

## FCC Test Report

**Report No.:** RF121023C05A

**FCC ID:** HDCWLAN192XF1

**Test Model:** BSAP-1920

**Series Model:** BSAP-1925

**Received Date:** Aug. 07, 2015

**Test Date:** Aug. 12 ~ Sep. 08, 2015

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

**Applicant:** Adtran

**Address:** 901 Explorer Boulevard Huntsville Alabama United States

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

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

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



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## Table of Contents

<b>Release Control Record</b> .....	<b>4</b>
<b>1 Certificate of Conformity</b> .....	<b>5</b>
<b>2 Summary of Test Results</b> .....	<b>6</b>
2.1 Measurement Uncertainty.....	6
2.2 Modification Record.....	6
<b>3 General Information</b> .....	<b>7</b>
3.1 General Description of EUT.....	7
3.2 Description of Test Modes.....	8
3.2.1 Test Mode Applicability and Tested Channel Detail.....	9
3.3 Duty Cycle of Test Signal.....	11
3.4 Description of Support Units.....	12
3.4.1 Configuration of System under Test.....	13
3.5 General Description of Applied Standards.....	14
<b>4 Test Types and Results</b> .....	<b>15</b>
4.1 Radiated Emission and Bandedge Measurement.....	15
4.1.1 Limits of Radiated Emission and Bandedge Measurement.....	15
4.1.2 Test Instruments.....	16
4.1.3 Test Procedures.....	17
4.1.4 Deviation from Test Standard.....	17
4.1.5 Test Set Up.....	18
4.1.6 EUT Operating Conditions.....	18
4.1.7 Test Results.....	19
4.2 Conducted Emission Measurement.....	55
4.2.1 Limits of Conducted Emission Measurement.....	55
4.2.2 Test Instruments.....	55
4.2.3 Test Procedures.....	56
4.2.4 Deviation from Test Standard.....	56
4.2.5 Test Setup.....	56
4.2.6 EUT Operating Conditions.....	56
4.2.7 Test Results.....	57
4.3 Transmit Power Measurement.....	65
4.3.1 Limits of Transmit Power Measurement.....	65
4.3.2 Test Setup.....	65
4.3.3 Test Instruments.....	65
4.3.4 Test Procedure.....	65
4.3.5 Deviation from Test Standard.....	65
4.3.6 EUT Operating Conditions.....	65
4.3.7 Test Result.....	66
4.4 Peak Power Spectral Density Measurement.....	71
4.4.1 Limits of Peak Power Spectral Density Measurement.....	71
4.4.2 Test Setup.....	71
4.4.3 Test Instruments.....	71
4.4.4 Test Procedures.....	71
4.4.5 Deviation from Test Standard.....	72
4.4.6 EUT Operating Conditions.....	72
4.4.7 Test Results.....	73
4.5 Frequency Stability.....	77
4.5.1 Limits of Frequency Stability Measurement.....	77
4.5.2 Test Setup.....	77
4.5.3 Test Instruments.....	77
4.5.4 Test Procedure.....	77
4.5.5 Deviation from Test Standard.....	77
4.5.6 EUT Operating Condition.....	77



4.5.7 Test Results .....	78
4.6 6dB Bandwidth Measurement.....	79
4.6.1 Limits of 6dB Bandwidth Measurement.....	79
4.6.2 Test Setup.....	79
4.6.3 Test Instruments .....	79
4.6.4 Test Procedure .....	79
4.6.5 Deviation from Test Standard .....	79
4.6.6 EUT Operating Condition .....	79
4.6.7 Test Results .....	80
<b>5 Pictures of Test Arrangements.....</b>	<b>82</b>
<b>Appendix – Information on the Testing Laboratories .....</b>	<b>83</b>



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### Release Control Record

Issue No.	Description	Date Issued
RF121023C05A	Original release	Sep. 10, 2015

## 1 Certificate of Conformity

**Product:** Wireless 802.11abgn Access Point  
**Brand:** Adtran  
**Test Model:** BSAP-1920  
**Series Model:** BSAP-1925  
**Sample Status:** Engineering sample  
**Applicant:** Adtran  
**Test Date:** Aug. 12 ~ Sep. 08, 2015  
**Standards:** 47 CFR FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.10:2013

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

**Prepared by :** Celine Chou , **Date:** Sep. 10, 2015  
Celine Chou / Specialist

**Approved by :** Ken Liu , **Date:** Sep. 10, 2015  
Ken Liu / Senior Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -6.07dB at 0.46179MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 10360.00MHz, 11570.00MHz and 625.02MHz.
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	Antenna connectors are UFL and RSMA not a standard connector.

### 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 ports0	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Wireless 802.11abgn Access Point
Brand	Adtran
Test Model	BSAP-1920
Series Model	BSAP-1925
Model Difference	Refer to Note
Status of EUT	Engineering sample
Power Supply Rating	12Vdc (adapter) 56Vdc (PoE)
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300Mbps
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	5180 ~ 5240MHz: 129.090mW 5745 ~ 5825MHz: 107.590mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change.
2. This report is issued as a supplementary report to the original ADT report no.: RF120618C25D-1. The difference compared with the original report is updating U-NII-1 and U-NII-3 band to new rules. All test data had been re-tested.
3. All models are listed as below. All models are hardware, software, electrically identical, different model names are for different antenna. (refer to as below for more detail)

Brand	Model	Description
Adtran	BSAP-1925	With External Antenna only
	BSAP-1920	With Internal Antenna only

4. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX

5. The EUT consumes power from the following adapter.

Adapter	
Brand	Powertron
Model	PA1015-2I/PA1015-2I120125
Input	100-240Vac, 50-60Hz, 0.4A
Output	12Vdc, 1.25A, 15W
Power Line	1.5m non-shielded, w/o core

6. The following antennas were provided to the EUT.

No.	Type	Gain(dBi)	Connector
1	Embedded	2.4GHz Band: 3dBi 5GHz Band: 4dBi	UFL
2	Dipole	2.4GHz Band: 3dBi 5GHz Band: 3dBi	RSMA

### 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 $\geq$ 1G	RE $<$ 1G	PLC	APCM	EUT Model	Power
A	√	√	√	√	BSAP-1920	Power from adapter
B	-	√	√	-		Power from PoE
C	√	√	√	-	BSAP-1925	Power from adapter
D	-	√	√	-		Power from PoE

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

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
2. "-" 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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, C	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A, C	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A, C	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	15.0
A, C	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A, C	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
A, C	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	15.0

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B, C, D	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

**Power Line Conducted Emission Test:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B, C, D	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

**Antenna Port Conducted Measurement:**

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

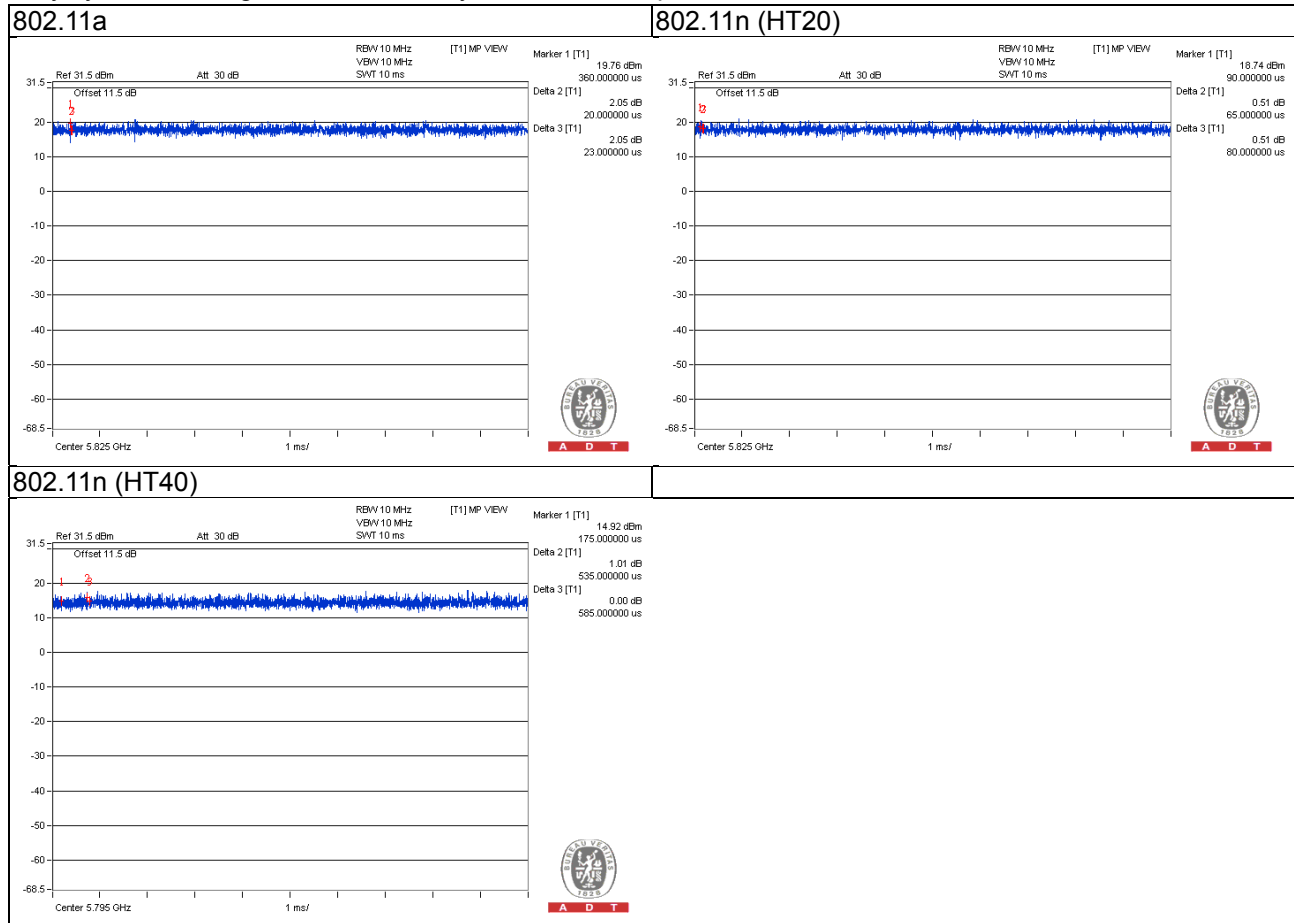
EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, C	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A, C	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A, C	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	15.0
A, C	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A, C	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
A, C	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	15.0

**Test Condition:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
<b>RE<math>\geq</math>1G</b>	18deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
<b>RE<math>&lt;</math>1G</b>	18deg. C, 70%RH	120Vac, 60Hz 56Vdc	Nick Hsu
<b>PLC</b>	20deg. C, 70%RH	120Vac, 60Hz	Jones Chang
<b>APCM</b>	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

### 3.3 Duty Cycle of Test Signal

Duty cycle of test signal is > 98 %, duty factor is not required



### 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	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	POE	PHIHONG	POE21U-1AF	NA	NA	Provided by Manufacturer For test mode B and D only

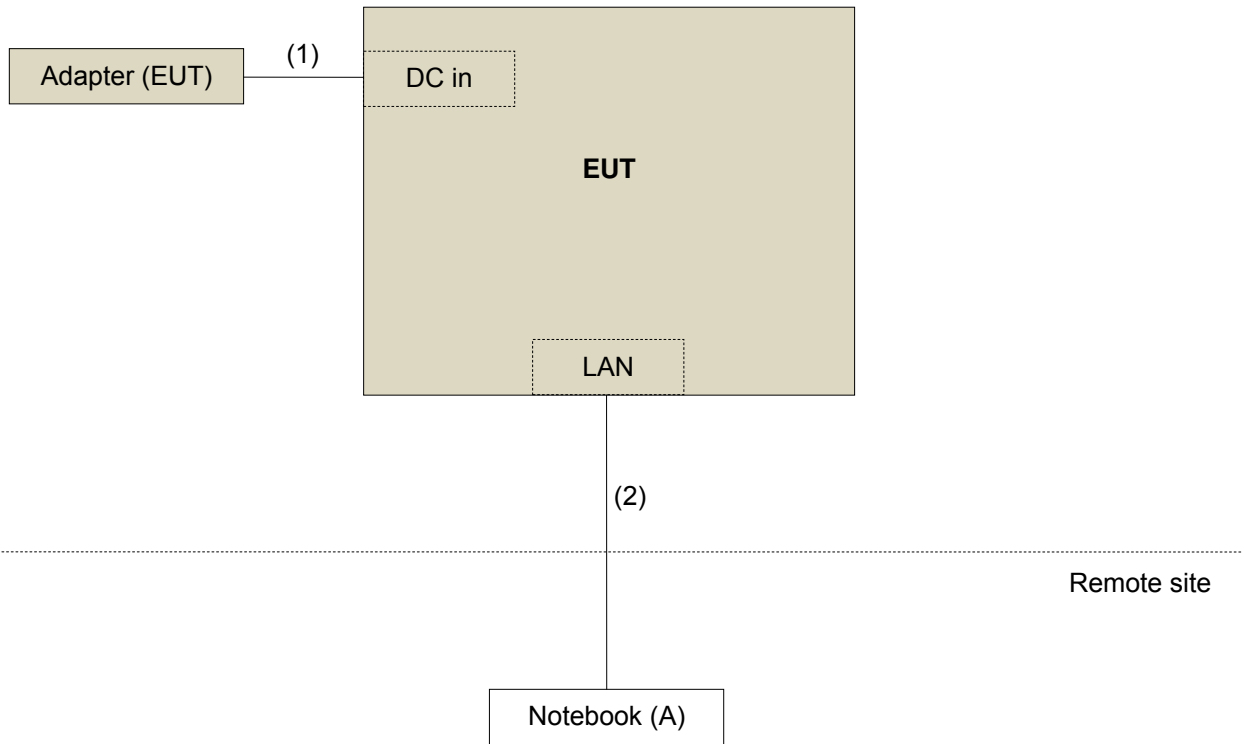
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

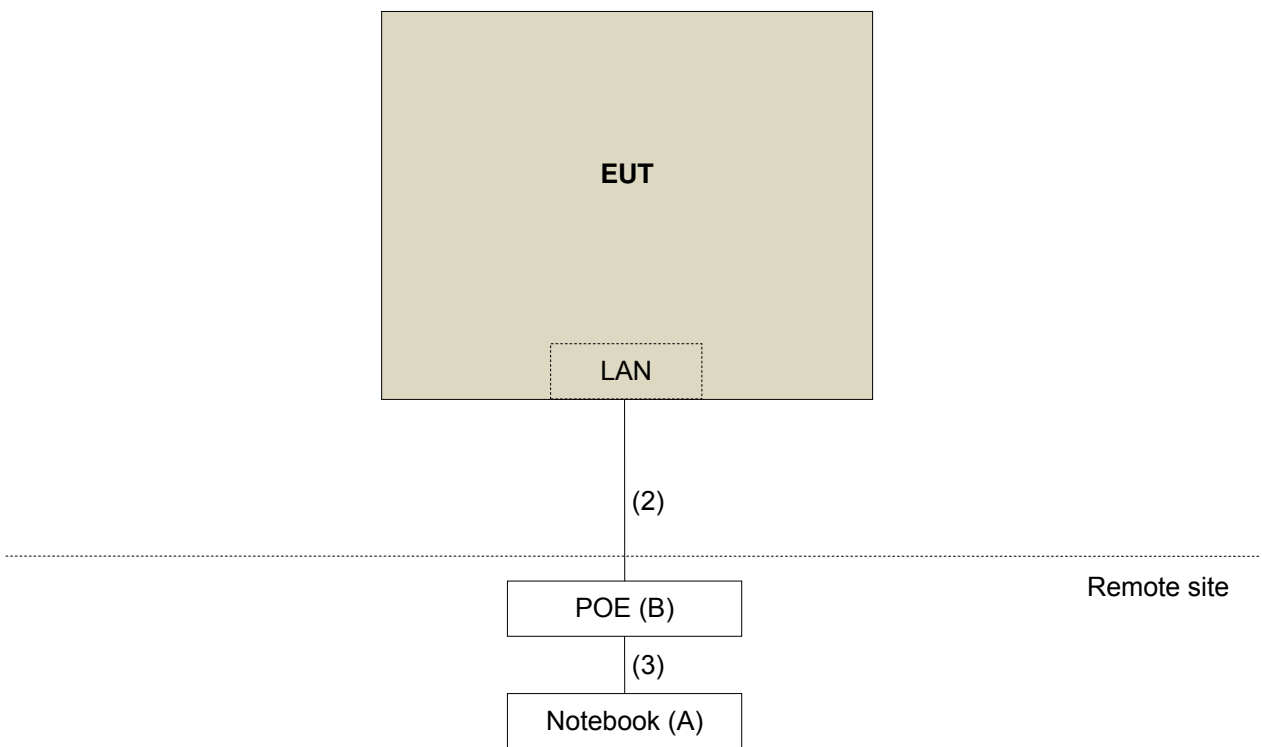
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Power	1	1.5	N	0	Attached on adapter
2.	RJ45 , Cat5e	1	3	N	0	-
3.	RJ45 , Cat5e	1	3	N	0	For test mode B and D only

### 3.4.1 Configuration of System under Test

Test mode A and C



Test mode B and D



### 3.5 General Description of Applied Standards

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

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

**789033 D02 General UNII Test Procedures 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 is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It 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 Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (dBµV/m)	AV:54 (dBµV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/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(dBµV/m) <sup>*1</sup> PK:78.2 (dBµV/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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 10, 2015	Apr. 09, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Sep. 02, 2014	Sep. 01, 2015
			Sep. 02, 2015	Sep. 01, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Feb. 05, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	9120D	209	Feb. 09, 2015	Feb. 08, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2014	Oct. 17, 2015
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2014	Aug. 21, 2015
			Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03(214378)	Aug. 22, 2014	Aug. 21, 2015
			Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03(309224+ 12738)	Aug. 22, 2014	Aug. 21, 2015
			Aug. 22, 2015	Aug. 21, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2014	Oct. 17, 2015
High Speed Peak Power Meter	ML2495A	0824011	Jul. 09, 2015	Jul. 08, 2016
Power Sensor	MA2411B	0738171	Jul. 09, 2015	Jul. 08, 2016
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2015	Jun. 07, 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 HwaYa Chamber 3.
  3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
  4. The FCC Site Registration No. is 988962.
  5. The IC Site Registration No. is IC 7450F-3.



#### 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:**

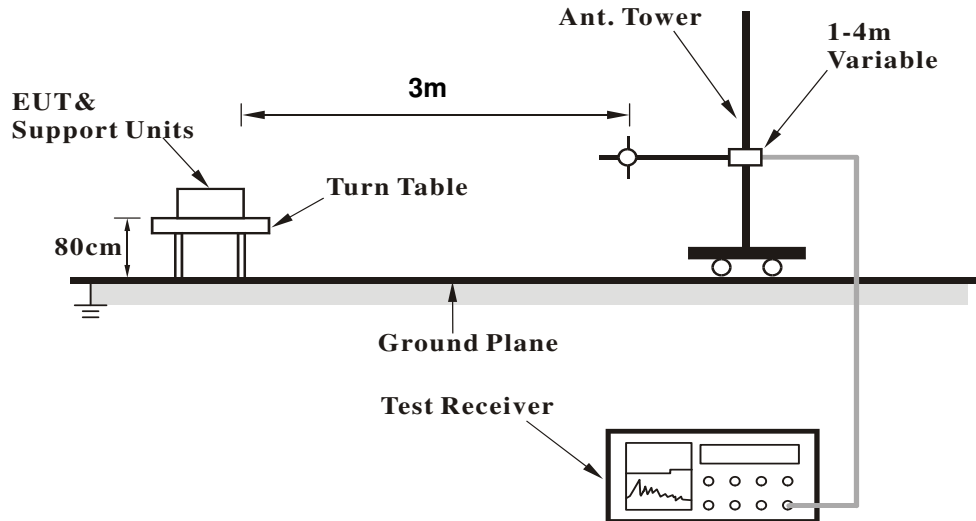
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

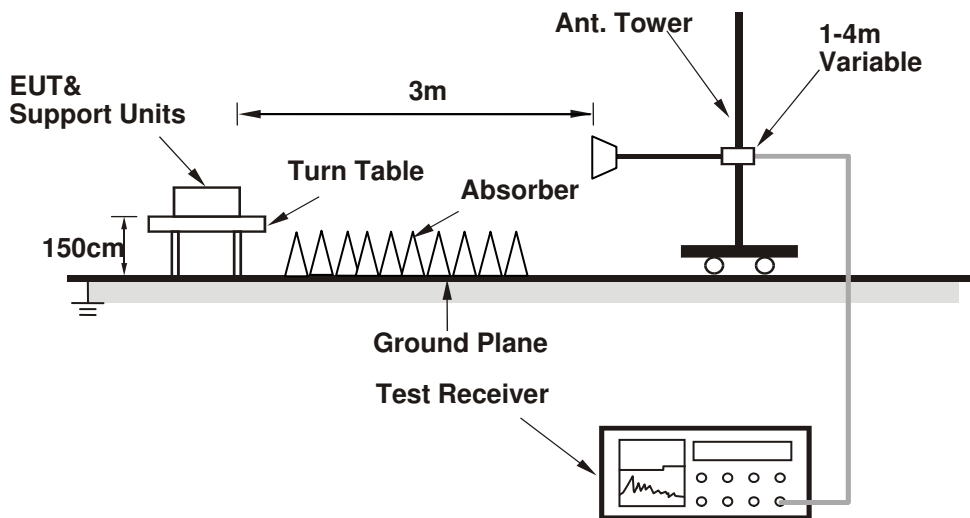
No deviation.

#### 4.1.5 Test Set Up

##### <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

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via external board through a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".

#### 4.1.7 Test Results

Above 1GHz Data

802.11a

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

#### 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	72.7 PK	74.0	-1.3	1.56 H	331	66.70	6.00
2	5150.00	52.5 AV	54.0	-1.5	1.56 H	331	46.50	6.00
3	*5180.00	113.8 PK			1.78 H	339	74.30	39.50
4	*5180.00	102.8 AV			1.78 H	339	63.30	39.50
5	#6906.00	59.8 PK	68.2	-8.4	2.21 H	331	48.30	11.50
6	#10360.00	61.3 PK	74.0	-12.7	1.96 H	291	42.90	18.40
7	#10360.00	48.7 AV	54.0	-5.3	1.96 H	291	30.30	18.40
8	15540.00	61.2 PK	74.0	-12.8	1.69 H	293	42.30	18.90
9	15540.00	48.1 AV	54.0	-5.9	1.69 H	293	29.20	18.90

#### 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	70.9 PK	74.0	-3.1	2.20 V	324	64.90	6.00
2	5150.00	51.9 AV	54.0	-2.1	2.20 V	324	45.90	6.00
3	*5180.00	114.0 PK			1.98 V	324	74.50	39.50
4	*5180.00	103.5 AV			1.98 V	324	64.00	39.50
5	#6906.00	60.5 PK	68.2	-7.7	2.34 V	359	49.00	11.50
6	#10360.00	63.5 PK	74.0	-10.5	2.54 V	221	45.10	18.40
7	#10360.00	50.6 AV	54.0	-3.4	2.54 V	221	32.20	18.40
8	15540.00	62.4 PK	74.0	-11.6	1.79 V	115	43.50	18.90
9	15540.00	49.3 AV	54.0	-4.7	1.79 V	115	30.40	18.90

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

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

**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			1.72 H	342	75.20	39.60
2	*5200.00	104.6 AV			1.72 H	342	65.00	39.60
3	#6933.00	58.5 PK	68.2	-9.7	1.28 H	335	46.80	11.70
4	#10400.00	63.3 PK	74.0	-10.7	1.13 H	98	44.80	18.50
5	#10400.00	51.3 AV	54.0	-2.7	1.13 H	98	32.80	18.50
6	15600.00	61.2 PK	74.0	-12.8	1.70 H	288	42.40	18.80
7	15600.00	48.2 AV	54.0	-5.8	1.70 H	288	29.40	18.80

**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	115.8 PK			2.07 V	323	76.20	39.60
2	*5200.00	105.6 AV			2.07 V	323	66.00	39.60
3	#6933.00	60.7 PK	68.2	-7.5	1.07 V	271	49.00	11.70
4	#10400.00	65.1 PK	74.0	-8.9	1.02 V	182	46.60	18.50
5	#10400.00	52.4 AV	54.0	-1.6	1.02 V	182	33.90	18.50
6	15600.00	67.3 PK	74.0	-6.7	1.89 V	111	48.50	18.80
7	15600.00	52.6 AV	54.0	-1.4	1.89 V	111	33.80	18.80

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

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

**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	114.2 PK			1.79 H	339	74.60	39.60
2	*5240.00	103.9 AV			1.79 H	339	64.30	39.60
3	5460.00	59.8 PK	74.0	-14.2	1.78 H	348	53.40	6.40
4	5460.00	47.9 AV	54.0	-6.1	1.78 H	348	41.50	6.40
5	#10480.00	60.9 PK	74.0	-13.1	1.98 H	100	41.90	19.00
6	#10480.00	47.7 AV	54.0	-6.3	1.98 H	100	28.70	19.00
7	15720.00	61.6 PK	74.0	-12.4	1.70 H	291	43.10	18.50
8	15720.00	48.5 AV	54.0	-5.5	1.70 H	291	30.00	18.50

**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	114.8 PK			1.61 V	324	75.20	39.60
2	*5240.00	104.9 AV			1.61 V	324	65.30	39.60
3	5460.00	60.6 PK	74.0	-13.4	1.66 V	333	54.20	6.40
4	5460.00	49.2 AV	54.0	-4.8	1.66 V	333	42.80	6.40
5	#10480.00	61.9 PK	74.0	-12.1	1.00 V	185	42.90	19.00
6	#10480.00	49.1 AV	54.0	-4.9	1.00 V	185	30.10	19.00
7	15720.00	66.8 PK	74.0	-7.2	1.89 V	112	48.30	18.50
8	15720.00	52.3 AV	54.0	-1.7	1.89 V	112	33.80	18.50

**Remarks:**

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

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

**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	#5714.00	58.9 PK	74.0	-15.1	1.67 H	332	52.10	6.80
2	#5714.00	47.6 AV	54.0	-6.4	1.67 H	332	40.80	6.80
3	#5722.00	73.1 PK	78.2	-5.1	1.67 H	333	66.30	6.80
4	#5725.00	65.9 PK	78.2	-12.3	1.67 H	333	59.10	6.80
5	*5745.00	107.2 PK			1.86 H	331	66.80	40.40
6	*5745.00	97.3 AV			1.86 H	331	56.90	40.40
7	11490.00	60.2 PK	74.0	-13.8	1.56 H	231	41.80	18.40
8	11490.00	47.0 AV	54.0	-7.0	1.56 H	231	28.60	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	#5714.00	71.2 PK	74.0	-2.8	1.82 V	310	64.40	6.80
2	#5714.00	51.6 AV	54.0	-2.4	1.82 V	310	44.80	6.80
3	#5722.90	76.7 PK	78.2	-1.5	1.82 V	310	69.90	6.80
4	#5725.00	66.8 PK	78.2	-11.4	1.90 V	302	60.00	6.80
5	*5745.00	110.8 PK			1.90 V	303	70.40	40.40
6	*5745.00	100.7 AV			1.90 V	303	60.30	40.40
7	#10490.00	61.2 PK	74.0	-12.8	1.71 V	289	42.10	19.10
8	#10490.00	48.1 AV	54.0	-5.9	1.71 V	289	29.00	19.10

**Remarks:**

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



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

**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	*5785.00	108.3 PK			1.63 H	309	67.80	40.50
2	*5785.00	98.1 AV			1.63 H	309	57.60	40.50
3	11570.00	60.7 PK	74.0	-13.3	1.63 H	19	42.30	18.40
4	11570.00	47.6 AV	54.0	-6.4	1.63 H	19	29.20	18.40
5	#17355.00	69.2 PK	74.0	-4.8	1.59 H	22	43.00	26.20
6	#17355.00	51.2 AV	54.0	-2.8	1.59 H	22	25.00	26.20

**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	*5785.00	110.7 PK			1.82 V	303	70.20	40.50
2	*5785.00	100.1 AV			1.82 V	303	59.60	40.50
3	11570.00	66.0 PK	74.0	-8.0	2.10 V	142	47.60	18.40
4	11570.00	52.1 AV	54.0	-1.9	2.10 V	142	33.70	18.40
5	#17355.00	70.5 PK	74.0	-3.5	1.76 V	332	44.30	26.20
6	#17355.00	52.2 AV	54.0	-1.8	1.76 V	332	26.00	26.20

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	108.8 PK			1.58 H	307	68.30	40.50
2	*5825.00	98.6 AV			1.58 H	307	58.10	40.50
3	#5850.00	62.7 PK	78.2	-15.5	1.78 H	306	55.80	6.90
4	#5853.00	72.7 PK	78.2	-5.5	1.78 H	306	65.70	7.00
5	#5861.00	64.3 PK	74.0	-9.7	4.00 H	311	57.30	7.00
6	#5861.00	47.5 AV	54.0	-6.5	4.00 H	311	40.50	7.00
7	11650.00	60.8 PK	74.0	-13.2	1.59 H	286	41.90	18.90
8	11650.00	47.4 AV	54.0	-6.6	1.59 H	286	28.50	18.90
9	#17475.00	69.7 PK	74.0	-4.3	1.50 H	234	42.70	27.00
10	#17475.00	51.5 AV	54.0	-2.5	1.50 H	234	24.50	27.00

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.7 PK			1.86 V	298	70.20	40.50
2	*5825.00	101.0 AV			1.86 V	298	60.50	40.50
3	#5850.00	65.0 PK	78.2	-13.2	2.30 V	18	58.10	6.90
4	#5853.00	74.3 PK	78.2	-3.9	2.30 V	18	67.30	7.00
5	#5861.00	66.7 PK	74.0	-7.3	1.78 V	346	59.70	7.00
6	#5861.00	49.9 AV	54.0	-4.1	1.78 V	346	42.90	7.00
7	11650.00	65.7 PK	74.0	-8.3	2.07 V	142	46.80	18.90
8	11650.00	52.2 AV	54.0	-1.8	2.07 V	142	33.30	18.90
9	#17475.00	70.2 PK	74.0	-3.8	1.75 V	331	43.20	27.00
10	#17475.00	52.1 AV	54.0	-1.9	1.75 V	331	25.10	27.00

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



**802.11n (HT20)**

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

**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	70.5 PK	74.0	-3.5	1.56 H	322	64.50	6.00
2	5150.00	52.5 AV	54.0	-1.5	1.56 H	322	46.50	6.00
3	*5180.00	113.4 PK			1.80 H	322	73.90	39.50
4	*5180.00	102.9 AV			1.80 H	322	63.40	39.50
5	#10360.00	61.2 PK	74.0	-12.8	2.01 H	282	42.80	18.40
6	#10360.00	48.1 AV	54.0	-5.9	2.01 H	282	29.70	18.40
7	15540.00	61.1 PK	74.0	-12.9	1.73 H	19	42.20	18.90
8	15540.00	48.5 AV	54.0	-5.5	1.73 H	19	29.60	18.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.9 PK	74.0	-4.1	2.00 V	330	63.90	6.00
2	5150.00	51.2 AV	54.0	-2.8	2.00 V	330	45.20	6.00
3	*5180.00	113.0 PK			1.72 V	329	73.50	39.50
4	*5180.00	102.5 AV			1.72 V	329	63.00	39.50
5	#10360.00	62.9 PK	74.0	-11.1	2.15 V	178	44.50	18.40
6	#10360.00	49.8 AV	54.0	-4.2	2.15 V	178	31.40	18.40
7	15540.00	62.1 PK	74.0	-11.9	1.77 V	79	43.20	18.90
8	15540.00	49.5 AV	54.0	-4.5	1.77 V	79	30.60	18.90

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

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

**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	114.2 PK			1.68 H	339	74.60	39.60
2	*5200.00	104.2 AV			1.68 H	339	64.60	39.60
3	#10400.00	62.5 PK	74.0	-11.5	1.33 H	96	44.00	18.50
4	#10400.00	50.3 AV	54.0	-3.7	1.33 H	96	31.80	18.50
5	15600.00	61.0 PK	74.0	-13.0	1.70 H	288	42.20	18.80
6	15600.00	47.8 AV	54.0	-6.2	1.70 H	288	29.00	18.80

**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	113.7 PK			2.02 V	319	74.10	39.60
2	*5200.00	103.4 AV			2.02 V	319	63.80	39.60
3	#10400.00	61.1 PK	74.0	-12.9	1.23 V	179	42.60	18.50
4	#10400.00	48.0 AV	54.0	-6.0	1.23 V	179	29.50	18.50
5	15600.00	67.2 PK	74.0	-6.8	1.88 V	111	48.40	18.80
6	15600.00	52.5 AV	54.0	-1.5	1.88 V	111	33.70	18.80

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



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

**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	113.6 PK			1.61 H	337	74.00	39.60
2	*5240.00	103.5 AV			1.61 H	337	63.90	39.60
3	5460.00	61.0 PK	74.0	-13.0	1.56 H	324	54.60	6.40
4	5460.00	49.4 AV	54.0	-4.6	1.56 H	324	43.00	6.40
5	#10480.00	61.2 PK	74.0	-12.8	2.00 H	123	42.20	19.00
6	#10480.00	48.0 AV	54.0	-6.0	2.00 H	123	29.00	19.00
7	15720.00	62.3 PK	74.0	-11.7	1.71 H	293	43.80	18.50
8	15720.00	49.1 AV	54.0	-4.9	1.71 H	293	30.60	18.50

**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	115.1 PK			1.61 V	331	75.50	39.60
2	*5240.00	105.5 AV			1.61 V	331	65.90	39.60
3	5460.00	58.9 PK	74.0	-15.1	1.71 V	167	52.50	6.40
4	5460.00	47.4 AV	54.0	-6.6	1.71 V	167	41.00	6.40
5	#10480.00	61.1 PK	74.0	-12.9	1.90 V	122	42.10	19.00
6	#10480.00	48.2 AV	54.0	-5.8	1.90 V	122	29.20	19.00
7	15720.00	66.0 PK	74.0	-8.0	1.87 V	112	47.50	18.50
8	15720.00	52.5 AV	54.0	-1.5	1.87 V	112	34.00	18.50

Remarks:

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

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

**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	#5714.90	66.9 PK	74.0	-7.1	1.57 H	331	60.10	6.80
2	#5714.90	47.8 AV	54.0	-6.2	1.57 H	331	41.00	6.80
3	#5722.90	74.6 PK	78.2	-3.6	1.89 H	11	67.80	6.80
4	#5725.00	55.2 PK	78.2	-23.0	1.87 H	13	48.40	6.80
5	*5745.00	105.3 PK			1.55 H	304	64.90	40.40
6	*5745.00	95.5 AV			1.55 H	304	55.10	40.40
7	11490.00	58.5 PK	74.0	-15.5	1.15 H	69	40.10	18.40
8	11490.00	46.1 AV	54.0	-7.9	1.15 H	69	27.70	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	#5714.90	66.2 PK	74.0	-7.8	2.06 V	60	59.40	6.80
2	#5714.90	48.8 AV	54.0	-5.2	2.06 V	60	42.00	6.80
3	#5722.90	76.8 PK	78.2	-1.4	1.81 V	16	70.00	6.80
4	#5725.00	57.0 PK	78.2	-21.2	1.88 V	12	50.20	6.80
5	*5745.00	108.9 PK			1.89 V	300	68.50	40.40
6	*5745.00	98.9 AV			1.89 V	300	58.50	40.40
7	11490.00	58.5 PK	74.0	-15.5	1.78 V	273	40.10	18.40
8	11490.00	46.0 AV	54.0	-8.0	1.78 V	273	27.60	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

**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	*5785.00	109.7 PK			1.66 H	306	69.20	40.50
2	*5785.00	99.2 AV			1.66 H	306	58.70	40.50
3	11570.00	63.0 PK	74.0	-11.0	1.02 H	129	44.60	18.40
4	11570.00	50.6 AV	54.0	-3.4	1.02 H	129	32.20	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	*5785.00	112.4 PK			1.31 V	274	71.90	40.50
2	*5785.00	102.2 AV			1.31 V	274	61.70	40.50
3	11570.00	63.8 PK	74.0	-10.2	1.15 V	323	45.40	18.40
4	11570.00	52.2 AV	54.0	-1.8	1.15 V	323	33.80	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	107.3 PK			1.56 H	302	66.80	40.50
2	*5825.00	97.6 AV			1.56 H	302	57.10	40.50
3	#5850.00	51.2 PK	78.2	-27.0	1.67 H	300	44.30	6.90
4	#5852.10	70.8 PK	78.2	-7.4	1.66 H	301	63.80	7.00
5	#5860.10	65.2 PK	74.0	-8.8	1.72 H	304	58.20	7.00
6	#5860.10	49.0 AV	54.0	-5.0	1.72 H	304	42.00	7.00
7	11650.00	63.2 PK	74.0	-10.8	1.12 H	101	44.30	18.90
8	11650.00	49.7 AV	54.0	-4.3	1.12 H	101	30.80	18.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	110.7 PK			1.63 V	300	70.20	40.50
2	*5825.00	101.3 AV			1.63 V	300	60.80	40.50
3	#5850.00	56.0 PK	78.2	-22.2	1.34 V	334	49.10	6.90
4	#5852.10	72.8 PK	78.2	-5.4	1.35 V	330	65.80	7.00
5	#5860.10	72.2 PK	74.0	-1.8	1.36 V	270	65.20	7.00
6	#5860.10	51.4 AV	54.0	-2.6	1.36 V	270	44.40	7.00
7	11650.00	64.0 PK	74.0	-10.0	1.16 V	291	45.10	18.90
8	11650.00	49.7 AV	54.0	-4.3	1.16 V	291	30.80	18.90

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

**802.11n (HT40)**

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

**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	70.3 PK	74.0	-3.7	1.58 H	345	64.30	6.00
2	5150.00	52.1 AV	54.0	-1.9	1.58 H	345	46.10	6.00
3	*5190.00	105.1 PK			1.78 H	340	65.60	39.50
4	*5190.00	95.0 AV			1.78 H	340	55.50	39.50
5	#10380.00	60.6 PK	74.0	-13.4	1.68 H	320	42.10	18.50
6	#10380.00	47.4 AV	54.0	-6.6	1.68 H	320	28.90	18.50

**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	1.70 V	319	62.80	6.00
2	5150.00	48.5 AV	54.0	-5.5	1.70 V	319	42.50	6.00
3	*5190.00	107.3 PK			1.70 V	337	67.80	39.50
4	*5190.00	97.0 AV			1.70 V	337	57.50	39.50
5	#10380.00	61.0 PK	74.0	-13.0	2.02 V	170	42.50	18.50
6	#10380.00	47.9 AV	54.0	-6.1	2.02 V	170	29.40	18.50

**Remarks:**

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

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.9 PK	74.0	-15.1	1.71 H	19	52.90	6.00
2	5150.00	47.4 AV	54.0	-6.6	1.71 H	19	41.40	6.00
3	*5230.00	111.2 PK			1.59 H	339	71.60	39.60
4	*5230.00	101.0 AV			1.59 H	339	61.40	39.60
5	#10460.00	60.9 PK	74.0	-13.1	1.75 H	290	42.00	18.90
6	#10460.00	47.9 AV	54.0	-6.1	1.75 H	290	29.00	18.90
7	15690.00	60.2 PK	74.0	-13.8	1.67 H	330	41.60	18.60
8	15690.00	47.2 AV	54.0	-6.8	1.67 H	330	28.60	18.60

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.0 PK	74.0	-15.0	1.80 V	292	53.00	6.00
2	5150.00	47.7 AV	54.0	-6.3	1.80 V	292	41.70	6.00
3	*5230.00	112.4 PK			1.87 V	331	72.80	39.60
4	*5230.00	102.6 AV			1.87 V	331	63.00	39.60
5	#10460.00	60.8 PK	74.0	-13.2	1.47 V	181	41.90	18.90
6	#10460.00	47.5 AV	54.0	-6.5	1.47 V	181	28.60	18.90
7	15690.00	66.0 PK	74.0	-8.0	1.83 V	111	47.40	18.60
8	15690.00	52.6 AV	54.0	-1.4	1.83 V	111	34.00	18.60

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



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

**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	#5714.90	69.5 PK	74.0	-4.5	1.60 H	335	62.70	6.80
2	#5714.90	51.3 AV	54.0	-2.7	1.60 H	335	44.50	6.80
3	#5722.90	74.7 PK	78.2	-3.5	1.76 H	327	67.90	6.80
4	#5725.00	59.2 PK	78.2	-19.0	1.66 H	327	52.40	6.80
5	*5755.00	101.8 PK			1.55 H	325	61.30	40.50
6	*5755.00	92.0 AV			1.55 H	325	51.50	40.50
7	11510.00	57.9 PK	74.0	-16.1	1.16 H	123	39.60	18.30
8	11510.00	46.5 AV	54.0	-7.5	1.16 H	123	28.20	18.30

**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	#5714.90	72.4 PK	74.0	-1.6	1.83 V	301	65.60	6.80
2	#5714.90	52.3 AV	54.0	-1.7	1.83 V	301	45.50	6.80
3	#5722.90	76.6 PK	78.2	-1.6	1.84 V	303	69.80	6.80
4	#5725.00	60.9 PK	78.2	-17.3	1.81 V	302	54.10	6.80
5	*5755.00	104.7 PK			1.72 V	300	64.20	40.50
6	*5755.00	95.5 AV			1.72 V	300	55.00	40.50
7	11510.00	57.9 PK	74.0	-16.1	1.61 V	277	39.60	18.30
8	11510.00	46.2 AV	54.0	-7.8	1.61 V	277	27.90	18.30

**Remarks:**

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

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	104.6 PK			1.45 H	307	64.10	40.50
2	*5795.00	95.1 AV			1.45 H	307	54.60	40.50
3	#5850.00	51.1 PK	78.2	-27.1	1.24 H	303	44.20	6.90
4	#5852.10	68.9 PK	78.2	-9.3	1.38 H	302	61.90	7.00
5	#5860.10	66.8 PK	74.0	-7.2	1.54 H	305	59.80	7.00
6	#5860.10	49.2 AV	54.0	-4.8	1.54 H	305	42.20	7.00
7	11550.00	58.6 PK	74.0	-15.4	1.19 H	114	40.20	18.40
8	11550.00	47.0 AV	54.0	-7.0	1.19 H	114	28.60	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	*5795.00	108.0 PK			1.72 V	301	67.50	40.50
2	*5795.00	98.5 AV			1.72 V	301	58.00	40.50
3	#5850.00	54.4 PK	78.2	-23.8	1.55 V	265	47.50	6.90
4	#5852.10	70.8 PK	78.2	-7.4	1.55 V	269	63.80	7.00
5	#5860.10	69.3 PK	74.0	-4.7	1.55 V	268	62.30	7.00
6	#5860.10	52.2 AV	54.0	-1.8	1.55 V	268	45.20	7.00
7	11550.00	58.4 PK	74.0	-15.6	1.57 V	220	40.00	18.40
8	11550.00	47.0 AV	54.0	-7.0	1.57 V	220	28.60	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)
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.

**802.11a**

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.2 PK	74.0	-9.8	1.51 H	282	58.20	6.00
2	5150.00	48.8 AV	54.0	-5.2	1.51 H	282	42.80	6.00
3	*5180.00	108.9 PK			1.77 H	3	69.40	39.50
4	*5180.00	99.0 AV			1.77 H	3	59.50	39.50
5	#10360.00	62.8 PK	74.0	-11.2	1.00 H	59	44.40	18.40
6	#10360.00	50.7 AV	54.0	-3.3	1.00 H	59	32.30	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	5150.00	69.8 PK	74.0	-4.2	1.15 V	185	63.80	6.00
2	5150.00	52.2 AV	54.0	-1.8	1.15 V	185	46.20	6.00
3	*5180.00	114.9 PK			2.01 V	36	75.40	39.50
4	*5180.00	104.5 AV			2.01 V	36	65.00	39.50
5	#10360.00	65.6 PK	74.0	-8.4	1.00 V	16	47.20	18.40
6	#10360.00	52.7 AV	54.0	-1.3	1.00 V	16	34.30	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.4 PK			1.59 H	6	70.80	39.60
2	*5200.00	100.3 AV			1.59 H	6	60.70	39.60
3	#10400.00	62.1 PK	68.2	-6.1	1.02 H	60	43.60	18.50

**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	115.4 PK			1.90 V	35	75.80	39.60
2	*5200.00	105.0 AV			1.90 V	35	65.40	39.60
3	#10400.00	67.0 PK	68.2	-1.2	1.00 V	15	48.50	18.50

**Remarks:**

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

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

**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	112.4 PK			1.61 H	4	72.80	39.60
2	*5240.00	102.4 AV			1.61 H	4	62.80	39.60
3	5400.00	57.2 PK	74.0	-16.8	1.28 H	340	50.90	6.30
4	5400.00	44.5 AV	54.0	-9.5	1.28 H	340	38.20	6.30
5	#10480.00	62.6 PK	74.0	-11.4	1.06 H	136	43.60	19.00
6	#10480.00	49.6 AV	54.0	-4.4	1.06 H	136	30.60	19.00
7	15720.00	62.3 PK	74.0	-11.7	1.18 H	321	43.80	18.50
8	15720.00	50.1 AV	54.0	-3.9	1.18 H	321	31.60	18.50

**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	116.7 PK			1.99 V	185	77.10	39.60
2	*5240.00	106.7 AV			1.99 V	185	67.10	39.60
3	5400.00	57.9 PK	74.0	-16.1	1.97 V	49	51.60	6.30
4	5400.00	46.8 AV	54.0	-7.2	1.97 V	49	40.50	6.30
5	#10480.00	68.8 PK	74.0	-5.2	1.06 V	13	49.80	19.00
6	#10480.00	52.7 AV	54.0	-1.3	1.06 V	13	33.70	19.00
7	15720.00	63.3 PK	74.0	-10.7	2.27 V	60	44.80	18.50
8	15720.00	50.8 AV	54.0	-3.2	2.27 V	60	32.30	18.50

**Remarks:**

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

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

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	#5714.90	59.1 PK	74.0	-14.9	1.72 H	177	52.30	6.80
2	#5714.90	45.6 AV	54.0	-8.4	1.72 H	177	38.80	6.80
3	#5722.90	67.1 PK	78.2	-11.1	1.24 H	140	60.30	6.80
4	#5725.00	52.3 PK	78.2	-25.9	1.66 H	168	45.50	6.80
5	*5745.00	101.6 PK			1.78 H	170	61.20	40.40
6	*5745.00	91.5 AV			1.78 H	170	51.10	40.40
7	11490.00	57.5 PK	74.0	-16.5	1.15 H	241	39.10	18.40
8	11490.00	45.5 AV	54.0	-8.5	1.15 H	241	27.10	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	#5714.90	63.0 PK	74.0	-11.0	1.62 V	350	56.20	6.80
2	#5714.90	46.6 AV	54.0	-7.4	1.62 V	350	39.80	6.80
3	#5722.90	76.5 PK	78.2	-1.7	1.80 V	189	69.70	6.80
4	#5725.00	60.2 PK	78.2	-18.0	1.63 V	119	53.40	6.80
5	*5745.00	106.6 PK			1.45 V	354	66.20	40.40
6	*5745.00	96.7 AV			1.45 V	354	56.30	40.40
7	11490.00	60.1 PK	74.0	-13.9	1.23 V	157	41.70	18.40
8	11490.00	48.0 AV	54.0	-6.0	1.23 V	157	29.60	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

**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	*5785.00	105.8 PK			2.12 H	171	65.30	40.50
2	*5785.00	95.7 AV			2.12 H	171	55.20	40.50
3	11570.00	63.3 PK	74.0	-10.7	1.00 H	134	44.90	18.40
4	11570.00	50.8 AV	54.0	-3.2	1.00 H	134	32.40	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	*5785.00	113.1 PK			1.71 V	94	72.60	40.50
2	*5785.00	102.9 AV			1.71 V	94	62.40	40.50
3	11570.00	66.7 PK	74.0	-7.3	1.00 V	164	48.30	18.40
4	11570.00	52.9 AV	54.0	-1.1	1.00 V	164	34.50	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	103.0 PK			1.64 H	170	62.50	40.50
2	*5825.00	92.7 AV			1.64 H	170	52.20	40.50
3	#5850.00	47.0 PK	78.2	-31.2	1.48 H	180	40.10	6.90
4	#5852.10	64.9 PK	78.2	-13.3	1.65 H	169	57.90	7.00
5	#5860.10	60.0 PK	74.0	-14.0	1.77 H	171	53.00	7.00
6	#5860.10	45.7 AV	54.0	-8.3	1.77 H	171	38.70	7.00
7	11650.00	58.6 PK	74.0	-15.4	1.14 H	42	39.70	18.90
8	11650.00	46.9 AV	54.0	-7.1	1.14 H	42	28.00	18.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	111.1 PK			1.85 V	96	70.60	40.50
2	*5825.00	100.8 AV			1.85 V	96	60.30	40.50
3	#5850.00	59.0 PK	78.2	-19.2	2.04 V	129	52.10	6.90
4	#5852.10	76.5 PK	78.2	-1.7	1.94 V	187	69.50	7.00
5	#5860.10	69.2 PK	74.0	-4.8	2.01 V	126	62.20	7.00
6	#5860.10	51.7 AV	54.0	-2.3	2.01 V	126	44.70	7.00
7	11650.00	61.2 PK	74.0	-12.8	2.00 V	216	42.30	18.90
8	11650.00	49.2 AV	54.0	-4.8	2.00 V	216	30.30	18.90

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



**802.11n (HT20)**

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.9 PK	74.0	-6.1	1.42 H	3	61.90	6.00
2	5150.00	51.4 AV	54.0	-2.6	1.42 H	3	45.40	6.00
3	*5180.00	108.4 PK			1.77 H	4	68.90	39.50
4	*5180.00	98.2 AV			1.77 H	4	58.70	39.50
5	#10360.00	62.9 PK	74.0	-11.1	1.00 H	60	44.50	18.40
6	#10360.00	49.7 AV	54.0	-4.3	1.00 H	60	31.30	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	5150.00	67.8 PK	74.0	-6.2	1.01 V	193	61.80	6.00
2	5150.00	52.2 AV	54.0	-1.8	1.01 V	193	46.20	6.00
3	*5180.00	115.2 PK			2.00 V	36	75.70	39.50
4	*5180.00	105.2 AV			2.00 V	36	65.70	39.50
5	#10360.00	67.0 PK	74.0	-7.0	2.12 V	15	48.60	18.40
<b>6</b>	<b>#10360.00</b>	<b>53.0 AV</b>	<b>54.0</b>	<b>-1.0</b>	<b>2.12 V</b>	<b>15</b>	<b>34.60</b>	<b>18.40</b>

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

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

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	109.5 PK			1.73 H	4	69.90	39.60
2	*5200.00	99.5 AV			1.73 H	4	59.90	39.60
3	#10400.00	62.1 PK	68.2	-6.1	1.12 H	50	43.60	18.50

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	114.1 PK			1.68 V	185	74.50	39.60
2	*5200.00	104.1 AV			1.68 V	185	64.50	39.60
3	#10400.00	67.1 PK	68.2	-1.1	1.00 V	16	48.60	18.50

Remarks:

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

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	111.8 PK			1.49 H	4	72.20	39.60
2	*5240.00	101.7 AV			1.49 H	4	62.10	39.60
3	5400.00	57.4 PK	74.0	-16.6	1.29 H	206	51.10	6.30
4	5400.00	44.7 AV	54.0	-9.3	1.29 H	206	38.40	6.30
5	#10480.00	62.6 PK	74.0	-11.4	1.02 H	68	43.60	19.00
6	#10480.00	49.2 AV	54.0	-4.8	1.02 H	68	30.20	19.00
7	15720.00	62.8 PK	74.0	-11.2	1.53 H	129	44.30	18.50
8	15720.00	50.1 AV	54.0	-3.9	1.53 H	129	31.60	18.50

**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	116.6 PK			2.11 V	185	77.00	39.60
2	*5240.00	106.0 AV			2.11 V	185	66.40	39.60
3	5400.00	58.1 PK	74.0	-15.9	1.82 V	51	51.80	6.30
4	5400.00	46.7 AV	54.0	-7.3	1.82 V	51	40.40	6.30
5	#10480.00	69.0 PK	74.0	-5.0	2.38 V	15	50.00	19.00
6	#10480.00	52.6 AV	54.0	-1.4	2.38 V	15	33.60	19.00
7	15720.00	62.2 PK	74.0	-11.8	1.00 V	302	43.70	18.50
8	15720.00	50.3 AV	54.0	-3.7	1.00 V	302	31.80	18.50

**Remarks:**

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

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

**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	#5714.00	57.5 PK	74.0	-16.5	1.69 H	169	50.70	6.80
2	#5714.00	46.2 AV	54.0	-7.8	1.69 H	169	39.40	6.80
3	#5722.00	70.5 PK	78.2	-7.7	1.75 H	170	63.70	6.80
4	#5725.00	55.6 PK	78.2	-22.6	1.75 H	170	48.80	6.80
5	*5745.00	100.9 PK			1.80 H	170	60.50	40.40
6	*5745.00	90.6 AV			1.80 H	170	50.20	40.40
7	11490.00	60.0 PK	74.0	-14.0	1.11 H	244	41.60	18.40
8	11490.00	47.0 AV	54.0	-7.0	1.11 H	244	28.60	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	#5700.00	59.9 PK	74.0	-14.1	1.88 V	200	53.10	6.80
2	#5700.00	47.7 AV	54.0	-6.3	1.88 V	200	40.90	6.80
3	#5722.00	76.8 PK	78.2	-1.4	1.93 V	120	70.00	6.80
4	#5725.00	63.3 PK	78.2	-14.9	1.93 V	120	56.50	6.80
5	*5745.00	108.8 PK			1.72 V	136	68.40	40.40
6	*5745.00	99.0 AV			1.72 V	136	58.60	40.40
7	11490.00	60.8 PK	74.0	-13.2	1.27 V	165	42.40	18.40
8	11490.00	47.7 AV	54.0	-6.3	1.27 V	165	29.30	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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " \* ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

**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	*5785.00	105.4 PK			2.01 H	321	64.90	40.50
2	*5785.00	94.6 AV			2.01 H	321	54.10	40.50
3	11570.00	64.0 PK	74.0	-10.0	1.00 H	180	45.60	18.40
4	11570.00	51.1 AV	54.0	-2.9	1.00 H	180	32.70	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	*5785.00	113.2 PK			1.75 V	137	72.70	40.50
2	*5785.00	103.7 AV			1.75 V	137	63.20	40.50
3	11570.00	69.4 PK	74.0	-4.6	1.90 V	308	51.00	18.40
<b>4</b>	<b>11570.00</b>	<b>53.0 AV</b>	<b>54.0</b>	<b>-1.0</b>	<b>1.90 V</b>	<b>308</b>	<b>34.60</b>	<b>18.40</b>

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

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	104.0 PK			2.12 H	170	63.50	40.50
2	*5825.00	93.9 AV			2.12 H	170	53.40	40.50
3	#5850.00	57.6 PK	78.2	-20.6	2.12 H	170	50.70	6.90
4	#5853.00	64.7 PK	78.2	-13.5	2.12 H	170	57.70	7.00
5	#5861.00	60.5 PK	74.0	-13.5	1.76 H	177	53.50	7.00
6	#5861.00	48.9 AV	54.0	-5.1	1.76 H	177	41.90	7.00
7	11650.00	60.7 PK	74.0	-13.3	1.20 H	264	41.80	18.90
8	11650.00	47.9 AV	54.0	-6.1	1.20 H	264	29.00	18.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	113.3 PK			2.07 V	307	72.80	40.50
2	*5825.00	102.9 AV			2.07 V	307	62.40	40.50
3	#5850.00	63.8 PK	78.2	-14.4	1.90 V	311	56.90	6.90
4	#5853.00	76.3 PK	78.2	-1.9	1.90 V	311	69.30	7.00
5	#5861.00	70.2 PK	74.0	-3.8	1.00 V	94	63.20	7.00
6	#5861.00	49.1 AV	54.0	-4.9	1.00 V	94	42.10	7.00
7	11650.00	62.2 PK	74.0	-11.8	2.01 V	316	43.30	18.90
8	11650.00	49.9 AV	54.0	-4.1	2.01 V	316	31.00	18.90

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

**802.11n (HT40)**

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.3 PK	74.0	-8.7	1.34 H	71	59.30	6.00
2	5150.00	51.4 AV	54.0	-2.6	1.34 H	71	45.40	6.00
3	*5190.00	100.7 PK			1.64 H	357	61.20	39.50
4	*5190.00	91.0 AV			1.64 H	357	51.50	39.50
5	#10380.00	59.5 PK	74.0	-14.5	1.22 H	54	41.00	18.50
6	#10380.00	48.0 AV	54.0	-6.0	1.22 H	54	29.50	18.50

**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	71.2 PK	74.0	-2.8	1.83 V	57	65.20	6.00
2	5150.00	52.6 AV	54.0	-1.4	1.83 V	57	46.60	6.00
3	*5190.00	104.6 PK			1.82 V	67	65.10	39.50
4	*5190.00	94.9 AV			1.82 V	67	55.40	39.50
5	#10380.00	59.5 PK	74.0	-14.5	1.70 V	35	41.00	18.50
6	#10380.00	48.1 AV	54.0	-5.9	1.70 V	35	29.60	18.50

**Remarks:**

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

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

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.0 PK	74.0	-13.0	1.44 H	282	55.00	6.00
2	5150.00	47.1 AV	54.0	-6.9	1.44 H	282	41.10	6.00
3	*5230.00	107.6 PK			1.86 H	358	68.00	39.60
4	*5230.00	98.2 AV			1.86 H	358	58.60	39.60
5	#10460.00	59.2 PK	74.0	-14.8	1.17 H	257	40.30	18.90
6	#10460.00	47.8 AV	54.0	-6.2	1.17 H	257	28.90	18.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.0 PK	74.0	-5.0	1.80 V	40	63.00	6.00
2	5150.00	52.4 AV	54.0	-1.6	1.80 V	40	46.40	6.00
3	*5230.00	110.5 PK			2.10 V	162	70.90	39.60
4	*5230.00	101.2 AV			2.10 V	162	61.60	39.60
5	#10460.00	62.4 PK	74.0	-11.6	2.25 V	8	43.50	18.90
6	#10460.00	50.3 AV	54.0	-3.7	2.25 V	8	31.40	18.90

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



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

**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	#5714.00	59.9 PK	74.0	-14.1	1.99 H	302	53.10	6.80
2	#5714.00	48.8 AV	54.0	-5.2	1.99 H	302	42.00	6.80
3	#5722.00	65.1 PK	78.2	-13.1	1.86 H	212	58.30	6.80
4	#5725.00	51.9 PK	78.2	-26.3	1.83 H	212	45.10	6.80
5	*5755.00	95.1 PK			2.09 H	322	54.60	40.50
6	*5755.00	85.4 AV			2.09 H	322	44.90	40.50
7	11510.00	60.1 PK	74.0	-13.9	1.22 H	255	41.80	18.30
8	11510.00	47.1 AV	54.0	-6.9	1.22 H	255	28.80	18.30

**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	#5714.00	71.0 PK	74.0	-3.0	1.76 V	315	64.20	6.80
2	#5714.00	51.3 AV	54.0	-2.7	1.76 V	315	44.50	6.80
3	#5722.00	76.6 PK	78.2	-1.6	1.76 V	308	69.80	6.80
4	#5725.00	65.3 PK	78.2	-12.9	1.82 V	192	58.50	6.80
5	*5755.00	104.4 PK			1.78 V	309	63.90	40.50
6	*5755.00	94.7 AV			1.78 V	309	54.20	40.50
7	11510.00	61.0 PK	74.0	-13.0	1.86 V	208	42.70	18.30
8	11510.00	47.9 AV	54.0	-6.1	1.86 V	208	29.60	18.30

**Remarks:**

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	101.0 PK			2.02 H	321	60.50	40.50
2	*5795.00	91.0 AV			2.02 H	321	50.50	40.50
3	#5850.00	51.8 PK	78.2	-26.4	1.76 H	188	44.90	6.90
4	#5853.00	61.8 PK	78.2	-16.4	1.76 H	188	54.80	7.00
5	#5861.00	58.5 PK	74.0	-15.5	1.81 H	314	51.50	7.00
6	#5861.00	47.2 AV	54.0	-6.8	1.81 H	314	40.20	7.00
7	11590.00	60.1 PK	74.0	-13.9	1.05 H	189	41.60	18.50
8	11590.00	47.0 AV	54.0	-7.0	1.05 H	189	28.50	18.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	108.6 PK			1.80 V	138	68.10	40.50
2	*5795.00	98.4 AV			1.80 V	138	57.90	40.50
3	#5850.00	63.0 PK	78.2	-15.2	1.79 V	133	56.10	6.90
4	#5853.00	73.4 PK	78.2	-4.8	1.79 V	133	66.40	7.00
5	#5861.00	71.8 PK	74.0	-2.2	1.87 V	125	64.80	7.00
6	#5861.00	52.4 AV	54.0	-1.6	1.87 V	125	45.40	7.00
7	11590.00	61.2 PK	74.0	-12.8	1.80 V	175	42.70	18.50
8	11590.00	48.2 AV	54.0	-5.8	1.80 V	175	29.70	18.50

Remarks:

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

Below 1GHz Data

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	A		

**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	88.23	33.3 QP	43.5	-10.2	1.99 H	289	53.10	-19.80
2	210.72	39.9 QP	43.5	-3.6	1.00 H	181	56.60	-16.70
3	282.02	43.4 QP	46.0	-2.6	1.00 H	188	56.30	-12.90
4	375.01	43.5 QP	46.0	-2.5	1.00 H	243	54.40	-10.90
5	624.85	44.0 QP	46.0	-2.0	1.49 H	329	49.40	-5.40
6	875.67	41.1 QP	46.0	-4.9	1.49 H	289	42.00	-0.90

**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	29.90	37.3 QP	40.0	-2.7	1.00 V	233	53.40	-16.10
2	51.19	35.6 QP	40.0	-4.4	1.00 V	1	50.20	-14.60
3	69.30	36.6 QP	40.0	-3.4	1.04 V	55	52.60	-16.00
4	282.66	44.2 QP	46.0	-1.8	1.00 V	134	57.10	-12.90
5	375.98	38.6 QP	46.0	-7.4	1.00 V	189	49.50	-10.90
6	624.85	43.0 QP	46.0	-3.0	1.00 V	185	48.40	-5.40

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	B		

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	47.40	33.4 QP	40.0	-6.6	1.99 H	132	48.00	-14.60
2	140.72	34.1 QP	43.5	-9.4	1.99 H	282	48.70	-14.60
3	210.72	39.8 QP	43.5	-3.7	1.50 H	261	56.50	-16.70
4	282.66	40.6 QP	46.0	-5.4	1.50 H	141	53.50	-12.90
5	624.85	43.5 QP	46.0	-2.5	1.00 H	235	48.90	-5.40
6	875.67	39.6 QP	46.0	-6.4	1.50 H	288	40.50	-0.90

**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	47.63	37.1 QP	40.0	-2.9	1.00 V	351	51.70	-14.60
2	64.90	34.6 QP	40.0	-5.4	1.00 V	272	50.00	-15.40
3	210.72	33.8 QP	43.5	-9.7	1.99 V	241	50.50	-16.70
4	282.66	41.5 QP	46.0	-4.5	1.49 V	343	54.40	-12.90
5	624.85	41.1 QP	46.0	-4.9	1.00 V	142	46.50	-5.40
6	875.67	38.6 QP	46.0	-7.4	1.49 V	208	39.50	-0.90

**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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	C		

**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	125.17	35.0 QP	43.5	-8.5	1.00 H	83	50.90	-15.90
2	214.08	41.9 QP	43.5	-1.6	1.07 H	224	58.60	-16.70
3	374.04	39.3 QP	46.0	-6.7	1.00 H	200	50.30	-11.00
4	625.02	44.6 QP	46.0	-1.4	1.32 H	112	50.00	-5.40
5	751.23	38.9 QP	46.0	-7.1	1.00 H	129	42.00	-3.10
6	875.67	37.8 QP	46.0	-8.2	1.00 H	111	38.70	-0.90

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.84	36.4 QP	40.0	-3.6	1.00 V	47	52.50	-16.10
2	59.06	36.2 QP	40.0	-3.8	1.00 V	350	51.00	-14.80
3	82.40	37.4 QP	40.0	-2.6	1.00 V	275	56.50	-19.10
4	212.66	35.4 QP	43.5	-8.1	1.00 V	293	52.10	-16.70
5	374.04	41.9 QP	46.0	-4.1	1.00 V	175	52.90	-11.00
<b>6</b>	<b>625.02</b>	<b>45.0 QP</b>	<b>46.0</b>	<b>-1.0</b>	<b>1.00 V</b>	<b>83</b>	<b>50.40</b>	<b>-5.40</b>

**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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	D		

**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	45.45	34.9 QP	40.0	-5.1	2.00 H	135	49.70	-14.80
2	193.22	38.3 QP	43.5	-5.2	1.50 H	168	54.60	-16.30
3	206.56	40.7 QP	43.5	-2.8	1.05 H	327	57.50	-16.80
4	280.71	42.7 QP	46.0	-3.3	1.01 H	31	55.60	-12.90
5	624.85	40.2 QP	46.0	-5.8	1.01 H	256	45.60	-5.40
6	875.67	42.0 QP	46.0	-4.0	1.50 H	241	42.90	-0.90

**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	37.99	34.2 QP	40.0	-5.8	1.00 V	14	49.50	-15.30
2	47.88	38.6 QP	40.0	-1.4	1.06 V	21	53.20	-14.60
3	206.83	39.5 QP	43.5	-4.0	1.99 V	219	56.30	-16.80
4	375.98	33.8 QP	46.0	-12.2	1.00 V	201	44.70	-10.90
5	624.85	38.2 QP	46.0	-7.8	1.00 V	190	43.60	-5.40
6	875.67	39.3 QP	46.0	-6.7	1.49 V	201	40.20	-0.90

**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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

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

- Note:** 1. The lower limit shall apply at the transition frequencies.  
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 11, 2014	Nov. 10, 2015
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2015	Feb. 25, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Note:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
 2. The test was performed in HwaYa Shielded Room 1.  
 3. The VCCI Site Registration No. is C-2040.

### 4.2.3 Test Procedures

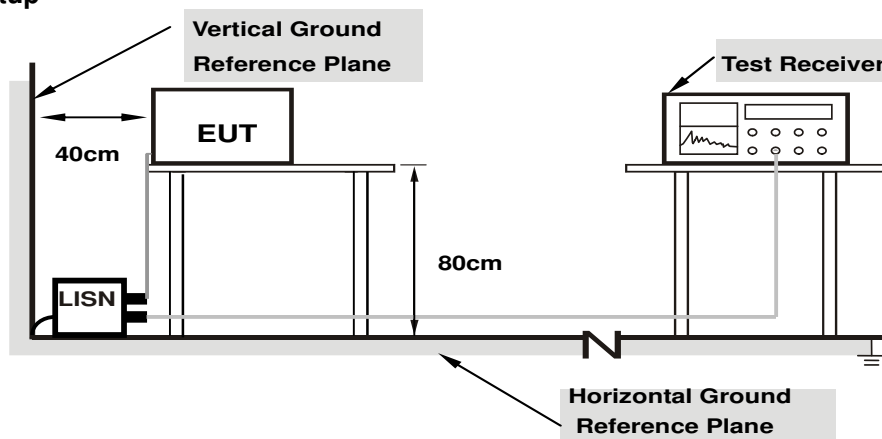
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

### 4.2.4 Deviation from Test Standard

No deviation.

### 4.2.5 Test Setup



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

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

### 4.2.6 EUT Operating Conditions

Same as 4.1.6.



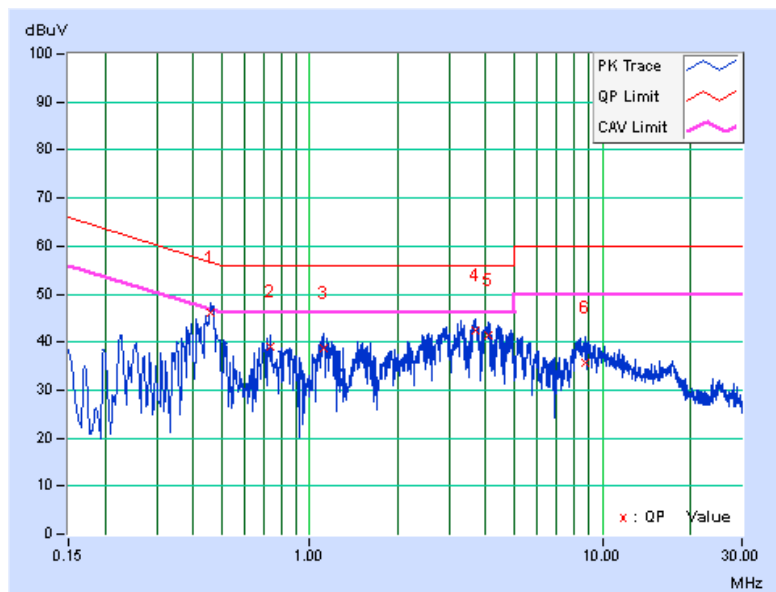
### 4.2.7 Test Results

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.45889	9.91	36.14	24.04	46.05	33.95	56.71
2	0.73259	9.97	29.22	16.72	39.19	26.69	56.00	46.00	-16.81	-19.31
3	1.11186	10.04	28.78	16.47	38.82	26.51	56.00	46.00	-17.18	-19.49
4	3.68464	10.18	32.29	21.15	42.47	31.33	56.00	46.00	-13.53	-14.67
5	4.07564	10.19	31.18	20.35	41.37	30.54	56.00	46.00	-14.63	-15.46
6	8.71681	10.47	25.27	15.23	35.74	25.70	60.00	50.00	-24.26	-24.30

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.

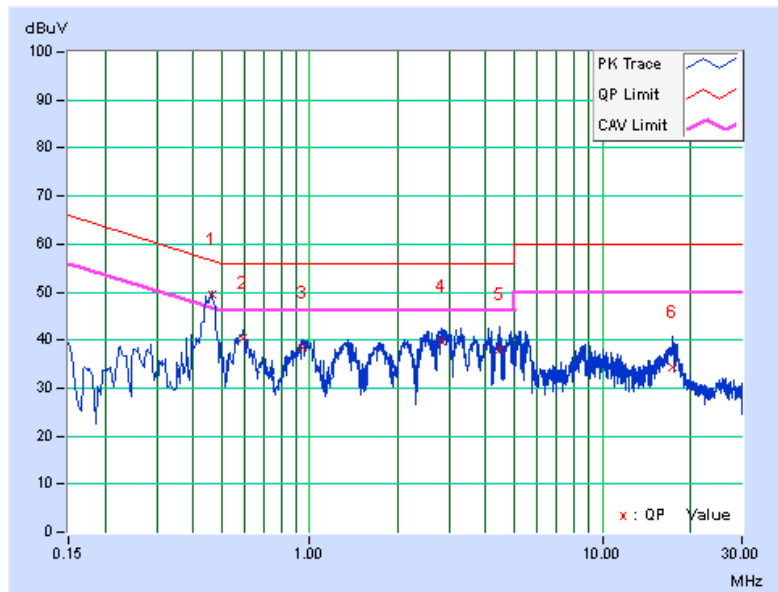


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			<b>1</b>	<b>0.46179</b>	<b>9.99</b>	<b>39.44</b>	<b>30.60</b>	<b>49.43</b>	<b>40.59</b>	<b>56.66</b>
2	0.59183	10.00	30.37	20.90	40.37	30.90	56.00	46.00	-15.63	-15.10
3	0.95155	10.03	28.42	18.36	38.45	28.39	56.00	46.00	-17.55	-17.61
4	2.80880	10.19	29.61	20.34	39.80	30.53	56.00	46.00	-16.20	-15.47
5	4.43536	10.35	27.78	19.97	38.13	30.32	56.00	46.00	-17.87	-15.68
6	17.33836	10.93	23.32	15.29	34.25	26.22	60.00	50.00	-25.75	-23.78

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.

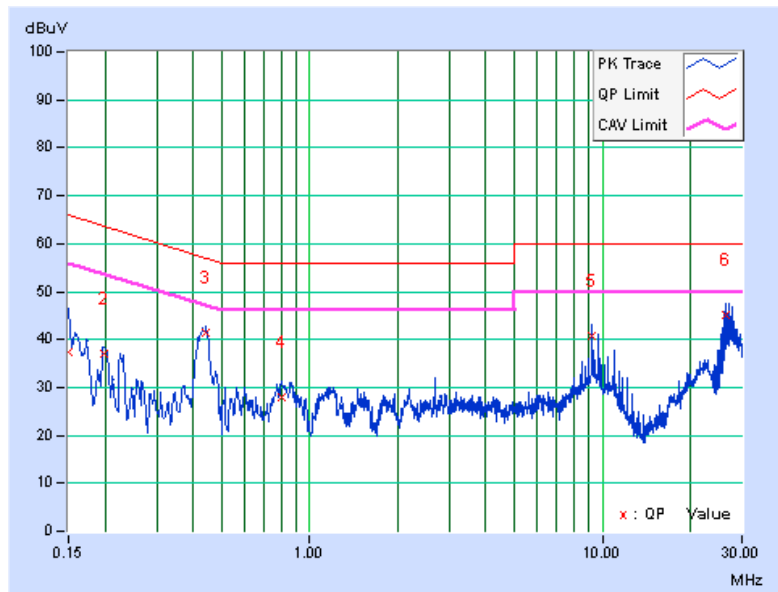


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	9.82	27.45	25.96	37.27	35.78	66.00
2	0.19717	9.84	27.12	17.04	36.96	26.88	63.73	53.73	-26.77	-26.85
3	0.44273	9.88	31.37	22.72	41.25	32.60	57.01	47.01	-15.76	-14.41
4	0.80307	9.91	18.13	9.90	28.04	19.81	56.00	46.00	-27.96	-26.19
5	9.23684	10.46	30.32	29.34	40.78	39.80	60.00	50.00	-19.22	-10.20
6	26.49558	11.33	33.73	31.50	45.06	42.83	60.00	50.00	-14.94	-7.17

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.

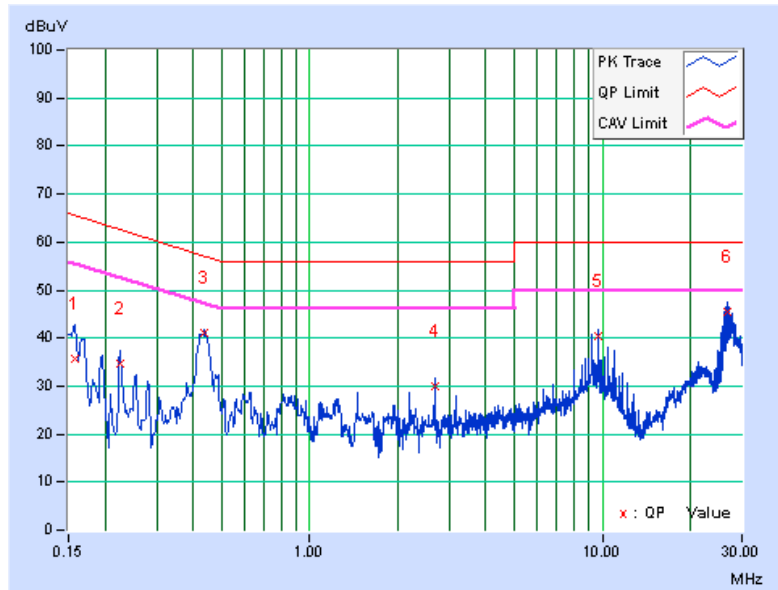


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15760	9.82	25.94	19.28	35.76	29.10	65.59
2	0.22429	9.84	24.97	19.15	34.81	28.99	62.66	52.66	-27.85	-23.67
3	0.43579	9.88	31.16	23.16	41.04	33.04	57.14	47.14	-16.10	-14.10
4	2.67195	10.04	19.77	18.24	29.81	28.28	56.00	46.00	-26.19	-17.72
5	9.72559	10.46	30.08	29.43	40.54	39.89	60.00	50.00	-19.46	-10.11
6	26.74582	11.08	34.42	33.02	45.50	44.10	60.00	50.00	-14.50	-5.90

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.

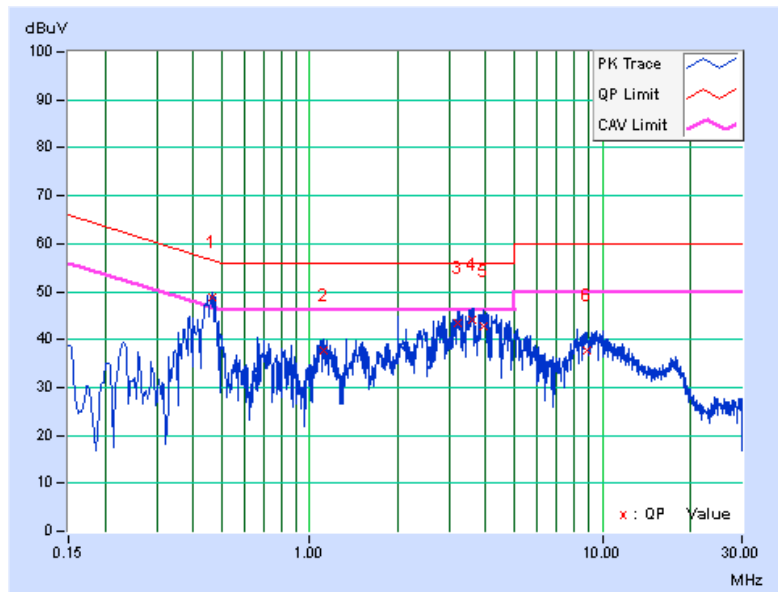


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.46280	9.91	39.03	27.03	48.94	36.94	56.64
2	1.11577	10.04	27.76	15.68	37.80	25.72	56.00	46.00	-18.20	-20.28
3	3.18807	10.15	33.29	22.72	43.44	32.87	56.00	46.00	-12.56	-13.13
4	3.60644	10.17	33.98	23.62	44.15	33.79	56.00	46.00	-11.85	-12.21
5	3.91142	10.19	32.68	21.29	42.87	31.48	56.00	46.00	-13.13	-14.52
6	8.83020	10.47	27.24	17.76	37.71	28.23	60.00	50.00	-22.29	-21.77

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.

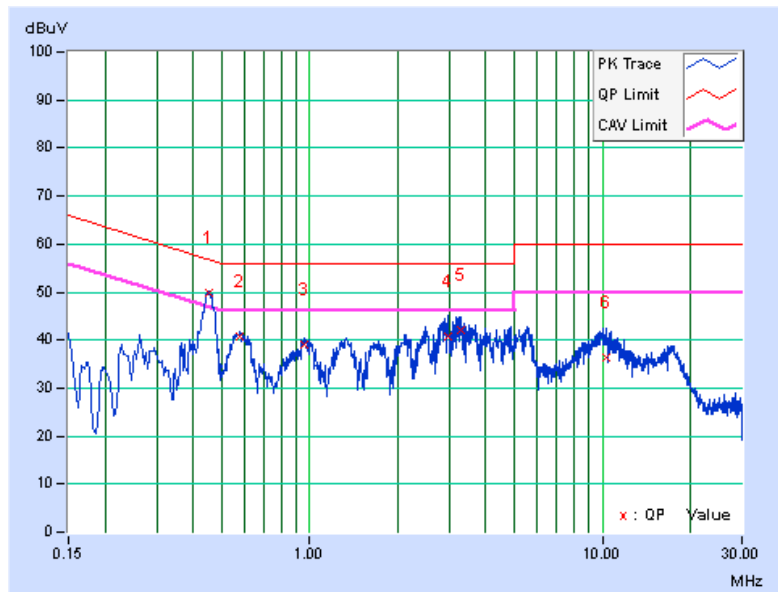


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.45097	9.99	39.82	30.64	49.81	40.63	56.86
2	0.58010	10.00	30.89	22.86	40.89	32.86	56.00	46.00	-15.11	-13.14
3	0.95937	10.03	28.99	19.21	39.02	29.24	56.00	46.00	-16.98	-16.76
4	2.96911	10.21	30.53	20.51	40.74	30.72	56.00	46.00	-15.26	-15.28
5	3.27800	10.24	31.88	22.94	42.12	33.18	56.00	46.00	-13.88	-12.82
6	10.25735	10.60	25.83	15.42	36.43	26.02	60.00	50.00	-23.57	-23.98

Remarks:

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

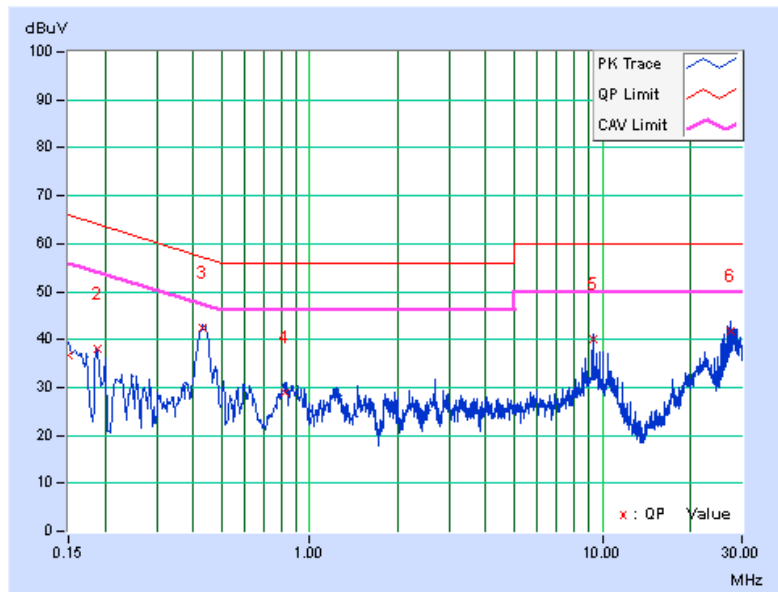


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	9.82	26.85	25.88	36.67	35.70	66.00
2	0.18910	9.84	28.15	16.31	37.99	26.15	64.08	54.08	-26.09	-27.93
3	0.43122	9.88	32.44	25.42	42.32	35.30	57.23	47.23	-14.91	-11.93
4	0.81802	9.91	18.96	11.76	28.87	21.67	56.00	46.00	-27.13	-24.33
5	9.27594	10.46	29.70	28.49	40.16	38.95	60.00	50.00	-19.84	-11.05
6	27.34014	11.36	30.47	28.44	41.83	39.80	60.00	50.00	-18.17	-10.20

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.

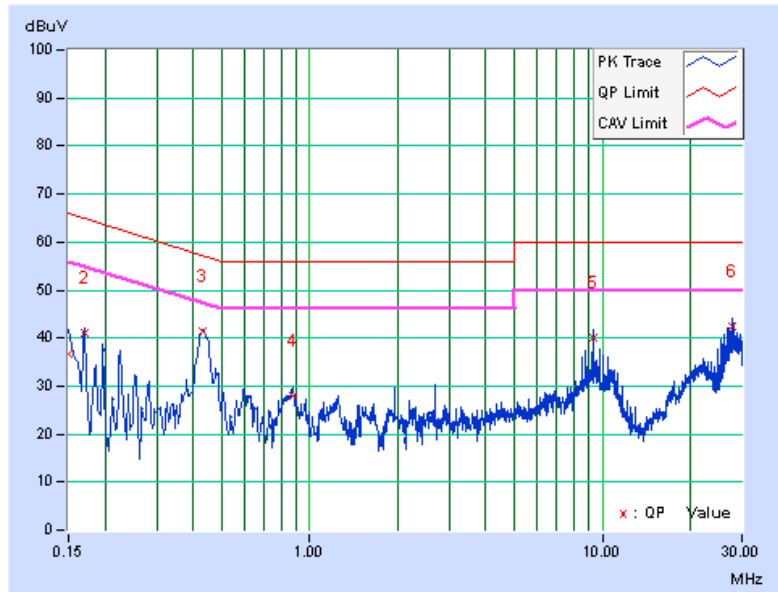


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	9.82	26.78	25.91	36.60	35.73	66.00
2	0.16955	9.82	31.31	20.68	41.13	30.50	64.98	54.98	-23.85	-24.48
3	0.43122	9.88	31.50	24.54	41.38	34.42	57.23	47.23	-15.85	-12.81
4	0.87335	9.92	17.97	10.50	27.89	20.42	56.00	46.00	-28.11	-25.58
5	9.27594	10.44	29.63	28.49	40.07	38.93	60.00	50.00	-19.93	-11.07
6	27.82498	11.10	31.38	29.53	42.48	40.63	60.00	50.00	-17.52	-9.37

Remarks:

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





### 4.3 Transmit Power Measurement

#### 4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

\*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

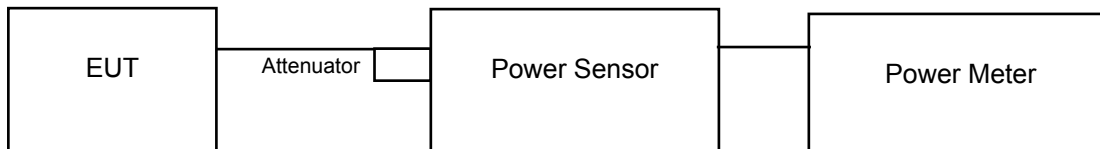
Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \leq 4$ ;

Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

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

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

#### 4.3.2 Test Setup



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

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

### 4.3.7 Test Result

#### Power Output:

#### 802.11a

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	16.69	17.55	103.551	20.15	30.00	Pass
40	5200	17.85	17.84	121.768	20.86	30.00	Pass
48	5240	16.57	17.89	106.912	20.29	30.00	Pass
149	5745	14.05	13.36	47.087	16.73	30.00	Pass
157	5785	15.76	15.60	73.978	18.69	30.00	Pass
165	5825	14.76	14.77	59.915	17.78	30.00	Pass

#### 802.11n (HT20)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	16.32	17.16	94.855	19.77	30.00	Pass
40	5200	17.66	17.97	121.006	20.83	30.00	Pass
48	5240	16.98	18.12	114.751	20.60	30.00	Pass
149	5745	13.16	12.05	36.733	15.65	30.00	Pass
157	5785	17.45	17.16	<b>107.590</b>	20.32	30.00	Pass
165	5825	14.74	14.75	59.639	17.76	30.00	Pass

#### 802.11n (HT40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	12.33	12.86	36.420	15.61	30.00	Pass
46	5230	17.48	18.64	<b>129.090</b>	21.11	30.00	Pass
151	5755	11.03	10.11	22.934	13.60	30.00	Pass
159	5795	15.23	15.10	65.702	18.18	30.00	Pass

**26dB Bandwidth:**
**802.11a**

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
36	5180	24.11	23.88	Pass
40	5200	24.15	24.76	Pass
48	5240	24.32	22.89	Pass

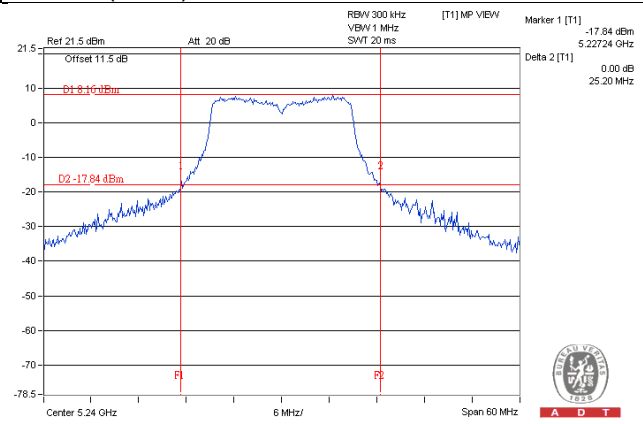
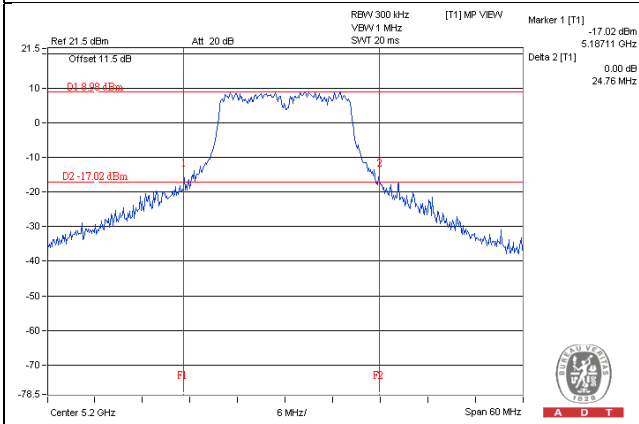
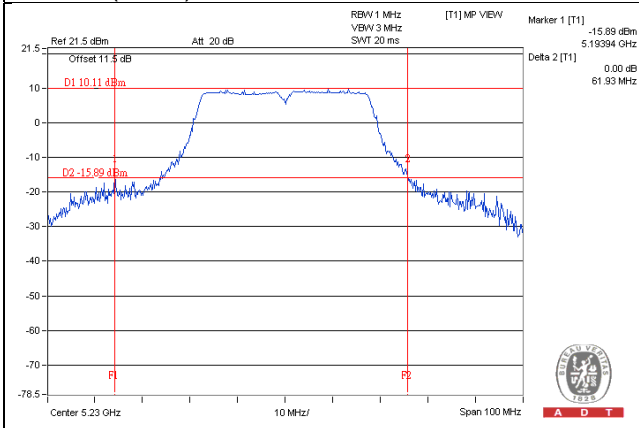
**802.11n (HT20)**

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
36	5180	24.75	24.61	Pass
40	5200	24.75	24.74	Pass
48	5240	24.57	25.20	Pass

**802.11n (HT40)**

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)		Pass / Fail
		Chain 0	Chain 1	
38	5190	52.59	51.37	Pass
46	5230	61.93	53.98	Pass

### Spectrum Plot of Worst Value

**802.11a****802.11n (HT20)****802.11n (HT40)**

**Occupied Bandwidth:**
**802.11a**

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.16	16.80
40	5200	17.04	16.92
48	5240	17.16	16.80
149	5745	17.04	16.78
157	5785	17.16	17.04
165	5825	17.16	16.92

**802.11n (HT20)**

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.12	17.88
40	5200	18.12	17.88
48	5240	18.12	18.36
149	5745	18.36	18.24
157	5785	19.68	18.48
165	5825	18.12	18.00

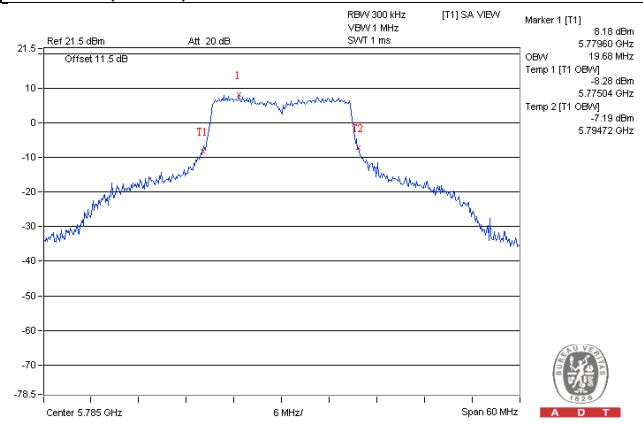
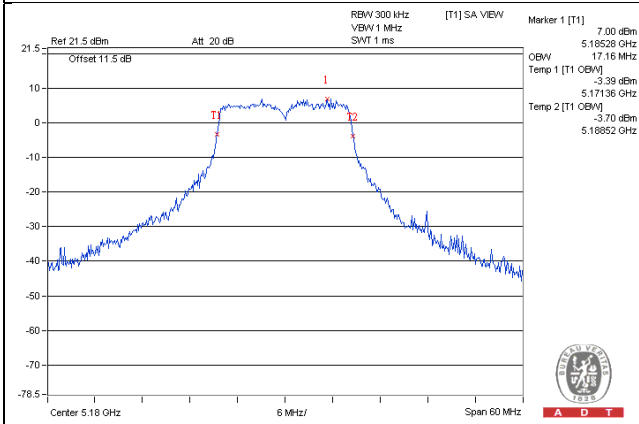
**802.11n (HT40)**

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.56	37.68
46	5230	37.92	37.20
151	5755	37.56	37.68
159	5795	37.80	37.56

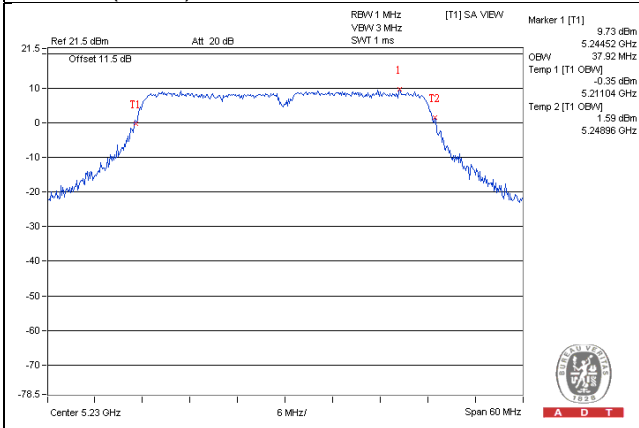
### Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)

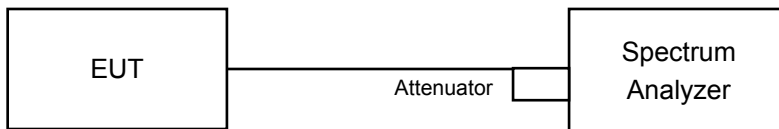


## 4.4 Peak Power Spectral Density Measurement

### 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	11dBm/ MHz
		Mobile and Portable client device	
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 band:

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 band:

- 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 Band

802.11a

Channel	Channel Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.89	5.45	7.04	15.99	Pass
40	5200	2.34	4.63	6.64	15.99	Pass
48	5240	2.22	4.47	6.50	15.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $4\text{dBi} + 10\log(2) = 7.01\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $17-(7.01-6) = 15.99\text{dBm}$ .

802.11n (HT20)

Channel	Channel Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.82	3.60	5.81	15.99	Pass
40	5200	1.77	3.61	5.80	15.99	Pass
48	5240	2.03	3.47	5.82	15.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $4\text{dBi} + 10\log(2) = 7.01\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $17-(7.01-6) = 15.99\text{dBm}$ .

802.11n (HT40)

Channel	Channel Frequency (MHz)	PSD (dBm)		Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
38	5190	-6.04	-4.08	-1.94	15.99	Pass
46	5230	-0.89	1.73	3.63	15.99	Pass

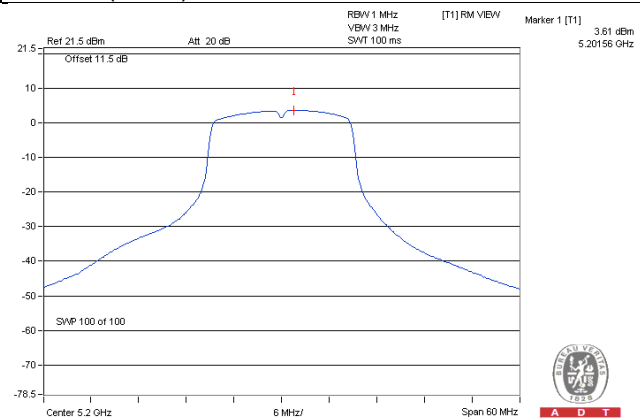
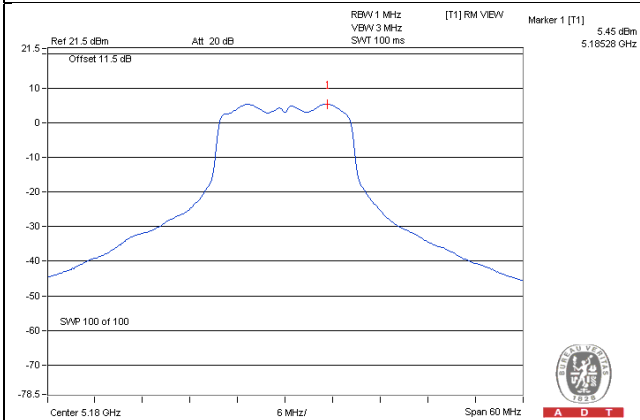
Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain =  $4\text{dBi} + 10\log(2) = 7.01\text{dBi} > 6\text{dBi}$  , so the power density limit shall be reduced to  $17-(7.01-6) = 15.99\text{dBm}$ .

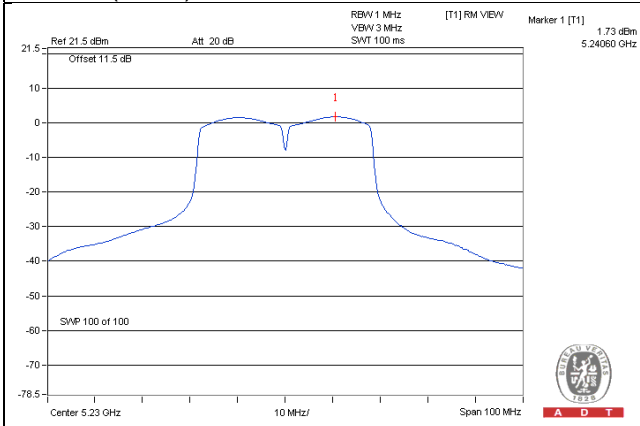
### Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)



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

TX chain	Channel	Channel Frequency (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	149	5745	-8.04	-5.82	3.01	-2.81	28.99	Pass
	157	5785	-6.08	-3.86	3.01	-0.85	28.99	Pass
	165	5825	-6.44	-4.22	3.01	-1.21	28.99	Pass
1	149	5745	-8.09	-5.87	3.01	-2.86	28.99	Pass
	157	5785	-6.47	-4.25	3.01	-1.24	28.99	Pass
	165	5825	-7.45	-5.23	3.01	-2.22	28.99	Pass

**Note:**

- Method 1 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 = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 30-(7.01-6) = 28.99dBm.

**802.11n (HT20)**

TX chain	Channel	Channel Frequency (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	149	5745	-9.72	-7.50	3.01	-4.49	28.99	Pass
	157	5785	-4.93	-2.71	3.01	0.30	28.99	Pass
	165	5825	-7.13	-4.91	3.01	-1.90	28.99	Pass
1	149	5745	-9.80	-7.58	3.01	-4.57	28.99	Pass
	157	5785	-4.93	-2.71	3.01	0.30	28.99	Pass
	165	5825	-7.51	-5.29	3.01	-2.28	28.99	Pass

**Note:**

- Method 1 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 = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 30-(7.01-6) = 28.99dBm.

**802.11n (HT40)**

TX chain	Channel	Channel Frequency (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=2) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
0	151	5755	-14.40	-12.18	3.01	-9.17	28.99	Pass
	159	5795	-9.49	-7.27	3.01	-4.26	28.99	Pass
1	151	5755	-15.16	-12.94	3.01	-9.93	28.99	Pass
	159	5795	-9.91	-7.69	3.01	-4.68	28.99	Pass

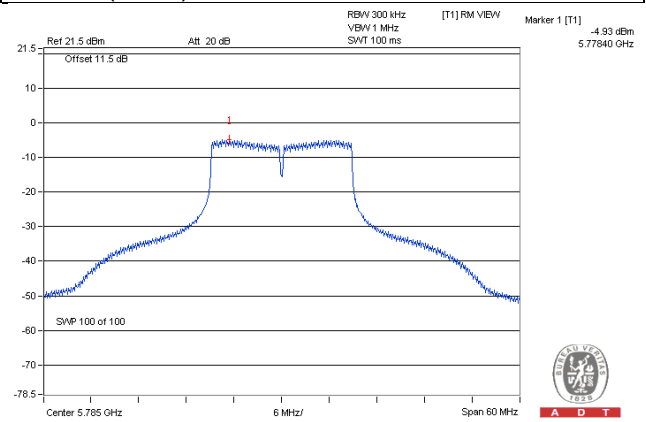
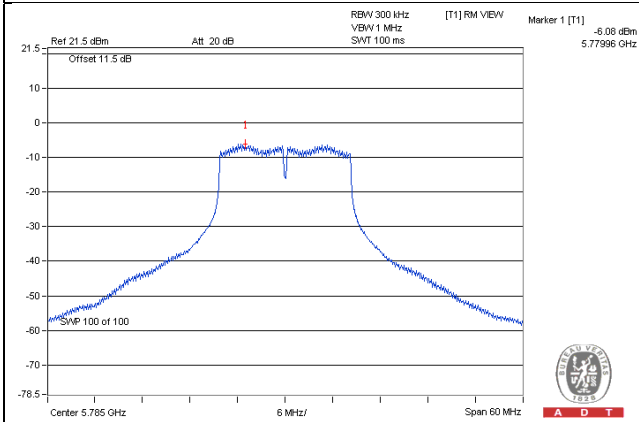
**Note:**

- Method 1 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 = 4dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 30-(7.01-6) = 28.99dBm.

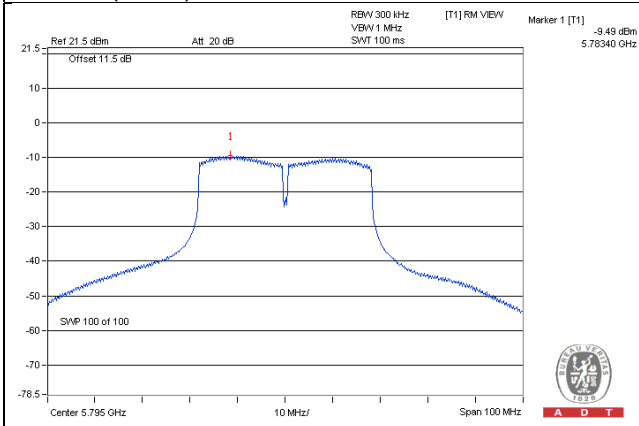
## Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)

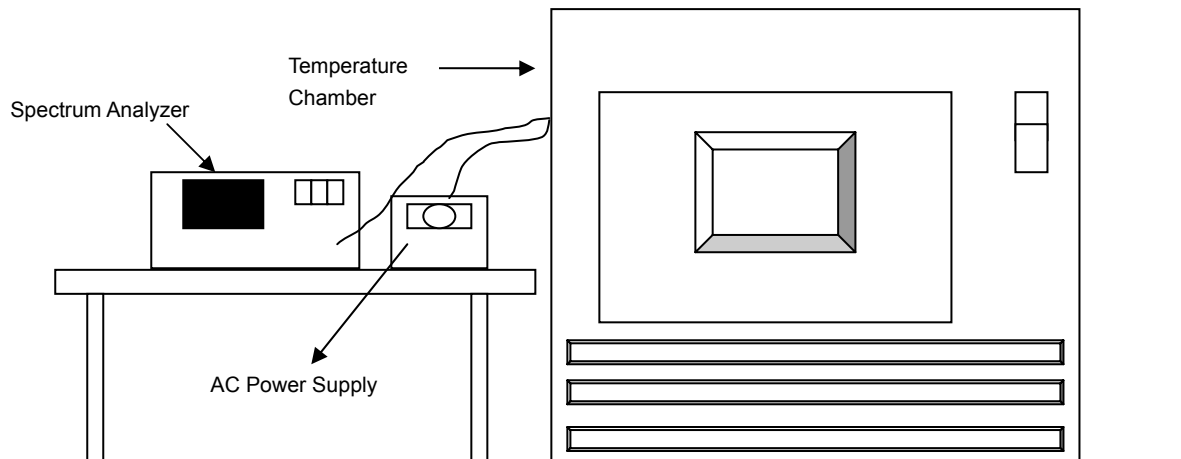


## 4.5 Frequency Stability

### 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 Procedure

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

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

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

#### 4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
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 (%)
55	120	5180.0143	0.00028	5180.0128	0.00025	5180.0123	0.00024	5180.0116	0.00022
50	120	5179.9798	-0.00039	5179.9773	-0.00044	5179.9783	-0.00042	5179.9791	-0.00040
40	120	5179.9819	-0.00035	5179.983	-0.00033	5179.9849	-0.00029	5179.9859	-0.00027
30	120	5180.0147	0.00028	5180.0182	0.00035	5180.0148	0.00029	5180.0162	0.00031
20	120	5179.9978	-0.00004	5179.9964	-0.00007	5179.9985	-0.00003	5179.997	-0.00006
10	120	5180.0096	0.00019	5180.0103	0.00020	5180.0089	0.00017	5180.0107	0.00021
0	120	5179.9787	-0.00041	5179.9798	-0.00039	5179.9784	-0.00042	5179.9778	-0.00043
-10	120	5180.0202	0.00039	5180.0161	0.00031	5180.0183	0.00035	5180.0184	0.00036
-20	120	5179.9925	-0.00014	5179.9922	-0.00015	5179.996	-0.00008	5179.995	-0.00010

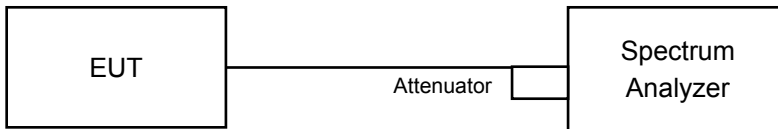
Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9971	-0.00006	5179.9973	-0.00005	5179.9982	-0.00003	5179.9968	-0.00006
	120	5179.9978	-0.00004	5179.9964	-0.00007	5179.9985	-0.00003	5179.997	-0.00006
	102	5179.9971	-0.00006	5179.9968	-0.00006	5179.9992	-0.00002	5179.9968	-0.00006

## 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 Procedure

#### MEASUREMENT PROCEDURE REF

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

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Condition

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

#### 4.6.7 Test Results

##### 802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.49	16.45	0.5	Pass
157	5785	16.50	16.58	0.5	Pass
165	5825	16.64	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	17.87	17.87	0.5	Pass
157	5785	17.90	17.86	0.5	Pass
165	5825	17.74	17.79	0.5	Pass

##### 802.11n (HT40)

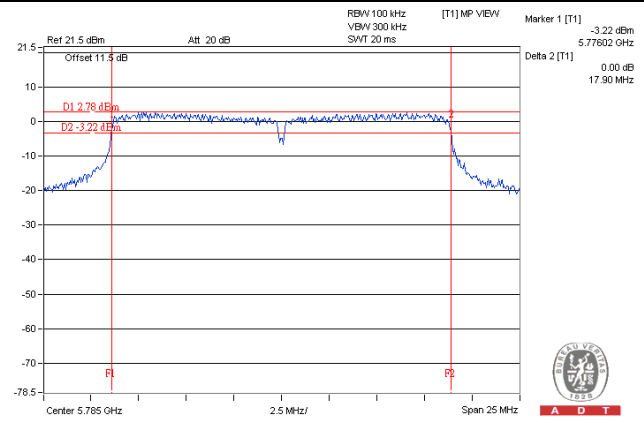
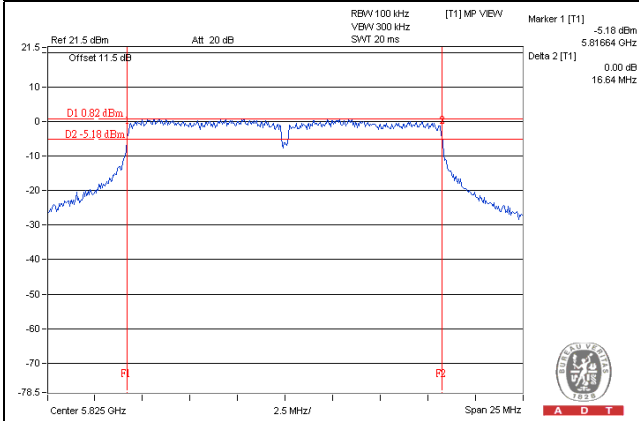
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.56	36.67	0.5	Pass
159	5795	36.56	36.55	0.5	Pass



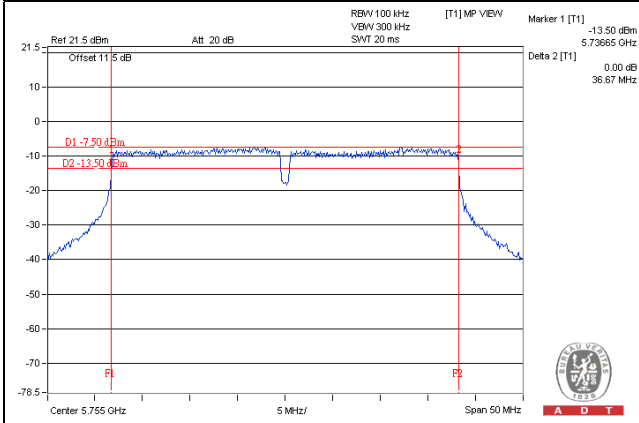
Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



802.11n (HT40)



## 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:

**Linko EMC/RF Lab**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF Lab/Telecom Lab**

Tel: 886-3-5935343

Fax: 886-3-5935342

**Hwa Ya EMC/RF/Safety**

Tel: 886-3-3183232

Fax: 886-3-3270892

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

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

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

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