

## FCC Test Report (WLAN)

**Report No.:** RF180529E06

**FCC ID:** N7NBX31A

**Test Model:** BX3100, BX3105

**Received Date:** May 29, 2018

**Test Date:** June 30 to July 03, 2018

**Issued Date:** July 19, 2018

**Applicant:** Sierra Wireless Inc.

**Address:** 13811 Wireless Way, Richmond, BC V6V 3A4, Canada

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

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

**FCC Registration /  
Designation Number:** 723255 / TW2022



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### Release Control Record

Issue No.	Description	Date Issued
RF180529E06	Original release.	July 19, 2018

## 1 Certificate of Conformity

**Product:** AirPrime BX310x module

**Brand:** Sierra Wireless Inc.

**Test Model:** BX3100, BX3105

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** Sierra Wireless Inc.

**Test Date:** June 30 to July 03, 2018

**Standards:** 47 CFR FCC Part 15, Subpart C (Section 15.247)  
ANSI C63.10: 2013

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

**Prepared by :** Wendy Wu , **Date:** July 19, 2018  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** July 19, 2018  
May Chen / Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	Test Item	Result	Remarks
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -16.41dB at 0.18125MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 2390.00MHz, 2483.50MHz.
15.247(d)	Antenna Port Emission	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is SMA. (The device is professionally installed)

### 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT (WLAN)

Product	AirPrime BX310x module
Brand	Sierra Wireless Inc.
Test Model	BX3100, BX3105
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 150Mbps
Operating Frequency	2.412 ~ 2.462GHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7
Output Power	182.81mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. There are WLAN and Bluetooth technology used for the EUT.
2. The EUT has below model as following table:

Model	Difference
BX3100	External Antenna
BX3105	Internal Antenna

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

#### For Model No.: BX3100

Ant No.	Brand	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector Type
1	RF Solutions	ANT-24G-S21	0	2.4~2.4835	Monopole	SMA
2	MobileMark	CVS-2400	2.5	2.4~2.4835	Dipole	SMA
3	GemWave	FSD_BL3404-50T	1.5	2.4~2.4835	Dipole	SMA
4	Molex	PS-47950-011-001	2.27	2.4~2.4835 5.15~5.85	Dipole	i-pex(MHF)
5	RF Solutions	ANT-24G-DPL-2	2.21	2.4~2.4835	Dipole	SMA

#### For Model No.: BX3105

Ant No.	Brand	Model	Antenna Net Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector Type
1	Sierra Wireless Inc.	BX3105	-1.65	2.4~2.4835	PIFA	NA

Note:

1. Max. gain was selected for Antenna Port Conducted Measurement test.

4. The EUT incorporates a SISO function.

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

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.



### 3.2 Description of Test Modes

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

### 3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE $<$ 1G	PLC	APCM	
1	√	√	-	-	With Monopole Antenna
2	√	√	√	√	With Dipole Antenna
3	√	√	-	-	With PIFA Antenna

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:

- The EUT's antenna (Monopole) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
- The EUT's antenna (Dipole) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
- The EUT's antenna (PIFA) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
- "-" means no effect.

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

#### **Power Line Conducted Emission Test:**

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

### Antenna Port Conducted Measurement:

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

### Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE $\geq$ 1G	21deg. C, 63%RH	120Vac, 60Hz	Eason Tseng
RE $<$ 1G	22deg. C, 69%RH	120Vac, 60Hz	Steven Chiang
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

### 3.3 Duty Cycle of Test Signal

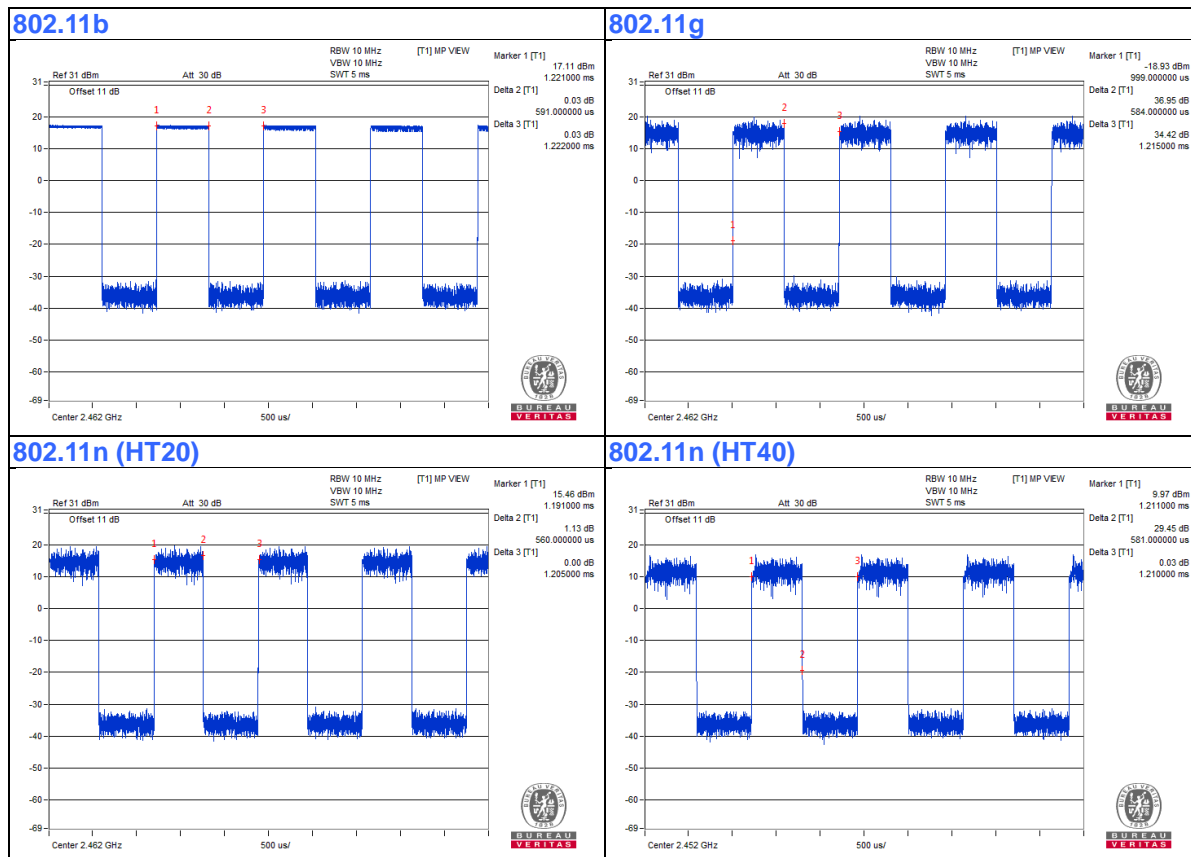
If duty cycle of test signal is < 98%, duty factor shall be considered.

**802.11b:** Duty cycle = 0.591/1.222 = 0.484, Duty factor =  $10 \cdot \log(1/0.484) = 3.15$

**802.11g:** Duty cycle = 0.584/1.215 = 0.481, Duty factor =  $10 \cdot \log(1/0.481) = 3.18$

**802.11n (HT20):** Duty cycle = 0.56/1.205 = 0.465, Duty factor =  $10 \cdot \log(1/0.465) = 3.33$

**802.11n (HT40):** Duty cycle = 0.581/1.21 = 0.48, Duty factor =  $10 \cdot \log(1/0.48) = 3.19$



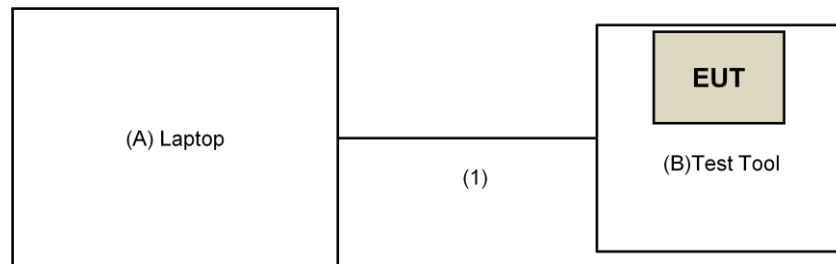
### 3.4 Description of Support Units

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.	Laptop	DELL	E6420	B92T3R1	FCCDoC	Provided by Lab
B.	Test Tool	NA	NA	NA	NA	Supplied by client

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1	Yes	0	Supplied by client

#### 3.4.1 Configuration of System under Test



### 3.5 General Description of Applied Standards

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

**FCC Part 15, Subpart C (15.247)**  
**KDB 558074 D01 DTS Meas Guidance v04**  
**ANSI C63.10-2013**

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

## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

#### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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.

## 4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
Pre-Amplifier EMCI	EMC001340	980142	Feb. 09, 2018	Feb. 08, 2019
Loop Antenna <sup>(*)</sup> Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 15, 2018	Jan. 14, 2019
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 09, 2017	Nov. 08, 2018
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 29, 2017	Nov. 28, 2018
RF Cable	8D	966-4-1 966-4-2 966-4-3	Mar. 21, 2018	Mar. 20, 2019
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 03, 2017	Oct. 02, 2018
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 12, 2017	Dec. 11, 2018
Pre-Amplifier EMCI	EMC12630SE	980385	Jan. 29, 2018	Jan. 28, 2019
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Jan. 29, 2018	Jan. 28, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 29, 2018	Jan. 28, 2019
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 14, 2017	Dec. 13, 2018
RF Cable	EMC102-KM-KM-1200	160925	Jan. 29, 2018	Jan. 28, 2019
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 20, 2018	June 19, 2019
Power meter Anritsu	ML2495A	1014008	May 09, 2018	May 08, 2019
Power sensor Anritsu	MA2411B	0917122	May 09, 2018	May 08, 2019

**Note:**

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. \*The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6. Tested Date: June 30 to July 03, 2018



#### 4.1.3 Test Procedures

##### **For Radiated emission below 30MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

##### **NOTE:**

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

##### **For Radiated emission above 30MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

##### **Note:**

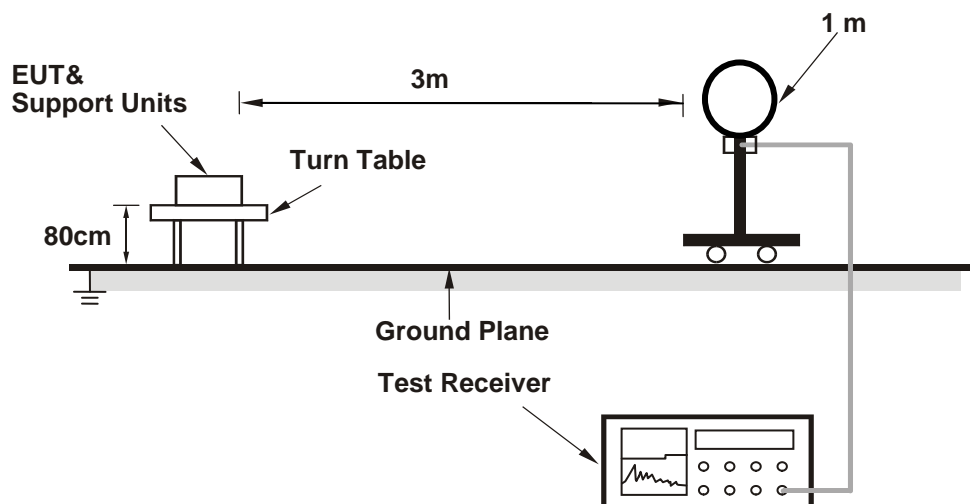
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

#### 4.1.4 Deviation from Test Standard

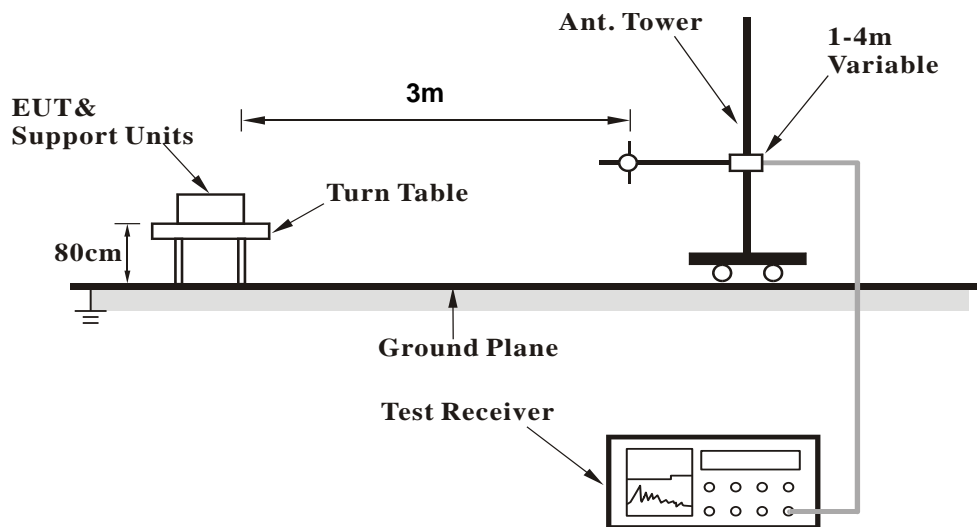
No deviation.

#### 4.1.5 Test Setup

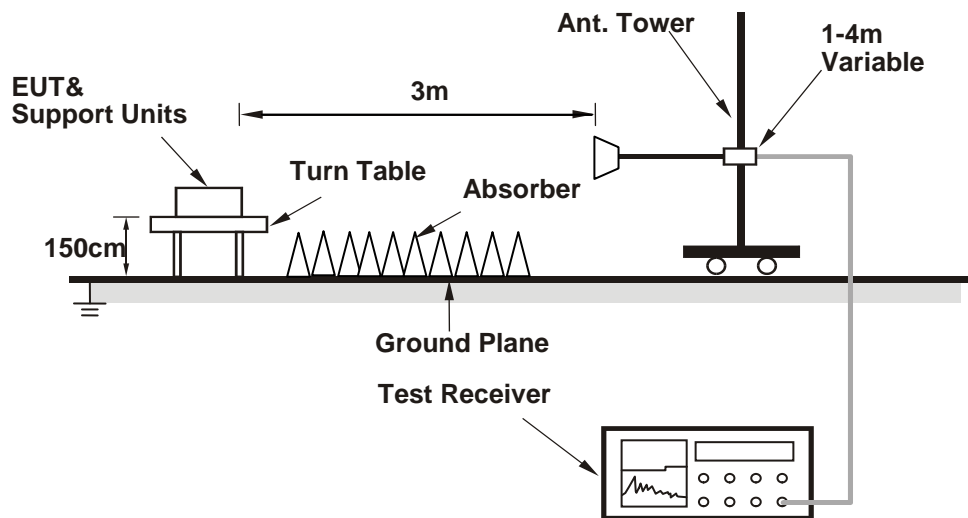
##### For Radiated emission below 30MHz



##### For Radiated emission 30MHz to 1GHz



### For Radiated emission above 1GHz



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

#### 4.1.6 EUT Operating Conditions

- a. Placed the EUT on the testing table.
- b. Controlling software (Tera term paste "BX3100\_Setup SOP" command) has been activated to set the EUT on specific status.

## 4.1.7 Test Results (Mode 1)

## Above 1GHz Data:

## 802.11b

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	55.8 PK	74.0	-18.2	1.11 H	68	58.0	-2.2
2	2390.00	45.8 AV	54.0	-8.2	1.11 H	68	48.0	-2.2
3	*2412.00	107.6 PK			1.18 H	68	110.0	-2.4
4	*2412.00	105.2 AV			1.18 H	68	107.6	-2.4
5	4824.00	46.5 PK	74.0	-27.5	1.65 H	67	44.7	1.8
6	4824.00	41.3 AV	54.0	-12.7	1.65 H	67	39.5	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	50.2 PK	74.0	-23.8	2.80 V	33	52.4	-2.2
2	2390.00	40.5 AV	54.0	-13.5	2.80 V	33	42.7	-2.2
3	*2412.00	103.4 PK			2.80 V	33	105.8	-2.4
4	*2412.00	101.1 AV			2.80 V	33	103.5	-2.4
5	4824.00	48.3 PK	74.0	-25.7	1.00 V	92	46.5	1.8
6	4824.00	43.0 AV	54.0	-11.0	1.00 V	92	41.2	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.5 PK			1.21 H	84	110.1	-2.6
2	*2437.00	105.1 AV			1.21 H	84	107.7	-2.6
3	4874.00	46.8 PK	74.0	-27.2	1.56 H	93	44.8	2.0
4	4874.00	41.7 AV	54.0	-12.3	1.56 H	93	39.7	2.0
5	7311.00	48.6 PK	74.0	-25.4	1.96 H	94	40.2	8.4
6	7311.00	35.7 AV	54.0	-18.3	1.96 H	94	27.3	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.8 PK			2.86 V	53	106.4	-2.6
2	*2437.00	101.4 AV			2.86 V	53	104.0	-2.6
3	4874.00	47.9 PK	74.0	-26.1	1.00 V	75	45.9	2.0
4	4874.00	42.8 AV	54.0	-11.2	1.00 V	75	40.8	2.0
5	7311.00	48.9 PK	74.0	-25.1	1.61 V	339	40.5	8.4
6	7311.00	37.1 AV	54.0	-16.9	1.61 V	339	28.7	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.2 PK			1.17 H	76	109.8	-2.6
2	*2462.00	104.7 AV			1.17 H	76	107.3	-2.6
3	2483.50	55.4 PK	74.0	-18.6	1.17 H	76	57.8	-2.4
4	2483.50	45.5 AV	54.0	-8.5	1.17 H	76	47.9	-2.4
5	4924.00	47.0 PK	74.0	-27.0	1.62 H	80	45.0	2.0
6	4924.00	41.6 AV	54.0	-12.4	1.62 H	80	39.6	2.0
7	7386.00	49.2 PK	74.0	-24.8	2.00 H	85	40.6	8.6
8	7386.00	36.0 AV	54.0	-18.0	2.00 H	85	27.4	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.5 PK			2.86 V	44	106.1	-2.6
2	*2462.00	101.1 AV			2.86 V	44	103.7	-2.6
3	2483.50	50.2 PK	74.0	-23.8	2.86 V	44	52.6	-2.4
4	2483.50	40.4 AV	54.0	-13.6	2.86 V	44	42.8	-2.4
5	4924.00	48.2 PK	74.0	-25.8	1.00 V	84	46.2	2.0
6	4924.00	43.0 AV	54.0	-11.0	1.00 V	84	41.0	2.0
7	7386.00	49.3 PK	74.0	-24.7	1.65 V	324	40.7	8.6
8	7386.00	37.2 AV	54.0	-16.8	1.65 V	324	28.6	8.6

**REMARKS:**

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

**802.11g**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.0 PK	74.0	-1.0	1.23 H	65	75.2	-2.2
2	2390.00	53.3 AV	54.0	-0.7	1.23 H	65	55.5	-2.2
3	*2412.00	108.5 PK			1.23 H	65	110.9	-2.4
4	*2412.00	99.7 AV			1.23 H	65	102.1	-2.4
5	4824.00	42.0 PK	74.0	-32.0	1.41 H	288	40.2	1.8
6	4824.00	30.1 AV	54.0	-23.9	1.41 H	288	28.3	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.6 PK	74.0	-8.4	2.84 V	25	67.8	-2.2
2	2390.00	48.3 AV	54.0	-5.7	2.84 V	25	50.5	-2.2
3	*2412.00	105.4 PK			2.84 V	25	107.8	-2.4
4	*2412.00	96.5 AV			2.84 V	25	98.9	-2.4
5	4824.00	40.9 PK	74.0	-33.1	1.09 V	95	39.1	1.8
6	4824.00	29.2 AV	54.0	-24.8	1.09 V	95	27.4	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.7 PK			1.27 H	81	111.3	-2.6
2	*2437.00	99.8 AV			1.27 H	81	102.4	-2.6
3	4874.00	41.2 PK	74.0	-32.8	1.47 H	276	39.2	2.0
4	4874.00	29.6 AV	54.0	-24.4	1.47 H	276	27.6	2.0
5	7311.00	42.2 PK	74.0	-31.8	1.55 H	257	33.8	8.4
6	7311.00	30.2 AV	54.0	-23.8	1.55 H	257	21.8	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.5 PK			2.80 V	23	107.1	-2.6
2	*2437.00	96.0 AV			2.80 V	23	98.6	-2.6
3	4874.00	41.0 PK	74.0	-33.0	1.05 V	96	39.0	2.0
4	4874.00	29.3 AV	54.0	-24.7	1.05 V	96	27.3	2.0
5	7311.00	41.8 PK	74.0	-32.2	1.65 V	337	33.4	8.4
6	7311.00	30.0 AV	54.0	-24.0	1.65 V	337	21.6	8.4

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.6 PK			1.23 H	80	111.2	-2.6
2	*2462.00	99.5 AV			1.23 H	80	102.1	-2.6
3	2483.50	71.8 PK	74.0	-2.2	1.23 H	80	74.2	-2.4
<b>4</b>	<b>2483.50</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.23 H</b>	<b>80</b>	<b>56.3</b>	<b>-2.4</b>
5	4924.00	41.8 PK	74.0	-32.2	1.46 H	270	39.8	2.0
6	4924.00	29.9 AV	54.0	-24.1	1.46 H	270	27.9	2.0
7	7386.00	42.0 PK	74.0	-32.0	1.56 H	273	33.4	8.6
8	7386.00	29.8 AV	54.0	-24.2	1.56 H	273	21.2	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.8 PK			2.87 V	48	107.4	-2.6
2	*2462.00	96.2 AV			2.87 V	48	98.8	-2.6
3	2483.50	65.4 PK	74.0	-8.6	2.87 V	48	67.8	-2.4
4	2483.50	48.4 AV	54.0	-5.6	2.87 V	48	50.8	-2.4
5	4924.00	41.0 PK	74.0	-33.0	1.11 V	104	39.0	2.0
6	4924.00	29.4 AV	54.0	-24.6	1.11 V	104	27.4	2.0
7	7386.00	41.3 PK	74.0	-32.7	1.61 V	332	32.7	8.6
8	7386.00	29.5 AV	54.0	-24.5	1.61 V	332	20.9	8.6

**REMARKS:**

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

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.1 PK	74.0	-3.9	1.24 H	64	72.3	-2.2
2	2390.00	53.8 AV	54.0	-0.2	1.24 H	64	56.0	-2.2
3	*2412.00	107.8 PK			1.24 H	64	110.2	-2.4
4	*2412.00	99.1 AV			1.24 H	64	101.5	-2.4
5	4824.00	41.4 PK	74.0	-32.6	1.47 H	270	39.6	1.8
6	4824.00	30.1 AV	54.0	-23.9	1.47 H	270	28.3	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.0 PK	74.0	-8.0	2.85 V	38	68.2	-2.2
2	2390.00	48.5 AV	54.0	-5.5	2.85 V	38	50.7	-2.2
3	*2412.00	105.1 PK			2.85 V	38	107.5	-2.4
4	*2412.00	96.3 AV			2.85 V	38	98.7	-2.4
5	4824.00	41.2 PK	74.0	-32.8	1.03 V	86	39.4	1.8
6	4824.00	29.2 AV	54.0	-24.8	1.03 V	86	27.4	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.6 PK			1.47 H	63	110.2	-2.6
2	*2437.00	99.2 AV			1.47 H	63	101.8	-2.6
3	4874.00	41.6 PK	74.0	-32.4	1.50 H	265	39.6	2.0
4	4874.00	29.9 AV	54.0	-24.1	1.50 H	265	27.9	2.0
5	7311.00	42.6 PK	74.0	-31.4	1.54 H	265	34.2	8.4
6	7311.00	30.4 AV	54.0	-23.6	1.54 H	265	22.0	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.0 PK			2.91 V	33	107.6	-2.6
2	*2437.00	96.1 AV			2.91 V	33	98.7	-2.6
3	4874.00	40.9 PK	74.0	-33.1	1.07 V	83	38.9	2.0
4	4874.00	29.5 AV	54.0	-24.5	1.07 V	83	27.5	2.0
5	7311.00	42.0 PK	74.0	-32.0	1.63 V	332	33.6	8.4
6	7311.00	30.4 AV	54.0	-23.6	1.63 V	332	22.0	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.6 PK			1.24 H	79	110.2	-2.6
2	*2462.00	99.1 AV			1.24 H	79	101.7	-2.6
3	2483.50	73.6 PK	74.0	-0.4	1.24 H	79	76.0	-2.4
<b>4</b>	<b>2483.50</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.24 H</b>	<b>79</b>	<b>56.3</b>	<b>-2.4</b>
5	4924.00	41.1 PK	74.0	-32.9	1.42 H	268	39.1	2.0
6	4924.00	29.7 AV	54.0	-24.3	1.42 H	268	27.7	2.0
7	7386.00	42.0 PK	74.0	-32.0	1.49 H	249	33.4	8.6
8	7386.00	29.8 AV	54.0	-24.2	1.49 H	249	21.2	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	105.3 PK			2.87 V	23	107.9	-2.6
2	*2462.00	96.2 AV			2.87 V	23	98.8	-2.6
3	2483.50	65.3 PK	74.0	-8.7	2.87 V	23	67.7	-2.4
4	2483.50	48.3 AV	54.0	-5.7	2.87 V	23	50.7	-2.4
5	4924.00	40.7 PK	74.0	-33.3	1.10 V	110	38.7	2.0
6	4924.00	29.2 AV	54.0	-24.8	1.10 V	110	27.2	2.0
7	7386.00	42.1 PK	74.0	-31.9	1.67 V	327	33.5	8.6
8	7386.00	30.0 AV	54.0	-24.0	1.67 V	327	21.4	8.6

**REMARKS:**

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

**802.11n (HT40)**

<b>CHANNEL</b>	TX Channel 3	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	72.1 PK	74.0	-1.9	1.23 H	66	74.3	-2.2
2	<b>2390.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.23 H</b>	<b>66</b>	<b>56.1</b>	<b>-2.2</b>
3	*2422.00	103.8 PK			1.23 H	66	106.3	-2.5
4	*2422.00	95.0 AV			1.23 H	66	97.5	-2.5
5	4844.00	40.8 PK	74.0	-33.2	1.49 H	277	39.0	1.8
6	4844.00	29.3 AV	54.0	-24.7	1.49 H	277	27.5	1.8
7	7266.00	42.4 PK	74.0	-31.6	1.60 H	250	34.2	8.2
8	7266.00	30.3 AV	54.0	-23.7	1.60 H	250	22.1	8.2

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	65.7 PK	74.0	-8.3	2.96 V	18	67.9	-2.2
2	2390.00	48.5 AV	54.0	-5.5	2.96 V	18	50.7	-2.2
3	*2422.00	101.5 PK			2.96 V	18	104.0	-2.5
4	*2422.00	92.2 AV			2.96 V	18	94.7	-2.5
5	4844.00	41.7 PK	74.0	-32.3	1.01 V	109	39.9	1.8
6	4844.00	29.7 AV	54.0	-24.3	1.01 V	109	27.9	1.8
7	7266.00	41.6 PK	74.0	-32.4	1.67 V	332	33.4	8.2
8	7266.00	30.0 AV	54.0	-24.0	1.67 V	332	21.8	8.2

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.8 PK	74.0	-10.2	1.24 H	79	66.0	-2.2
2	2390.00	48.2 AV	54.0	-5.8	1.24 H	79	50.4	-2.2
3	*2437.00	105.2 PK			1.24 H	79	107.8	-2.6
4	*2437.00	96.0 AV			1.24 H	79	98.6	-2.6
5	2483.50	68.4 PK	74.0	-5.6	1.24 H	79	70.8	-2.4
6	2483.50	51.8 AV	54.0	-2.2	1.24 H	79	54.2	-2.4
7	4874.00	40.7 PK	74.0	-33.3	1.53 H	271	38.7	2.0
8	4874.00	29.3 AV	54.0	-24.7	1.53 H	271	27.3	2.0
9	7311.00	42.4 PK	74.0	-31.6	1.51 H	273	34.0	8.4
10	7311.00	30.5 AV	54.0	-23.5	1.51 H	273	22.1	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	60.2 PK	74.0	-13.8	2.90 V	27	62.4	-2.2
2	2390.00	42.8 AV	54.0	-11.2	2.90 V	27	45.0	-2.2
3	*2437.00	101.1 PK			2.90 V	27	103.7	-2.6
4	*2437.00	92.0 AV			2.90 V	27	94.6	-2.6
5	2483.50	63.2 PK	74.0	-10.8	2.90 V	27	65.6	-2.4
6	2483.50	46.1 AV	54.0	-7.9	2.90 V	27	48.5	-2.4
7	4874.00	41.5 PK	74.0	-32.5	1.09 V	109	39.5	2.0
8	4874.00	29.5 AV	54.0	-24.5	1.09 V	109	27.5	2.0
9	7311.00	42.2 PK	74.0	-31.8	1.68 V	336	33.8	8.4
10	7311.00	30.3 AV	54.0	-23.7	1.68 V	336	21.9	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	104.1 PK			1.23 H	80	106.7	-2.6
2	*2452.00	95.1 AV			1.23 H	80	97.7	-2.6
3	2483.50	72.3 PK	74.0	-1.7	1.23 H	80	74.7	-2.4
<b>4</b>	<b>2483.50</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.23 H</b>	<b>80</b>	<b>56.3</b>	<b>-2.4</b>
5	4904.00	40.9 PK	74.0	-33.1	1.42 H	266	38.9	2.0
6	4904.00	29.1 AV	54.0	-24.9	1.42 H	266	27.1	2.0
7	7356.00	42.4 PK	74.0	-31.6	1.57 H	264	33.8	8.6
8	7356.00	30.2 AV	54.0	-23.8	1.57 H	264	21.6	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	101.4 PK			2.90 V	32	104.0	-2.6
2	*2452.00	91.8 AV			2.90 V	32	94.4	-2.6
3	2483.50	65.4 PK	74.0	-8.6	2.90 V	32	67.8	-2.4
4	2483.50	48.4 AV	54.0	-5.6	2.90 V	32	50.8	-2.4
5	4904.00	40.6 PK	74.0	-33.4	1.08 V	92	38.6	2.0
6	4904.00	29.0 AV	54.0	-25.0	1.08 V	92	27.0	2.0
7	7356.00	41.3 PK	74.0	-32.7	1.60 V	325	32.7	8.6
8	7356.00	29.5 AV	54.0	-24.5	1.60 V	325	20.9	8.6

**REMARKS:**

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

**Below 1GHz Data:**

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9kHz ~ 1GHz		

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	68.22	30.2 QP	40.0	-9.8	2.00 H	157	39.4	-9.2
2	225.02	35.4 QP	46.0	-10.6	1.00 H	77	46.6	-11.2
3	270.95	28.1 QP	46.0	-17.9	1.50 H	278	36.1	-8.0
4	514.88	29.1 QP	46.0	-16.9	1.50 H	273	30.4	-1.3
5	781.97	32.2 QP	46.0	-13.8	1.00 H	0	28.5	3.7
6	957.20	34.4 QP	46.0	-11.6	1.50 H	314	28.3	6.1

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	68.22	33.1 QP	40.0	-6.9	1.50 V	238	42.3	-9.2
2	155.37	30.0 QP	43.5	-13.5	1.00 V	360	37.5	-7.5
3	227.40	29.2 QP	46.0	-16.8	1.50 V	267	40.1	-10.9
4	280.31	29.6 QP	46.0	-16.4	2.00 V	352	37.2	-7.6
5	509.25	28.6 QP	46.0	-17.4	2.00 V	105	30.1	-1.5
6	942.77	34.0 QP	46.0	-12.0	1.50 V	265	27.8	6.2

**REMARKS:**

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



## 4.1.8 Test Results (Mode 2)

## Above 1GHz Data:

## 802.11b

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.7 PK	74.0	-19.3	1.51 H	343	56.9	-2.2
2	2390.00	43.5 AV	54.0	-10.5	1.51 H	343	45.7	-2.2
3	*2412.00	103.4 PK			1.51 H	343	105.8	-2.4
4	*2412.00	100.8 AV			1.51 H	343	103.2	-2.4
5	4824.00	46.7 PK	74.0	-27.3	1.42 H	360	44.9	1.8
6	4824.00	35.0 AV	54.0	-19.0	1.42 H	360	33.2	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	51.1 PK	74.0	-22.9	1.44 V	56	53.3	-2.2
2	2390.00	39.4 AV	54.0	-14.6	1.44 V	56	41.6	-2.2
3	*2412.00	99.7 PK			1.44 V	56	102.1	-2.4
4	*2412.00	96.9 AV			1.44 V	56	99.3	-2.4
5	4824.00	46.8 PK	74.0	-27.2	1.47 V	288	45.0	1.8
6	4824.00	36.2 AV	54.0	-17.8	1.47 V	288	34.4	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.2 PK			1.27 H	17	105.8	-2.6
2	*2437.00	100.6 AV			1.27 H	17	103.2	-2.6
3	4874.00	46.3 PK	74.0	-27.7	1.49 H	347	44.3	2.0
4	4874.00	35.1 AV	54.0	-18.9	1.49 H	347	33.1	2.0
5	7311.00	42.2 PK	74.0	-31.8	2.79 H	36	33.8	8.4
6	7311.00	29.7 AV	54.0	-24.3	2.79 H	36	21.3	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	99.9 PK			1.41 V	51	102.5	-2.6
2	*2437.00	97.6 AV			1.41 V	51	100.2	-2.6
3	4874.00	47.0 PK	74.0	-27.0	1.49 V	279	45.0	2.0
4	4874.00	36.3 AV	54.0	-17.7	1.49 V	279	34.3	2.0
5	7311.00	42.4 PK	74.0	-31.6	1.56 V	237	34.0	8.4
6	7311.00	30.5 AV	54.0	-23.5	1.56 V	237	22.1	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.8 PK			1.38 H	15	105.4	-2.6
2	*2462.00	100.3 AV			1.38 H	15	102.9	-2.6
3	2483.50	54.9 PK	74.0	-19.1	1.38 H	15	57.3	-2.4
4	2483.50	43.8 AV	54.0	-10.2	1.38 H	15	46.2	-2.4
5	4924.00	46.7 PK	74.0	-27.3	1.47 H	359	44.7	2.0
6	4924.00	35.2 AV	54.0	-18.8	1.47 H	359	33.2	2.0
7	7386.00	41.8 PK	74.0	-32.2	2.81 H	42	33.2	8.6
8	7386.00	29.6 AV	54.0	-24.4	2.81 H	42	21.0	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.9 PK			1.43 V	60	102.5	-2.6
2	*2462.00	97.3 AV			1.43 V	60	99.9	-2.6
3	2483.50	51.2 PK	74.0	-22.8	1.43 V	60	53.6	-2.4
4	2483.50	39.3 AV	54.0	-14.7	1.43 V	60	41.7	-2.4
5	4924.00	47.3 PK	74.0	-26.7	1.49 V	276	45.3	2.0
6	4924.00	36.5 AV	54.0	-17.5	1.49 V	276	34.5	2.0
7	7386.00	42.6 PK	74.0	-31.4	1.58 V	241	34.0	8.6
8	7386.00	30.5 AV	54.0	-23.5	1.58 V	241	21.9	8.6

**REMARKS:**

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

**802.11g**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.4 PK	74.0	-7.6	1.44 H	15	68.6	-2.2
2	2390.00	48.9 AV	54.0	-5.1	1.44 H	15	51.1	-2.2
3	*2412.00	104.9 PK			1.44 H	15	107.3	-2.4
4	*2412.00	95.8 AV			1.44 H	15	98.2	-2.4
5	4824.00	41.3 PK	74.0	-32.7	1.44 H	360	39.5	1.8
6	4824.00	29.7 AV	54.0	-24.3	1.44 H	360	27.9	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.2 PK	74.0	-10.8	1.46 V	64	65.4	-2.2
2	2390.00	45.1 AV	54.0	-8.9	1.46 V	64	47.3	-2.2
3	*2412.00	101.2 PK			1.46 V	64	103.6	-2.4
4	*2412.00	92.4 AV			1.46 V	64	94.8	-2.4
5	4824.00	40.5 PK	74.0	-33.5	1.53 V	287	38.7	1.8
6	4824.00	28.8 AV	54.0	-25.2	1.53 V	287	27.0	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.6 PK			1.33 H	17	107.2	-2.6
2	*2437.00	95.7 AV			1.33 H	17	98.3	-2.6
3	4874.00	40.9 PK	74.0	-33.1	1.50 H	343	38.9	2.0
4	4874.00	29.6 AV	54.0	-24.4	1.50 H	343	27.6	2.0
5	7311.00	42.0 PK	74.0	-32.0	2.81 H	47	33.6	8.4
6	7311.00	30.3 AV	54.0	-23.7	2.81 H	47	21.9	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.7 PK			1.44 V	63	104.3	-2.6
2	*2437.00	92.7 AV			1.44 V	63	95.3	-2.6
3	4874.00	40.5 PK	74.0	-33.5	1.49 V	273	38.5	2.0
4	4874.00	29.1 AV	54.0	-24.9	1.49 V	273	27.1	2.0
5	7311.00	41.7 PK	74.0	-32.3	1.70 V	218	33.3	8.4
6	7311.00	29.8 AV	54.0	-24.2	1.70 V	218	21.4	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	104.7 PK			1.18 H	17	107.3	-2.6
2	*2462.00	95.6 AV			1.18 H	17	98.2	-2.6
3	2483.50	68.4 PK	74.0	-5.6	1.18 H	17	70.8	-2.4
4	2483.50	50.7 AV	54.0	-3.3	1.18 H	17	53.1	-2.4
5	4924.00	40.6 PK	74.0	-33.4	1.46 H	360	38.6	2.0
6	4924.00	29.0 AV	54.0	-25.0	1.46 H	360	27.0	2.0
7	7386.00	42.5 PK	74.0	-31.5	2.81 H	50	33.9	8.6
8	7386.00	30.7 AV	54.0	-23.3	2.81 H	50	22.1	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.3 PK			1.46 V	66	103.9	-2.6
2	*2462.00	92.5 AV			1.46 V	66	95.1	-2.6
3	2483.50	62.6 PK	74.0	-11.4	1.46 V	66	65.0	-2.4
4	2483.50	48.0 AV	54.0	-6.0	1.46 V	66	50.4	-2.4
5	4924.00	40.1 PK	74.0	-33.9	1.59 V	271	38.1	2.0
6	4924.00	28.4 AV	54.0	-25.6	1.59 V	271	26.4	2.0
7	7386.00	41.1 PK	74.0	-32.9	1.59 V	228	32.5	8.6
8	7386.00	29.5 AV	54.0	-24.5	1.59 V	228	20.9	8.6

**REMARKS:**

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

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.8 PK	74.0	-7.2	1.19 H	20	69.0	-2.2
2	2390.00	51.7 AV	54.0	-2.3	1.19 H	20	53.9	-2.2
3	*2412.00	104.1 PK			1.19 H	20	106.5	-2.4
4	*2412.00	95.7 AV			1.19 H	20	98.1	-2.4
5	4824.00	40.0 PK	74.0	-34.0	1.50 H	354	38.2	1.8
6	4824.00	28.9 AV	54.0	-25.1	1.50 H	354	27.1	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.8 PK	74.0	-11.2	1.49 V	75	65.0	-2.2
2	2390.00	48.1 AV	54.0	-5.9	1.49 V	75	50.3	-2.2
3	*2412.00	100.9 PK			1.49 V	75	103.3	-2.4
4	*2412.00	92.2 AV			1.49 V	75	94.6	-2.4
5	4824.00	40.9 PK	74.0	-33.1	1.54 V	301	39.1	1.8
6	4824.00	29.1 AV	54.0	-24.9	1.54 V	301	27.3	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.2 PK			1.21 H	25	106.8	-2.6
2	*2437.00	95.9 AV			1.21 H	25	98.5	-2.6
3	4874.00	40.6 PK	74.0	-33.4	1.44 H	345	38.6	2.0
4	4874.00	29.0 AV	54.0	-25.0	1.44 H	345	27.0	2.0
5	7311.00	42.4 PK	74.0	-31.6	2.76 H	33	34.0	8.4
6	7311.00	30.4 AV	54.0	-23.6	2.76 H	33	22.0	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.8 PK			1.52 V	52	104.4	-2.6
2	*2437.00	92.8 AV			1.52 V	52	95.4	-2.6
3	4874.00	40.5 PK	74.0	-33.5	1.49 V	298	38.5	2.0
4	4874.00	28.9 AV	54.0	-25.1	1.49 V	298	26.9	2.0
5	7311.00	42.1 PK	74.0	-31.9	1.65 V	232	33.7	8.4
6	7311.00	30.2 AV	54.0	-23.8	1.65 V	232	21.8	8.4

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	103.7 PK			1.26 H	18	106.3	-2.6
2	*2462.00	95.2 AV			1.26 H	18	97.8	-2.6
3	2483.50	71.2 PK	74.0	-2.8	1.26 H	18	73.6	-2.4
4	2483.50	51.9 AV	54.0	-2.1	1.26 H	18	54.3	-2.4
5	4924.00	40.0 PK	74.0	-34.0	1.47 H	357	38.0	2.0
6	4924.00	28.6 AV	54.0	-25.4	1.47 H	357	26.6	2.0
7	7386.00	42.2 PK	74.0	-31.8	2.80 H	28	33.6	8.6
8	7386.00	30.2 AV	54.0	-23.8	2.80 H	28	21.6	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	101.4 PK			1.41 V	59	104.0	-2.6
2	*2462.00	92.7 AV			1.41 V	59	95.3	-2.6
3	2483.50	62.3 PK	74.0	-11.7	1.41 V	59	64.7	-2.4
4	2483.50	47.7 AV	54.0	-6.3	1.41 V	59	50.1	-2.4
5	4924.00	40.2 PK	74.0	-33.8	1.48 V	295	38.2	2.0
6	4924.00	28.5 AV	54.0	-25.5	1.48 V	295	26.5	2.0
7	7386.00	41.7 PK	74.0	-32.3	1.61 V	219	33.1	8.6
8	7386.00	30.1 AV	54.0	-23.9	1.61 V	219	21.5	8.6

**REMARKS:**

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

**802.11n (HT40)**

<b>CHANNEL</b>	TX Channel 3	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.3 PK	74.0	-3.7	1.17 H	18	72.5	-2.2
2	2390.00	52.5 AV	54.0	-1.5	1.17 H	18	54.7	-2.2
3	*2422.00	101.6 PK			1.17 H	18	104.1	-2.5
4	*2422.00	92.1 AV			1.17 H	18	94.6	-2.5
5	4844.00	40.4 PK	74.0	-33.6	1.44 H	341	38.6	1.8
6	4844.00	28.7 AV	54.0	-25.3	1.44 H	341	26.9	1.8
7	7266.00	42.6 PK	74.0	-31.4	2.77 H	46	34.4	8.2
8	7266.00	30.7 AV	54.0	-23.3	2.77 H	46	22.5	8.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.2 PK	74.0	-10.8	1.42 V	57	65.4	-2.2
2	2390.00	48.5 AV	54.0	-5.5	1.42 V	57	50.7	-2.2
3	*2422.00	108.2 PK			1.42 V	57	110.7	-2.5
4	*2422.00	88.8 AV			1.42 V	57	91.3	-2.5
5	4844.00	39.9 PK	74.0	-34.1	1.50 V	271	38.1	1.8
6	4844.00	28.4 AV	54.0	-25.6	1.50 V	271	26.6	1.8
7	7266.00	42.3 PK	74.0	-31.7	1.62 V	221	34.1	8.2
8	7266.00	30.1 AV	54.0	-23.9	1.62 V	221	21.9	8.2

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	102.1 PK			1.19 H	24	104.7	-2.6
2	*2437.00	92.5 AV			1.19 H	24	95.1	-2.6
3	4874.00	40.4 PK	74.0	-33.6	1.41 H	345	38.4	2.0
4	4874.00	28.7 AV	54.0	-25.3	1.41 H	345	26.7	2.0
5	7311.00	42.6 PK	74.0	-31.4	2.71 H	36	34.2	8.4
6	7311.00	30.8 AV	54.0	-23.2	2.71 H	36	22.4	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.2 PK			1.36 V	44	110.8	-2.6
2	*2437.00	89.0 AV			1.36 V	44	91.6	-2.6
3	4874.00	40.4 PK	74.0	-33.6	1.47 V	291	38.4	2.0
4	4874.00	28.9 AV	54.0	-25.1	1.47 V	291	26.9	2.0
5	7311.00	41.4 PK	74.0	-32.6	1.61 V	234	33.0	8.4
6	7311.00	29.4 AV	54.0	-24.6	1.61 V	234	21.0	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	100.9 PK			1.17 H	18	103.5	-2.6
2	*2452.00	92.1 AV			1.17 H	18	94.7	-2.6
3	2483.50	71.7 PK	74.0	-2.3	1.17 H	18	74.1	-2.4
4	2483.50	53.6 AV	54.0	-0.4	1.17 H	18	56.0	-2.4
5	4904.00	40.6 PK	74.0	-33.4	1.49 H	330	38.6	2.0
6	4904.00	29.0 AV	54.0	-25.0	1.49 H	330	27.0	2.0
7	7356.00	42.3 PK	74.0	-31.7	2.82 H	38	33.7	8.6
8	7356.00	30.6 AV	54.0	-23.4	2.82 H	38	22.0	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	107.8 PK			1.37 V	57	110.4	-2.6
2	*2452.00	88.6 AV			1.37 V	57	91.2	-2.6
3	2483.50	63.5 PK	74.0	-10.5	1.37 V	57	65.9	-2.4
4	2483.50	48.5 AV	54.0	-5.5	1.37 V	57	50.9	-2.4
5	4904.00	40.1 PK	74.0	-33.9	1.52 V	286	38.1	2.0
6	4904.00	28.7 AV	54.0	-25.3	1.52 V	286	26.7	2.0
7	7356.00	41.4 PK	74.0	-32.6	1.68 V	228	32.8	8.6
8	7356.00	29.4 AV	54.0	-24.6	1.68 V	228	20.8	8.6

**REMARKS:**

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

**Below 1GHz Data:**

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9kHz ~ 1GHz		

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.99	30.6 QP	40.0	-9.4	2.00 H	246	38.8	-8.2
2	144.00	28.3 QP	43.5	-15.2	1.00 H	284	36.3	-8.0
3	165.99	32.5 QP	43.5	-11.0	1.50 H	303	40.5	-8.0
4	225.65	35.9 QP	46.0	-10.1	2.00 H	78	47.0	-11.1
5	805.49	39.2 QP	46.0	-6.8	1.00 H	33	35.3	3.9
6	927.30	34.4 QP	46.0	-11.6	2.00 H	360	28.4	6.0

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.40	31.1 QP	40.0	-8.9	2.00 V	344	39.0	-7.9
2	166.02	30.6 QP	43.5	-12.9	2.00 V	2	38.6	-8.0
3	259.04	28.4 QP	46.0	-17.6	2.00 V	360	37.0	-8.6
4	286.15	29.8 QP	46.0	-16.2	1.50 V	348	37.3	-7.5
5	806.58	40.2 QP	46.0	-5.8	2.00 V	336	36.3	3.9
6	921.24	34.6 QP	46.0	-11.4	1.00 V	77	28.7	5.9

**REMARKS:**

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

## 4.1.9 Test Results (Mode 3)

## Above 1GHz Data:

## 802.11b

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	54.9 PK	74.0	-19.1	1.01 H	298	57.1	-2.2
2	2390.00	43.8 AV	54.0	-10.2	1.01 H	298	46.0	-2.2
3	*2412.00	106.7 PK			1.01 H	298	109.1	-2.4
4	*2412.00	104.6 AV			1.01 H	298	107.0	-2.4
5	4824.00	45.6 PK	74.0	-28.4	2.57 H	340	43.8	1.8
6	4824.00	39.6 AV	54.0	-14.4	2.57 H	340	37.8	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	50.9 PK	74.0	-23.1	3.40 V	264	53.1	-2.2
2	2390.00	39.3 AV	54.0	-14.7	3.40 V	264	41.5	-2.2
3	*2412.00	102.3 PK			3.40 V	264	104.7	-2.4
4	*2412.00	99.8 AV			3.40 V	264	102.2	-2.4
5	4824.00	42.4 PK	74.0	-31.6	1.60 V	265	40.6	1.8
6	4824.00	32.3 AV	54.0	-21.7	1.60 V	265	30.5	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	106.6 PK			1.02 H	294	109.2	-2.6
2	*2437.00	104.2 AV			1.02 H	294	106.8	-2.6
3	4874.00	44.9 PK	74.0	-29.1	2.59 H	350	42.9	2.0
4	4874.00	38.6 AV	54.0	-15.4	2.59 H	350	36.6	2.0
5	7311.00	44.1 PK	74.0	-29.9	1.63 H	325	35.7	8.4
6	7311.00	34.4 AV	54.0	-19.6	1.63 H	325	26.0	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	102.5 PK			3.38 V	246	105.1	-2.6
2	*2437.00	100.0 AV			3.38 V	246	102.6	-2.6
3	4874.00	41.9 PK	74.0	-32.1	1.56 V	285	39.9	2.0
4	4874.00	32.2 AV	54.0	-21.8	1.56 V	285	30.2	2.0
5	7311.00	42.4 PK	74.0	-31.6	1.95 V	53	34.0	8.4
6	7311.00	33.4 AV	54.0	-20.6	1.95 V	53	25.0	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.2 PK			1.00 H	297	108.8	-2.6
2	*2462.00	103.9 AV			1.00 H	297	106.5	-2.6
3	2483.50	55.6 PK	74.0	-18.4	1.00 H	297	58.0	-2.4
4	2483.50	44.1 AV	54.0	-9.9	1.00 H	297	46.5	-2.4
5	4924.00	45.2 PK	74.0	-28.8	2.57 H	338	43.2	2.0
6	4924.00	39.1 AV	54.0	-14.9	2.57 H	338	37.1	2.0
7	7386.00	43.7 PK	74.0	-30.3	1.66 H	336	35.1	8.6
8	7386.00	34.2 AV	54.0	-19.8	1.66 H	336	25.6	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.3 PK			3.39 V	258	104.9	-2.6
2	*2462.00	100.0 AV			3.39 V	258	102.6	-2.6
3	2483.50	51.4 PK	74.0	-22.6	3.39 V	258	53.8	-2.4
4	2483.50	39.6 AV	54.0	-14.4	3.39 V	258	42.0	-2.4
5	4924.00	42.1 PK	74.0	-31.9	1.59 V	276	40.1	2.0
6	4924.00	32.3 AV	54.0	-21.7	1.59 V	276	30.3	2.0
7	7386.00	42.4 PK	74.0	-31.6	1.98 V	38	33.8	8.6
8	7386.00	33.6 AV	54.0	-20.4	1.98 V	38	25.0	8.6

**REMARKS:**

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



**802.11g**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	70.7 PK	74.0	-3.3	1.00 H	360	72.9	-2.2
2	2390.00	53.7 AV	54.0	-0.3	1.00 H	360	55.9	-2.2
3	*2412.00	106.5 PK			1.05 H	299	108.9	-2.4
4	*2412.00	97.2 AV			1.05 H	299	99.6	-2.4
5	4824.00	40.3 PK	74.0	-33.7	2.65 H	343	38.5	1.8
6	4824.00	29.1 AV	54.0	-24.9	2.65 H	343	27.3	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.0 PK	74.0	-6.0	3.40 V	260	70.2	-2.2
2	2390.00	48.8 AV	54.0	-5.2	3.40 V	260	51.0	-2.2
3	*2412.00	102.7 PK			3.40 V	260	105.1	-2.4
4	*2412.00	93.2 AV			3.40 V	260	95.6	-2.4
5	4824.00	39.8 PK	74.0	-34.2	1.59 V	263	38.0	1.8
6	4824.00	28.4 AV	54.0	-25.6	1.59 V	263	26.6	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	108.3 PK			1.14 H	359	110.9	-2.6
2	*2437.00	99.8 AV			1.14 H	359	102.4	-2.6
3	4874.00	40.5 PK	74.0	-33.5	2.63 H	338	38.5	2.0
4	4874.00	28.7 AV	54.0	-25.3	2.63 H	338	26.7	2.0
5	7311.00	43.2 PK	74.0	-30.8	1.66 H	343	34.8	8.4
6	7311.00	31.4 AV	54.0	-22.6	1.66 H	343	23.0	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	104.3 PK			3.37 V	257	106.9	-2.6
2	*2437.00	95.7 AV			3.37 V	257	98.3	-2.6
3	4874.00	40.5 PK	74.0	-33.5	1.52 V	238	38.5	2.0
4	4874.00	28.7 AV	54.0	-25.3	1.52 V	238	26.7	2.0
5	7311.00	43.0 PK	74.0	-31.0	2.10 V	46	34.6	8.4
6	7311.00	30.8 AV	54.0	-23.2	2.10 V	46	22.4	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.2 PK			1.15 H	355	108.8	-2.6
2	*2462.00	97.6 AV			1.15 H	355	100.2	-2.6
3	2483.50	70.2 PK	74.0	-3.8	1.15 H	355	72.6	-2.4
4	2483.50	53.6 AV	54.0	-0.4	1.15 H	355	56.0	-2.4
5	4924.00	40.2 PK	74.0	-33.8	2.62 H	336	38.2	2.0
6	4924.00	28.6 AV	54.0	-25.4	2.62 H	336	26.6	2.0
7	7386.00	42.9 PK	74.0	-31.1	1.61 H	356	34.3	8.6
8	7386.00	30.9 AV	54.0	-23.1	1.61 H	356	22.3	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.6 PK			3.39 V	252	105.2	-2.6
2	*2462.00	93.1 AV			3.39 V	252	95.7	-2.6
3	2483.50	66.8 PK	74.0	-7.2	3.39 V	252	69.2	-2.4
4	2483.50	47.8 AV	54.0	-6.2	3.39 V	252	50.2	-2.4
5	4924.00	40.5 PK	74.0	-33.5	1.55 V	239	38.5	2.0
6	4924.00	28.9 AV	54.0	-25.1	1.55 V	239	26.9	2.0
7	7386.00	42.6 PK	74.0	-31.4	2.02 V	57	34.0	8.6
8	7386.00	30.6 AV	54.0	-23.4	2.02 V	57	22.0	8.6

**REMARKS:**

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

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 1	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.5 PK	74.0	-6.5	1.02 H	360	69.7	-2.2
2	2390.00	53.8 AV	54.0	-0.2	1.02 H	360	56.0	-2.2
3	*2412.00	104.5 PK			1.02 H	360	106.9	-2.4
4	*2412.00	95.7 AV			1.02 H	360	98.1	-2.4
5	4824.00	40.2 PK	74.0	-33.8	2.57 H	351	38.4	1.8
6	4824.00	28.7 AV	54.0	-25.3	2.57 H	351	26.9	1.8

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.4 PK	74.0	-6.6	3.33 V	249	69.6	-2.2
2	2390.00	48.5 AV	54.0	-5.5	3.33 V	249	50.7	-2.2
3	*2412.00	100.2 PK			3.33 V	249	102.6	-2.4
4	*2412.00	91.6 AV			3.33 V	249	94.0	-2.4
5	4824.00	40.9 PK	74.0	-33.1	1.52 V	255	39.1	1.8
6	4824.00	29.2 AV	54.0	-24.8	1.52 V	255	27.4	1.8

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.6 PK			1.13 H	354	110.2	-2.6
2	*2437.00	98.9 AV			1.13 H	354	101.5	-2.6
3	4874.00	40.5 PK	74.0	-33.5	2.61 H	346	38.5	2.0
4	4874.00	29.0 AV	54.0	-25.0	2.61 H	346	27.0	2.0
5	7311.00	43.0 PK	74.0	-31.0	1.63 H	341	34.6	8.4
6	7311.00	31.1 AV	54.0	-22.9	1.63 H	341	22.7	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	103.8 PK			3.41 V	263	106.4	-2.6
2	*2437.00	95.1 AV			3.41 V	263	97.7	-2.6
3	4874.00	40.3 PK	74.0	-33.7	1.57 V	250	38.3	2.0
4	4874.00	28.8 AV	54.0	-25.2	1.57 V	250	26.8	2.0
5	7311.00	43.1 PK	74.0	-30.9	2.06 V	44	34.7	8.4
6	7311.00	31.1 AV	54.0	-22.9	2.06 V	44	22.7	8.4

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 11	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	106.2 PK			1.01 H	356	108.8	-2.6
2	*2462.00	97.5 AV			1.01 H	356	100.1	-2.6
3	2483.50	71.8 PK	74.0	-2.2	1.01 H	359	74.2	-2.4
4	2483.50	53.7 AV	54.0	-0.3	1.01 H	359	56.1	-2.4
5	4924.00	40.8 PK	74.0	-33.2	2.64 H	357	38.8	2.0
6	4924.00	29.4 AV	54.0	-24.6	2.64 H	357	27.4	2.0
7	7386.00	42.6 PK	74.0	-31.4	1.67 H	351	34.0	8.6
8	7386.00	31.0 AV	54.0	-23.0	1.67 H	351	22.4	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.5 PK			3.40 V	268	105.1	-2.6
2	*2462.00	93.6 AV			3.40 V	268	96.2	-2.6
3	2483.50	68.1 PK	74.0	-5.9	3.40 V	268	70.5	-2.4
4	2483.50	48.8 AV	54.0	-5.2	3.40 V	268	51.2	-2.4
5	4924.00	40.9 PK	74.0	-33.1	1.58 V	258	38.9	2.0
6	4924.00	29.3 AV	54.0	-24.7	1.58 V	258	27.3	2.0
7	7386.00	43.0 PK	74.0	-31.0	2.08 V	52	34.4	8.6
8	7386.00	31.1 AV	54.0	-22.9	2.08 V	52	22.5	8.6

**REMARKS:**

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

802.11n (HT40)

<b>CHANNEL</b>	TX Channel 3	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.8 PK	74.0	-4.2	1.11 H	359	72.0	-2.2
2	2390.00	53.6 AV	54.0	-0.4	1.11 H	359	55.8	-2.2
3	*2422.00	103.4 PK			1.11 H	359	105.9	-2.5
4	*2422.00	93.9 AV			1.11 H	359	96.4	-2.5
5	4844.00	40.6 PK	74.0	-33.4	2.63 H	331	38.8	1.8
6	4844.00	29.3 AV	54.0	-24.7	2.63 H	331	27.5	1.8
7	7266.00	43.0 PK	74.0	-31.0	1.57 H	346	34.8	8.2
8	7266.00	31.2 AV	54.0	-22.8	1.57 H	346	23.0	8.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	68.2 PK	74.0	-5.8	3.34 V	267	70.4	-2.2
2	2390.00	48.8 AV	54.0	-5.2	3.34 V	267	51.0	-2.2
3	*2422.00	99.6 PK			3.34 V	267	102.1	-2.5
4	*2422.00	89.8 AV			3.34 V	267	92.3	-2.5
5	4844.00	40.0 PK	74.0	-34.0	1.58 V	253	38.2	1.8
6	4844.00	28.4 AV	54.0	-25.6	1.58 V	253	26.6	1.8
7	7266.00	42.6 PK	74.0	-31.4	2.01 V	47	34.4	8.2
8	7266.00	30.7 AV	54.0	-23.3	2.01 V	47	22.5	8.2

**REMARKS:**

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

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.4 PK			1.05 H	358	108.0	-2.6
2	*2437.00	96.3 AV			1.05 H	358	98.9	-2.6
3	4874.00	40.8 PK	74.0	-33.2	2.57 H	341	38.8	2.0
4	4874.00	29.0 AV	54.0	-25.0	2.57 H	341	27.0	2.0
5	7311.00	42.8 PK	74.0	-31.2	1.61 H	325	34.4	8.4
6	7311.00	30.9 AV	54.0	-23.1	1.61 H	325	22.5	8.4

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.8 PK			3.34 V	267	104.4	-2.6
2	*2437.00	92.5 AV			3.34 V	267	95.1	-2.6
3	4874.00	40.7 PK	74.0	-33.3	1.62 V	254	38.7	2.0
4	4874.00	29.2 AV	54.0	-24.8	1.62 V	254	27.2	2.0
5	7311.00	43.7 PK	74.0	-30.3	2.03 V	41	35.3	8.4
6	7311.00	31.4 AV	54.0	-22.6	2.03 V	41	23.0	8.4

**REMARKS:**

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



<b>CHANNEL</b>	TX Channel 9	<b>DETECTOR FUNCTION</b>	Peak (PK)
<b>FREQUENCY RANGE</b>	1GHz ~ 25GHz		Average (AV)

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.9 PK			1.01 H	359	105.5	-2.6
2	*2452.00	93.5 AV			1.01 H	359	96.1	-2.6
3	2483.50	71.6 PK	74.0	-2.4	1.01 H	359	74.0	-2.4
4	2483.50	53.8 AV	54.0	-0.2	1.01 H	359	56.2	-2.4
5	4904.00	40.8 PK	74.0	-33.2	2.64 H	353	38.8	2.0
6	4904.00	29.3 AV	54.0	-24.7	2.64 H	353	27.3	2.0
7	7356.00	43.1 PK	74.0	-30.9	1.69 H	335	34.5	8.6
8	7356.00	31.1 AV	54.0	-22.9	1.69 H	335	22.5	8.6

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	98.9 PK			3.40 V	274	101.5	-2.6
2	*2452.00	89.6 AV			3.40 V	274	92.2	-2.6
3	2483.50	67.5 PK	74.0	-6.5	3.40 V	274	69.9	-2.4
4	2483.50	48.3 AV	54.0	-5.7	3.40 V	274	50.7	-2.4
5	4904.00	41.1 PK	74.0	-32.9	1.61 V	260	39.1	2.0
6	4904.00	29.3 AV	54.0	-24.7	1.61 V	260	27.3	2.0
7	7356.00	42.8 PK	74.0	-31.2	2.01 V	55	34.2	8.6
8	7356.00	30.6 AV	54.0	-23.4	2.01 V	55	22.0	8.6

**REMARKS:**

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

**Below 1GHz Data:**

**802.11n (HT20)**

<b>CHANNEL</b>	TX Channel 6	<b>DETECTOR FUNCTION</b>	Quasi-Peak (QP)
<b>FREQUENCY RANGE</b>	9kHz ~ 1GHz		

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.58	26.6 QP	40.0	-13.4	1.00 H	249	35.6	-9.0
2	82.31	25.5 QP	40.0	-14.5	2.00 H	159	38.5	-13.0
3	165.99	31.7 QP	43.5	-11.8	2.00 H	341	39.7	-8.0
4	272.01	27.3 QP	46.0	-18.7	2.00 H	296	35.2	-7.9
5	663.63	29.6 QP	46.0	-16.4	2.00 H	0	28.1	1.5
6	950.72	33.8 QP	46.0	-12.2	2.00 H	273	27.8	6.0

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

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	153.89	33.4 QP	43.5	-10.1	1.00 V	8	41.1	-7.7
2	275.99	31.1 QP	46.0	-14.9	2.00 V	4	38.9	-7.8
3	431.87	25.8 QP	46.0	-20.2	2.00 V	230	28.8	-3.0
4	605.94	28.1 QP	46.0	-17.9	2.00 V	0	27.2	0.9
5	759.68	31.5 QP	46.0	-14.5	1.50 V	268	28.2	3.3
6	958.29	34.1 QP	46.0	-11.9	1.00 V	89	27.9	6.2

**REMARKS:**

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

## 4.2 Conducted Emission Measurement

### 4.2.1 Limits of Conducted Emission Measurement

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

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

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

### 4.2.2 Test Instruments

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

**Note:**

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3. Tested Date: June 30, 2018

#### 4.2.3 Test Procedures

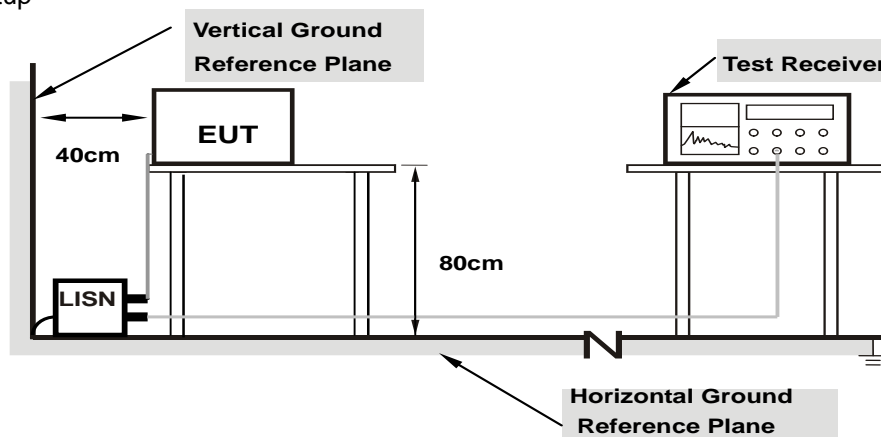
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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.

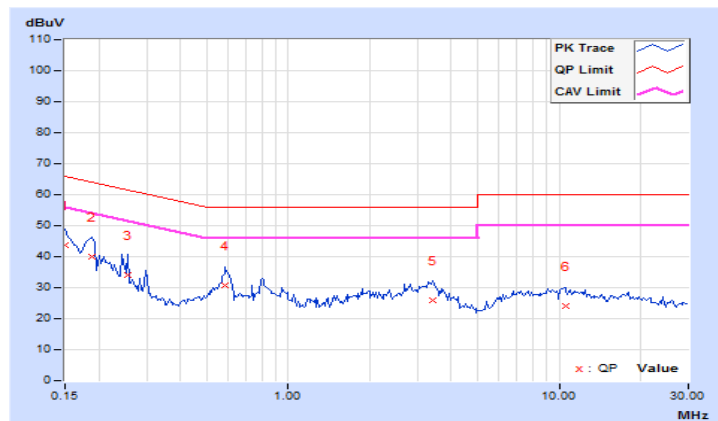
#### 4.2.7 Test Results

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

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor (dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.03	33.50	23.43	43.53	33.46	66.00	56.00	-22.47	-22.54
2	0.18906	10.05	29.97	11.21	40.02	21.26	64.08	54.08	-24.06	-32.82
3	0.25547	10.07	23.88	3.92	33.95	13.99	61.58	51.58	-27.63	-37.59
4	0.58750	10.12	20.49	12.30	30.61	22.42	56.00	46.00	-25.39	-23.58
5	3.42188	10.25	15.85	10.26	26.10	20.51	56.00	46.00	-29.90	-25.49
6	10.52344	10.57	13.48	8.20	24.05	18.77	60.00	50.00	-35.95	-31.23

**Remarks:**

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

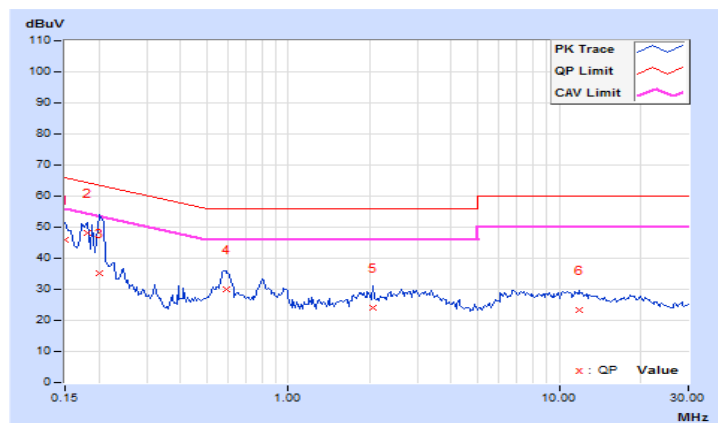


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	9.94	36.05	26.05	45.99	35.99	66.00	56.00	-20.01	-20.01
<b>2</b>	<b>0.18125</b>	<b>9.95</b>	<b>38.07</b>	<b>19.80</b>	<b>48.02</b>	<b>29.75</b>	<b>64.43</b>	<b>54.43</b>	<b>-16.41</b>	<b>-24.68</b>
3	0.20078	9.96	25.41	13.47	35.37	23.43	63.58	53.58	-28.21	-30.15
4	0.59141	10.01	20.17	10.81	30.18	20.82	56.00	46.00	-25.82	-25.18
5	2.04297	10.07	13.90	8.06	23.97	18.13	56.00	46.00	-32.03	-27.87
6	11.86328	10.49	12.72	6.62	23.21	17.11	60.00	50.00	-36.79	-32.89

**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

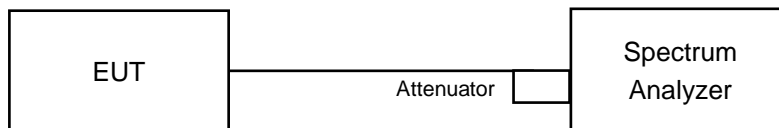


### 4.3 6dB Bandwidth Measurement

#### 4.3.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 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

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

#### 4.3.5 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

##### 802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	8.17	0.5	Pass
6	2437	8.15	0.5	Pass
11	2462	8.16	0.5	Pass

##### 802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	16.45	0.5	Pass
6	2437	16.41	0.5	Pass
11	2462	16.40	0.5	Pass

##### 802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
1	2412	17.67	0.5	Pass
6	2437	17.67	0.5	Pass
11	2462	17.67	0.5	Pass

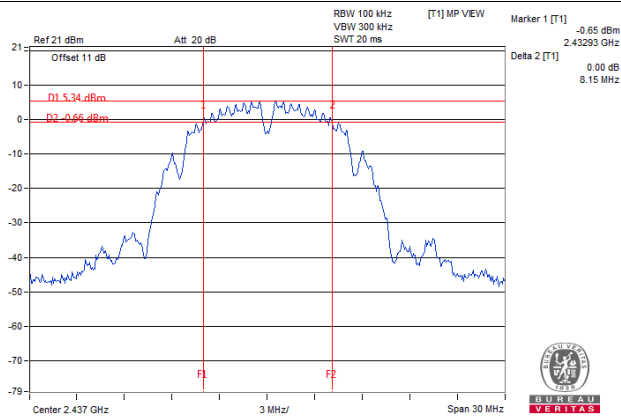
##### 802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
3	2422	36.43	0.5	Pass
6	2437	36.49	0.5	Pass
9	2452	36.55	0.5	Pass

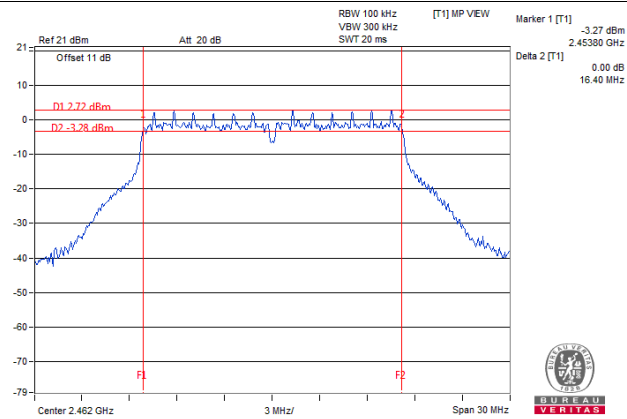


### Spectrum Plot of Worst Value

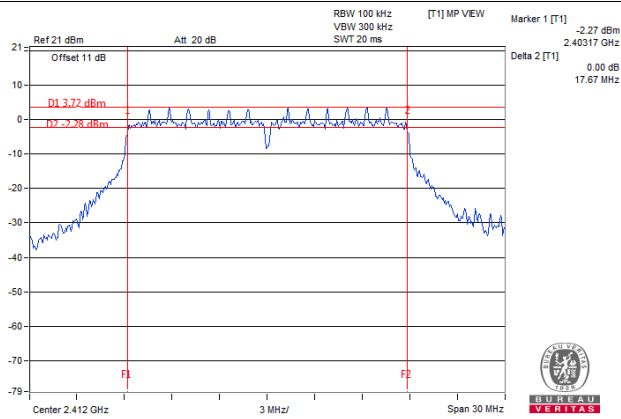
#### 802.11b: CH6



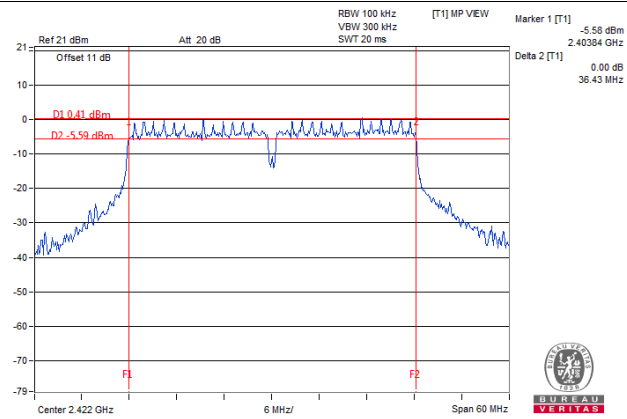
#### 802.11g: CH11



#### 802.11n (HT20): CH1



#### 802.11n (HT40): CH3

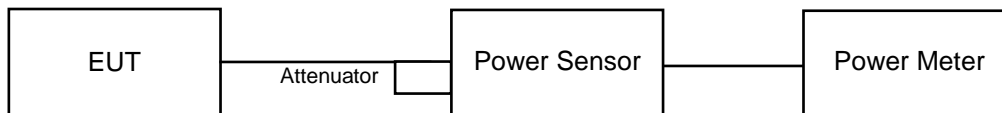


## 4.4 Conducted Output Power Measurement

### 4.4.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30dBm)

### 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

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was 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.

### 4.4.5 Deviation from Test Standard

No deviation.

### 4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

#### 4.4.7 Test Results

#### FOR PEAK POWER

##### 802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	76.384	18.83	30.00	Pass
6	2437	76.736	18.85	30.00	Pass
11	2462	78.163	18.93	30.00	Pass

##### 802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	167.109	22.23	30.00	Pass
6	2437	179.473	22.54	30.00	Pass
11	2462	182.81	22.62	30.00	Pass

##### 802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
1	2412	143.219	21.56	30.00	Pass
6	2437	180.302	22.56	30.00	Pass
11	2462	156.315	21.94	30.00	Pass

##### 802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass/Fail
3	2422	124.451	20.95	30.00	Pass
6	2437	159.221	22.02	30.00	Pass
9	2452	113.501	20.55	30.00	Pass

## FOR AVERAGE POWER

### 802.11b

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	34.995	15.44
6	2437	35.237	15.47
11	2462	36.308	15.60

### 802.11g

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	22.131	13.45
6	2437	34.834	15.42
11	2462	25.763	14.11

### 802.11n (HT20)

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2412	18.923	12.77
6	2437	32.734	15.15
11	2462	21.135	13.25

### 802.11n (HT40)

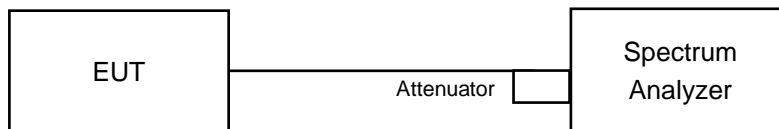
Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
3	2422	18.664	12.71
6	2437	31.915	15.04
9	2452	16.293	12.12

## 4.5 Power Spectral Density Measurement

### 4.5.1 Limits of Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz.

### 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. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d. Set the VBW  $\geq 3 \times \text{RBW}$ .
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

### 4.5.5 Deviation from Test Standard

No deviation.

### 4.5.6 EUT Operating Condition

Same as Item 4.3.6

#### 4.5.7 Test Results

##### 802.11b

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-5.73	8	Pass
6	2437	-6.46	8	Pass
11	2462	-7.34	8	Pass

##### 802.11g

Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-10.86	8	Pass
6	2437	-11.55	8	Pass
11	2462	-12.72	8	Pass

##### 802.11n (HT20)

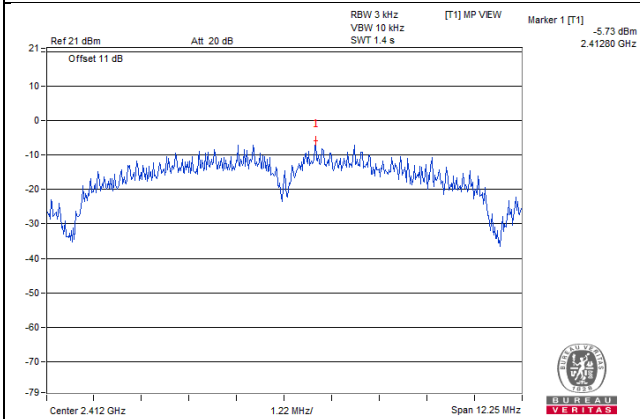
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
1	2412	-11.14	8	Pass
6	2437	-11.66	8	Pass
11	2462	-12.41	8	Pass

##### 802.11n (HT40)

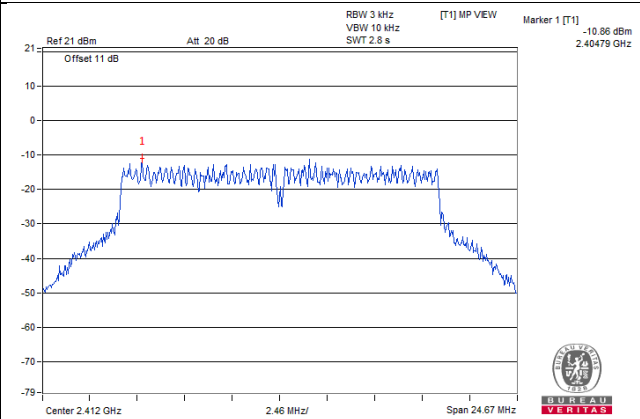
Channel	Freq. (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Pass /Fail
3	2422	-13.55	8	Pass
6	2437	-14.14	8	Pass
9	2452	-15.07	8	Pass

Spectrum Plot of Worst Value

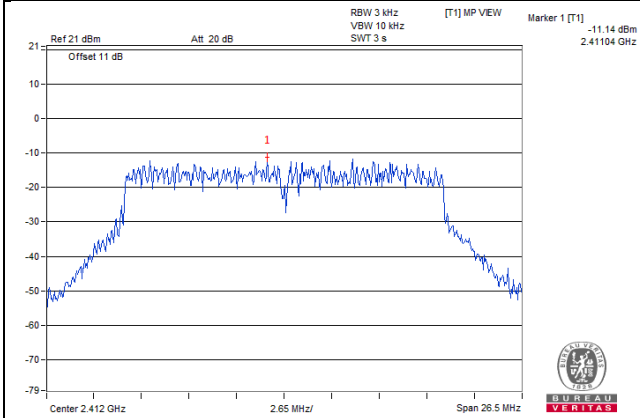
802.11b: CH1



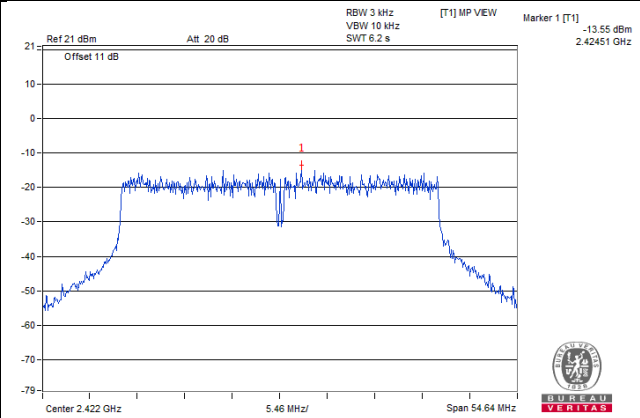
802.11g: CH1



802.11n (HT20): CH1



802.11n (HT40): CH3

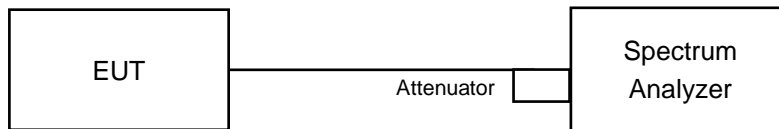


## 4.6 Conducted Out of Band Emission Measurement

### 4.6.1 Limits of Conducted Out of Band Emission Measurement

Below 20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

### 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

1. Set the RBW = 100 kHz.
2. Set the VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

#### MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW  $\geq$  300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

### 4.6.5 Deviation from Test Standard

No deviation.

### 4.6.6 EUT Operating Condition

Same as Item 4.3.6

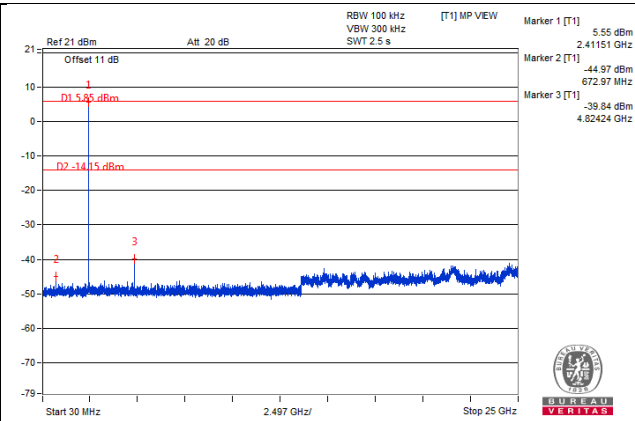
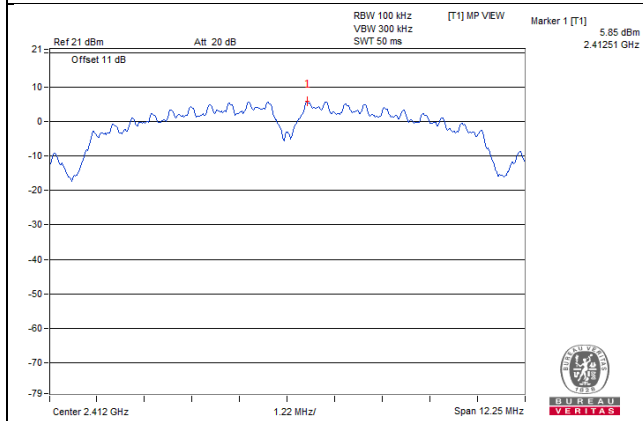
### 4.6.7 Test Results

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

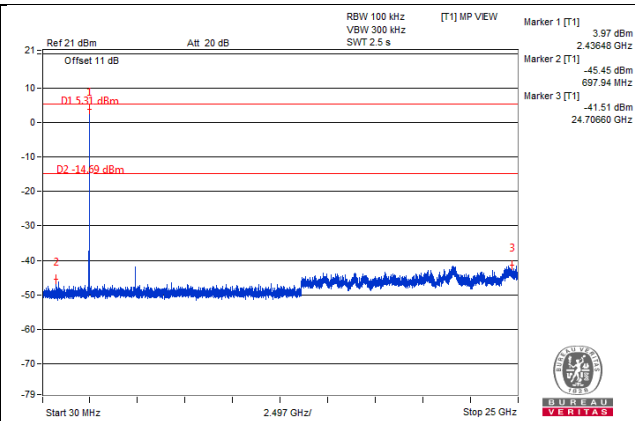
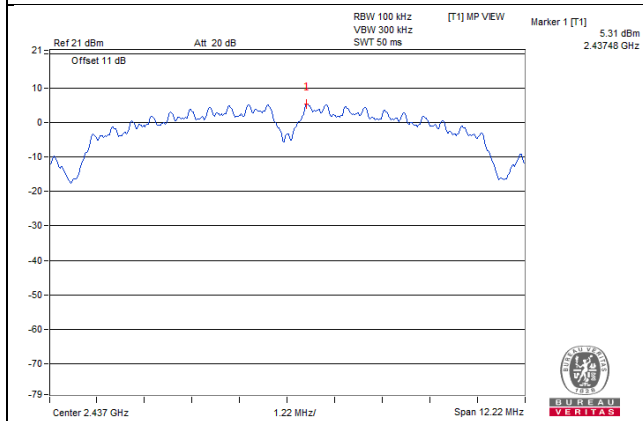


802.11b

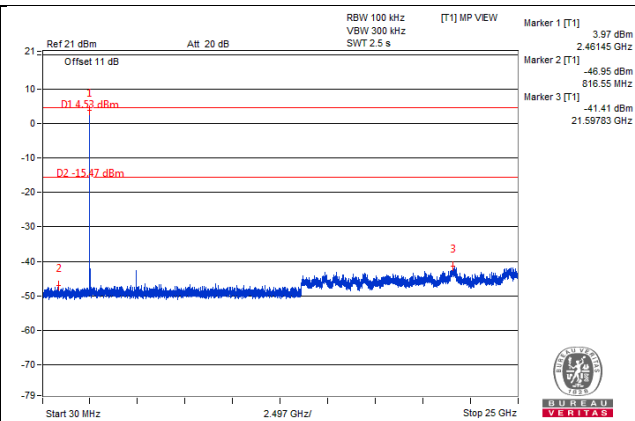
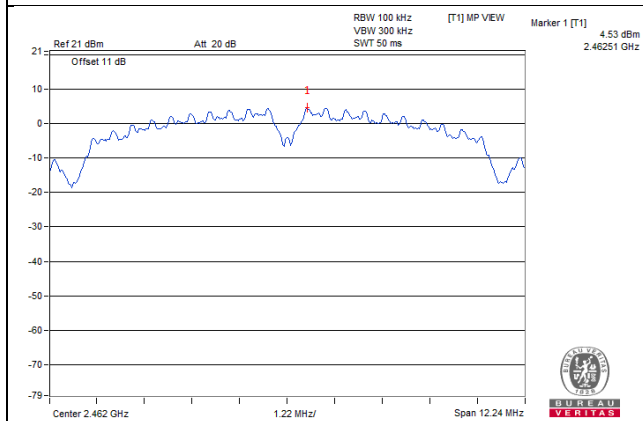
CH 1



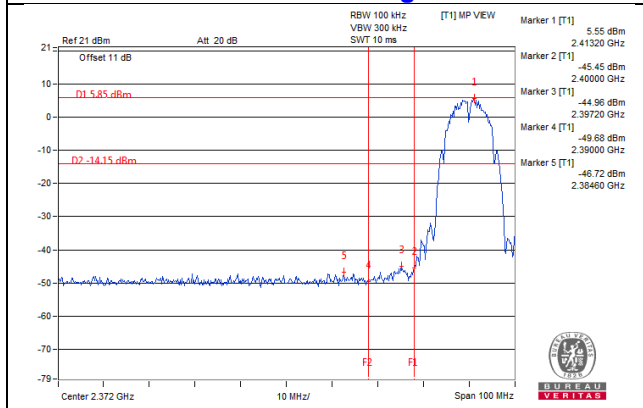
CH 6



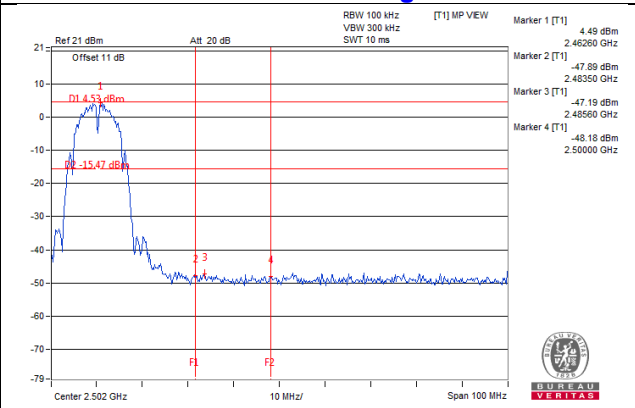
CH 11



CH 1 Band edge

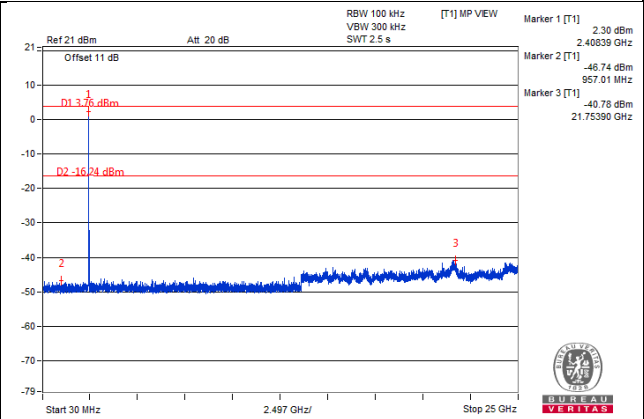
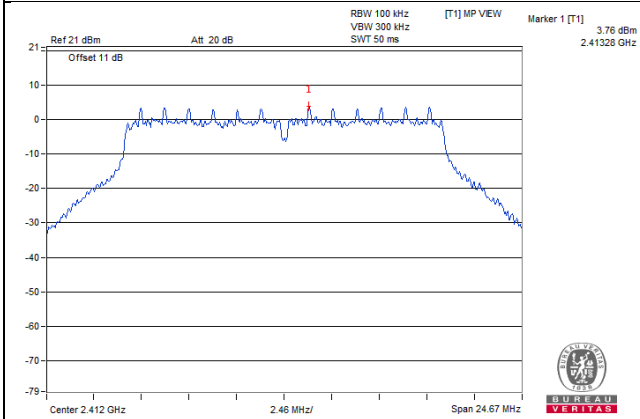


CH 11 Band edge

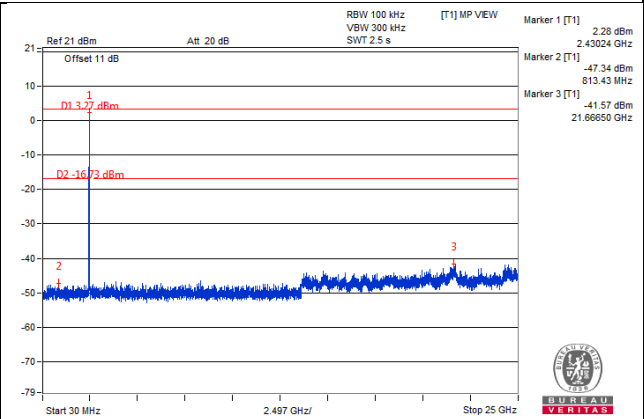
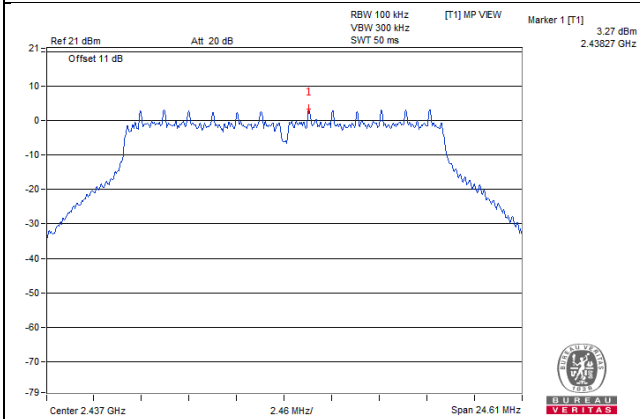


# 802.11g

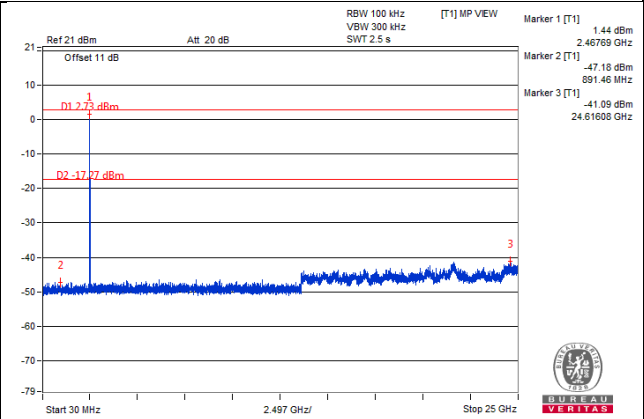
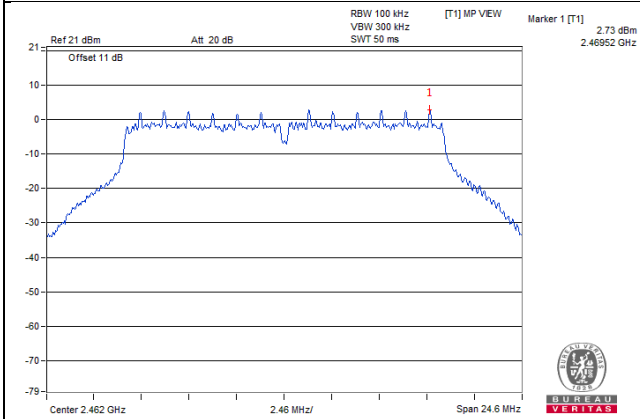
## CH 1



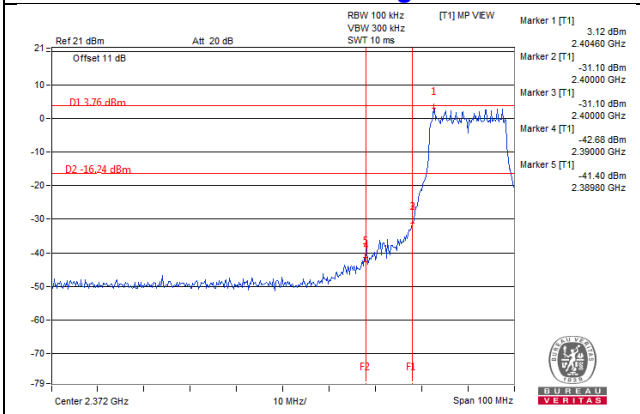
## CH 6



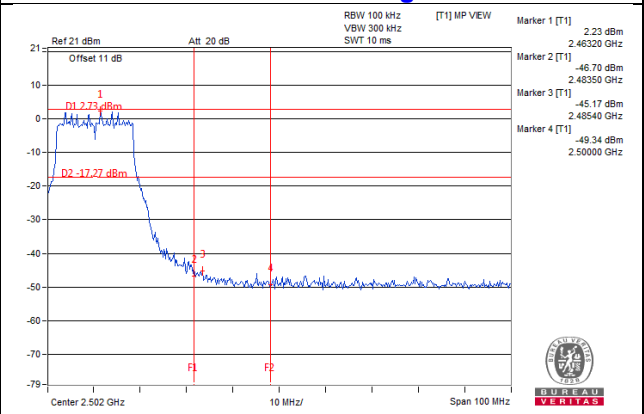
## CH 11



### CH 1 Band edge

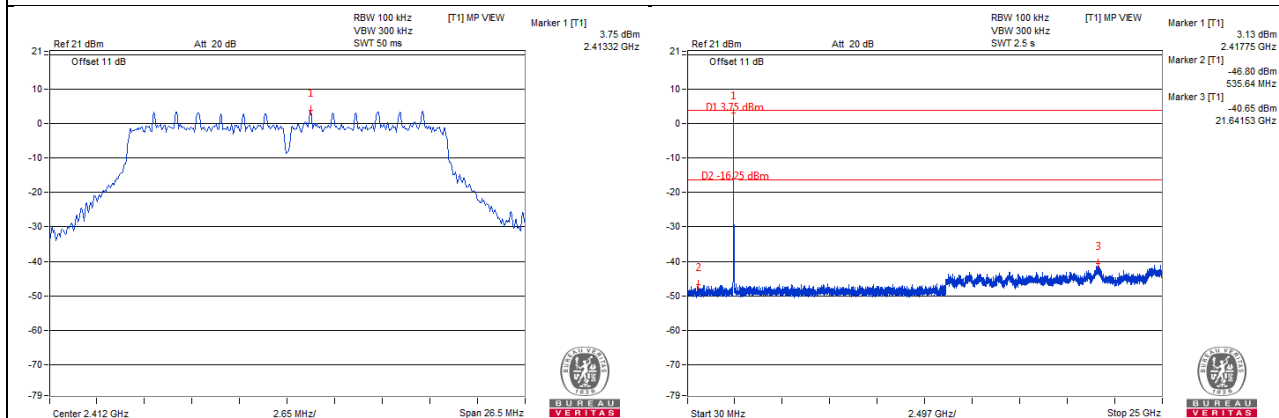


### CH 11 Band edge

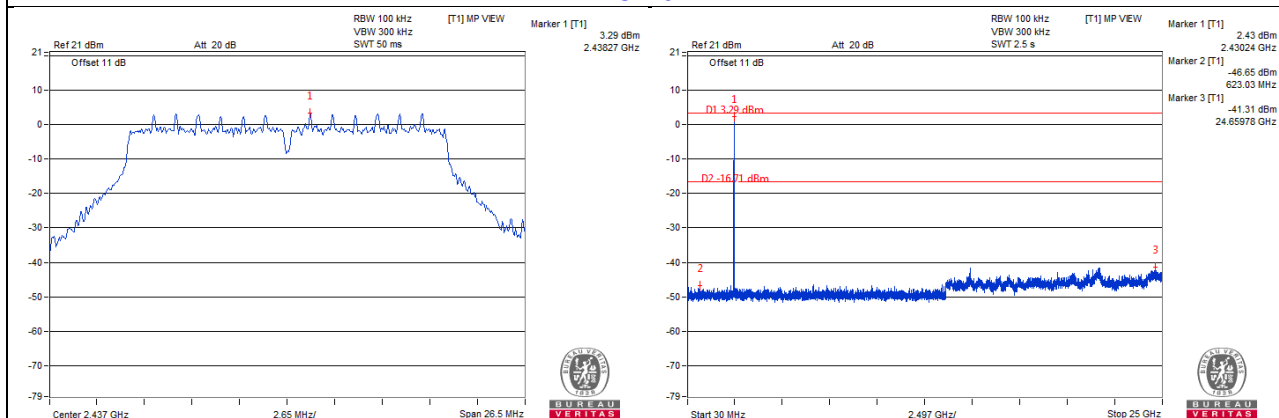


802.11n (HT20)

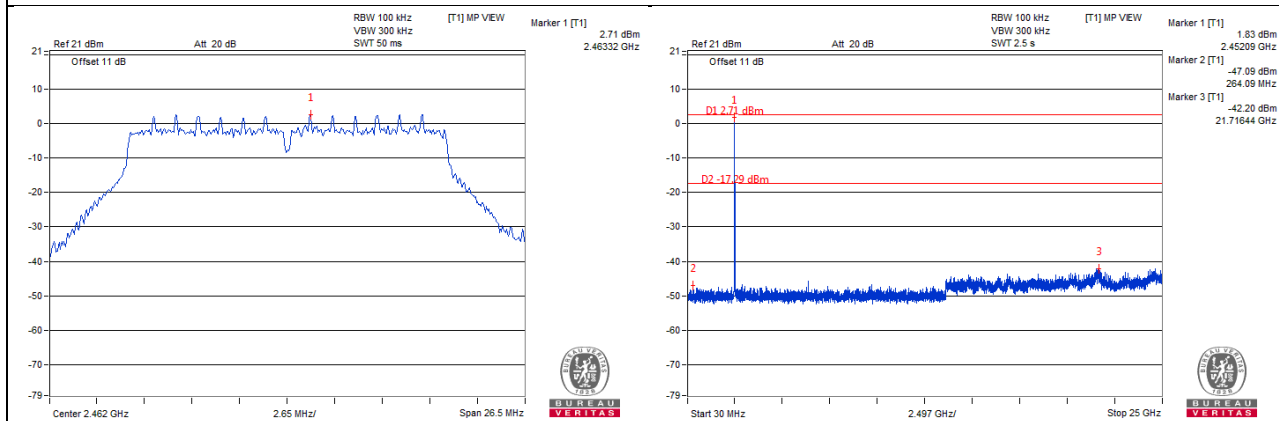
CH 1



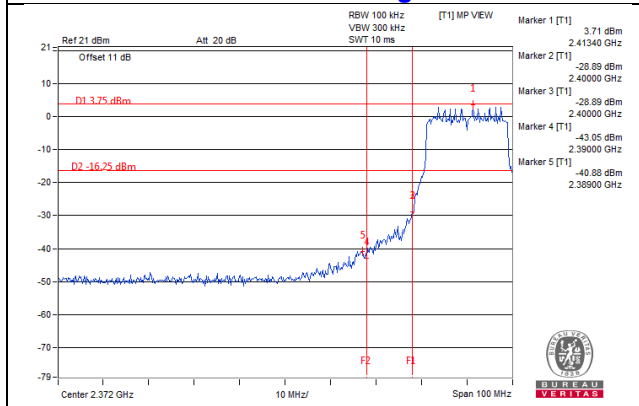
CH 6



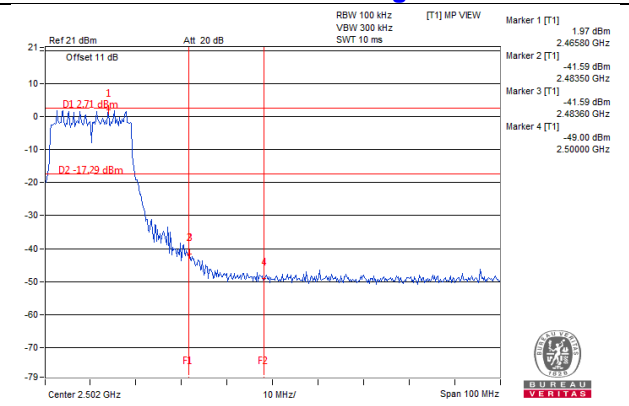
CH 11



CH 1 Band edge

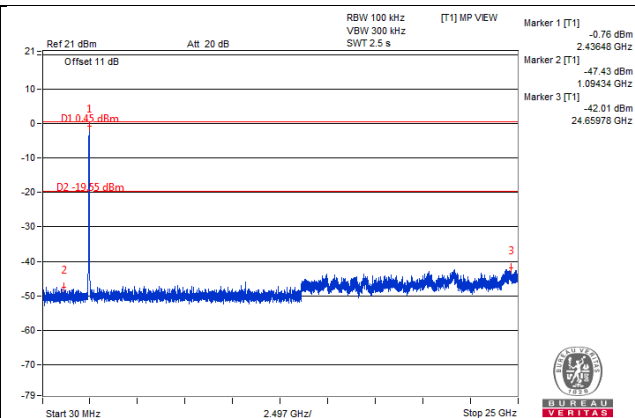
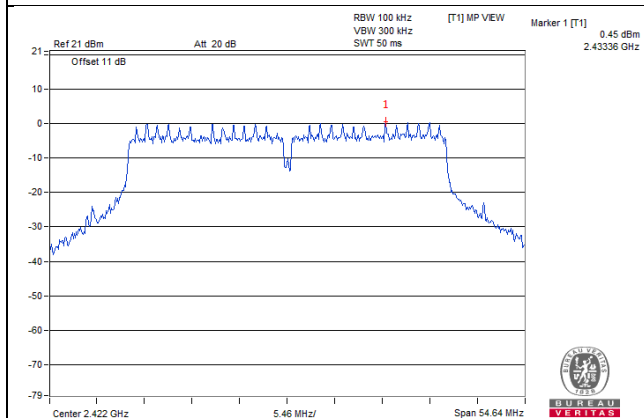


CH 11 Band edge

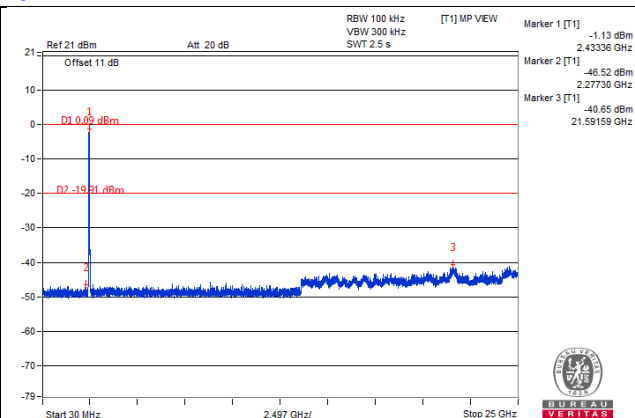
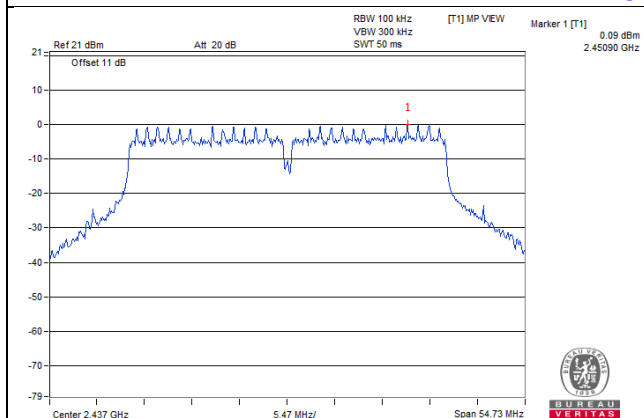


802.11n (HT40)

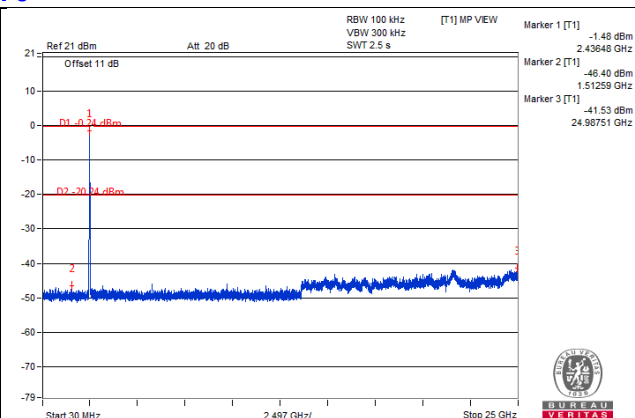
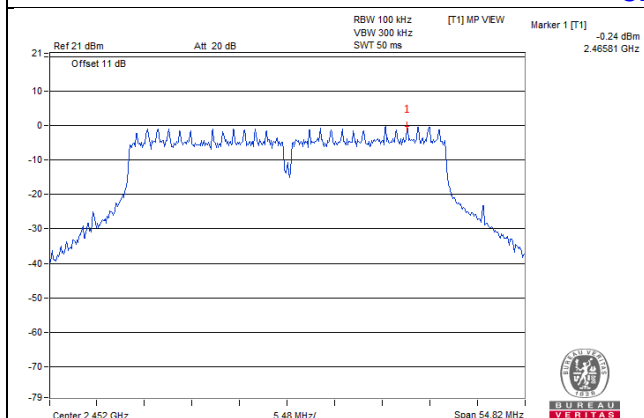
CH 3



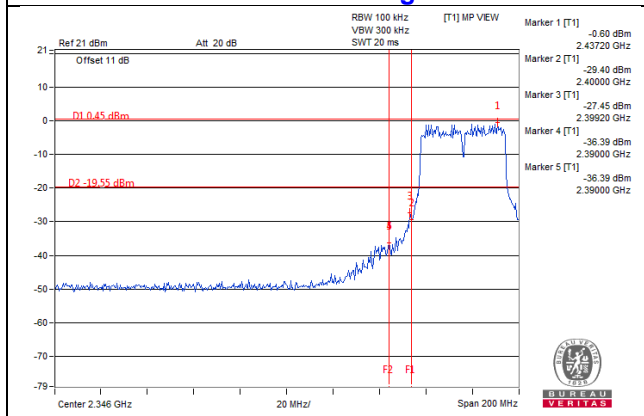
CH 6



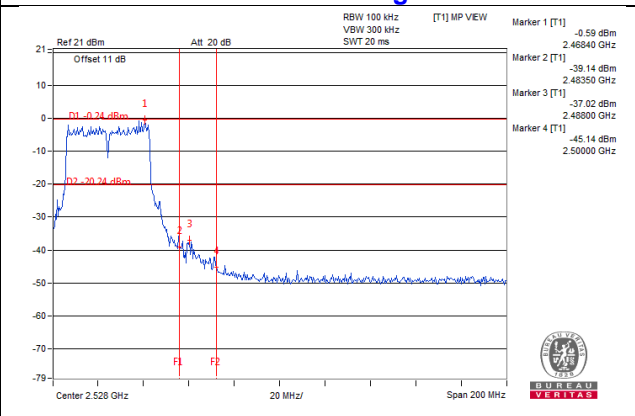
CH 9



CH 3 Band edge



CH 9 Band edge



## 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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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

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