

## FCC Test Report

**Report No.:** RF140606E08C-1

**FCC ID:** PY314200281

**Test Model:** WND930

**Received Date:** July 20, 2014

**Test Date:** July 20 to Aug. 06, 2014 and Aug. 24 to Sep. 03, 2015

**Issued Date:** Sep. 10, 2015

**Applicant:** Netgear Incorporated

**Address:** 350 East Plumeria Drive San Jose, CA 95134

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

**Lab Address:** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (3):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.



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### Release Control Record

Issue No.	Description	Date Issued
RF140606E08C-1	Original release.	Sep. 10, 2015



A D T

## 1 Certificate of Conformity

**Product:** Outdoor High Power Wireless N Access Point

**Brand:** NETGEAR

**Test Model:** WND930

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Netgear Incorporated

**Test Date:** July 20 to Aug. 06, 2014 and Aug. 24 to Sep. 03, 2015

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

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

**Prepared by :** Phoenix Huang , **Date:** Sep. 10, 2015  
Phoenix Huang / Specialist

**Approved by :** May Chen , **Date:** Sep. 10, 2015  
May Chen / Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -16.19dB at 0.50156MHz.
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 5650.00MHz, 5708.00MHz, 5725.00MHz, 5850.00MHz, 5860.00MHz.
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	For internal antenna connector is i-pex(MHF) not a standard connector. For external antenna connector is N type(M) not a standard connector.

**NOTE:** 1. This report is prepared for FCC Class II change. (Upgrade the standard to section 15.407 under new rule for U-NII-1, 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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.86 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.37 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.65 dB
	6GHz ~ 18GHz	3.88 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	Outdoor High Power Wireless N Access Point
Brand	NETGEAR
Test Model	WND930
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	44 - 57Vdc from PoE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps
Operating Frequency	<b>2.4GHz:</b> 2.412GHz ~ 2.462GHz <b>5GHz:</b> 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	<b>2.4GHz:</b> 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 <b>5GHz:</b> 802.11a, 802.11n (HT20): 9 802.11n (HT40): 4
Output Power	<b>5GHz: (UNII 1 &amp; UNII 3)</b> 802.11a: 436.875mW 802.11n (HT20): 659.561mW 802.11n (HT40): 439.539mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

**Note:**

1. This report is prepared for FCC Class II change. The difference compared with the Report No.: RF140606E08-1 design is as the following:
  - ◆ Upgrade the standard to section 15.407 under new rule for U-NII-1, U-NII-3 band.
2. According to above conditions, all test items of U-NII-3 band need to be performed, and the other test data was copied from the original test report (Report No.: RF140606E08-1). And all data was verified to meet the requirements.
3. 2.4GHz and 5GHz technology can transmit at same time.
4. The antennas provided to the EUT, please refer to the following table:

Internal Antenna				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
Chain (0)	5	5.150~5.850GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
External Antenna				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Dipole	N type(M)
Chain (1)	5		Dipole	N type(M)
Chain (0)	7	5.150~5.850GHz	Dipole	N type(M)
Chain (1)	7		Dipole	N type(M)

5. The EUT incorporates a MIMO function.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
<b>802.11a</b>	6~ 54Mbps	2TX	2RX
<b>802.11b</b>	1 ~ 11Mbps	2TX	2RX
<b>802.11g</b>	6 ~ 54Mbps	2TX	2RX
<b>802.11n (HT20)</b>	MCS 0 ~ 7	2TX	2RX
	MCS 8 ~ 15	2TX	2RX
<b>802.11n (HT40)</b>	MCS 0 ~ 7	2TX	2RX
	MCS 8 ~ 15	2TX	2RX

6. The emission of the simultaneous operation WLAN (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
7. 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):

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

#### FOR 5745 ~ 5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	-	√	With External antenna
2	√	√	√	-	With Internal antenna

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
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

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

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	5180-5240, 5745-5825	36 to 48, 149 to 165	157	OFDM	BPSK	6.5

**Power Line Conducted Emission Test:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	5180-5240, 5745-5825	36 to 48, 149 to 165	157	OFDM	BPSK	6.5

**Antenna Port Conducted Measurement:**

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

**Test Condition:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	22deg. C, 70%RH	120Vac, 60Hz	Tim Ho
	23deg. C, 67%RH	120Vac, 60Hz	Robert Cheng
RE $<$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Gary Cheng
	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	25deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen
	25deg. C, 60%RH	120Vac, 60Hz	James Chan

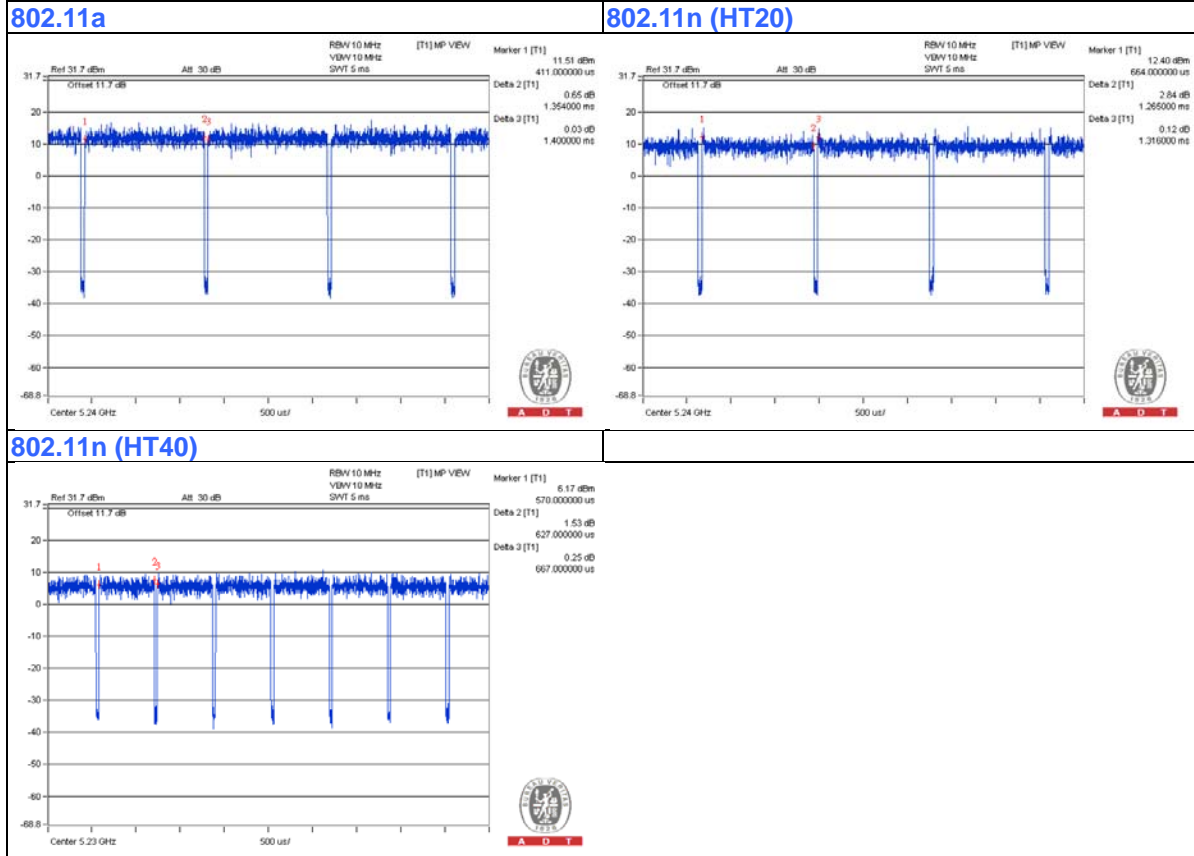
### 3.3 Duty Cycle of Test Signal

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

**802.11a:** Duty cycle = 1.354 ms/1.4 ms = 0.967, Duty factor =  $10 * \log(1/0.967) = 0.15$

**802.11n (HT20):** Duty cycle = 1.265 ms/1.316 ms = 0.961, Duty factor =  $10 * \log(1/0.961) = 0.17$

**802.11n (HT40):** Duty cycle = 0.627 ms/0.667 ms = 0.94, Duty factor =  $10 * \log(1/0.94) = 0.27$



### 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.	POE	Symbol	AP-PSBIAS-1P2-A FR	NA	FCC DoC	Supplied by Client
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Supplied by Client

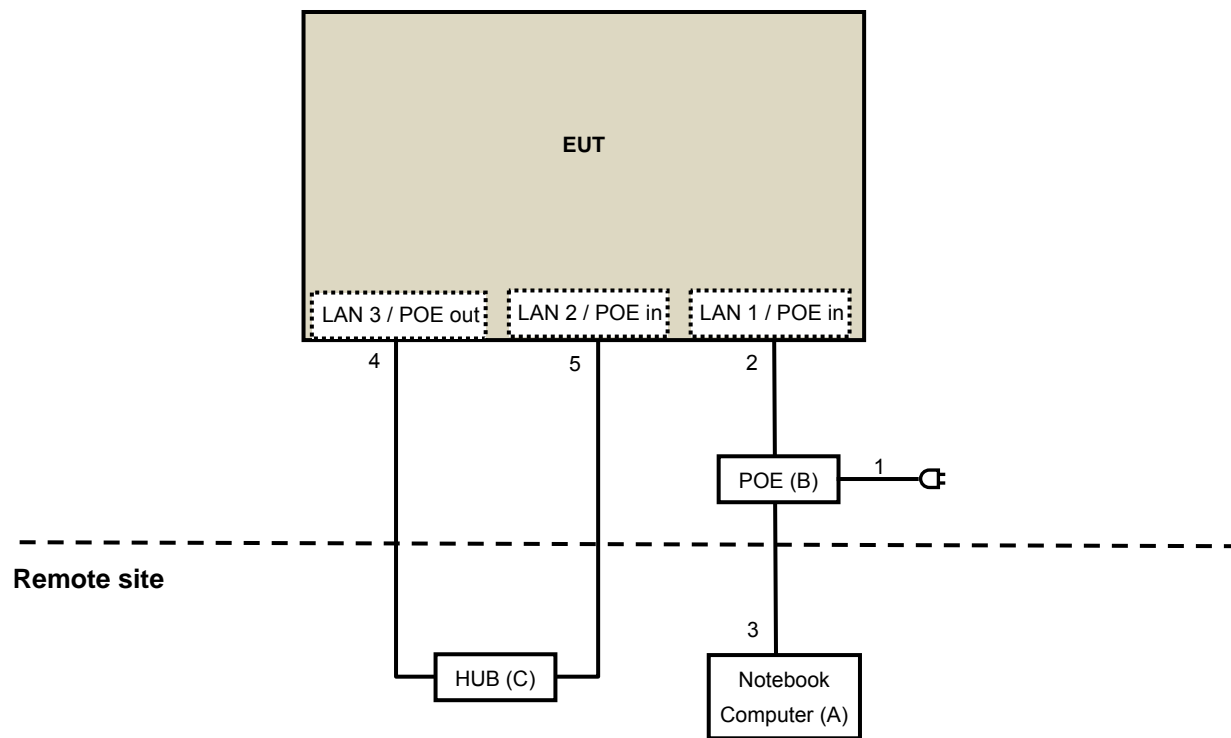
Note:

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

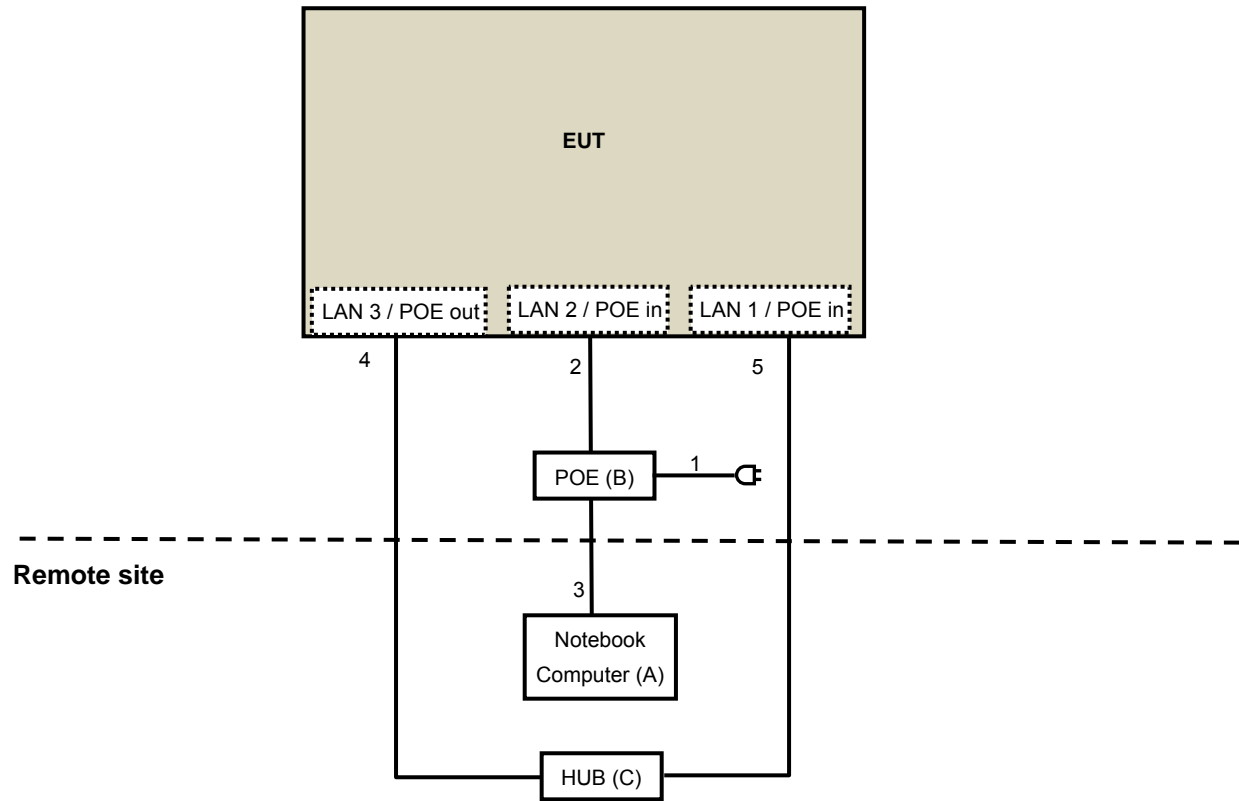
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC	1	1.8	Yes	0	Supplied by Client
2.	RJ-45	1	3	No	0	Provided by Lab
3.	RJ-45	1	10	No	0	Provided by Lab
4.	RJ-45	1	10	No	0	Provided by Lab
5.	RJ-45	1	10	No	0	Provided by Lab

### 3.4.1 Configuration of System under Test

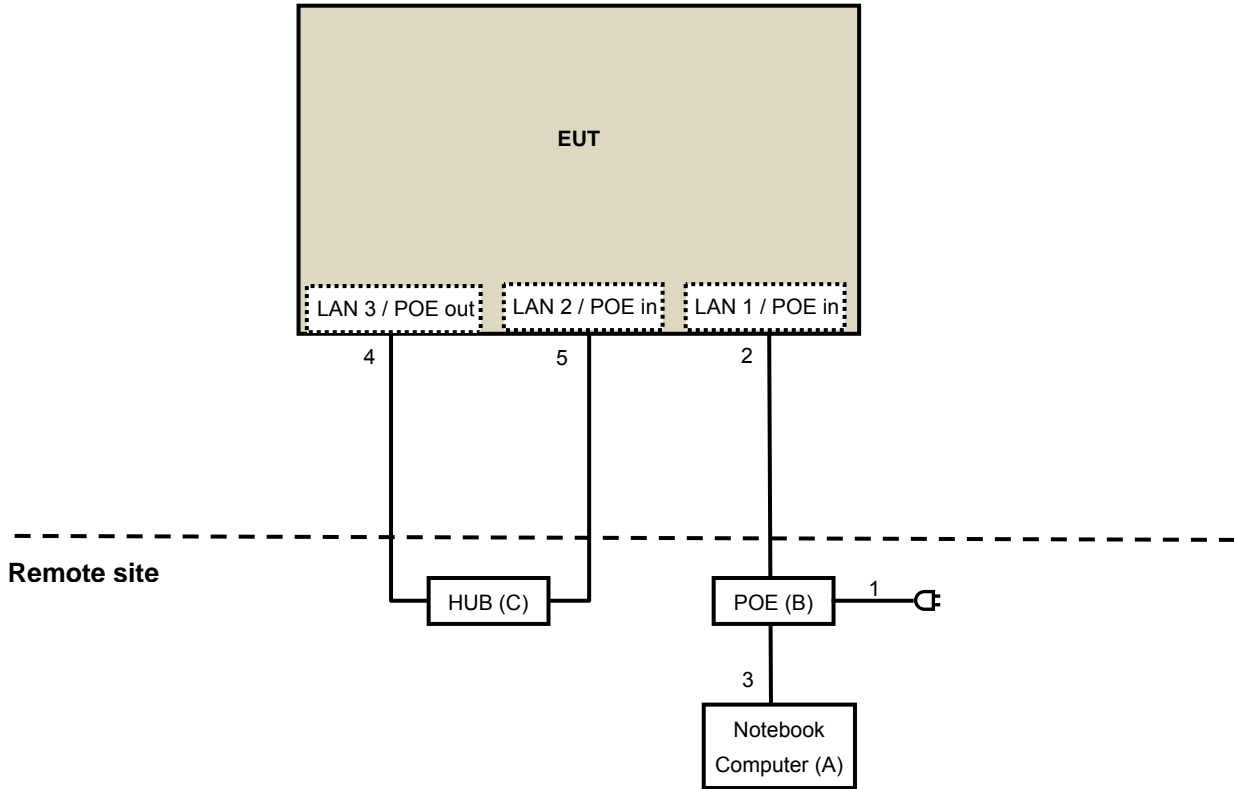
#### For Conducted Emission test: (LAN 1 / POE in)



**For Conducted Emission test: (LAN 2 / POE in)**



For other test items:





### 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)**

**789033 D02 General UNII Test Procedure New Rules v01**

**662911 D01 Multiple Transmitter Output v02r01**

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 v01	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 Above 1GHz (U-NII-1):

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 12, 2013	Dec. 11, 2014
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 2014
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 2015
Power meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 2015

##### 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. G.
3. The FCC Site Registration No. is 966073.
4. The VCCI Site Registration No. is G-137.
5. The CANADA Site Registration No. is IC 7450H-2.
6. Tested Date: Aug. 01 to 06, 2014

**For Above 1GHz (U-NII-3) and Below 1GHz:**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210105	July 24, 2015	July 23, 2016
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 06, 2015	Feb. 05, 2016
RF Cable	8D-FB	CHGCAB-001 -1 CHGCAB-001 -2	Oct. 04, 2014	Oct. 03, 2015
	RF-141	CHGCAB-004	Oct. 04, 2014	Oct. 03, 2015
Horn_Antenna AISI	AIH.8018	000032009111 0	Feb. 09, 2015	Feb. 08, 2016
Pre-Amplifier Agilent	8449B	3008A02578	June 23, 2015	June 22, 2016
RF Cable	NA	131205 131216 131217 SNMY23684/ 4	Jan. 16, 2015	Jan. 15, 2016
Spectrum Analyzer R&S	FSV40	100964	June 26, 2015	June 25, 2016
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Dec. 12, 2014	Dec. 11, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Feb. 05, 2015	Feb. 04, 2016
RF Cable	NA	329751/4 RF104-204	Dec. 11, 2014	Dec. 10, 2015
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	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-S P-AR	MAA0812-00 8	Jan. 12, 2015	Jan. 11, 2016

**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. G.
3. The FCC Site Registration No. is 966073.
4. The VCCI Site Registration No. is G-137.
5. The CANADA Site Registration No. is IC 7450H-2.
6. Tested Date: Sep. 02 to 03, 2015

#### 4.1.3 Test Procedures

- 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:**

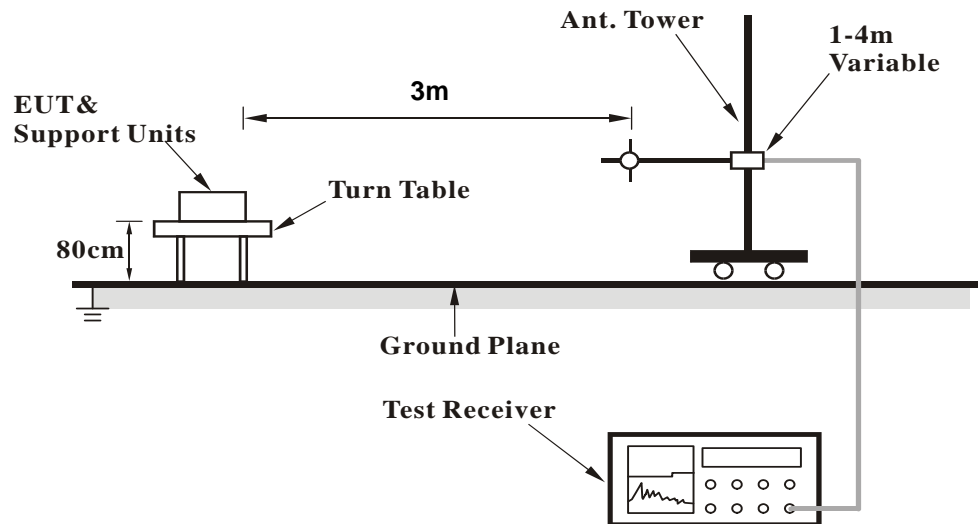
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

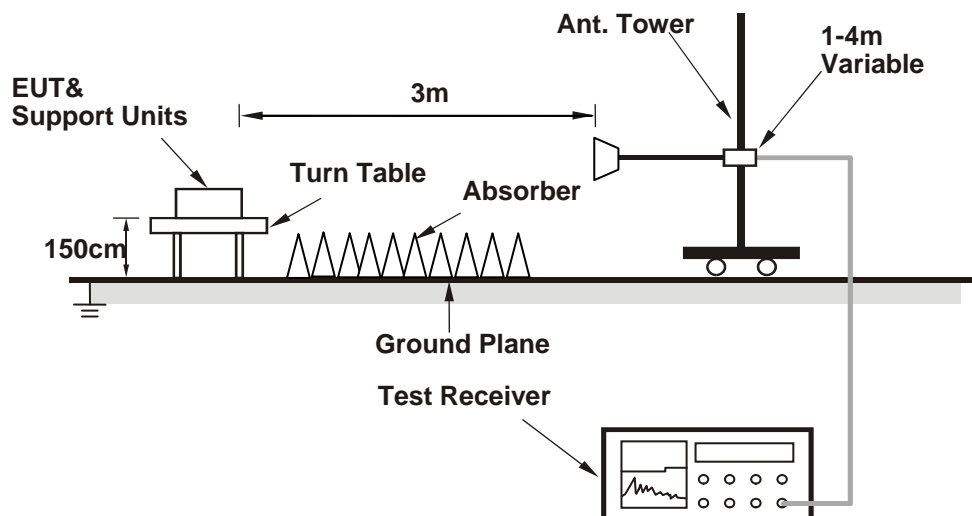
No deviation.

#### 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 Conditions

1. Placed the EUT on testing table.
2. Prepared support unit A (Notebook Computer) to act as communication partner.
3. The communication partner run test program "artgui.exe V2.3" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

**4.1.7 Test Results (Mode 1)**
**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)

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
<b>NO.</b>	<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA HEIGHT (m)</b>	<b>TABLE ANGLE (Degree)</b>	<b>RAW VALUE (dBuV)</b>	<b>CORRECTION FACTOR (dB/m)</b>
1	5150.00	51.6 PK	74.0	-22.4	1.04 H	324	44.80	6.80
2	5150.00	39.5 AV	54.0	-14.5	1.04 H	324	32.70	6.80
3	*5180.00	99.9 PK			1.02 H	312	92.95	6.95
4	*5180.00	91.0 AV			1.02 H	312	84.05	6.95
5	5450.00	51.2 PK	74.0	-22.8	1.00 H	318	43.33	7.87
6	5450.00	39.2 AV	54.0	-14.8	1.00 H	318	31.33	7.87
7	#10360.00	53.8 PK	74.0	-20.2	1.00 H	214	40.69	13.11
8	#10360.00	40.1 AV	54.0	-13.9	1.00 H	214	26.99	13.11
9	15540.00	58.1 PK	74.0	-15.9	1.14 H	106	39.41	18.69
10	15540.00	47.2 AV	54.0	-6.8	1.14 H	106	28.51	18.69

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
<b>NO.</b>	<b>FREQ. (MHz)</b>	<b>EMISSION LEVEL (dBuV/m)</b>	<b>LIMIT (dBuV/m)</b>	<b>MARGIN (dB)</b>	<b>ANTENNA HEIGHT (m)</b>	<b>TABLE ANGLE (Degree)</b>	<b>RAW VALUE (dBuV)</b>	<b>CORRECTION FACTOR (dB/m)</b>
1	5000.00	57.2 PK	74.0	-16.8	1.00 V	242	50.78	6.42
2	5000.00	50.4 AV	54.0	-3.6	1.00 V	242	43.98	6.42
3	5150.00	58.8 PK	74.0	-15.2	1.00 V	300	52.00	6.80
4	5150.00	45.9 AV	54.0	-8.1	1.00 V	300	39.10	6.80
5	*5180.00	115.8 PK			1.09 V	302	108.85	6.95
6	*5180.00	104.9 AV			1.09 V	302	97.95	6.95
7	5450.00	62.2 PK	74.0	-11.8	1.31 V	49	54.33	7.87
8	5450.00	49.9 AV	54.0	-4.1	1.31 V	49	42.03	7.87
9	#10360.00	54.1 PK	74.0	-19.9	1.04 V	168	40.99	13.11
10	#10360.00	40.8 AV	54.0	-13.2	1.04 V	168	27.69	13.11
11	15540.00	59.0 PK	74.0	-15.0	1.00 V	214	40.31	18.69
12	15540.00	47.7 AV	54.0	-6.3	1.00 V	214	29.01	18.69

**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	5000.00	51.9 PK	74.0	-22.1	1.06 H	334	45.48	6.42
2	5000.00	39.8 AV	54.0	-14.2	1.06 H	334	33.38	6.42
3	*5200.00	99.8 PK			1.00 H	312	92.75	7.05
4	*5200.00	91.1 AV			1.00 H	312	84.05	7.05
5	5443.00	50.4 PK	74.0	-23.6	1.00 H	317	42.57	7.83
6	5443.00	38.6 AV	54.0	-15.4	1.00 H	317	30.77	7.83
7	#10400.00	53.8 PK	74.0	-20.2	1.00 H	201	40.58	13.22
8	#10400.00	40.4 AV	54.0	-13.6	1.00 H	201	27.18	13.22
9	15600.00	57.4 PK	74.0	-16.6	1.11 H	94	38.70	18.70
10	15600.00	46.8 AV	54.0	-7.2	1.11 H	94	28.10	18.70

**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	5000.00	62.5 PK	74.0	-11.5	1.23 V	63	56.08	6.42
2	5000.00	50.1 AV	54.0	-3.9	1.23 V	63	43.68	6.42
3	*5200.00	115.2 PK			1.05 V	292	108.15	7.05
4	*5200.00	104.5 AV			1.05 V	292	97.45	7.05
5	5443.00	56.9 PK	74.0	-17.1	1.01 V	289	49.07	7.83
6	5443.00	50.4 AV	54.0	-3.6	1.01 V	289	42.57	7.83
7	#10400.00	54.2 PK	74.0	-19.8	1.01 V	173	40.98	13.22
8	#10400.00	41.0 AV	54.0	-13.0	1.01 V	173	27.78	13.22
9	15600.00	58.9 PK	74.0	-15.1	1.00 V	224	40.20	18.70
10	15600.00	48.0 AV	54.0	-6.0	1.00 V	224	29.30	18.70

**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	5000.00	50.6 PK	74.0	-23.4	1.07 H	303	44.18	6.42
2	5000.00	39.3 AV	54.0	-14.7	1.07 H	303	32.88	6.42
3	*5240.00	100.0 PK			1.00 H	320	92.84	7.16
4	*5240.00	91.1 AV			1.00 H	320	83.94	7.16
5	5442.00	51.4 PK	74.0	-22.6	1.05 H	321	43.57	7.83
6	5442.00	39.6 AV	54.0	-14.4	1.05 H	321	31.77	7.83
7	#10480.00	53.7 PK	74.0	-20.3	1.00 H	219	40.54	13.16
8	#10480.00	40.1 AV	54.0	-13.9	1.00 H	219	26.94	13.16
9	15720.00	58.0 PK	74.0	-16.0	1.12 H	87	39.60	18.40
10	15720.00	47.1 AV	54.0	-6.9	1.12 H	87	28.70	18.40

**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	5000.00	56.8 PK	74.0	-17.2	1.00 V	265	50.38	6.42
2	5000.00	50.3 AV	54.0	-3.7	1.00 V	265	43.88	6.42
3	*5240.00	115.7 PK			1.13 V	305	108.54	7.16
4	*5240.00	105.1 AV			1.13 V	305	97.94	7.16
5	5442.00	62.1 PK	74.0	-11.9	1.11 V	56	54.27	7.83
6	5442.00	49.5 AV	54.0	-4.5	1.11 V	56	41.67	7.83
7	#10480.00	54.2 PK	74.0	-19.8	1.00 V	157	41.04	13.16
8	#10480.00	40.8 AV	54.0	-13.2	1.00 V	157	27.64	13.16
9	15720.00	58.6 PK	74.0	-15.4	1.00 V	212	40.20	18.40
10	15720.00	47.3 AV	54.0	-6.7	1.00 V	212	28.90	18.40

**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	5000.00	58.3 PK	74.0	-15.7	1.60 H	54	50.46	7.84
2	5000.00	44.7 AV	54.0	-9.3	1.60 H	54	36.86	7.84
3	#5715.00	58.8 PK	68.2	-9.4	1.60 H	54	49.12	9.68
4	#5725.00	67.2 PK	78.2	-11.0	1.60 H	54	57.50	9.70
5	*5745.00	108.2 PK			1.60 H	54	98.44	9.76
6	*5745.00	98.2 AV			1.60 H	54	88.44	9.76
7	11490.00	56.5 PK	74.0	-17.5	1.77 H	360	41.64	14.86
8	11490.00	42.8 AV	54.0	-11.2	1.77 H	360	27.94	14.86
9	#17235.00	61.8 PK	74.0	-12.2	1.81 H	46	38.57	23.23
10	#17235.00	48.6 AV	54.0	-5.4	1.81 H	46	25.37	23.23

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	5000.00	55.8 PK	74.0	-18.2	1.60 V	231	47.96	7.84
2	5000.00	50.2 AV	54.0	-3.8	1.60 V	231	42.36	7.84
3	#5715.00	65.1 PK	68.2	-3.1	1.60 V	231	55.42	9.68
<b>4</b>	<b>#5725.00</b>	<b>78.1 PK</b>	<b>78.2</b>	<b>-0.1</b>	<b>1.60 V</b>	<b>231</b>	<b>68.40</b>	<b>9.70</b>
5	*5745.00	116.4 PK			1.60 V	231	106.64	9.76
6	*5745.00	107.1 AV			1.60 V	231	97.34	9.76
7	11490.00	54.7 PK	74.0	-19.3	1.80 V	360	39.84	14.86
8	11490.00	42.9 AV	54.0	-11.1	1.80 V	360	28.04	14.86
9	#17235.00	57.2 PK	74.0	-16.8	1.89 V	19	33.97	23.23
10	#17235.00	43.9 AV	54.0	-10.1	1.89 V	19	20.67	23.23

**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	#5520.00	59.8 PK	68.2	-8.4	1.66 H	55	50.49	9.31
2	#5706.00	59.4 PK	68.2	-8.8	1.66 H	55	49.75	9.65
3	#5720.00	60.0 PK	78.2	-18.2	1.66 H	55	50.31	9.69
4	*5785.00	112.2 PK			1.63 H	53	102.35	9.85
5	*5785.00	101.2 AV			1.63 H	53	91.35	9.85
6	#5859.00	59.5 PK	78.2	-18.7	1.66 H	55	49.57	9.93
7	#5860.00	59.5 PK	68.2	-8.7	1.66 H	55	49.57	9.93
8	11570.00	59.0 PK	74.0	-15.0	1.77 H	360	43.80	15.20
9	11570.00	45.5 AV	54.0	-8.5	1.77 H	360	30.30	15.20
10	#17355.00	65.1 PK	74.0	-8.9	1.83 H	43	41.54	23.56
11	#17355.00	51.8 AV	54.0	-2.2	1.83 H	43	28.24	23.56

**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	#5520.00	67.9 PK	68.2	-0.3	1.62 V	98	58.59	9.31
2	#5706.00	64.2 PK	68.2	-4.0	1.60 V	230	54.55	9.65
3	#5720.00	60.6 PK	78.2	-17.6	1.60 V	230	50.91	9.69
4	*5785.00	118.7 PK			1.60 V	230	108.85	9.85
5	*5785.00	109.8 AV			1.60 V	230	99.95	9.85
6	#5859.00	60.4 PK	78.2	-17.8	1.60 V	230	50.47	9.93
7	#5860.00	61.5 PK	68.2	-6.7	1.66 V	258	51.57	9.93
8	11570.00	57.3 PK	74.0	-16.7	1.81 V	360	42.10	15.20
9	11570.00	45.5 AV	54.0	-8.5	1.81 V	360	30.30	15.20
10	#17355.00	61.3 PK	74.0	-12.7	1.88 V	26	37.74	23.56
11	#17355.00	47.0 AV	54.0	-7.0	1.88 V	26	23.44	23.56

**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 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	#5520.00	59.4 PK	68.2	-8.8	1.73 H	314	50.09	9.31
2	*5825.00	111.5 PK			1.73 H	314	101.59	9.91
3	*5825.00	100.9 AV			1.73 H	314	90.99	9.91
4	#5851.00	73.1 PK	78.2	-5.1	1.73 H	314	63.18	9.92
5	#5862.00	65.9 PK	68.2	-2.3	1.73 H	314	55.97	9.93
6	#5900.00	60.2 PK	68.2	-8.0	1.73 H	314	50.25	9.95
7	11650.00	59.5 PK	74.0	-14.5	1.81 H	327	44.10	15.40
8	11650.00	45.9 AV	54.0	-8.1	1.81 H	327	30.50	15.40
9	#17475.00	65.7 PK	74.0	-8.3	1.88 H	34	41.61	24.09
10	#17475.00	52.1 AV	54.0	-1.9	1.88 H	34	28.01	24.09

**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	#5520.00	67.9 PK	68.2	-0.3	1.65 V	98	58.59	9.31
2	*5825.00	118.6 PK			1.60 V	225	108.69	9.91
3	*5825.00	109.1 AV			1.60 V	225	99.19	9.91
4	#5851.00	73.9 PK	78.2	-4.3	1.55 V	225	63.98	9.92
5	#5862.00	66.2 PK	68.2	-2.0	1.55 V	225	56.27	9.93
6	#5900.00	59.7 PK	68.2	-8.5	1.55 V	226	49.75	9.95
7	11650.00	57.4 PK	74.0	-16.6	1.84 V	360	42.00	15.40
8	11650.00	45.9 AV	54.0	-8.1	1.84 V	360	30.50	15.40
9	#17475.00	61.5 PK	74.0	-12.5	1.87 V	20	37.41	24.09
10	#17475.00	47.4 AV	54.0	-6.6	1.87 V	20	23.31	24.09

**REMARKS:**

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

**802.11n (HT20)**

<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	50.8 PK	74.0	-23.2	1.00 H	335	44.00	6.80
2	5150.00	39.2 AV	54.0	-14.8	1.00 H	335	32.40	6.80
3	*5180.00	98.9 PK			1.00 H	314	91.95	6.95
4	*5180.00	90.3 AV			1.00 H	314	83.35	6.95
5	5450.00	51.6 PK	74.0	-22.4	1.10 H	311	43.73	7.87
6	5450.00	40.0 AV	54.0	-14.0	1.10 H	311	32.13	7.87
7	#10360.00	53.2 PK	74.0	-20.8	1.00 H	217	40.09	13.11
8	#10360.00	39.2 AV	54.0	-14.8	1.00 H	217	26.09	13.11
9	15540.00	57.9 PK	74.0	-16.1	1.11 H	80	39.21	18.69
10	15540.00	47.0 AV	54.0	-7.0	1.11 H	80	28.31	18.69

**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	5000.00	57.0 PK	74.0	-17.0	1.00 V	288	50.58	6.42
2	5000.00	50.8 AV	54.0	-3.2	1.00 V	288	44.38	6.42
3	5150.00	58.2 PK	74.0	-15.8	1.00 V	308	51.40	6.80
4	5150.00	45.8 AV	54.0	-8.2	1.00 V	308	39.00	6.80
5	*5180.00	113.5 PK			1.11 V	279	106.55	6.95
6	*5180.00	104.8 AV			1.11 V	279	97.85	6.95
7	5450.00	61.9 PK	74.0	-12.1	1.27 V	42	54.03	7.87
8	5450.00	49.8 AV	54.0	-4.2	1.27 V	42	41.93	7.87
9	#10360.00	52.8 PK	74.0	-21.2	1.00 V	153	39.69	13.11
10	#10360.00	39.5 AV	54.0	-14.5	1.00 V	153	26.39	13.11
11	15540.00	57.8 PK	74.0	-16.2	1.00 V	211	39.11	18.69
12	15540.00	46.8 AV	54.0	-7.2	1.00 V	211	28.11	18.69

**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	5000.00	51.4 PK	74.0	-22.6	1.00 H	314	44.98	6.42
2	5000.00	39.1 AV	54.0	-14.9	1.00 H	314	32.68	6.42
3	*5200.00	99.4 PK			1.05 H	310	92.35	7.05
4	*5200.00	90.7 AV			1.05 H	310	83.65	7.05
5	5441.00	50.1 PK	74.0	-23.9	1.02 H	316	42.27	7.83
6	5441.00	38.3 AV	54.0	-15.7	1.02 H	316	30.47	7.83
7	#10400.00	53.6 PK	74.0	-20.4	1.06 H	212	40.38	13.22
8	#10400.00	39.9 AV	54.0	-14.1	1.06 H	212	26.68	13.22
9	15600.00	58.4 PK	74.0	-15.6	1.11 H	120	39.70	18.70
10	15600.00	47.6 AV	54.0	-6.4	1.11 H	120	28.90	18.70

**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	5000.00	62.5 PK	74.0	-11.5	1.37 V	47	56.08	6.42
2	5000.00	50.3 AV	54.0	-3.7	1.37 V	47	43.88	6.42
3	*5200.00	113.9 PK			1.15 V	267	106.85	7.05
4	*5200.00	105.1 AV			1.15 V	267	98.05	7.05
5	5441.00	56.4 PK	74.0	-17.6	1.13 V	255	48.57	7.83
6	5441.00	49.7 AV	54.0	-4.3	1.13 V	255	41.87	7.83
7	#10400.00	54.6 PK	74.0	-19.4	1.00 V	182	41.38	13.22
8	#10400.00	41.0 AV	54.0	-13.0	1.00 V	182	27.78	13.22
9	15600.00	58.8 PK	74.0	-15.2	1.00 V	217	40.10	18.70
10	15600.00	47.3 AV	54.0	-6.7	1.00 V	217	28.60	18.70

**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	5000.00	51.7 PK	74.0	-22.3	1.02 H	314	45.28	6.42
2	5000.00	40.0 AV	54.0	-14.0	1.02 H	314	33.58	6.42
3	*5240.00	99.2 PK			1.00 H	303	92.04	7.16
4	*5240.00	90.3 AV			1.00 H	303	83.14	7.16
5	5441.00	51.8 PK	74.0	-22.2	1.07 H	332	43.97	7.83
6	5441.00	40.0 AV	54.0	-14.0	1.07 H	332	32.17	7.83
7	#10480.00	53.8 PK	74.0	-20.2	1.00 H	206	40.64	13.16
8	#10480.00	40.4 AV	54.0	-13.6	1.00 H	206	27.24	13.16
9	15720.00	56.8 PK	74.0	-17.2	1.12 H	95	38.40	18.40
10	15720.00	46.3 AV	54.0	-7.7	1.12 H	95	27.90	18.40

**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	5000.00	57.7 PK	74.0	-16.3	1.12 V	271	51.28	6.42
2	5000.00	51.0 AV	54.0	-3.0	1.12 V	271	44.58	6.42
3	*5240.00	114.8 PK			1.10 V	315	107.64	7.16
4	*5240.00	105.2 AV			1.10 V	315	98.04	7.16
5	5441.00	63.3 PK	74.0	-10.7	1.39 V	36	55.47	7.83
6	5441.00	50.7 AV	54.0	-3.3	1.39 V	36	42.87	7.83
7	#10480.00	54.1 PK	74.0	-19.9	1.00 V	215	40.94	13.16
8	#10480.00	40.5 AV	54.0	-13.5	1.00 V	215	27.34	13.16
9	15720.00	59.2 PK	74.0	-14.8	1.00 V	215	40.80	18.40
10	15720.00	47.8 AV	54.0	-6.2	1.00 V	215	29.40	18.40

**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	#5560.00	59.5 PK	68.2	-8.7	1.70 H	360	50.17	9.33
2	#5725.00	69.8 PK	78.2	-8.4	1.70 H	360	60.10	9.70
3	*5745.00	107.8 PK			1.70 H	360	98.04	9.76
4	*5745.00	97.8 AV			1.70 H	360	88.04	9.76
5	11490.00	56.8 PK	74.0	-17.2	1.76 H	357	41.94	14.86
6	11490.00	42.6 AV	54.0	-11.4	1.76 H	357	27.74	14.86
7	#17235.00	61.0 PK	74.0	-13.0	1.92 H	21	37.77	23.23
8	#17235.00	45.0 AV	54.0	-9.0	1.92 H	21	21.77	23.23

**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	#5560.00	64.6 PK	68.2	-3.6	1.60 V	235	55.27	9.33
2	#5725.00	78.1 PK	78.2	-0.1	1.60 V	240	68.40	9.70
3	*5745.00	117.4 PK			1.58 V	230	107.64	9.76
4	*5745.00	107.8 AV			1.58 V	230	98.04	9.76
5	11490.00	55.8 PK	74.0	-18.2	1.77 V	360	40.94	14.86
6	11490.00	43.1 AV	54.0	-10.9	1.77 V	360	28.24	14.86
7	#17235.00	58.7 PK	74.0	-15.3	1.87 V	34	35.47	23.23
8	#17235.00	44.2 AV	54.0	-9.8	1.87 V	34	20.97	23.23

**REMARKS:**

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " \* ": Fundamental frequency.
- " # ": 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	#5560.00	61.1 PK	68.2	-7.1	1.60 H	53	51.77	9.33
2	#5707.00	61.2 PK	68.2	-7.0	1.60 H	53	51.54	9.66
3	*5785.00	112.8 PK			1.60 H	53	102.95	9.85
4	*5785.00	102.5 AV			1.60 H	53	92.65	9.85
5	#5870.00	59.7 PK	68.2	-8.5	1.60 H	53	49.77	9.93
6	11570.00	59.0 PK	74.0	-15.0	1.77 H	360	43.80	15.20
7	11570.00	45.8 AV	54.0	-8.2	1.77 H	360	30.60	15.20
8	#17355.00	65.0 PK	74.0	-9.0	1.81 H	40	41.44	23.56
9	#17355.00	51.5 AV	54.0	-2.5	1.81 H	40	27.94	23.56

**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	#5560.00	67.6 PK	68.2	-0.6	1.60 V	230	58.27	9.33
2	#5707.00	66.7 PK	68.2	-1.5	1.60 V	220	57.04	9.66
3	*5785.00	122.2 PK			1.60 V	230	112.35	9.85
4	*5785.00	111.7 AV			1.60 V	230	101.85	9.85
5	#5870.00	62.1 PK	68.2	-6.1	1.60 V	224	52.17	9.93
6	11570.00	57.2 PK	74.0	-16.8	1.87 V	360	42.00	15.20
7	11570.00	45.4 AV	54.0	-8.6	1.87 V	360	30.20	15.20
8	#17355.00	61.3 PK	74.0	-12.7	1.91 V	13	37.74	23.56
9	#17355.00	47.1 AV	54.0	-6.9	1.91 V	13	23.54	23.56

**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 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	5000.00	58.4 PK	74.0	-15.6	1.57 H	61	50.56	7.84
2	5000.00	50.2 AV	54.0	-3.8	1.57 H	61	42.36	7.84
3	#5560.00	60.5 PK	68.2	-7.7	1.57 H	61	51.17	9.33
4	*5825.00	112.3 PK			1.57 H	61	102.39	9.91
5	*5825.00	101.3 AV			1.57 H	61	91.39	9.91
6	#5850.00	70.3 PK	78.2	-7.9	1.57 H	61	60.38	9.92
7	#5860.00	62.4 PK	68.2	-5.8	1.57 H	61	52.47	9.93
8	#5897.00	59.9 PK	68.2	-8.3	1.57 H	61	49.95	9.95
9	11650.00	58.5 PK	74.0	-15.5	1.81 H	360	43.10	15.40
10	11650.00	45.0 AV	54.0	-9.0	1.81 H	360	29.60	15.40
11	#17475.00	65.1 PK	74.0	-8.9	1.84 H	50	41.01	24.09
12	#17475.00	51.9 AV	54.0	-2.1	1.84 H	50	27.81	24.09

**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	5000.00	59.6 PK	74.0	-14.4	1.60 V	235	51.76	7.84
2	5000.00	53.6 AV	54.0	-0.4	1.60 V	235	45.76	7.84
3	#5560.00	65.6 PK	68.2	-2.6	1.60 V	225	56.27	9.33
4	*5825.00	121.9 PK			1.60 V	225	111.99	9.91
5	*5825.00	111.6 AV			1.60 V	225	101.69	9.91
<b>6</b>	<b>#5850.00</b>	<b>78.1 PK</b>	<b>78.2</b>	<b>-0.1</b>	<b>1.60 V</b>	<b>236</b>	<b>68.18</b>	<b>9.92</b>
<b>7</b>	<b>#5860.00</b>	<b>68.1 PK</b>	<b>68.2</b>	<b>-0.1</b>	<b>1.60 V</b>	<b>225</b>	<b>58.17</b>	<b>9.93</b>
8	#5897.00	60.4 PK	68.2	-7.8	1.60 V	225	50.45	9.95
9	11650.00	56.9 PK	74.0	-17.1	1.77 V	360	41.50	15.40
10	11650.00	45.0 AV	54.0	-9.0	1.77 V	360	29.60	15.40
11	#17475.00	60.8 PK	74.0	-13.2	1.88 V	26	36.71	24.09
12	#17475.00	46.6 AV	54.0	-7.4	1.88 V	26	22.51	24.09

**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)**

<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	50.7 PK	74.0	-23.3	1.06 H	328	43.90	6.80
2	5150.00	38.6 AV	54.0	-15.4	1.06 H	328	31.80	6.80
3	*5190.00	99.1 PK			1.08 H	286	92.10	7.00
4	*5190.00	90.2 AV			1.08 H	286	83.20	7.00
5	5441.00	50.1 PK	74.0	-23.9	1.08 H	311	42.27	7.83
6	5441.00	38.5 AV	54.0	-15.5	1.08 H	311	30.67	7.83
7	#10380.00	53.4 PK	74.0	-20.6	1.00 H	214	40.23	13.17
8	#10380.00	39.9 AV	54.0	-14.1	1.00 H	214	26.73	13.17
9	15570.00	58.6 PK	74.0	-15.4	1.12 H	104	39.91	18.69
10	15570.00	47.6 AV	54.0	-6.4	1.12 H	104	28.91	18.69

**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	70.4 PK	74.0	-3.6	1.11 V	294	63.60	6.80
2	5150.00	53.6 AV	54.0	-0.4	1.11 V	294	46.80	6.80
3	*5190.00	109.7 PK			1.11 V	294	102.70	7.00
4	*5190.00	98.4 AV			1.11 V	294	91.40	7.00
5	5441.00	60.7 PK	74.0	-13.3	1.36 V	38	52.87	7.83
6	5441.00	48.4 AV	54.0	-5.6	1.36 V	38	40.57	7.83
7	#10380.00	54.0 PK	74.0	-20.0	1.00 V	143	40.83	13.17
8	#10380.00	40.9 AV	54.0	-13.1	1.00 V	143	27.73	13.17
9	15570.00	59.1 PK	74.0	-14.9	1.00 V	211	40.41	18.69
10	15570.00	47.6 AV	54.0	-6.4	1.00 V	211	28.91	18.69

**REMARKS:**

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " \* ": Fundamental frequency.
- " # ": 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	5000.00	51.1 PK	74.0	-22.9	1.10 H	325	44.68	6.42
2	5000.00	39.2 AV	54.0	-14.8	1.10 H	325	32.78	6.42
3	*5230.00	100.2 PK			1.00 H	312	93.08	7.12
4	*5230.00	91.3 AV			1.00 H	312	84.18	7.12
5	5457.00	50.8 PK	74.0	-23.2	1.05 H	312	42.90	7.90
6	5457.00	39.0 AV	54.0	-15.0	1.05 H	312	31.10	7.90
7	#10460.00	53.2 PK	74.0	-20.8	1.00 H	199	40.02	13.18
8	#10460.00	40.0 AV	54.0	-14.0	1.00 H	199	26.82	13.18
9	15690.00	57.4 PK	74.0	-16.6	1.18 H	88	39.02	18.38
10	15690.00	46.3 AV	54.0	-7.7	1.18 H	88	27.92	18.38

**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	5000.00	58.0 PK	74.0	-16.0	1.08 V	249	51.58	6.42
2	5000.00	49.9 AV	54.0	-4.1	1.08 V	249	43.48	6.42
3	*5230.00	112.6 PK			1.10 V	328	105.48	7.12
4	*5230.00	103.0 AV			1.10 V	328	95.88	7.12
5	5457.00	61.9 PK	74.0	-12.1	1.34 V	39	54.00	7.90
6	5457.00	49.2 AV	54.0	-4.8	1.34 V	39	41.30	7.90
7	#10460.00	54.1 PK	74.0	-19.9	1.00 V	164	40.92	13.18
8	#10460.00	40.7 AV	54.0	-13.3	1.00 V	164	27.52	13.18
9	15690.00	58.3 PK	74.0	-15.7	1.00 V	204	39.92	18.38
10	15690.00	47.2 AV	54.0	-6.8	1.00 V	204	28.82	18.38

**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	5000.00	58.1 PK	74.0	-15.9	1.58 H	59	50.26	7.84
2	5000.00	51.1 AV	54.0	-2.9	1.58 H	59	43.26	7.84
3	#5560.00	59.3 PK	68.2	-8.9	1.58 H	59	49.97	9.33
4	#5708.00	64.7 PK	68.2	-3.5	1.58 H	59	55.04	9.66
5	#5725.00	66.2 PK	78.2	-12.0	1.58 H	59	56.50	9.70
6	*5755.00	102.8 PK			1.58 H	59	93.03	9.77
7	*5755.00	92.6 AV			1.58 H	59	82.83	9.77
8	11510.00	56.4 PK	74.0	-17.6	1.73 H	360	41.55	14.85
9	11510.00	42.5 AV	54.0	-11.5	1.73 H	360	27.65	14.85
10	#17265.00	62.1 PK	74.0	-11.9	1.81 H	33	38.87	23.23
11	#17265.00	48.8 AV	54.0	-5.2	1.81 H	33	25.57	23.23

**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	5000.00	57.7 PK	74.0	-16.3	1.60 V	226	49.86	7.84
2	5000.00	51.0 AV	54.0	-3.0	1.60 V	226	43.16	7.84
3	#5560.00	63.3 PK	68.2	-4.9	1.60 V	225	53.97	9.33
4	#5708.00	<b>68.1 PK</b>	<b>68.2</b>	<b>-0.1</b>	<b>1.60 V</b>	<b>230</b>	<b>58.44</b>	<b>9.66</b>
5	#5725.00	<b>78.1 PK</b>	<b>78.2</b>	<b>-0.1</b>	<b>1.60 V</b>	<b>230</b>	<b>68.40</b>	<b>9.70</b>
6	*5755.00	113.3 PK			1.60 V	230	103.53	9.77
7	*5755.00	103.5 AV			1.60 V	230	93.73	9.77
8	11510.00	54.4 PK	74.0	-19.6	1.82 V	359	39.55	14.85
9	11510.00	42.5 AV	54.0	-11.5	1.82 V	359	27.65	14.85
10	#17265.00	57.2 PK	74.0	-16.8	1.86 V	33	33.97	23.23
11	#17265.00	44.1 AV	54.0	-9.9	1.86 V	33	20.87	23.23

**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	5000.00	58.6 PK	74.0	-15.4	1.59 H	61	50.76	7.84
2	5000.00	45.3 AV	54.0	-8.7	1.59 H	61	37.46	7.84
3	#5560.00	59.5 PK	68.2	-8.7	1.59 H	61	50.17	9.33
4	#5725.00	60.7 PK	78.2	-17.5	1.59 H	61	51.00	9.70
5	*5795.00	108.1 PK			1.59 H	61	98.22	9.88
6	*5795.00	97.4 AV			1.59 H	61	87.52	9.88
7	#5850.00	62.1 PK	78.2	-16.1	1.59 H	61	52.18	9.92
8	#5870.00	59.7 PK	68.2	-8.5	1.59 H	61	49.77	9.93
9	11590.00	60.1 PK	74.0	-13.9	1.87 H	336	44.79	15.31
10	11590.00	46.3 AV	54.0	-7.7	1.87 H	336	30.99	15.31
11	#17385.00	65.6 PK	74.0	-8.4	1.94 H	27	41.84	23.76
12	#17385.00	52.2 AV	54.0	-1.8	1.94 H	27	28.44	23.76

**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	5000.00	61.6 PK	74.0	-12.4	1.60 V	235	53.76	7.84
2	5000.00	51.7 AV	54.0	-2.3	1.60 V	235	43.86	7.84
<b>3</b>	<b>#5560.00</b>	<b>68.1 PK</b>	<b>68.2</b>	<b>-0.1</b>	<b>1.65 V</b>	<b>222</b>	<b>58.77</b>	<b>9.33</b>
4	#5725.00	66.1 PK	78.2	-12.1	1.65 V	235	56.40	9.70
5	*5795.00	116.0 PK			1.65 V	226	106.12	9.88
6	*5795.00	105.5 AV			1.65 V	226	95.62	9.88
7	#5850.00	69.9 PK	78.2	-8.3	1.65 V	235	59.98	9.92
8	#5870.00	65.0 PK	68.2	-3.2	1.65 V	235	55.07	9.93
9	11590.00	57.6 PK	74.0	-16.4	1.80 V	360	42.29	15.31
10	11590.00	46.0 AV	54.0	-8.0	1.80 V	360	30.69	15.31
11	#17385.00	61.9 PK	74.0	-12.1	1.85 V	12	38.14	23.76
12	#17385.00	47.5 AV	54.0	-6.5	1.85 V	12	23.74	23.76

**REMARKS:**

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

**Below 1GHz Data**

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	Below 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	108.30	31.1 QP	43.5	-12.4	1.42 H	237	47.27	-16.17
2	165.21	31.8 QP	43.5	-11.7	1.44 H	101	45.02	-13.22
3	199.64	31.6 QP	43.5	-11.9	1.13 H	16	47.73	-16.12
4	250.60	39.7 QP	46.0	-6.3	1.11 H	330	53.79	-14.05
5	375.11	39.1 QP	46.0	-6.9	1.25 H	86	49.41	-10.30
6	999.61	42.5 QP	54.0	-11.5	1.15 H	314	40.86	1.66

**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	35.12	28.7 QP	40.0	-11.3	1.00 V	154	43.07	-14.39
2	124.41	28.2 QP	43.5	-15.3	1.04 V	360	42.88	-14.67
3	249.78	31.9 QP	46.0	-14.1	1.14 V	119	45.97	-14.07
4	375.28	37.2 QP	46.0	-8.8	1.03 V	338	47.52	-10.29
5	430.12	37.2 QP	46.0	-8.8	1.10 V	117	45.74	-8.52
6	1000.02	44.4 QP	54.0	-9.6	1.06 V	113	44.38	0.00

**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

**4.1.8 Test Results (Mode 2)**
**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	5000.00	57.8 PK	74.0	-16.2	1.35 H	0	51.38	6.42
2	5000.00	49.7 AV	54.0	-4.3	1.35 H	0	43.28	6.42
3	5150.00	59.6 PK	74.0	-14.4	1.24 H	12	52.80	6.80
4	5150.00	45.8 AV	54.0	-8.2	1.24 H	12	39.00	6.80
5	*5180.00	115.9 PK			1.24 H	12	108.95	6.95
6	*5180.00	106.9 AV			1.24 H	12	99.95	6.95
7	5400.00	61.7 PK	74.0	-12.3	1.42 H	347	53.99	7.71
8	5400.00	51.3 AV	54.0	-2.7	1.42 H	347	43.59	7.71
9	#10360.00	52.9 PK	74.0	-21.1	1.02 H	259	39.79	13.11
10	#10360.00	41.7 AV	54.0	-12.3	1.02 H	259	28.59	13.11
11	15540.00	59.2 PK	74.0	-14.8	1.00 H	135	40.51	18.69
12	15540.00	46.8 AV	54.0	-7.2	1.00 H	135	28.11	18.69

**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	1.03 V	310	51.90	6.80
2	5150.00	44.9 AV	54.0	-9.1	1.03 V	310	38.10	6.80
3	*5180.00	108.3 PK			1.03 V	310	101.35	6.95
4	*5180.00	99.6 AV			1.03 V	310	92.65	6.95
5	5400.00	65.4 PK	74.0	-8.6	1.07 V	19	57.69	7.71
6	5400.00	52.8 AV	54.0	-1.2	1.07 V	19	45.09	7.71
7	#10360.00	53.1 PK	74.0	-20.9	1.29 V	186	39.99	13.11
8	#10360.00	40.8 AV	54.0	-13.2	1.29 V	186	27.69	13.11
9	15540.00	60.4 PK	74.0	-13.6	1.00 V	62	41.71	18.69
10	15540.00	47.6 AV	54.0	-6.4	1.00 V	62	28.91	18.69

**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	*5200.00	115.4 PK			1.22 H	10	108.35	7.05
2	*5200.00	106.3 AV			1.22 H	10	99.25	7.05
3	5400.00	59.2 PK	74.0	-14.8	1.25 H	10	51.49	7.71
4	5400.00	45.4 AV	54.0	-8.6	1.25 H	10	37.69	7.71
5	#10400.00	52.9 PK	74.0	-21.1	1.08 H	268	39.68	13.22
6	#10400.00	41.9 AV	54.0	-12.1	1.08 H	268	28.68	13.22
7	15600.00	59.3 PK	74.0	-14.7	1.00 H	113	40.60	18.70
8	15600.00	46.7 AV	54.0	-7.3	1.00 H	113	28.00	18.70

**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	107.8 PK			1.04 V	295	100.75	7.05
2	*5200.00	99.3 AV			1.04 V	295	92.25	7.05
3	5400.00	63.4 PK	74.0	-10.6	1.07 V	26	55.69	7.71
4	5400.00	51.5 AV	54.0	-2.5	1.07 V	26	43.79	7.71
5	#10400.00	53.5 PK	74.0	-20.5	1.31 V	201	40.28	13.22
6	#10400.00	41.0 AV	54.0	-13.0	1.31 V	201	27.78	13.22
7	15600.00	60.9 PK	74.0	-13.1	1.00 V	54	42.20	18.70
8	15600.00	48.0 AV	54.0	-6.0	1.00 V	54	29.30	18.70

**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	*5240.00	116.3 PK			1.20 H	27	109.14	7.16
2	*5240.00	107.1 AV			1.20 H	27	99.94	7.16
3	5350.00	58.8 PK	74.0	-15.2	1.20 H	27	51.31	7.49
4	5350.00	45.3 AV	54.0	-8.7	1.20 H	27	37.81	7.49
5	5400.00	58.6 PK	74.0	-15.4	1.36 H	11	50.89	7.71
6	5400.00	44.6 AV	54.0	-9.4	1.36 H	11	36.89	7.71
7	#10480.00	52.9 PK	74.0	-21.1	1.06 H	268	39.74	13.16
8	#10480.00	41.9 AV	54.0	-12.1	1.06 H	268	28.74	13.16
9	15720.00	58.7 PK	74.0	-15.3	1.00 H	135	40.30	18.40
10	15720.00	46.3 AV	54.0	-7.7	1.00 H	135	27.90	18.40

**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	108.3 PK			1.05 V	279	101.14	7.16
2	*5240.00	99.3 AV			1.05 V	279	92.14	7.16
3	5350.00	59.0 PK	74.0	-15.0	1.03 V	294	51.51	7.49
4	5350.00	45.2 AV	54.0	-8.8	1.03 V	294	37.71	7.49
5	5400.00	63.4 PK	74.0	-10.6	1.16 V	32	55.69	7.71
6	5400.00	51.3 AV	54.0	-2.7	1.16 V	32	43.59	7.71
7	#10480.00	53.3 PK	74.0	-20.7	1.29 V	200	40.14	13.16
8	#10480.00	40.9 AV	54.0	-13.1	1.29 V	200	27.74	13.16
9	15720.00	60.6 PK	74.0	-13.4	1.00 V	52	42.20	18.40
10	15720.00	47.8 AV	54.0	-6.2	1.00 V	52	29.40	18.40

**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)

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	5000.00	57.1 PK	74.0	-16.9	1.67 H	246	49.26	7.84
2	5000.00	43.6 AV	54.0	-10.4	1.67 H	246	35.76	7.84
3	#5715.00	57.6 PK	68.2	-10.6	1.67 H	246	47.92	9.68
4	#5725.00	66.6 PK	78.2	-11.6	1.67 H	246	56.90	9.70
5	*5745.00	107.3 PK			1.67 H	246	97.54	9.76
6	*5745.00	97.6 AV			1.67 H	246	87.84	9.76
7	11490.00	55.8 PK	74.0	-18.2	1.83 H	360	40.94	14.86
8	11490.00	41.6 AV	54.0	-12.4	1.83 H	360	26.74	14.86
9	#17235.00	60.3 PK	74.0	-13.7	1.96 H	36	37.07	23.23
10	#17235.00	47.2 AV	54.0	-6.8	1.96 H	36	23.97	23.23

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	5000.00	54.6 PK	74.0	-19.4	1.66 V	246	46.76	7.84
2	5000.00	49.7 AV	54.0	-4.3	1.66 V	246	41.86	7.84
3	#5715.00	63.7 PK	68.2	-4.5	1.66 V	246	54.02	9.68
4	#5725.00	77.6 PK	78.2	-0.6	1.66 V	246	67.90	9.70
5	*5745.00	115.2 PK			1.66 V	246	105.44	9.76
6	*5745.00	105.8 AV			1.66 V	246	96.04	9.76
7	11490.00	53.9 PK	74.0	-20.1	1.83 V	360	39.04	14.86
8	11490.00	41.6 AV	54.0	-12.4	1.83 V	360	26.74	14.86
9	#17235.00	56.3 PK	74.0	-17.7	1.93 V	33	33.07	23.23
10	#17235.00	42.4 AV	54.0	-11.6	1.93 V	33	19.17	23.23

**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	#5520.00	58.3 PK	68.2	-9.9	1.65 H	220	48.99	9.31
2	#5706.00	58.4 PK	68.2	-9.8	1.65 H	220	48.75	9.65
3	#5720.00	59.6 PK	78.2	-18.6	1.65 H	220	49.91	9.69
4	*5785.00	111.1 PK			1.65 H	220	101.25	9.85
5	*5785.00	100.6 AV			1.65 H	220	90.75	9.85
6	#5859.00	58.4 PK	78.2	-19.8	1.65 H	220	48.47	9.93
7	#5860.00	58.1 PK	68.2	-10.1	1.65 H	220	48.17	9.93
8	11570.00	58.3 PK	74.0	-15.7	1.84 H	360	43.10	15.20
9	11570.00	43.1 AV	54.0	-10.9	1.84 H	360	27.90	15.20
10	#17355.00	64.3 PK	74.0	-9.7	1.82 H	27	40.74	23.56
11	#17355.00	49.7 AV	54.0	-4.3	1.82 H	27	26.14	23.56

**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	#5520.00	66.7 PK	68.2	-1.5	1.65 V	218	57.39	9.31
2	#5706.00	63.3 PK	68.2	-4.9	1.65 V	218	53.65	9.65
3	#5720.00	59.6 PK	78.2	-18.6	1.65 V	218	49.91	9.69
4	*5785.00	117.3 PK			1.65 V	218	107.45	9.85
5	*5785.00	108.6 AV			1.65 V	218	98.75	9.85
6	#5859.00	59.4 PK	78.2	-18.8	1.65 V	218	49.47	9.93
7	#5860.00	60.6 PK	68.2	-7.6	1.65 V	218	50.67	9.93
8	11570.00	56.6 PK	74.0	-17.4	1.81 V	360	41.40	15.20
9	11570.00	44.7 AV	54.0	-9.3	1.81 V	360	29.50	15.20
10	#17355.00	60.2 PK	74.0	-13.8	1.86 V	38	36.64	23.56
11	#17355.00	46.2 AV	54.0	-7.8	1.86 V	38	22.64	23.56

**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 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	#5520.00	58.7 PK	68.2	-9.5	1.56 H	232	49.39	9.31
2	*5825.00	110.6 PK			1.56 H	232	100.69	9.91
3	*5825.00	99.8 AV			1.56 H	232	89.89	9.91
4	#5851.00	72.3 PK	78.2	-5.9	1.56 H	232	62.38	9.92
5	#5862.00	64.6 PK	68.2	-3.6	1.56 H	232	54.67	9.93
6	#5900.00	59.8 PK	68.2	-8.4	1.56 H	232	49.85	9.95
7	11650.00	58.7 PK	74.0	-15.3	1.95 H	360	43.30	15.40
8	11650.00	44.6 AV	54.0	-9.4	1.95 H	360	29.20	15.40
9	#17475.00	64.8 PK	74.0	-9.2	1.88 H	360	40.71	24.09
10	#17475.00	51.7 AV	54.0	-2.3	1.88 H	360	27.61	24.09

**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	#5520.00	66.5 PK	68.2	-1.7	1.61 V	239	57.19	9.31
2	*5825.00	117.4 PK			1.61 V	239	107.49	9.91
3	*5825.00	108.3 AV			1.61 V	239	98.39	9.91
4	#5851.00	72.3 PK	78.2	-5.9	1.61 V	239	62.38	9.92
5	#5862.00	65.6 PK	68.2	-2.6	1.61 V	239	55.67	9.93
6	#5900.00	58.3 PK	68.2	-9.9	1.61 V	239	48.35	9.95
7	11650.00	56.3 PK	74.0	-17.7	1.89 V	360	40.90	15.40
8	11650.00	44.6 AV	54.0	-9.4	1.89 V	360	29.20	15.40
9	#17475.00	60.6 PK	74.0	-13.4	1.88 V	4	36.51	24.09
10	#17475.00	46.9 AV	54.0	-7.1	1.88 V	4	22.81	24.09

**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)**

<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	60.1 PK	74.0	-13.9	1.20 H	18	53.30	6.80
2	5150.00	46.1 AV	54.0	-7.9	1.20 H	18	39.30	6.80
3	*5180.00	116.0 PK			1.20 H	18	109.05	6.95
4	*5180.00	106.8 AV			1.20 H	18	99.85	6.95
5	5400.00	59.2 PK	74.0	-14.8	1.18 H	18	51.49	7.71
6	5400.00	45.3 AV	54.0	-8.7	1.18 H	18	37.59	7.71
7	#10360.00	52.3 PK	74.0	-21.7	1.00 H	266	39.19	13.11
8	#10360.00	41.2 AV	54.0	-12.8	1.00 H	266	28.09	13.11
9	15540.00	58.4 PK	74.0	-15.6	1.00 H	123	39.71	18.69
10	15540.00	46.1 AV	54.0	-7.9	1.00 H	123	27.41	18.69

**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	58.2 PK	74.0	-15.8	1.02 V	299	51.40	6.80
2	5150.00	44.5 AV	54.0	-9.5	1.02 V	299	37.70	6.80
3	*5180.00	107.7 PK			1.05 V	305	100.75	6.95
4	*5180.00	99.3 AV			1.05 V	305	92.35	6.95
5	5400.00	63.4 PK	74.0	-10.6	1.20 V	49	55.69	7.71
6	5400.00	51.3 AV	54.0	-2.7	1.20 V	49	43.59	7.71
7	#10360.00	52.8 PK	74.0	-21.2	1.34 V	199	39.69	13.11
8	#10360.00	40.3 AV	54.0	-13.7	1.34 V	199	27.19	13.11
9	15540.00	59.9 PK	74.0	-14.1	1.00 V	53	41.21	18.69
10	15540.00	47.3 AV	54.0	-6.7	1.00 V	53	28.61	18.69

**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	*5200.00	114.8 PK			1.27 H	7	107.75	7.05
2	*5200.00	106.0 AV			1.27 H	7	98.95	7.05
3	5400.00	58.7 PK	74.0	-15.3	1.24 H	7	50.99	7.71
4	5400.00	45.3 AV	54.0	-8.7	1.24 H	7	37.59	7.71
5	#10400.00	51.9 PK	74.0	-22.1	1.04 H	255	38.68	13.22
6	#10400.00	40.8 AV	54.0	-13.2	1.04 H	255	27.58	13.22
7	15600.00	58.7 PK	74.0	-15.3	1.00 H	119	40.00	18.70
8	15600.00	46.2 AV	54.0	-7.8	1.00 H	119	27.50	18.70

**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	108.2 PK			1.00 V	312	101.15	7.05
2	*5200.00	99.4 AV			1.00 V	312	92.35	7.05
3	5400.00	63.4 PK	74.0	-10.6	1.12 V	27	55.69	7.71
4	5400.00	51.3 AV	54.0	-2.7	1.12 V	27	43.59	7.71
5	#10400.00	53.3 PK	74.0	-20.7	1.23 V	179	40.08	13.22
6	#10400.00	40.9 AV	54.0	-13.1	1.23 V	179	27.68	13.22
7	15600.00	60.1 PK	74.0	-13.9	1.00 V	58	41.40	18.70
8	15600.00	47.4 AV	54.0	-6.6	1.00 V	58	28.70	18.70

**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	*5240.00	116.0 PK			1.24 H	12	108.84	7.16
2	*5240.00	107.1 AV			1.24 H	12	99.94	7.16
3	5350.00	58.3 PK	74.0	-15.7	1.04 H	7	50.81	7.49
4	5350.00	46.9 AV	54.0	-7.1	1.04 H	7	39.41	7.49
5	5400.00	59.6 PK	74.0	-14.4	1.24 H	12	51.89	7.71
6	5400.00	45.5 AV	54.0	-8.5	1.24 H	12	37.79	7.71
7	#10480.00	52.0 PK	74.0	-22.0	1.00 H	265	38.84	13.16
8	#10480.00	41.2 AV	54.0	-12.8	1.00 H	265	28.04	13.16
9	15720.00	58.7 PK	74.0	-15.3	1.00 H	123	40.30	18.40
10	15720.00	46.4 AV	54.0	-7.6	1.00 H	123	28.00	18.40

**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	107.6 PK			1.00 V	326	100.44	7.16
2	*5240.00	99.2 AV			1.00 V	326	92.04	7.16
3	5350.00	58.4 PK	74.0	-15.6	1.00 V	316	50.91	7.49
4	5350.00	44.5 AV	54.0	-9.5	1.00 V	316	37.01	7.49
5	5400.00	62.7 PK	74.0	-11.3	1.16 V	9	54.99	7.71
6	5400.00	50.6 AV	54.0	-3.4	1.16 V	9	42.89	7.71
7	#10480.00	53.8 PK	74.0	-20.2	1.16 V	194	40.64	13.16
8	#10480.00	41.3 AV	54.0	-12.7	1.16 V	194	28.14	13.16
9	15720.00	60.4 PK	74.0	-13.6	1.00 V	47	42.00	18.40
10	15720.00	47.5 AV	54.0	-6.5	1.00 V	47	29.10	18.40

**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	#5560.00	58.4 PK	68.2	-9.8	1.59 H	213	49.07	9.33
2	#5725.00	68.7 PK	78.2	-9.5	1.59 H	213	59.00	9.70
3	*5745.00	106.6 PK			1.59 H	213	96.84	9.76
4	*5745.00	96.5 AV			1.59 H	213	86.74	9.76
5	11490.00	55.8 PK	74.0	-18.2	1.76 H	360	40.94	14.86
6	11490.00	41.3 AV	54.0	-12.7	1.76 H	360	26.44	14.86
7	#17235.00	60.4 PK	74.0	-13.6	1.82 H	49	37.17	23.23
8	#17235.00	44.3 AV	54.0	-9.7	1.82 H	49	21.07	23.23

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	#5560.00	63.4 PK	68.2	-4.8	1.59 V	221	54.07	9.33
2	#5725.00	77.8 PK	78.2	-0.4	1.59 V	221	68.10	9.70
3	*5745.00	116.6 PK			1.59 V	221	106.84	9.76
4	*5745.00	106.7 AV			1.59 V	221	96.94	9.76
5	11490.00	54.3 PK	74.0	-19.7	1.80 V	360	39.44	14.86
6	11490.00	42.6 AV	54.0	-11.4	1.80 V	360	27.74	14.86
7	#17235.00	57.5 PK	74.0	-16.5	1.84 V	39	34.27	23.23
8	#17235.00	43.7 AV	54.0	-10.3	1.84 V	39	20.47	23.23

**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	#5560.00	60.1 PK	68.2	-8.1	1.88 H	360	50.77	9.33
2	#5707.00	60.3 PK	68.2	-7.9	1.88 H	360	50.64	9.66
3	*5785.00	111.6 PK			1.88 H	360	101.75	9.85
4	*5785.00	101.5 AV			1.88 H	360	91.65	9.85
5	#5870.00	58.7 PK	68.2	-9.5	1.88 H	360	48.77	9.93
6	11570.00	58.3 PK	74.0	-15.7	1.89 H	21	43.10	15.20
7	11570.00	44.6 AV	54.0	-9.4	1.89 H	21	29.40	15.20
8	#17355.00	64.8 PK	74.0	-9.2	1.63 H	242	41.24	23.56
9	#17355.00	50.6 AV	54.0	-3.4	1.63 H	242	27.04	23.56

**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	#5560.00	66.6 PK	68.2	-1.6	1.60 V	232	57.27	9.33
2	#5707.00	65.4 PK	68.2	-2.8	1.60 V	232	55.74	9.66
3	*5785.00	121.1 PK			1.60 V	232	111.25	9.85
4	*5785.00	110.6 AV			1.60 V	232	100.75	9.85
5	#5870.00	61.7 PK	68.2	-6.5	1.60 V	232	51.77	9.93
6	11570.00	56.7 PK	74.0	-17.3	1.90 V	354	41.50	15.20
7	11570.00	44.2 AV	54.0	-9.8	1.90 V	354	29.00	15.20
8	#17355.00	60.6 PK	74.0	-13.4	1.91 V	27	37.04	23.56
9	#17355.00	46.5 AV	54.0	-7.5	1.91 V	27	22.94	23.56

**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 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	5000.00	57.6 PK	74.0	-16.4	1.52 H	215	49.76	7.84
2	5000.00	52.6 AV	54.0	-1.4	1.52 H	215	44.76	7.84
3	#5560.00	59.4 PK	68.2	-8.8	1.52 H	215	50.07	9.33
4	*5825.00	111.1 PK			1.52 H	215	101.19	9.91
5	*5825.00	100.9 AV			1.52 H	215	90.99	9.91
6	#5850.00	60.7 PK	78.2	-17.5	1.52 H	215	50.78	9.92
7	#5860.00	61.3 PK	68.2	-6.9	1.52 H	215	51.37	9.93
8	#5897.00	58.5 PK	68.2	-9.7	1.52 H	215	48.55	9.95
9	11650.00	57.7 PK	74.0	-16.3	1.80 H	360	42.30	15.40
10	11650.00	44.6 AV	54.0	-9.4	1.80 H	360	29.20	15.40
11	#17475.00	64.6 PK	74.0	-9.4	1.95 H	39	40.51	24.09
12	#17475.00	50.4 AV	54.0	-3.6	1.95 H	39	26.31	24.09

**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	5000.00	58.7 PK	74.0	-15.3	1.56 V	217	50.86	7.84
2	5000.00	53.6 AV	54.0	-0.4	1.56 V	217	45.76	7.84
3	#5560.00	64.3 PK	68.2	-3.9	1.56 V	217	54.97	9.33
4	*5825.00	120.8 PK			1.56 V	217	110.89	9.91
5	*5825.00	110.4 AV			1.56 V	217	100.49	9.91
6	#5850.00	77.1 PK	78.2	-1.1	1.56 V	217	67.18	9.92
7	#5860.00	67.5 PK	68.2	-0.7	1.56 V	217	57.57	9.93
8	#5897.00	59.6 PK	68.2	-8.6	1.56 V	217	49.65	9.95
9	11650.00	55.6 PK	74.0	-18.4	1.77 V	360	40.20	15.40
10	11650.00	44.3 AV	54.0	-9.7	1.77 V	360	28.90	15.40
11	#17475.00	59.6 PK	74.0	-14.4	1.91 V	27	35.51	24.09
12	#17475.00	45.5 AV	54.0	-8.5	1.91 V	27	21.41	24.09

**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)**

<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	69.4 PK	74.0	-4.6	1.02 H	6	62.60	6.80
2	5150.00	53.3 AV	54.0	-0.7	1.02 H	6	46.50	6.80
3	*5190.00	111.4 PK			1.02 H	6	104.40	7.00
4	*5190.00	100.3 AV			1.02 H	6	93.30	7.00
5	#10380.00	51.2 PK	74.0	-22.8	1.00 H	273	38.03	13.17
6	#10380.00	40.7 AV	54.0	-13.3	1.00 H	273	27.53	13.17
7	15570.00	58.4 PK	74.0	-15.6	1.00 H	127	39.71	18.69
8	15570.00	46.6 AV	54.0	-7.4	1.00 H	127	27.91	18.69

**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	68.8 PK	74.0	-5.2	1.00 V	316	62.00	6.80
2	5150.00	53.2 AV	54.0	-0.8	1.00 V	316	46.40	6.80
3	*5190.00	103.2 PK			1.00 V	316	96.20	7.00
4	*5190.00	92.3 AV			1.00 V	316	85.30	7.00
5	#10380.00	53.4 PK	74.0	-20.6	1.04 V	200	40.23	13.17
6	#10380.00	41.2 AV	54.0	-12.8	1.04 V	200	28.03	13.17
7	15570.00	59.9 PK	74.0	-14.1	1.00 V	35	41.21	18.69
8	15570.00	47.4 AV	54.0	-6.6	1.00 V	35	28.71	18.69

**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	*5230.00	113.0 PK			1.00 H	12	105.88	7.12
2	*5230.00	103.5 AV			1.00 H	12	96.38	7.12
3	5350.00	57.7 PK	74.0	-16.3	1.04 H	12	50.21	7.49
4	5350.00	46.6 AV	54.0	-7.4	1.04 H	12	39.11	7.49
5	#10460.00	51.6 PK	74.0	-22.4	1.00 H	259	38.42	13.18
6	#10460.00	41.2 AV	54.0	-12.8	1.00 H	259	28.02	13.18
7	15690.00	57.6 PK	74.0	-16.4	1.00 H	130	39.22	18.38
8	15690.00	45.6 AV	54.0	-8.4	1.00 H	130	27.22	18.38

**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	105.4 PK			1.00 V	295	98.28	7.12
2	*5230.00	94.1 AV			1.00 V	295	86.98	7.12
3	5350.00	59.0 PK	74.0	-15.0	1.00 V	295	51.51	7.49
4	5350.00	44.9 AV	54.0	-9.1	1.00 V	295	37.41	7.49
5	#10460.00	53.4 PK	74.0	-20.6	1.21 V	203	40.22	13.18
6	#10460.00	41.1 AV	54.0	-12.9	1.21 V	203	27.92	13.18
7	15690.00	60.3 PK	74.0	-13.7	1.00 V	46	41.92	18.38
8	15690.00	47.6 AV	54.0	-6.4	1.00 V	46	29.22	18.38

**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)

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>								
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	5000.00	57.7 PK	74.0	-16.3	1.59 H	223	49.86	7.84
2	5000.00	48.8 AV	54.0	-5.2	1.59 H	223	40.96	7.84
3	#5560.00	58.4 PK	68.2	-9.8	1.59 H	223	49.07	9.33
4	#5708.00	63.6 PK	68.2	-4.6	1.59 H	223	53.94	9.66
5	#5725.00	65.4 PK	78.2	-12.8	1.59 H	223	55.70	9.70
6	*5755.00	101.1 PK			1.59 H	223	91.33	9.77
7	*5755.00	91.5 AV			1.59 H	223	81.73	9.77
8	11510.00	53.7 PK	74.0	-20.3	1.74 H	343	38.85	14.85
9	11510.00	40.3 AV	54.0	-13.7	1.74 H	343	25.45	14.85
10	#17265.00	59.4 PK	74.0	-14.6	1.83 H	20	36.17	23.23
11	#17265.00	45.6 AV	54.0	-8.4	1.83 H	20	22.37	23.23

<b>ANTENNA POLARITY &amp; TEST DISTANCE: VERTICAL AT 3 M</b>								
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	5000.00	56.7 PK	74.0	-17.3	1.62 V	223	48.86	7.84
2	5000.00	50.5 AV	54.0	-3.5	1.62 V	223	42.66	7.84
3	#5560.00	62.4 PK	68.2	-5.8	1.62 V	223	53.07	9.33
4	#5708.00	67.1 PK	68.2	-1.1	1.62 V	223	57.44	9.66
5	#5725.00	77.6 PK	78.2	-0.6	1.62 V	223	67.90	9.70
6	*5755.00	112.3 PK			1.62 V	223	102.53	9.77
7	*5755.00	102.4 AV			1.62 V	223	92.63	9.77
8	11510.00	51.6 PK	74.0	-22.4	1.79 V	354	36.75	14.85
9	11510.00	41.6 AV	54.0	-12.4	1.79 V	354	26.75	14.85
10	#17265.00	54.3 PK	74.0	-19.7	1.81 V	23	31.07	23.23
11	#17265.00	43.2 AV	54.0	-10.8	1.81 V	23	19.97	23.23

**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	5000.00	57.7 PK	74.0	-16.3	1.80 H	358	49.86	7.84
2	5000.00	44.3 AV	54.0	-9.7	1.80 H	358	36.46	7.84
3	#5560.00	58.6 PK	68.2	-9.6	1.80 H	358	49.27	9.33
4	#5725.00	59.6 PK	78.2	-18.6	1.80 H	358	49.90	9.70
5	*5795.00	107.2 PK			1.80 H	358	97.32	9.88
6	*5795.00	96.4 AV			1.80 H	358	86.52	9.88
7	#5850.00	61.5 PK	78.2	-16.7	1.80 H	358	51.58	9.92
8	#5870.00	58.7 PK	68.2	-9.5	1.80 H	358	48.77	9.93
9	11590.00	57.4 PK	74.0	-16.6	1.85 H	3	42.09	15.31
10	11590.00	43.3 AV	54.0	-10.7	1.85 H	3	27.99	15.31
11	#17385.00	62.7 PK	74.0	-11.3	1.65 H	231	38.94	23.76
12	#17385.00	49.8 AV	54.0	-4.2	1.65 H	231	26.04	23.76

**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	5000.00	60.8 PK	74.0	-13.2	1.77 V	357	52.96	7.84
2	5000.00	50.7 AV	54.0	-3.3	1.77 V	357	42.86	7.84
3	#5560.00	67.5 PK	68.2	-0.7	1.77 V	357	58.17	9.33
4	#5725.00	65.6 PK	78.2	-12.6	1.77 V	357	55.90	9.70
5	*5795.00	115.3 PK			1.77 V	357	105.42	9.88
6	*5795.00	104.6 AV			1.77 V	357	94.72	9.88
7	#5850.00	68.1 PK	78.2	-10.1	1.17 V	357	58.18	9.92
8	#5870.00	64.2 PK	68.2	-4.0	1.77 V	357	54.27	9.93
9	11590.00	54.2 PK	74.0	-19.8	1.83 V	5	38.89	15.31
10	11590.00	43.7 AV	54.0	-10.3	1.83 V	5	28.39	15.31
11	#17385.00	58.1 PK	74.0	-15.9	1.61 V	233	34.34	23.76
12	#17385.00	44.9 AV	54.0	-9.1	1.61 V	233	21.14	23.76

**REMARKS:**

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

**Below 1GHz Data**
**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 157	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	Below 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	108.28	31.1 QP	43.5	-12.4	1.22 H	207	47.30	-16.17
2	165.20	31.8 QP	43.5	-11.7	1.14 H	111	45.00	-13.22
3	199.61	31.5 QP	43.5	-12.0	1.03 H	106	47.62	-16.12
4	250.64	39.8 QP	46.0	-6.2	1.01 H	300	53.81	-14.05
5	375.10	39.1 QP	46.0	-6.9	1.05 H	108	49.42	-10.30
6	999.60	42.5 QP	54.0	-11.5	1.05 H	310	40.84	1.66

**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	35.80	28.7 QP	40.0	-11.3	1.10 V	254	43.09	-14.38
2	124.45	28.2 QP	43.5	-15.4	1.14 V	105	42.82	-14.67
3	249.80	31.9 QP	46.0	-14.1	1.44 V	109	46.01	-14.07
4	375.30	37.1 QP	46.0	-8.9	1.13 V	348	47.41	-10.29
5	430.15	37.1 QP	46.0	-8.9	1.20 V	107	45.62	-8.52
6	1000.11	44.3 QP	54.0	-9.7	1.16 V	103	44.28	0.00

**REMARKS:**

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



## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	100375	May 06, 2015	May 05, 2016
Line-Impedance Stabilization Network (for EUT) R&S	ENV216	100072	June 11, 2015	June 10, 2016
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100071	Nov. 10, 2014	Nov. 09, 2015
RF Cable	5D-FB	COCCAB-001	Mar. 09, 2015	Mar. 08, 2016
50 ohms Terminator	N/A	EMC-03	Sep. 22, 2014	Sep. 21, 2015
50 ohms Terminator	N/A	EMC-02	Sep. 30, 2014	Sep. 29, 2015
Software BVADT	BVADT_Cond_ V7.3.7.3	NA	NA	NA

**Note:**

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
- 3 The VCCI Con C Registration No. is C-3611.
- 4 Tested Date: Aug. 24, 2015

#### 4.2.3 Test Procedures

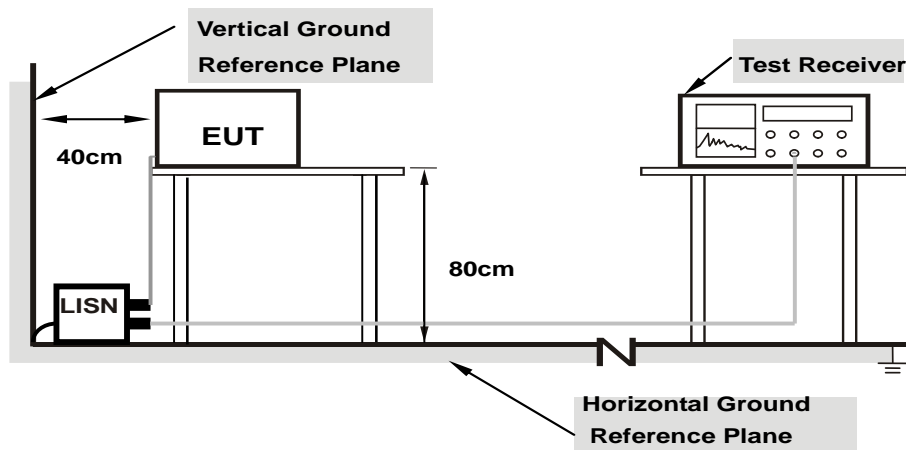
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

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

#### 4.2.4 Deviation from Test Standard

No deviation.

#### 4.2.5 Test Setup



**Note: 1.Support units were connected to second LISN.**

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

#### 4.2.6 EUT Operating Conditions

Same as 4.1.6.

#### 4.2.7 Test Results (Mode 2)

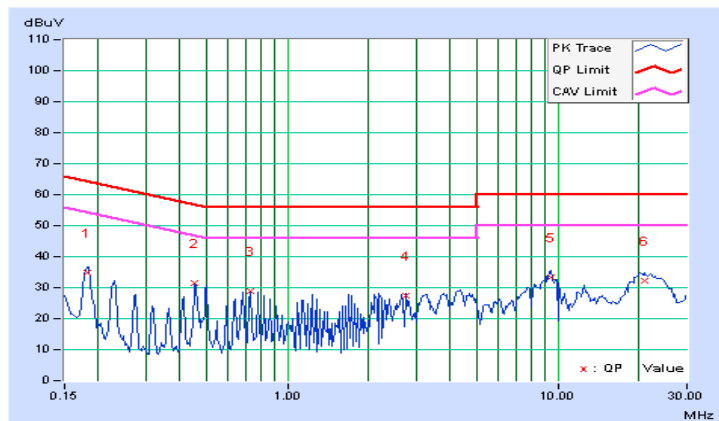
##### LAN 1 / POE in

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18266	0.09	34.65	34.04	34.74	34.13	64.36	54.36	-29.63	-20.24
2	0.45506	0.10	31.25	30.47	31.35	30.57	56.78	46.78	-25.43	-16.21
3	0.72813	0.12	28.68	27.75	28.80	27.87	56.00	46.00	-27.20	-18.13
4	2.73447	0.19	27.17	26.32	27.36	26.51	56.00	46.00	-28.64	-19.49
5	9.38672	0.43	32.92	30.20	33.35	30.63	60.00	50.00	-26.65	-19.37
6	20.83491	0.72	31.36	27.27	32.08	27.99	60.00	50.00	-27.92	-22.01

#### 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

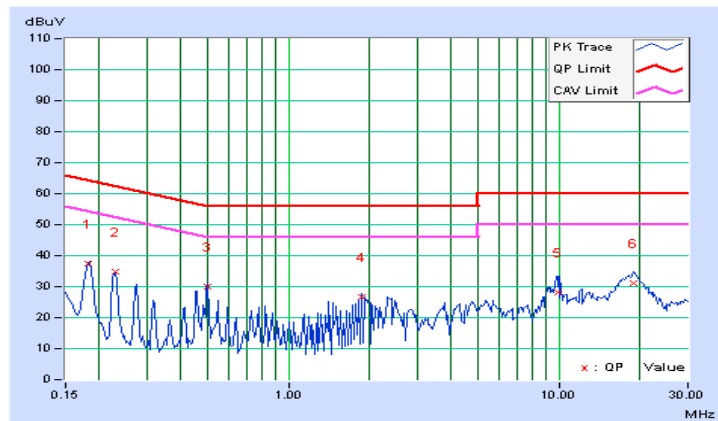


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18191	0.08	37.36	36.40	37.44	36.48	64.40	54.40	-26.96	-17.92
2	0.22812	0.08	34.55	33.77	34.63	33.85	62.52	52.52	-27.89	-18.67
<b>3</b>	<b>0.50156</b>	<b>0.11</b>	<b>29.72</b>	<b>29.70</b>	<b>29.83</b>	<b>29.81</b>	<b>56.00</b>	<b>46.00</b>	<b>-26.17</b>	<b>-16.19</b>
4	1.87109	0.16	26.35	25.98	26.51	26.14	56.00	46.00	-29.49	-19.86
5	9.89922	0.46	27.65	22.02	28.11	22.48	60.00	50.00	-31.89	-27.52
6	18.94359	0.71	30.35	26.08	31.06	26.79	60.00	50.00	-28.94	-23.21

**Remarks:**

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



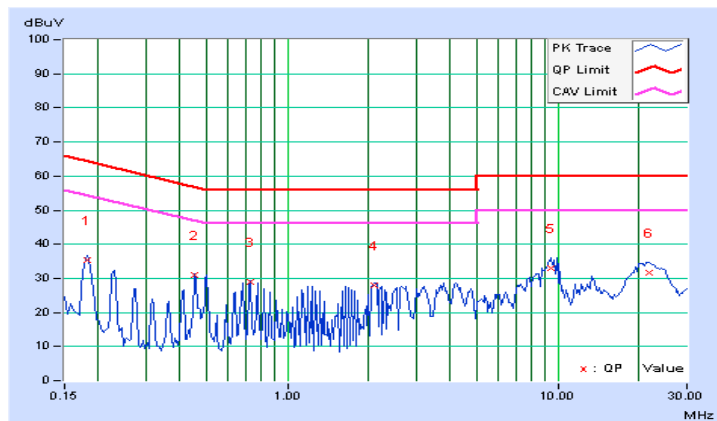
LAN 2 / POE in

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

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.09	35.18	33.66	35.27	33.75	64.43	54.43	-29.16	-20.68
2	0.45460	0.10	30.74	30.08	30.84	30.18	56.79	46.79	-25.95	-16.61
3	0.72830	0.12	28.91	27.81	29.03	27.93	56.00	46.00	-26.97	-18.07
4	2.08984	0.17	27.75	27.33	27.92	27.50	56.00	46.00	-28.08	-18.50
5	9.37500	0.43	32.64	29.13	33.07	29.56	60.00	50.00	-26.93	-20.44
6	21.61328	0.74	31.05	26.63	31.79	27.37	60.00	50.00	-28.21	-22.63

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

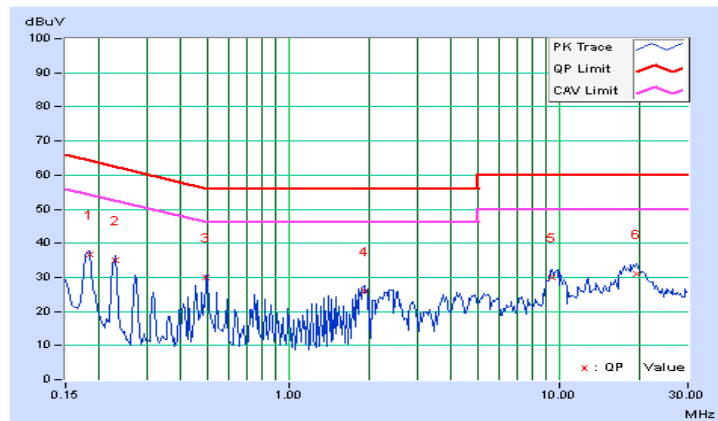


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.08	36.76	36.44	36.84	36.52	64.25	54.25	-27.41	-17.73
2	0.22812	0.08	34.93	33.16	35.01	33.24	62.52	52.52	-27.51	-19.28
3	0.49766	0.10	29.76	29.65	29.86	29.75	56.04	46.04	-26.17	-16.28
4	1.90625	0.17	25.88	25.76	26.05	25.93	56.00	46.00	-29.95	-20.07
5	9.39453	0.44	29.67	24.51	30.11	24.95	60.00	50.00	-29.89	-25.05
6	19.45656	0.72	30.18	26.72	30.90	27.44	60.00	50.00	-29.10	-22.56

**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 D01 Multiple Transmitter Output v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

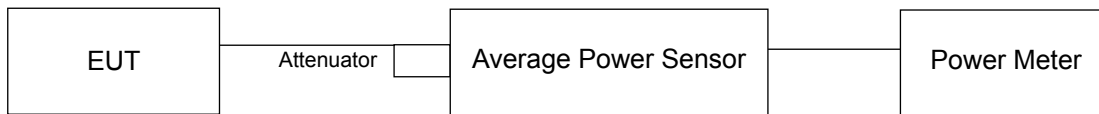
Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

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



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedures

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating 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 Results

##### 802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	10.56	8.72	18.823	12.75	23	Pass
40	5200	10.32	8.56	17.943	12.54	23	Pass
48	5240	10.72	8.88	19.53	12.91	23	Pass
149	5745	20.70	19.45	205.595	23.13	29	Pass
157	5785	24.12	22.52	436.875	26.40	29	Pass
165	5825	23.37	22.33	388.272	25.89	29	Pass

- Note:** 1. 5150~5250MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $24-(7-6) = 23\text{dBm}$ .  
 2. 5470~5850MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $30-(7-6) = 29\text{dBm}$ .

##### 802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	10.06	8.94	17.973	12.55	23	Pass
40	5200	10.32	8.56	17.943	12.54	23	Pass
48	5240	10.56	8.34	18.199	12.60	23	Pass
149	5745	21.42	20.68	255.626	24.08	29	Pass
157	5785	25.60	24.72	659.561	28.19	29	Pass
165	5825	24.87	24.16	567.517	27.54	29	Pass

- Note:** 1. 5150~5250MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $24-(7-6) = 23\text{dBm}$ .  
 2. 5470~5850MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $30-(7-6) = 29\text{dBm}$ .

**802.11 (HT40)**

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	10.78	8.67	19.329	12.86	23	Pass
46	5230	12.76	12.23	35.591	15.51	23	Pass
151	5755	19.33	19.60	176.905	22.48	29	Pass
159	5795	23.70	23.12	439.539	26.43	29	Pass

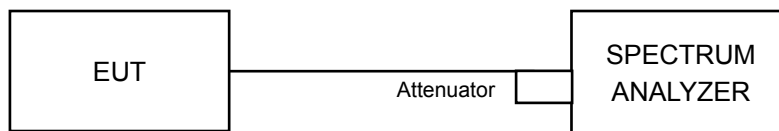
- Note:**
1. 5150~5250MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $24-(7-6) = 23\text{dBm}$ .
  2. 5470~5850MHz: The directional gain is 7dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $30-(7-6) = 29\text{dBm}$ .

## 4.4 Peak Power Spectral Density Measurement

### 4.4.1 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

### 4.4.2 Test Setup



### 4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.4.4 Test Procedures

#### For U-NII-1

Using method SA-1

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

#### For U-NII-3:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- 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  $BWCF = 10\log(500\text{ kHz}/300\text{kHz})$
- Sweep time = auto, trigger set to “free run”.
- Trace average at least 100 traces in power averaging mode.
- Record the max value

#### 4.4.5 Deviation from Test Standard

No deviation.

#### 4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

#### 4.4.7 Test Results

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

##### 802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-2.13	-5.36	0.15	-0.30	6.99	Pass
40	5200	-1.63	-6.48	0.15	-0.25	6.99	Pass
48	5240	-1.98	-5.30	0.15	-0.17	6.99	Pass

- Note:**
- Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
  - Directional gain =  $7\text{dBi} + 10\log(2) = 10.01\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $11-(10.01-6) = 6.99\text{dBm}$ .
  - Refer to section 3.3 for duty cycle spectrum plot.

##### 802.11n (HT20)

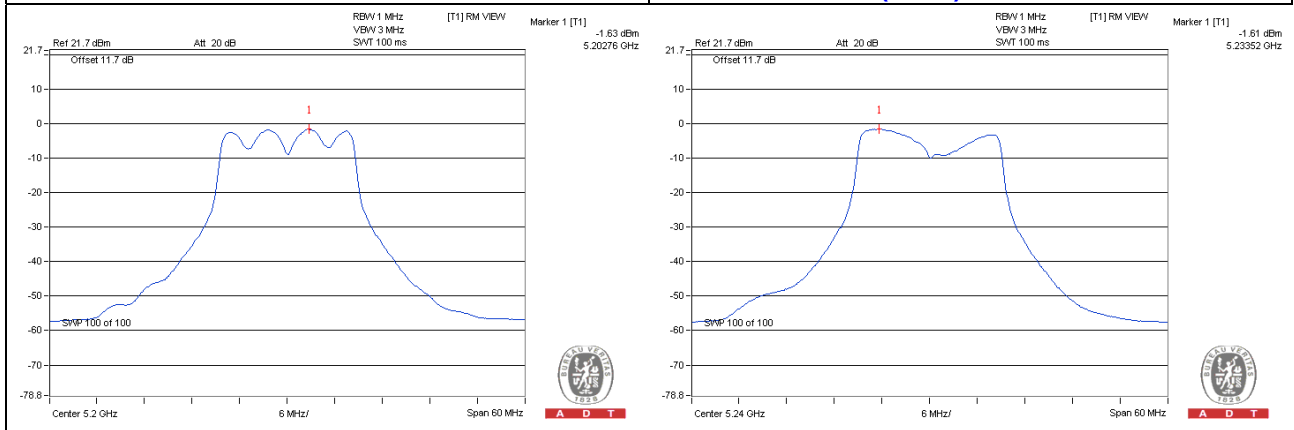
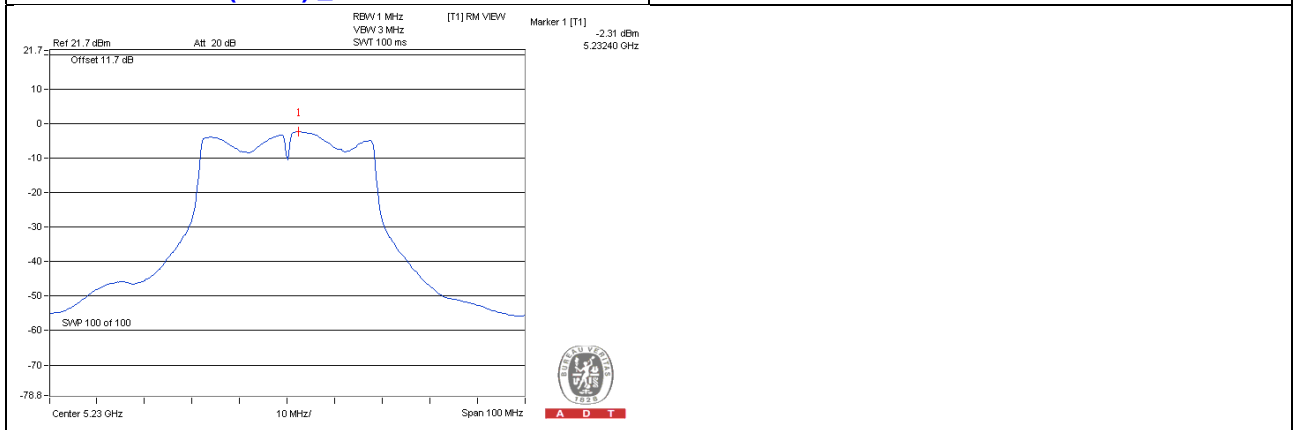
Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-1.92	-6.12	0.17	-0.35	6.99	Pass
40	5200	-2.08	-5.60	0.17	-0.31	6.99	Pass
48	5240	-1.64	-6.96	0.17	-0.35	6.99	Pass

- Note:**
- Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
  - Directional gain =  $7\text{dBi} + 10\log(2) = 10.01\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $11-(10.01-6) = 6.99\text{dBm}$ .
  - Refer to section 3.3 for duty cycle spectrum plot.

**802.11n (HT40)**

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-4.77	-9.80	0.27	-3.32	6.99	Pass
46	5230	-2.31	-5.69	0.27	-0.40	6.99	Pass

- Note:**
- Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
  - Directional gain =  $7\text{dBi} + 10\log(2) = 10.01\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (10.01 - 6) = 6.99\text{dBm}$ .
  - Refer to section 3.3 for duty cycle spectrum plot.

**Spectrum Plot of Worst Value**
**802.11a\_Chain 0 / CH40**
**802.11n (HT20)\_Chain 0 / CH48**

**802.11n (HT40)\_Chain 0 / CH46**


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

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-2.16	0.06	3.01	0.15	3.22	25.99	Pass
	157	5785	-0.36	1.86	3.01	0.15	5.02	25.99	Pass
	165	5825	0.29	2.51	3.01	0.15	5.67	25.99	Pass
1	149	5745	-2.28	-0.06	3.01	0.15	3.10	25.99	Pass
	157	5785	-0.38	1.84	3.01	0.15	5.00	25.99	Pass
	165	5825	0.09	2.31	3.01	0.15	5.47	25.99	Pass

**Note:** 1. Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dB, so the power density limit shall be reduced to 30-(10.01-6) = 25.99dBm.

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

**802.11n (HT20)**

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-2.48	-0.26	3.01	0.17	2.92	25.99	Pass
	157	5785	1.26	3.48	3.01	0.17	6.66	25.99	Pass
	165	5825	1.08	3.30	3.01	0.17	6.48	25.99	Pass
1	149	5745	-1.83	0.39	3.01	0.17	3.57	25.99	Pass
	157	5785	1.67	3.89	3.01	0.17	7.07	25.99	Pass
	165	5825	1.20	3.42	3.01	0.17	6.60	25.99	Pass

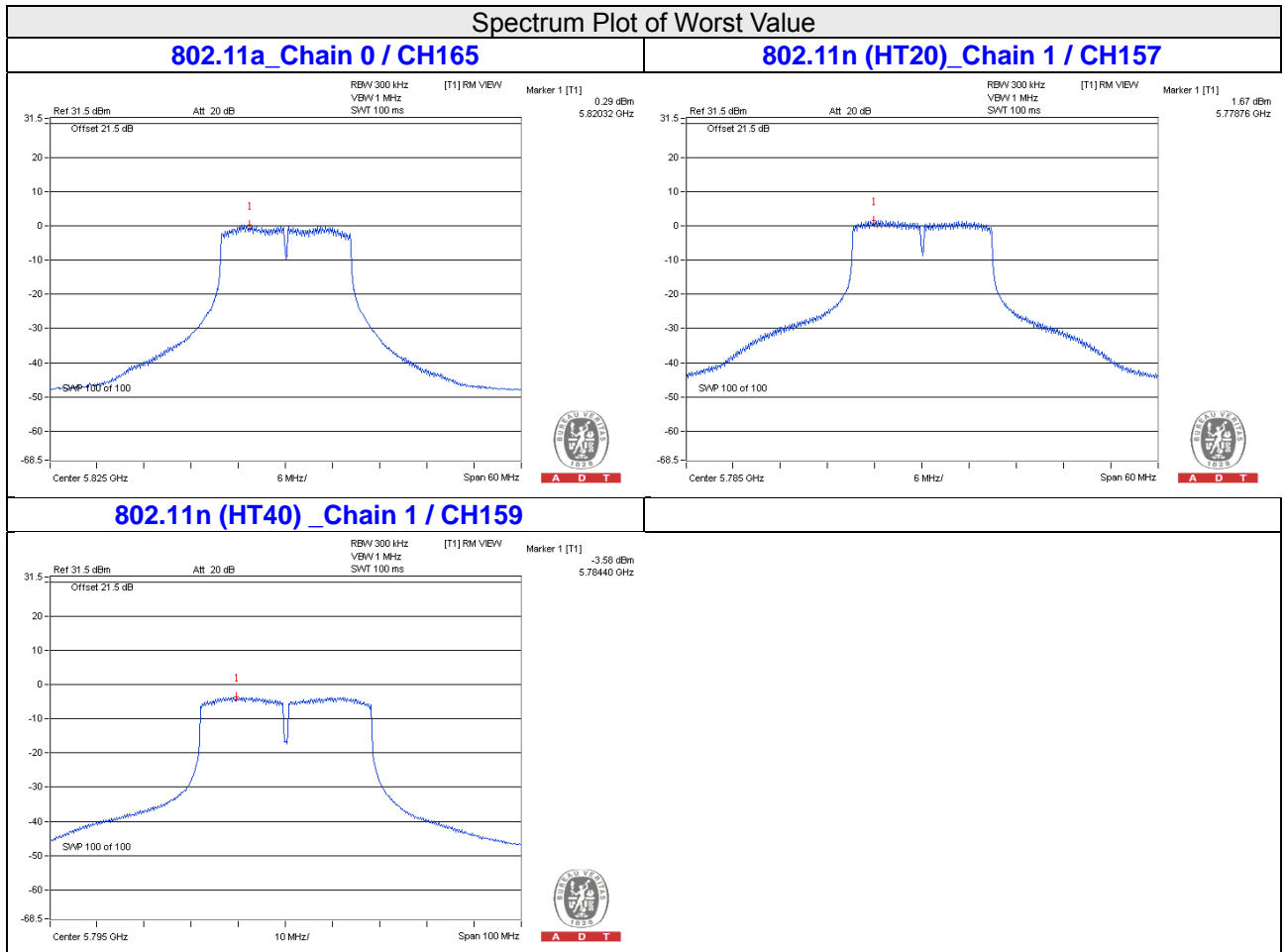
**Note:** 1. Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dB, so the power density limit shall be reduced to 30-(10.01-6) = 25.99dBm.

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

**802.11n (HT40)**

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-6.91	-4.69	3.01	0.27	-1.41	25.99	Pass
	159	5795	-3.93	-1.71	3.01	0.27	1.57	25.99	Pass
1	151	5755	-7.37	-5.15	3.01	0.27	-1.87	25.99	Pass
	159	5795	-3.58	-1.36	3.01	0.27	1.92	25.99	Pass

- Note:**
1. Directional gain = 7dBi + 10log(2) = 10.01dBi > 6dB, so the power density limit shall be reduced to 30-(10.01-6) = 25.99dBm.
  2. Refer to section 3.3 for duty cycle spectrum plot.



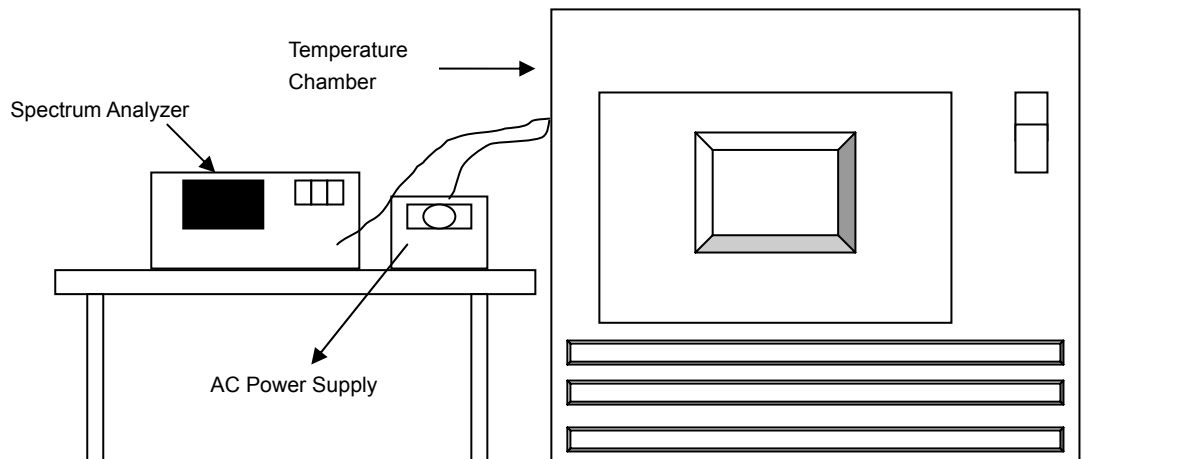


## 4.5 Frequency Stability Measurement

### 4.5.1 Limits of Frequency Stability Measurement

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

### 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

- 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.

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Conditions

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

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5745MHz									
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	5745.024	0.00042	5745.0264	0.00046	5745.025	0.00044	5745.0284	0.00049
40	120	5745.0061	0.00011	5745.0067	0.00012	5745.0086	0.00015	5745.0099	0.00017
30	120	5744.9797	-0.00035	5744.9766	-0.00041	5744.9778	-0.00039	5744.9783	-0.00038
20	120	5745.0125	0.00022	5745.01	0.00017	5745.0121	0.00021	5745.0084	0.00015
10	120	5745.017	0.00030	5745.0153	0.00027	5745.0174	0.00030	5745.0139	0.00024
0	120	5745.0143	0.00025	5745.0103	0.00018	5745.0102	0.00018	5745.0134	0.00023
-10	120	5745.022	0.00038	5745.0179	0.00031	5745.0178	0.00031	5745.0181	0.00032
-20	120	5745.0104	0.00018	5745.0103	0.00018	5745.0127	0.00022	5745.0148	0.00026
-30	120	5745.0281	0.00049	5745.0247	0.00043	5745.0259	0.00045	5745.0261	0.00045

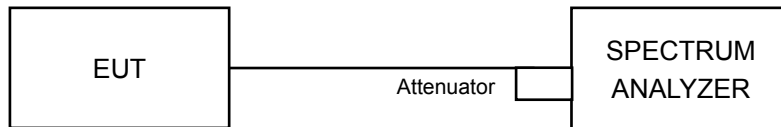
Frequency Stability Versus Temp.									
Operating Frequency: 5745MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5745.0124	0.00022	5745.0104	0.00018	5745.0113	0.00020	5745.0095	0.00017
	120	5745.0125	0.00022	5745.01	0.00017	5745.0121	0.00021	5745.0084	0.00015
	102	5745.0119	0.00021	5745.0109	0.00019	5745.011	0.00019	5745.0077	0.00013

## 4.6 6dB Bandwidth Measurement

### 4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

### 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 Procedures

#### 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

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Conditions

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

#### 4.6.7 Test Results

##### 802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.43	16.53	0.5	Pass
157	5785	16.49	16.49	0.5	Pass
165	5825	16.47	16.54	0.5	Pass

##### 802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.76	17.77	0.5	Pass
157	5785	17.75	17.79	0.5	Pass
165	5825	17.76	17.76	0.5	Pass

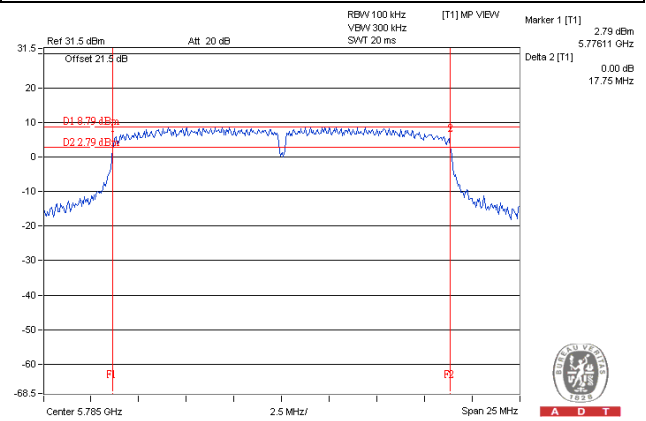
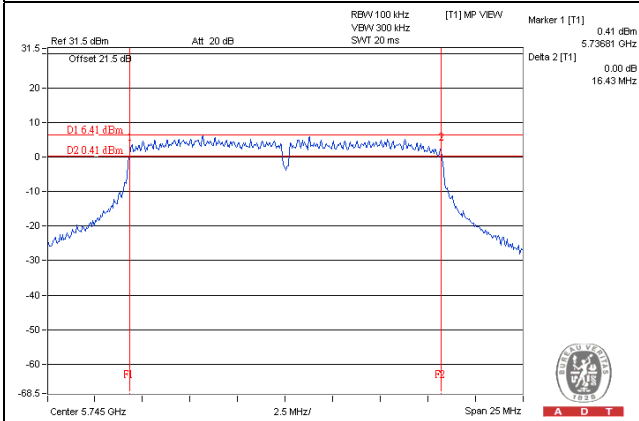
##### 802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.48	36.55	0.5	Pass
159	5795	36.64	36.59	0.5	Pass

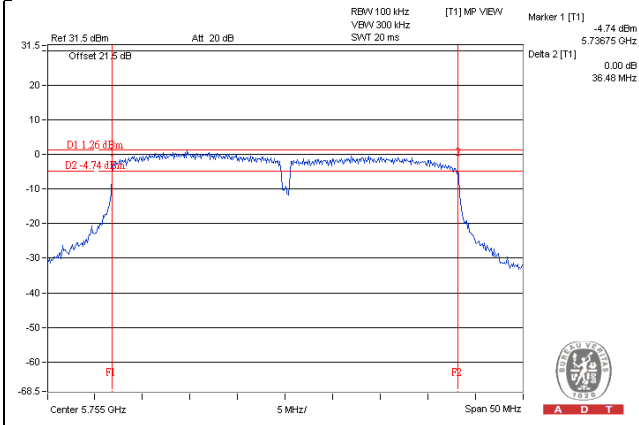
Spectrum Plot of Worst Value

802.11a\_Chain 0 / CH149

802.11n (HT20)\_Chain 0 / CH157



802.11n (HT40)\_Chain 0 / CH151



## 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.

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

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**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.

--- END ---