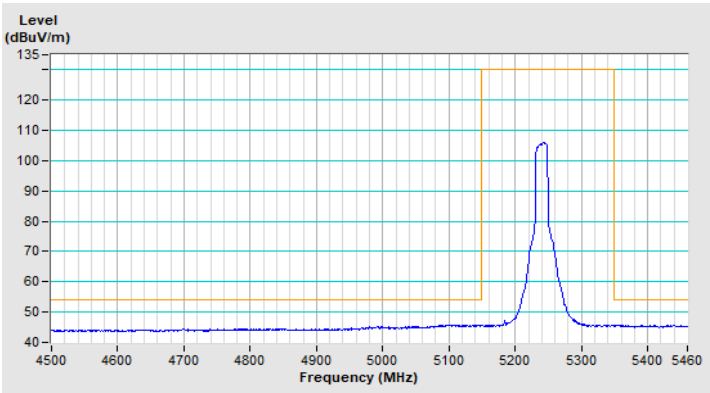
Horizontal (Peak)



Horizontal (Average)

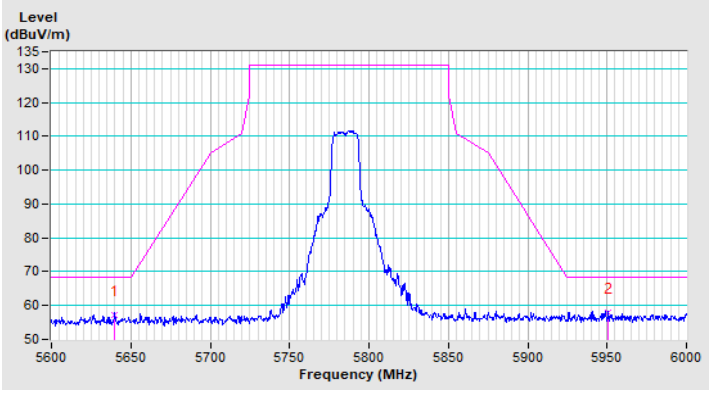


Vertical (Peak)

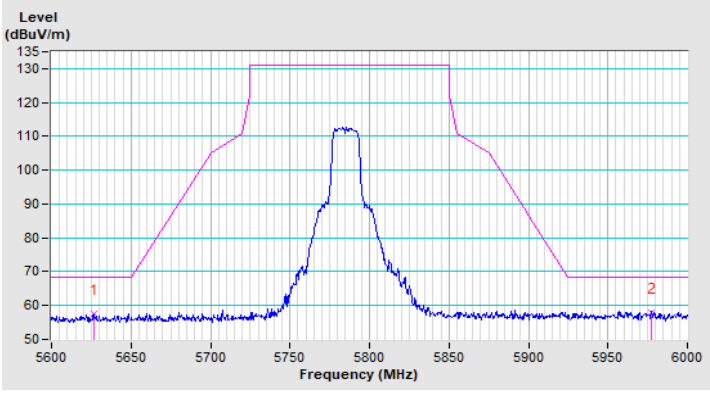


Vertical (Average)

802.11a Channel 157



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:

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@bureauveritas.com
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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