

## FCC Test Report

**Report No.:** RF121124E01B

**FCC ID:** Q87-AE6000

**Test Model:** AE6000

**Received Date:** Mar. 23, 2016

**Test Date:** Mar. 30 to Apr. 12, 2016

**Issued Date:** June 14, 2016

**Applicant:** Linksys LLC

**Address:** 121 Theory Drive Irvine California 92617 United States

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**Test Location (1):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.



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### Report Issue History Record

Issue No.	Reason for Change	Date Issued
RF121124E01 RF121124E01-1	Original	Jan. 10, 2013
RF121124E01B	Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.	June 14, 2016

### Release Control Record

Issue No.	Description	Date Issued
RF121124E01B	Original release.	June 14, 2016



A D T

## 1 Certificate of Conformity

**Product:** Client Adapter 802.11 a/b/g/n/ac USB dongle

**Brand:** Linksys

**Test Model:** AE6000

**Sample Status:** ENGINEERING SAMPLE

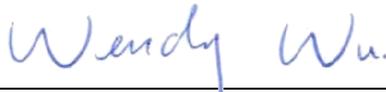
**Applicant:** Linksys LLC

**Test Date:** Mar. 30 to Apr. 12, 2016

**Standard:** 47 CFR FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :**

  
Wendy Wu / Specialist

**Date:**

June 14, 2016

**Approved by :**

  
May Chen / Manager

**Date:**

June 14, 2016

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5715.00MHz and 5150.00MHz.
15.407(a)(1/2 /3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
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	No antenna connector is used.

**NOTE:** 1. This report is prepared for FCC Class II change. (Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.)

### 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) ( $\pm$ )
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.31 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.43 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	4.11 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Client Adapter 802.11 a/b/g/n/ac USB dongle
Brand	Linksys
Test Model	AE6000
Series Model	NA
Status of EUT	ENGINEERING SAMPLE
Driver version	v5.1.21.0
Power Supply Rating	DC 5V from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	<b>For 15.407:</b> 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.58GHz & 5.66~5.7GHz, 5.745 ~ 5.825GHz
	<b>For 15.247:</b> 2.412 ~ 2.462GHz
Number of Channel	<b>For 15.407:</b> 802.11a, 802.11n (HT20), 802.11ac (VHT20): 21 802.11n (HT40), 802.11ac (VHT40): 9 802.11ac (VHT80): 4
	<b>For 15.247:</b> 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	<b>For 15.407:</b> 5.18 ~ 5.24GHz 82.414mW 5.26 ~ 5.32GHz 110.154mW 5.5~5.58GHz & 5.66~5.7GHz 102.094mW 5.745 ~ 5.825GHz 114.815mW
	<b>For 15.247:</b> 891.251mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This is a supplementary report of RF121124E01. The differences between them are as below information:

- ◆ Upgraded the standard to section 15.407 under new rule.
- ◆ Changed the product brand, applicant's name and address.

2. For UNII-2A and UNII-2C band: There is no increase in authorized power level, so RF test data refer to the original test report (RF121124E01-1).

3. According to above conditions, all test items of U-NII-1 and U-NII-3 band need to be performed, except for AC power conducted emission test item. And all data was verified to meet the requirements.

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

Ant No.	Antenna Type	Antenna Gain (dBi)	Connector	Frequency range (MHz to MHz)
1	Metal Antenna	4.31	NA	2400~2483.5
	Metal Antenna	5.09	NA	5150~5825

5. The EUT incorporates a SISO function.

MODULATION MODE	TX/RX FUNCTION
<b>802.11b</b>	1Tx/1Rx
<b>802.11g</b>	1Tx/1Rx
<b>802.11a</b>	1Tx/1Rx
<b>802.11n (HT20)</b>	1Tx/1Rx
<b>802.11n (HT40)</b>	1Tx/1Rx
<b>802.11ac (VHT20)</b>	1Tx/1Rx
<b>802.11ac (VHT40)</b>	1Tx/1Rx
<b>802.11ac (VHT80)</b>	1Tx/1Rx

Note: 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)

6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 7.
7. When the EUT operating in 802.11ac, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 9.
8. 2.4GHz and 5GHz technology cannot transmit at same time.
9. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

### 3.2 Description of Test Modes

#### FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20), 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), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

#### FOR 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), 802.11ac (VHT40):

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≥1G	RE<1G	PLC	APCM	
-	√	√	-	√	-

Where **RE≥1G**: Radiated Emission above 1GHz      **RE<1G**: Radiated Emission below 1GHz  
**PLC**: Power Line Conducted Emission      **APCM**: Antenna Port Conducted Measurement

**NOTE:**

1. "-" means no effect.

#### **Radiated Emission Test (Above 1GHz):**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	58.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	58.5

#### **Radiated Emission Test (Below 1GHz):**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5745-5825	149 to 165	165	OFDM	BPSK	6.0

**Antenna Port Conducted Measurement:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	58.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	58.5

**Test Condition:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY	TEST LOCATION
<b>RE≥1G</b>	25deg. C, 65%RH	120Vac, 60Hz	Tim Ho	1
<b>RE&lt;1G</b>	23deg. C, 68%RH	120Vac, 60Hz	Andy Ho	1
<b>APCM</b>	22deg. C, 64%RH	120Vac, 60Hz	Robert Cheng	1

### 3.3 Duty Cycle of Test Signal

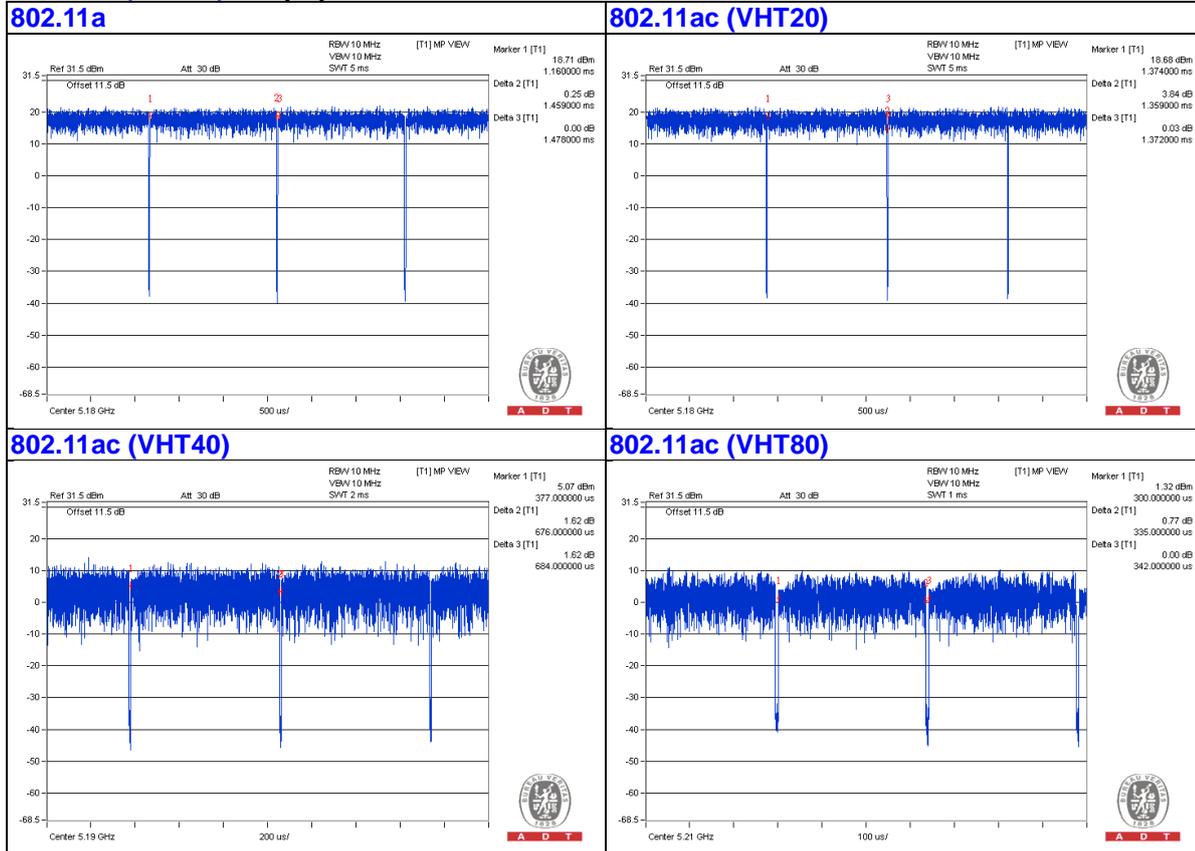
Duty cycle of test signal is  $\geq 98\%$ , duty factor is not required.

**802.11a:** Duty cycle =  $1.459 \text{ ms} / 1.478 \text{ ms} = 0.987$

**802.11ac (VHT20):** Duty cycle =  $1.359 \text{ ms} / 1.372 \text{ ms} = 0.991$

**802.11ac (VHT40):** Duty cycle =  $0.676 \text{ ms} / 0.684 \text{ ms} = 0.988$

**802.11ac (VHT80):** Duty cycle =  $0.335 \text{ ms} / 0.342 \text{ ms} = 0.980$



### 3.4 Description of Support Units

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

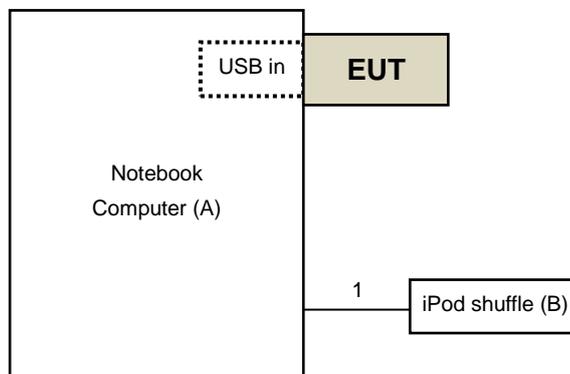
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	iPod shuffle	Apple	MC749TA/A	CC4DN25WDFDM	NA	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.1	Yes	0	Provided by Lab

#### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standard

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

**FCC Part 15, Subpart E (15.407)**

**KDB 789033 D02 General UNII Test Procedure New Rules v01r02**

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 v01r02	FIELD STRENGTH AT 3m	
	PK:74 (dBuV/m)	AV:54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) <sup>*1</sup> PK:-17 (dBm/MHz) <sup>*2</sup>	PK: 68.2(dBuV/m) <sup>*1</sup> PK:78.2 (dBuV/m) <sup>*2</sup>

**NOTE:** <sup>\*1</sup> beyond 10MHz of the band edge <sup>\*2</sup> within 10 MHz of band edge

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

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



## 4.1.2 Test Instruments

**For Radiated Emissions (below 1GHz)**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	Aug. 12, 2015	Aug. 11, 2016
Pre-Amplifier <sup>(*)</sup> EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna <sup>(*)</sup> Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-07	May 08, 2015	May 07, 2016
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	138	Jan. 18, 2016	Jan. 17, 2017
RF Cable	8D	966-3-1 966-3-2 966-3-3	Apr. 03, 2015	Apr. 02, 2016
Software	ADT_Radiated_V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. 3.
5. The FCC Site Registration No. is 147459
6. The CANADA Site Registration No. is 20331-1
7. Tested Date: Mar. 30, 2016

**For the other test**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY54450088	July 24, 2015	July 23, 2016
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 19, 2015	Sep. 18, 2016
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150318 150323 150324	Mar. 30, 2016	Mar. 29, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36441/2	Jan. 16, 2016	Jan. 15, 2017
Software	ADT_Radiated_V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA
Boresight Antenna Fixture	NA	NA	NA	NA
SPECTRUM ANALYZER R&S	FSP 40	100060	May 08, 2015	May 07, 2016
Power meter Anritsu	ML2495A	1014008	Apr. 28, 2015	Apr. 27, 2016
Power sensor Anritsu	MA2411B	0917122	Apr. 28, 2015	Apr. 27, 2016
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-SP-AR	MAA0812-008	Jan. 15, 2016	Jan. 14, 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 966 Chamber No. 4.
3. The FCC Site Registration No. is 292998
4. The CANADA Site Registration No. is 20331-2
5. Tested Date: Apr. 07 to 12, 2016

#### 4.1.3 Test Procedure

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 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:**

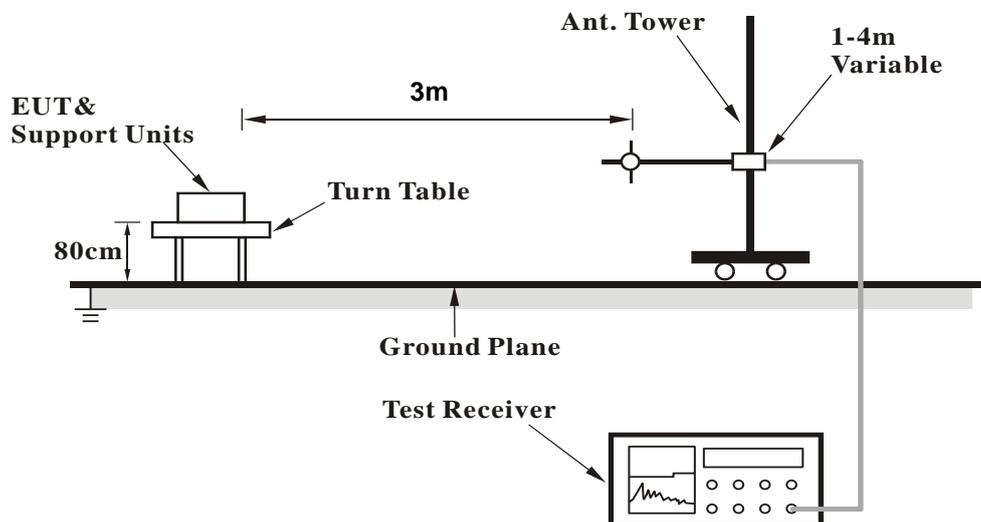
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ( $10 \log(1/\text{duty cycle})$ ).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

#### 4.1.4 Deviation from Test Standard

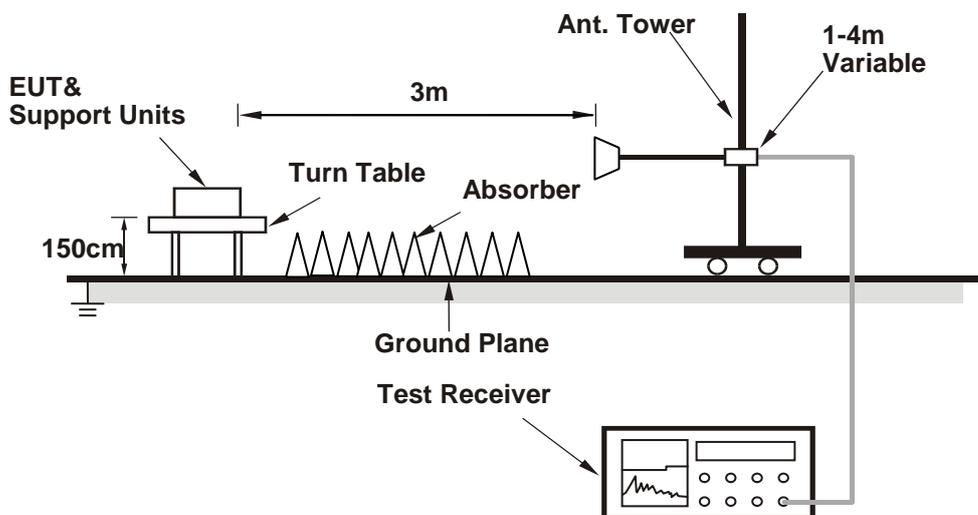
No deviation.

#### 4.1.5 Test Setup

##### <Frequency Range below 1GHz>



##### <Frequency Range above 1GHz>



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

#### 4.1.6 EUT Operating Condition

- a. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
- b. The communication partner run test program "MT76xxU.exe [ver 2.0.2.5]" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

802.11a

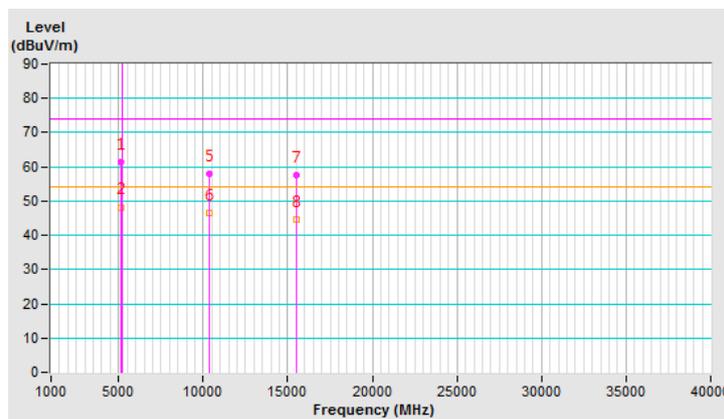
<b>CHANNEL</b>	TX Channel 36	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	61.3 PK	74.0	-12.7	1.00 H	103	59.73	1.57
2	5150.00	48.2 AV	54.0	-5.8	1.00 H	103	46.63	1.57
3	*5180.00	107.2 PK			1.00 H	103	105.52	1.68
4	*5180.00	97.4 AV			1.00 H	103	95.72	1.68
5	#10360.00	57.8 PK	74.0	-16.2	1.06 H	143	46.08	11.72
6	#10360.00	46.6 AV	54.0	-7.4	1.06 H	143	34.88	11.72
7	15540.00	57.5 PK	74.0	-16.5	1.01 H	164	44.20	13.30
8	15540.00	44.5 AV	54.0	-9.5	1.01 H	164	31.20	13.30

**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.



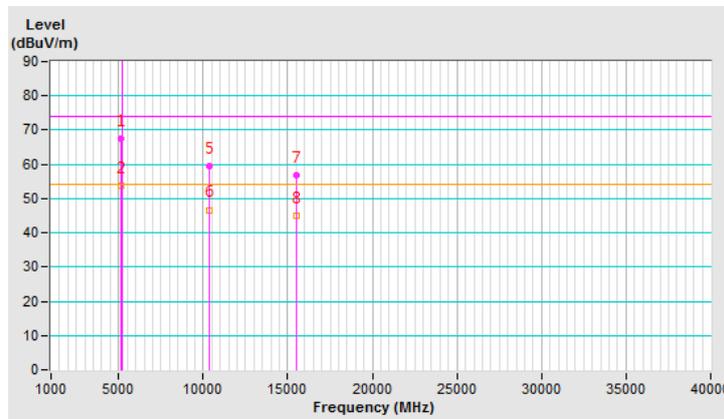
<b>CHANNEL</b>	TX Channel 36	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	67.6 PK	74.0	-6.4	2.20 V	342	66.03	1.57
2	<b>5150.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>2.20 V</b>	<b>342</b>	<b>52.33</b>	<b>1.57</b>
3	*5180.00	109.8 PK			2.20 V	342	108.12	1.68
4	*5180.00	100.1 AV			2.20 V	342	98.42	1.68
5	#10360.00	59.4 PK	74.0	-14.6	1.16 V	234	47.68	11.72
6	#10360.00	46.7 AV	54.0	-7.3	1.16 V	234	34.98	11.72
7	15540.00	56.7 PK	74.0	-17.3	1.07 V	333	43.40	13.30
8	15540.00	44.9 AV	54.0	-9.1	1.07 V	333	31.60	13.30

**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.



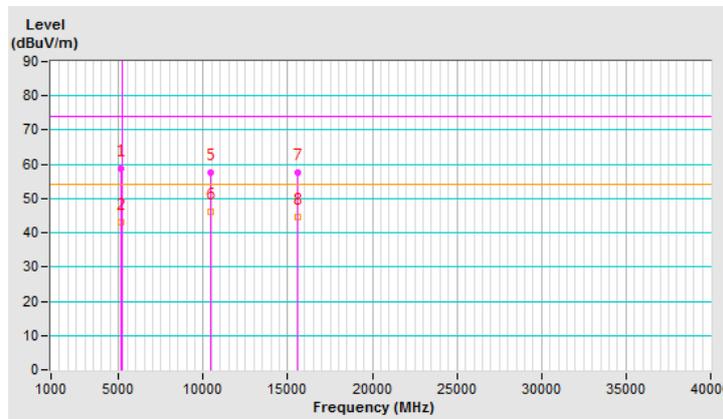
<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	58.6 PK	74.0	-15.4	1.02 H	89	57.03	1.57
2	5150.00	43.2 AV	54.0	-10.8	1.02 H	89	41.63	1.57
3	*5200.00	107.6 PK			1.02 H	89	105.86	1.74
4	*5200.00	97.8 AV			1.02 H	89	96.06	1.74
5	#10400.00	57.6 PK	74.0	-16.4	1.02 H	124	45.68	11.92
6	#10400.00	46.2 AV	54.0	-7.8	1.02 H	124	34.28	11.92
7	15600.00	57.4 PK	74.0	-16.6	1.06 H	162	44.10	13.30
8	15600.00	44.7 AV	54.0	-9.3	1.06 H	162	31.40	13.30

**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.



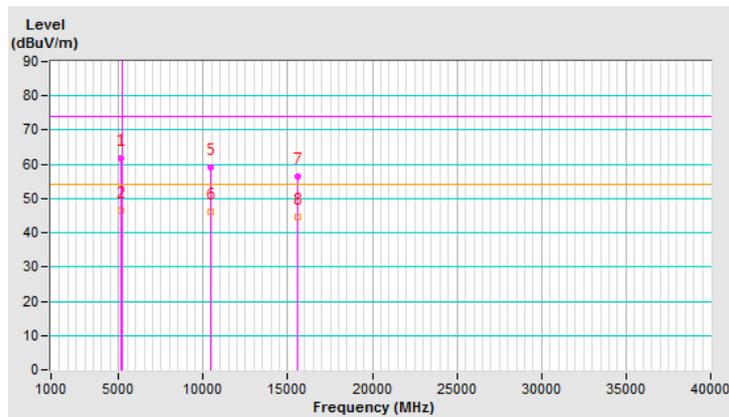
<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	61.9 PK	74.0	-12.1	2.31 V	341	60.33	1.57
2	5150.00	46.6 AV	54.0	-7.4	2.31 V	341	45.03	1.57
3	*5200.00	110.7 PK			2.31 V	341	108.96	1.74
4	*5200.00	100.9 AV			2.31 V	341	99.16	1.74
5	#10400.00	59.2 PK	74.0	-14.8	1.07 V	231	47.28	11.92
6	#10400.00	46.2 AV	54.0	-7.8	1.07 V	231	34.28	11.92
7	15600.00	56.3 PK	74.0	-17.7	1.11 V	346	43.00	13.30
8	15600.00	44.7 AV	54.0	-9.3	1.11 V	346	31.40	13.30

**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.



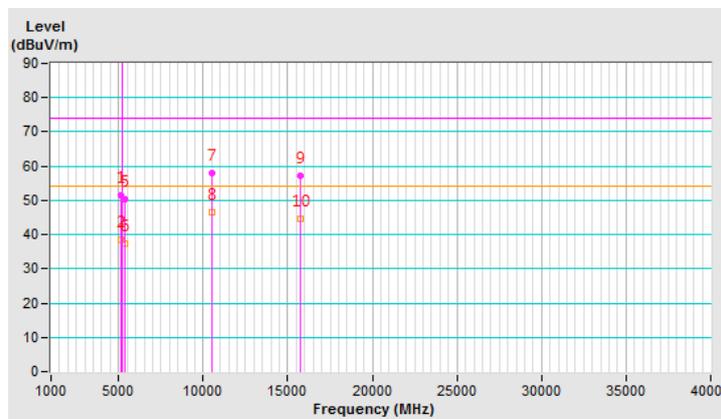
<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	51.3 PK	74.0	-22.7	1.02 H	93	49.73	1.57
2	5150.00	38.4 AV	54.0	-15.6	1.02 H	93	36.83	1.57
3	*5240.00	100.9 PK			1.02 H	93	99.05	1.85
4	*5240.00	93.2 AV			1.02 H	93	91.35	1.85
5	5350.00	50.3 PK	74.0	-23.7	1.02 H	93	48.19	2.11
6	5350.00	37.5 AV	54.0	-16.5	1.02 H	93	35.39	2.11
7	#10480.00	57.8 PK	74.0	-16.2	1.00 H	130	45.54	12.26
8	#10480.00	46.5 AV	54.0	-7.5	1.00 H	130	34.24	12.26
9	15720.00	57.3 PK	74.0	-16.7	1.02 H	157	44.12	13.18
10	15720.00	44.6 AV	54.0	-9.4	1.02 H	157	31.42	13.18

**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.



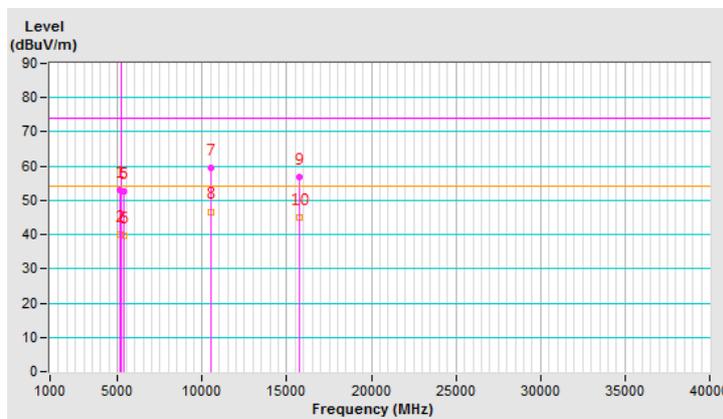
<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	53.0 PK	74.0	-21.0	2.26 V	345	51.43	1.57
2	5150.00	40.1 AV	54.0	-13.9	2.26 V	345	38.53	1.57
3	*5240.00	104.7 PK			2.26 V	345	102.85	1.85
4	*5240.00	96.8 AV			2.26 V	345	94.95	1.85
5	5350.00	52.5 PK	74.0	-21.5	2.26 V	345	50.39	2.11
6	5350.00	39.6 AV	54.0	-14.4	2.26 V	345	37.49	2.11
7	#10480.00	59.4 PK	74.0	-14.6	1.12 V	239	47.14	12.26
8	#10480.00	46.7 AV	54.0	-7.3	1.12 V	239	34.44	12.26
9	15720.00	56.8 PK	74.0	-17.2	1.13 V	349	43.62	13.18
10	15720.00	45.0 AV	54.0	-9.0	1.13 V	349	31.82	13.18

**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.



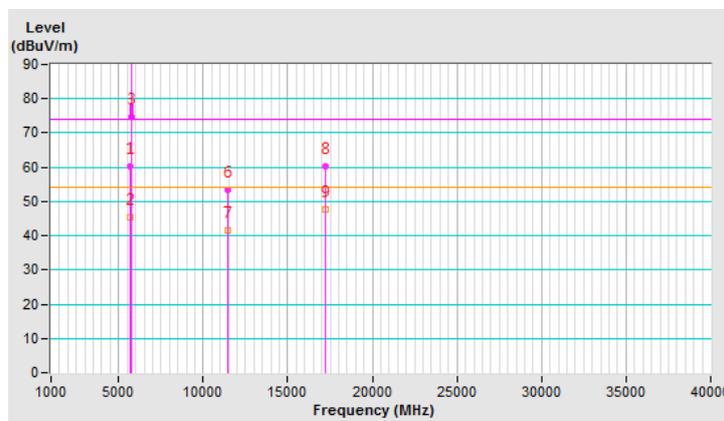
<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	60.3 PK	74.0	-13.7	1.14 H	122	57.53	2.77
2	#5715.00	45.4 AV	54.0	-8.6	1.14 H	122	42.63	2.77
3	#5725.00	74.7 PK	78.2	-3.5	1.14 H	122	71.92	2.78
4	*5745.00	104.4 PK			1.14 H	122	101.58	2.82
5	*5745.00	94.2 AV			1.14 H	122	91.38	2.82
6	11490.00	53.3 PK	74.0	-20.7	1.21 H	113	39.84	13.46
7	11490.00	41.7 AV	54.0	-12.3	1.21 H	113	28.24	13.46
8	#17235.00	60.2 PK	74.0	-13.8	1.10 H	245	41.75	18.45
9	#17235.00	47.5 AV	54.0	-6.5	1.10 H	245	29.05	18.45

**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.



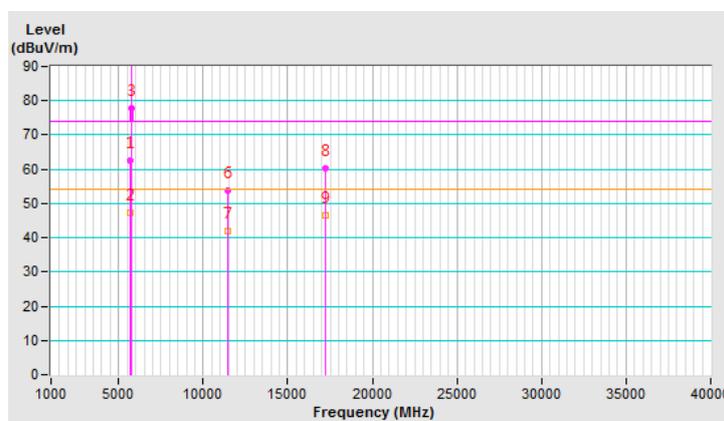
<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	62.6 PK	74.0	-11.4	2.44 V	49	59.83	2.77
2	#5715.00	47.2 AV	54.0	-6.8	2.44 V	49	44.43	2.77
3	#5725.00	77.9 PK	78.2	-0.3	2.44 V	49	75.12	2.78
4	*5745.00	107.7 PK			2.44 V	49	104.88	2.82
5	*5745.00	97.5 AV			2.44 V	49	94.68	2.82
6	11490.00	53.7 PK	74.0	-20.3	1.02 V	237	40.24	13.46
7	11490.00	41.8 AV	54.0	-12.2	1.02 V	237	28.34	13.46
8	#17235.00	60.4 PK	74.0	-13.6	1.32 V	154	41.95	18.45
9	#17235.00	46.5 AV	54.0	-7.5	1.32 V	154	28.05	18.45

**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.



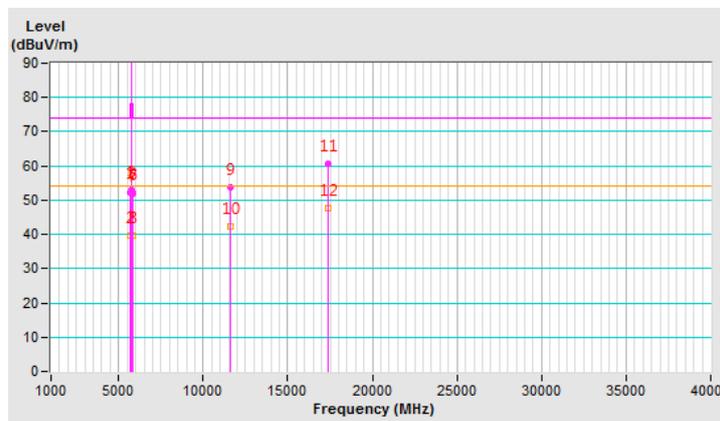
<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	52.4 PK	74.0	-21.6	1.11 H	131	11.82	40.58
2	#5715.00	39.8 AV	54.0	-14.2	1.11 H	131	-0.78	40.58
3	#5725.00	52.9 PK	78.2	-25.3	1.11 H	131	12.31	40.59
4	*5785.00	104.4 PK			1.11 H	131	63.71	40.69
5	*5785.00	94.6 AV			1.11 H	131	53.91	40.69
6	#5850.00	52.2 PK	78.2	-26.0	1.11 H	131	11.45	40.75
7	#5860.00	51.7 PK	74.0	-22.3	1.11 H	131	10.95	40.75
8	#5860.00	39.8 AV	54.0	-14.2	1.11 H	131	-0.95	40.75
9	11570.00	53.9 PK	74.0	-20.1	1.17 H	128	2.60	51.30
10	11570.00	42.2 AV	54.0	-11.8	1.17 H	128	-9.10	51.30
11	#17355.00	60.6 PK	74.0	-13.4	1.14 H	243	4.27	56.33
12	#17355.00	47.7 AV	54.0	-6.3	1.14 H	243	-8.63	56.33

**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.



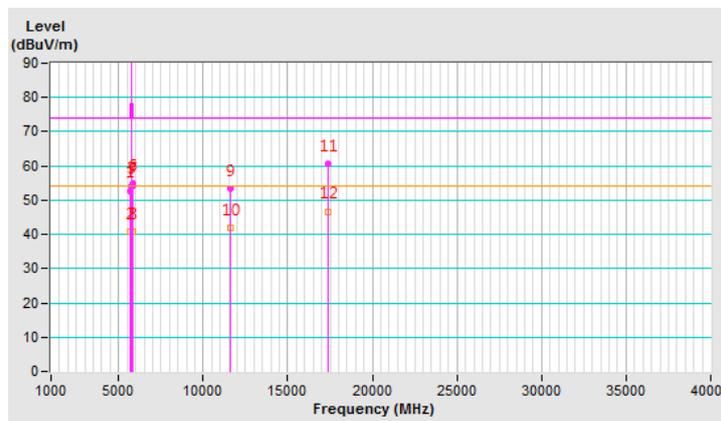
<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	52.8 PK	74.0	-21.2	2.42 V	50	12.22	40.58
2	#5715.00	40.8 AV	54.0	-13.2	2.42 V	50	0.22	40.58
3	#5725.00	54.2 PK	78.2	-24.0	2.42 V	50	13.61	40.59
4	*5785.00	108.2 PK			2.42 V	50	67.51	40.69
5	*5785.00	98.4 AV			2.42 V	50	57.71	40.69
6	#5850.00	55.0 PK	78.2	-23.2	2.42 V	50	14.25	40.75
7	#5860.00	54.3 PK	74.0	-19.7	2.42 V	50	13.55	40.75
8	#5860.00	40.7 AV	54.0	-13.3	2.42 V	50	-0.05	40.75
9	11570.00	53.4 PK	74.0	-20.6	1.06 V	241	2.10	51.30
10	11570.00	41.8 AV	54.0	-12.2	1.06 V	241	-9.50	51.30
11	#17355.00	60.5 PK	74.0	-13.5	1.28 V	145	4.17	56.33
12	#17355.00	46.7 AV	54.0	-7.3	1.28 V	145	-9.63	56.33

**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.



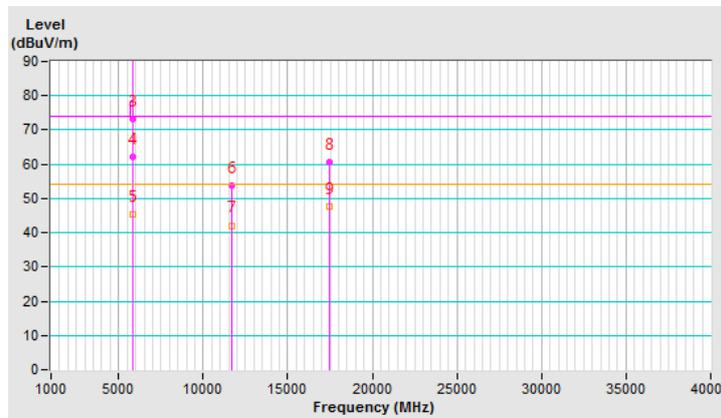
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5825.00	106.3 PK			1.08 H	146	103.36	2.94
2	*5825.00	95.4 AV			1.08 H	146	92.46	2.94
3	#5850.00	73.1 PK	78.2	-5.1	1.08 H	146	70.16	2.94
4	#5860.00	62.2 PK	74.0	-11.8	1.08 H	146	59.26	2.94
5	#5860.00	45.4 AV	54.0	-8.6	1.08 H	146	42.46	2.94
6	11650.00	53.7 PK	74.0	-20.3	1.15 H	142	40.49	13.21
7	11650.00	42.1 AV	54.0	-11.9	1.15 H	142	28.89	13.21
8	#17475.00	60.6 PK	74.0	-13.4	1.17 H	249	41.17	19.43
9	#17475.00	47.6 AV	54.0	-6.4	1.17 H	249	28.17	19.43

**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.



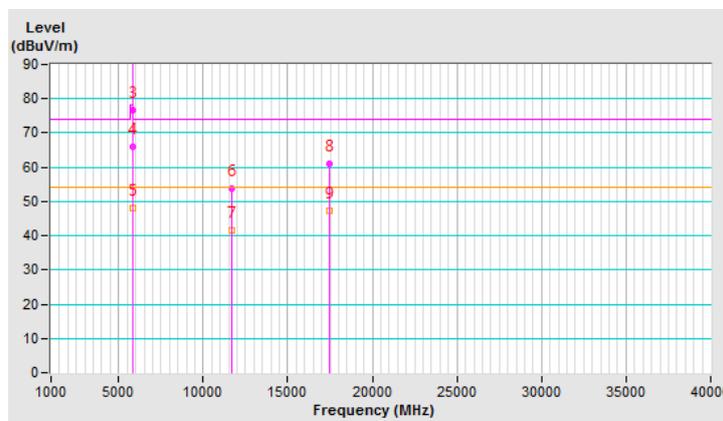
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5825.00	109.2 PK			2.51 V	49	106.26	2.94
2	*5825.00	98.5 AV			2.51 V	49	95.56	2.94
3	#5850.00	76.7 PK	78.2	-1.5	2.51 V	49	73.76	2.94
4	#5860.00	65.8 PK	74.0	-8.2	2.51 V	49	62.86	2.94
5	#5860.00	47.9 AV	54.0	-6.1	2.51 V	49	44.96	2.94
6	11650.00	53.6 PK	74.0	-20.4	1.01 V	240	40.39	13.21
7	11650.00	41.7 AV	54.0	-12.3	1.01 V	240	28.49	13.21
8	#17475.00	60.9 PK	74.0	-13.1	1.23 V	152	41.47	19.43
9	#17475.00	47.1 AV	54.0	-6.9	1.23 V	152	27.67	19.43

**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 VHT20

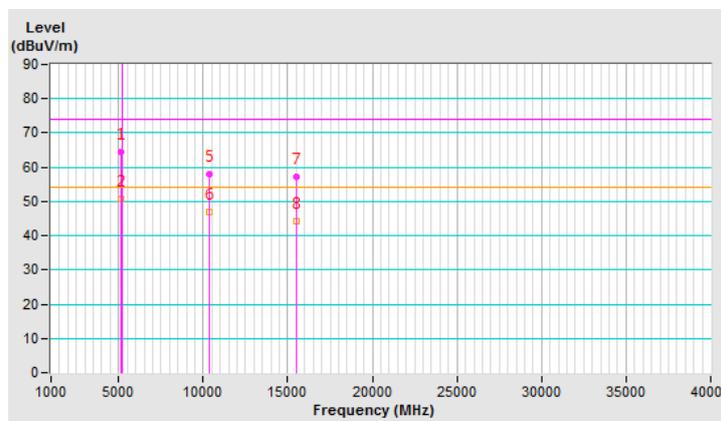
<b>CHANNEL</b>	TX Channel 36	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	64.3 PK	74.0	-9.7	1.02 H	113	62.73	1.57
2	5150.00	50.6 AV	54.0	-3.4	1.02 H	113	49.03	1.57
3	*5180.00	104.5 PK			1.02 H	113	102.82	1.68
4	*5180.00	92.6 AV			1.02 H	113	90.92	1.68
5	#10360.00	58.1 PK	74.0	-15.9	1.00 H	159	46.38	11.72
6	#10360.00	47.0 AV	54.0	-7.0	1.00 H	159	35.28	11.72
7	15540.00	57.2 PK	74.0	-16.8	1.04 H	179	43.90	13.30
8	15540.00	44.3 AV	54.0	-9.7	1.04 H	179	31.00	13.30

**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.



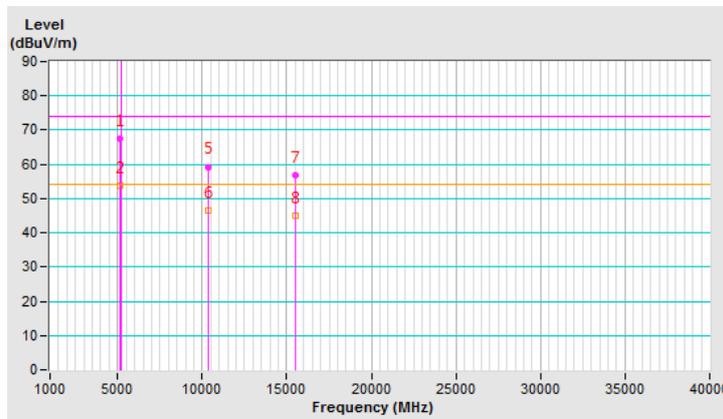
<b>CHANNEL</b>	TX Channel 36	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	67.6 PK	74.0	-6.4	2.85 V	42	66.03	1.57
2	5150.00	53.8 AV	54.0	-0.2	2.85 V	42	52.23	1.57
3	*5180.00	107.9 PK			2.85 V	42	106.22	1.68
4	*5180.00	97.8 AV			2.85 V	42	96.12	1.68
5	#10360.00	59.3 PK	74.0	-14.7	1.12 V	231	47.58	11.72
6	#10360.00	46.6 AV	54.0	-7.4	1.12 V	231	34.88	11.72
7	15540.00	56.8 PK	74.0	-17.2	1.13 V	322	43.50	13.30
8	15540.00	44.9 AV	54.0	-9.1	1.13 V	322	31.60	13.30

**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.



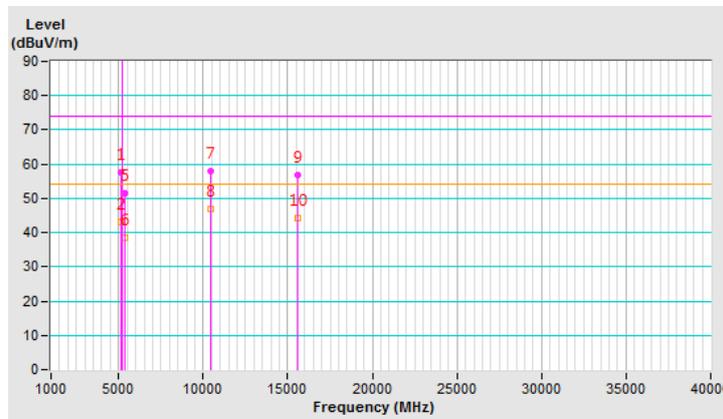
<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	57.6 PK	74.0	-16.4	1.04 H	87	56.03	1.57
2	5150.00	43.0 AV	54.0	-11.0	1.04 H	87	41.43	1.57
3	*5200.00	107.8 PK			1.04 H	87	106.06	1.74
4	*5200.00	96.5 AV			1.04 H	87	94.76	1.74
5	5350.00	51.6 PK	74.0	-22.4	1.04 H	87	49.49	2.11
6	5350.00	38.4 AV	54.0	-15.6	1.04 H	87	36.29	2.11
7	#10400.00	57.9 PK	74.0	-16.1	1.05 H	140	45.98	11.92
8	#10400.00	46.9 AV	54.0	-7.1	1.05 H	140	34.98	11.92
9	15600.00	56.9 PK	74.0	-17.1	1.05 H	168	43.60	13.30
10	15600.00	44.1 AV	54.0	-9.9	1.05 H	168	30.80	13.30

**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.



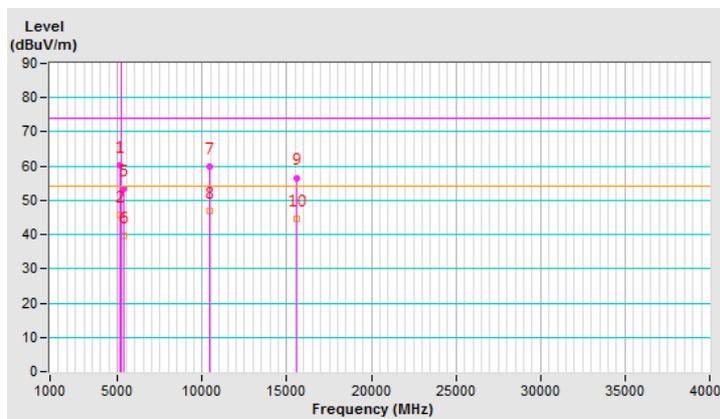
<b>CHANNEL</b>	TX Channel 40	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	60.3 PK	74.0	-13.7	2.59 V	42	58.73	1.57
2	5150.00	45.9 AV	54.0	-8.1	2.59 V	42	44.33	1.57
3	*5200.00	109.5 PK			2.59 V	42	107.76	1.74
4	*5200.00	99.3 AV			2.59 V	42	97.56	1.74
5	5350.00	53.5 PK	74.0	-20.5	2.59 V	42	51.39	2.11
6	5350.00	39.6 AV	54.0	-14.4	2.59 V	42	37.49	2.11
7	#10400.00	59.8 PK	74.0	-14.2	1.11 V	219	47.88	11.92
8	#10400.00	47.0 AV	54.0	-7.0	1.11 V	219	35.08	11.92
9	15600.00	56.6 PK	74.0	-17.4	1.03 V	336	43.30	13.30
10	15600.00	44.6 AV	54.0	-9.4	1.03 V	336	31.30	13.30

**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.



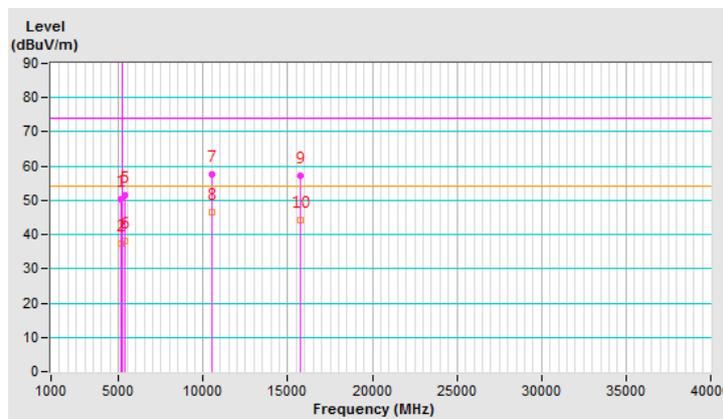
<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	50.4 PK	74.0	-23.6	1.04 H	91	48.83	1.57
2	5150.00	37.2 AV	54.0	-16.8	1.04 H	91	35.63	1.57
3	*5240.00	100.8 PK			1.04 H	91	98.95	1.85
4	*5240.00	93.0 AV			1.04 H	91	91.15	1.85
5	5350.00	51.3 PK	74.0	-22.7	1.04 H	91	49.19	2.11
6	5350.00	38.2 AV	54.0	-15.8	1.04 H	91	36.09	2.11
7	#10480.00	57.6 PK	74.0	-16.4	1.02 H	151	45.34	12.26
8	#10480.00	46.4 AV	54.0	-7.6	1.02 H	151	34.14	12.26
9	15720.00	57.3 PK	74.0	-16.7	1.00 H	176	44.12	13.18
10	15720.00	44.3 AV	54.0	-9.7	1.00 H	176	31.12	13.18

**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.



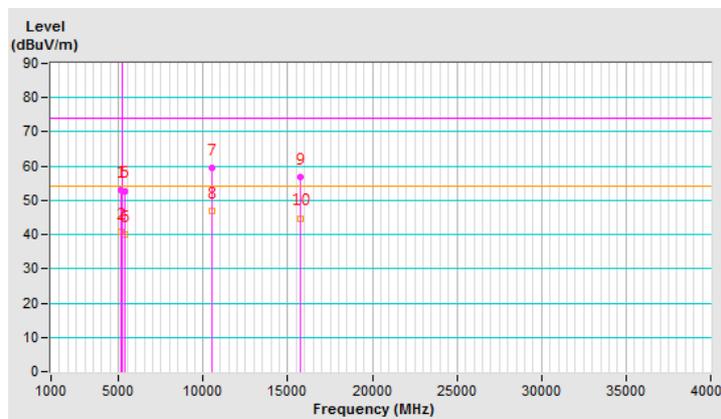
<b>CHANNEL</b>	TX Channel 48	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	53.1 PK	74.0	-20.9	2.59 V	43	51.53	1.57
2	5150.00	40.8 AV	54.0	-13.2	2.59 V	43	39.23	1.57
3	*5240.00	106.2 PK			2.59 V	43	104.35	1.85
4	*5240.00	96.5 AV			2.59 V	43	94.65	1.85
5	5350.00	52.8 PK	74.0	-21.2	2.59 V	43	50.69	2.11
6	5350.00	39.9 AV	54.0	-14.1	2.59 V	43	37.79	2.11
7	#10480.00	59.5 PK	74.0	-14.5	1.10 V	232	47.24	12.26
8	#10480.00	47.0 AV	54.0	-7.0	1.10 V	232	34.74	12.26
9	15720.00	56.7 PK	74.0	-17.3	1.05 V	326	43.52	13.18
10	15720.00	44.8 AV	54.0	-9.2	1.05 V	326	31.62	13.18

**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.



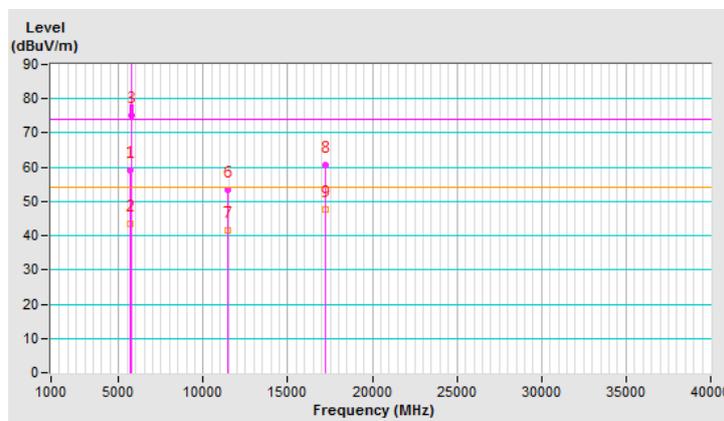
<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	59.0 PK	74.0	-15.0	1.16 H	136	56.23	2.77
2	#5715.00	43.6 AV	54.0	-10.4	1.16 H	136	40.83	2.77
3	#5725.00	75.2 PK	78.2	-3.0	1.16 H	136	72.42	2.78
4	*5745.00	101.3 PK			1.16 H	136	98.48	2.82
5	*5745.00	91.2 AV			1.16 H	136	88.38	2.82
6	11490.00	53.3 PK	74.0	-20.7	1.17 H	119	39.84	13.46
7	11490.00	41.7 AV	54.0	-12.3	1.17 H	119	28.24	13.46
8	#17235.00	60.6 PK	74.0	-13.4	1.16 H	254	42.15	18.45
9	#17235.00	47.8 AV	54.0	-6.2	1.16 H	254	29.35	18.45

**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.



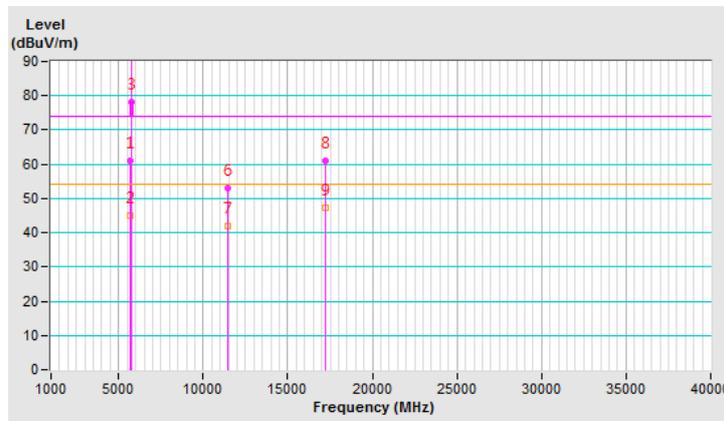
<b>CHANNEL</b>	TX Channel 149	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	61.0 PK	74.0	-13.0	2.61 V	44	58.23	2.77
2	#5715.00	45.1 AV	54.0	-8.9	2.61 V	44	42.33	2.77
3	#5725.00	78.0 PK	78.2	-0.2	2.61 V	44	75.22	2.78
4	*5745.00	104.1 PK			2.61 V	44	101.28	2.82
5	*5745.00	94.5 AV			2.61 V	44	91.68	2.82
6	11490.00	53.1 PK	74.0	-20.9	1.06 V	255	39.64	13.46
7	11490.00	41.8 AV	54.0	-12.2	1.06 V	255	28.34	13.46
8	#17235.00	60.9 PK	74.0	-13.1	1.29 V	159	42.45	18.45
9	#17235.00	47.1 AV	54.0	-6.9	1.29 V	159	28.65	18.45

**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.



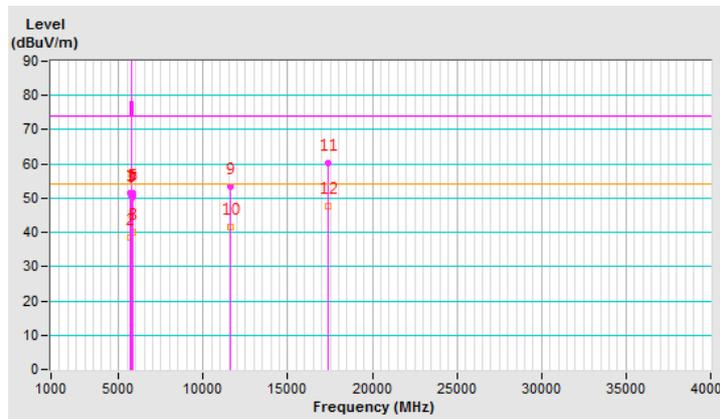
<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	51.3 PK	74.0	-22.7	1.14 H	120	48.53	2.77
2	#5715.00	38.4 AV	54.0	-15.6	1.14 H	120	35.63	2.77
3	#5725.00	50.9 PK	78.2	-27.3	1.14 H	120	48.12	2.78
4	*5785.00	105.2 PK			1.14 H	120	102.31	2.89
5	*5785.00	94.2 AV			1.14 H	120	91.31	2.89
6	#5850.00	51.6 PK	78.2	-26.6	1.14 H	120	48.66	2.94
7	#5860.00	50.5 PK	74.0	-23.5	1.14 H	120	47.56	2.94
8	#5860.00	40.0 AV	54.0	-14.0	1.14 H	120	37.06	2.94
9	11570.00	53.3 PK	74.0	-20.7	1.02 H	117	40.06	13.24
10	11570.00	41.6 AV	54.0	-12.4	1.02 H	117	28.36	13.24
11	#17355.00	60.3 PK	74.0	-13.7	1.10 H	247	41.20	19.10
12	#17355.00	47.8 AV	54.0	-6.2	1.10 H	247	28.70	19.10

**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.



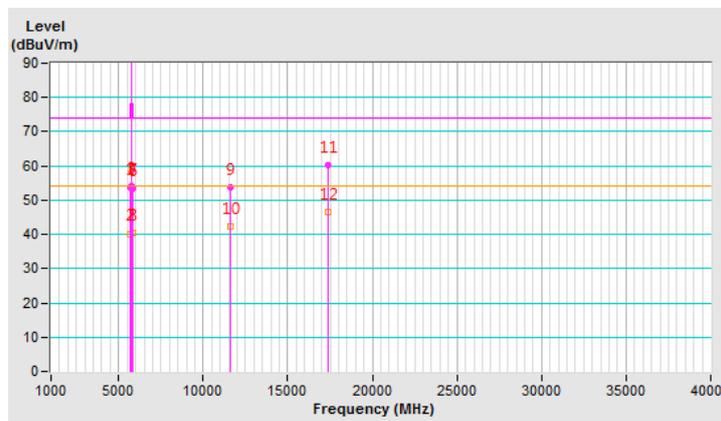
<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	53.6 PK	74.0	-20.4	2.62 V	51	50.83	2.77
2	#5715.00	40.2 AV	54.0	-13.8	2.62 V	51	37.43	2.77
3	#5725.00	54.3 PK	78.2	-23.9	2.62 V	51	51.52	2.78
4	*5785.00	108.1 PK			2.62 V	51	105.21	2.89
5	*5785.00	97.6 AV			2.62 V	51	94.71	2.89
6	#5850.00	53.5 PK	78.2	-24.7	2.62 V	51	50.56	2.94
7	#5860.00	53.7 PK	74.0	-20.3	2.62 V	51	50.76	2.94
8	#5860.00	40.4 AV	54.0	-13.6	2.62 V	51	37.46	2.94
9	11570.00	53.6 PK	74.0	-20.4	1.09 V	246	40.36	13.24
10	11570.00	42.2 AV	54.0	-11.8	1.09 V	246	28.96	13.24
11	#17355.00	60.1 PK	74.0	-13.9	1.33 V	158	41.00	19.10
12	#17355.00	46.5 AV	54.0	-7.5	1.33 V	158	27.40	19.10

**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.



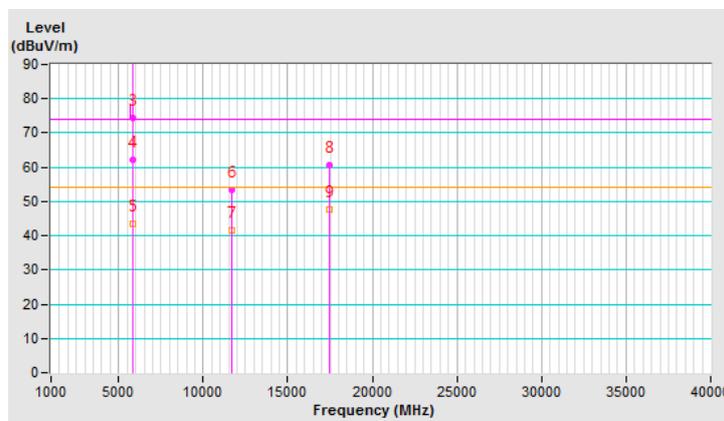
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5825.00	103.3 PK			1.21 H	102	100.36	2.94
2	*5825.00	94.3 AV			1.21 H	102	91.36	2.94
3	#5850.00	74.2 PK	78.2	-4.0	1.21 H	102	71.26	2.94
4	#5860.00	62.2 PK	74.0	-11.8	1.21 H	102	59.26	2.94
5	#5860.00	43.3 AV	54.0	-10.7	1.21 H	102	40.36	2.94
6	11650.00	53.5 PK	74.0	-20.5	1.24 H	121	40.29	13.21
7	11650.00	41.6 AV	54.0	-12.4	1.24 H	121	28.39	13.21
8	#17475.00	60.6 PK	74.0	-13.4	1.07 H	259	41.17	19.43
9	#17475.00	47.8 AV	54.0	-6.2	1.07 H	259	28.37	19.43

**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.



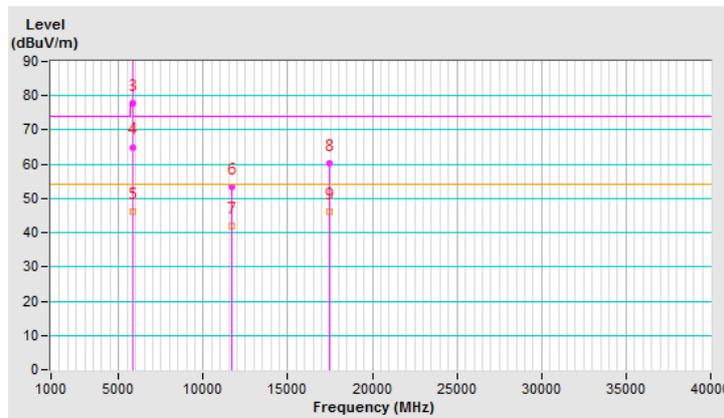
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5825.00	106.4 PK			2.52 V	50	103.46	2.94
2	*5825.00	97.1 AV			2.52 V	50	94.16	2.94
3	#5850.00	77.7 PK	78.2	-0.5	2.52 V	50	74.76	2.94
4	#5860.00	65.0 PK	74.0	-9.0	2.52 V	50	62.06	2.94
5	#5860.00	46.0 AV	54.0	-8.0	2.52 V	50	43.06	2.94
6	11650.00	53.5 PK	74.0	-20.5	1.06 V	247	40.29	13.21
7	11650.00	42.0 AV	54.0	-12.0	1.06 V	247	28.79	13.21
8	#17475.00	60.2 PK	74.0	-13.8	1.31 V	159	40.77	19.43
9	#17475.00	46.2 AV	54.0	-7.8	1.31 V	159	26.77	19.43

**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.



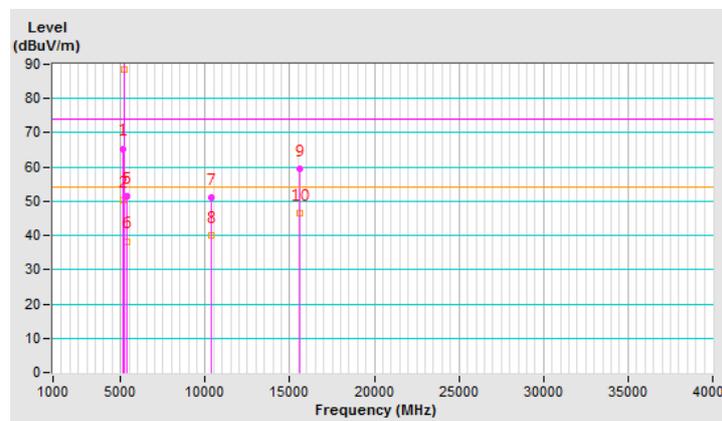
802.11ac VHT40

<b>CHANNEL</b>	TX Channel 38	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	65.4 PK	74.0	-8.6	1.22 H	110	63.83	1.57
2	5150.00	50.4 AV	54.0	-3.6	1.22 H	110	48.83	1.57
3	*5190.00	98.9 PK			1.22 H	110	97.19	1.71
4	*5190.00	88.5 AV			1.22 H	110	86.79	1.71
5	5350.00	51.4 PK	74.0	-22.6	1.22 H	110	49.29	2.11
6	5350.00	38.3 AV	54.0	-15.7	1.22 H	110	36.19	2.11
7	#10380.00	51.0 PK	74.0	-23.0	1.24 H	121	39.18	11.82
8	#10380.00	40.0 AV	54.0	-14.0	1.24 H	121	28.18	11.82
9	15570.00	59.4 PK	74.0	-14.6	1.17 H	279	46.10	13.30
10	15570.00	46.5 AV	54.0	-7.5	1.17 H	279	33.20	13.30

**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.



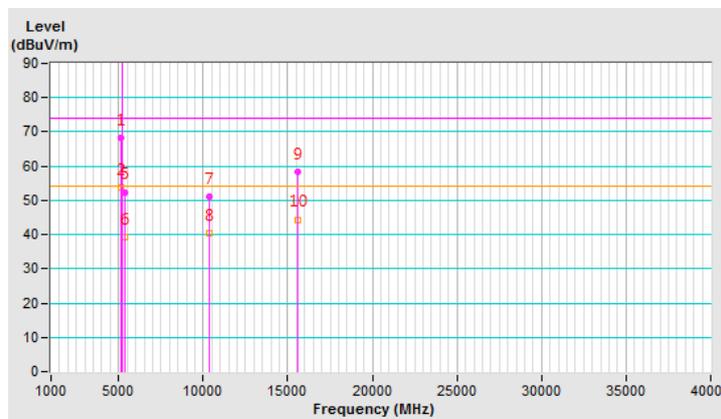
<b>CHANNEL</b>	TX Channel 38	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.4 PK	74.0	-5.6	2.36 V	39	66.83	1.57
2	5150.00	53.7 AV	54.0	-0.3	2.36 V	39	52.13	1.57
3	*5190.00	102.0 PK			2.36 V	39	100.29	1.71
4	*5190.00	91.8 AV			2.36 V	39	90.09	1.71
5	5350.00	52.4 PK	74.0	-21.6	2.36 V	39	50.29	2.11
6	5350.00	39.3 AV	54.0	-14.7	2.36 V	39	37.19	2.11
7	#10380.00	51.1 PK	74.0	-22.9	1.05 V	258	39.28	11.82
8	#10380.00	40.3 AV	54.0	-13.7	1.05 V	258	28.48	11.82
9	15570.00	58.3 PK	74.0	-15.7	1.27 V	168	45.00	13.30
10	15570.00	44.4 AV	54.0	-9.6	1.27 V	168	31.10	13.30

**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.



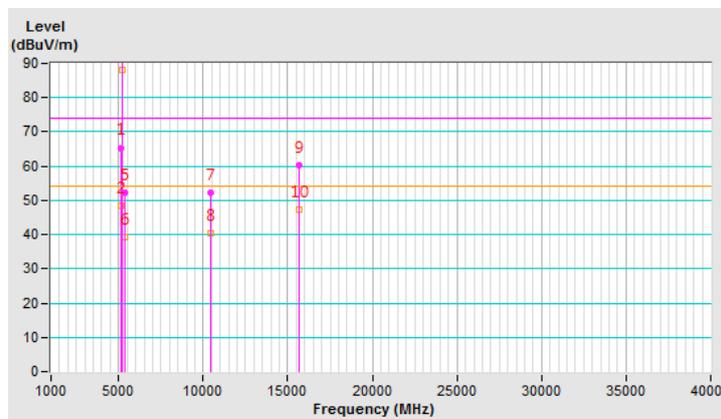
<b>CHANNEL</b>	TX Channel 46	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	65.4 PK	74.0	-8.6	1.14 H	106	63.83	1.57
2	5150.00	48.3 AV	54.0	-5.7	1.14 H	106	46.73	1.57
3	*5230.00	97.8 PK			1.14 H	106	95.97	1.83
4	*5230.00	88.1 AV			1.14 H	106	86.27	1.83
5	5350.00	52.2 PK	74.0	-21.8	1.14 H	106	50.09	2.11
6	5350.00	39.4 AV	54.0	-14.6	1.14 H	106	37.29	2.11
7	#10460.00	52.1 PK	74.0	-21.9	1.27 H	131	39.92	12.18
8	#10460.00	40.3 AV	54.0	-13.7	1.27 H	131	28.12	12.18
9	15690.00	60.4 PK	74.0	-13.6	1.12 H	274	47.18	13.22
10	15690.00	47.4 AV	54.0	-6.6	1.12 H	274	34.18	13.22

**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.



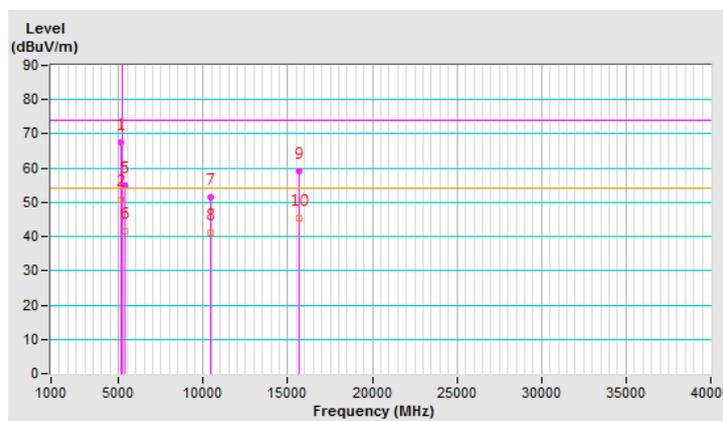
<b>CHANNEL</b>	TX Channel 46	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	67.5 PK	74.0	-6.5	2.24 V	39	65.93	1.57
2	5150.00	50.9 AV	54.0	-3.1	2.24 V	39	49.33	1.57
3	*5230.00	100.9 PK			2.24 V	39	99.07	1.83
4	*5230.00	91.3 AV			2.24 V	39	89.47	1.83
5	5350.00	54.9 PK	74.0	-19.1	2.24 V	39	52.79	2.11
6	5350.00	41.7 AV	54.0	-12.3	2.24 V	39	39.59	2.11
7	#10460.00	51.3 PK	74.0	-22.7	1.09 V	264	39.12	12.18
8	#10460.00	41.2 AV	54.0	-12.8	1.09 V	264	29.02	12.18
9	15690.00	59.2 PK	74.0	-14.8	1.29 V	182	45.98	13.22
10	15690.00	45.2 AV	54.0	-8.8	1.29 V	182	31.98	13.22

**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.



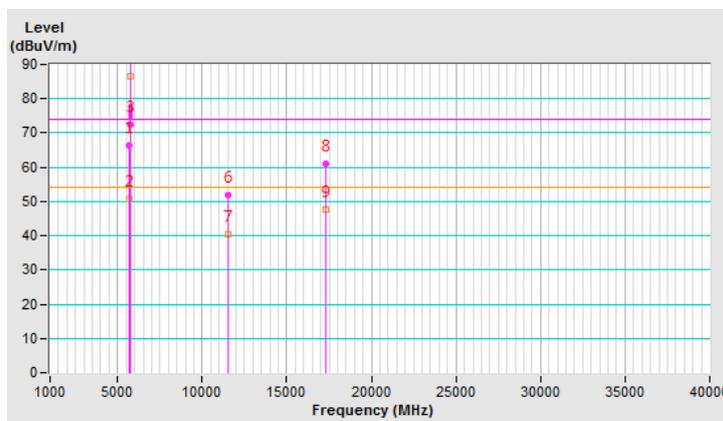
<b>CHANNEL</b>	TX Channel 151	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	66.4 PK	74.0	-7.6	1.10 H	109	63.63	2.77
2	#5715.00	50.6 AV	54.0	-3.4	1.10 H	109	47.83	2.77
3	#5725.00	72.4 PK	78.2	-5.8	1.10 H	109	69.62	2.78
4	*5755.00	95.4 PK			1.10 H	109	92.56	2.84
5	*5755.00	86.4 AV			1.10 H	109	83.56	2.84
6	11510.00	52.0 PK	74.0	-22.0	1.26 H	142	38.57	13.43
7	11510.00	40.5 AV	54.0	-13.5	1.26 H	142	27.07	13.43
8	#17265.00	61.1 PK	74.0	-12.9	1.13 H	287	42.54	18.56
9	#17265.00	47.8 AV	54.0	-6.2	1.13 H	287	29.24	18.56

**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.



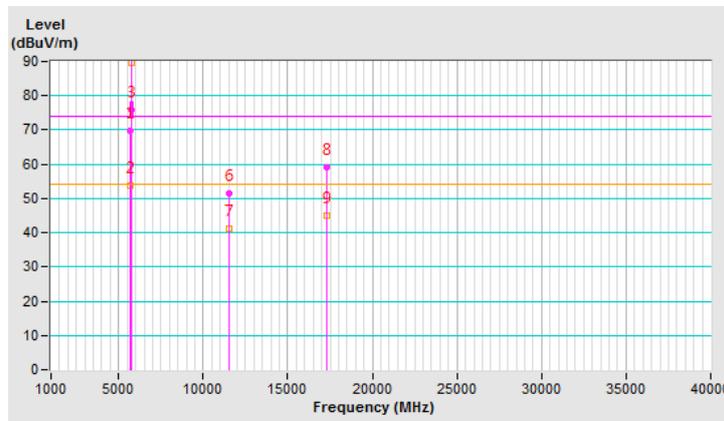
<b>CHANNEL</b>	TX Channel 151	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	69.7 PK	74.0	-4.3	1.27 V	46	66.93	2.77
2	#5715.00	53.9 AV	54.0	-0.1	1.27 V	46	51.13	2.77
3	#5725.00	75.9 PK	78.2	-2.3	1.27 V	46	73.12	2.78
4	*5755.00	98.8 PK			1.27 V	46	95.96	2.84
5	*5755.00	89.6 AV			1.27 V	46	86.76	2.84
6	11510.00	51.3 PK	74.0	-22.7	1.15 V	260	37.87	13.43
7	11510.00	41.3 AV	54.0	-12.7	1.15 V	260	27.87	13.43
8	#17265.00	59.2 PK	74.0	-14.8	1.28 V	183	40.64	18.56
9	#17265.00	45.1 AV	54.0	-8.9	1.28 V	183	26.54	18.56

**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.



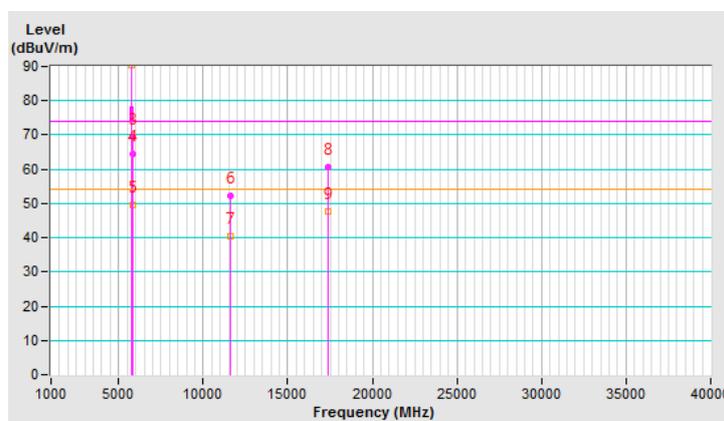
<b>CHANNEL</b>	TX Channel 159	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5795.00	100.2 PK			1.12 H	124	97.28	2.92
2	*5795.00	90.5 AV			1.12 H	124	87.58	2.92
3	#5850.00	69.5 PK	78.2	-8.7	1.12 H	124	66.56	2.94
4	#5860.00	64.5 PK	74.0	-9.5	1.12 H	124	61.56	2.94
5	#5860.00	49.6 AV	54.0	-4.4	1.12 H	124	46.66	2.94
6	11590.00	52.3 PK	74.0	-21.7	1.32 H	134	39.12	13.18
7	11590.00	40.4 AV	54.0	-13.6	1.32 H	134	27.22	13.18
8	#17385.00	60.7 PK	74.0	-13.3	1.08 H	279	41.38	19.32
9	#17385.00	47.7 AV	54.0	-6.3	1.08 H	279	28.38	19.32

**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.



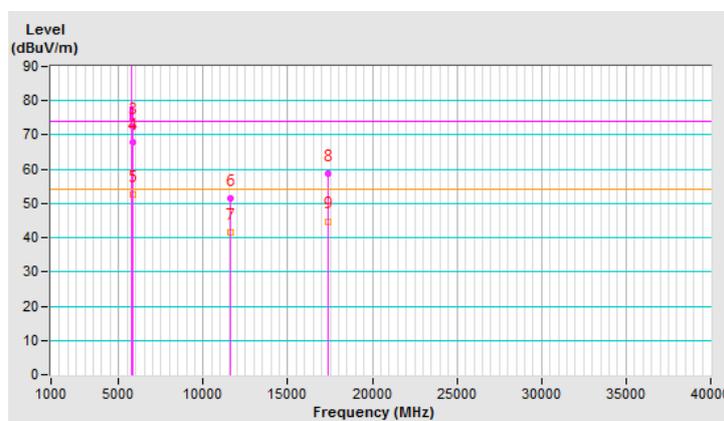
<b>CHANNEL</b>	TX Channel 159	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	*5795.00	103.8 PK			1.08 V	11	100.88	2.92
2	*5795.00	93.7 AV			1.08 V	11	90.78	2.92
3	#5850.00	72.3 PK	78.2	-5.9	1.08 V	11	69.36	2.94
4	#5860.00	67.8 PK	74.0	-6.2	1.08 V	11	64.86	2.94
5	#5860.00	52.6 AV	54.0	-1.4	1.08 V	11	49.66	2.94
6	11590.00	51.4 PK	74.0	-22.6	1.09 V	249	38.22	13.18
7	11590.00	41.4 AV	54.0	-12.6	1.09 V	249	28.22	13.18
8	#17385.00	58.8 PK	74.0	-15.2	1.27 V	184	39.48	19.32
9	#17385.00	44.8 AV	54.0	-9.2	1.27 V	184	25.48	19.32

**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.



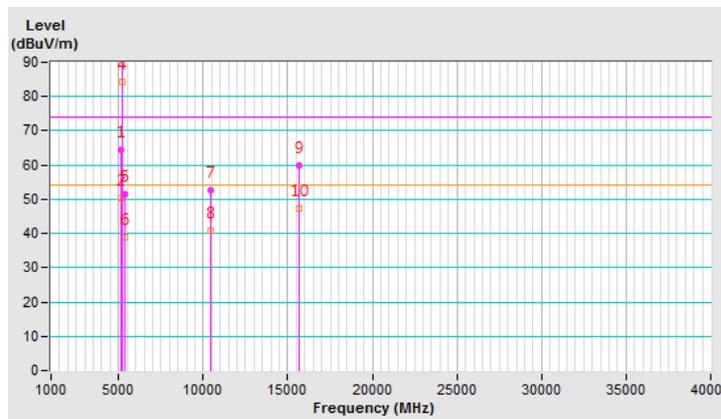
802.11ac VHT80

<b>CHANNEL</b>	TX Channel 42	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	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	64.4 PK	74.0	-9.6	1.06 H	114	62.83	1.57
2	5150.00	50.2 AV	54.0	-3.8	1.06 H	114	48.63	1.57
3	*5210.00	95.4 PK			1.06 H	114	93.63	1.77
4	*5210.00	84.2 AV			1.06 H	114	82.43	1.77
5	5350.00	51.4 PK	74.0	-22.6	1.06 H	114	49.29	2.11
6	5350.00	38.8 AV	54.0	-15.2	1.06 H	114	36.69	2.11
7	#10420.00	52.6 PK	74.0	-21.4	1.28 H	139	40.59	12.01
8	#10420.00	40.7 AV	54.0	-13.3	1.28 H	139	28.69	12.01
9	15630.00	60.0 PK	74.0	-14.0	1.09 H	263	46.73	13.27
10	15630.00	47.2 AV	54.0	-6.8	1.09 H	263	33.93	13.27

**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.



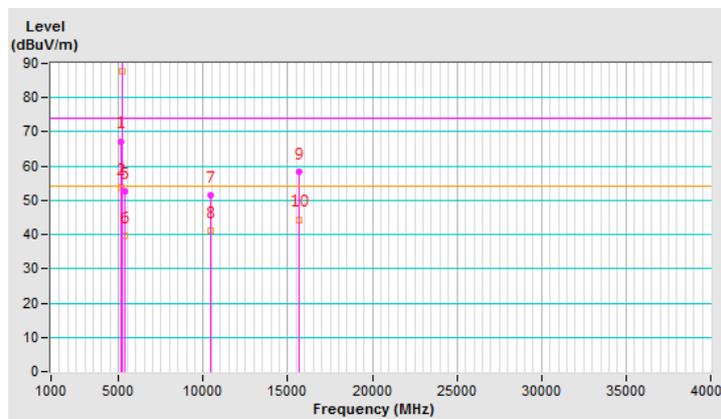
<b>CHANNEL</b>	TX Channel 42	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	67.3 PK	74.0	-6.7	1.04 V	247	65.73	1.57
2	<b>5150.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.04 V</b>	<b>247</b>	<b>52.33</b>	<b>1.57</b>
3	*5210.00	98.7 PK			1.04 V	247	96.93	1.77
4	*5210.00	87.7 AV			1.04 V	247	85.93	1.77
5	5350.00	52.5 PK	74.0	-21.5	1.04 V	247	50.39	2.11
6	5350.00	39.7 AV	54.0	-14.3	1.04 V	247	37.59	2.11
7	#10420.00	51.3 PK	74.0	-22.7	1.08 V	257	39.29	12.01
8	#10420.00	41.0 AV	54.0	-13.0	1.08 V	257	28.99	12.01
9	15630.00	58.3 PK	74.0	-15.7	1.27 V	182	45.03	13.27
10	15630.00	44.4 AV	54.0	-9.6	1.27 V	182	31.13	13.27

**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.



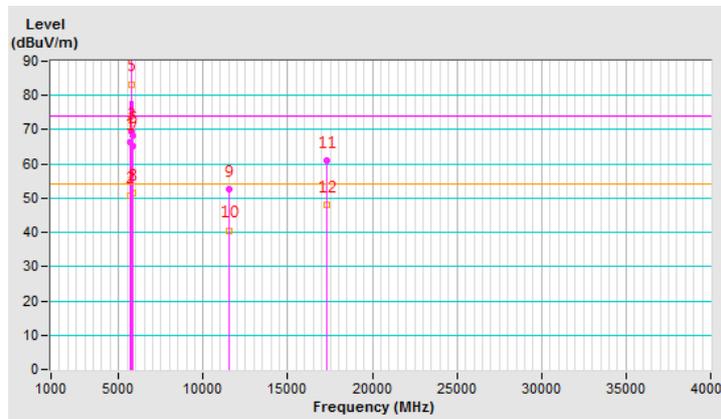
<b>CHANNEL</b>	TX Channel 155	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	66.2 PK	74.0	-7.8	1.00 H	106	63.43	2.77
2	#5715.00	50.6 AV	54.0	-3.4	1.00 H	106	47.83	2.77
3	#5725.00	69.4 PK	78.2	-8.8	1.00 H	106	66.62	2.78
4	*5775.00	94.2 PK			1.00 H	106	91.32	2.88
5	*5775.00	83.3 AV			1.00 H	106	80.42	2.88
6	#5850.00	68.4 PK	78.2	-9.8	1.00 H	106	65.46	2.94
7	#5860.00	65.3 PK	74.0	-8.7	1.00 H	106	62.36	2.94
8	#5860.00	51.4 AV	54.0	-2.6	1.00 H	106	48.46	2.94
9	11550.00	52.6 PK	74.0	-21.4	1.31 H	141	39.30	13.30
10	11550.00	40.6 AV	54.0	-13.4	1.31 H	141	27.30	13.30
11	#17325.00	61.0 PK	74.0	-13.0	1.04 H	293	42.12	18.88
12	#17325.00	48.0 AV	54.0	-6.0	1.04 H	293	29.12	18.88

**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.



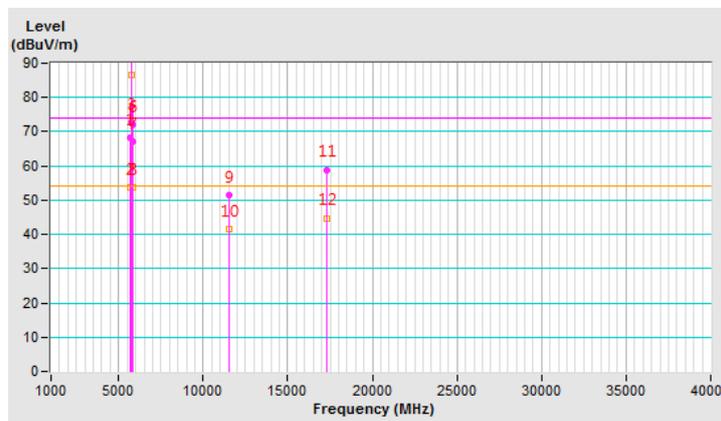
<b>CHANNEL</b>	TX Channel 155	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 40GHz		Average (AV)

**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	#5715.00	68.4 PK	74.0	-5.6	1.12 V	11	65.63	2.77
2	#5715.00	53.9 AV	54.0	-0.1	1.12 V	11	51.13	2.77
3	#5725.00	72.9 PK	78.2	-5.3	1.12 V	11	70.12	2.78
4	*5775.00	97.5 PK			1.12 V	11	94.62	2.88
5	*5775.00	86.7 AV			1.12 V	11	83.82	2.88
6	#5850.00	71.9 PK	78.2	-6.3	1.12 V	11	68.96	2.94
7	#5860.00	67.2 PK	74.0	-6.8	1.12 V	11	64.26	2.94
8	#5860.00	53.7 AV	54.0	-0.3	1.12 V	11	50.76	2.94
9	11550.00	51.3 PK	74.0	-22.7	1.14 V	238	38.00	13.30
10	11550.00	41.6 AV	54.0	-12.4	1.14 V	238	28.30	13.30
11	#17325.00	58.9 PK	74.0	-15.1	1.28 V	184	40.02	18.88
12	#17325.00	44.8 AV	54.0	-9.2	1.28 V	184	25.92	18.88

**REMARKS:**

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



**Below 1GHz Data:**

**802.11a**

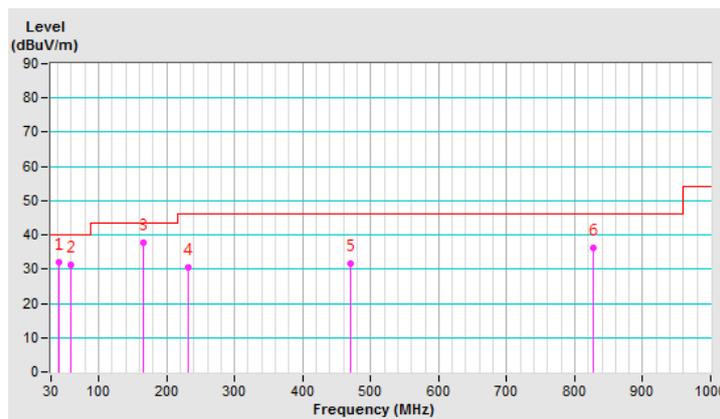
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**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	42.54	32.0 QP	40.0	-8.1	1.00 H	286	31.11	0.84
2	59.08	31.2 QP	40.0	-8.8	2.00 H	68	30.57	0.59
3	165.99	37.7 QP	43.5	-5.8	1.00 H	39	36.85	0.82
4	232.37	30.4 QP	46.0	-15.6	1.00 H	299	31.62	-1.23
5	471.25	31.5 QP	46.0	-14.5	1.50 H	112	25.59	5.94
6	827.73	36.3 QP	46.0	-9.7	2.00 H	360	24.12	12.15

**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



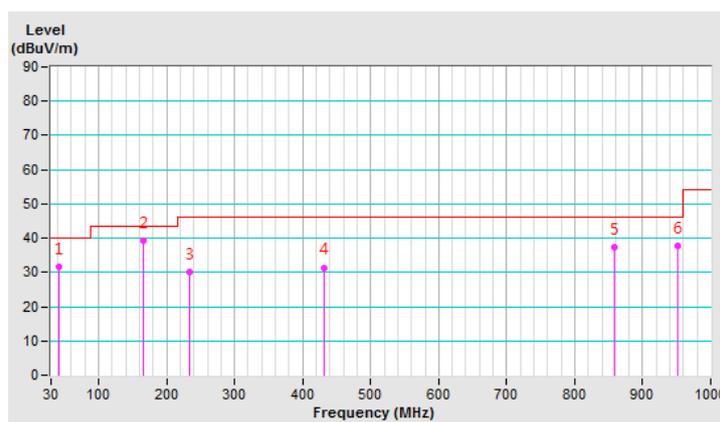
<b>CHANNEL</b>	TX Channel 165	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	30MHz ~ 1GHz		

**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	41.96	31.6 QP	40.0	-8.4	1.00 V	137	30.86	0.75
2	166.28	39.3 QP	43.5	-4.2	1.00 V	50	38.50	0.82
3	232.80	30.2 QP	46.0	-15.9	1.00 V	313	31.32	-1.17
4	431.99	31.4 QP	46.0	-14.6	1.50 V	334	26.18	5.26
5	858.48	37.2 QP	46.0	-8.8	1.50 V	0	24.69	12.51
6	951.35	37.8 QP	46.0	-8.2	1.00 V	297	23.66	14.15

**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 Transmit Power Measurement

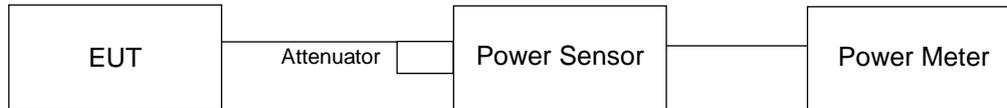
### 4.2.1 Limits of Transmit Power Measurement

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

#### 4.2.2 Test Setup

##### FOR POWER OUTPUT MEASUREMENT



#### 4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.2.4 Test Procedure

##### FOR POWER OUTPUT MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

#### 4.2.5 Deviation from Test Standard

No deviation.

#### 4.2.6 EUT Operating Condition

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

#### 4.2.7 Test Result

#### POWER OUTPUT:

##### 802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	45.499	16.58	24	Pass
40	5200	82.414	19.16	24	Pass
48	5240	46.774	16.70	24	Pass
149	5745	54.954	17.40	30	Pass
157	5785	94.189	19.74	30	Pass
165	5825	114.815	20.60	30	Pass

##### 802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	44.259	16.46	24	Pass
40	5200	82.035	19.14	24	Pass
48	5240	39.537	15.97	24	Pass
149	5745	53.58	17.29	30	Pass
157	5785	92.683	19.67	30	Pass
165	5825	110.917	20.45	30	Pass

##### 802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
38	5190	12.589	11.00	24	Pass
46	5230	38.905	15.90	24	Pass
151	5755	26.303	14.20	30	Pass
159	5795	90.365	19.56	30	Pass

##### 802.11ac (VHT80)

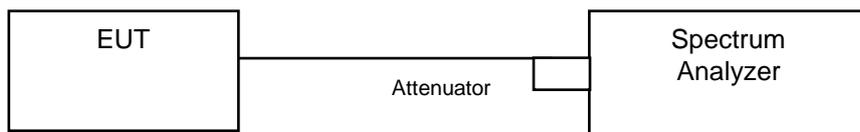
Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Limit (dBm)	Pass / Fail
42	5210	10.593	10.25	24	Pass
155	5775	31.333	14.96	30	Pass

### 4.3 Peak Power Spectral Density Measurement

#### 4.3.1 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

#### 4.3.2 Test Setup



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

##### For U-NII-1 band:

Using method SA-1

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

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

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Condition

Same as Item 4.3.6.

#### 4.3.7 Test Results

##### 802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	3.48	11	Pass
40	5200	6.41	11	Pass
48	5240	4.16	11	Pass

##### 802.11ac (VHT20)

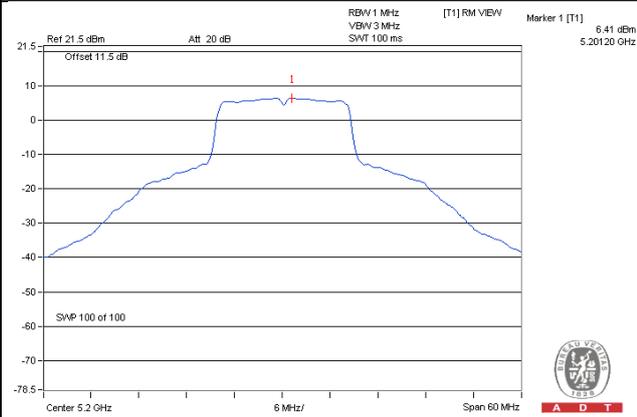
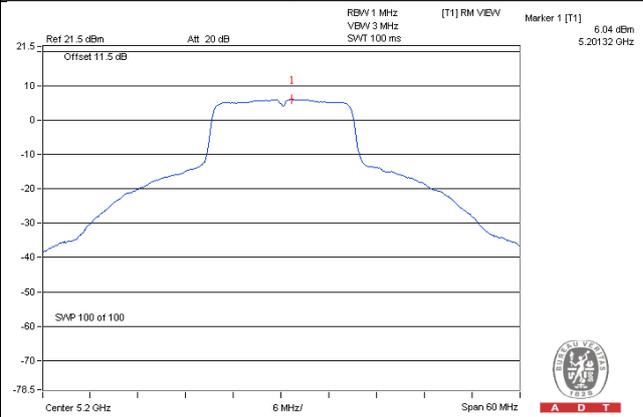
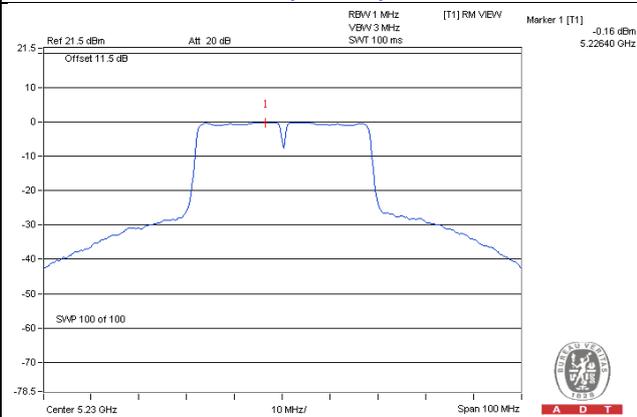
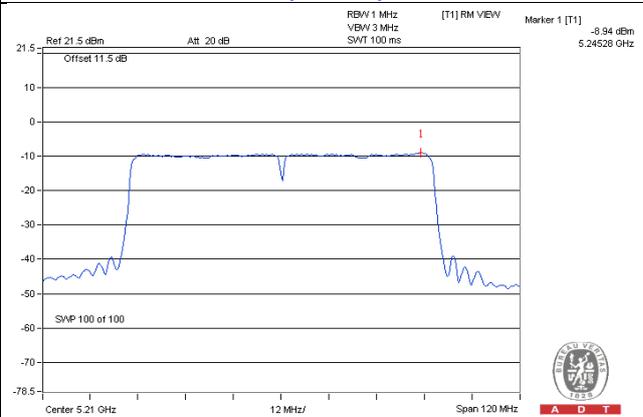
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	3.15	11	Pass
40	5200	6.04	11	Pass
48	5240	3.15	11	Pass

##### 802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
38	5190	-5.25	11	Pass
46	5230	-0.16	11	Pass

##### 802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
42	5210	-8.94	11	Pass

**Spectrum Plot of Worst Value****802.11a / CH40****802.11ac (VHT20) / CH40****802.11ac (VHT40) / CH46****802.11ac (VHT80) / CH42**

**For U-NII-3:**
**802.11a**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-3.65	-1.43	30	Pass
157	5785	-1.10	1.12	30	Pass
165	5825	-0.90	1.32	30	Pass

**802.11ac (VHT20)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
149	5745	-3.97	-1.75	30	Pass
157	5785	-1.55	0.67	30	Pass
165	5825	-1.44	0.78	30	Pass

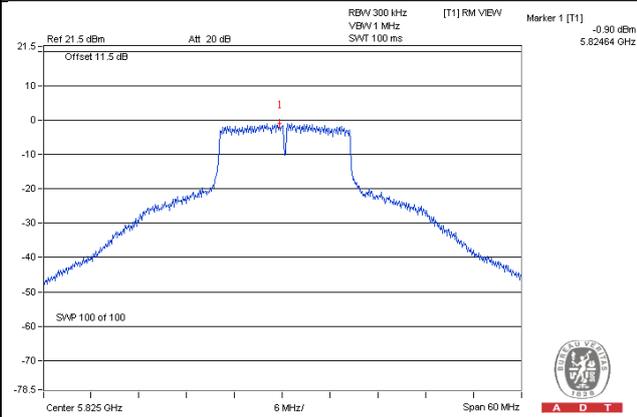
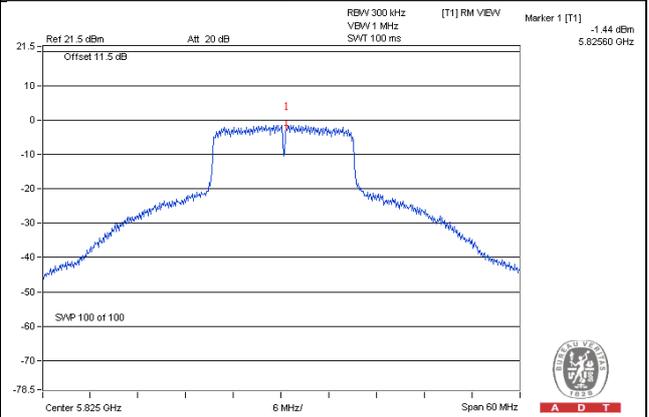
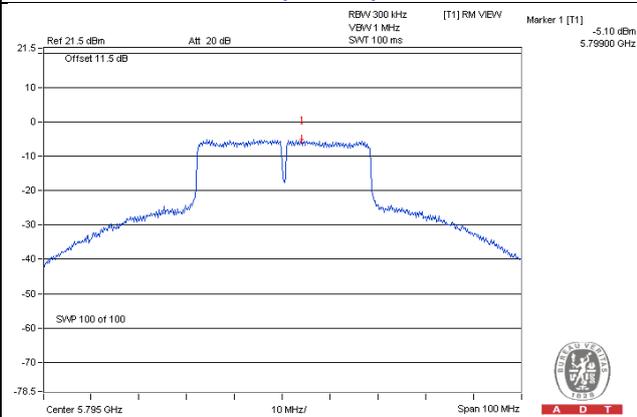
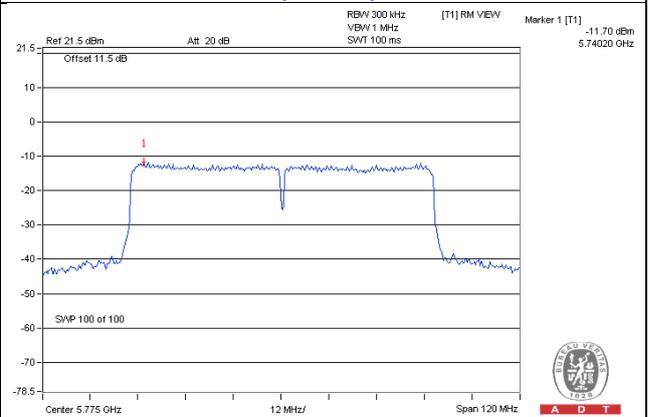
**802.11ac (VHT40)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
151	5755	-10.60	-8.38	30	Pass
159	5795	-5.10	-2.88	30	Pass

**802.11ac (VHT80)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
155	5745	-11.70	-9.48	30	Pass

### Spectrum Plot of Worst Value

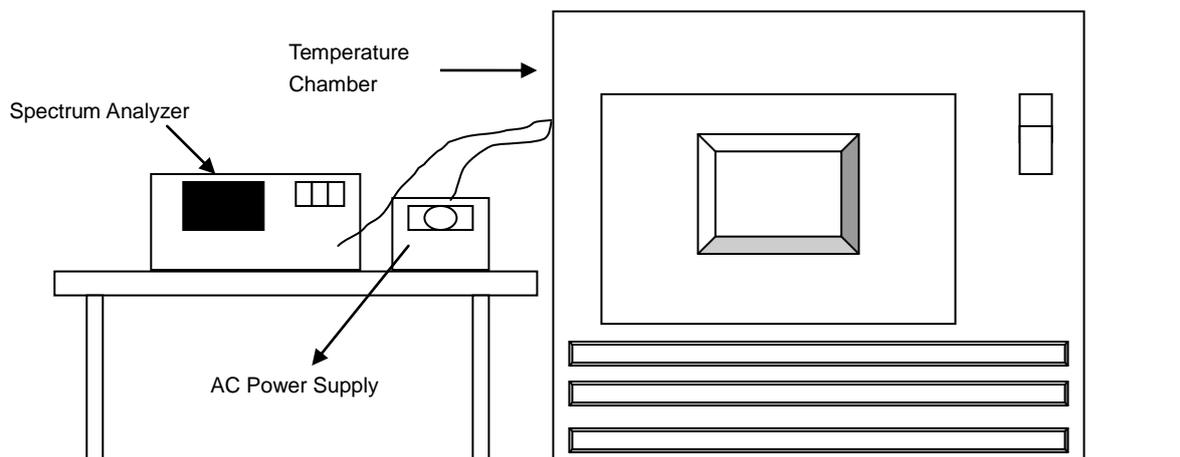
**802.11a / CH165****802.11ac (VHT20) / CH165****802.11ac (VHT40) / CH159****802.11ac (VHT80) / CH155**

#### 4.4 Frequency Stability Measurement

##### 4.4.1 Limits of Frequency Stability Measurement

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

##### 4.4.2 Test Setup



##### 4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

##### 4.4.4 Test Procedure

- a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

##### 4.4.5 Deviation from Test Standard

No deviation.

##### 4.4.6 EUT Operating Condition

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

**4.4.7 Test Results**

<b>FREQUENCY STABILITY VERSUS TEMP.</b>									
<b>OPERATING FREQUENCY: 5180MHz</b>									
<b>TEMP. (°C)</b>	<b>POWER SUPPLY (Vac)</b>	<b>0 MINUTE</b>		<b>2 MINUTE</b>		<b>5 MINUTE</b>		<b>10 MINUTE</b>	
		<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>
50	120	5179.9857	-0.00028	5179.9841	-0.00031	5179.984	-0.00031	5179.9873	-0.00025
40	120	5179.9789	-0.00041	5179.9748	-0.00049	5179.9754	-0.00047	5179.9775	-0.00043
30	120	5179.9933	-0.00013	5179.9945	-0.00011	5179.9906	-0.00018	5179.9935	-0.00013
20	120	5180.0041	0.00008	5179.9999	0.00000	5179.9989	-0.00002	5180.0033	0.00006
10	120	5179.9823	-0.00034	5179.9789	-0.00041	5179.982	-0.00035	5179.9826	-0.00034
0	120	5180.003	0.00006	5180.0028	0.00005	5179.999	-0.00002	5180.0028	0.00005
-10	120	5179.9836	-0.00032	5179.9882	-0.00023	5179.9868	-0.00025	5179.9861	-0.00027
-20	120	5179.9846	-0.00030	5179.9838	-0.00031	5179.9813	-0.00036	5179.9798	-0.00039
-30	120	5180.0186	0.00036	5180.0143	0.00028	5180.0146	0.00028	5180.0189	0.00036

<b>FREQUENCY STABILITY VERSUS VOLTAGE</b>									
<b>OPERATING FREQUENCY: 5180MHz</b>									
<b>TEMP. (°C)</b>	<b>POWER SUPPLY (Vac)</b>	<b>0 MINUTE</b>		<b>2 MINUTE</b>		<b>5 MINUTE</b>		<b>10 MINUTE</b>	
		<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>	<b>Measured Frequency (MHz)</b>	<b>Frequency Drift (%)</b>
20	138	5180.0037	0.00007	5179.9997	-0.00001	5179.9989	-0.00002	5180.0034	0.00007
	120	5180.0041	0.00008	5179.9999	0.00000	5179.9989	-0.00002	5180.0033	0.00006
	102	5180.0045	0.00009	5179.9995	-0.00001	5179.9988	-0.00002	5180.004	0.00008

## 4.5 6dB Bandwidth Measurement

### 4.5.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

### 4.5.2 Test Setup



### 4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.5.4 Test Procedure

#### MEASUREMENT PROCEDURE REF

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

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

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

## 4.5.7 Test Results

**802.11a**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.33	0.5	PASS
157	5785	16.34	0.5	PASS
165	5825	16.36	0.5	PASS

**802.11ac (VHT20)**

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.54	0.5	PASS
157	5785	16.58	0.5	PASS
165	5825	16.96	0.5	PASS

**802.11ac (VHT40)**

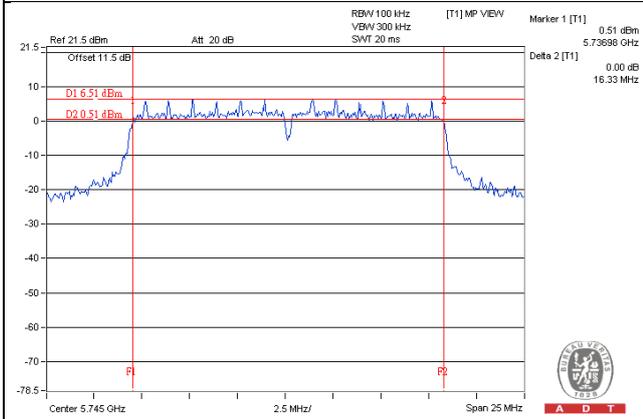
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.65	0.5	PASS
159	5795	35.77	0.5	PASS

**802.11ac (VHT80)**

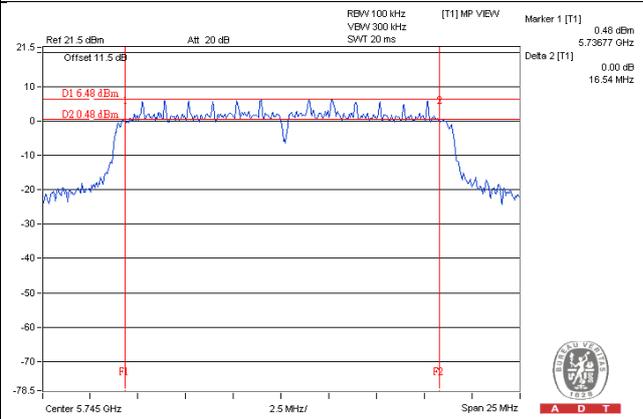
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.53	0.5	PASS

Spectrum Plot of Worst Value

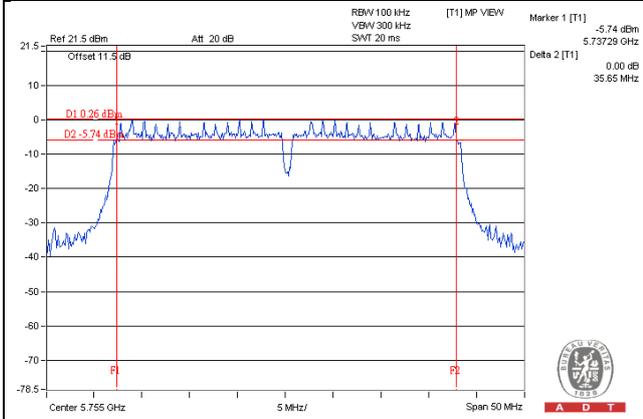
802.11a / CH149



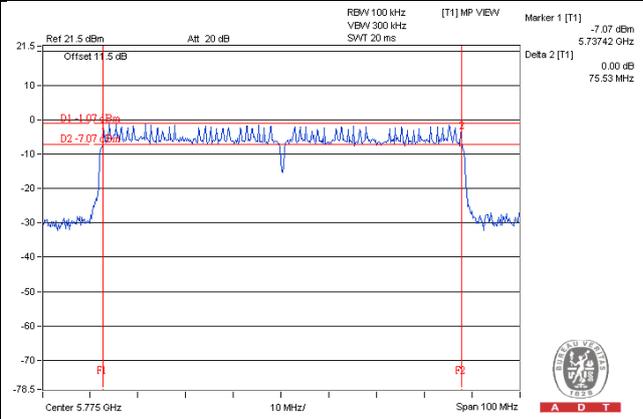
802.11ac (VHT20) / CH149



802.11ac (VHT40) / CH151



802.11ac (VHT80) / CH155



## 5 Pictures of Test Arrangements

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





## 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.

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

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