FCC Test Report

Report No.:	RF180611E06-1
FCC ID:	H8NTCG220E27
Test Model:	TCG220-E27
Received Date:	June 11, 2018
Test Date:	June 16 to 30, 2018
Issued Date:	July 18, 2018
Applicant:	ASKEY COMPUTER CORP.
Address:	10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, TAIWAN, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Testing Laboratory
2022

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Release Control Record

Issue No.	Description	Date Issued
RF180611E06-1	Original release.	July 18, 2018

1 Certificate of Conformity

Product:	Cable Modem
Brand:	Askey
Test Model:	TCG220-E27
Sample Status:	ENGINEERING SAMPLE
Applicant:	ASKEY COMPUTER CORP.
Test Date:	June 16 to 30, 2018
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10: 2013

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 EMC characteristics under the conditions specified in this report.

Prepared by : Phoenix Huang , **Date:** July 18, 2018

Phoenix Huang / Specialist

Approved by : , **Date:** July 18, 2018

Max Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -9.00dB at 2.92969MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 10400.00MHz and 10480.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A.

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	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.33 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.10 dB
	6GHz ~ 18GHz	4.85 dB
	18GHz ~ 40GHz	5.24 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Cable Modem
Brand	Askey
Test Model	TCG220-E27
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18~ 5.24GHz, 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20): 9 802.11n (HT40): 4
Output Power	**2.4GHz:** 616.076mW **5GHz:** **5.18 ~ 5.24GHz:** 113.687mW **5.745 ~ 5.825GHz:** 299.696mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x1
Data Cable Supplied	NA

Note:

1. There are WLAN (2.4G) and WLAN (5G) technology used for the EUT. The EUT has below radios as following table:

Radio 1	Radio 2
WLAN (2.4GHz)	WLAN (5GHz)

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3. The EUT must be supplied from power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.
1	SHENZHEN FRECOM	F18L10-120150SPAU	Input: 100-240Vac, 0.6A, 50/60Hz Output: 12V, 1.5A DC output cable: Unshielded 1.5m
2	APD	WB-18Q12FU	Input: 100-240Vac, 0.6A, 50-60Hz Output: 12V, 1.5A DC output cable: Unshielded 1.5m
Note: For radiated emissions test, the EUT was pre-tested with above Adapter 1 & 2, the worst case was found in Adapter 2. Therefore only the test data of the Adapter 2 was recorded in this report.			

4. The antennas provided to the EUT, please refer to the following table:

For 2.4GHz Band					
Ant. No.	Brand	Ant. Net Gain (dBi)	Freq. range (GHz)	Ant. Type	Connecter Type
1	Askey	2.5	2.4~2.4835	PCB	i-pex(MHF)
2		2.5	2.4~2.4835		NA
For 5GHz Band					
Ant. No.	Brand	Ant. Net Gain (dBi)	Freq. range (GHz)	Ant. Type	Connecter Type
1	Askey	2.5	5.15~5.85	Dipole	i-pex(MHF)
2		2.5	5.15~5.85		i-pex(MHF)

5. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	1TX (Fixed Chain 0)	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX

6. 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 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

FOR 5745 ~ 5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	With Adapter 2
2	-	-	√	-	With Adapter 1

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement
Note: "-" means no effect.

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT20)	5180-5240, 5745-5825	36 to 48, 149 to 165	149	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11n (HT20)	5180-5240, 5745-5825	36 to 48, 149 to 165	149	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

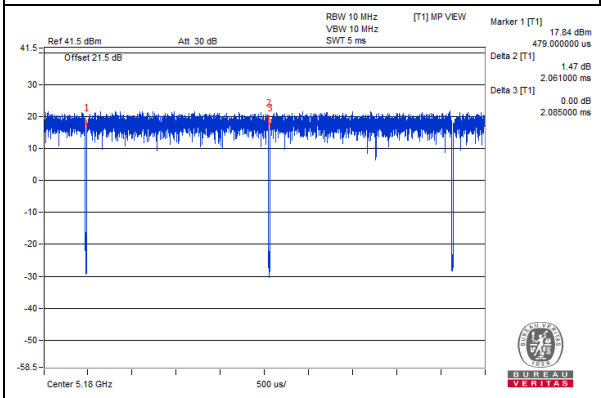
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	22deg. C, 66%RH	120Vac, 60Hz	Steven Chiang
RE<1G	22deg. C, 69%RH	120Vac, 60Hz	Frank Chuang
PLC	23deg. C, 75%RH	120Vac, 60Hz	Andy Ho
	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin

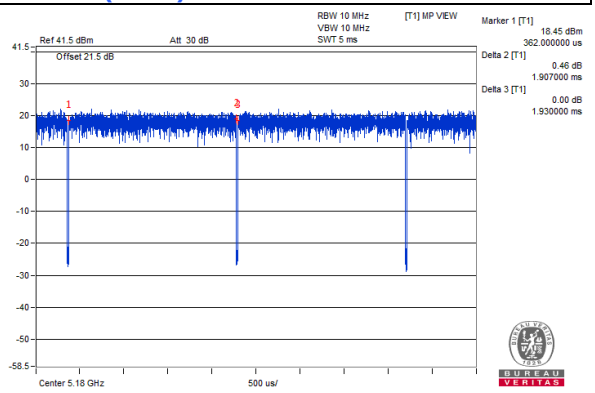
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.
802.11a: Duty cycle = 2.061 ms/2.085 ms = 0.988
802.11n (HT20): Duty cycle = 1.907 ms/1.93 ms = 0.988
802.11n (HT40): Duty cycle = 0.931 ms/0.96 ms = 0.97, Duty factor = 10 * log (1/Duty cycle) = 0.13

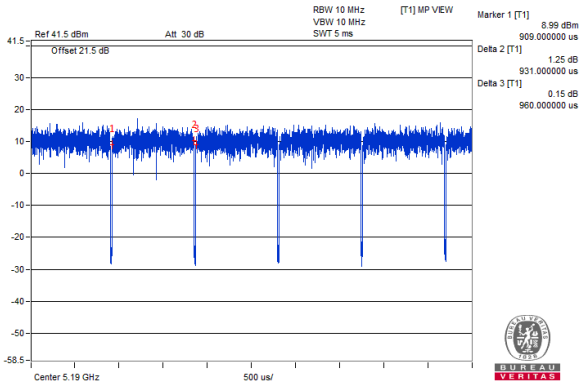
802.11a



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

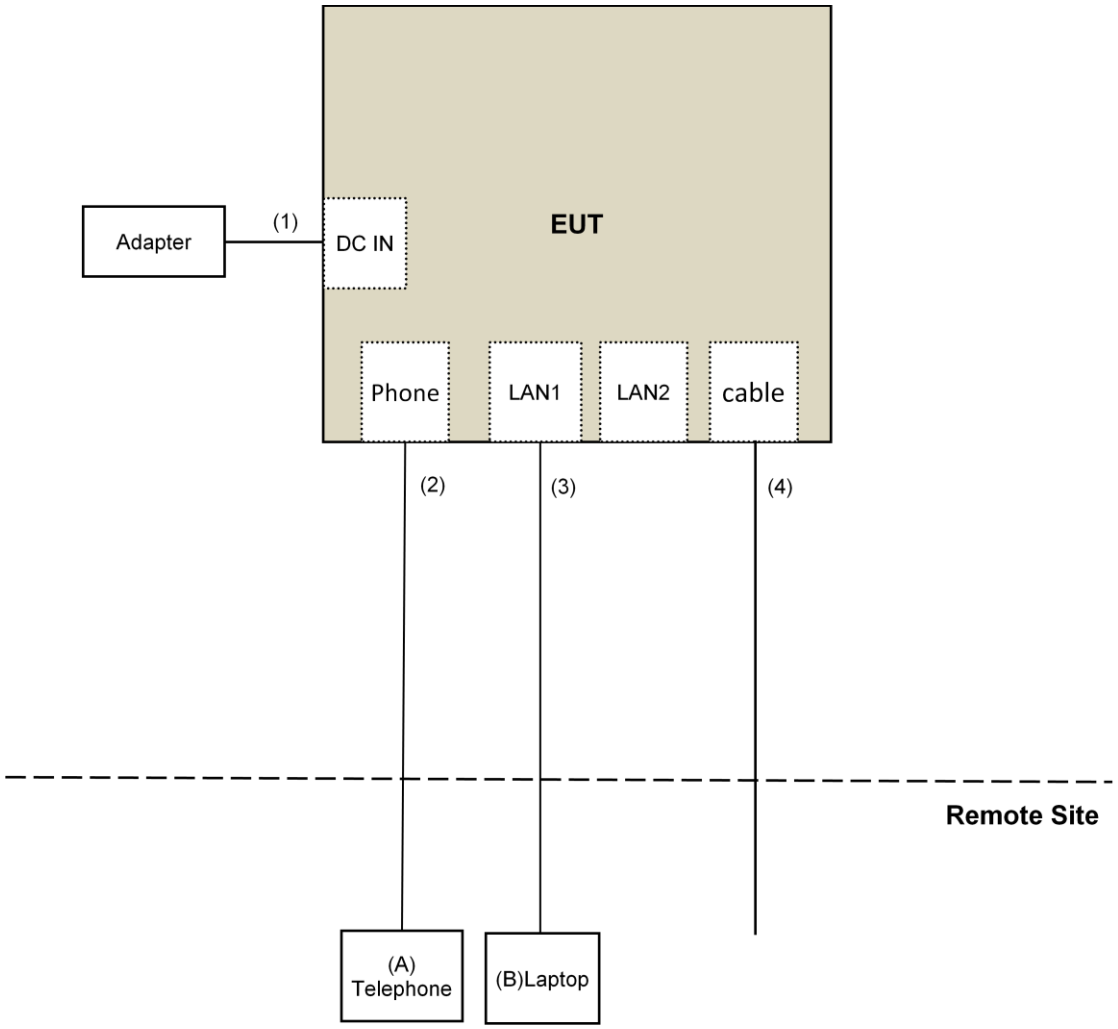
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Telephone	WONDER	WD-303	7C17KA 04011	NA	Provided by Lab
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-11 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	Coaxial Cable	1	10	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

NOTE:

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 1000MHz, 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 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="3">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="3" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK:74 (dBµV/m)</td><td>AV:54 (dBµV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK:-27 (dBm/MHz)</td><td rowspan="3">PK:68.2(dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK:-27 (dBm/MHz) *1
PK:10 (dBm/MHz) *2
PK:15.6 (dBm/MHz) *3
PK:27 (dBm/MHz) *4</td><td>PK: 68.2(dBµV/m) *1
PK:105.2 (dBµV/m) *2
PK: 110.8(dBµV/m) *3
PK:122.2 (dBµV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="5">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 09, 2017	Nov. 08, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-4-1 966-4-2 966-4-3	Mar. 21, 2018	Mar. 20, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980385	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 10, 2018	Jan. 09, 2019
DC Power Supply Topward	6603D	795558	NA	NA
True RMS Clamp Meter FLUKE	325	31130711WS	May 22, 2018	May 21, 2019

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: June 21 to 30, 2018

4.1.3 Test Procedure

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. Parallel, 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

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

f. The test-receiver system was set to peak and average 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.

Note:

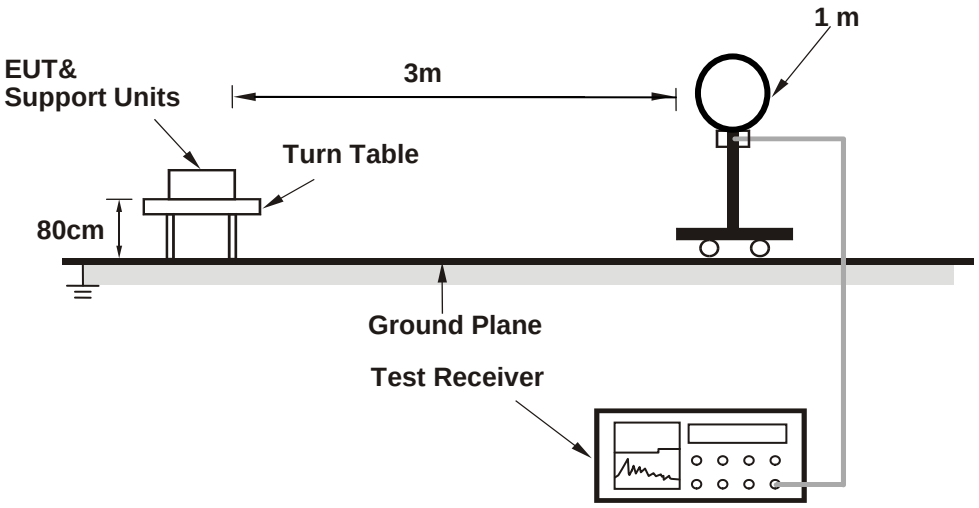
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

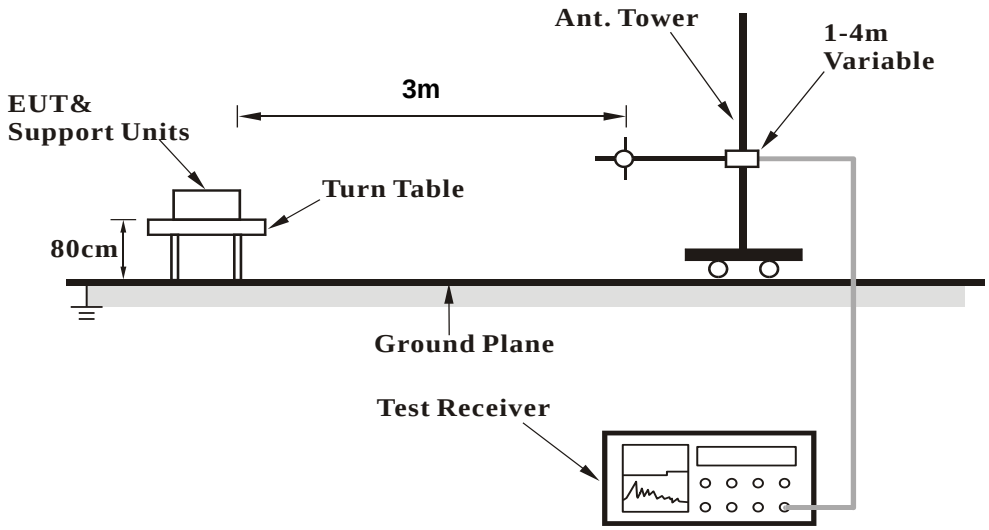
No deviation.

4.1.5 Test Setup

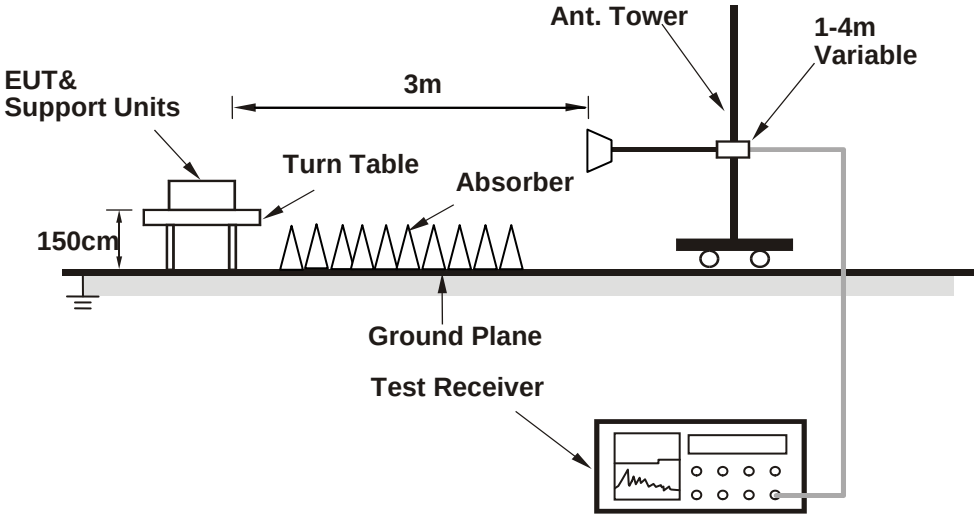
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

a. Connected the EUT with the Laptop which is placed on remote site.
b. Controlling software (MTool 2.0.1.0) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	60.3 PK	74.0	-13.7	1.18 H	193	57.3	3.0
2	5150.00	44.3 AV	54.0	-9.7	1.18 H	193	41.3	3.0
3	*5180.00	102.9 PK			1.18 H	193	100.1	2.8
4	*5180.00	93.1 AV			1.18 H	193	90.3	2.8
5	#10360.00	64.8 PK	74.0	-9.2	1.52 H	145	52.4	12.4
6	#10360.00	50.9 AV	54.0	-3.1	1.52 H	145	38.5	12.4
7	15540.00	47.1 PK	74.0	-26.9	2.32 H	120	34.3	12.8
8	15540.00	35.8 AV	54.0	-18.2	2.32 H	120	23.0	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	69.2 PK	74.0	-4.8	1.50 V	306	66.2	3.0
2	5150.00	53.7 AV	54.0	-0.3	1.50 V	306	50.7	3.0
3	*5180.00	111.0 PK			1.50 V	306	108.2	2.8
4	*5180.00	101.6 AV			1.50 V	306	98.8	2.8
5	#10360.00	66.2 PK	74.0	-7.8	3.56 V	84	53.8	12.4
6	#10360.00	51.2 AV	54.0	-2.8	3.56 V	84	38.8	12.4
7	15540.00	45.5 PK	74.0	-28.5	1.48 V	78	32.7	12.8
8	15540.00	33.4 AV	54.0	-20.6	1.48 V	78	20.6	12.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	103.6 PK			1.15 H	178	100.9	2.7
2	*5200.00	93.8 AV			1.15 H	178	91.1	2.7
3	#10400.00	67.8 PK	74.0	-6.2	1.50 H	145	55.3	12.5
4	#10400.00	53.7 AV	54.0	-0.3	1.50 H	145	41.2	12.5
5	15600.00	47.0 PK	74.0	-27.0	2.42 H	122	34.2	12.8
6	15600.00	35.5 AV	54.0	-18.5	2.42 H	122	22.7	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	111.6 PK			1.50 V	310	108.9	2.7
2	*5200.00	102.1 AV			1.50 V	310	99.4	2.7
3	#10400.00	68.2 PK	74.0	-5.8	3.57 V	84	55.7	12.5
4	#10400.00	53.4 AV	54.0	-0.6	3.57 V	84	40.9	12.5
5	15600.00	45.2 PK	74.0	-28.8	1.56 V	74	32.4	12.8
6	15600.00	32.9 AV	54.0	-21.1	1.56 V	74	20.1	12.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	103.3 PK			1.14 H	196	100.8	2.5
2	*5240.00	93.7 AV			1.14 H	196	91.2	2.5
3	5350.00	49.3 PK	74.0	-24.7	1.14 H	196	46.7	2.6
4	5350.00	38.4 AV	54.0	-15.6	1.14 H	196	35.8	2.6
5	#10480.00	67.4 PK	74.0	-6.6	1.50 H	144	54.4	13.0
6	#10480.00	53.8 AV	54.0	-0.2	1.50 H	144	40.8	13.0
7	15720.00	46.9 PK	74.0	-27.1	2.37 H	114	34.5	12.4
8	15720.00	35.4 AV	54.0	-18.6	2.37 H	114	23.0	12.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	111.3 PK			1.50 V	349	108.8	2.5
2	*5240.00	102.2 AV			1.50 V	349	99.7	2.5
3	5350.00	50.9 PK	74.0	-23.1	1.50 V	349	48.3	2.6
4	5350.00	39.8 AV	54.0	-14.2	1.50 V	349	37.2	2.6
5	#10480.00	68.8 PK	74.0	-5.2	2.96 V	70	55.8	13.0
6	**#10480.00**	**53.9 AV**	**54.0**	**-0.1**	**2.96 V**	**70**	**40.9**	**13.0**
7	15720.00	45.6 PK	74.0	-28.4	1.52 V	70	33.2	12.4
8	15720.00	33.4 AV	54.0	-20.6	1.52 V	70	21.0	12.4

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.94	57.6 PK	68.2	-10.6	1.72 H	220	54.3	3.3
2	*5745.00	105.0 PK			1.72 H	220	101.7	3.3
3	*5745.00	95.7 AV			1.72 H	220	92.4	3.3
4	#5991.27	57.1 PK	68.2	-11.1	1.72 H	220	53.4	3.7
5	11490.00	58.4 PK	74.0	-15.6	1.67 H	54	45.0	13.4
6	11490.00	46.1 AV	54.0	-7.9	1.67 H	54	32.7	13.4
7	#17235.00	55.1 PK	74.0	-18.9	1.49 H	93	38.4	16.7
8	#17235.00	43.5 AV	54.0	-10.5	1.49 H	93	26.8	16.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5639.36	60.6 PK	68.2	-7.6	1.50 V	264	56.3	4.3
2	*5745.00	116.0 PK			1.50 V	264	112.7	3.3
3	*5745.00	106.0 AV			1.50 V	264	102.7	3.3
4	#5948.89	58.0 PK	68.2	-10.2	1.50 V	264	53.4	4.6
5	11490.00	53.8 PK	74.0	-20.2	1.51 V	70	40.4	13.4
6	11490.00	41.8 AV	54.0	-12.2	1.51 V	70	28.4	13.4
7	#17235.00	52.3 PK	74.0	-21.7	2.00 V	88	35.6	16.7
8	#17235.00	39.9 AV	54.0	-14.1	2.00 V	88	23.2	16.7

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.59	56.9 PK	68.2	-11.3	1.73 H	220	53.6	3.3
2	*5785.00	104.1 PK			1.73 H	220	100.8	3.3
3	*5785.00	95.2 AV			1.73 H	220	91.9	3.3
4	#6019.59	56.4 PK	68.2	-11.8	1.73 H	220	52.6	3.8
5	11570.00	59.0 PK	74.0	-15.0	1.63 H	63	45.6	13.4
6	11570.00	46.5 AV	54.0	-7.5	1.63 H	63	33.1	13.4
7	#17355.00	55.5 PK	74.0	-18.5	1.51 H	106	38.2	17.3
8	#17355.00	43.9 AV	54.0	-10.1	1.51 H	106	26.6	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.81	58.5 PK	68.2	-9.7	1.50 V	263	54.2	4.3
2	*5785.00	115.8 PK			1.50 V	263	112.5	3.3
3	*5785.00	105.6 AV			1.50 V	263	102.3	3.3
4	#5939.61	59.6 PK	68.2	-8.6	1.50 V	263	55.0	4.6
5	11570.00	56.4 PK	74.0	-17.6	3.69 V	67	43.0	13.4
6	11570.00	43.6 AV	54.0	-10.4	3.69 V	67	30.2	13.4
7	#17355.00	45.0 PK	74.0	-29.0	1.55 V	55	27.7	17.3
8	#17355.00	32.9 AV	54.0	-21.1	1.55 V	55	15.6	17.3

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5615.76	56.4 PK	68.2	-11.8	1.72 H	215	53.1	3.3
2	*5825.00	104.3 PK			1.72 H	215	100.8	3.5
3	*5825.00	95.4 AV			1.72 H	215	91.9	3.5
4	#5948.25	56.5 PK	68.2	-11.7	1.72 H	215	53.0	3.5
5	11650.00	58.5 PK	74.0	-15.5	1.64 H	52	45.2	13.3
6	11650.00	46.2 AV	54.0	-7.8	1.64 H	52	32.9	13.3
7	#17475.00	54.9 PK	74.0	-19.1	1.49 H	99	36.7	18.2
8	#17475.00	43.2 AV	54.0	-10.8	1.49 H	99	25.0	18.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5626.01	58.9 PK	68.2	-9.3	2.16 V	308	54.5	4.4
2	*5825.00	115.2 PK			2.16 V	308	111.7	3.5
3	*5825.00	105.5 AV			2.16 V	308	102.0	3.5
4	#5973.58	59.7 PK	68.2	-8.5	2.16 V	308	55.1	4.6
5	11650.00	55.7 PK	74.0	-18.3	3.68 V	67	42.4	13.3
6	11650.00	43.0 AV	54.0	-11.0	3.68 V	67	29.7	13.3
7	#17475.00	45.7 PK	74.0	-28.3	1.61 V	64	27.5	18.2
8	#17475.00	33.6 AV	54.0	-20.4	1.61 V	64	15.4	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11n (HT20)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	60.7 PK	74.0	-13.3	1.15 H	198	57.7	3.0
2	5150.00	44.5 AV	54.0	-9.5	1.15 H	198	41.5	3.0
3	*5180.00	102.8 PK			1.15 H	198	100.0	2.8
4	*5180.00	92.6 AV			1.15 H	198	89.8	2.8
5	#10360.00	64.4 PK	74.0	-9.6	1.49 H	153	52.0	12.4
6	#10360.00	50.6 AV	54.0	-3.4	1.49 H	153	38.2	12.4
7	15540.00	46.9 PK	74.0	-27.1	2.37 H	108	34.1	12.8
8	15540.00	35.6 AV	54.0	-18.4	2.37 H	108	22.8	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	68.4 PK	74.0	-5.6	1.50 V	343	65.4	3.0
2	5150.00	53.7 AV	54.0	-0.3	1.50 V	343	50.7	3.0
3	*5180.00	110.7 PK			1.50 V	343	107.9	2.8
4	*5180.00	100.4 AV			1.50 V	343	97.6	2.8
5	#10360.00	66.0 PK	74.0	-8.0	3.60 V	69	53.6	12.4
6	#10360.00	51.0 AV	54.0	-3.0	3.60 V	69	38.6	12.4
7	15540.00	45.8 PK	74.0	-28.2	1.48 V	69	33.0	12.8
8	15540.00	33.7 AV	54.0	-20.3	1.48 V	69	20.9	12.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	102.8 PK			1.14 H	180	100.1	2.7
2	*5200.00	92.8 AV			1.14 H	180	90.1	2.7
3	#10400.00	68.5 PK	74.0	-5.5	1.53 H	146	56.0	12.5
4	**#10400.00**	**53.9 AV**	**54.0**	**-0.1**	**1.53 H**	**146**	**41.4**	**12.5**
5	15600.00	46.1 PK	74.0	-27.9	2.39 H	104	33.3	12.8
6	15600.00	34.9 AV	54.0	-19.1	2.39 H	104	22.1	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	111.5 PK			1.27 V	348	108.8	2.7
2	*5200.00	100.6 AV			1.27 V	348	97.9	2.7
3	#10400.00	68.3 PK	74.0	-5.7	2.92 V	71	55.8	12.5
4	#10400.00	53.8 AV	54.0	-0.2	2.92 V	71	41.3	12.5
5	15600.00	45.3 PK	74.0	-28.7	1.53 V	81	32.5	12.8
6	15600.00	33.3 AV	54.0	-20.7	1.53 V	81	20.5	12.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	104.5 PK			1.14 H	180	102.0	2.5
2	*5240.00	94.2 AV			1.14 H	180	91.7	2.5
3	5350.00	49.2 PK	74.0	-24.8	1.14 H	180	46.6	2.6
4	5350.00	38.1 AV	54.0	-15.9	1.14 H	180	35.5	2.6
5	#10480.00	67.4 PK	74.0	-6.6	1.50 H	155	54.4	13.0
6	#10480.00	53.5 AV	54.0	-0.5	1.50 H	155	40.5	13.0
7	15720.00	47.0 PK	74.0	-27.0	2.41 H	118	34.6	12.4
8	15720.00	35.7 AV	54.0	-18.3	2.41 H	118	23.3	12.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	110.7 PK			1.50 V	360	108.2	2.5
2	*5240.00	101.9 AV			1.50 V	360	99.4	2.5
3	5350.00	51.8 PK	74.0	-22.2	1.50 V	360	49.2	2.6
4	5350.00	39.3 AV	54.0	-14.7	1.50 V	360	36.7	2.6
5	#10480.00	68.4 PK	74.0	-5.6	3.17 V	72	55.4	13.0
6	#10480.00	53.7 AV	54.0	-0.3	3.17 V	72	40.7	13.0
7	15720.00	45.7 PK	74.0	-28.3	1.50 V	54	33.3	12.4
8	15720.00	33.6 AV	54.0	-20.4	1.50 V	54	21.2	12.4

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5598.94	55.8 PK	68.2	-12.4	1.68 H	230	52.6	3.2
2	*5745.00	104.1 PK			1.68 H	230	100.8	3.3
3	*5745.00	94.8 AV			1.68 H	230	91.5	3.3
4	#5973.57	55.9 PK	68.2	-12.3	1.68 H	230	52.3	3.6
5	11490.00	58.2 PK	74.0	-15.8	1.64 H	42	44.8	13.4
6	11490.00	45.7 AV	54.0	-8.3	1.64 H	42	32.3	13.4
7	#17235.00	54.9 PK	74.0	-19.1	1.45 H	81	38.2	16.7
8	#17235.00	43.5 AV	54.0	-10.5	1.45 H	81	26.8	16.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5634.75	64.9 PK	68.2	-3.3	1.50 V	262	60.6	4.3
2	*5745.00	116.0 PK			1.50 V	262	112.7	3.3
3	*5745.00	105.5 AV			1.50 V	262	102.2	3.3
4	#6012.31	59.9 PK	68.2	-8.3	1.50 V	262	55.2	4.7
5	11490.00	55.9 PK	74.0	-18.1	3.72 V	85	42.5	13.4
6	11490.00	43.0 AV	54.0	-11.0	3.72 V	85	29.6	13.4
7	#17235.00	46.3 PK	74.0	-27.7	1.53 V	58	29.6	16.7
8	#17235.00	33.8 AV	54.0	-20.2	1.53 V	58	17.1	16.7

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.36	56.2 PK	68.2	-12.0	1.67 H	226	52.9	3.3
2	*5785.00	103.5 PK			1.67 H	226	100.2	3.3
3	*5785.00	94.2 AV			1.67 H	226	90.9	3.3
4	#6014.49	56.6 PK	68.2	-11.6	1.67 H	226	52.8	3.8
5	11570.00	58.2 PK	74.0	-15.8	1.65 H	40	44.8	13.4
6	11570.00	45.8 AV	54.0	-8.2	1.65 H	40	32.4	13.4
7	#17355.00	55.3 PK	74.0	-18.7	1.47 H	87	38.0	17.3
8	#17355.00	43.8 AV	54.0	-10.2	1.47 H	87	26.5	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.55	58.6 PK	68.2	-9.6	1.50 V	262	54.3	4.3
2	*5785.00	114.6 PK			1.51 V	262	111.3	3.3
3	*5785.00	104.7 AV			1.51 V	262	101.4	3.3
4	#5976.66	58.7 PK	68.2	-9.5	1.50 V	262	54.1	4.6
5	11570.00	55.7 PK	74.0	-18.3	3.69 V	97	42.3	13.4
6	11570.00	43.1 AV	54.0	-10.9	3.69 V	97	29.7	13.4
7	#17355.00	46.1 PK	74.0	-27.9	1.60 V	69	28.8	17.3
8	#17355.00	33.8 AV	54.0	-20.2	1.60 V	69	16.5	17.3

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5568.48	56.9 PK	68.2	-11.3	1.71 H	228	53.7	3.2
2	*5825.00	103.1 PK			1.71 H	228	99.6	3.5
3	*5825.00	93.8 AV			1.71 H	228	90.3	3.5
4	#5946.23	57.5 PK	68.2	-10.7	1.71 H	228	54.0	3.5
5	11650.00	58.8 PK	74.0	-15.2	1.72 H	45	45.5	13.3
6	11650.00	46.3 AV	54.0	-7.7	1.72 H	45	33.0	13.3
7	#17475.00	55.3 PK	74.0	-18.7	1.53 H	100	37.1	18.2
8	#17475.00	43.6 AV	54.0	-10.4	1.53 H	100	25.4	18.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5585.53	59.1 PK	68.2	-9.1	1.59 V	253	54.8	4.3
2	*5825.00	114.0 PK			1.59 V	253	110.5	3.5
3	*5825.00	104.6 AV			1.59 V	253	101.1	3.5
4	#5937.72	59.3 PK	68.2	-8.9	1.59 V	253	54.7	4.6
5	11650.00	55.8 PK	74.0	-18.2	3.74 V	74	42.5	13.3
6	11650.00	43.2 AV	54.0	-10.8	3.74 V	74	29.9	13.3
7	#17475.00	45.2 PK	74.0	-28.8	1.52 V	64	27.0	18.2
8	#17475.00	33.0 AV	54.0	-21.0	1.52 V	64	14.8	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11n (HT40)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	60.5 PK	74.0	-13.5	1.15 H	192	57.5	3.0
2	5150.00	44.3 AV	54.0	-9.7	1.15 H	192	41.3	3.0
3	*5190.00	94.5 PK			1.15 H	192	91.7	2.8
4	*5190.00	84.6 AV			1.15 H	192	81.8	2.8
5	5350.00	47.9 PK	74.0	-26.1	1.15 H	192	45.3	2.6
6	5350.00	37.4 AV	54.0	-16.6	1.15 H	192	34.8	2.6
7	#10380.00	56.2 PK	74.0	-17.8	1.53 H	140	43.8	12.4
8	#10380.00	43.3 AV	54.0	-10.7	1.53 H	140	30.9	12.4
9	15570.00	45.6 PK	74.0	-28.4	1.41 H	121	32.8	12.8
10	15570.00	33.5 AV	54.0	-20.5	1.41 H	121	20.7	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	72.5 PK	74.0	-1.5	1.50 V	234	69.5	3.0
2	5150.00	53.8 AV	54.0	-0.2	1.50 V	234	50.8	3.0
3	*5190.00	102.8 PK			1.50 V	234	100.0	2.8
4	*5190.00	92.3 AV			1.50 V	234	89.5	2.8
5	5350.00	48.4 PK	74.0	-25.6	1.50 V	234	45.8	2.6
6	5350.00	36.6 AV	54.0	-17.4	1.50 V	234	34.0	2.6
7	#10380.00	55.7 PK	74.0	-18.3	3.72 V	71	43.3	12.4
8	#10380.00	42.8 AV	54.0	-11.2	3.72 V	71	30.4	12.4
9	15570.00	46.0 PK	74.0	-28.0	1.57 V	70	33.2	12.8
10	15570.00	33.4 AV	54.0	-20.6	1.57 V	70	20.6	12.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (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	47.5 PK	74.0	-26.5	1.12 H	184	44.5	3.0
2	5150.00	37.0 AV	54.0	-17.0	1.12 H	184	34.0	3.0
3	*5230.00	100.3 PK			1.12 H	184	97.8	2.5
4	*5230.00	90.1 AV			1.12 H	184	87.6	2.5
5	5350.00	48.3 PK	74.0	-25.7	1.12 H	184	45.7	2.6
6	5350.00	37.6 AV	54.0	-16.4	1.12 H	184	35.0	2.6
7	#10460.00	67.8 PK	74.0	-6.2	1.50 H	147	54.9	12.9
8	#10460.00	53.4 AV	54.0	-0.6	1.50 H	147	40.5	12.9
9	15690.00	46.2 PK	74.0	-27.8	1.45 H	106	33.8	12.4
10	15690.00	34.2 AV	54.0	-19.8	1.45 H	106	21.8	12.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (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	65.6 PK	74.0	-8.4	1.79 V	234	62.6	3.0
2	5150.00	47.3 AV	54.0	-6.7	1.79 V	234	44.3	3.0
3	*5230.00	108.1 PK			1.79 V	234	105.6	2.5
4	*5230.00	98.2 AV			1.79 V	234	95.7	2.5
5	5350.00	55.5 PK	74.0	-18.5	1.79 V	234	52.9	2.6
6	5350.00	42.2 AV	54.0	-11.8	1.79 V	234	39.6	2.6
7	#10460.00	66.8 PK	74.0	-7.2	3.24 V	71	53.9	12.9
8	#10460.00	53.1 AV	54.0	-0.9	3.24 V	71	40.2	12.9
9	15690.00	45.8 PK	74.0	-28.2	1.59 V	75	33.4	12.4
10	15690.00	33.4 AV	54.0	-20.6	1.59 V	75	21.0	12.4

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.37	63.1 PK	68.2	-5.1	1.85 H	221	59.9	3.2
2	*5755.00	101.5 PK			1.85 H	221	98.2	3.3
3	*5755.00	90.4 AV			1.85 H	221	87.1	3.3
4	#5960.69	57.4 PK	68.2	-10.8	1.85 H	221	53.9	3.5
5	11510.00	52.1 PK	74.0	-21.9	1.61 H	58	38.7	13.4
6	11510.00	39.6 AV	54.0	-14.4	1.61 H	58	26.2	13.4
7	#17265.00	46.2 PK	74.0	-27.8	1.46 H	108	29.4	16.8
8	#17265.00	34.2 AV	54.0	-19.8	1.46 H	108	17.4	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.31	65.4 PK	68.2	-2.8	1.50 V	264	61.1	4.3
2	*5755.00	108.1 PK			1.50 V	264	104.8	3.3
3	*5755.00	98.6 AV			1.50 V	264	95.3	3.3
4	#6011.02	59.4 PK	68.2	-8.8	1.50 V	264	54.7	4.7
5	11510.00	51.3 PK	74.0	-22.7	3.72 V	82	37.9	13.4
6	11510.00	41.0 AV	54.0	-13.0	3.72 V	82	27.6	13.4
7	#17265.00	45.5 PK	74.0	-28.5	1.56 V	53	28.7	16.8
8	#17265.00	33.3 AV	54.0	-20.7	1.56 V	53	16.5	16.8

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5650.91	58.6 PK	68.9	-10.3	1.81 H	219	55.4	3.2
2	*5795.00	103.4 PK			1.81 H	219	100.1	3.3
3	*5795.00	92.5 AV			1.81 H	219	89.2	3.3
4	#5932.78	58.7 PK	68.2	-9.5	1.81 H	219	55.1	3.6
5	11590.00	51.6 PK	74.0	-22.4	1.60 H	43	38.2	13.4
6	11590.00	39.1 AV	54.0	-14.9	1.60 H	43	25.7	13.4
7	#17385.00	45.7 PK	74.0	-28.3	1.40 H	109	28.2	17.5
8	#17385.00	33.8 AV	54.0	-20.2	1.40 H	109	16.3	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5646.59	66.1 PK	68.2	-2.1	1.50 V	257	61.8	4.3
2	*5795.00	110.6 PK			1.50 V	257	107.3	3.3
3	*5795.00	100.8 AV			1.50 V	257	97.5	3.3
4	#5933.44	62.4 PK	68.2	-5.8	1.50 V	257	57.8	4.6
5	11590.00	54.6 PK	74.0	-19.4	3.73 V	61	41.2	13.4
6	11590.00	44.3 AV	54.0	-9.7	3.73 V	61	30.9	13.4
7	#17385.00	45.1 PK	74.0	-28.9	1.50 V	63	27.6	17.5
8	#17385.00	33.2 AV	54.0	-20.8	1.50 V	63	15.7	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Data:

802.11n (HT20)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.02	35.2 QP	40.0	-4.8	1.00 H	206	44.2	-9.0
2	88.25	31.8 QP	43.5	-11.7	2.00 H	110	45.4	-13.6
3	187.46	31.3 QP	43.5	-12.2	1.50 H	115	41.6	-10.3
4	204.48	36.0 QP	43.5	-7.5	1.50 H	258	47.1	-11.1
5	344.45	32.2 QP	46.0	-13.8	1.00 H	316	38.1	-5.9
6	499.99	32.3 QP	46.0	-13.7	1.50 H	326	34.1	-1.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	88.98	35.5 QP	43.5	-8.0	1.50 V	80	49.1	-13.6
2	180.35	28.0 QP	43.5	-15.5	1.00 V	82	37.5	-9.5
3	335.50	33.3 QP	46.0	-12.7	1.50 V	354	39.4	-6.1
4	400.01	31.6 QP	46.0	-14.4	1.50 V	84	35.8	-4.2
5	500.01	31.9 QP	46.0	-14.1	1.00 V	248	33.7	-1.8
6	723.33	30.9 QP	46.0	-15.1	1.50 V	360	28.8	2.1

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 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 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Nov. 01, 2017	Oct. 31, 2018
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Nov. 15, 2017	Nov. 14, 2018
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 04, 2018	June 03, 2019
50 ohms Terminator	N/A	EMC-02	Sep. 22, 2017	Sep. 21, 2018
RF Cable	5D-FB	COCCAB-001	Sep. 29, 2017	Sep. 28, 2018
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 16, 2018	Mar. 15, 2019
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: June 16 to 18, 2018

4.2.3 Test Procedure

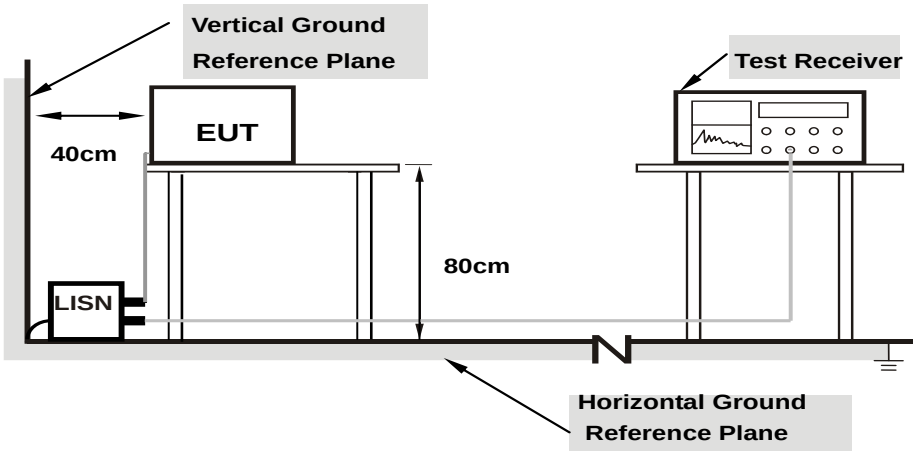
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

Note: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 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).

4.2.6 EUT Operating Condition

Same as 4.1.6.

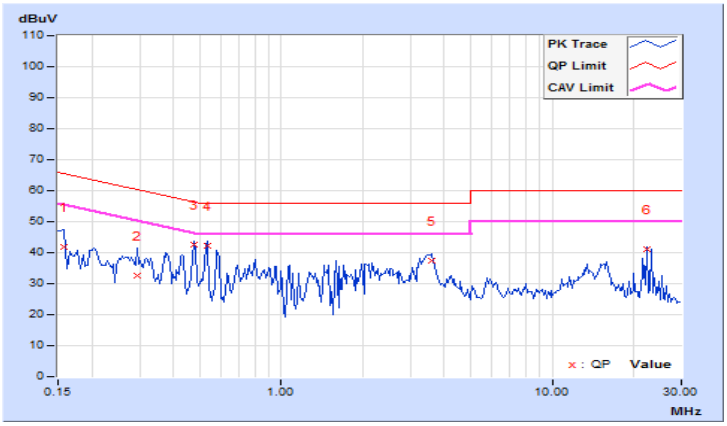
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.05	31.94	18.85	41.99	28.90	65.58	55.58	-23.59	-26.68
2	0.29453	10.09	22.35	11.98	32.44	22.07	60.40	50.40	-27.96	-28.33
3	0.47422	10.13	32.36	24.97	42.49	35.10	56.44	46.44	-13.95	-11.34
4	0.53281	10.13	32.12	26.04	42.25	36.17	56.00	46.00	-13.75	-9.83
5	3.57813	10.31	26.94	17.80	37.25	28.11	56.00	46.00	-18.75	-17.89
6	22.34375	11.43	29.76	28.29	41.19	39.72	60.00	50.00	-18.81	-10.28

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

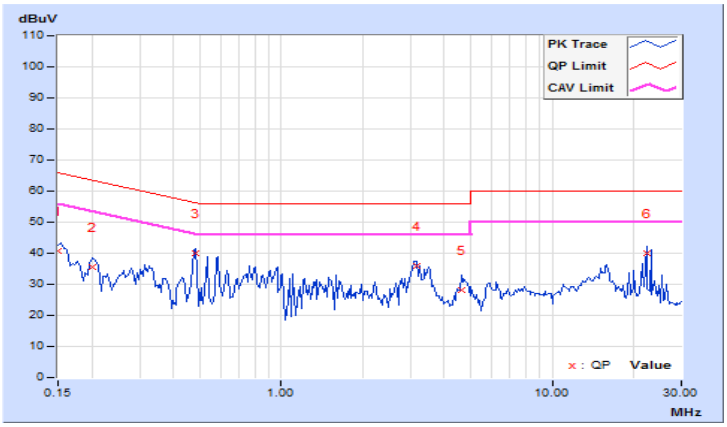


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.95	30.81	19.49	40.76	29.44	66.00	56.00	-25.24	-26.56
2	0.20078	9.97	25.42	13.04	35.39	23.01	63.58	53.58	-28.19	-30.57
3	0.48203	10.02	30.01	22.86	40.03	32.88	56.30	46.30	-16.27	-13.42
4	3.15234	10.15	25.74	15.46	35.89	25.61	56.00	46.00	-20.11	-20.39
5	4.62891	10.23	18.07	10.06	28.30	20.29	56.00	46.00	-27.70	-25.71
6	22.34375	11.19	28.87	23.01	40.06	34.20	60.00	50.00	-19.94	-15.80

Remarks:

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



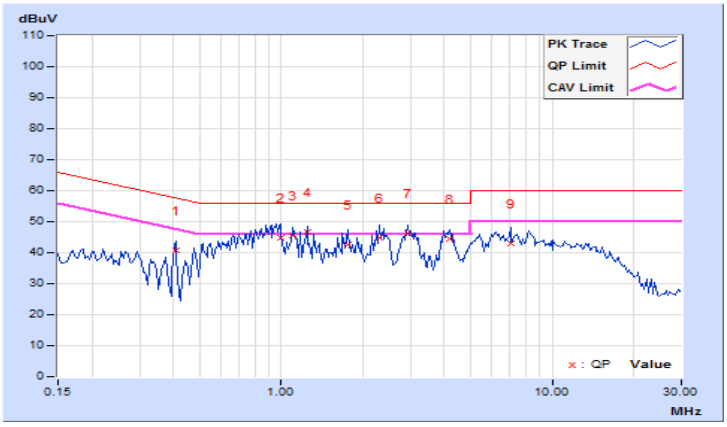
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.40781	10.12	30.58	23.96	40.70	34.08	57.69	47.69	-16.99	-13.61
2	0.98984	10.17	34.64	26.41	44.81	36.58	56.00	46.00	-11.19	-9.42
3	1.10938	10.18	35.20	25.03	45.38	35.21	56.00	46.00	-10.62	-10.79
4	1.24609	10.18	36.48	24.73	46.66	34.91	56.00	46.00	-9.34	-11.09
5	1.76172	10.21	32.31	22.31	42.52	32.52	56.00	46.00	-13.48	-13.48
6	2.31641	10.24	34.40	25.80	44.64	36.04	56.00	46.00	-11.36	-9.96
7	**2.92969**	**10.28**	**35.90**	**26.72**	**46.18**	**37.00**	**56.00**	**46.00**	**-9.82**	**-9.00**
8	4.17969	10.35	34.12	25.21	44.47	35.56	56.00	46.00	-11.53	-10.44
9	7.07031	10.53	32.56	25.66	43.09	36.19	60.00	50.00	-16.91	-13.81

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

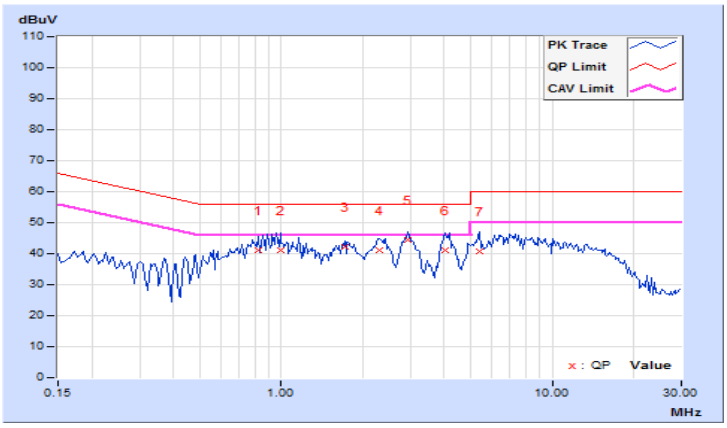


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.82188	10.03	31.05	21.69	41.08	31.72	56.00	46.00	-14.92	-14.28
2	0.99375	10.04	31.13	24.17	41.17	34.21	56.00	46.00	-14.83	-11.79
3	1.71094	10.08	32.03	23.44	42.11	33.52	56.00	46.00	-13.89	-12.48
4	2.31250	10.11	31.15	24.11	41.26	34.22	56.00	46.00	-14.74	-11.78
5	2.94141	10.14	34.41	26.54	44.55	36.68	56.00	46.00	-11.45	-9.32
6	4.01172	10.19	30.79	23.83	40.98	34.02	56.00	46.00	-15.02	-11.98
7	5.38281	10.27	30.34	22.73	40.61	33.00	60.00	50.00	-19.39	-17.00

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

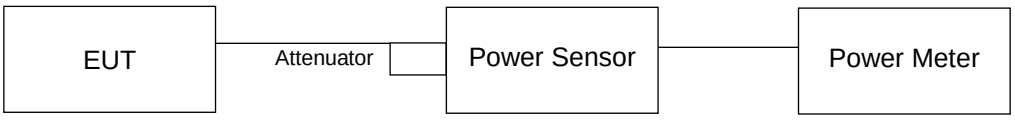
*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 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.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 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. Duty factor is not added to measured value.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	16.11	16.54	85.914	19.34	30	Pass
40	5200	17.16	17.37	106.576	20.28	30	Pass
48	5240	17.08	17.24	104.016	20.17	30	Pass
149	5745	21.83	21.59	296.617	24.72	30	Pass
157	5785	21.47	21.64	286.162	24.57	30	Pass
165	5825	21.33	21.19	267.353	24.27	30	Pass

802.11n (HT20)

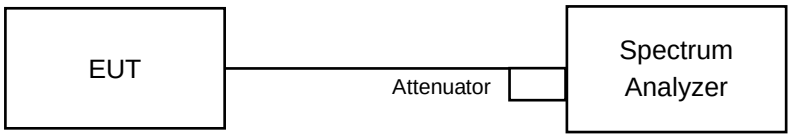
Chan.	Chan. Freq. (MHz)	Maximum Conducted (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	16.35	16.73	90.25	19.55	30	Pass
40	5200	17.03	17.33	104.541	20.19	30	Pass
48	5240	17.42	17.67	113.687	20.56	30	Pass
149	5745	21.87	21.64	299.696	24.77	30	Pass
157	5785	21.45	21.67	286.53	24.57	30	Pass
165	5825	21.26	21.31	268.867	24.30	30	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	11.33	11.61	28.071	14.48	30	Pass
46	5230	17.20	17.60	110.025	20.41	30	Pass
151	5755	17.72	18.81	135.189	21.31	30	Pass
159	5795	21.69	21.53	289.804	24.62	30	Pass

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 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 SAMPLE. 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.

4.4.4 Test Results

802.11a

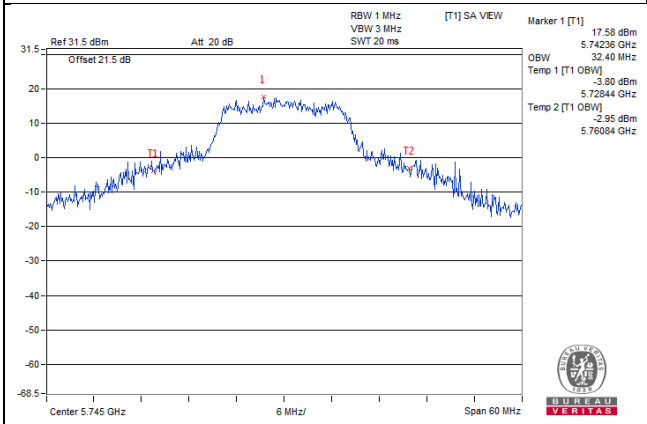
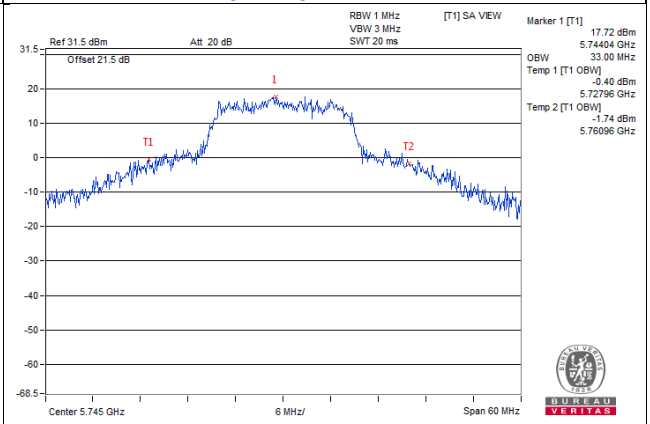
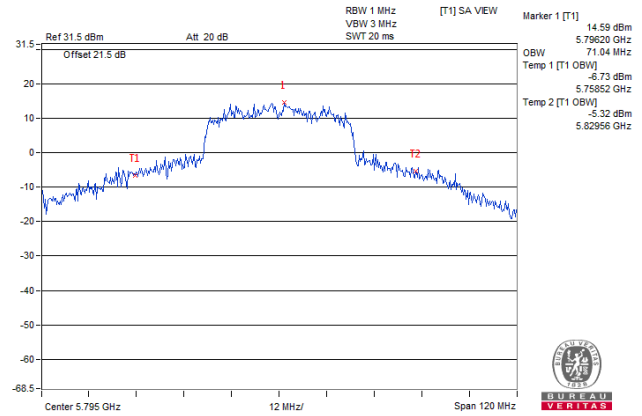
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.92	16.92
40	5200	16.92	17.16
48	5240	16.92	17.40
149	5745	32.40	27.72
157	5785	29.88	27.60
165	5825	28.20	24.84

802.11n (HT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.00	18.00
40	5200	18.12	18.12
48	5240	18.00	18.12
149	5745	33.00	29.28
157	5785	32.64	29.28
165	5825	30.36	26.52

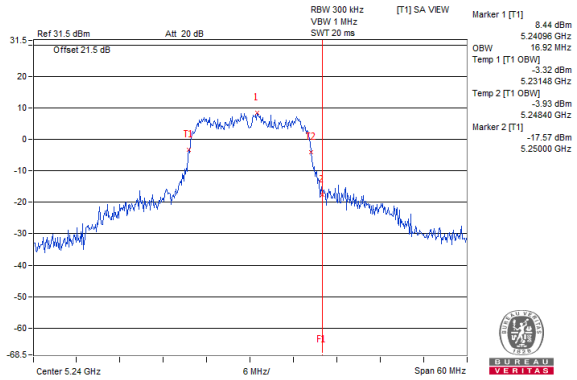
802.11 (HT40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.72	36.72
46	5230	38.64	39.12
151	5755	40.80	44.16
159	5795	71.04	63.84

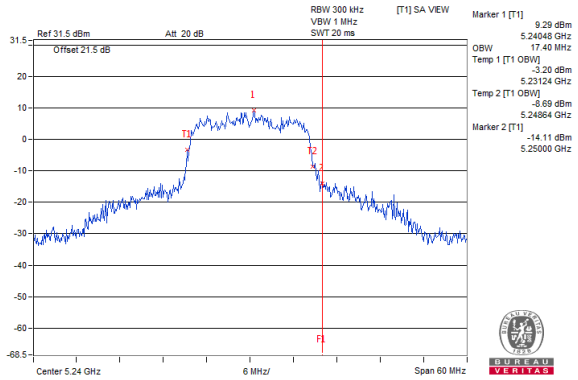
Spectrum Plot of Max. Value	
802.11a_Chain 0 / CH149	**802.11n (HT20)_Chain 0 / CH149**
	
802.11n (HT40) _Chain 0 / CH159	
	

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

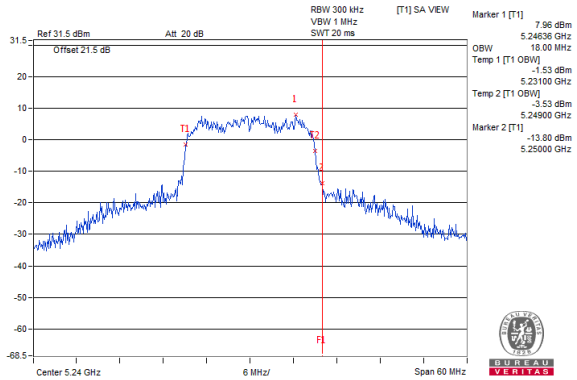
802.11a_Chain0 / CH48



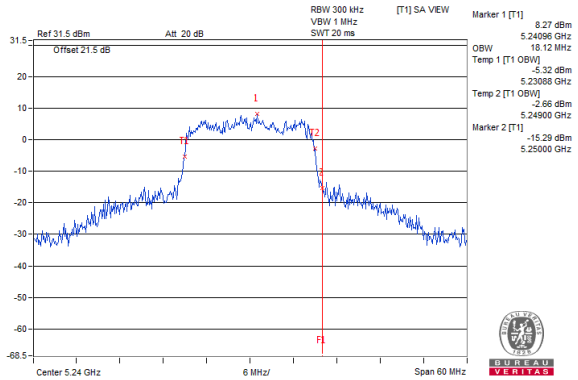
802.11a_Chain1 / CH48



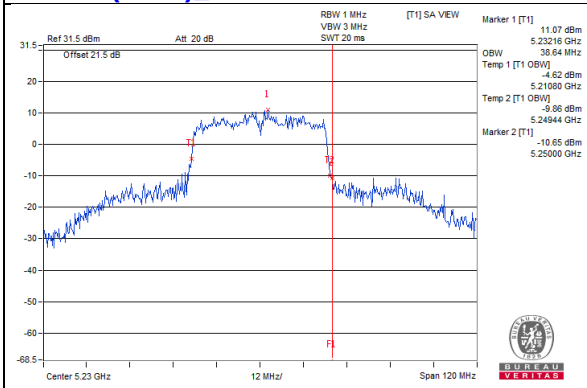
802.11n (HT20)_Chain0 / CH48



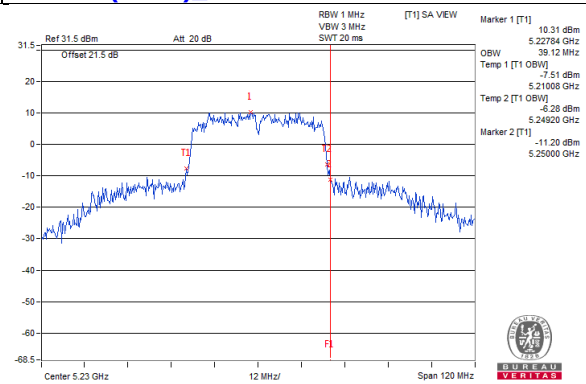
802.11n (HT20)_Chain1 / CH48



802.11n (HT40)_Chain0 / CH46

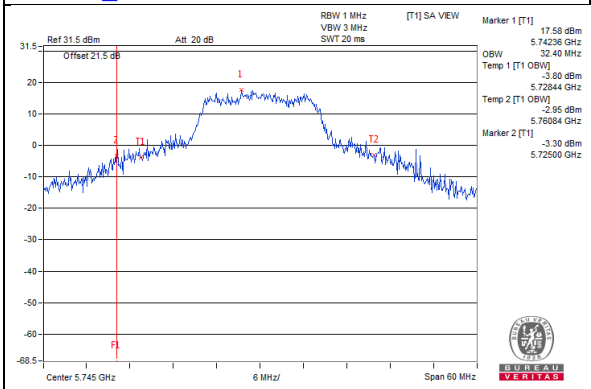


802.11n (HT40)_Chain1 / CH46

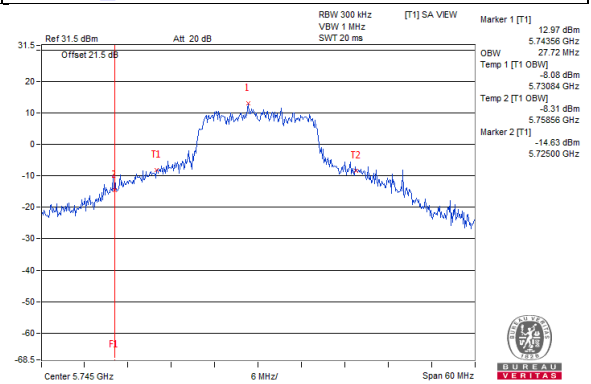


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

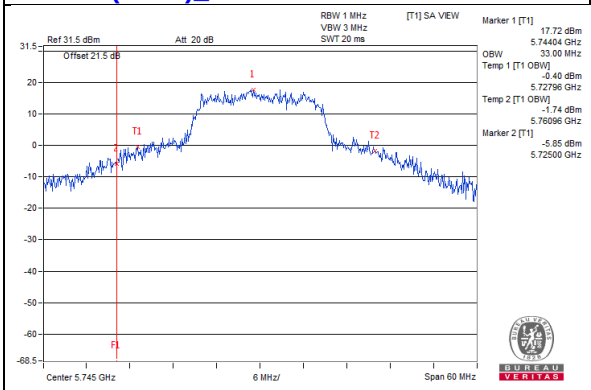
802.11a_Chain0 / CH149



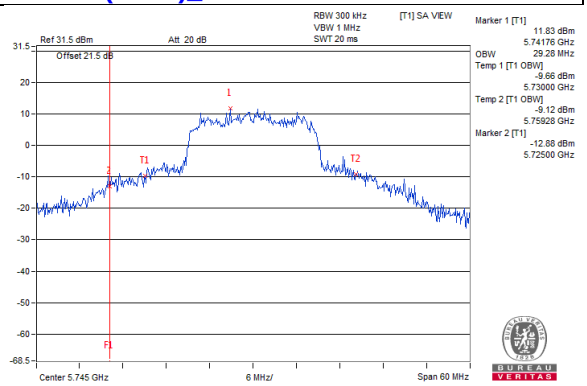
802.11a_Chain1 / CH149



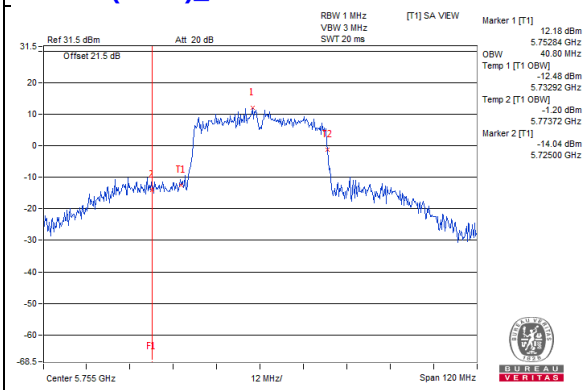
802.11n (HT20)_Chain0 / CH149



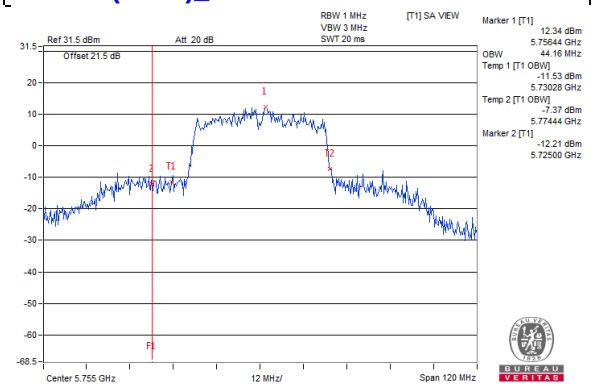
802.11n (HT20)_Chain1 / CH149



802.11n (HT40)_Chain0 / CH151



802.11n (HT40)_Chain1 / CH151

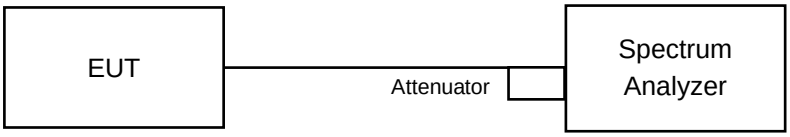


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
	√	Indoor Access Point	
		Client device	11dBm/ MHz
U-NII-2A			11dBm/ MHz
U-NII-2C			11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-1 band:

For 802.11a, 802.11n (HT20):

Using method SA-1

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

For 802.11n (HT40):

Using method SA-2

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

For U-NII-3:

For 802.11a, 802.11n (HT20):

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

For 802.11n (HT40):

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	4.34	4.48	7.42	17	Pass
40	5200	4.98	5.00	8.00	17	Pass
48	5240	5.07	5.00	8.05	17	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT20)

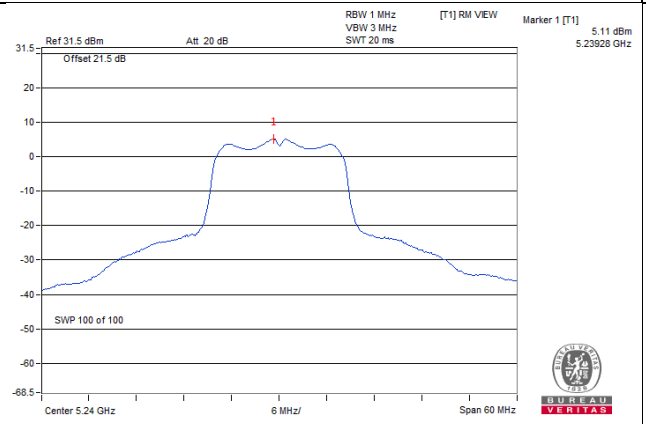
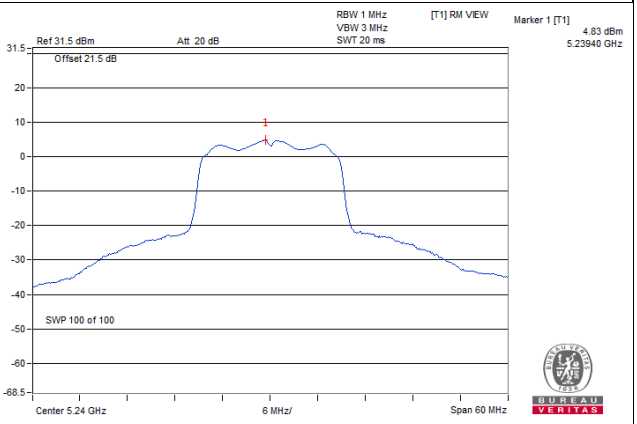
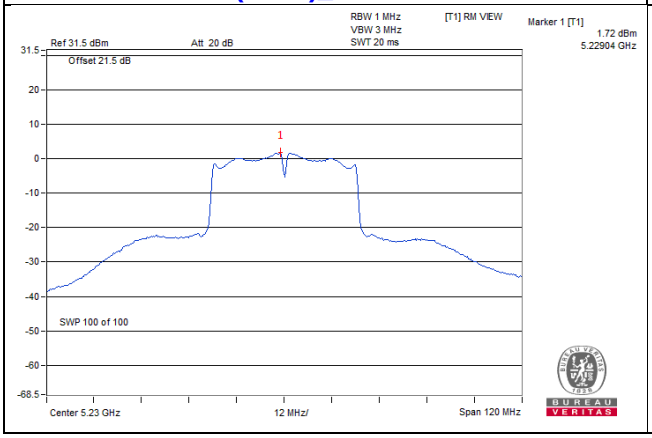
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	4.02	4.17	7.11	17	Pass
40	5200	4.74	4.37	7.57	17	Pass
48	5240	4.78	4.49	7.65	17	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-3.95	-3.60	0.13	-0.63	17	Pass
46	5230	1.24	1.72	0.13	4.63	17	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH48	**802.11n (HT20)_Chain 0 / CH48**
	
802.11n (HT40)_Chain 1 / CH46	
	

For U-NII-3:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD		10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)				
0	149	5745	0.69	2.91	3.01	5.92	30	Pass
	157	5785	0.83	3.05	3.01	6.06	30	Pass
	165	5825	1.08	3.30	3.01	6.31	30	Pass
1	149	5745	0.59	2.81	3.01	5.82	30	Pass
	157	5785	0.82	3.04	3.01	6.05	30	Pass
	165	5825	0.54	2.76	3.01	5.77	30	Pass

Note: 1. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT20)

TX chain	Chan.	Chan. Freq. (MHz)	PSD		10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)				
0	149	5745	0.73	2.95	3.01	5.96	30	Pass
	157	5785	0.90	3.12	3.01	6.13	30	Pass
	165	5825	0.96	3.18	3.01	6.19	30	Pass
1	149	5745	-0.12	2.10	3.01	5.11	30	Pass
	157	5785	0.13	2.35	3.01	5.36	30	Pass
	165	5825	0.46	2.68	3.01	5.69	30	Pass

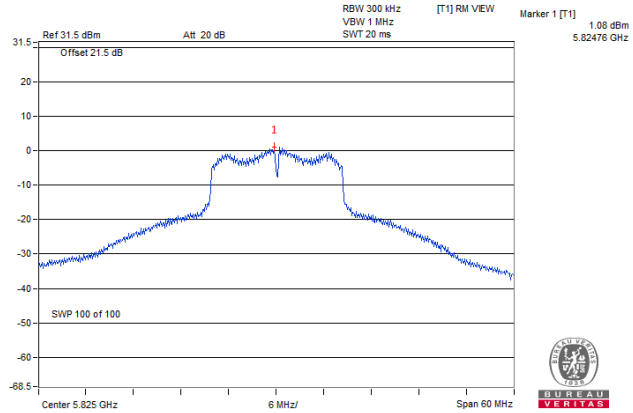
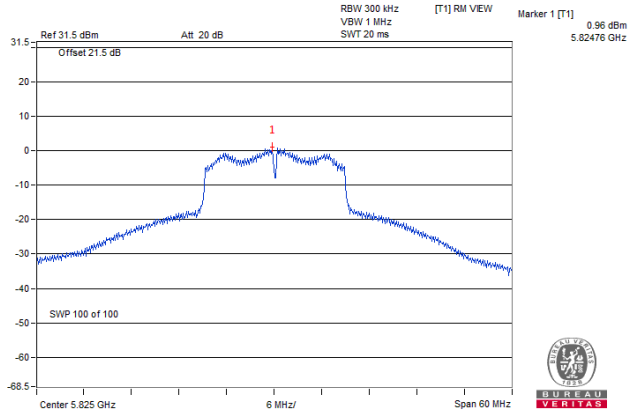
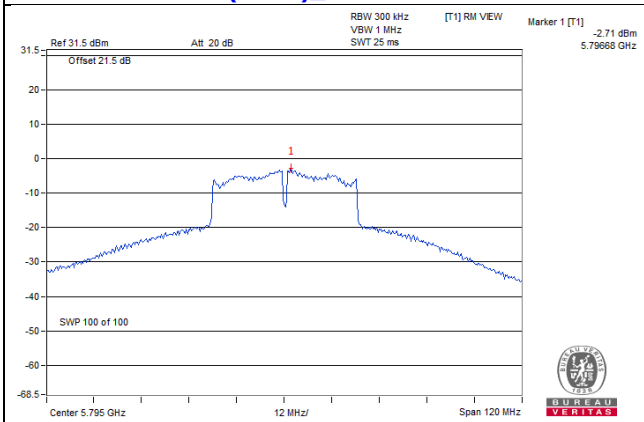
Note: 1. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT40)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5745	-6.45	-4.23	3.01	0.13	-1.09	30	Pass
	159	5785	-2.71	-0.49	3.01	0.13	2.65	30	Pass
1	151	5745	-6.24	-4.02	3.01	0.13	-0.88	30	Pass
	159	5785	-3.45	-1.23	3.01	0.13	1.91	30	Pass

Note: 1. The directional gain = 2.5dBi + 10log(2) = 5.51dBi < 6dBi, so the power density limit shall not be reduced.

2. Refer to section 3.3 for duty cycle spectrum plot.

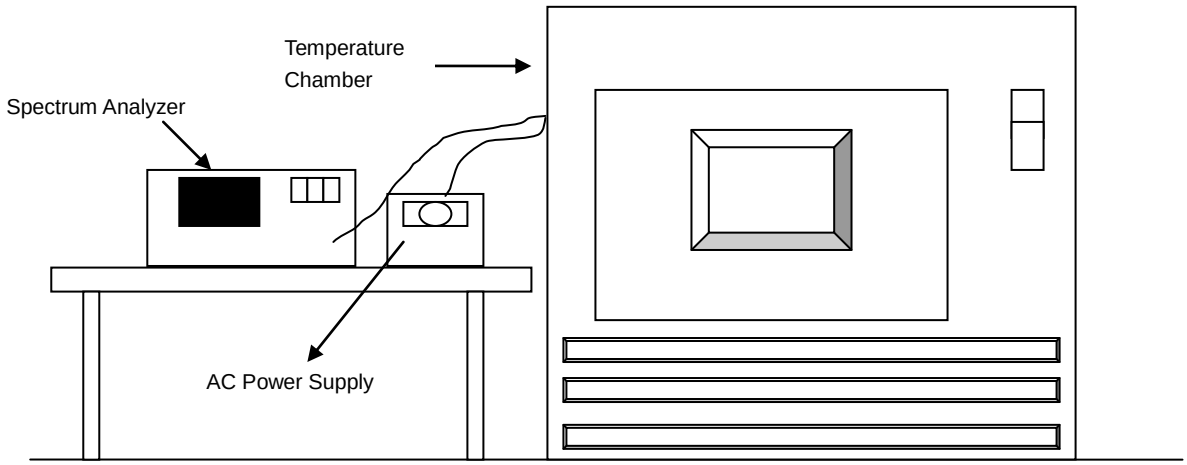
Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH165	**802.11n (HT20)_Chain 0 / CH165**
	
802.11n (HT40)_Chain 0 / CH159	
	

4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 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 2 and 3 with the temperature chamber set to the lowest temperature.

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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5180.0103	Pass	5180.0118	Pass	5180.0134	Pass	5180.0148	Pass
40	120	5179.9926	Pass	5179.9968	Pass	5179.9964	Pass	5179.9968	Pass
30	120	5179.9885	Pass	5179.9887	Pass	5179.9886	Pass	5179.9885	Pass
20	120	5179.998	Pass	5179.9987	Pass	5180.0017	Pass	5180.0001	Pass
10	120	5180.0157	Pass	5180.018	Pass	5180.0146	Pass	5180.0174	Pass
0	120	5179.9845	Pass	5179.9844	Pass	5179.9833	Pass	5179.9848	Pass
-10	120	5179.9721	Pass	5179.9762	Pass	5179.9769	Pass	5179.9732	Pass
-20	120	5180.0139	Pass	5180.0126	Pass	5180.0148	Pass	5180.0152	Pass
-30	120	5179.9864	Pass	5179.987	Pass	5179.9836	Pass	5179.9867	Pass

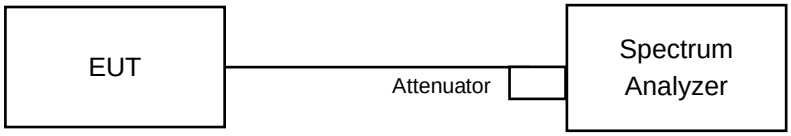
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9972	Pass	5179.9983	Pass	5180.0007	Pass	5179.9991	Pass
	120	5179.998	Pass	5179.9987	Pass	5180.0017	Pass	5180.0001	Pass
	102	5179.998	Pass	5179.9987	Pass	5180.0018	Pass	5180.0009	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results

802.11a

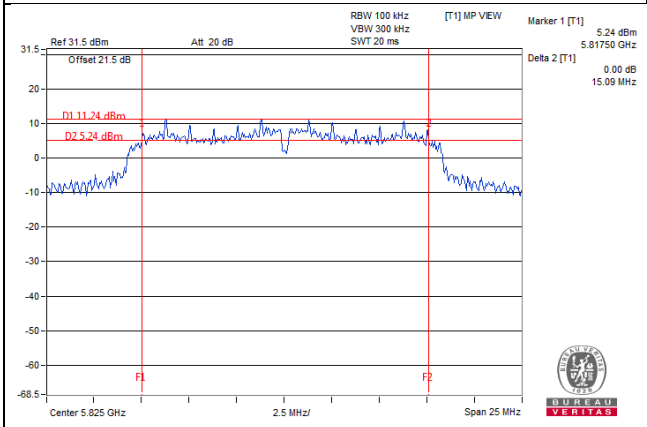
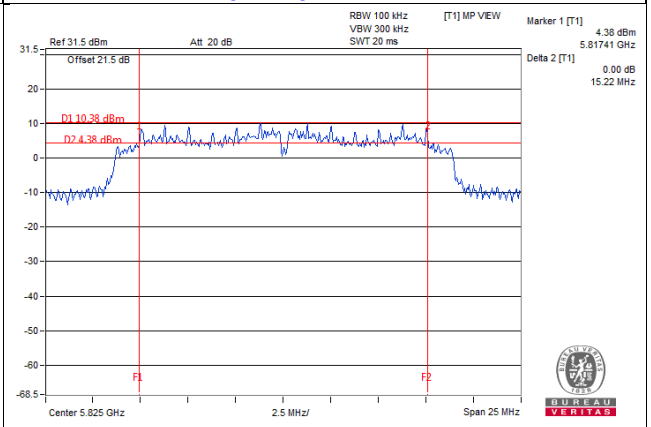
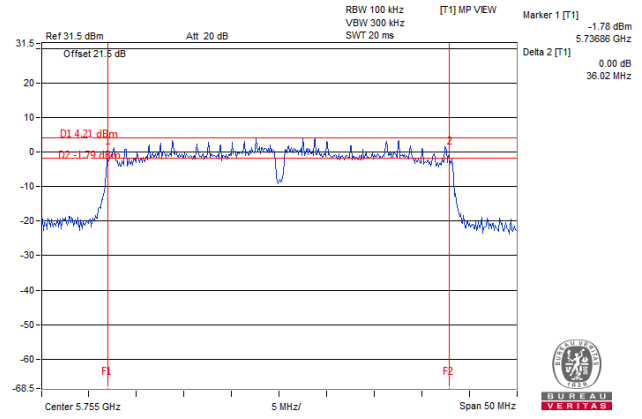
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	15.67	15.36	0.5	Pass
157	5785	15.34	15.20	0.5	Pass
165	5825	15.09	15.19	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	15.40	15.69	0.5	Pass
157	5785	15.71	15.77	0.5	Pass
165	5825	15.35	15.22	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.02	36.31	0.5	Pass
159	5795	36.09	36.23	0.5	Pass

Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH165	**802.11n (HT20)_Chain 1 / CH165**
	
802.11n (HT40) _Chain 0 / CH151	
	

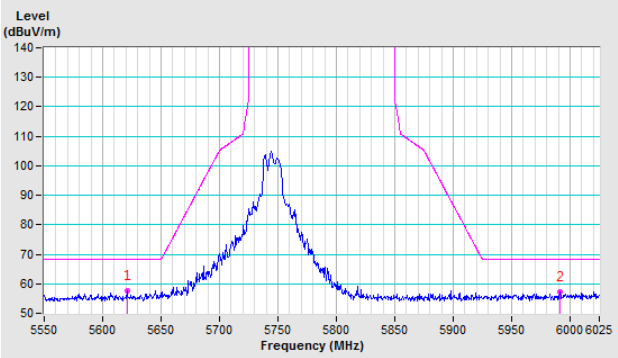
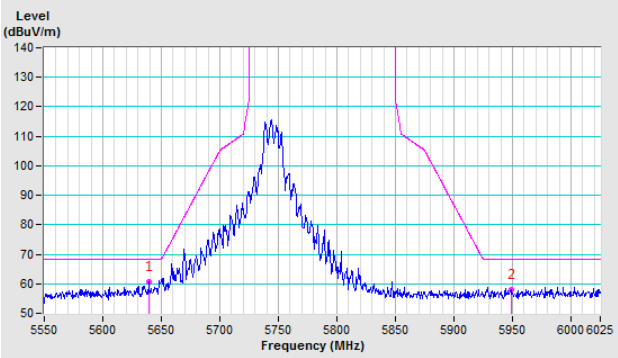
5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

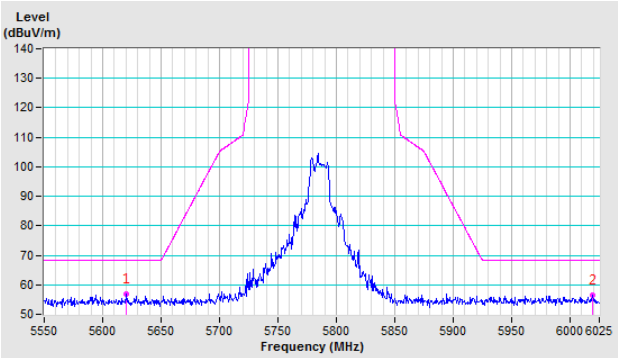
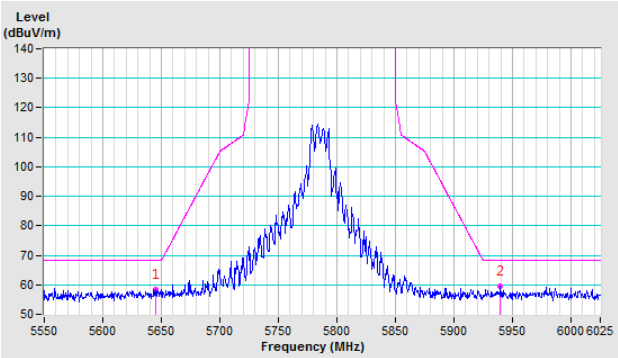
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

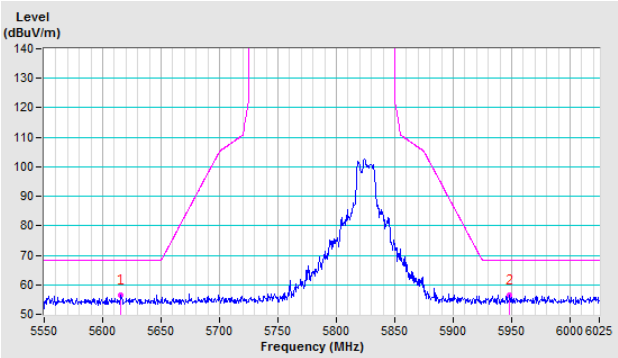
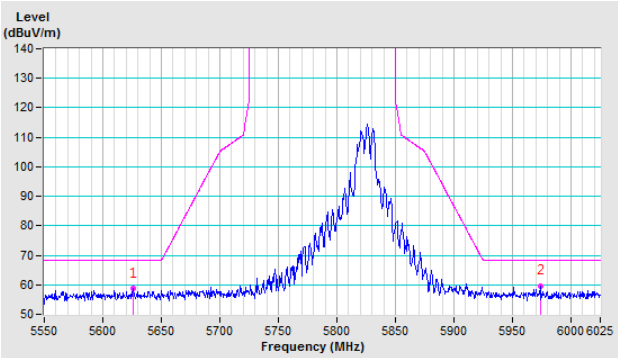
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

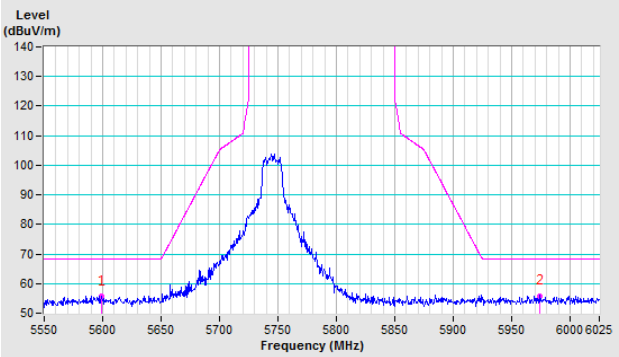
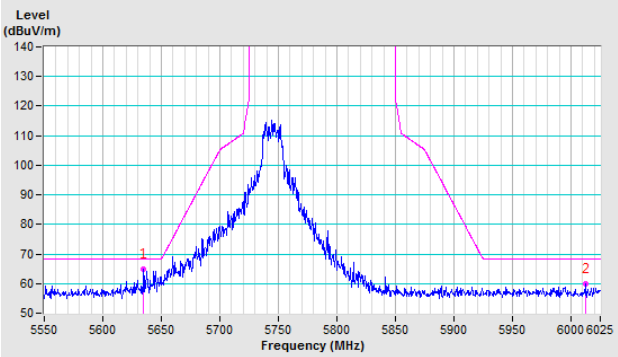
Horizontal	Vertical
	

CH 165 5825 MHz

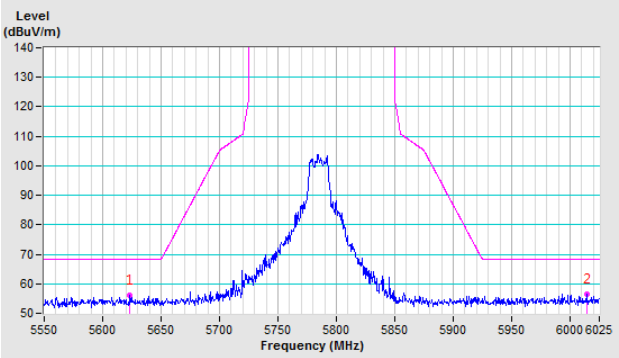
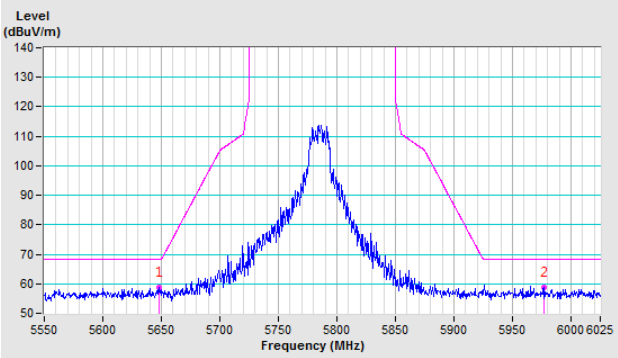
Horizontal	Vertical
	

802.11n (HT20)

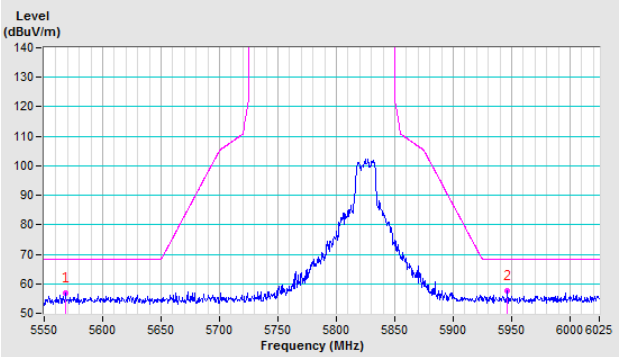
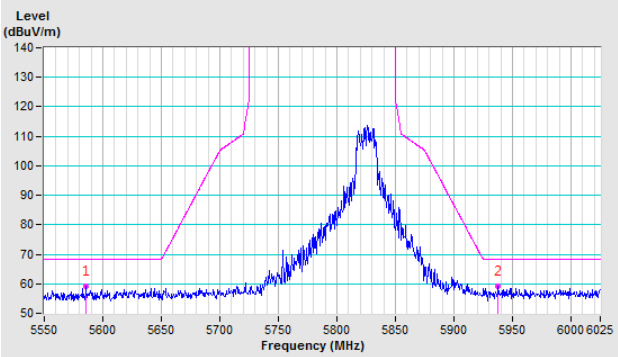
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

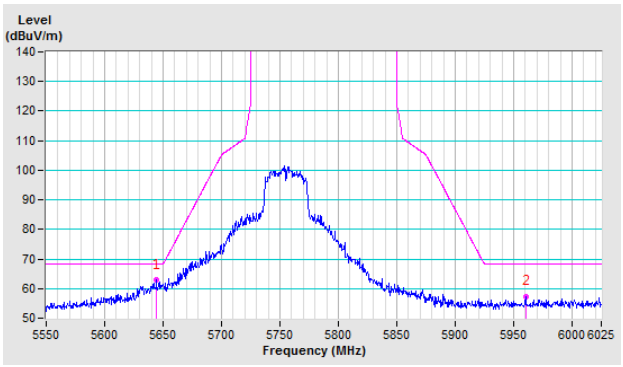
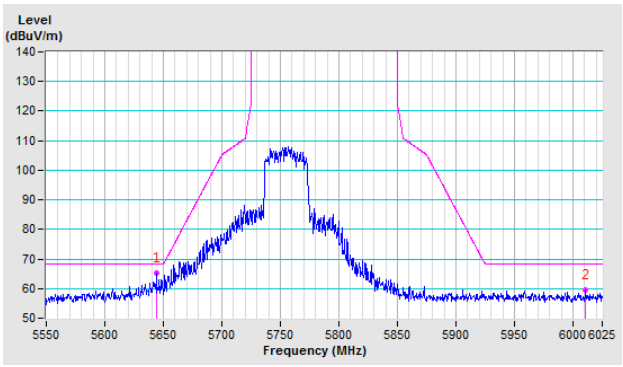
Horizontal	Vertical
	

CH 165 5825 MHz

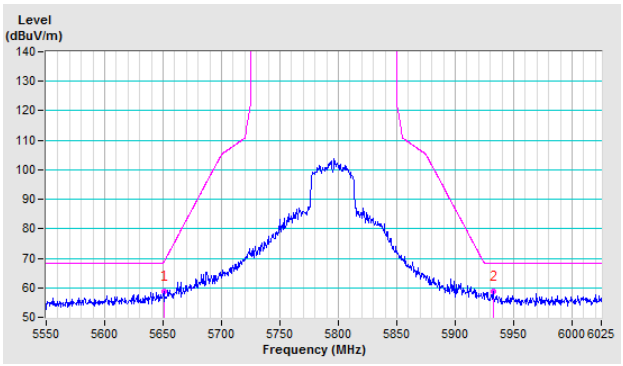
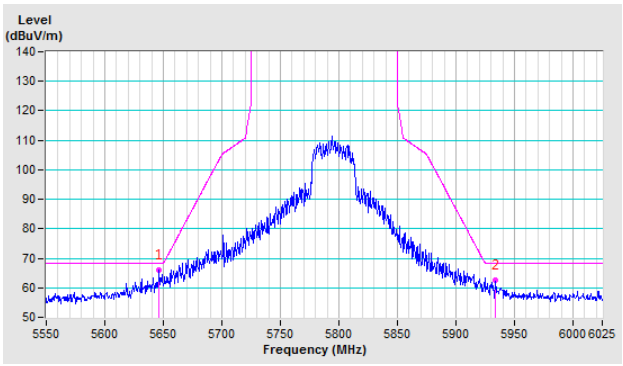
Horizontal	Vertical
	

802.11n (HT40)

CH 151 5755 MHz

Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

Appendix – Information on 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:

Linkou 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@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---