

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: RFBGDGE-WTW-P22050591-1

FCC ID: EHTPERS2

Model No.: 6930w

Received Date: 2022/5/18

Test Date: 2022/5/31 ~ 2022/6/23

Issued Date: Jul. 08, 2022

Applicant: Mitel Networks

Address: 4000 Innovation Drive Ottawa, Canada K2K 3K1

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 / 788550 / TW0003

Designation Number:

Approved by: _____

Jeremy Lin

Date: _____

Jul. 08, 2022

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
RFBGDGE-WTW-P22050591-1	Original release.	Jul. 08, 2022

1 Certificate

Product: IP Phone

Brand: Mitel

Test Model: 6930w

Sample Status: Engineering sample

Applicant: Mitel Networks

Test Date: 2022/5/31 ~ 2022/6/23

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

Measurement ANSI C63.10-2013

procedure: KDB 789033 D02 General UNII Test Procedure New Rules 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)(2)	26 dB Bandwidth	Pass	For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.
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	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	Pass	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -8.05 dB at 19.90600 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -5.59 dB at 341.37 MHz
15.407(b)(1/2/3/4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -2.2 dB at 5150.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

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

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	9 kHz ~ 30 MHz	2.79 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	3 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	IP Phone
Brand	Mitel
Test Model	6930w
FW Version	6.3.1.49
Status of EUT	Engineering sample
Power Supply Rating	48Vdc from adapter 56Vdc from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/ 48/ 36/ 24/ 18/ 12/ 9/ 6 Mbps 802.11n: up to 72.2 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	802.11a, 802.11n (HT20): 24
Output Power	5180 ~ 5240 MHz : 40.926 mW (16.12 dBm) 5260 ~ 5320 MHz : 40.832 mW (16.11 dBm) 5500 ~ 5700 MHz : 15.812 mW (11.99 dBm) 5745 ~ 5825 MHz : 15.524 mW (11.91 dBm)
EUT Category	Client device

Note:

1. The EUT uses the following devices.

Item	Brand	Model	Specification	Remark
Adapter	FSP	FSP030-DFMN3	I/P: 100-240Vac, 50-60Hz, 1.2A O/P: 48Vdc, 0.625A DC Cable: 1.78m power cable with one core attached on adapter	Support unit
Network Cable (RJ45)	NA	NA	2.1m non-shielded RJ45 cable without core	Accessory
PoE	Phihong	POE15M-1AF	I/P: 100-240Vac, 50-60Hz, 0.8A O/P: 56Vdc, 0.275A, 15.4W	Support unit

2. 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 No.	Gain (dBi)								Antenna Type	Connector Type
	5150	5250	5350	5470	5600	5725	5785	5850		
1	2.63	2.44	2.73	3.42	3.12	3.36	3.57	3.82	Chip	N/A

* The above Antenna information refers to the manufacturer's antenna specifications, the laboratory shall not be held responsible.

2. The EUT provides 1 completed transmitter and 1 receiver:

5 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX

3.3 Channel List

FOR 5180 ~ 5320 MHz

8 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

FOR 5500 ~ 5700 MHz

11 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

FOR 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20):

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

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	EUT can be used in the following ways: X-axis / Z-axis. Pre-scan in these ways and find the worst case as a representative test condition.
Worst Case:	The worst case was found when positioned on X-plane.
EUT Configure Mode:	Mode A: EUT with Adapter Mode B: EUT with POE

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

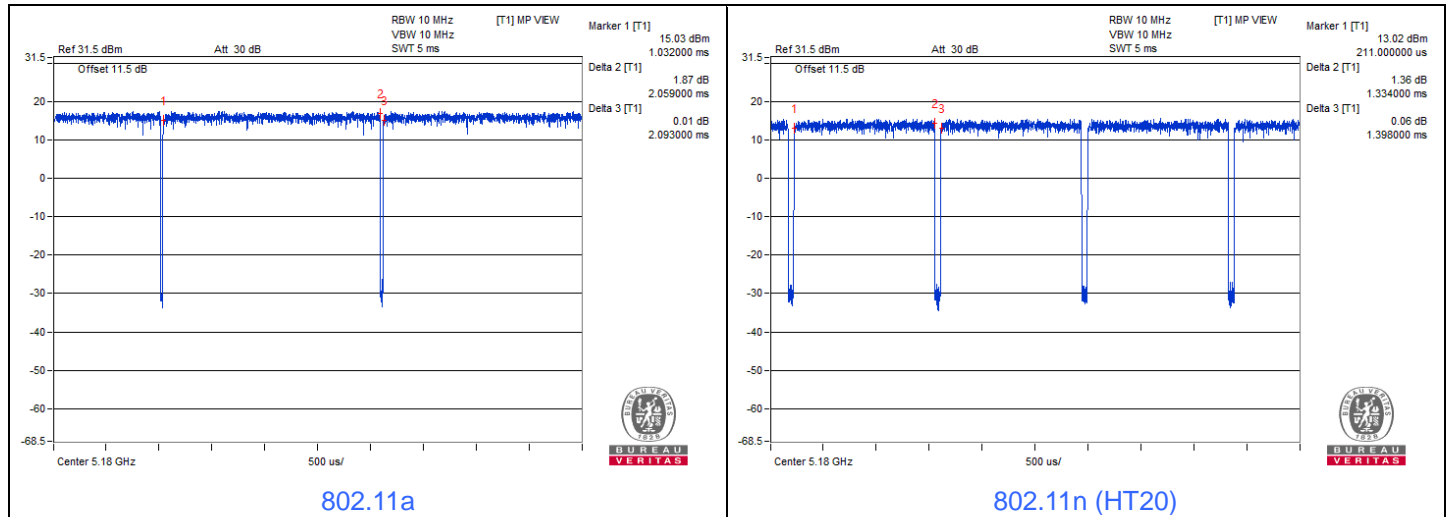
EUT Configure Mode	Test Item	Mode	Tested Channel	Modulation	Data Rate Parameter
A, B	AC Power Conducted Emissions	802.11a	40	BPSK	6Mb/s
A, B	Unwanted Emissions below 1 GHz	802.11a	40	BPSK	6Mb/s
A	Unwanted Emissions above 1 GHz	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	6Mb/s
		802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	MCS0
A	RF Output Power / Power Spectral Density	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	6Mb/s
		802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	MCS0
A	Occupied Bandwidth	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	6Mb/s
		802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	MCS0
A	26 dB Bandwidth	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	6Mb/s
		802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	MCS0
A	6 dB Bandwidth	802.11a	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	6Mb/s
		802.11n (HT20)	36, 40, 48, 52, 60, 64, 100, 116, 140, 149, 157, 165	BPSK	MCS0
A	Frequency Stability	802.11a	36	un-modulation	-

3.5 Duty Cycle of Test Signal

Duty cycle of test signal is $\geq 98\%$, duty factor is not required.
 Duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.059 \text{ ms} / 2.093 \text{ ms} \times 100\% = 98.4\%$

802.11n (HT20): Duty cycle = $1.334 \text{ ms} / 1.398 \text{ ms} \times 100\% = 95.4\%$, duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.20 \text{ dB}$

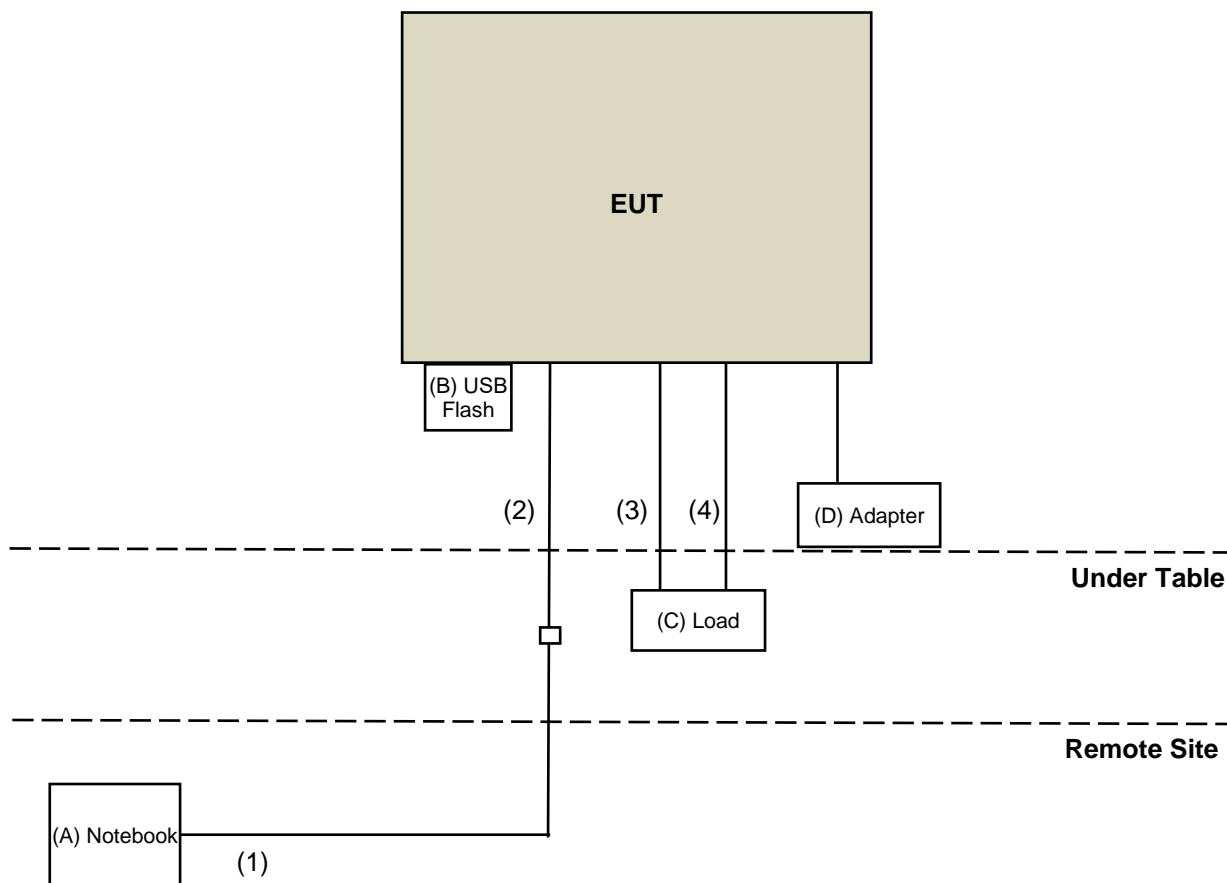


3.6 Test Program Used and Operation Descriptions

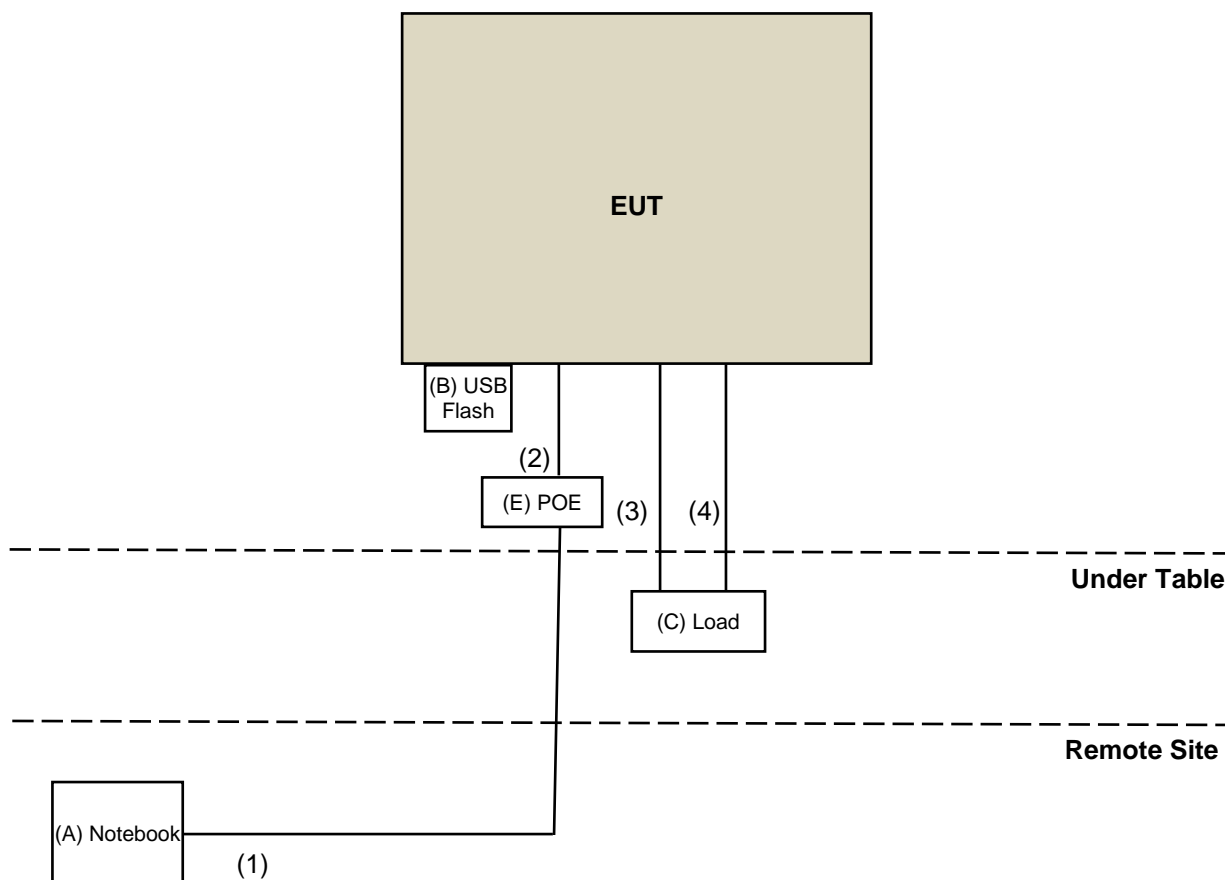
Controlling software Tera Term 4.71 has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices

Mode A



Mode B



3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	14" Laptop	Lenovo	L440	R9-0GFJJK	N/A	Provided by Lab
B	UBS Flash	SanDisk	N/A	N/A	N/A	Provided by Lab
C	Load	N/A	N/A	N/A	N/A	Provided by Lab
D	Adapter	FSP	FSP030-DFMN3	N/A	N/A	Provided by client
E	POE	Phihong	POE15M-1AF	N/A	N/A	Provided by client

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	1	6	N	N	Provided by Lab
2	RJ-45 Cable	1	2.1	N	N	Supplied by applicant
3	RJ-45 Cable	1	2.1	N	N	Supplied by applicant
4	RJ-11 Cable	1	1.5	N	N	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 26 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/6/15

4.2 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
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	2021/7/12	2022/7/11
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: 2022/6/15

4.3 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.4 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.6 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source ExTech	CFW-105	E000603	N/A	N/A
Digital Multimeter Fluke	87-III	70360755	2021/7/8	2022/7/7
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	100979	2022/3/25	2023/3/24
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	2022/1/3	2023/1/2

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2022/6/15

4.7 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC LISN R&S	ESH3-Z6	100219	2021/7/25	2022/7/24
		844950/018	2021/7/25	2022/7/24
DC-LISN SCHWARZBECK MESS- ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH2-Z5	100100	2022/2/17	2023/2/16
	ESH3-Z5	100312	2021/9/17	2022/9/16
	ENV216	100071	2021/10/27	2022/10/26
RF Coaxial Cable WORKEN	5D-FB	Cable-cond2-01	2021/9/4	2022/9/3
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102783	2021/12/20	2022/12/19
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2021/8/20	2022/8/19

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2022/5/31-6/23

4.8 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	2021/7/21	2022/7/20
Loop Antenna EMCI	EM-6879	269	2021/9/16	2022/9/15
Preamplifier Agilent	8447D	2944A10638	2022/5/14	2023/5/13
Pre-amplifier EMCI	EMC001340	980201	2021/9/15	2022/9/14
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 ROHDE & SCHWARZ	FSP40	100040	2021/9/15	2022/9/14
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: 2022/5/31-6/23

4.9 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-Amplifier 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&EMCI	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	2022/1/15	2023/1/14
RF Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	2022/1/15	2023/1/14
RF FLITER MICRO-TRONICS	BRM50716	060	2022/1/10	2023/1/9
	BRM17690	004	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: 2022/5/31 ~ 2022/6/17

5 Limits of Test Items

5.1 26 dB Bandwidth

The results are for reference only.

5.2 RF Output Power

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 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	250mW (24 dBm)

Operation Band	Limit
U-NII-2A	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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.

5.3 Power Spectral Density

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	17 dBm/ MHz
	Fixed point-to-point Access Point	
	Indoor Access Point	
	Mobile and Portable client device	11 dBm/ MHz

Operation Band	Limit
U-NII-2A	11 dBm/ MHz
U-NII-2C	11 dBm/ MHz
U-NII-3	30 dBm/ 500 kHz

5.4 6 dB Bandwidth

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

5.5 Occupied Bandwidth

The results are for reference only.

5.6 Frequency Stability

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

5.7 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.

5.8 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).

5.9 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

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8 (dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*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.	

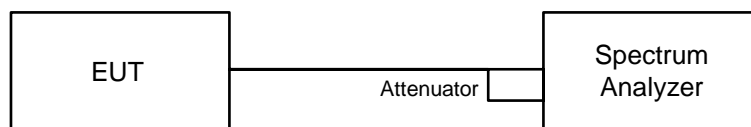
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 26 dB Bandwidth

6.1.1 Test Setup

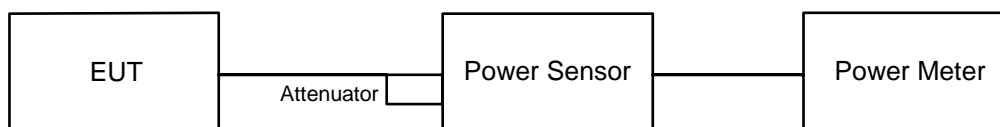


6.1.2 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.2 RF Output Power

6.2.1 Test Setup

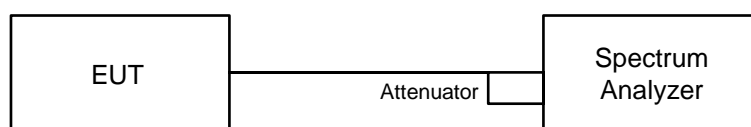


6.2.2 Test Procedure

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.

6.3 Power Spectral Density

6.3.1 Test Setup



6.3.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-1

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
- Sweep points ≥ $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.

- f. Record the max value

For specified measurement bandwidth 1 MHz:

Method SA-2

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- c. Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- d. Sweep time = auto, trigger set to “free run”.
- e. Trace average at least 100 traces in power averaging mode.
- f. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- g. Record the max value and add 10 log (1/duty cycle).

For specified measurement bandwidth 500 kHz:

Method SA-1

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- c. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz}/300 \text{ kHz})$
- d. Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- e. Sweep time = auto, trigger set to “free run”.
- f. Trace average at least 100 traces in power averaging mode.
- g. Record the max value

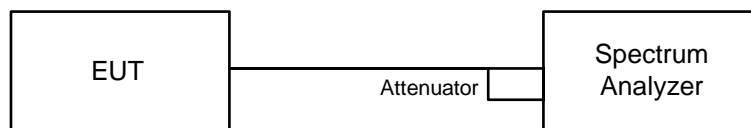
For specified measurement bandwidth 500 kHz:

Method SA-2

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- c. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz}/300 \text{ kHz})$
- d. Sweep points $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- e. Sweep time = auto, trigger set to “free run”.
- f. Trace average at least 100 traces in power averaging mode.
- g. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- h. Record the max value and add 10 log (1/duty cycle).

6.4 6 dB Bandwidth

6.4.1 Test Setup

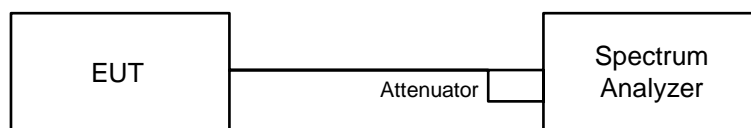


6.4.2 Test Procedure

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

6.5 Occupied Bandwidth

6.5.1 Test Setup

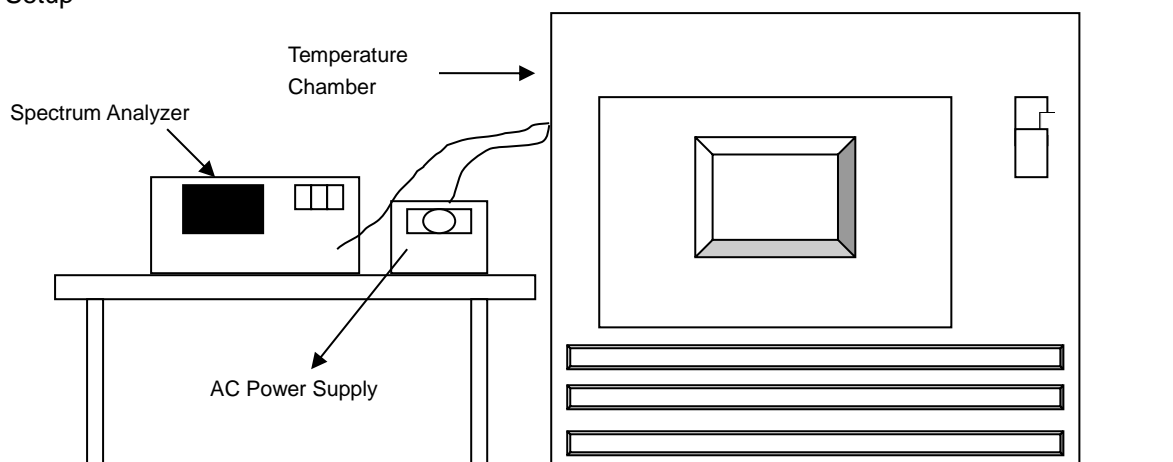


6.5.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

6.6 Frequency Stability

6.6.1 Test Setup

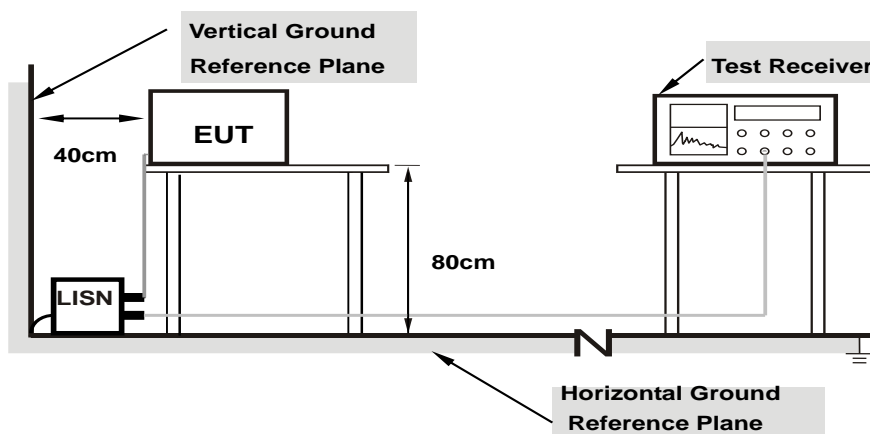


6.6.2 Test Procedure

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

6.7 AC Power Conducted Emissions

6.7.1 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).

6.7.2 Test Procedure

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

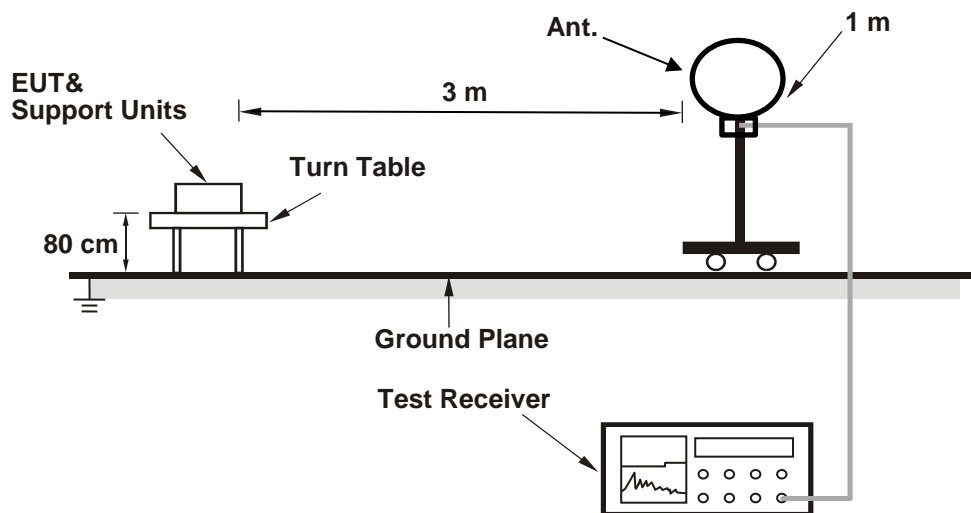
Note:

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.

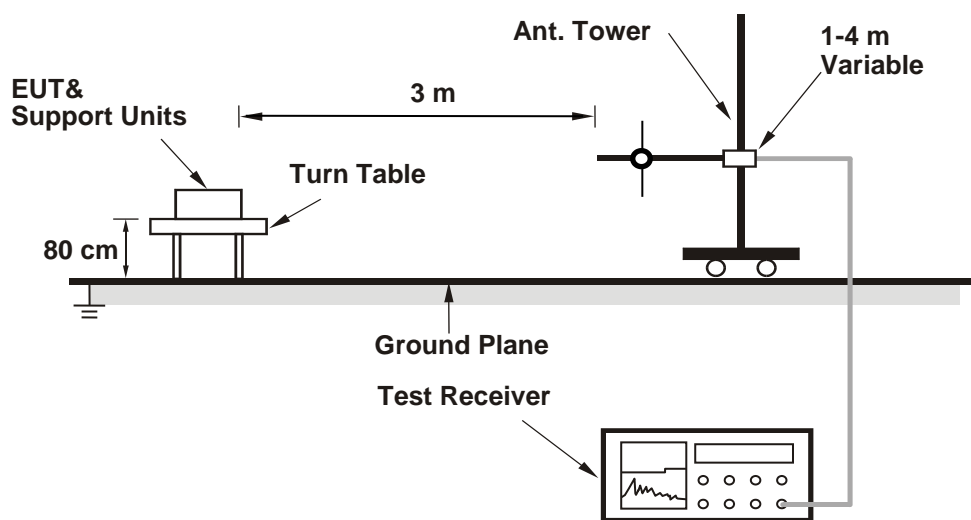
6.8 Unwanted Emissions below 1 GHz

6.8.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



6.8.2 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.

Notes:

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

For Radiated 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.

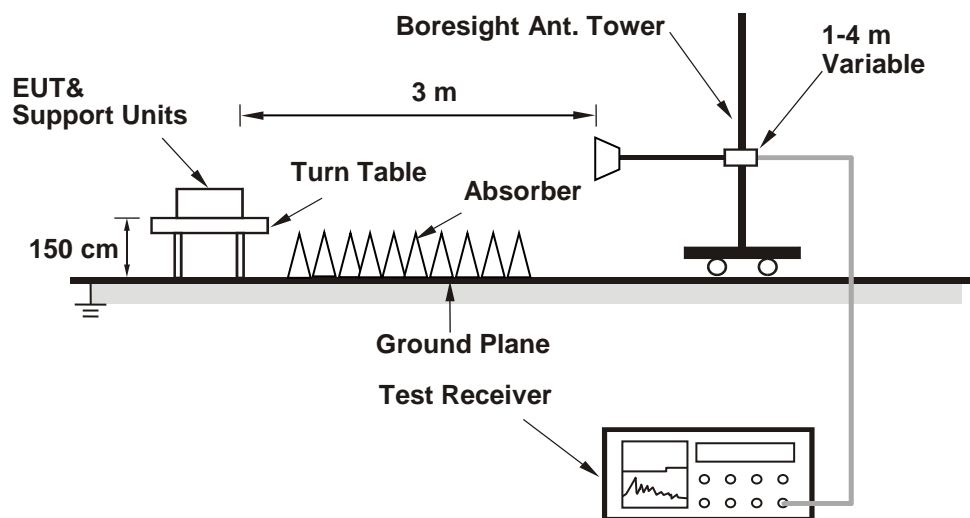
Notes:

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.

6.9 Unwanted Emissions above 1 GHz

6.9.1 Test Setup

For Radiated emission above 1 GHz



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

6.9.2 Test Procedure

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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:

- 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.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 26 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
52	5260	41.19
60	5300	38.97
64	5320	38.85
100	5500	21.8
116	5580	21.86
140	5700	21.86

Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	41.19	27.14 > 24
60	5300	38.97	26.9 > 24
64	5320	38.85	26.89 > 24
100	5500	21.80	24.38 > 24
116	5580	21.86	24.39 > 24
140	5700	21.86	24.39 > 24

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

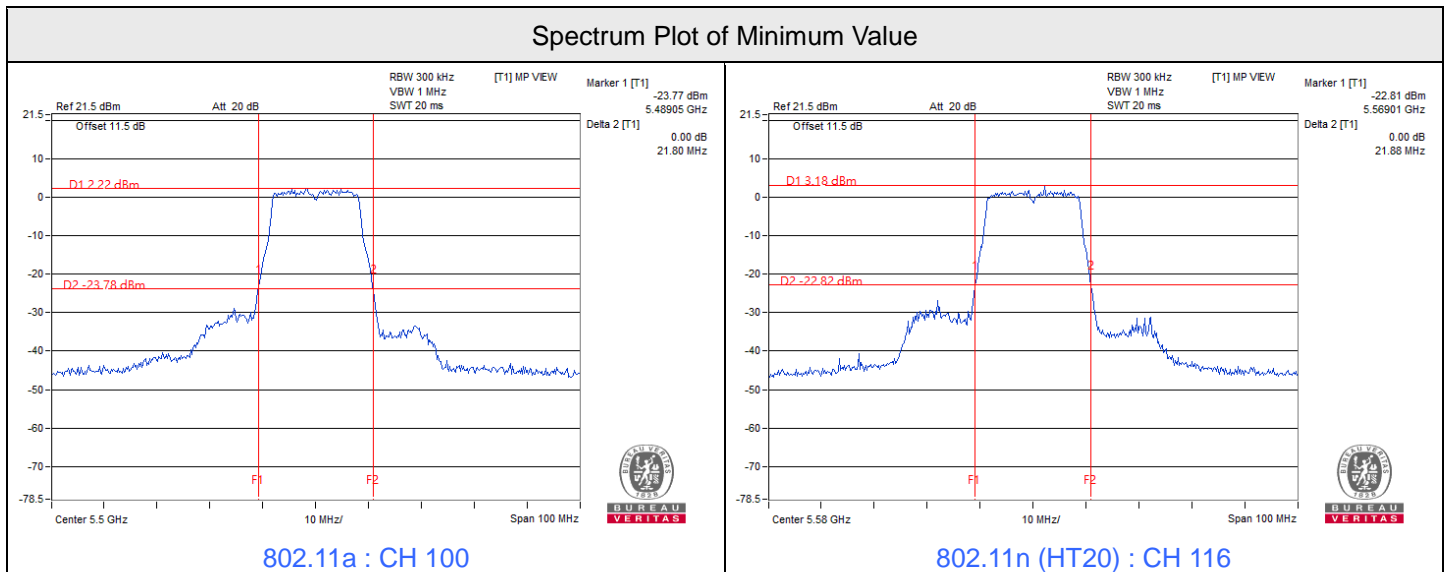


802.11n (HT20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
52	5260	22.03
60	5300	33.91
64	5320	22.13
100	5500	22.11
116	5580	21.88
140	5700	22.18

Determined Output Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	22.03	24.43 > 24
60	5300	33.91	26.3 > 24
64	5320	22.13	24.44 > 24
100	5500	22.11	24.44 > 24
116	5580	21.88	24.4 > 24
140	5700	22.18	24.45 > 24

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.



7.2 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	31.989	15.05	24	Pass
40	5200	40.926	16.12	24	Pass
48	5240	40.272	16.05	24	Pass
52	5260	40.832	16.11	24	Pass
60	5300	40.551	16.08	24	Pass
64	5320	40.272	16.05	24	Pass
100	5500	15.74	11.97	24	Pass
116	5580	15.776	11.98	24	Pass
140	5700	15.812	11.99	24	Pass
149	5745	15.524	11.91	30	Pass
157	5785	15.346	11.86	30	Pass
165	5825	15.101	11.79	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2.63 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-2A, the antenna gain is 2.73 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2C, the antenna gain is 3.42 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the antenna gain is 3.82 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	25.882	14.13	24	Pass
40	5200	31.989	15.05	24	Pass
48	5240	31.842	15.03	24	Pass
52	5260	33.189	15.21	24	Pass
60	5300	31.989	15.05	24	Pass
64	5320	31.696	15.01	24	Pass
100	5500	12.912	11.11	24	Pass
116	5580	13.274	11.23	24	Pass
140	5700	12.618	11.01	24	Pass
149	5745	13.996	11.46	30	Pass
157	5785	13.9	11.43	30	Pass
165	5825	13.836	11.41	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 2.63 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-2A, the antenna gain is 2.73 dBi < 6 dBi, so the output power limit shall not be reduced.
3. For U-NII-2C, the antenna gain is 3.42 dBi < 6 dBi, so the output power limit shall not be reduced.
4. For U-NII-3, the antenna gain is 3.82 dBi < 6 dBi, so the output power limit shall not be reduced.

7.3 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	2.05	11.00	Pass
40	5200	3.07	11.00	Pass
48	5240	2.95	11.00	Pass
52	5260	3.19	11.00	Pass
60	5300	3.12	11.00	Pass
64	5320	3.13	11.00	Pass
100	5500	-0.97	11.00	Pass
116	5580	-0.99	11.00	Pass
140	5700	-1.06	11.00	Pass

Notes:

1. For U-NII-1, the antenna gain is 2.63 dBi < 6dBi, so the power density limit shall not be reduced.
2. For U-NII-2A, the antenna gain is 2.73 dBi < 6 dBi, so the power density limit shall not be reduced.
3. For U-NII-2C, the antenna gain is 3.42 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	1.17	0.20	1.37	11.00	Pass
40	5200	2.05	0.20	2.25	11.00	Pass
48	5240	1.99	0.20	2.19	11.00	Pass
52	5260	2.13	0.20	2.33	11.00	Pass
60	5300	2.06	0.20	2.26	11.00	Pass
64	5320	1.93	0.20	2.13	11.00	Pass
100	5500	-1.95	0.20	-1.75	11.00	Pass
116	5580	-1.83	0.20	-1.63	11.00	Pass
140	5700	-1.96	0.20	-1.76	11.00	Pass

Notes:

1. For U-NII-1, the antenna gain is 2.63 dBi < 6dBi, so the power density limit shall not be reduced.
2. For U-NII-2A, the antenna gain is 2.73 dBi < 6 dBi, so the power density limit shall not be reduced.
3. For U-NII-2C, the antenna gain is 3.42 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11a

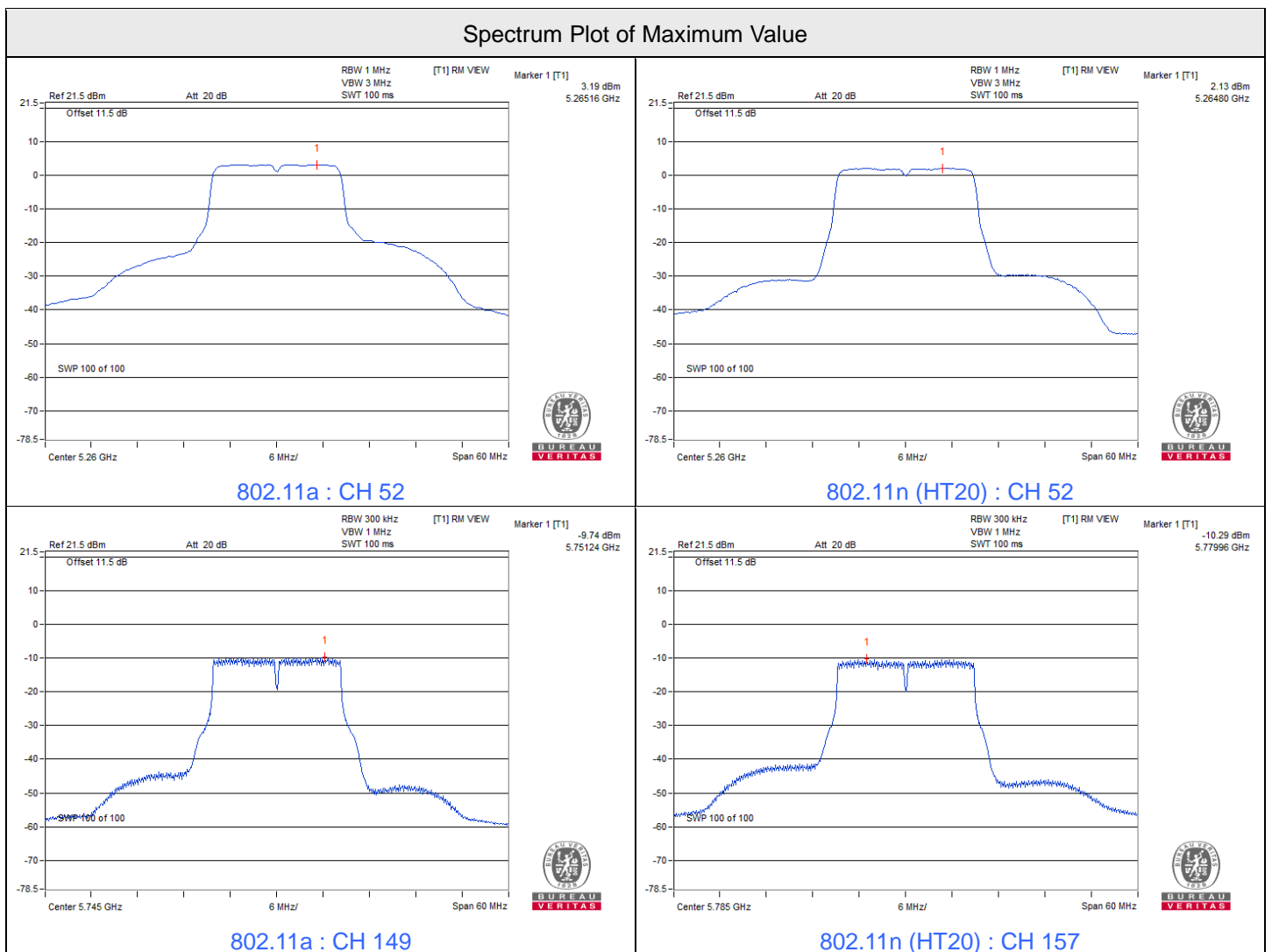
Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
149	5745	-9.74	-7.52	30	Pass
157	5785	-9.91	-7.69	30	Pass
165	5825	-10.26	-8.04	30	Pass

Note: For U-NII-3, the antenna gain is 3.82 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor (dB)	PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
149	5745	-10.39	0.2	-7.97	30	Pass
157	5785	-10.29	0.2	-7.87	30	Pass
165	5825	-10.35	0.2	-7.93	30	Pass

Note: For U-NII-3, the antenna gain is 3.82 dBi < 6 dBi, so the power density limit shall not be reduced.



7.4 6 dB Bandwidth

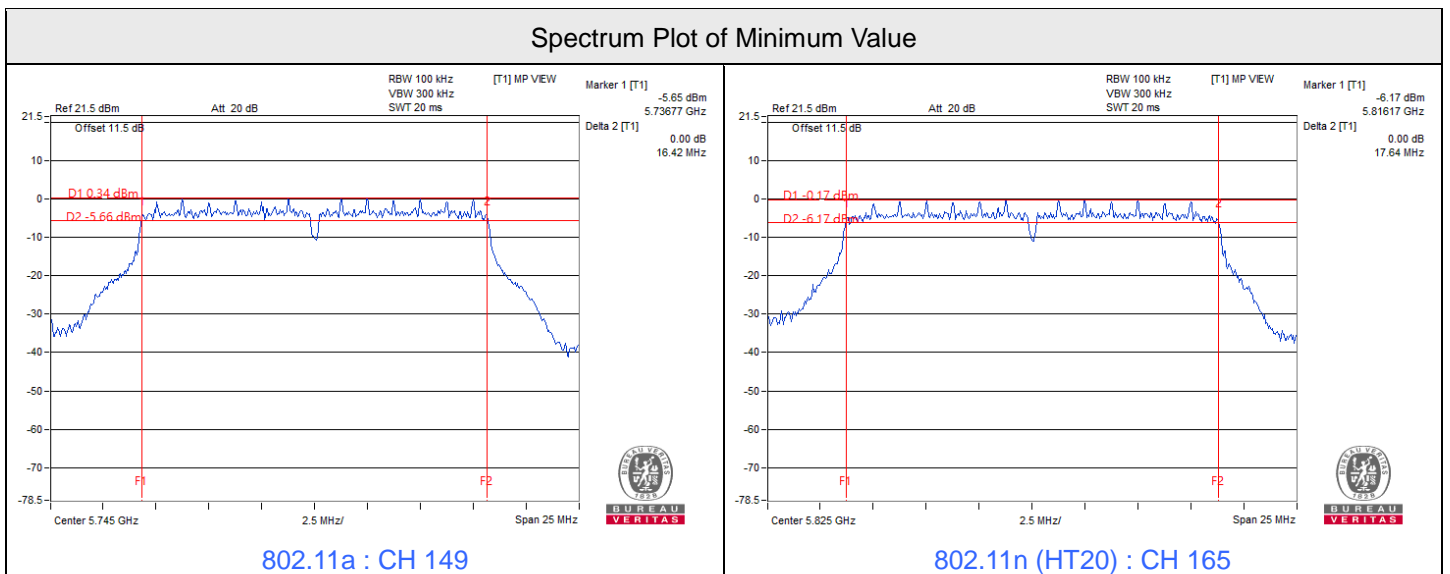
Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	16.42	0.5	Pass
157	5785	16.42	0.5	Pass
165	5825	16.44	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	17.66	0.5	Pass
157	5785	17.65	0.5	Pass
165	5825	17.64	0.5	Pass



7.5 Occupied Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

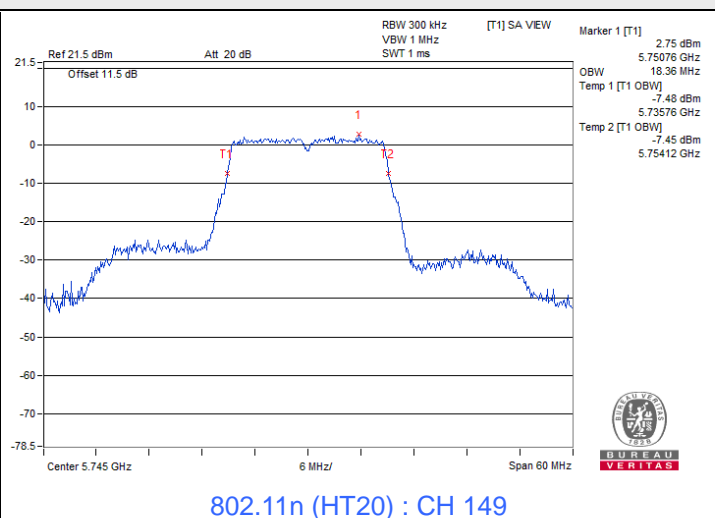
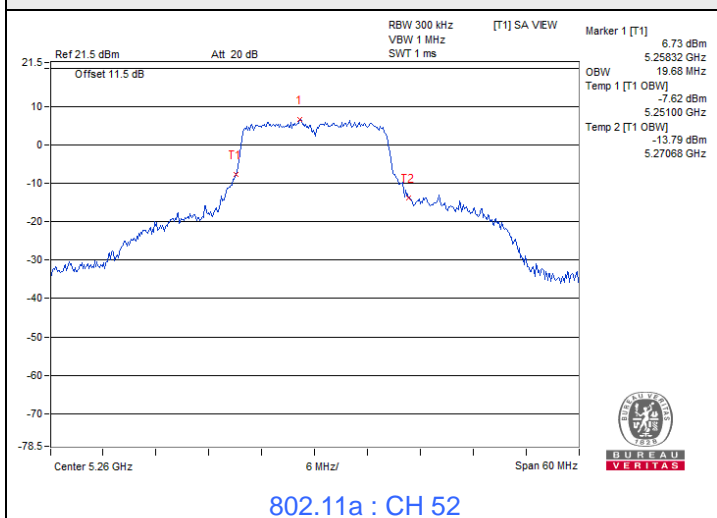
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.28
40	5200	18.24
48	5240	18.24
52	5260	19.68
60	5300	18.84
64	5320	18.6
100	5500	17.16
116	5580	17.16
140	5700	17.04
149	5745	17.16
157	5785	17.16
165	5825	17.16

802.11n (HT20)

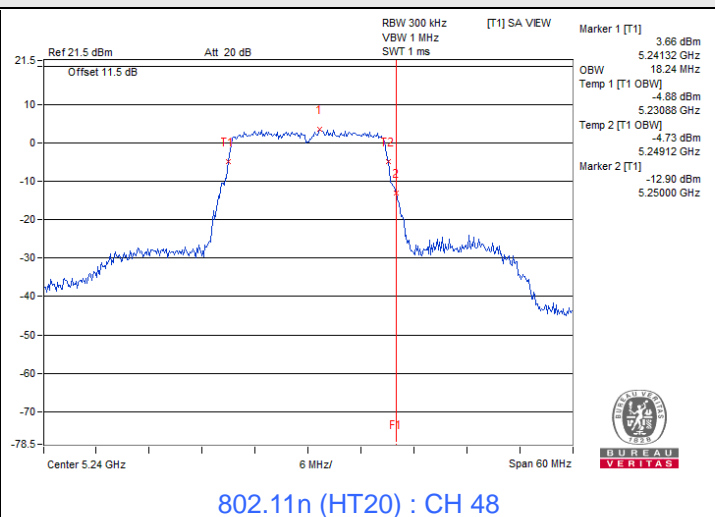
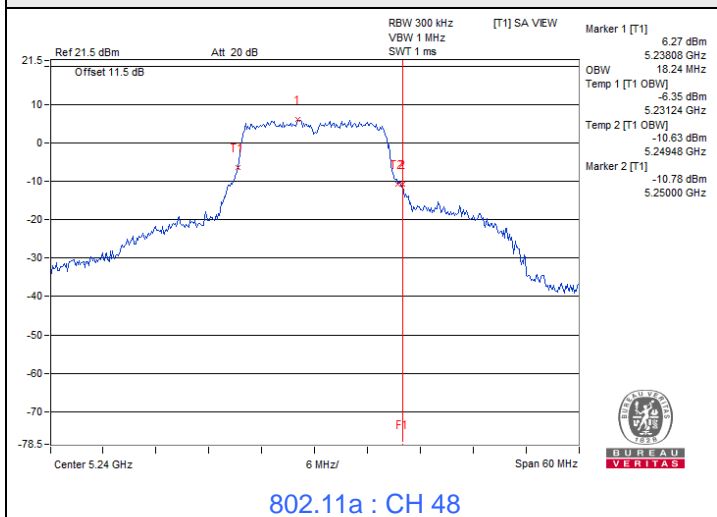
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	18.12
40	5200	18.12
48	5240	18.24
52	5260	18.24
60	5300	18.24
64	5320	18.24
100	5500	18.12
116	5580	18.12
140	5700	18.24
149	5745	18.36
157	5785	18.24
165	5825	18.12



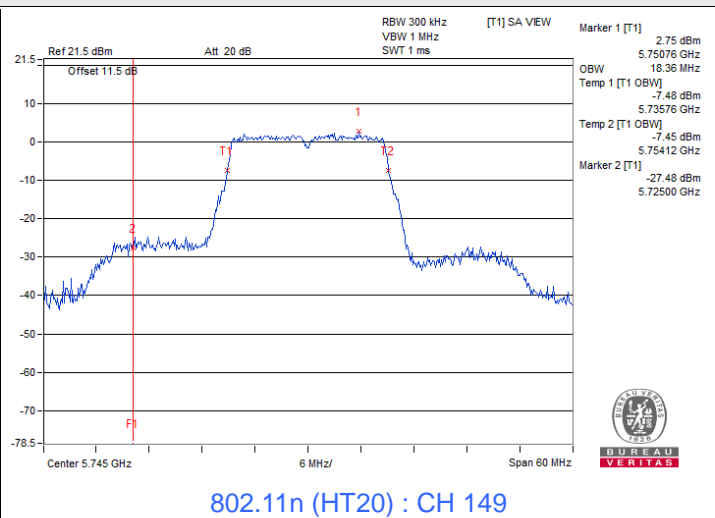
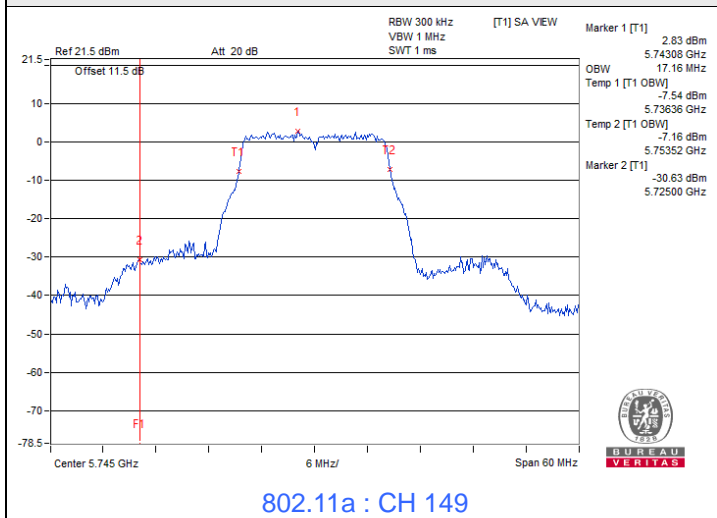
Spectrum Plot of Maximum Value



Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A band)



Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C band)



7.6 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 60% RH	Tested By:	Jisyong Wang
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802.11a

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
49	120	5179.9967	Pass	5179.9971	Pass	5179.9956	Pass	5179.9937	Pass
40	120	5180.0199	Pass	5180.0219	Pass	5180.0208	Pass	5180.025	Pass
30	120	5179.9879	Pass	5179.987	Pass	5179.9864	Pass	5179.983	Pass
20	120	5179.9998	Pass	5180.0003	Pass	5179.9992	Pass	5179.9985	Pass
10	120	5180.0071	Pass	5180.0075	Pass	5180.0088	Pass	5180.0109	Pass
0	120	5179.9897	Pass	5179.9904	Pass	5179.99	Pass	5179.9912	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5179.999	Pass	5179.9984	Pass	5179.9994	Pass	5180.0002	Pass
	120	5179.9998	Pass	5180.0003	Pass	5179.9992	Pass	5179.9985	Pass
	102	5180.0005	Pass	5180.0008	Pass	5179.9985	Pass	5180.0014	Pass

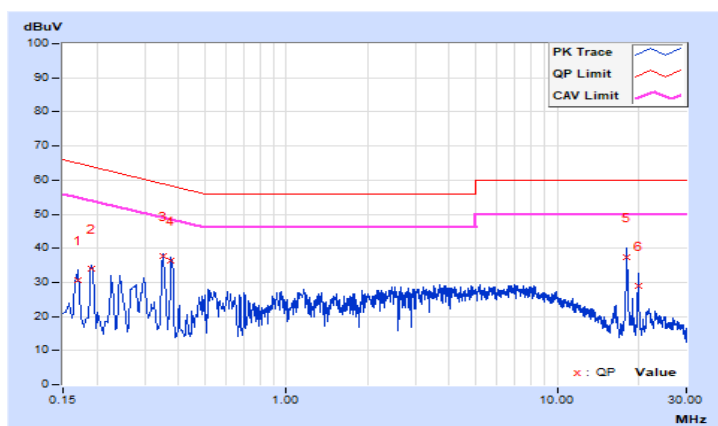
7.7 AC Power Conducted Emissions

RF Mode	TX 802.11a	Channel	CH 40 : 5200 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	0.17000	10.14	20.63	4.71	30.77	14.85	64.96	54.96	-34.19	-40.11
2	0.19000	10.15	23.74	5.37	33.89	15.52	64.04	54.04	-30.15	-38.52
3	0.35000	10.22	27.39	26.61	37.61	36.83	58.96	48.96	-21.35	-12.13
4	0.37400	10.23	26.12	23.59	36.35	33.82	58.41	48.41	-22.06	-14.59
5	18.11800	10.58	26.70	20.75	37.28	31.33	60.00	50.00	-22.72	-18.67
6	19.92600	10.61	18.38	12.63	28.99	23.24	60.00	50.00	-31.01	-26.76

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

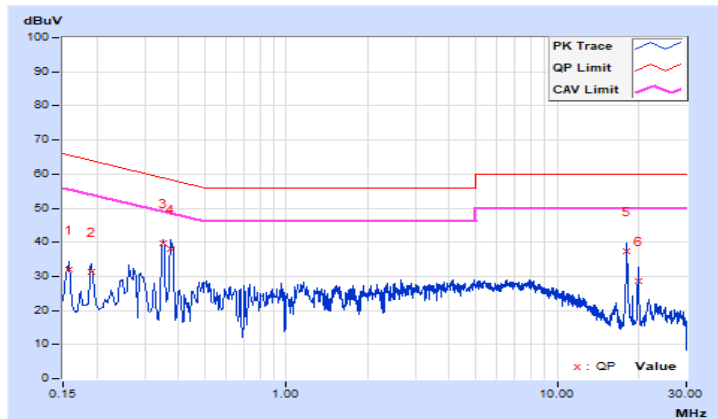


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Rex Wang	Test Mode	A

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	0.15800	10.15	21.81	6.35	31.96	16.50	65.57	55.57	-33.61	-39.07
2	0.19000	10.18	20.99	7.45	31.17	17.63	64.04	54.04	-32.87	-36.41
3	0.35000	10.24	29.65	28.82	39.89	39.06	58.96	48.96	-19.07	-9.90
4	0.37400	10.25	27.96	25.75	38.21	36.00	58.41	48.41	-20.20	-12.41
5	18.11000	10.70	26.70	20.84	37.40	31.54	60.00	50.00	-22.60	-18.46
6	19.93000	10.75	17.87	12.06	28.62	22.81	60.00	50.00	-31.38	-27.19

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

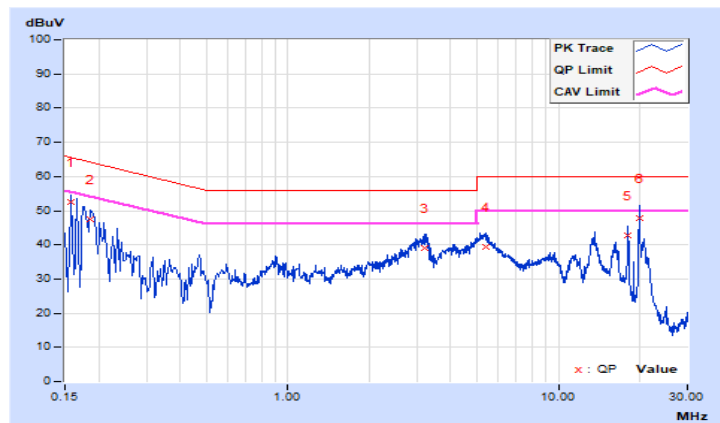


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 72% RH
Tested By	Rex Wang	Test Mode	B

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	0.15800	10.13	42.47	24.61	52.60	34.74	65.57	55.57	-12.97	-20.83
2	0.18600	10.14	37.36	20.00	47.50	30.14	64.21	54.21	-16.71	-24.07
3	3.21800	10.24	28.93	18.40	39.17	28.64	56.00	46.00	-16.83	-17.36
4	5.37800	10.26	29.01	23.74	39.27	34.00	60.00	50.00	-20.73	-16.00
5	18.10200	10.37	32.29	26.57	42.66	36.94	60.00	50.00	-17.34	-13.06
6	19.90600	10.40	37.31	31.55	47.71	41.95	60.00	50.00	-12.29	-8.05

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

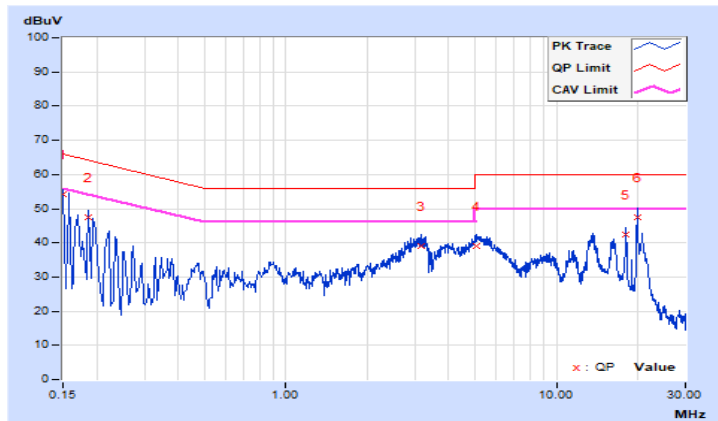


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22°C, 72% RH
Tested By	Rex Wang	Test Mode	B

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	0.15000	10.14	43.92	24.34	54.06	34.48	66.00	56.00	-11.94	-21.52
2	0.18600	10.15	37.46	19.82	47.61	29.97	64.21	54.21	-16.60	-24.24
3	3.17800	10.25	28.74	18.77	38.99	29.02	56.00	46.00	-17.01	-16.98
4	5.05400	10.28	28.63	23.30	38.91	33.58	60.00	50.00	-21.09	-16.42
5	18.09800	10.51	32.05	26.26	42.56	36.77	60.00	50.00	-17.44	-13.23
6	19.92200	10.55	36.93	31.24	47.48	41.79	60.00	50.00	-12.52	-8.21

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



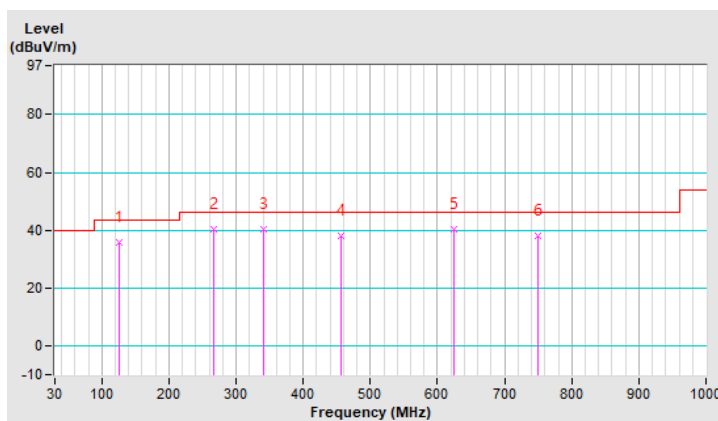
7.8 Unwanted Emissions below 1 GHz

RF Mode	TX 802.11a	Channel	CH 40 : 5200 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	125.06	35.7 QP	43.5	-7.8	1.99 H	300	46.4	-10.7
2	265.71	40.2 QP	46.0	-5.8	1.00 H	184	48.4	-8.2
3	341.37	40.4 QP	46.0	-5.6	1.00 H	184	46.5	-6.1
4	455.83	38.2 QP	46.0	-7.8	1.99 H	158	41.5	-3.3
5	624.61	40.4 QP	46.0	-5.6	1.99 H	258	40.4	0.0
6	749.74	38.2 QP	46.0	-7.8	1.00 H	2	35.9	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.

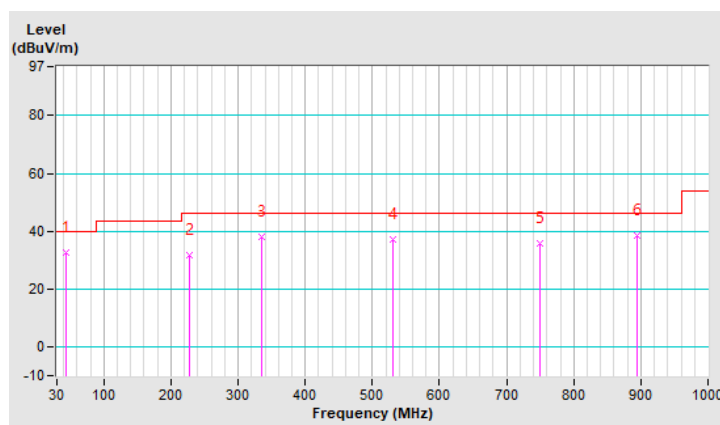


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 67% RH
Tested By	Adair Peng	Test Mode	A

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	43.58	32.7 QP	40.0	-7.3	1.01 V	190	42.1	-9.4
2	227.88	31.9 QP	46.0	-14.1	1.01 V	37	42.9	-11.0
3	335.55	37.9 QP	46.0	-8.1	2.00 V	26	44.0	-6.1
4	530.52	37.0 QP	46.0	-9.0	1.01 V	18	38.9	-1.9
5	749.74	35.7 QP	46.0	-10.3	1.01 V	18	33.4	2.3
6	895.24	38.4 QP	46.0	-7.6	2.00 V	289	33.5	4.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The 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.

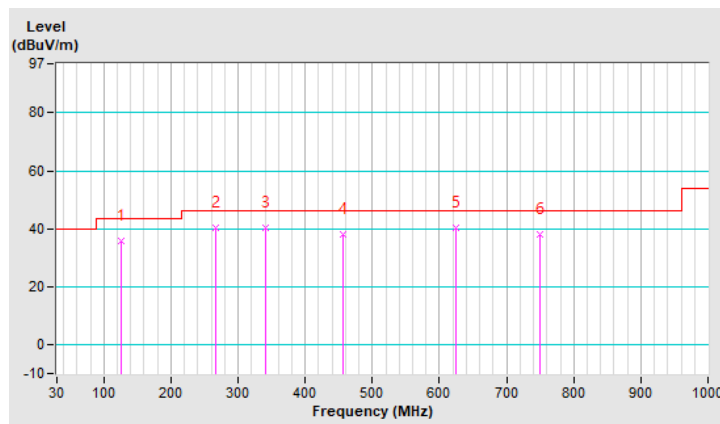


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 72% RH
Tested By	Vincent Chen	Test Mode	B

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	125.06	35.70 QP	43.50	-7.80	1.99 H	300	49.61	-13.91
2	265.71	40.19 QP	46.00	-5.81	1.00 H	184	53.98	-13.79
3	341.37	40.41 QP	46.00	-5.59	1.00 H	184	50.95	-10.54
4	455.83	38.16 QP	46.00	-7.84	1.99 H	158	45.32	-7.16
5	624.61	40.35 QP	46.00	-5.65	1.99 H	258	43.21	-2.86
6	749.74	38.23 QP	46.00	-7.77	1.00 H	2	38.73	-0.50

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.

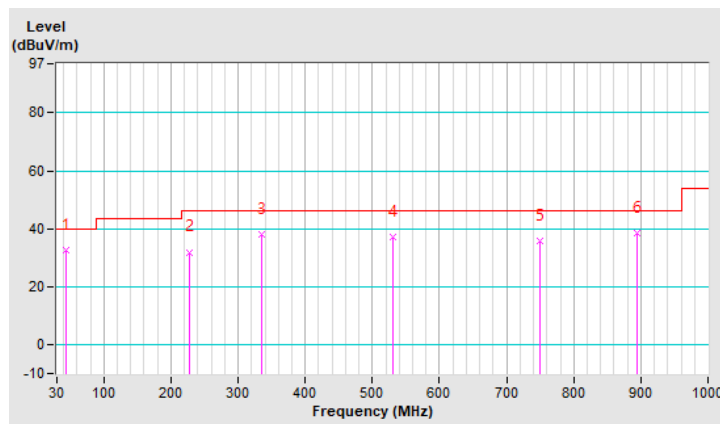


RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	9 kHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 72% RH
Tested By	Vincent Chen	Test Mode	B

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	43.58	32.72 QP	40.00	-7.28	1.01 V	190	45.58	-12.86
2	227.88	31.94 QP	46.00	-14.06	1.01 V	37	48.05	-16.11
3	335.55	37.88 QP	46.00	-8.12	2.00 V	26	48.56	-10.68
4	530.52	37.03 QP	46.00	-8.97	1.01 V	18	42.68	-5.65
5	749.74	35.67 QP	46.00	-10.33	1.01 V	18	36.17	-0.50
6	895.24	38.44 QP	46.00	-7.56	2.00 V	289	36.91	1.53

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.



7.9 Unwanted Emissions above 1 GHz

RF Mode	TX 802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	5150.00	68.5 PK	74.0	-5.5	1.54 H	181	62.9	5.6
2	5150.00	51.8 AV	54.0	-2.2	1.54 H	181	46.2	5.6
3	*5180.00	108.3 PK			1.54 H	181	68.3	40.0
4	*5180.00	98.8 AV			1.54 H	181	58.8	40.0
5	#10360.00	56.6 PK	68.2	-11.6	1.57 H	188	39.1	17.5

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	5150.00	64.4 PK	74.0	-9.6	3.11 V	97	58.8	5.6
2	5150.00	48.3 AV	54.0	-5.7	3.11 V	97	42.7	5.6
3	*5180.00	107.7 PK			3.11 V	97	67.7	40.0
4	*5180.00	97.6 AV			3.11 V	97	57.6	40.0
5	#10360.00	56.3 PK	68.2	-11.9	2.97 V	105	38.8	17.5

Remarks:

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



RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	*5200.00	109.3 PK			1.50 H	183	69.3	40.0
2	*5200.00	99.4 AV			1.50 H	183	59.4	40.0
3	#10400.00	57.1 PK	68.2	-11.1	1.55 H	180	39.6	17.5
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	*5200.00	108.4 PK			3.08 V	98	68.4	40.0
2	*5200.00	98.4 AV			3.08 V	98	58.4	40.0
3	#10400.00	56.9 PK	68.2	-11.3	2.99 V	101	39.4	17.5

Remarks:

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



RF Mode	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 = 10 Hz
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	109.3 PK			1.55 H	181	69.4	39.9
2	*5240.00	99.5 AV			1.55 H	181	59.6	39.9
3	5350.00	56.0 PK	74.0	-18.0	1.55 H	181	50.7	5.3
4	5350.00	42.7 AV	54.0	-11.3	1.55 H	181	37.4	5.3
5	#10480.00	57.5 PK	68.2	-10.7	1.51 H	178	39.9	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	108.3 PK			3.12 V	98	68.4	39.9
2	*5240.00	98.4 AV			3.12 V	98	58.5	39.9
3	5350.00	55.9 PK	74.0	-18.1	3.12 V	98	50.6	5.3
4	5350.00	42.5 AV	54.0	-11.5	3.12 V	98	37.2	5.3
5	#10480.00	57.1 PK	68.2	-11.1	3.00 V	100	39.5	17.6

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 36 : 5180 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	5150.00	67.1 PK	74.0	-6.9	1.48 H	180	61.5	5.6
2	5150.00	48.4 AV	54.0	-5.6	1.48 H	180	42.8	5.6
3	*5180.00	106.6 PK			1.48 H	180	66.6	40.0
4	*5180.00	96.3 AV			1.48 H	180	56.3	40.0
5	#10360.00	57.1 PK	68.2	-11.1	1.61 H	174	39.6	17.5

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	5150.00	67.0 PK	74.0	-7.0	3.13 V	100	61.4	5.6
2	5150.00	47.6 AV	54.0	-6.4	3.13 V	100	42.0	5.6
3	*5180.00	105.4 PK			3.13 V	100	65.4	40.0
4	*5180.00	95.1 AV			3.13 V	100	55.1	40.0
5	#10360.00	57.0 PK	68.2	-11.2	2.95 V	104	39.5	17.5

Remarks:

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



RF Mode	TX 802.11n (HT20)	Channel	CH 40 : 5200 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	*5200.00	108.0 PK			1.58 H	181	68.0	40.0
2	*5200.00	97.0 AV			1.58 H	181	57.0	40.0
3	#10400.00	57.5 PK	68.2	-10.7	1.69 H	177	40.0	17.5
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	*5200.00	107.1 PK			3.18 V	99	67.1	40.0
2	*5200.00	95.8 AV			3.18 V	99	55.8	40.0
3	#10400.00	57.2 PK	68.2	-11.0	2.97 V	104	39.7	17.5

Remarks:

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



RF Mode	TX 802.11n (HT20)	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	108.3 PK			1.52 H	181	68.4	39.9
2	*5240.00	97.8 AV			1.52 H	181	57.9	39.9
3	5350.00	56.4 PK	74.0	-17.6	1.52 H	181	51.1	5.3
4	5350.00	42.8 AV	54.0	-11.2	1.52 H	181	37.5	5.3
5	#10480.00	57.8 PK	68.2	-10.4	1.68 H	179	40.2	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	107.2 PK			3.04 V	99	67.3	39.9
2	*5240.00	96.6 AV			3.04 V	99	56.7	39.9
3	5350.00	56.3 PK	74.0	-17.7	3.04 V	99	51.0	5.3
4	5350.00	42.6 AV	54.0	-11.4	3.04 V	99	37.3	5.3
5	#10480.00	57.3 PK	68.2	-10.9	3.14 V	105	39.7	17.6

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 52 : 5260 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	5150.00	56.9 PK	74.0	-17.1	1.51 H	180	51.3	5.6
2	5150.00	44.3 AV	54.0	-9.7	1.51 H	180	38.7	5.6
3	*5260.00	110.9 PK			1.51 H	180	71.0	39.9
4	*5260.00	100.9 AV			1.51 H	180	61.0	39.9
5	#10520.00	58.8 PK	68.2	-9.4	1.69 H	174	41.2	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	3.09 V	98	51.2	5.6
2	5150.00	44.2 AV	54.0	-9.8	3.09 V	98	38.6	5.6
3	*5260.00	109.6 PK			3.09 V	98	69.7	39.9
4	*5260.00	99.7 AV			3.09 V	98	59.8	39.9
5	#10520.00	58.3 PK	68.2	-9.9	2.97 V	103	40.7	17.6

Remarks:

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



RF Mode	TX 802.11a	Channel	CH 60 : 5300 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	*5300.00	110.5 PK			1.42 H	176	70.9	39.6
2	*5300.00	100.3 AV			1.42 H	176	60.7	39.6
3	10600.00	58.2 PK	74.0	-15.8	1.61 H	183	40.2	18.0
4	10600.00	44.9 AV	54.0	-9.1	1.61 H	183	26.9	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	*5300.00	109.4 PK			3.12 V	97	69.8	39.6
2	*5300.00	99.3 AV			3.12 V	97	59.7	39.6
3	10600.00	57.8 PK	74.0	-16.2	3.02 V	101	39.8	18.0
4	10600.00	44.5 AV	54.0	-9.5	3.02 V	101	26.5	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.



RF Mode	TX 802.11a	Channel	CH 64 : 5320 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	*5320.00	110.1 PK			2.02 H	218	70.5	39.6
2	*5320.00	100.2 AV			2.02 H	218	60.6	39.6
3	5350.00	70.2 PK	74.0	-3.8	2.02 H	218	64.9	5.3
4	5350.00	49.9 AV	54.0	-4.1	2.02 H	218	44.6	5.3
5	10640.00	58.0 PK	74.0	-16.0	1.90 H	185	40.1	17.9
6	10640.00	44.7 AV	54.0	-9.3	1.90 H	185	26.8	17.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	108.8 PK			3.17 V	93	69.2	39.6
2	*5320.00	98.8 AV			3.17 V	93	59.2	39.6
3	5350.00	69.5 PK	74.0	-4.5	3.17 V	93	64.2	5.3
4	5350.00	49.2 AV	54.0	-4.8	3.17 V	93	43.9	5.3
5	10640.00	57.6 PK	74.0	-16.4	2.95 V	110	39.7	17.9
6	10640.00	44.3 AV	54.0	-9.7	2.95 V	110	26.4	17.9

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 52 : 5260 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	5150.00	57.5 PK	74.0	-16.5	1.80 H	220	51.9	5.6
2	5150.00	43.9 AV	54.0	-10.1	1.80 H	220	38.3	5.6
3	*5260.00	109.0 PK			1.80 H	220	69.1	39.9
4	*5260.00	99.2 AV			1.80 H	220	59.3	39.9
5	#10520.00	59.1 PK	68.2	-9.1	1.92 H	205	41.5	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.6 PK	74.0	-17.4	2.95 V	97	51.0	5.6
2	5150.00	43.6 AV	54.0	-10.4	2.95 V	97	38.0	5.6
3	*5260.00	107.9 PK			2.95 V	97	68.0	39.9
4	*5260.00	98.0 AV			2.95 V	97	58.1	39.9
5	#10520.00	58.7 PK	68.2	-9.5	3.00 V	110	41.1	17.6

Remarks:

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



RF Mode	TX 802.11n (HT20)	Channel	CH 60 : 5300 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	*5300.00	108.9 PK			1.91 H	224	69.3	39.6
2	*5300.00	99.0 AV			1.91 H	224	59.4	39.6
3	10600.00	59.0 PK	74.0	-15.0	1.87 H	199	41.0	18.0
4	10600.00	46.1 AV	54.0	-7.9	1.87 H	199	28.1	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	*5300.00	107.8 PK			2.96 V	95	68.2	39.6
2	*5300.00	98.0 AV			2.96 V	95	58.4	39.6
3	10600.00	58.7 PK	74.0	-15.3	3.05 V	102	40.7	18.0
4	10600.00	45.7 AV	54.0	-8.3	3.05 V	102	27.7	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.

RF Mode	TX 802.11n (HT20)	Channel	CH 64 : 5320 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	*5320.00	108.9 PK			1.88 H	225	69.3	39.6
2	*5320.00	98.7 AV			1.88 H	225	59.1	39.6
3	5350.00	62.3 PK	74.0	-11.7	1.88 H	225	57.0	5.3
4	5350.00	46.6 AV	54.0	-7.4	1.88 H	225	41.3	5.3
5	10640.00	58.7 PK	74.0	-15.3	1.99 H	197	40.8	17.9
6	10640.00	45.9 AV	54.0	-8.1	1.99 H	197	28.0	17.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	107.8 PK			3.13 V	100	68.2	39.6
2	*5320.00	97.8 AV			3.13 V	100	58.2	39.6
3	5350.00	61.0 PK	74.0	-13.0	3.13 V	100	55.7	5.3
4	5350.00	45.7 AV	54.0	-8.3	3.13 V	100	40.4	5.3
5	10640.00	58.3 PK	74.0	-15.7	3.10 V	107	40.4	17.9
6	10640.00	45.5 AV	54.0	-8.5	3.10 V	107	27.6	17.9

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 100 : 5500 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	5460.00	57.9 PK	74.0	-16.1	2.78 H	213	51.7	6.2
2	5460.00	45.2 AV	54.0	-8.8	2.78 H	213	39.0	6.2
3	#5470.00	63.1 PK	68.2	-5.1	2.78 H	213	56.9	6.2
4	*5500.00	105.7 PK			2.78 H	213	65.2	40.5
5	*5500.00	95.8 AV			2.78 H	213	55.3	40.5
6	11000.00	58.9 PK	74.0	-15.1	2.02 H	190	40.1	18.8
7	11000.00	45.8 AV	54.0	-8.2	2.02 H	190	27.0	18.8

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	5460.00	57.5 PK	74.0	-16.5	3.19 V	97	51.3	6.2
2	5460.00	44.4 AV	54.0	-9.6	3.19 V	97	38.2	6.2
3	#5470.00	61.7 PK	68.2	-6.5	3.19 V	97	55.5	6.2
4	*5500.00	104.5 PK			3.19 V	97	64.0	40.5
5	*5500.00	94.7 AV			3.19 V	97	54.2	40.5
6	11000.00	58.5 PK	74.0	-15.5	2.95 V	112	39.7	18.8
7	11000.00	45.4 AV	54.0	-8.6	2.95 V	112	26.6	18.8

Remarks:

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



RF Mode	TX 802.11a	Channel	CH 116 : 5580 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	*5580.00	105.6 PK			2.46 H	211	65.3	40.3
2	*5580.00	95.5 AV			2.46 H	211	55.2	40.3
3	11160.00	58.3 PK	74.0	-15.7	1.98 H	187	40.2	18.1
4	11160.00	45.0 AV	54.0	-9.0	1.98 H	187	26.9	18.1
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	*5580.00	104.4 PK			3.29 V	97	64.1	40.3
2	*5580.00	94.4 AV			3.29 V	97	54.1	40.3
3	11160.00	57.9 PK	74.0	-16.1	3.09 V	101	39.8	18.1
4	11160.00	44.7 AV	54.0	-9.3	3.09 V	101	26.6	18.1

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.



RF Mode	TX 802.11a	Channel	CH 140 : 5700 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	*5700.00	106.6 PK			2.48 H	211	65.9	40.7
2	*5700.00	96.5 AV			2.48 H	211	55.8	40.7
3	#5725.00	64.6 PK	68.2	-3.6	2.48 H	211	58.1	6.5
4	11400.00	59.3 PK	74.0	-14.7	2.02 H	190	40.5	18.8
5	11400.00	46.0 AV	54.0	-8.0	2.02 H	190	27.2	18.8

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	*5700.00	105.5 PK			2.97 V	93	64.8	40.7
2	*5700.00	95.3 AV			2.97 V	93	54.6	40.7
3	#5725.00	63.4 PK	68.2	-4.8	2.97 V	93	56.9	6.5
4	11400.00	58.9 PK	74.0	-15.1	3.09 V	99	40.1	18.8
5	11400.00	45.8 AV	54.0	-8.2	3.09 V	99	27.0	18.8

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 100 : 5500 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	5460.00	58.0 PK	74.0	-16.0	1.73 H	224	51.8	6.2
2	5460.00	45.2 AV	54.0	-8.8	1.73 H	224	39.0	6.2
3	#5470.00	61.2 PK	68.2	-7.0	1.73 H	224	55.0	6.2
4	*5500.00	105.8 PK			1.73 H	224	65.3	40.5
5	*5500.00	95.6 AV			1.73 H	224	55.1	40.5
6	11000.00	59.4 PK	74.0	-14.6	1.93 H	200	40.6	18.8
7	11000.00	45.8 AV	54.0	-8.2	1.93 H	200	27.0	18.8

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	5460.00	57.8 PK	74.0	-16.2	3.20 V	97	51.6	6.2
2	5460.00	44.6 AV	54.0	-9.4	3.20 V	97	38.4	6.2
3	#5470.00	61.2 PK	68.2	-7.0	3.20 V	97	55.0	6.2
4	*5500.00	104.9 PK			3.20 V	97	64.4	40.5
5	*5500.00	94.8 AV			3.20 V	97	54.3	40.5
6	11000.00	58.5 PK	74.0	-15.5	2.89 V	104	39.7	18.8
7	11000.00	45.4 AV	54.0	-8.6	2.89 V	104	26.6	18.8

Remarks:

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



RF Mode	TX 802.11n (HT20)	Channel	CH 116 : 5580 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	*5580.00	107.3 PK			1.66 H	223	67.0	40.3
2	*5580.00	96.2 AV			1.66 H	223	55.9	40.3
3	11160.00	58.4 PK	74.0	-15.6	1.88 H	201	40.3	18.1
4	11160.00	45.3 AV	54.0	-8.7	1.88 H	201	27.2	18.1

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	*5580.00	106.1 PK			3.19 V	98	65.8	40.3
2	*5580.00	95.2 AV			3.19 V	98	54.9	40.3
3	11160.00	57.9 PK	74.0	-16.1	3.02 V	110	39.8	18.1
4	11160.00	44.8 AV	54.0	-9.2	3.02 V	110	26.7	18.1

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.



RF Mode	TX 802.11n (HT20)	Channel	CH 140 : 5700 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	*5700.00	106.5 PK			1.59 H	224	65.8	40.7
2	*5700.00	96.4 AV			1.59 H	224	55.7	40.7
3	#5725.00	62.7 PK	68.2	-5.5	1.59 H	224	56.2	6.5
4	11400.00	59.6 PK	74.0	-14.4	1.82 H	191	40.8	18.8
5	11400.00	46.0 AV	54.0	-8.0	1.82 H	191	27.2	18.8

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	*5700.00	105.2 PK			3.16 V	96	64.5	40.7
2	*5700.00	95.1 AV			3.16 V	96	54.4	40.7
3	#5725.00	62.3 PK	68.2	-5.9	3.16 V	96	55.8	6.5
4	11400.00	59.1 PK	74.0	-14.9	3.11 V	106	40.3	18.8
5	11400.00	45.6 AV	54.0	-8.4	3.11 V	106	26.8	18.8

Remarks:

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



RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	#5627.20	57.0 PK	68.2	-11.2	1.49 H	224	51.0	6.0
2	*5745.00	107.1 PK			1.49 H	224	66.2	40.9
3	*5745.00	97.3 AV			1.49 H	224	56.4	40.9
4	#5973.20	58.4 PK	68.2	-9.8	1.49 H	224	51.5	6.9
5	11490.00	59.2 PK	74.0	-14.8	1.78 H	201	40.6	18.6
6	11490.00	46.0 AV	54.0	-8.0	1.78 H	201	27.4	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5636.00	56.5 PK	68.2	-11.7	3.02 V	100	50.5	6.0
2	*5745.00	105.9 PK			3.02 V	100	65.0	40.9
3	*5745.00	95.8 AV			3.02 V	100	54.9	40.9
4	#5972.40	58.0 PK	68.2	-10.2	3.02 V	100	51.1	6.9
5	11490.00	58.9 PK	74.0	-15.1	3.03 V	101	40.3	18.6
6	11490.00	45.6 AV	54.0	-8.4	3.03 V	101	27.0	18.6

Remarks:

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



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 = 10 Hz
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	#5638.00	56.9 PK	68.2	-11.3	1.44 H	223	50.9	6.0
2	*5785.00	107.2 PK			1.44 H	223	66.2	41.0
3	*5785.00	97.0 AV			1.44 H	223	56.0	41.0
4	#5944.40	57.6 PK	68.2	-10.6	1.44 H	223	50.6	7.0
5	11570.00	58.9 PK	74.0	-15.1	1.82 H	224	40.5	18.4
6	11570.00	45.7 AV	54.0	-8.3	1.82 H	224	27.3	18.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5608.00	56.7 PK	68.2	-11.5	3.09 V	99	50.7	6.0
2	*5785.00	106.1 PK			3.09 V	99	65.1	41.0
3	*5785.00	95.8 AV			3.09 V	99	54.8	41.0
4	#5933.60	58.0 PK	68.2	-10.2	3.09 V	99	51.0	7.0
5	11570.00	58.5 PK	74.0	-15.5	2.98 V	95	40.1	18.4
6	11570.00	45.3 AV	54.0	-8.7	2.98 V	95	26.9	18.4

Remarks:

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



RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 10 Hz
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	#5614.80	56.9 PK	68.2	-11.3	1.51 H	224	51.0	5.9
2	*5825.00	107.0 PK			1.51 H	224	65.8	41.2
3	*5825.00	97.0 AV			1.51 H	224	55.8	41.2
4	#5944.80	57.2 PK	68.2	-11.0	1.51 H	224	50.2	7.0
5	11650.00	59.2 PK	74.0	-14.8	1.79 H	212	41.0	18.2
6	11650.00	45.5 AV	54.0	-8.5	1.79 H	212	27.3	18.2

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	#5638.80	57.0 PK	68.2	-11.2	3.09 V	97	51.0	6.0
2	*5825.00	106.1 PK			3.09 V	97	64.9	41.2
3	*5825.00	95.8 AV			3.09 V	97	54.6	41.2
4	#5971.20	57.9 PK	68.2	-10.3	3.09 V	97	51.0	6.9
5	11650.00	58.9 PK	74.0	-15.1	2.98 V	100	40.7	18.2
6	11650.00	45.2 AV	54.0	-8.8	2.98 V	100	27.0	18.2

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.
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 802.11n (HT20)	Channel	CH 149 : 5745 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	#5646.80	57.0 PK	68.2	-11.2	1.55 H	223	51.0	6.0
2	*5745.00	107.2 PK			1.55 H	223	66.3	40.9
3	*5745.00	97.3 AV			1.55 H	223	56.4	40.9
4	#5984.80	57.9 PK	68.2	-10.3	1.55 H	223	51.0	6.9
5	11490.00	58.6 PK	74.0	-15.4	1.82 H	194	40.0	18.6
6	11490.00	45.4 AV	54.0	-8.6	1.82 H	194	26.8	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.00	56.9 PK	68.2	-11.3	2.99 V	97	50.9	6.0
2	*5745.00	106.1 PK			2.99 V	97	65.2	40.9
3	*5745.00	95.9 AV			2.99 V	97	55.0	40.9
4	#5977.20	57.1 PK	68.2	-11.1	2.99 V	97	50.2	6.9
5	11490.00	58.3 PK	74.0	-15.7	3.11 V	101	39.7	18.6
6	11490.00	45.2 AV	54.0	-8.8	3.11 V	101	26.6	18.6

Remarks:

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



RF Mode	TX 802.11n (HT20)	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	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	#5604.00	56.1 PK	68.2	-12.2	1.48 H	222	50.1	6.0
2	*5785.00	107.5 PK			1.48 H	222	66.5	41.0
3	*5785.00	97.2 AV			1.48 H	222	56.2	41.0
4	#5999.60	56.4 PK	68.2	-11.8	1.48 H	222	49.4	7.0
5	11570.00	58.7 PK	74.0	-15.3	1.93 H	200	40.3	18.4
6	11570.00	45.4 AV	54.0	-8.6	1.93 H	200	27.0	18.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5639.60	56.1 PK	68.2	-12.1	3.18 V	95	50.1	6.0
2	*5785.00	106.2 PK			3.18 V	95	65.2	41.0
3	*5785.00	96.1 AV			3.18 V	95	55.1	41.0
4	#5948.00	57.3 PK	68.2	-10.9	3.18 V	95	50.3	7.0
5	11570.00	58.4 PK	74.0	-15.6	3.04 V	103	40.0	18.4
6	11570.00	45.2 AV	54.0	-8.8	3.04 V	103	26.8	18.4

Remarks:

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



RF Mode	TX 802.11n (HT20)	Channel	CH 165 : 5825 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	#5634.80	57.7 PK	68.2	-10.5	1.51 H	223	51.7	6.0
2	*5825.00	107.1 PK			1.51 H	223	65.9	41.2
3	*5825.00	96.9 AV			1.51 H	223	55.7	41.2
4	#5944.00	57.7 PK	68.2	-10.5	1.51 H	223	50.7	7.0
5	11650.00	58.5 PK	74.0	-15.5	1.82 H	197	40.3	18.2
6	11650.00	44.9 AV	54.0	-9.1	1.82 H	197	26.7	18.2

Antenna Polarity & Test Distance : Vertical at 3 m

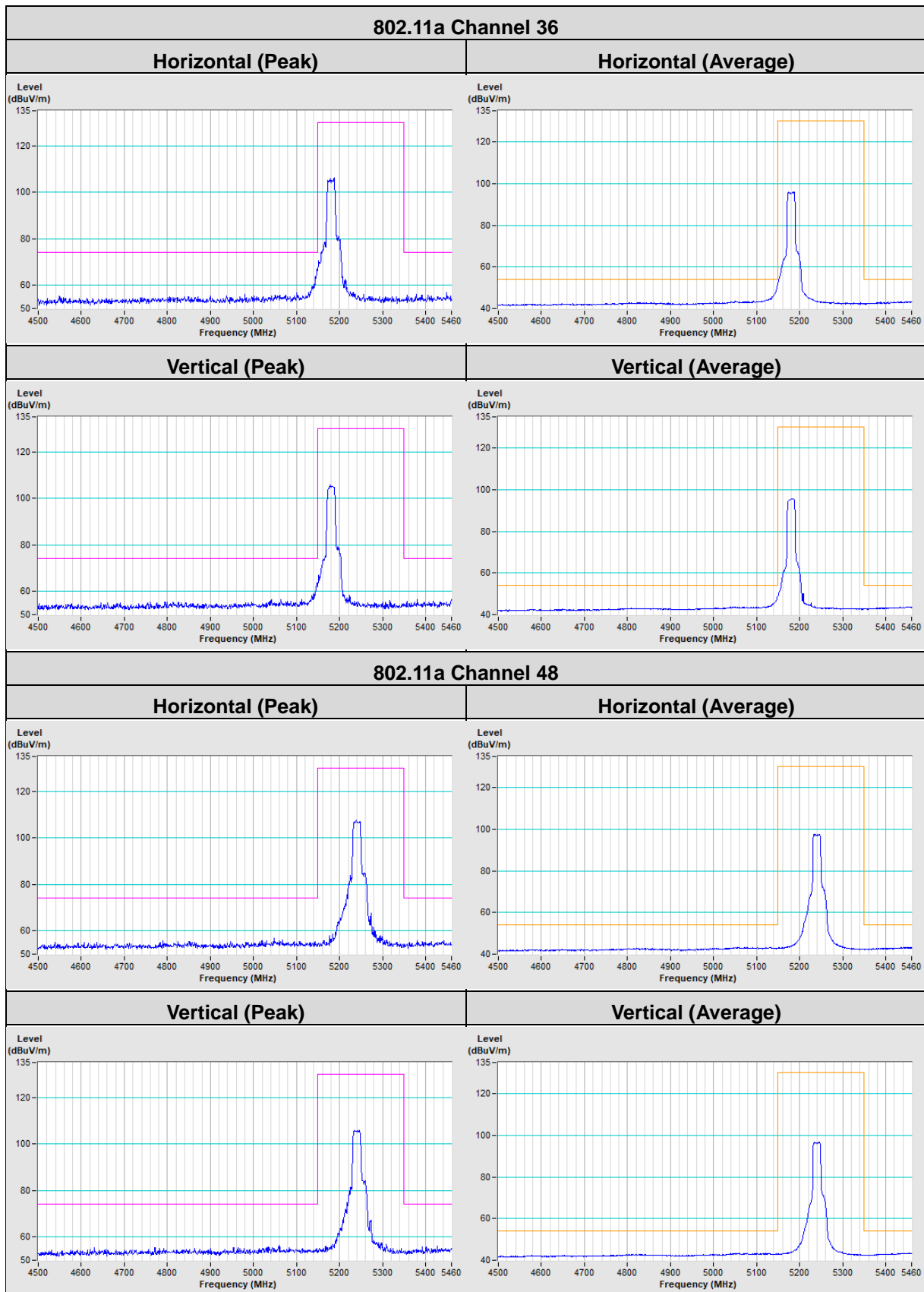
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1	#5631.60	56.8 PK	68.2	-11.4	2.92 V	100	50.8	6.0
2	*5825.00	106.2 PK			2.92 V	100	65.0	41.2
3	*5825.00	96.0 AV			2.92 V	100	54.8	41.2
4	#5928.80	58.1 PK	68.2	-10.1	2.92 V	100	51.0	7.1
5	11650.00	58.3 PK	74.0	-15.7	3.03 V	99	40.1	18.2
6	11650.00	44.7 AV	54.0	-9.3	3.03 V	99	26.5	18.2

Remarks:

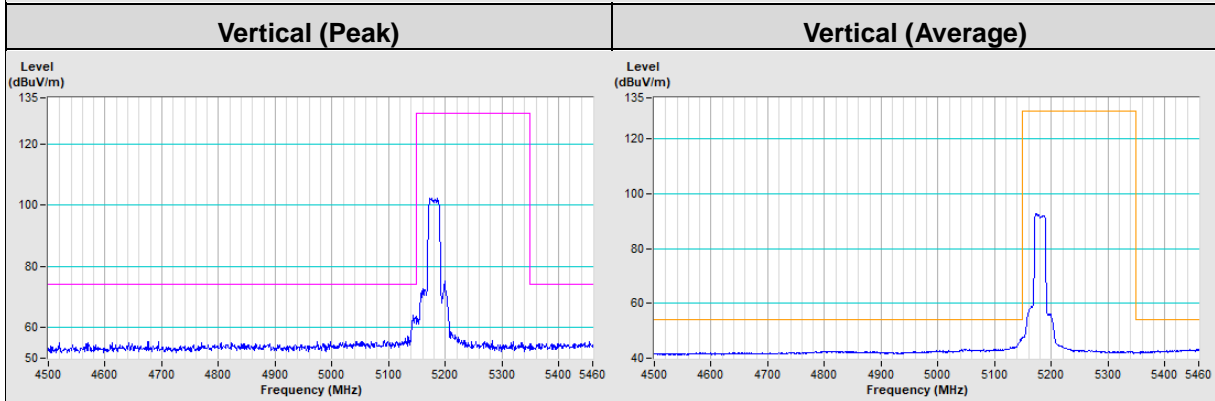
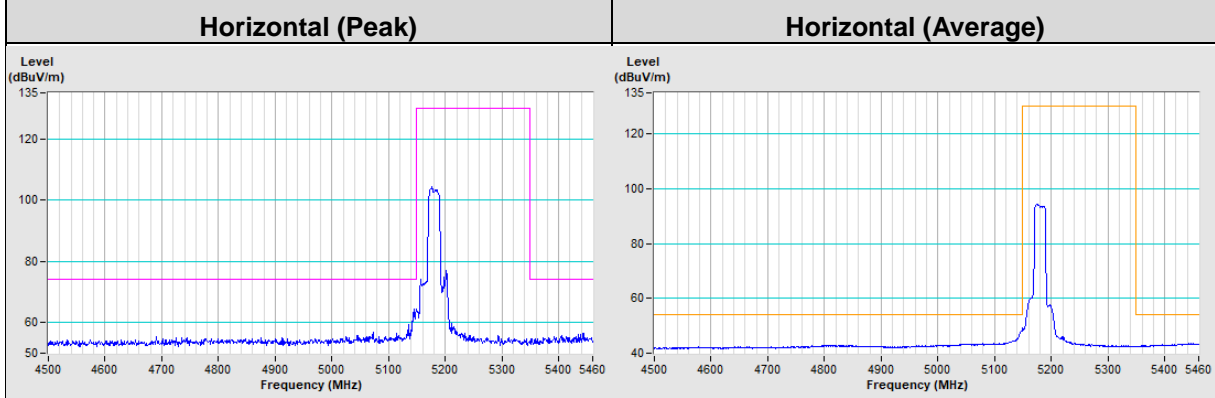
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency,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



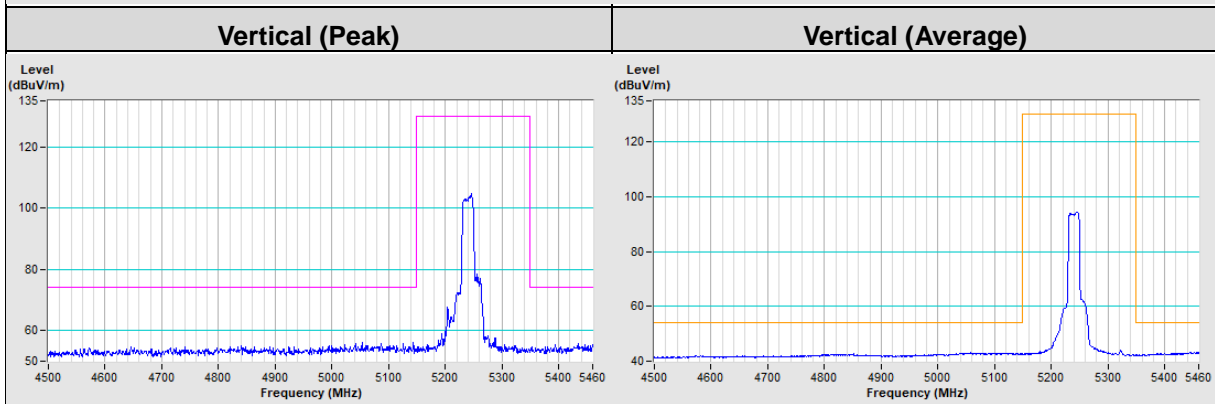
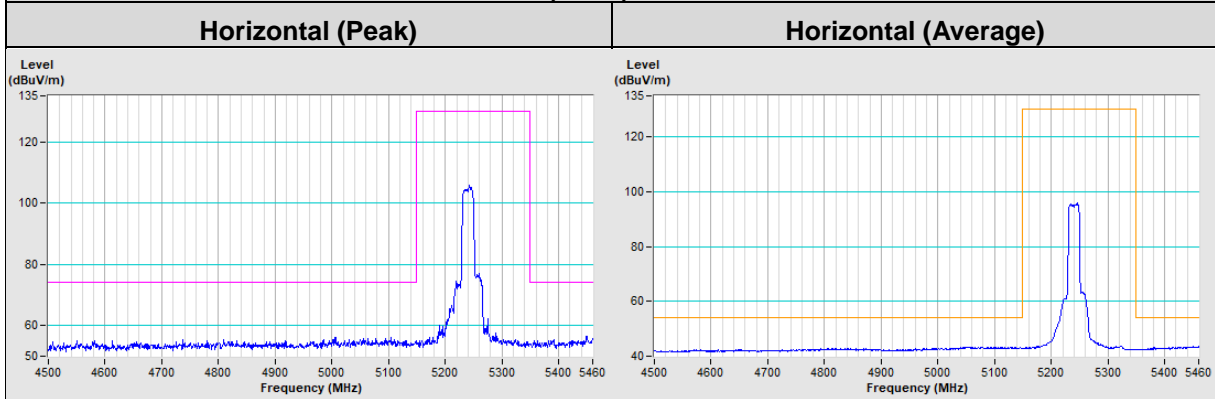
Band Edge Measurement

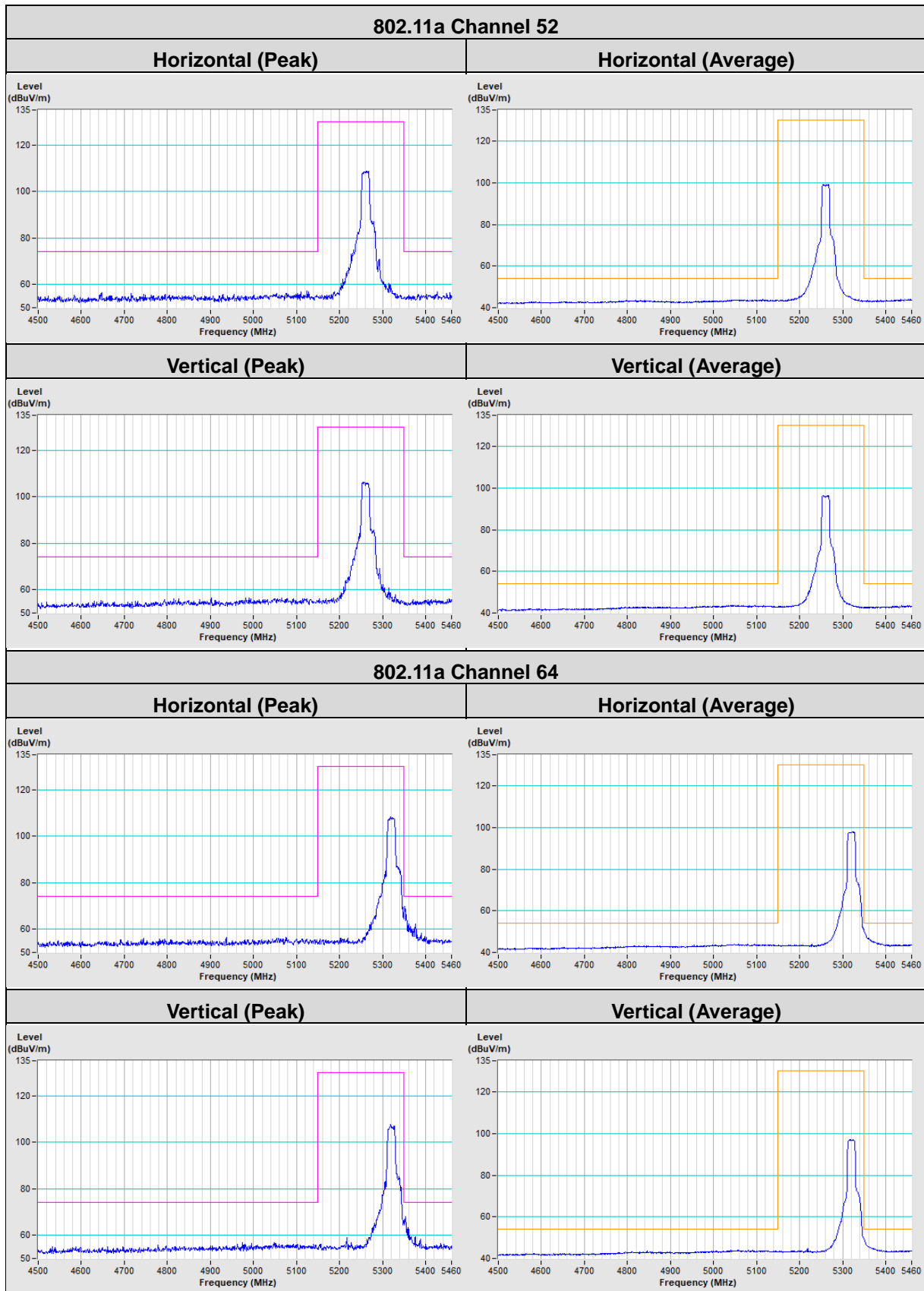


802.11n (HT20) Channel 36

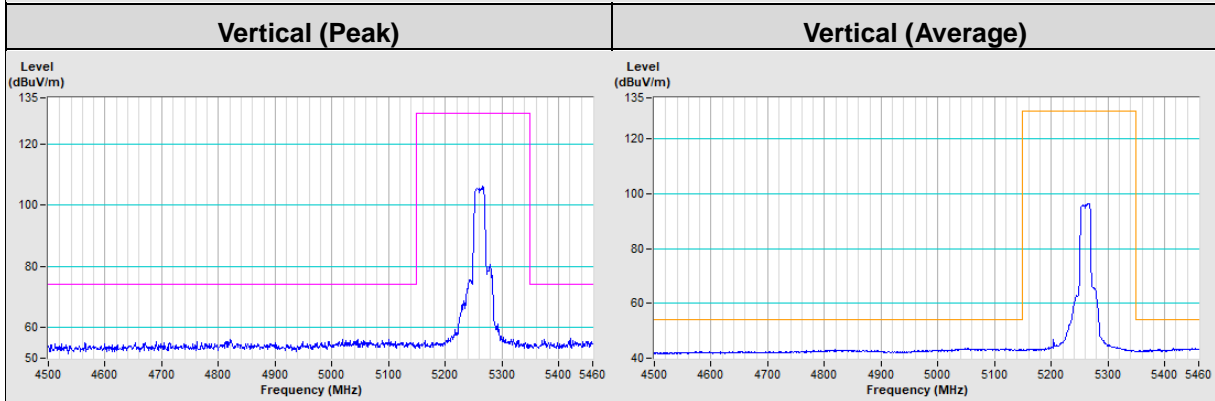
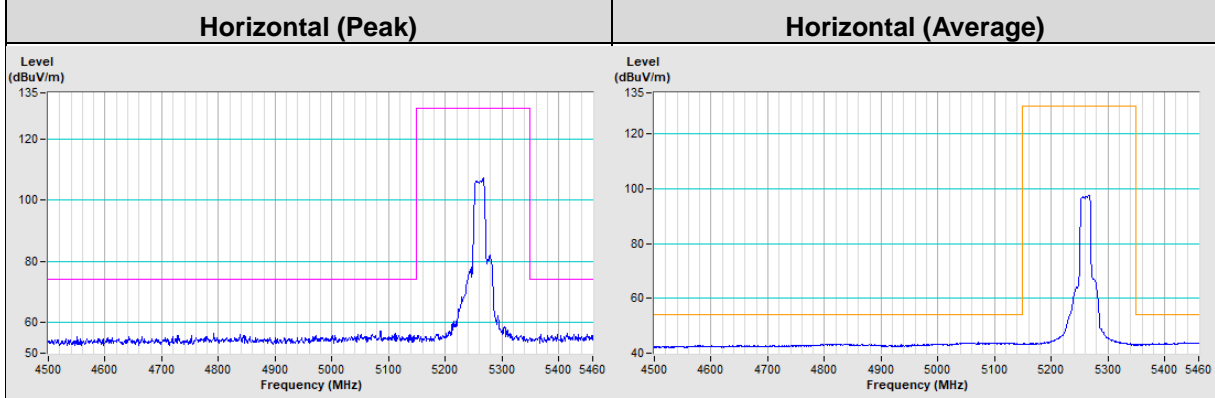


802.11n (HT20) Channel 48

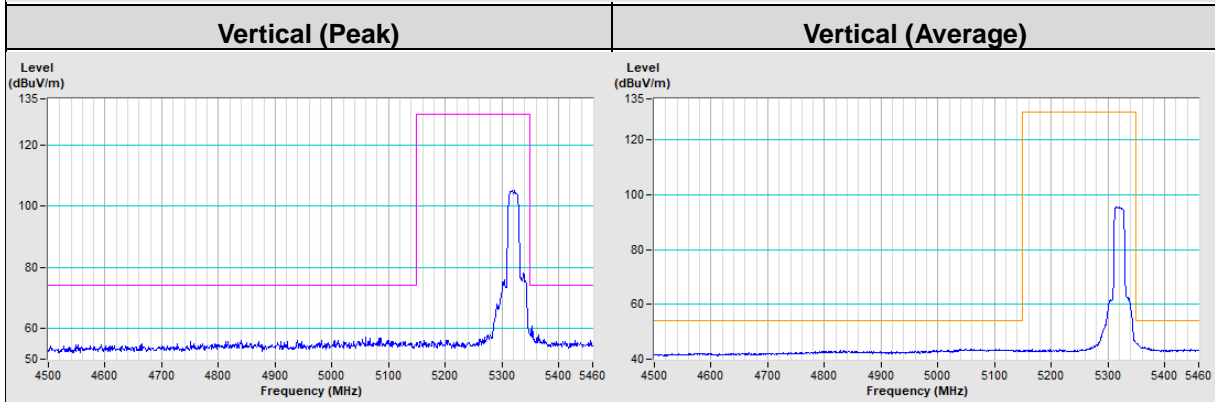
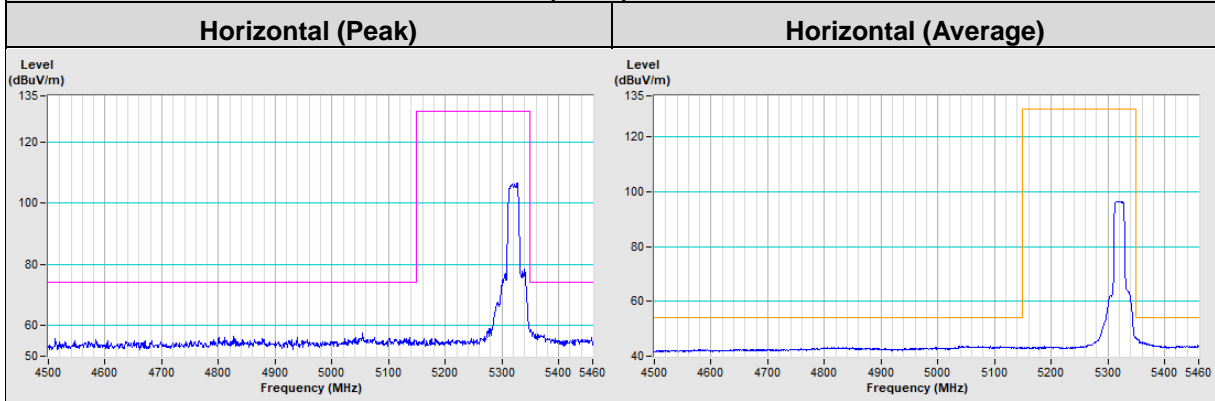


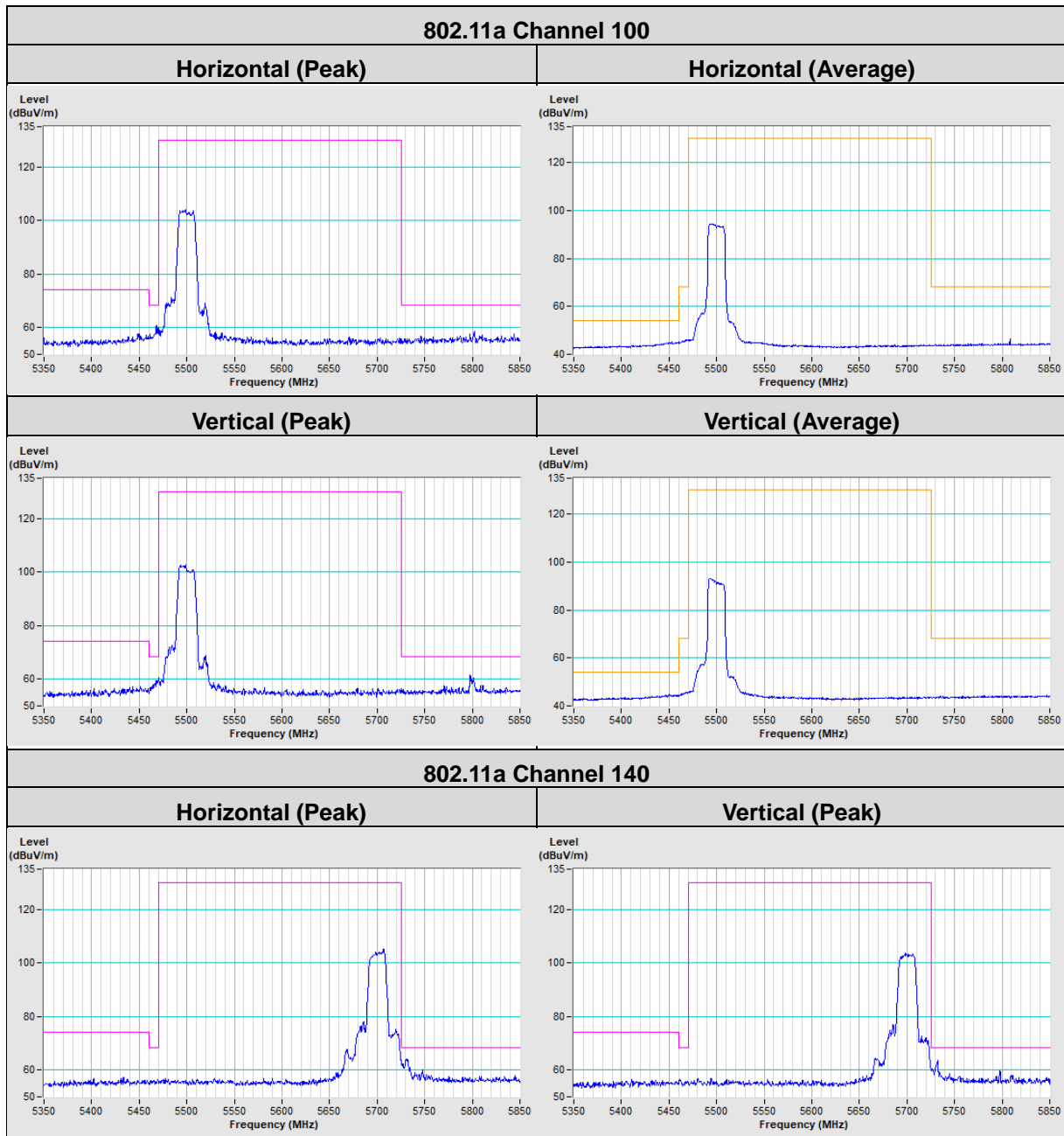


802.11n (HT20) Channel 52

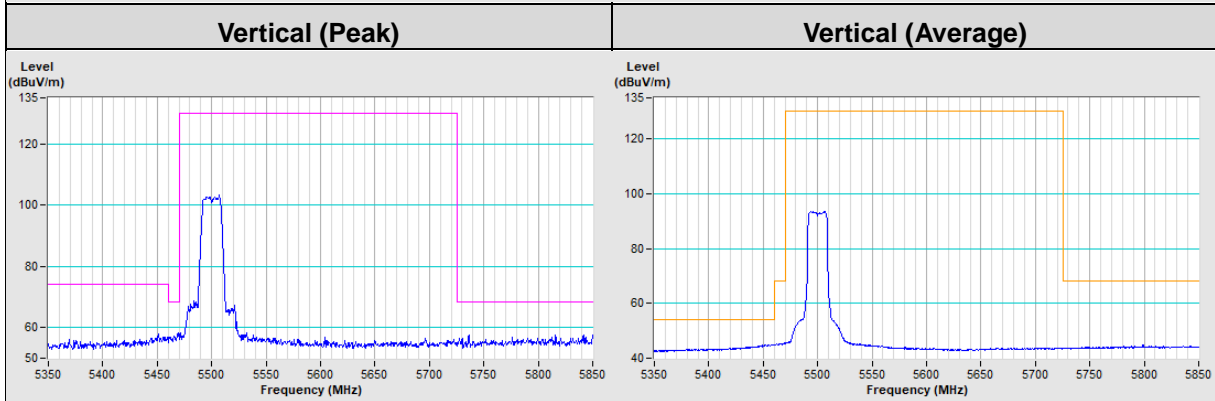
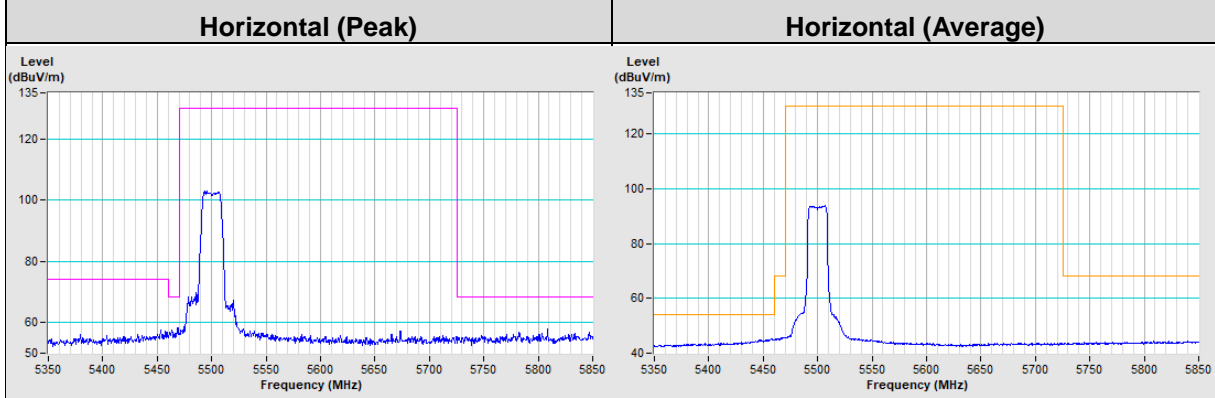


802.11n (HT20) Channel 64

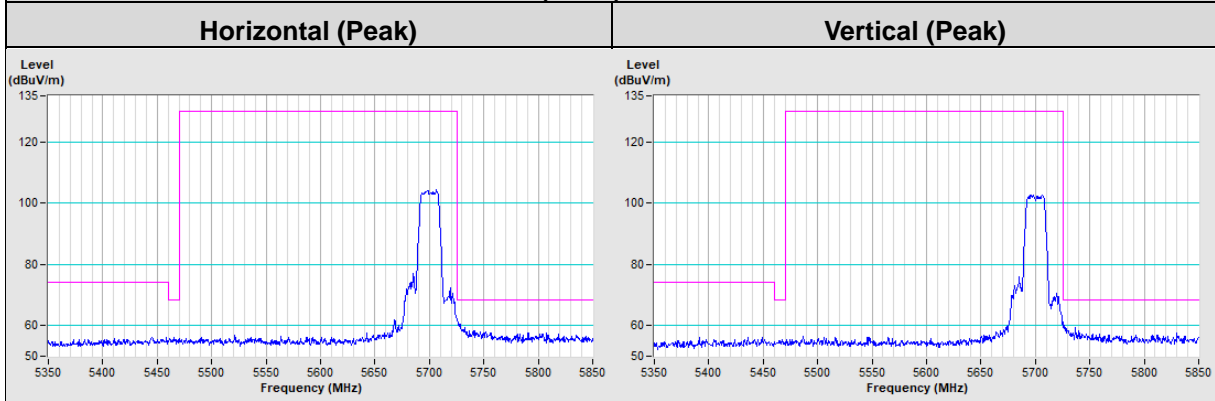


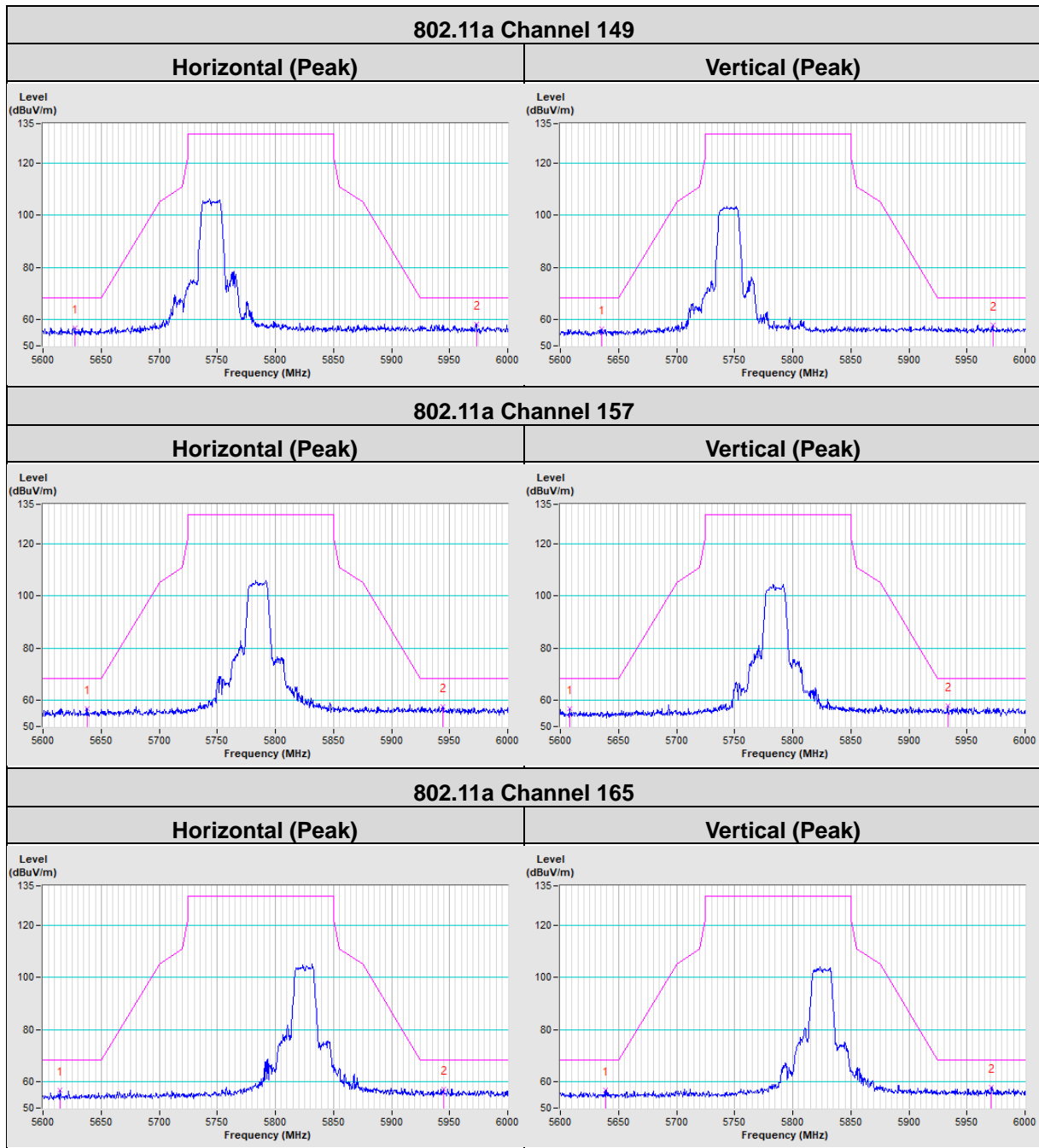


802.11n (HT20) Channel 100

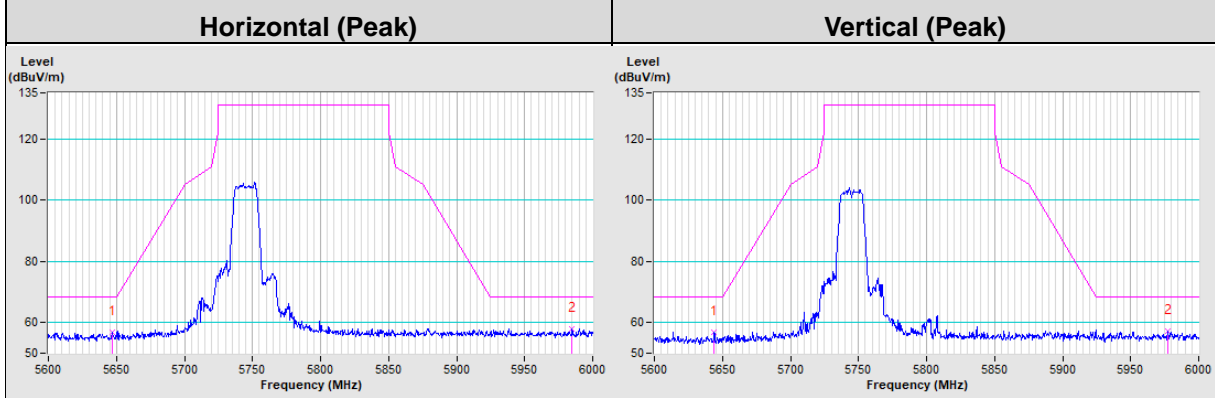


802.11n (HT20) Channel 140

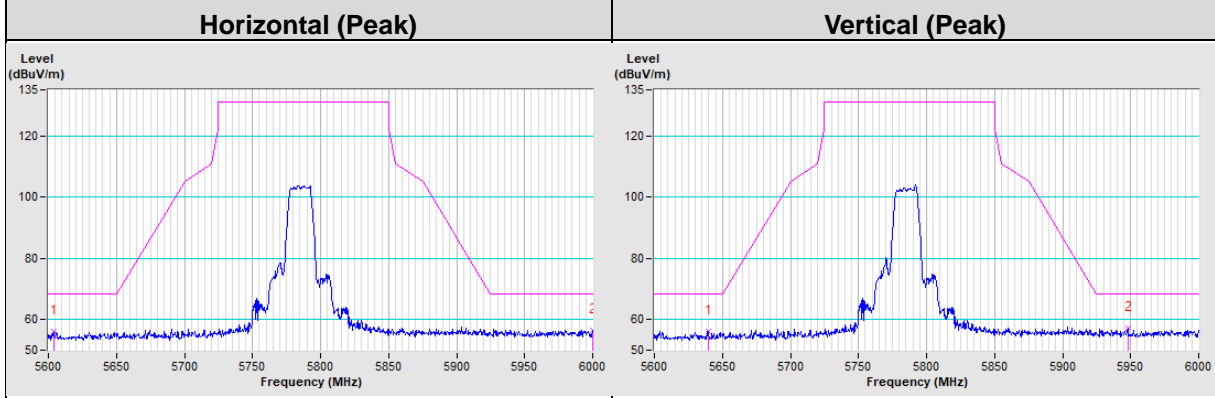




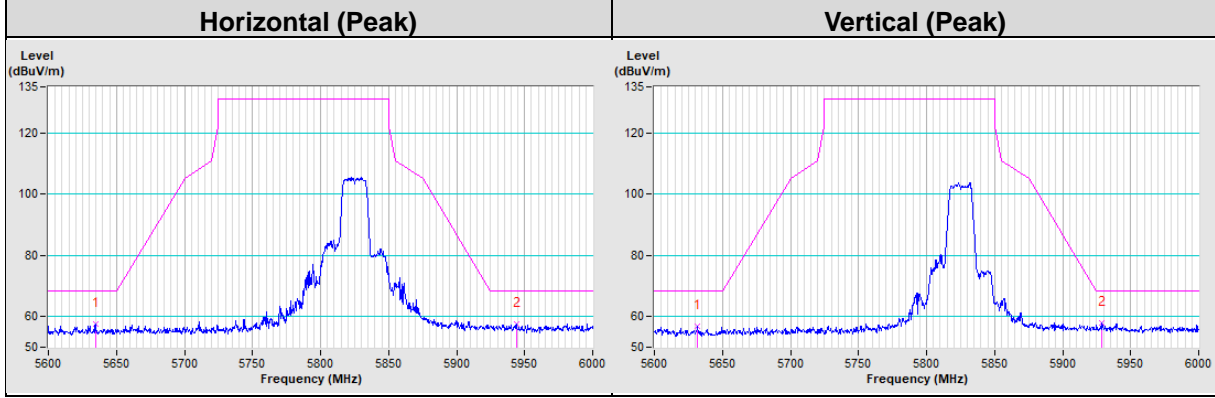
802.11n (HT20) Channel 149



802.11n (HT20) Channel 157



802.11n (HT20) Channel 165



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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