

## FCC Test Report

**Report No.:** RF170412C17-1

**FCC ID:** Q3N-RS50

**Test Model:** RS50

**Received Date:** Jan. 19, 2017

**Test Date:** Feb. 02 ~ Feb. 09, 2017

**Issued Date:** May 29, 2017

**Applicant:** CIPHERLAB CO., LTD

**Address:** 12F, 333 Dunhua S. Rd., Sec.2 Taipei, Taiwan 106

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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### Release Control Record

Issue No.	Description	Date Issued
RF170412C17-1	Original release.	May 29, 2017

## 1 Certificate of Conformity

**Product:** Mobile Computer

**Brand:** CIPHERLAB

**Test Model:** RS50

**Sample Status:** Engineering sample

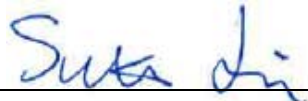
**Applicant:** CIPHERLAB CO., LTD

**Test Date:** Feb. 02 ~ Feb. 09, 2017

**Standards:** 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 :**



**Date:**

May 29, 2017

Suntee Liu / Specialist

**Approved by :**



**Date:**

May 29, 2017

Ken Liu / Senior 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 -10.47dB at 0.58538MHz.
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 5350.00MHz.
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 UFL not a standard connector.

\*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB 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) ( $\pm$ )
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Mobile Computer
Brand	CIPHERLAB
Test Model	RS50
Sample Status	Engineering sample
Power Supply Rating	5Vdc (adapter) 3.8Vdc (battery)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1 5260~5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1 5500~5700MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 8 802.11n (HT40), 802.11n (HT40): 3 802.11ac (VHT80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1
Output Power	5180~5240MHz: 48.195mW 5260~5320MHz: 50.933mW 5500~5700MHz: 54.828mW 5745~5825MHz: 54.200mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter, Battery
Cable Supplied	1.5m shielded USB cable with 1 core

Note:

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

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX
802.11ac (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

\* The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for 20MHz/40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT uses following antennas.

WLAN / BT EDR / BT LE										
Brand	Amphenol				Model			C-5679-12-002-45-FA00		
Antenna Type	PIFA				Antenna Connector			spring		
Gain (dBi)	Frequency (MHz)									
	2400	2442	2484	5150	5250	5350	5470	5725	5785	5875
	1.87	1.72	0.91	2.28	3.08	4.40	4.17	3.84	3.62	3.44

\* The max. gain among all 2.4GHz gains is chosen for final tests.

\* The max. gain among all 5GHz gains is chosen for final tests.

3. The EUT uses following accessory devices.

Component	Vendor	Model	Specification
Adapter	Sunny COMPUTER TECHNOLOGY CO.,LTD.	SYS1561-1005	I/P: 100-240Vac, 1.0A MAX, 50-60Hz O/P: +5Vdc, 2A, 10W MAX.
Battery	CIPHERLAB	BA-0115A3	3.8Vdc

4. The EUT doesn't operate in 5600~5650MHz via software control.

5. WLAN 2.4GHz and WLAN 5GHz / WLAN and BT technologies can not transmit at same time.



### 3.2 Description of Test Modes

#### 5180~5240MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

#### 5260~5320MHz:

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

#### 5500~5700MHz:

8 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 MHz		

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
106	5530 MHz

#### 5745~5825MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement  
 RE<1G: Radiated Emission below 1GHz  
 PLC: Power Line Conducted Emission  
 APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on X-plane.

#### 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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	1TX
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5	1TX
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5	1TX
	802.11ac (VHT80)		42	42	OFDM	29.3	1TX
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	1TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5	1TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5	1TX
	802.11ac (VHT80)		58	58	OFDM	29.3	1TX
-	802.11a	5500-5700	100 to 144	100, 116, 140	OFDM	6.0	1TX
	802.11n (HT20)		100 to 144	100, 116, 140	OFDM	6.5	1TX
	802.11n (HT40)		102 to 142	102, 110, 134	OFDM	13.5	1TX
	802.11ac (VHT80)		106 to 138	106	OFDM	29.3	1TX
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	1TX
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5	1TX
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5	1TX
	802.11ac (VHT80)		155	155	OFDM	29.3	1TX

#### 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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	140	OFDM	6.0	1TX
		5260-5320	52 to 64		OFDM	6.0	1TX
		5500-5700	100 to 140		OFDM	6.0	1TX
		5745-5825	149 to 165		OFDM	6.0	1TX

### 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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	140	OFDM	6.0	1TX
		5260-5320	52 to 64		OFDM	6.0	1TX
		5500-5700	100 to 140		OFDM	6.0	1TX
		5745-5825	149 to 165		OFDM	6.0	1TX

### 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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	1TX
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5	1TX
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5	1TX
	802.11ac (VHT80)		42	42	OFDM	29.3	1TX
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	1TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5	1TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5	1TX
	802.11ac (VHT80)		58	58	OFDM	29.3	1TX
-	802.11a	5500-5700	100 to 144	100, 116, 140	OFDM	6.0	1TX
	802.11n (HT20)		100 to 144	100, 116, 140	OFDM	6.5	1TX
	802.11n (HT40)		102 to 142	102, 110, 134	OFDM	13.5	1TX
	802.11ac (VHT80)		106 to 138	106	OFDM	29.3	1TX
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	1TX
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5	1TX
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5	1TX
	802.11ac (VHT80)		155	155	OFDM	29.3	1TX

### Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	16 deg. C, 70% RH 25 deg. C, 65% RH	120Vac, 60Hz	Nick Hsu Chris Lin Matthew Yang
RE<1G	25 deg. C, 65% RH	120Vac, 60Hz	Matthew Yang
PLC	25 deg. C, 75% RH	120Vac, 60Hz	Matthew Yang
APCM	16 deg. C, 70% RH	120Vac, 60Hz	Nick Hsu

### 3.3 Duty Cycle of Test Signal

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

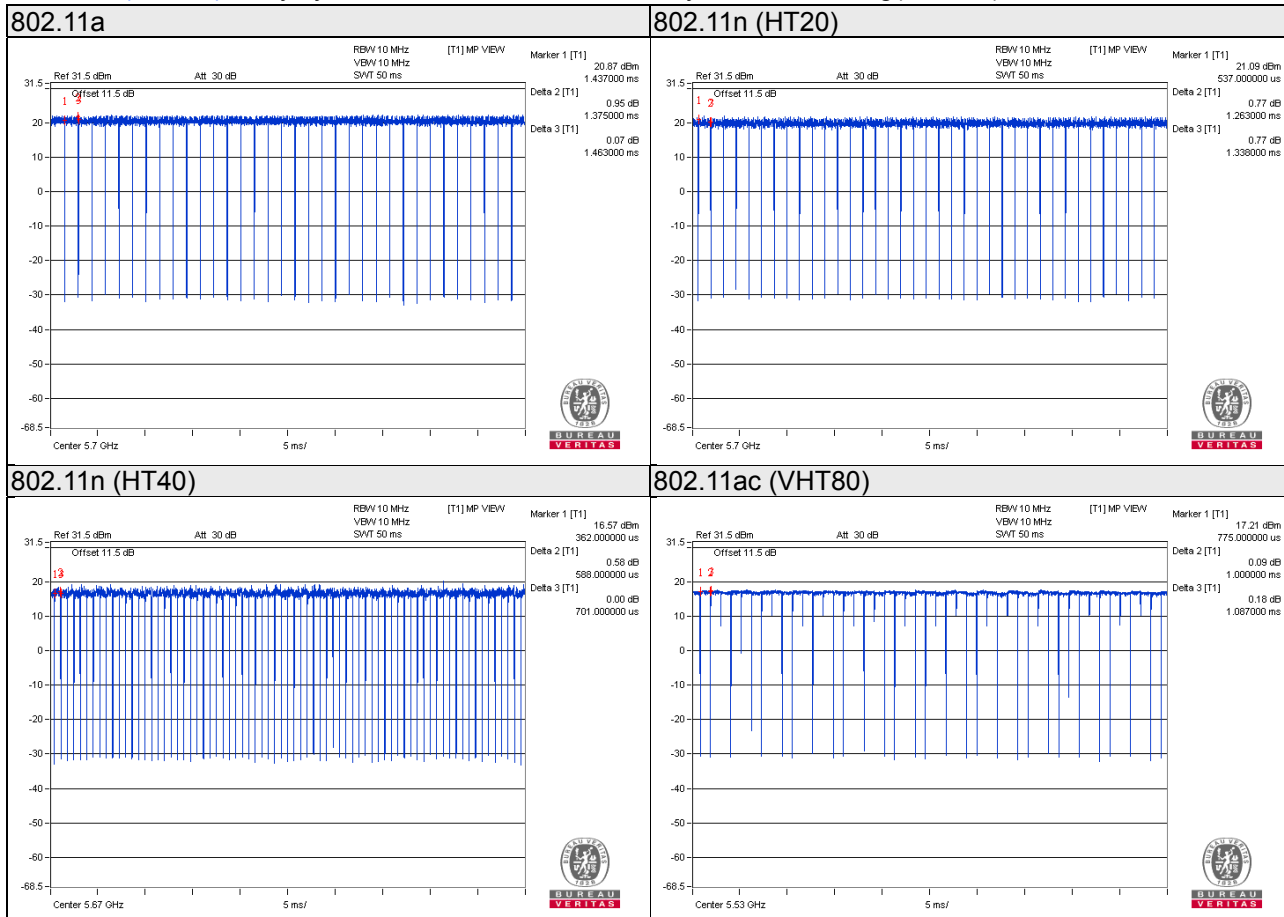
Duty cycle of test signal is  $< 98\%$ , duty factor shall be considered.

802.11a: Duty cycle =  $1.375/1.463 = 0.940$ , Duty factor =  $10 * \log(1/0.940) = 0.27$

802.11n (HT20): Duty cycle =  $1.263/1.338 = 0.944$ , Duty factor =  $10 * \log(1/0.944) = 0.25$

802.11n (HT40): Duty cycle =  $0.588/0.701 = 0.839$ , Duty factor =  $10 * \log(1/0.839) = 0.76$

802.11ac (VHT80): Duty cycle =  $1.000/1.087 = 0.920$ , Duty factor =  $10 * \log(1/0.920) = 0.36$

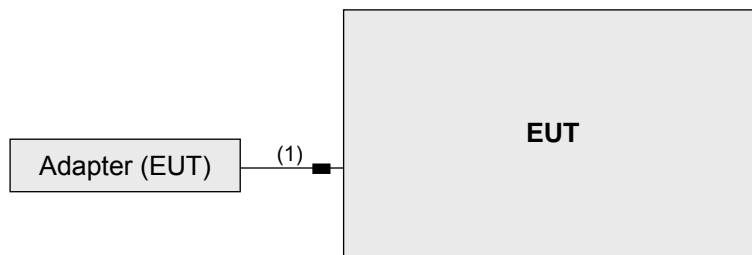


### 3.4 Description of Support Units

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	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB	1	1.5	Y	1	Accessory of EUT

#### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standards

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 v01r04**

ANSI C63.10:2013

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

## 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

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v01r03		Field Strength at 3m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
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	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK: -27 (dBm/MHz) <sup>*1</sup> PK: 10 (dBm/MHz) <sup>*2</sup> PK: 15.6 (dBm/MHz) <sup>*3</sup> PK: 27 (dBm/MHz) <sup>*4</sup>	PK: 68.2(dBµV/m) <sup>*1</sup> PK: 105.2 (dBµV/m) <sup>*2</sup> PK: 110.8(dBµV/m) <sup>*3</sup> PK: 122.2 (dBµV/m) <sup>*4</sup>
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
<sup>*1</sup> beyond 75 MHz or more above of the band edge.		<sup>*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
<sup>*3</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		<sup>*4</sup> 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:

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

#### 4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 24, 2016	Oct. 23, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 15, 2016	Dec. 14, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2016	Aug. 08, 2017
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 09, 2016	Aug. 08, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 17, 2016	Oct. 16, 2017
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017

- 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 test was performed in HwaYa Chamber 4.  
 3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.  
 4. The FCC Site Registration No. is 460141.  
 5. The IC Site Registration No. is IC7450F-4.



### 4.1.3 Test Procedures

#### 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. Both X and Y axes 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 detect 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:

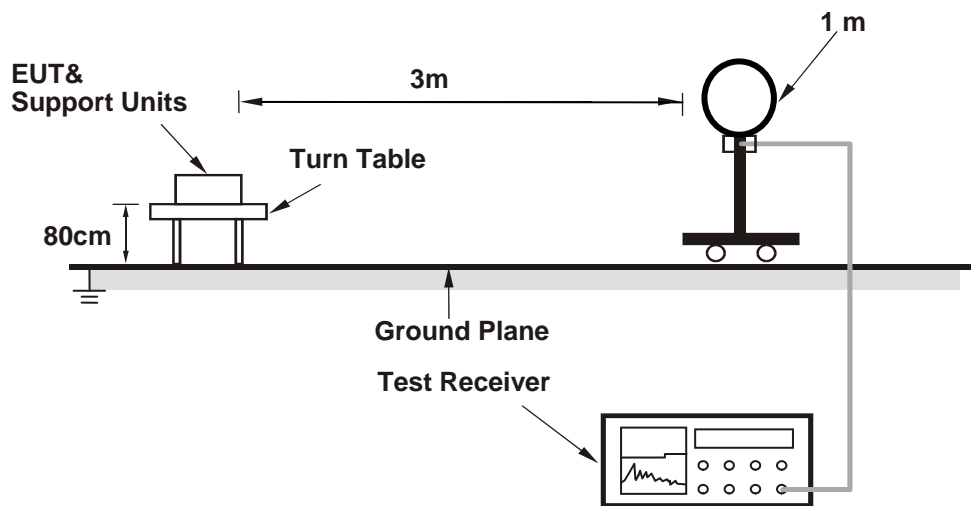
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) 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

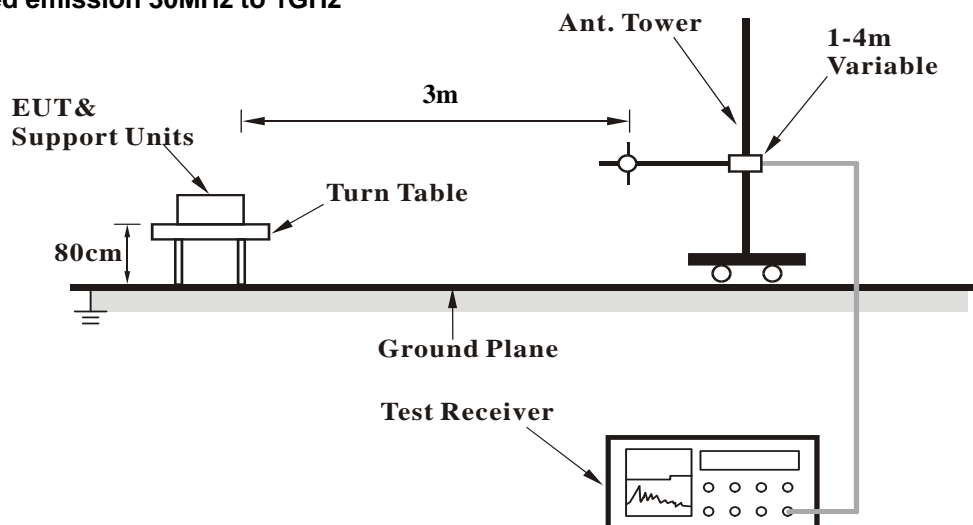
No deviation.

#### 4.1.5 Test Setup

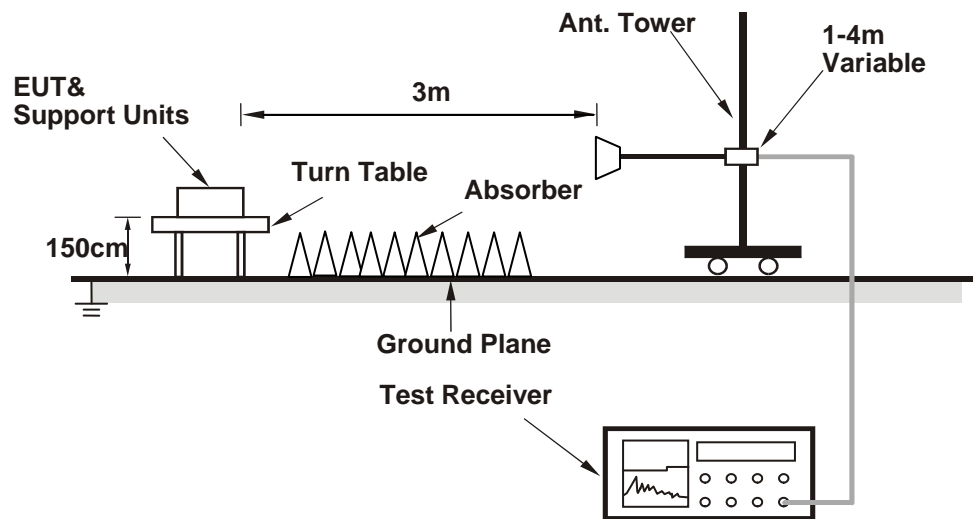
##### For Radiated emission below 30MHz



##### 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 Conditions

- a. Set the EUT under transmission condition continuously at specific channel frequency.

#### 4.1.7 Test Results

Above 1GHz data:

802.11a

CHANNEL	TX Channel 36	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	5150.00	59.6 PK	74.0	-14.4	1.44 H	82	53.5	6.1
2	5150.00	46.0 AV	54.0	-8.0	1.44 H	82	39.9	6.1
3	*5180.00	109.6 PK			1.36 H	85	69.4	40.2
4	*5180.00	100.2 AV			1.36 H	85	60.0	40.2
5	#10360.00	58.5 PK	74.0	-15.5	1.83 H	269	40.6	17.9
6	#10360.00	46.0 AV	54.0	-8.0	1.83 H	269	28.1	17.9

#### 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	59.0 PK	74.0	-15.0	1.34 V	88	52.9	6.1
2	5150.00	45.3 AV	54.0	-8.7	1.34 V	88	39.2	6.1
3	*5180.00	108.5 PK			1.22 V	82	68.3	40.2
4	*5180.00	99.0 AV			1.22 V	82	58.8	40.2
5	#10360.00	59.4 PK	74.0	-14.6	1.70 V	331	41.5	17.9
6	#10360.00	46.5 AV	54.0	-7.5	1.70 V	331	28.6	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. 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	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5200.00	110.5 PK			1.00 H	86	70.3	40.2
2	*5200.00	101.2 AV			1.00 H	86	61.0	40.2
3	#10400.00	59.1 PK	74.0	-14.9	1.57 H	216	40.9	18.2
4	#10400.00	46.5 AV	54.0	-7.5	1.57 H	216	28.3	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	*5200.00	108.3 PK			1.11 V	83	68.1	40.2
2	*5200.00	99.0 AV			1.11 V	83	58.8	40.2
3	#10400.00	60.1 PK	74.0	-13.9	1.72 V	166	41.9	18.2
4	#10400.00	46.5 AV	54.0	-7.5	1.72 V	166	28.3	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.

CHANNEL	TX Channel 48	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	*5240.00	111.7 PK			1.00 H	92	71.3	40.4
2	*5240.00	102.0 AV			1.00 H	92	61.6	40.4
3	5350.00	57.1 PK	74.0	-16.9	1.00 H	92	50.6	6.5
4	5350.00	44.7 AV	54.0	-9.3	1.00 H	92	38.2	6.5
5	#10480.00	58.6 PK	74.0	-15.4	1.66 H	184	40.2	18.4
6	#10480.00	46.3 AV	54.0	-7.7	1.66 H	184	27.9	18.4

**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	109.1 PK			1.24 V	88	68.7	40.4
2	*5240.00	99.6 AV			1.24 V	88	59.2	40.4
3	5350.00	57.4 PK	74.0	-16.6	1.24 V	88	50.9	6.5
4	5350.00	44.7 AV	54.0	-9.3	1.24 V	88	38.2	6.5
5	#10480.00	59.2 PK	74.0	-14.8	1.53 V	181	40.8	18.4
6	#10480.00	46.3 AV	54.0	-7.7	1.53 V	181	27.9	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. 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 52	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	5150.00	59.8 PK	74.0	-14.2	1.22 H	117	53.7	6.1
2	5150.00	49.0 AV	54.0	-5.0	1.22 H	117	42.9	6.1
3	*5260.00	111.0 PK			1.14 H	99	70.6	40.4
4	*5260.00	102.2 AV			1.14 H	99	61.8	40.4
5	#10520.00	59.9 PK	74.0	-14.1	1.63 H	54	41.5	18.4
6	#10520.00	48.8 AV	54.0	-5.2	1.63 H	54	30.4	18.4

**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	58.7 PK	74.0	-15.3	1.69 V	126	52.6	6.1
2	5150.00	47.8 AV	54.0	-6.2	1.69 V	126	41.7	6.1
3	*5260.00	109.3 PK			1.25 V	88	68.9	40.4
4	*5260.00	100.1 AV			1.25 V	88	59.7	40.4
5	#10520.00	59.9 PK	74.0	-14.1	1.32 V	54	41.5	18.4
6	#10520.00	48.2 AV	54.0	-5.8	1.32 V	54	29.8	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. 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 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5300.00	110.5 PK			1.15 H	104	70.0	40.5
2	*5300.00	101.5 AV			1.15 H	104	61.0	40.5
3	10600.00	60.3 PK	74.0	-13.7	1.04 H	17	41.5	18.8
4	10600.00	48.7 AV	54.0	-5.3	1.04 H	17	29.9	18.8

**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	*5300.00	108.7 PK			1.25 V	86	68.2	40.5
2	*5300.00	99.5 AV			1.25 V	86	59.0	40.5
3	10600.00	59.7 PK	74.0	-14.3	1.04 V	54	40.9	18.8
4	10600.00	47.5 AV	54.0	-6.5	1.04 V	54	28.7	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. 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 64	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	*5320.00	111.0 PK			1.18 H	96	70.5	40.5
2	*5320.00	101.7 AV			1.18 H	96	61.2	40.5
3	5350.00	60.1 PK	74.0	-13.9	1.32 H	114	53.6	6.5
4	5350.00	49.1 AV	54.0	-4.9	1.32 H	114	42.6	6.5
5	10640.00	60.2 PK	74.0	-13.8	1.32 H	64	41.2	19.0
6	10640.00	48.9 AV	54.0	-5.1	1.32 H	64	29.9	19.0

**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	*5320.00	108.3 PK			1.20 V	79	67.8	40.5
2	*5320.00	99.4 AV			1.20 V	79	58.9	40.5
3	5350.00	58.4 PK	74.0	-15.6	1.36 V	120	51.9	6.5
4	5350.00	48.1 AV	54.0	-5.9	1.36 V	120	41.6	6.5
5	10640.00	59.5 PK	74.0	-14.5	1.32 V	47	40.5	19.0
6	10640.00	48.9 AV	54.0	-5.1	1.32 V	47	29.9	19.0

**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. 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 100	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	5460.00	58.1 PK	74.0	-15.9	1.17 H	105	51.4	6.7
2	5460.00	46.8 AV	54.0	-7.2	1.17 H	105	40.1	6.7
3	#5470.00	67.4 PK	74.0	-6.6	1.15 H	132	60.7	6.7
4	#5470.00	48.6 AV	54.0	-5.4	1.15 H	132	41.9	6.7
5	*5500.00	111.3 PK			1.09 H	88	70.4	40.9
6	*5500.00	101.6 AV			1.09 H	88	60.7	40.9
7	11000.00	60.0 PK	74.0	-14.0	1.32 H	65	40.7	19.3
8	11000.00	48.0 AV	54.0	-6.0	1.32 H	65	28.7	19.3

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	5460.00	57.7 PK	74.0	-16.3	1.33 V	125	51.0	6.7
2	5460.00	47.3 AV	54.0	-6.7	1.33 V	125	40.6	6.7
3	#5470.00	58.7 PK	74.0	-15.3	1.29 V	104	52.0	6.7
4	#5470.00	47.9 AV	54.0	-6.1	1.29 V	104	41.2	6.7
5	*5500.00	109.9 PK			1.13 V	63	69.0	40.9
6	*5500.00	99.9 AV			1.13 V	63	59.0	40.9
7	11000.00	59.9 PK	74.0	-14.1	1.23 V	64	40.6	19.3
8	11000.00	48.0 AV	54.0	-6.0	1.23 V	64	28.7	19.3

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 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	111.5 PK			1.09 H	100	70.5	41.0
2	*5580.00	101.4 AV			1.09 H	100	60.4	41.0
3	11160.00	61.0 PK	74.0	-13.0	1.33 H	225	41.2	19.8
4	11160.00	49.7 AV	54.0	-4.3	1.33 H	225	29.9	19.8

**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	*5580.00	110.0 PK			1.63 V	43	69.0	41.0
2	*5580.00	100.9 AV			1.63 V	43	59.9	41.0
3	11160.00	60.3 PK	74.0	-13.7	1.32 V	65	40.5	19.8
4	11160.00	48.5 AV	54.0	-5.5	1.32 V	65	28.7	19.8

**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 140	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	*5700.00	112.2 PK			1.14 H	105	70.7	41.5
2	*5700.00	101.9 AV			1.14 H	105	60.4	41.5
3	#5725.00	60.3 PK	74.0	-13.7	1.26 H	119	53.0	7.3
4	#5725.00	48.9 AV	54.0	-5.1	1.26 H	119	41.6	7.3
5	11400.00	61.9 PK	74.0	-12.1	1.32 H	55	41.5	20.4
6	11400.00	50.1 AV	54.0	-3.9	1.32 H	55	29.7	20.4

**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	*5700.00	110.5 PK			1.48 V	48	69.0	41.5
2	*5700.00	100.8 AV			1.48 V	48	59.3	41.5
3	#5725.00	59.1 PK	74.0	-14.9	1.58 V	65	51.8	7.3
4	#5725.00	47.9 AV	54.0	-6.1	1.58 V	65	40.6	7.3
5	11400.00	61.6 PK	74.0	-12.4	1.26 V	35	41.2	20.4
6	11400.00	49.1 AV	54.0	-4.9	1.26 V	35	28.7	20.4

**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	#5620.80	59.4 PK	68.2	-8.8	1.03 H	102	52.5	6.9
2	*5745.00	111.5 PK			1.03 H	102	69.9	41.6
3	*5745.00	111.0 AV			1.03 H	102	69.4	41.6
4	#5984.80	59.6 PK	68.2	-8.6	1.03 H	102	51.7	7.9
5	11490.00	61.3 PK	74.0	-12.7	1.32 H	55	41.0	20.3
6	11490.00	50.2 AV	54.0	-3.8	1.32 H	55	29.9	20.3

**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	#5604.00	59.9 PK	68.2	-8.3	1.24 V	40	53.0	6.9
2	*5745.00	109.8 PK			1.24 V	40	68.2	41.6
3	*5745.00	100.4 AV			1.24 V	40	58.8	41.6
4	#5992.00	61.3 PK	68.2	-6.9	1.24 V	40	53.4	7.9
5	11490.00	60.5 PK	74.0	-13.5	1.23 V	64	40.2	20.3
6	11490.00	50.1 AV	54.0	-3.9	1.23 V	64	29.8	20.3

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 157	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	#5608.80	59.9 PK	68.2	-8.3	1.07 H	105	53.0	6.9
2	*5785.00	111.5 PK			1.07 H	105	69.9	41.6
3	*5785.00	101.0 AV			1.07 H	105	59.4	41.6
4	#5994.40	60.0 PK	68.2	-8.2	1.07 H	105	52.1	7.9
5	11570.00	61.3 PK	74.0	-12.7	1.32 H	55	41.2	20.1
6	11570.00	49.8 AV	54.0	-4.2	1.32 H	55	29.7	20.1

**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	#5618.40	59.4 PK	68.2	-8.8	1.27 V	41	52.5	6.9
2	*5785.00	110.3 PK			1.27 V	41	68.7	41.6
3	*5785.00	100.3 AV			1.27 V	41	58.7	41.6
4	#5981.60	59.6 PK	68.2	-8.6	1.27 V	41	51.7	7.9
5	11570.00	61.0 PK	74.0	-13.0	1.32 V	65	40.9	20.1
6	11570.00	48.8 AV	54.0	-5.2	1.32 V	65	28.7	20.1

**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
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 165	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	#5648.80	59.2 PK	68.2	-9.0	1.09 H	108	52.1	7.1
2	*5825.00	111.6 PK			1.09 H	108	69.8	41.8
3	*5825.00	101.7 AV			1.09 H	108	59.9	41.8
4	#5964.80	60.1 PK	68.2	-8.1	1.09 H	108	52.2	7.9
5	11650.00	60.3 PK	74.0	-13.7	1.32 H	55	40.5	19.8
6	11650.00	49.5 AV	54.0	-4.5	1.32 H	55	29.7	19.8

**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	#5620.80	59.2 PK	68.2	-9.0	1.33 V	46	52.3	6.9
2	*5825.00	110.5 PK			1.33 V	46	68.7	41.8
3	*5825.00	100.8 AV			1.33 V	46	59.0	41.8
4	#5994.40	60.1 PK	68.2	-8.1	1.33 V	46	52.2	7.9
5	11650.00	60.8 PK	74.0	-13.2	1.54 V	87	41.0	19.8
6	11650.00	48.5 AV	54.0	-5.5	1.54 V	87	28.7	19.8

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.

## 802.11n (HT20)

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

## ANTENNA POLARITY &amp; 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	62.0 PK	74.0	-12.0	1.54 H	115	55.9	6.1
2	5150.00	47.3 AV	54.0	-6.7	1.54 H	115	41.2	6.1
3	*5180.00	109.7 PK			1.18 H	95	69.5	40.2
4	*5180.00	99.7 AV			1.18 H	95	59.5	40.2
5	#10360.00	59.8 PK	74.0	-14.2	1.52 H	68	41.9	17.9
6	#10360.00	48.0 AV	54.0	-6.0	1.52 H	68	30.1	17.9

## ANTENNA POLARITY &amp; 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	62.0 PK	74.0	-12.0	1.62 V	97	55.9	6.1
2	5150.00	47.0 AV	54.0	-7.0	1.62 V	97	40.9	6.1
3	*5180.00	109.2 PK			1.14 V	84	69.0	40.2
4	*5180.00	98.5 AV			1.14 V	84	58.3	40.2
5	#10360.00	58.4 PK	74.0	-15.6	1.25 V	64	40.5	17.9
6	#10360.00	47.8 AV	54.0	-6.2	1.25 V	64	29.9	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. 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)
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	*5200.00	110.1 PK			1.01 H	91	69.9	40.2
2	*5200.00	100.3 AV			1.01 H	91	60.1	40.2
3	#10400.00	59.7 PK	74.0	-14.3	1.23 H	64	41.5	18.2
4	#10400.00	48.1 AV	54.0	-5.9	1.23 H	64	29.9	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	*5200.00	108.9 PK			1.25 V	80	68.7	40.2
2	*5200.00	98.3 AV			1.25 V	80	58.1	40.2
3	#10400.00	59.0 PK	74.0	-15.0	1.32 V	332	40.8	18.2
4	#10400.00	46.9 AV	54.0	-7.1	1.32 V	332	28.7	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.

CHANNEL	TX Channel 48	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	*5240.00	109.7 PK			1.00 H	83	69.3	40.4
2	*5240.00	99.8 AV			1.00 H	83	59.4	40.4
3	5350.00	47.7 PK	74.0	-26.3	1.10 H	100	41.2	6.5
4	5350.00	36.2 AV	54.0	-17.8	1.10 H	100	29.7	6.5
5	#10480.00	58.9 PK	74.0	-15.1	1.32 H	46	40.5	18.4
6	#10480.00	47.1 AV	54.0	-6.9	1.32 H	46	28.7	18.4

**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	109.1 PK			1.03 V	59	68.7	40.4
2	*5240.00	98.4 AV			1.03 V	59	58.0	40.4
3	5350.00	59.1 PK	74.0	-14.9	1.14 V	123	52.6	6.5
4	5350.00	46.6 AV	54.0	-7.4	1.14 V	123	40.1	6.5
5	#10480.00	59.3 PK	74.0	-14.7	1.32 V	54	40.9	18.4
6	#10480.00	47.4 AV	54.0	-6.6	1.32 V	54	29.0	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. 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 52	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	5150.00	58.4 PK	74.0	-15.6	1.06 H	99	52.3	6.1
2	5150.00	46.7 AV	54.0	-7.3	1.06 H	99	40.6	6.1
3	*5260.00	110.1 PK			1.06 H	99	69.7	40.4
4	*5260.00	100.1 AV			1.06 H	99	59.7	40.4
5	#10520.00	59.6 PK	74.0	-14.4	1.26 H	88	41.2	18.4
6	#10520.00	48.3 AV	54.0	-5.7	1.26 H	88	29.9	18.4

**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	58.1 PK	74.0	-15.9	1.25 V	47	52.0	6.1
2	5150.00	46.8 AV	54.0	-7.2	1.25 V	47	40.7	6.1
3	*5260.00	109.1 PK			1.37 V	87	68.7	40.4
4	*5260.00	98.1 AV			1.37 V	87	57.7	40.4
5	#10520.00	59.0 PK	74.0	-15.0	1.33 V	225	40.6	18.4
6	#10520.00	47.1 AV	54.0	-6.9	1.33 V	225	28.7	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. 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 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5300.00	109.6 PK			1.00 H	102	69.1	40.5
2	*5300.00	99.9 AV			1.00 H	102	59.4	40.5
3	10600.00	60.3 PK	74.0	-13.7	1.26 H	302	41.5	18.8
4	10600.00	48.2 AV	54.0	-5.8	1.26 H	302	29.4	18.8

**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	*5300.00	108.3 PK			1.39 V	87	67.8	40.5
2	*5300.00	97.6 AV			1.39 V	87	57.1	40.5
3	10600.00	58.8 PK	74.0	-15.2	1.55 V	228	40.0	18.8
4	10600.00	47.5 AV	54.0	-6.5	1.55 V	228	28.7	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. 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 64	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5320.00	110.0 PK			1.08 H	90	69.5	40.5
2	*5320.00	100.5 AV			1.08 H	90	60.0	40.5
3	5350.00	60.5 PK	74.0	-13.5	1.15 H	126	54.0	6.5
4	5350.00	48.0 AV	54.0	-6.0	1.15 H	126	41.5	6.5
5	10640.00	60.5 PK	74.0	-13.5	1.32 H	147	41.5	19.0
6	10640.00	49.2 AV	54.0	-4.8	1.32 H	147	30.2	19.0

**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	*5320.00	108.4 PK			1.18 V	89	67.9	40.5
2	*5320.00	98.0 AV			1.18 V	89	57.5	40.5
3	5350.00	58.4 PK	74.0	-15.6	1.23 V	105	51.9	6.5
4	5350.00	46.6 AV	54.0	-7.4	1.23 V	105	40.1	6.5
5	10640.00	59.9 PK	74.0	-14.1	1.20 V	56	40.9	19.0
6	10640.00	47.4 AV	54.0	-6.6	1.20 V	56	28.4	19.0

**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. 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 100	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	5460.00	61.6 PK	74.0	-12.4	1.00 H	109	54.9	6.7
2	5460.00	47.9 AV	54.0	-6.1	1.00 H	109	41.2	6.7
3	#5470.00	64.4 PK	74.0	-9.6	1.10 H	100	57.7	6.7
4	#5470.00	48.5 AV	54.0	-5.5	1.10 H	100	41.8	6.7
5	*5500.00	109.8 PK			1.03 H	95	68.9	40.9
6	*5500.00	99.8 AV			1.03 H	95	58.9	40.9
7	11000.00	60.8 PK	74.0	-13.2	1.33 H	225	41.5	19.3
8	11000.00	49.2 AV	54.0	-4.8	1.33 H	225	29.9	19.3

**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	5460.00	59.4 PK	74.0	-14.6	1.38 V	54	52.7	6.7
2	5460.00	46.7 AV	54.0	-7.3	1.38 V	54	40.0	6.7
3	#5470.00	62.7 PK	74.0	-11.3	1.39 V	75	56.0	6.7
4	#5470.00	46.9 AV	54.0	-7.1	1.39 V	75	40.2	6.7
5	*5500.00	107.9 PK			1.31 V	71	67.0	40.9
6	*5500.00	97.0 AV			1.31 V	71	56.1	40.9
7	11000.00	59.9 PK	74.0	-14.1	1.25 V	58	40.6	19.3
8	11000.00	48.0 AV	54.0	-6.0	1.25 V	58	28.7	19.3

**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 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	109.6 PK			1.08 H	102	68.6	41.0
2	*5580.00	99.2 AV			1.08 H	102	58.2	41.0
3	11160.00	61.0 PK	74.0	-13.0	1.05 H	64	41.2	19.8
4	11160.00	49.7 AV	54.0	-4.3	1.05 H	64	29.9	19.8

**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	*5580.00	108.9 PK			1.65 V	39	67.9	41.0
2	*5580.00	98.9 AV			1.65 V	39	57.9	41.0
3	11160.00	60.3 PK	74.0	-13.7	1.32 V	55	40.5	19.8
4	11160.00	48.2 AV	54.0	-5.8	1.32 V	55	28.4	19.8

**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 140	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	*5700.00	109.4 PK			1.04 H	106	67.9	41.5
2	*5700.00	99.5 AV			1.04 H	106	58.0	41.5
3	#5725.00	61.3 PK	74.0	-12.7	1.14 H	126	54.0	7.3
4	#5725.00	48.9 AV	54.0	-5.1	1.14 H	126	41.6	7.3
5	11400.00	61.6 PK	74.0	-12.4	1.47 H	45	41.2	20.4
6	11400.00	50.1 AV	54.0	-3.9	1.47 H	45	29.7	20.4

**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	*5700.00	109.4 PK			1.69 V	44	67.9	41.5
2	*5700.00	99.5 AV			1.69 V	44	58.0	41.5
3	#5725.00	59.1 PK	74.0	-14.9	1.74 V	65	51.8	7.3
4	#5725.00	47.5 AV	54.0	-6.5	1.74 V	65	40.2	7.3
5	11400.00	61.3 PK	74.0	-12.7	1.26 V	35	40.9	20.4
6	11400.00	49.3 AV	54.0	-4.7	1.26 V	35	28.9	20.4

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	#5623.20	60.0 PK	68.2	-8.2	1.12 H	104	53.0	7.0
2	*5745.00	110.6 PK			1.12 H	104	69.0	41.6
3	*5745.00	99.8 AV			1.12 H	104	58.2	41.6
4	#5954.40	61.0 PK	68.2	-7.2	1.12 H	104	53.1	7.9
5	11490.00	61.5 PK	74.0	-12.5	1.32 H	55	41.2	20.3
6	11490.00	50.0 AV	54.0	-4.0	1.32 H	55	29.7	20.3

**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	#5635.20	59.3 PK	68.2	-8.9	1.28 V	36	52.3	7.0
2	*5745.00	109.0 PK			1.28 V	36	67.4	41.6
3	*5745.00	99.1 AV			1.28 V	36	57.5	41.6
4	#5935.20	60.4 PK	68.2	-7.8	1.28 V	36	52.6	7.8
5	11490.00	60.9 PK	74.0	-13.1	1.22 V	54	40.6	20.3
6	11490.00	48.7 AV	54.0	-5.3	1.22 V	54	28.4	20.3

**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 157	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	#5645.60	59.5 PK	68.2	-8.7	1.09 H	103	52.4	7.1
2	*5785.00	109.6 PK			1.09 H	103	68.0	41.6
3	*5785.00	99.0 AV			1.09 H	103	57.4	41.6
4	#5964.80	60.1 PK	68.2	-8.1	1.09 H	103	52.2	7.9
5	11570.00	61.6 PK	74.0	-12.4	1.14 H	58	41.5	20.1
6	11570.00	49.6 AV	54.0	-4.4	1.14 H	58	29.5	20.1

**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	#5601.60	59.4 PK	68.2	-8.8	1.01 V	42	52.5	6.9
2	*5785.00	109.4 PK			1.01 V	42	67.8	41.6
3	*5785.00	97.9 AV			1.01 V	42	56.3	41.6
4	#5959.20	59.7 PK	68.2	-8.5	1.01 V	42	51.8	7.9
5	11570.00	61.0 PK	74.0	-13.0	1.36 V	58	40.9	20.1
6	11570.00	48.8 AV	54.0	-5.2	1.36 V	58	28.7	20.1

**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
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 165	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	#5608.80	59.6 PK	68.2	-8.6	1.24 H	109	52.7	6.9
2	*5825.00	109.8 PK			1.24 H	109	68.0	41.8
3	*5825.00	99.3 AV			1.24 H	109	57.5	41.8
4	#5980.00	60.5 PK	68.2	-7.7	1.24 H	109	52.6	7.9
5	11650.00	61.0 PK	74.0	-13.0	1.52 H	64	41.2	19.8
6	11650.00	49.5 AV	54.0	-4.5	1.52 H	64	29.7	19.8

**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	#5647.20	58.6 PK	68.2	-9.6	1.45 V	147	51.5	7.1
2	*5825.00	108.7 PK			1.45 V	147	66.9	41.8
3	*5825.00	98.7 AV			1.45 V	147	56.9	41.8
4	#5990.40	60.2 PK	68.2	-8.0	1.45 V	147	52.3	7.9
5	11650.00	60.4 PK	74.0	-13.6	1.52 V	58	40.6	19.8
6	11650.00	48.2 AV	54.0	-5.8	1.52 V	58	28.4	19.8

**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.

802.11n (HT40)

CHANNEL	TX Channel 38	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	5150.00	67.3 PK	74.0	-6.7	1.08 H	87	61.2	6.1
2	5150.00	49.4 AV	54.0	-4.6	1.08 H	87	43.3	6.1
3	*5190.00	106.4 PK			1.14 H	93	66.2	40.2
4	*5190.00	96.9 AV			1.14 H	93	56.7	40.2
5	#10380.00	59.8 PK	74.0	-14.2	1.35 H	158	41.8	18.0
6	#10380.00	46.8 AV	54.0	-7.2	1.35 H	158	28.8	18.0
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	60.1 PK	74.0	-13.9	1.28 V	103	54.0	6.1
2	5150.00	47.4 AV	54.0	-6.6	1.28 V	103	41.3	6.1
3	*5190.00	104.1 PK			1.43 V	85	63.9	40.2
4	*5190.00	94.4 AV			1.43 V	85	54.2	40.2
5	#10380.00	59.5 PK	74.0	-14.5	1.66 V	235	41.5	18.0
6	#10380.00	46.7 AV	54.0	-7.3	1.66 V	235	28.7	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. 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)
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	*5230.00	107.0 PK			1.17 H	97	66.6	40.4
2	*5230.00	97.2 AV			1.17 H	97	56.8	40.4
3	5350.00	58.4 PK	74.0	-15.6	1.30 H	83	51.9	6.5
4	5350.00	46.1 AV	54.0	-7.9	1.30 H	83	39.6	6.5
5	#10460.00	60.1 PK	74.0	-13.9	1.38 H	144	41.9	18.2
6	#10460.00	47.2 AV	54.0	-6.8	1.38 H	144	29.0	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	*5230.00	104.8 PK			1.35 V	83	64.4	40.4
2	*5230.00	95.1 AV			1.35 V	83	54.7	40.4
3	5350.00	58.2 PK	74.0	-15.8	1.21 V	119	51.7	6.5
4	5350.00	45.5 AV	54.0	-8.5	1.21 V	119	39.0	6.5
5	#10460.00	59.7 PK	74.0	-14.3	1.57 V	228	41.5	18.2
6	#10460.00	46.8 AV	54.0	-7.2	1.57 V	228	28.6	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.

CHANNEL	TX Channel 54	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	5150.00	57.7 PK	74.0	-16.3	1.32 H	74	51.6	6.1
2	5150.00	45.0 AV	54.0	-9.0	1.32 H	74	38.9	6.1
3	*5270.00	106.8 PK			1.13 H	99	66.4	40.4
4	*5270.00	97.7 AV			1.13 H	99	57.3	40.4
5	#10540.00	60.7 PK	74.0	-13.3	1.33 H	129	42.1	18.6
6	#10540.00	47.9 AV	54.0	-6.1	1.33 H	129	29.3	18.6

**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	58.4 PK	74.0	-15.6	1.33 V	116	52.3	6.1
2	5150.00	44.9 AV	54.0	-9.1	1.33 V	116	38.8	6.1
3	*5270.00	104.0 PK			1.40 V	86	63.6	40.4
4	*5270.00	94.7 AV			1.40 V	86	54.3	40.4
5	#10540.00	60.4 PK	74.0	-13.6	1.59 V	211	41.8	18.6
6	#10540.00	47.7 AV	54.0	-6.3	1.59 V	211	29.1	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. 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 62	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	*5310.00	106.9 PK			1.14 H	92	66.4	40.5
2	*5310.00	97.1 AV			1.14 H	92	56.6	40.5
3	5350.00	64.5 PK	74.0	-9.5	1.29 H	117	58.0	6.5
4	5350.00	49.1 AV	54.0	-4.9	1.29 H	117	42.6	6.5
5	10620.00	60.9 PK	74.0	-13.1	1.31 H	108	42.0	18.9
6	10620.00	48.2 AV	54.0	-5.8	1.31 H	108	29.3	18.9

**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	*5310.00	103.0 PK			1.36 V	64	62.5	40.5
2	*5310.00	94.2 AV			1.36 V	64	53.7	40.5
3	5350.00	61.1 PK	74.0	-12.9	1.27 V	84	54.6	6.5
4	5350.00	47.5 AV	54.0	-6.5	1.27 V	84	41.0	6.5
5	10620.00	60.7 PK	74.0	-13.3	1.55 V	206	41.8	18.9
6	10620.00	47.8 AV	54.0	-6.2	1.55 V	206	28.9	18.9

**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. 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 102	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	5460.00	61.0 PK	74.0	-13.0	1.11 H	93	54.3	6.7
2	5460.00	49.5 AV	54.0	-4.5	1.11 H	93	42.8	6.7
3	#5470.00	66.0 PK	74.0	-8.0	1.18 H	98	59.3	6.7
4	#5470.00	52.2 AV	54.0	-1.8	1.18 H	98	45.5	6.7
5	*5510.00	107.4 PK			1.10 H	94	66.5	40.9
6	*5510.00	97.8 AV			1.10 H	94	56.9	40.9
7	11020.00	60.6 PK	74.0	-13.4	1.29 H	107	41.3	19.3
8	11020.00	48.0 AV	54.0	-6.0	1.29 H	107	28.7	19.3

**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	5460.00	58.2 PK	74.0	-15.8	1.40 V	45	51.5	6.7
2	5460.00	47.1 AV	54.0	-6.9	1.40 V	45	40.4	6.7
3	#5470.00	62.8 PK	74.0	-11.2	1.44 V	29	56.1	6.7
4	#5470.00	49.4 AV	54.0	-4.6	1.44 V	29	42.7	6.7
5	*5510.00	103.7 PK			1.43 V	67	62.8	40.9
6	*5510.00	94.3 AV			1.43 V	67	53.4	40.9
7	11020.00	60.4 PK	74.0	-13.6	1.61 V	233	41.1	19.3
8	11020.00	47.8 AV	54.0	-6.2	1.61 V	233	28.5	19.3

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 110	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5550.00	106.6 PK			1.09 H	92	65.6	41.0
2	*5550.00	97.1 AV			1.09 H	92	56.1	41.0
3	11100.00	61.0 PK	74.0	-13.0	1.27 H	112	41.2	19.8
4	11100.00	48.4 AV	54.0	-5.6	1.27 H	112	28.6	19.8

**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	*5550.00	104.7 PK			1.37 V	42	63.7	41.0
2	*5550.00	95.3 AV			1.37 V	42	54.3	41.0
3	11100.00	60.8 PK	74.0	-13.2	1.46 V	240	41.0	19.8
4	11100.00	48.2 AV	54.0	-5.8	1.46 V	240	28.4	19.8

**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 134	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	*5670.00	106.2 PK			1.15 H	100	64.9	41.3
2	*5670.00	96.7 AV			1.15 H	100	55.4	41.3
3	#5725.00	60.1 PK	74.0	-13.9	1.32 H	99	52.8	7.3
4	#5725.00	46.8 AV	54.0	-7.2	1.32 H	99	39.5	7.3
5	11340.00	61.6 PK	74.0	-12.4	1.38 H	118	41.4	20.2
6	11340.00	49.0 AV	54.0	-5.0	1.38 H	118	28.8	20.2

**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	*5670.00	105.7 PK			1.59 V	43	64.4	41.3
2	*5670.00	95.9 AV			1.59 V	43	54.6	41.3
3	#5725.00	60.9 PK	74.0	-13.1	1.41 V	38	53.6	7.3
4	#5725.00	46.9 AV	54.0	-7.1	1.41 V	38	39.6	7.3
5	11340.00	61.4 PK	74.0	-12.6	1.66 V	247	41.2	20.2
6	11340.00	48.8 AV	54.0	-5.2	1.66 V	247	28.6	20.2

**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.

CHANNEL	TX Channel 151	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	#5625.60	59.6 PK	68.2	-8.6	1.13 H	101	52.6	7.0
2	*5755.00	106.7 PK			1.13 H	101	65.1	41.6
3	*5755.00	96.2 AV			1.13 H	101	54.6	41.6
4	#5983.20	60.1 PK	68.2	-8.1	1.13 H	101	52.2	7.9
5	11510.00	61.7 PK	74.0	-12.3	1.30 H	148	41.5	20.2
6	11510.00	48.5 AV	54.0	-5.5	1.30 H	148	28.3	20.2
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	#5618.40	59.4 PK	68.2	-8.8	1.27 V	39	52.5	6.9
2	*5755.00	104.5 PK			1.27 V	39	62.9	41.6
3	*5755.00	95.5 AV			1.27 V	39	53.9	41.6
4	#5973.60	59.5 PK	68.2	-8.7	1.27 V	39	51.6	7.9
5	11510.00	61.9 PK	74.0	-12.1	1.44 V	285	41.7	20.2
6	11510.00	48.6 AV	54.0	-5.4	1.44 V	285	28.4	20.2

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.

CHANNEL	TX Channel 159	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	#5603.20	59.7 PK	68.2	-8.5	1.14 H	102	52.8	6.9
2	*5795.00	106.3 PK			1.14 H	102	64.6	41.7
3	*5795.00	96.8 AV			1.14 H	102	55.1	41.7
4	#5951.20	59.7 PK	68.2	-8.5	1.14 H	102	51.9	7.8
5	11590.00	61.5 PK	74.0	-12.5	1.23 H	166	41.4	20.1
6	11590.00	48.5 AV	54.0	-5.5	1.23 H	166	28.4	20.1

**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	#5616.80	60.0 PK	68.2	-8.2	1.37 V	42	53.1	6.9
2	*5795.00	104.9 PK			1.37 V	42	63.2	41.7
3	*5795.00	95.1 AV			1.37 V	42	53.4	41.7
4	#5937.60	61.3 PK	68.2	-6.9	1.37 V	42	53.5	7.8
5	11590.00	61.7 PK	74.0	-12.3	1.49 V	280	41.6	20.1
6	11590.00	48.7 AV	54.0	-5.3	1.49 V	280	28.6	20.1

**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
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT80)

CHANNEL	TX Channel 42	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	5150.00	66.9 PK	74.0	-7.1	1.07 H	85	60.8	6.1
2	5150.00	52.5 AV	54.0	-1.5	1.07 H	85	46.4	6.1
3	*5210.00	104.6 PK			1.02 H	97	64.3	40.3
4	*5210.00	93.5 AV			1.02 H	97	53.2	40.3
5	5350.00	58.4 PK	74.0	-15.6	1.10 H	105	51.9	6.5
6	5350.00	45.4 AV	54.0	-8.6	1.10 H	105	38.9	6.5
7	#10420.00	59.5 PK	74.0	-14.5	1.22 H	174	41.4	18.1
8	#10420.00	47.1 AV	54.0	-6.9	1.22 H	174	29.0	18.1

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	64.1 PK	74.0	-9.9	1.56 V	79	58.0	6.1
2	5150.00	50.9 AV	54.0	-3.1	1.56 V	79	44.8	6.1
3	*5210.00	102.0 PK			1.38 V	81	61.7	40.3
4	*5210.00	90.7 AV			1.38 V	81	50.4	40.3
5	5350.00	59.1 PK	74.0	-14.9	1.62 V	88	52.6	6.5
6	5350.00	45.2 AV	54.0	-8.8	1.62 V	88	38.7	6.5
7	#10420.00	59.4 PK	74.0	-14.6	1.77 V	188	41.3	18.1
8	#10420.00	47.0 AV	54.0	-7.0	1.77 V	188	28.9	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. 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 58	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	5150.00	57.3 PK	74.0	-16.7	1.07 H	114	51.2	6.1
2	5150.00	44.7 AV	54.0	-9.3	1.07 H	114	38.6	6.1
3	*5290.00	104.6 PK			1.02 H	102	64.2	40.4
4	*5290.00	93.5 AV			1.02 H	102	53.1	40.4
5	5350.00	69.5 PK	74.0	-4.5	1.09 H	86	63.0	6.5
<b>6</b>	<b>5350.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.09 H</b>	<b>86</b>	<b>47.4</b>	<b>6.5</b>
7	#10580.00	60.1 PK	74.0	-13.9	1.18 H	170	41.4	18.7
8	#10580.00	48.0 AV	54.0	-6.0	1.18 H	170	29.3	18.7

**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	5150.00	57.5 PK	74.0	-16.5	1.25 V	89	51.4	6.1
2	5150.00	44.7 AV	54.0	-9.3	1.25 V	89	38.6	6.1
3	*5290.00	101.7 PK			1.33 V	83	61.3	40.4
4	*5290.00	91.0 AV			1.33 V	83	50.6	40.4
5	5350.00	67.3 PK	74.0	-6.7	1.34 V	82	60.8	6.5
6	5350.00	52.7 AV	54.0	-1.3	1.34 V	82	46.2	6.5
7	#10580.00	60.4 PK	74.0	-13.6	1.41 V	296	41.7	18.7
8	#10580.00	48.1 AV	54.0	-5.9	1.41 V	296	29.4	18.7

**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 106	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

## ANTENNA POLARITY &amp; 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	5460.00	66.2 PK	74.0	-7.8	1.14 H	89	59.5	6.7
2	5460.00	52.0 AV	54.0	-2.0	1.14 H	89	45.3	6.7
3	#5470.00	67.9 PK	74.0	-6.1	1.11 H	93	61.2	6.7
4	#5470.00	53.6 AV	54.0	-0.4	1.11 H	93	46.9	6.7
5	*5530.00	104.3 PK			1.10 H	99	63.4	40.9
6	*5530.00	92.8 AV			1.10 H	99	51.9	40.9
7	#5725.00	57.8 PK	74.0	-16.2	1.05 H	109	50.5	7.3
8	#5725.00	45.4 AV	54.0	-8.6	1.05 H	109	38.1	7.3
9	11060.00	61.4 PK	74.0	-12.6	1.24 H	171	41.8	19.6
10	11060.00	48.7 AV	54.0	-5.3	1.24 H	171	29.1	19.6

## ANTENNA POLARITY &amp; 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	5460.00	60.4 PK	74.0	-13.6	1.18 V	69	53.7	6.7
2	5460.00	49.0 AV	54.0	-5.0	1.18 V	69	42.3	6.7
3	#5470.00	62.4 PK	74.0	-11.6	1.26 V	79	55.7	6.7
4	#5470.00	50.8 AV	54.0	-3.2	1.26 V	79	44.1	6.7
5	*5530.00	100.7 PK			1.22 V	66	59.8	40.9
6	*5530.00	89.7 AV			1.22 V	66	48.8	40.9
7	#5725.00	57.8 PK	74.0	-16.2	1.20 V	72	50.5	7.3
8	#5725.00	45.2 AV	54.0	-8.8	1.20 V	72	37.9	7.3
9	11060.00	61.2 PK	74.0	-12.8	1.38 V	298	41.6	19.6
10	11060.00	48.6 AV	54.0	-5.4	1.38 V	298	29.0	19.6

## 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. 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 155	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	#5600.80	58.8 PK	68.2	-9.4	1.14 H	104	51.9	6.9
2	*5775.00	104.0 PK			1.14 H	104	62.4	41.6
3	*5775.00	92.7 AV			1.14 H	104	51.1	41.6
4	#5945.60	59.9 PK	68.2	-8.3	1.14 H	104	52.1	7.8
5	11550.00	61.8 PK	74.0	-12.2	1.24 H	197	41.6	20.2
6	11550.00	48.9 AV	54.0	-5.1	1.24 H	197	28.7	20.2

**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	#5604.00	61.4 PK	68.2	-6.8	1.36 V	50	54.5	6.9
2	*5775.00	103.1 PK			1.36 V	50	61.5	41.6
3	*5775.00	92.2 AV			1.36 V	50	50.6	41.6
4	#5980.80	61.1 PK	68.2	-7.1	1.36 V	50	53.2	7.9
5	11550.00	62.0 PK	74.0	-12.0	1.50 V	311	41.8	20.2
6	11550.00	49.1 AV	54.0	-4.9	1.50 V	311	28.9	20.2

**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.



Below 1GHz Worst-Case Data: 802.11a

CHANNEL	TX Channel 140	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	47.36	27.8 QP	40.0	-12.2	1.99 H	142	42.2	-14.4
2	101.69	29.0 QP	43.5	-14.5	1.99 H	12	47.2	-18.2
3	175.43	24.4 QP	43.5	-19.1	1.50 H	255	38.9	-14.5
4	284.09	22.6 QP	46.0	-23.4	1.25 H	330	35.1	-12.5
5	666.35	24.9 QP	46.0	-21.1	1.00 H	50	30.0	-5.1
6	938.01	34.6 QP	46.0	-11.4	1.25 H	7	34.8	-0.2

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	31.84	25.7 QP	40.0	-14.3	1.50 V	229	41.4	-15.7
2	101.69	30.6 QP	43.5	-12.9	2.00 V	13	48.8	-18.2
3	171.55	21.9 QP	43.5	-21.6	1.00 V	92	36.0	-14.1
4	338.42	20.6 QP	46.0	-25.4	1.24 V	217	32.0	-11.4
5	689.64	25.3 QP	46.0	-20.7	2.00 V	7	29.9	-4.6
6	938.01	35.5 QP	46.0	-10.5	1.00 V	88	35.7	-0.2

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

## 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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 21, 2016	Nov. 20, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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 test was performed in HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

#### 4.2.3 Test Procedures

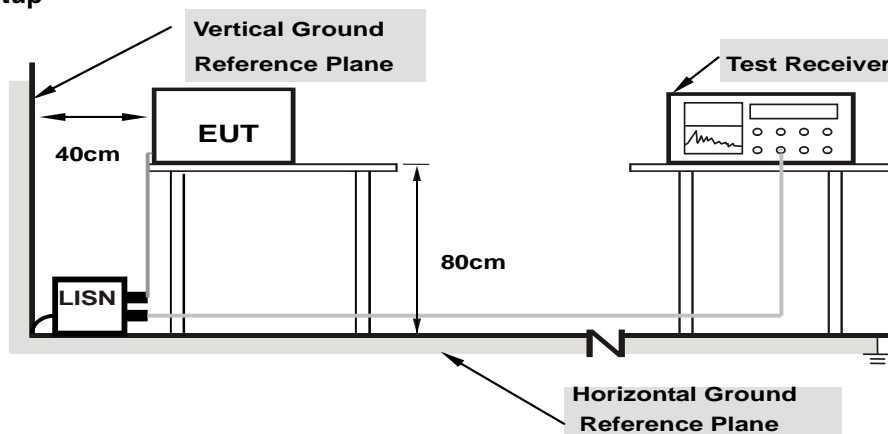
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

#### 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 Conditions

Same as 4.1.6.

#### 4.2.7 Test Results

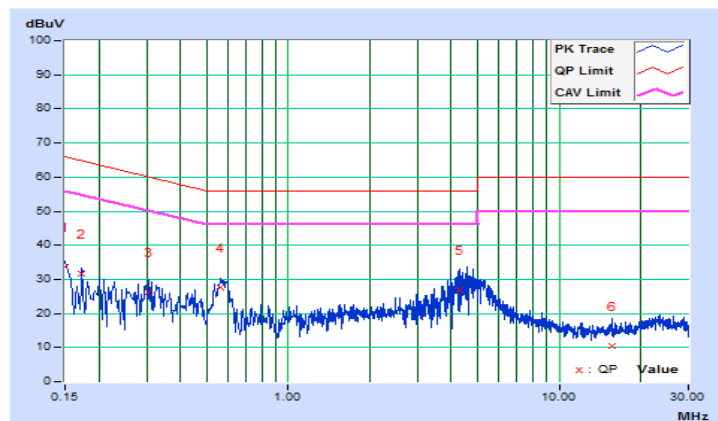
Worst-case data: 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.17	23.49	12.89	33.66	23.06	66.00
2	0.17346	10.18	21.60	11.43	31.78	21.61	64.79	54.79	-33.01	-33.18
3	0.30640	10.21	15.93	5.37	26.14	15.58	60.07	50.07	-33.93	-34.49
4	0.56055	10.23	17.53	8.93	27.76	19.16	56.00	46.00	-28.24	-26.84
5	4.27896	10.44	16.65	4.54	27.09	14.98	56.00	46.00	-28.91	-31.02
6	15.62578	11.16	-0.62	-5.14	10.54	6.02	60.00	50.00	-49.46	-43.98

#### 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.

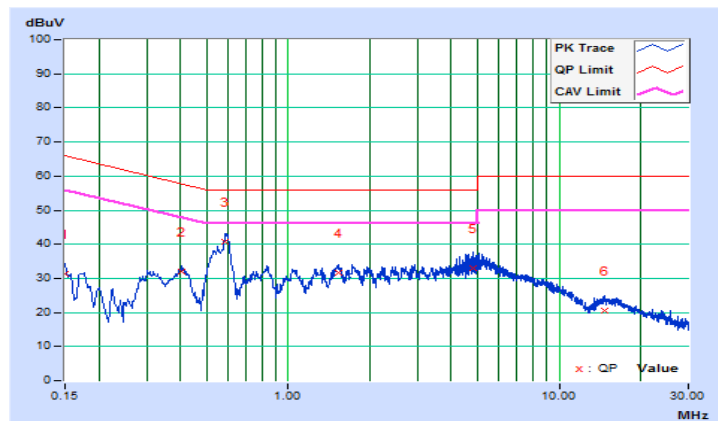


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.18	21.29	15.58	31.47	25.76	66.00
2	0.40373	10.29	21.76	16.90	32.05	27.19	57.78	47.78	-25.73	-20.59
<b>3</b>	<b>0.58538</b>	<b>10.28</b>	<b>30.51</b>	<b>25.25</b>	<b>40.79</b>	<b>35.53</b>	<b>56.00</b>	<b>46.00</b>	<b>-15.21</b>	<b>-10.47</b>
4	1.54196	10.32	21.24	15.21	31.56	25.53	56.00	46.00	-24.44	-20.47
5	4.79117	10.59	22.52	14.41	33.11	25.00	56.00	46.00	-22.89	-21.00
6	14.73821	11.21	9.31	4.92	20.52	16.13	60.00	50.00	-39.48	-33.87

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 $\leq$ 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)
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  $\geq 40$  MHz for any  $N_{ANT}$ ;

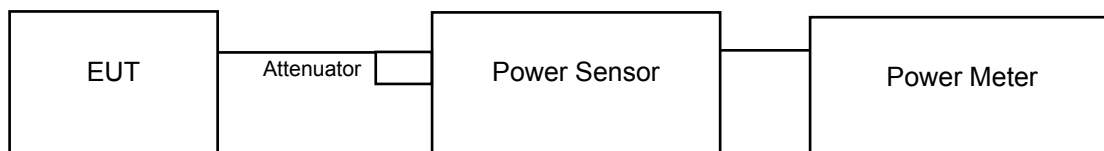
Array Gain =  $5 \log(N_{ANT}/N_{SS})$  dB or 3 dB, whichever is less for 20-MHz channel widths with  $N_{ANT} \geq 5$ .

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

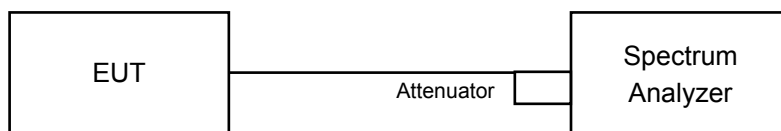
#### 4.3.2 Test Setup

##### For Power Output

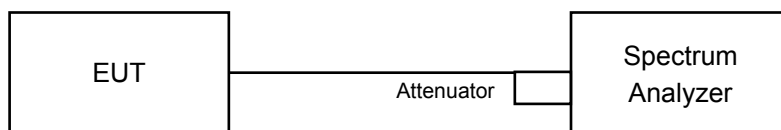
802.11a, 802.11n (HT20), 802.11n (HT40)



##### 802.11ac (VHT80)



##### For Bandwidth



### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.3.4 Test Procedure

#### For Average Power Measurement

##### For 802.11a, 802.11n (HT20), 802.11n (HT40)

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.

##### For 802.11ac (VHT80)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW  $\geq$  3 MHz.
- 5) Number of points in sweep  $\geq$  2 Span / RBW.
- 6) Sweep time  $\leq$  (number of points in sweep) \* T
- 7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- 8) Detector = RMS.
- 9) Trace mode = max hold.
- 10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
- 11) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

##### For 26dB Bandwidth

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) 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%.

### 4.3.5 Deviation from Test Standard

No deviation.

### 4.3.6 EUT Operating Conditions

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 Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	47.753	16.79	24	Pass
40	5200	<b>48.195</b>	16.83	24	Pass
48	5240	47.643	16.78	24	Pass
52	5260	50.466	17.03	24	Pass
60	5300	<b>50.933</b>	17.07	24	Pass
64	5320	50.234	17.01	24	Pass
100	5500	54.450	17.36	24	Pass
116	5580	54.200	17.34	24	Pass
140	5700	<b>54.828</b>	17.39	24	Pass
149	5745	52.845	17.23	30	Pass
157	5785	53.827	17.31	30	Pass
165	5825	<b>54.200</b>	17.34	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1.  $11\text{dBm} + 10\log ( 20.40 ) = 24.10 \text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 20.36 ) = 24.09 \text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log ( 20.56 ) = 24.13 \text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log ( 21.57 ) = 24.34 \text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log ( 23.42 ) = 24.70 \text{ dBm} > 24\text{dBm}$
6.  $11\text{dBm} + 10\log ( 23.66 ) = 24.74 \text{ dBm} > 24\text{dBm}$



## 802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	41.591	16.19	24	Pass
40	5200	41.305	16.16	24	Pass
48	5240	42.170	16.25	24	Pass
52	5260	38.726	15.88	24	Pass
60	5300	39.811	16.00	24	Pass
64	5320	40.179	16.04	24	Pass
100	5500	40.832	16.11	24	Pass
116	5580	41.976	16.23	24	Pass
140	5700	41.879	16.22	24	Pass
149	5745	40.087	16.03	30	Pass
157	5785	41.495	16.18	30	Pass
165	5825	41.400	16.17	30	Pass

## Note:

For U-NII-2A, U-NII-2C Band:

1.  $11\text{dBm} + 10\log ( 20.79 ) = 24.18 \text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 20.85 ) = 24.19 \text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log ( 20.81 ) = 24.18 \text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log ( 20.99 ) = 24.22 \text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log ( 22.09 ) = 24.44 \text{ dBm} > 24\text{dBm}$
6.  $11\text{dBm} + 10\log ( 22.14 ) = 24.45 \text{ dBm} > 24\text{dBm}$

### 802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	36.392	15.61	24	Pass
46	5230	36.058	15.57	24	Pass
54	5270	36.898	15.67	24	Pass
62	5310	36.813	15.66	24	Pass
102	5510	40.551	16.08	24	Pass
110	5550	40.272	16.05	24	Pass
134	5670	41.210	16.15	24	Pass
151	5755	39.811	16.00	30	Pass
159	5795	39.719	15.99	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1.  $11\text{dBm} + 10\log ( 41.95 ) = 27.23 \text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 41.80 ) = 27.21 \text{ dBm} > 24\text{dBm}$
3.  $11\text{dBm} + 10\log ( 53.23 ) = 28.26 \text{ dBm} > 24\text{dBm}$
4.  $11\text{dBm} + 10\log ( 53.36 ) = 28.27 \text{ dBm} > 24\text{dBm}$
5.  $11\text{dBm} + 10\log ( 54.75 ) = 28.38 \text{ dBm} > 24\text{dBm}$

### 802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	37.584	15.75	24	Pass
58	5290	41.687	16.20	24	Pass
106	5530	43.152	16.35	24	Pass
155	5775	42.756	16.31	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1.  $11\text{dBm} + 10\log ( 102.23 ) = 26.07 \text{ dBm} > 24\text{dBm}$
2.  $11\text{dBm} + 10\log ( 121.52 ) = 26.06 \text{ dBm} > 24\text{dBm}$

26dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	20.60
40	5200	20.48
48	5240	20.61
52	5260	20.40
60	5300	20.36
64	5320	20.56
100	5500	21.57
116	5580	23.42
140	5700	23.66

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	20.86
40	5200	20.69
48	5240	20.53
52	5260	20.79
60	5300	20.85
64	5320	20.81
100	5500	20.99
116	5580	22.09
140	5700	22.14

#### 802.11n (HT40)

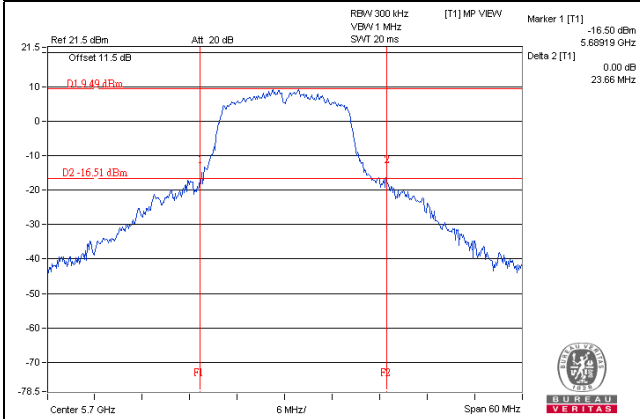
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
38	5190	41.79
46	5230	42.03
54	5270	41.95
62	5310	41.80
102	5510	53.23
110	5550	53.36
134	5670	54.75

#### 802.11ac (VHT80)

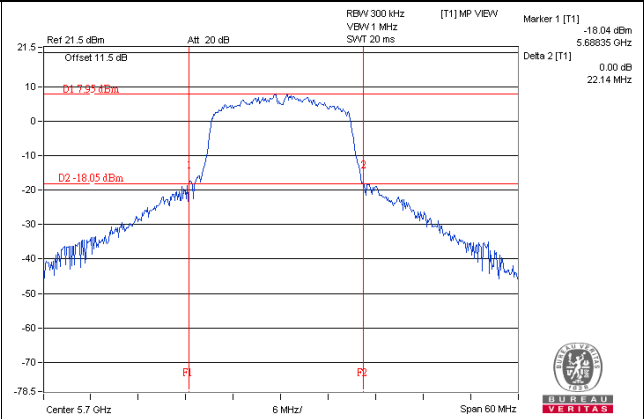
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
42	5210	100.44
58	5290	102.23
106	5530	121.52

### Spectrum Plot of Worst Value

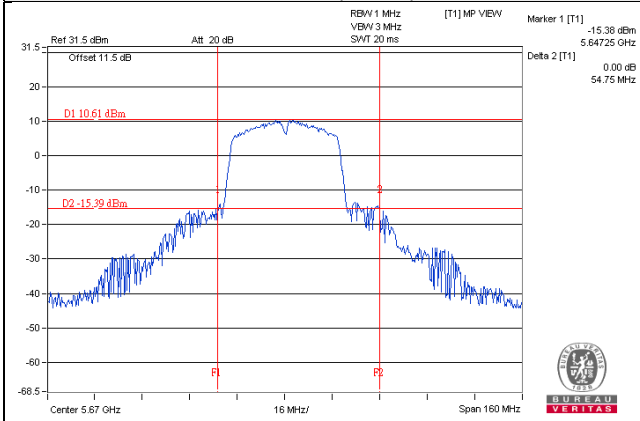
#### 802.11a



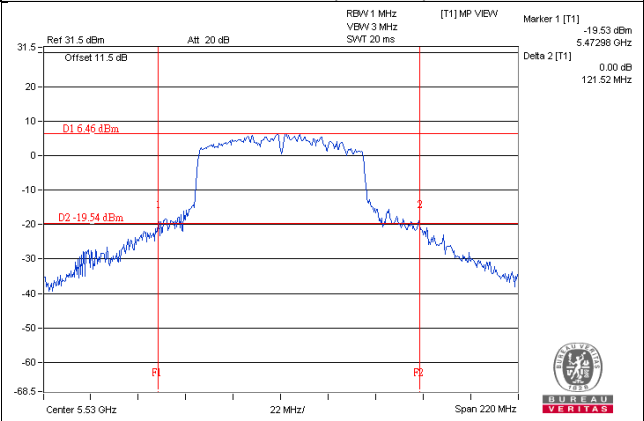
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)



## EUT Maximum Conducted Power

### 802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	50.933	17.07
5470~5725	54.828	17.39

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

### 802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	40.179	16.04
5470~5725	41.976	16.23

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

### 802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	36.898	15.67
5470~5725	41.210	16.15

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

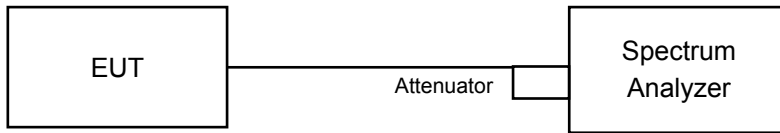
### 802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	41.687	16.20
5470~5725	43.152	16.35

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

## 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 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.

#### 4.4.4 Test Result

##### 802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.44
40	5200	16.68
48	5240	16.44
52	5260	16.56
60	5300	16.56
64	5320	16.68
100	5500	16.56
116	5580	16.68
140	5700	16.68
149	5745	16.68
157	5785	16.68
165	5825	16.68

##### 802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.64
40	5200	17.64
48	5240	17.64
52	5260	17.64
60	5300	17.52
64	5320	17.64
100	5500	17.76
116	5580	17.76
140	5700	17.64
149	5745	17.64
157	5785	17.64
165	5825	17.64



#### 802.11n (HT40)

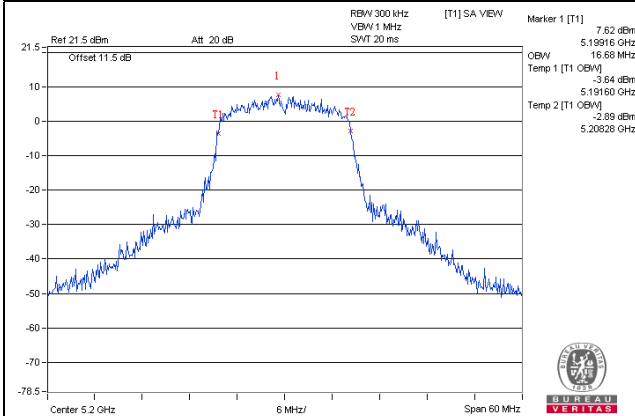
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.12
46	5230	36.12
54	5270	36.24
62	5310	36.36
102	5510	36.24
110	5550	36.24
134	5670	36.24
151	5755	36.24
159	5795	36.24

#### 802.11ac (VHT80)

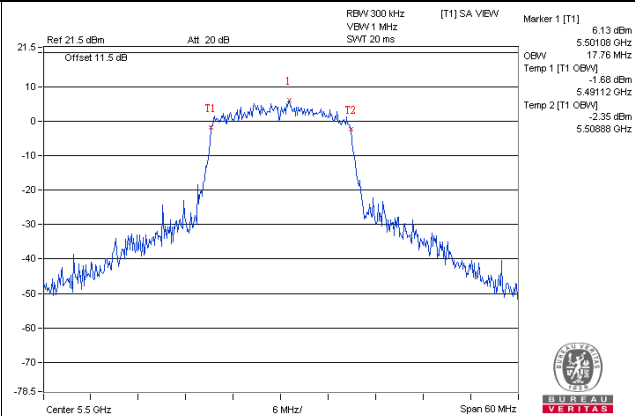
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.36
58	5290	75.36
106	5530	75.60
155	5775	75.36

### Spectrum Plot of Worst Value

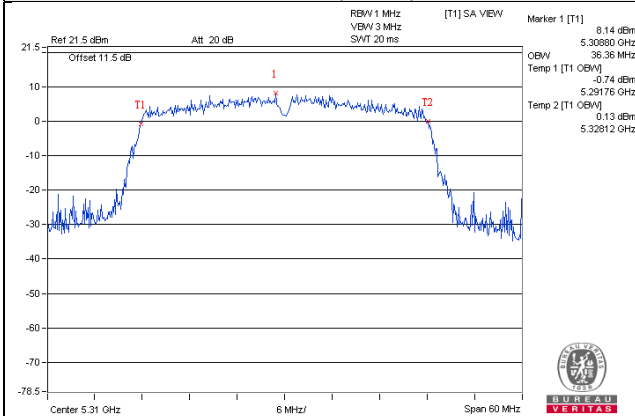
#### 802.11a



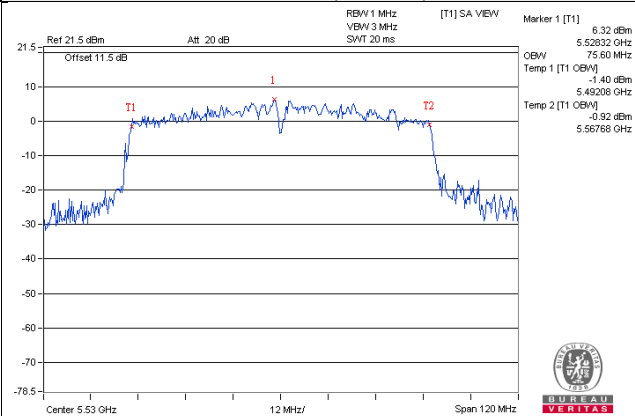
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)

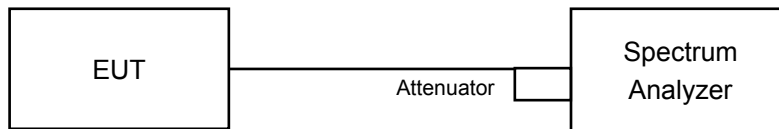


## 4.5 Peak Power Spectral Density Measurement

### 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	
	√	Mobile and Portable 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 Procedures

##### For U-NII-1, U-NII-2A, U-NII-2C band:

Duty cycle of test signal is  $\geq 98\%$

Using method SA-1

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

Duty cycle of test signal is  $< 98\%$

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW  $\geq 3$  MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add  $10 \log (1/\text{duty cycle})$

##### For U-NII-3 band:

Duty cycle of test signal is  $\geq 98\%$

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 kHz, Set VBW  $\geq 1$  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  $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$ .
- 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.

Duty cycle of test signal is  $< 98\%$

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 kHz, Set VBW  $\geq 1$  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  $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- 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  $10 \log (1/\text{duty cycle})$

#### 4.5.5 Deviation from Test Standard

No deviation.

#### 4.5.6 EUT Operating Conditions

Same as 4.3.6.

#### 4.5.7 Test Results

For U-NII-1 band:  
 802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	3.61	0.27	3.88	11	Pass
40	5200	3.64	0.27	3.91	11	Pass
48	5240	3.86	0.27	4.13	11	Pass
52	5260	3.82	0.27	4.09	11	Pass
60	5300	3.55	0.27	3.82	11	Pass
64	5320	3.45	0.27	3.72	11	Pass
100	5500	3.58	0.27	3.85	11	Pass
116	5580	4.03	0.27	4.30	11	Pass
140	5700	4.18	0.27	4.45	11	Pass

Note:

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

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	2.69	0.25	2.94	11	Pass
40	5200	3.02	0.25	3.27	11	Pass
48	5240	2.88	0.25	3.13	11	Pass
52	5260	2.52	0.25	2.77	11	Pass
60	5300	2.28	0.25	2.53	11	Pass
64	5320	2.19	0.25	2.44	11	Pass
100	5500	2.14	0.25	2.39	11	Pass
116	5580	2.89	0.25	3.14	11	Pass
140	5700	3.07	0.25	3.32	11	Pass

Note:

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

### 802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
38	5190	-0.94	0.76	-0.18	11	Pass
46	5230	-0.85	0.76	-0.09	11	Pass
54	5270	-1.17	0.76	-0.41	11	Pass
62	5310	-1.31	0.76	-0.55	11	Pass
102	5510	-0.78	0.76	-0.02	11	Pass
110	5550	-0.65	0.76	0.11	11	Pass
134	5670	-0.30	0.76	0.46	11	Pass

Note:

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

### 802.11ac (VHT80)

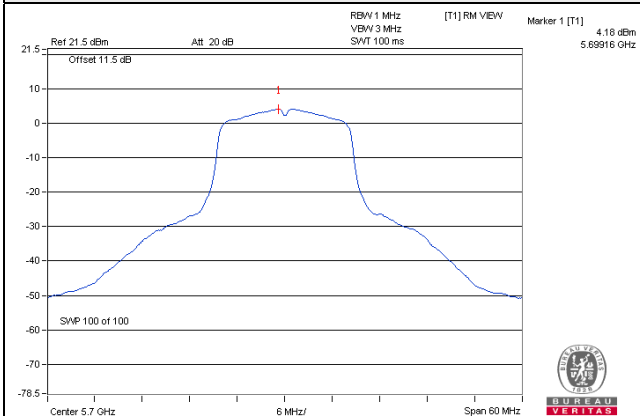
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
42	5210	-1.98	0.36	-1.62	11	Pass
58	5290	-2.28	0.36	-1.92	11	Pass
106	5530	-1.55	0.36	-1.19	11	Pass

Note:

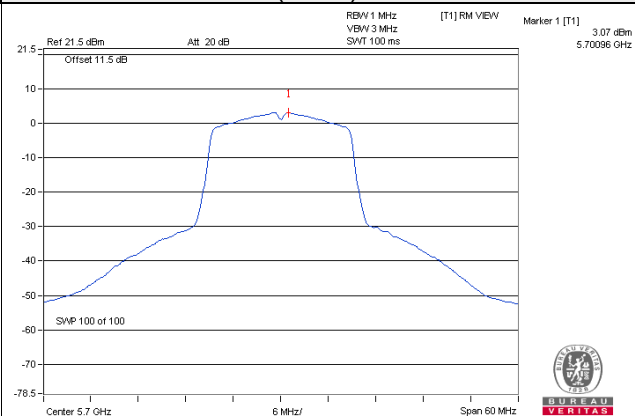
1. Refer to section 3.3 for duty cycle spectrum plot.

### Spectrum Plot of Worst Value

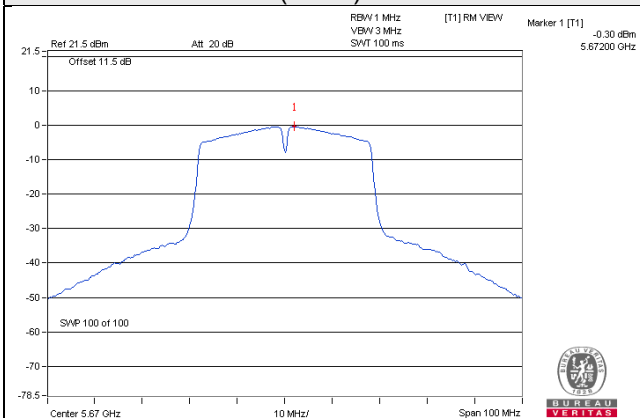
802.11a / CH 140



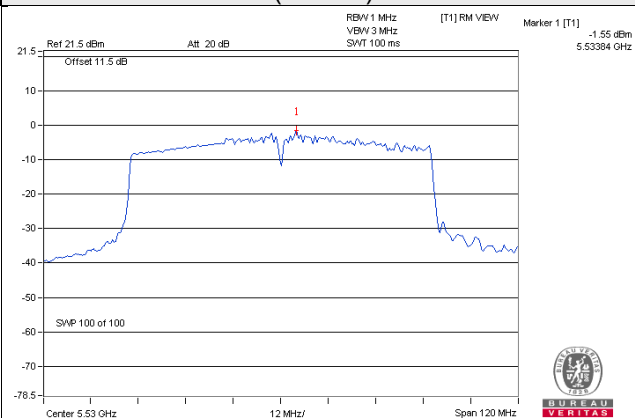
802.11n (HT20) / CH 140



802.11n (HT40) / CH 134



802.11ac (VHT80) / CH 106



For U-NII-3 band:  
802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-3.79	-1.57	0.27	-1.30	30	Pass
157	5785	-3.86	-1.64	0.27	-1.37	30	Pass
165	5825	-4.25	-2.03	0.27	-1.76	30	Pass

Note:

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

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-5.17	-2.95	0.25	-2.70	30	Pass
157	5785	-5.30	-3.08	0.25	-2.83	30	Pass
165	5825	-5.70	-3.48	0.25	-3.23	30	Pass

Note:

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

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-8.89	-6.67	0.76	-5.91	30	Pass
159	5795	-9.33	-7.11	0.76	-6.35	30	Pass

Note:

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

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
155	5775	-9.13	-6.91	0.36	-6.55	30	Pass

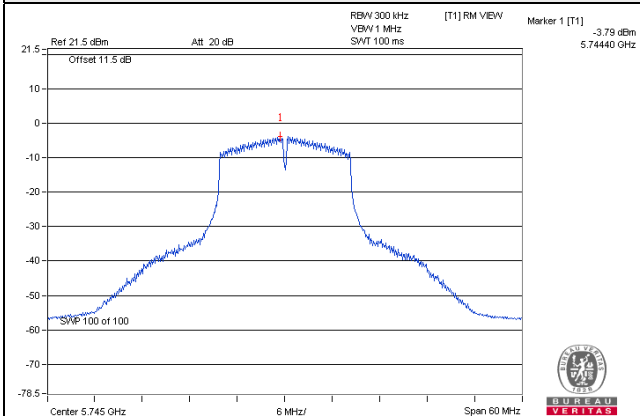
Note:

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

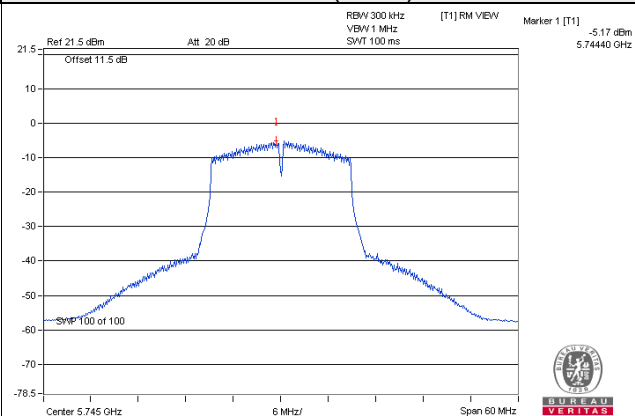


### Spectrum Plot of Worst Value

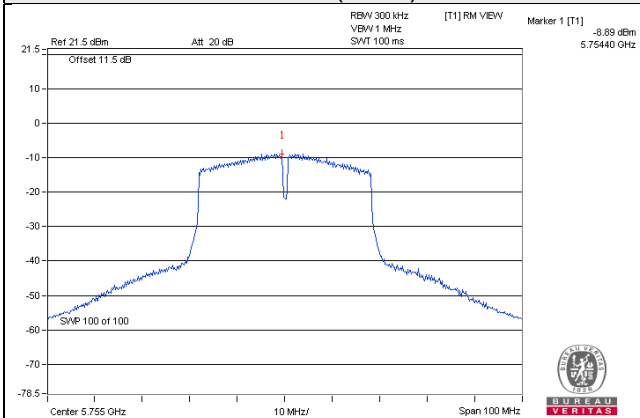
#### 802.11a



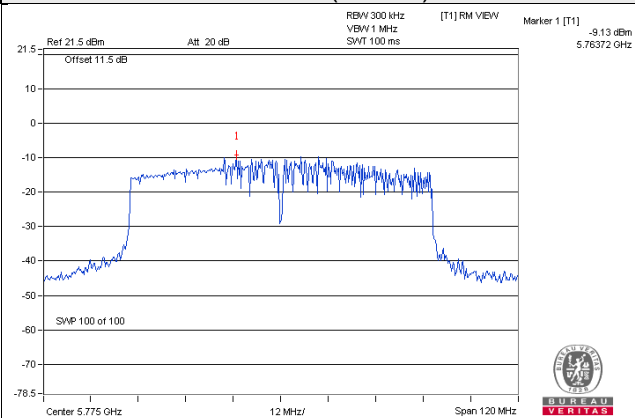
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)

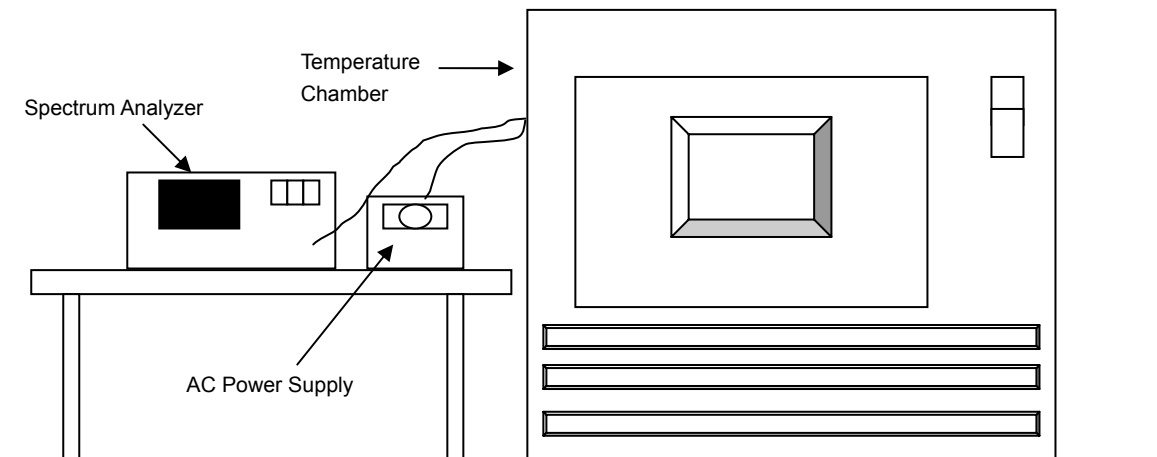


## 4.6 Frequency Stability

### 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

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- 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: 5700MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5700.0264	0.00046	5700.0273	0.00048	5700.0275	0.00048	5700.0284	0.00050
40	120	5699.9964	-0.00006	5699.9994	-0.00001	5699.9986	-0.00002	5699.9991	-0.00002
30	120	5700.0066	0.00012	5700.0099	0.00017	5700.0109	0.00019	5700.0107	0.00019
20	120	5700.0183	0.00032	5700.0184	0.00032	5700.0213	0.00037	5700.0168	0.00029
10	120	5700.0274	0.00048	5700.0277	0.00049	5700.0272	0.00048	5700.0265	0.00046
0	120	5700.0251	0.00044	5700.0237	0.00042	5700.0269	0.00047	5700.0258	0.00045
-10	120	5700.0266	0.00047	5700.0255	0.00045	5700.0249	0.00044	5700.028	0.00049
-20	120	5700.0126	0.00022	5700.0099	0.00017	5700.0079	0.00014	5700.0123	0.00022
-30	120	5699.9808	-0.00034	5699.9821	-0.00031	5699.9781	-0.00038	5699.9828	-0.00030

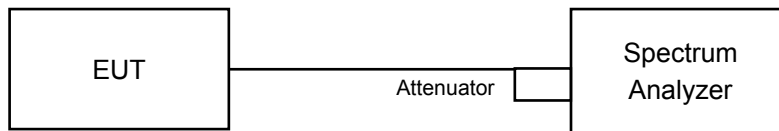
Frequency Stability Versus Voltage									
Operating Frequency: 5700MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5700.0178	0.00031	5700.018	0.00032	5700.0207	0.00036	5700.0178	0.00031
	120	5700.0183	0.00032	5700.0184	0.00032	5700.0213	0.00037	5700.0168	0.00029
	102	5700.0193	0.00034	5700.0191	0.00034	5700.0215	0.00038	5700.0162	0.00028

## 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

- Set resolution bandwidth (RBW) = 100kHz
- 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

### 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
149	5745	15.17	0.5	Pass
157	5785	15.14	0.5	Pass
165	5825	15.17	0.5	Pass

##### 802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.18	0.5	Pass
157	5785	15.14	0.5	Pass
165	5825	15.16	0.5	Pass

##### 802.11n (HT40)

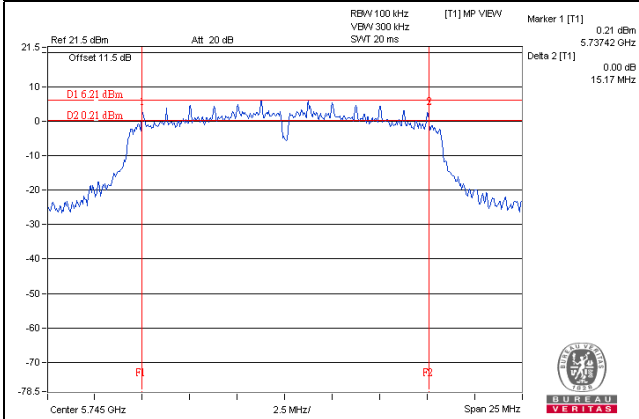
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.21	0.5	Pass
159	5795	35.20	0.5	Pass

##### 802.11ac (VHT80)

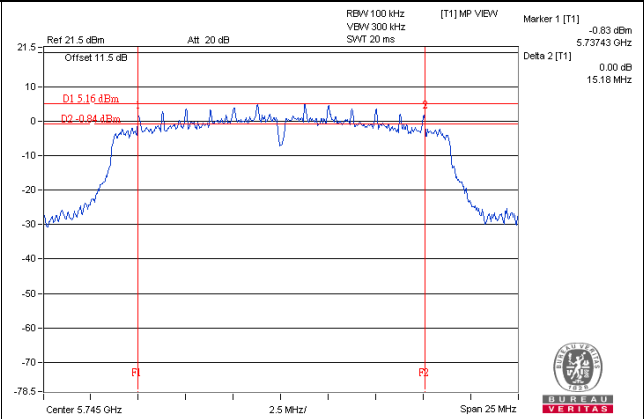
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.39	0.5	Pass

### Spectrum Plot of Worst Value

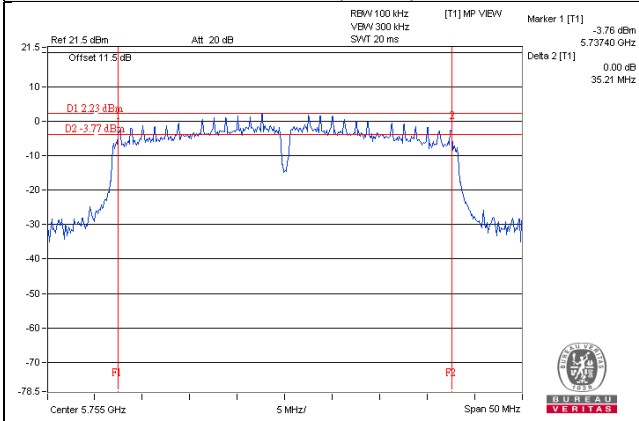
#### 802.11a



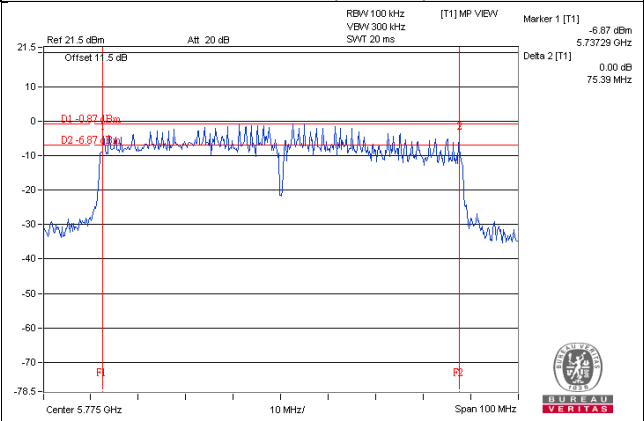
#### 802.11n (HT20)



#### 802.11n (HT40)



#### 802.11ac (VHT80)

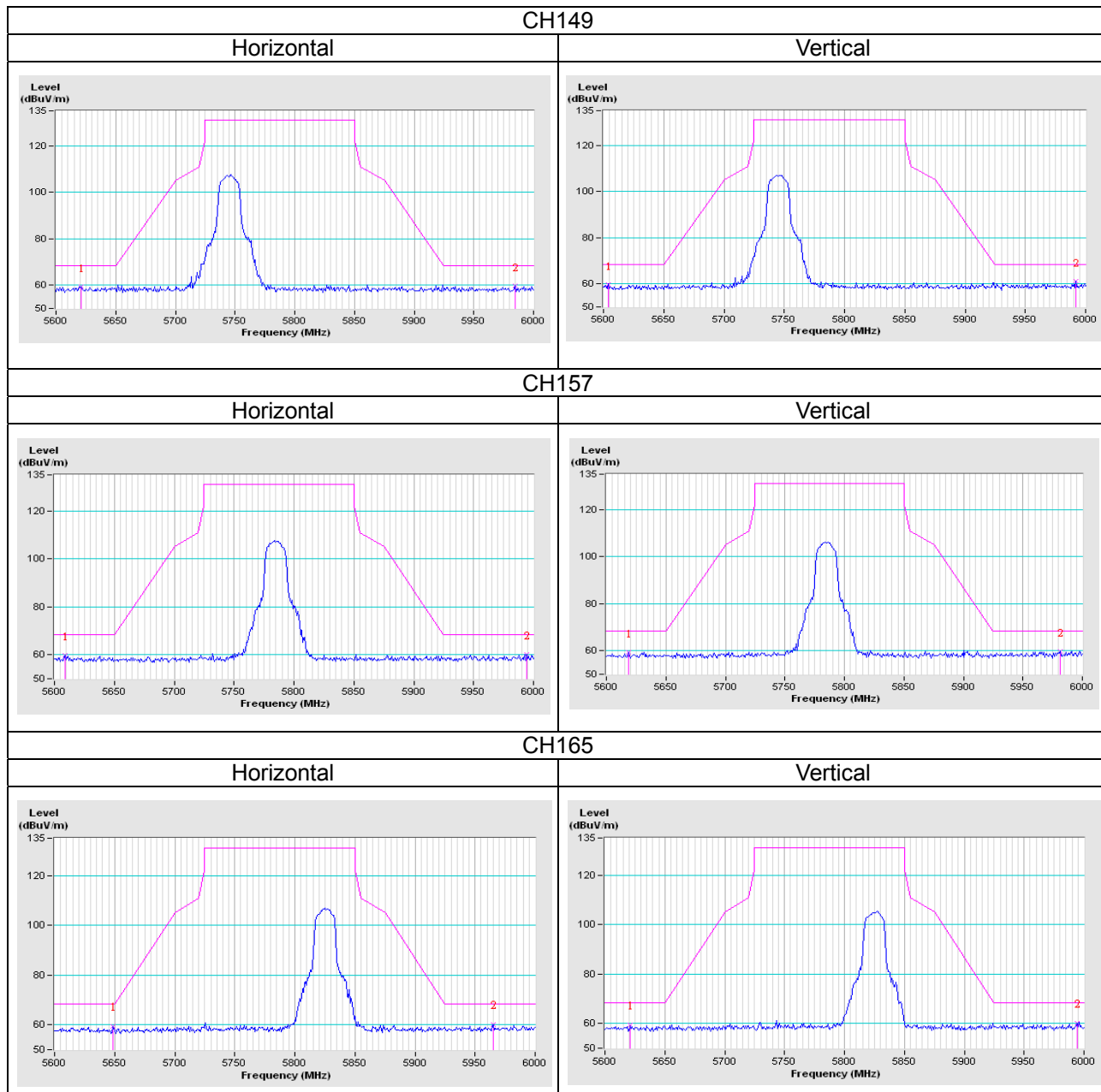


## 5 Pictures of Test Arrangements

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

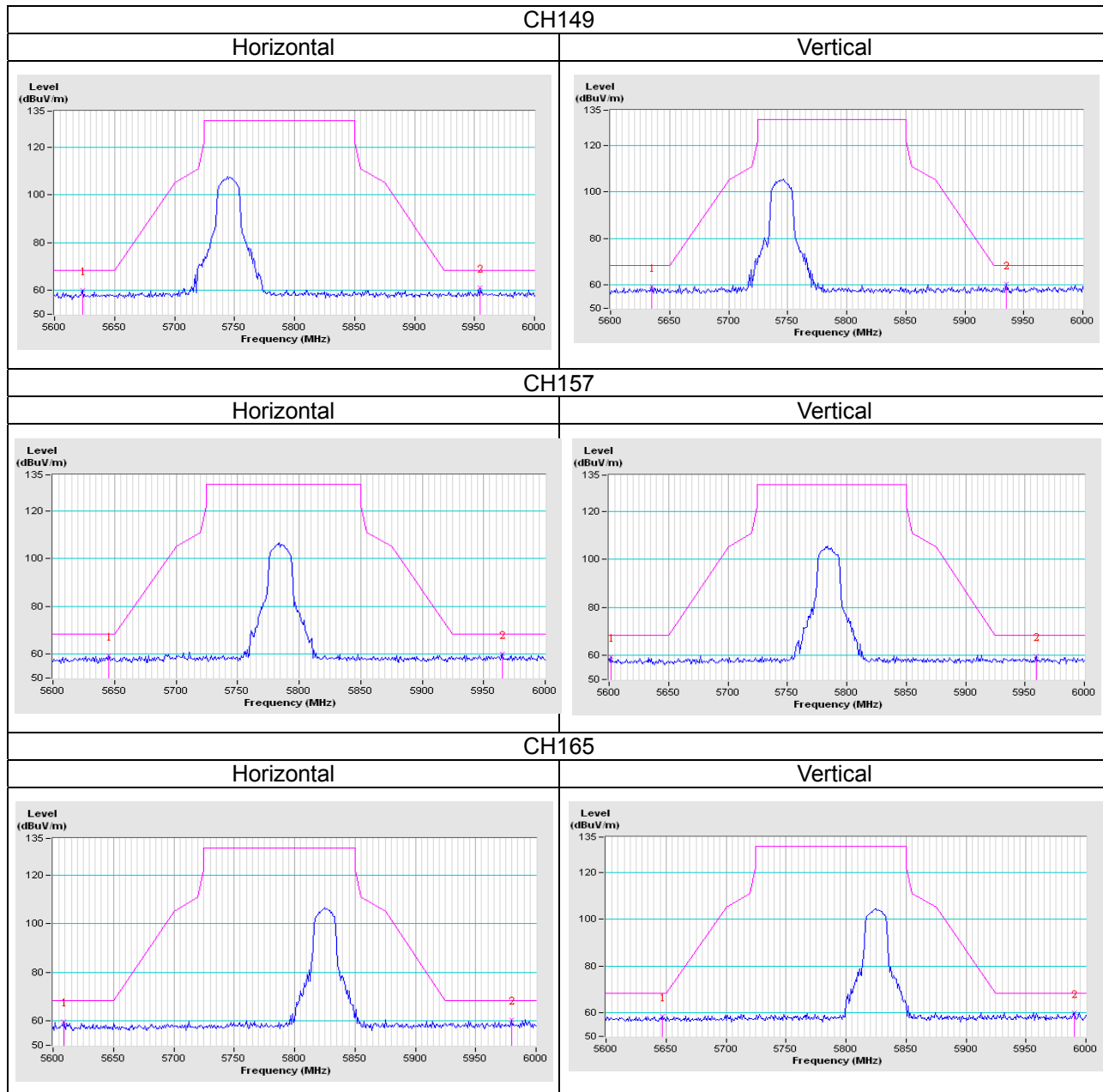
### Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

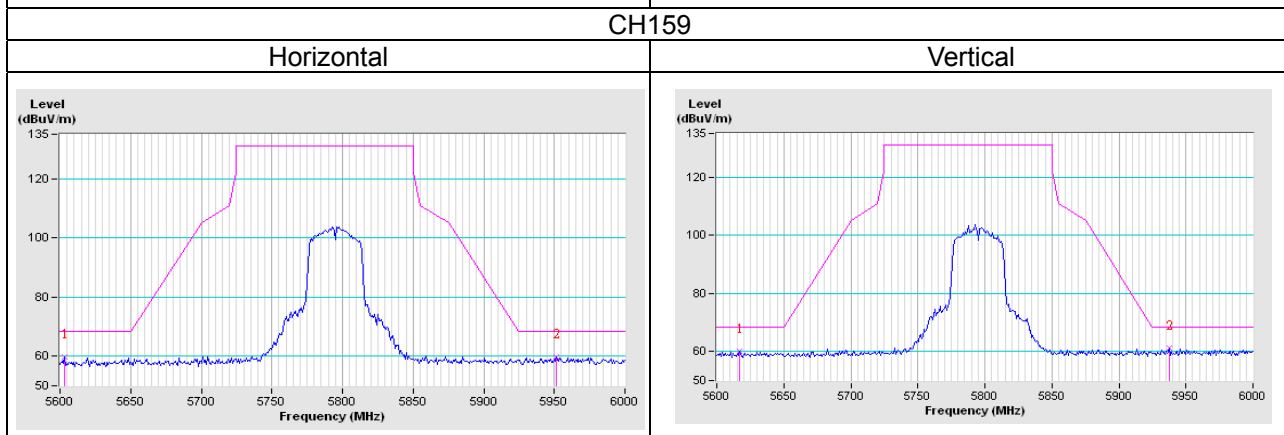
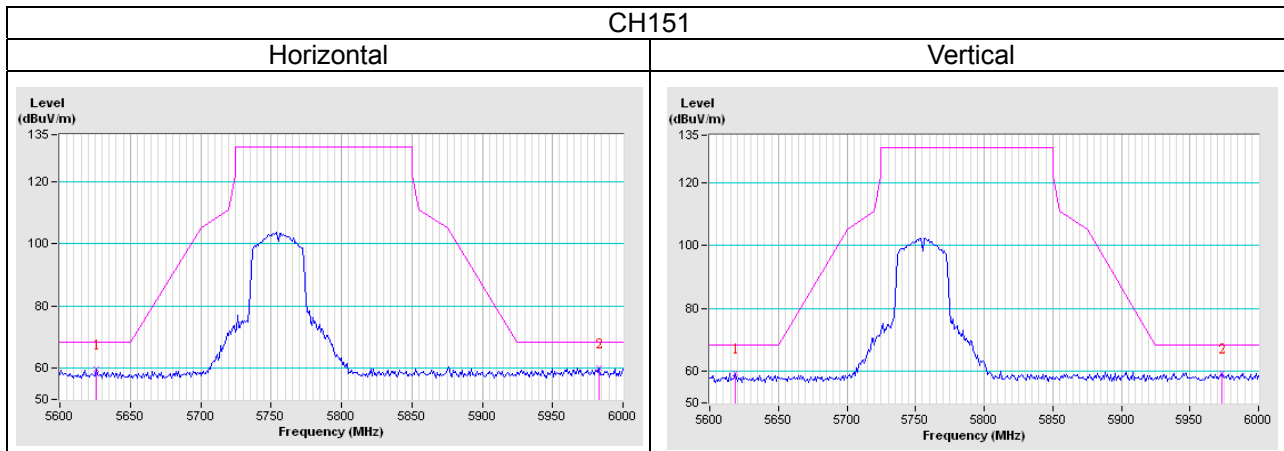




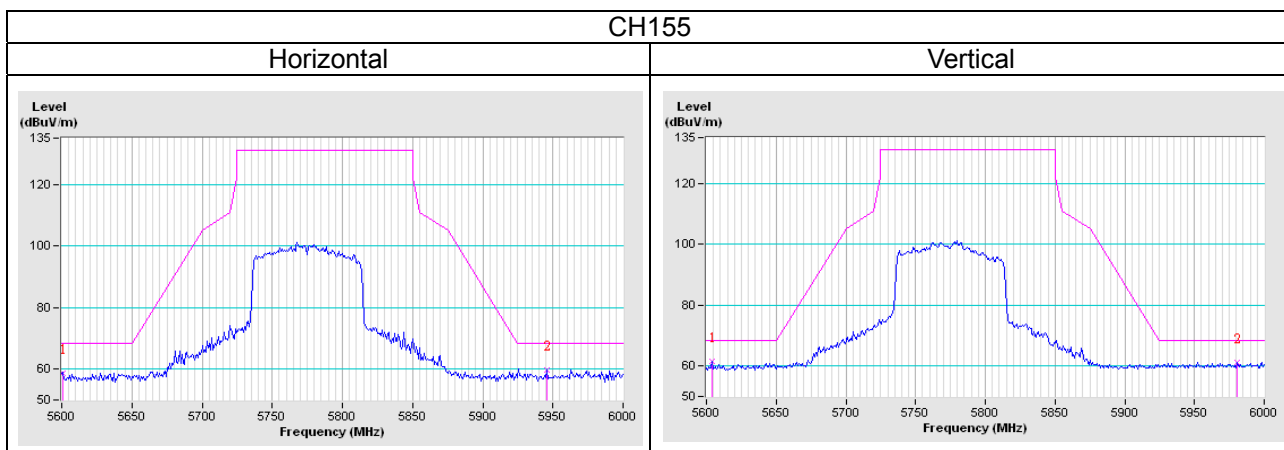
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



## 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 accredited and approved according to ISO/IEC 17025.

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

**Linko 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**

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

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