

FCC Test Report

Report No.: RF180102C33C-1

FCC ID: PZWBHT1800Q

Model: BHT-1800QWB-3

Series Model: BHT-1800QWB-1, BHT-1800QWB-2

Received Date: Jan. 02, 2018

Test Date: Jan. 23 ~ Jul. 18, 2018

Issued Date: Jul. 24, 2018

Applicant: DENSO WAVE INCORPORATED

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**FCC Registration/
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF180102C33C-1	Original release	Jul. 24, 2018

1 Certificate of Conformity

Product: Barcode Handy Terminal, 2D Code Handy Terminal

Brand: DENSO

Model: BHT-1800QWB-3

Series Model: BHT-1800QWB-1, BHT-1800QWB-2 (Refer to item 3.1 for the more details)

Sample Status: Engineering sample

Applicant: DENSO WAVE INCORPORATED

Test Date: Jan. 23 ~ Jul. 18, 2018

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

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

Prepared by : Pettie Chen, **Date:** Jul. 24, 2018
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Jul. 24, 2018
Bruce Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -5.32dB at 0.45455MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is Metal shrapnel not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Barcode Handy Terminal, 2D Code Handy Terminal
Brand	DENSO
Model	BHT-1800QWB-3
Series Model	BHT-1800QWB-1, BHT-1800QWB-2
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	3.85Vdc (battery) 12Vdc (Cradle)
Modulation Type	16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20): 4 802.11n (HT40): 2 5260~5320MHz: 802.11a, 802.11n (HT20): 4 802.11n (HT40): 2 5500~5700MHz: 802.11a, 802.11n (HT20): 11 802.11n (HT40): 5 5745~5825MHz: 802.11a, 802.11n (HT20): 5 802.11n (HT40): 2
Output Power	5180~5240MHz: 42.756mW 5260~5320MHz: 41.783mW 5500~5700MHz: 37.670mW 5745~5825MHz: 44.463mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	NA
Cable Supplied	NA

Note:

1. All models are listed as below.

Model Name	base module	CPU	Software	LCD	WLAN / NFC		Audio				
			OS	5"	WLAN	NFC	speaker	Main MIC	Sub MIC	Receiver	Ear phone
BHT-1800QWB-3	5inch WLAN/BT	APQ8009	Android	○	○	○	○	○	○	○	○
BHT-1800QWB-1	5inch WLAN/BT	APQ8009	Android	○	○		○				○
BHT-1800QWB-2	5inch WLAN/BT	APQ8009	Android	○	○		○	○	○	○	○

Model Name	base module	Sensor	Charge	Reading		
		IR Reader	wireless charge	2D	Camera (rear)	Camera (front)
BHT-1800QWB-3	5inch WLAN/BT	○	○	○	○	○
BHT-1800QWB-1	5inch WLAN/BT			○	○	
BHT-1800QWB-2	5inch WLAN/BT	○		○	○	○

*Model: BHT-1800QWB-3 was chosen for the final tests.

*NFC Limited module (include WPC) (Brand: DENSO, Model: DWI003, FCC ID: PZWDWI003) collocated in EUT (model: BHT-1800QWB-3).

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

Modulation Mode	TX Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX

3. The EUT with follow antennas gain is listed as table below.

Brand	Antenna Gain(dBi) Including cable loss	Frequency range (MHz to MHz)	Antenna Type	Connecter Type	Cable Loss(dB) (External only)	Cable Length (External only)
WHAYU	2.39	2.4~2.4835GHz	PIFA	Metal shrapnel	1	30cm
	5.03	5.15~5.25GHz	PIFA	Metal shrapnel	1.7	30cm
	4.89	5.25~5.35GHz	PIFA	Metal shrapnel	1.7	30cm
	4.98	5.47~5.725GHz	PIFA	Metal shrapnel	1.7	30cm
	4.11	5.725~5.850GHz	PIFA	Metal shrapnel	1.7	30cm

4. The EUT consumes power from the following battery.

Battery (For BHT-1800 Used)	
Brand	DENSO
Model	BT-180LA
Rating	2900mAh, 3.85Vdc, 11.165Wh

5. The client provides the following cradles for tests. (Support unit only)

LAN Cradle (For BHT-1800 Used) (Support unit)	
Brand	DENSO
Model	CU-BL-18
Output Power	12Vdc, 4.16A, 50W

USB Cradle (For BHT-1800 Used) (Support unit)	
Brand	DENSO
Model	CU-BU1-18
Output Power	12Vdc, 4.16A, 50W

Adapter for cradle (Support unit)	
Brand	FSP GROUP INC.
Model	FSP050-DBAE1
Input Power	100-240Vac, 1.5A, 50/60Hz
Output Power	12Vdc, 4.16A, 50W
Power Line	1.2m non-shielded DC cable with 1 core attached on adapter

*After pre-testing, USB cradle is the worst case for the final tests.

6. 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

5180~5240MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

5260~5320MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

5500~5700MHz:

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

5 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

5745~5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	-	√	Power from battery
B	-	√	√	-	Power from Cradle

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

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5
	802.11n (HT40)		151 to 159	151, 159	OFDM	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.

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

Power Line Conducted Emission Test:

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

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

Antenna Port Conducted Measurement:

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

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

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	25deg. C, 66%RH	120Vac, 60Hz	Matthew Yang
RE<1G	23deg. C, 66%RH	120Vac, 60Hz	Willy Cheng
	25deg. C, 70%RH		Luis Lee
PLC	23deg. C, 66%RH	120Vac, 60Hz	Willy Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chris Lin

3.3 Duty Cycle of Test Signal

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

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

802.11a: Duty cycle = $1.348/1.584 = 0.851$, Duty factor = $10 * \log(1/0.851) = 0.70$

802.11n (HT20): Duty cycle = $1.276/1.476 = 0.864$, Duty factor = $10 * \log(1/0.864) = 0.63$

802.11n (HT40): Duty cycle = $0.628/0.828 = 0.758$, Duty factor = $10 * \log(1/0.758) = 1.20$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5430	2RL3YW1	FCC DoC Approved	-
B.	Cradle	DENSO	CU-BU1-18	NA	NA	Provided by manufacturer
C.	Adapter	FSP GROUP INC.	FSP050-DBAE1	NA	NA	Provided by manufacturer

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

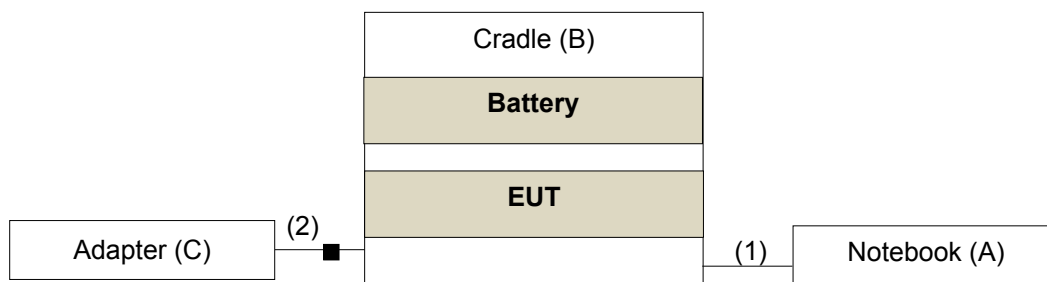
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.5	Y	0	-
2.	DC cable	1	1.2	N	1	Provided by manufacturer

3.4.1 Configuration of System under Test

Test Mode A



Test Mode B



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

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.

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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 17, 2017	Oct. 16, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 18, 2017	Aug. 17, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01960	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 08, 2017	Aug. 07, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier Agilent	8449B	3008A1960	Aug. 08, 2017	Aug. 07, 2018
High Speed Peak Power Meter	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018
Power Sensor	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 4.
 3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
 4. The IC Site Registration No. is IC 7450F-4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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:

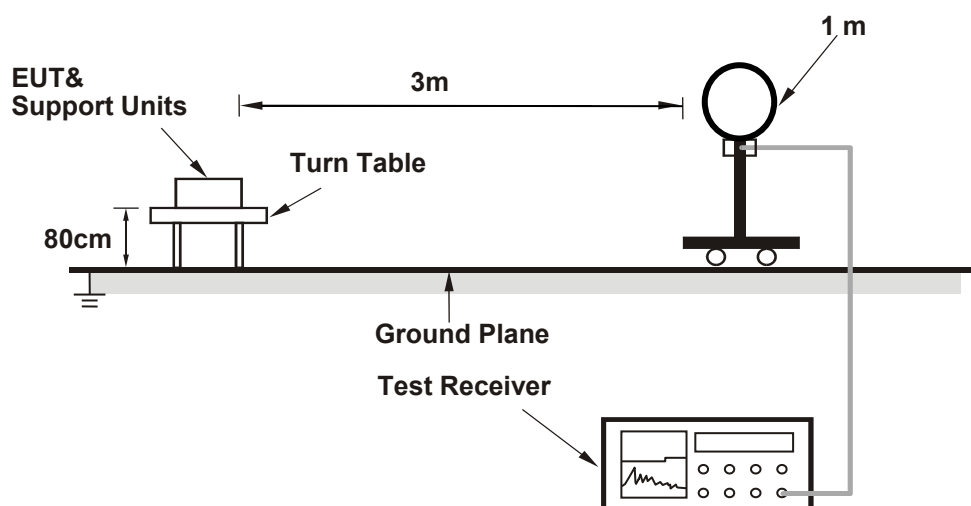
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

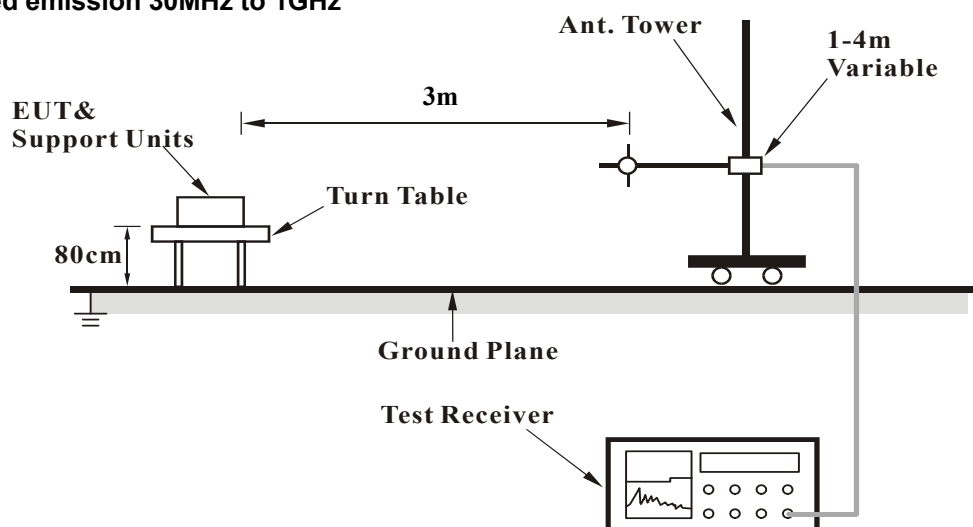
No deviation.

4.1.5 Test Set Up

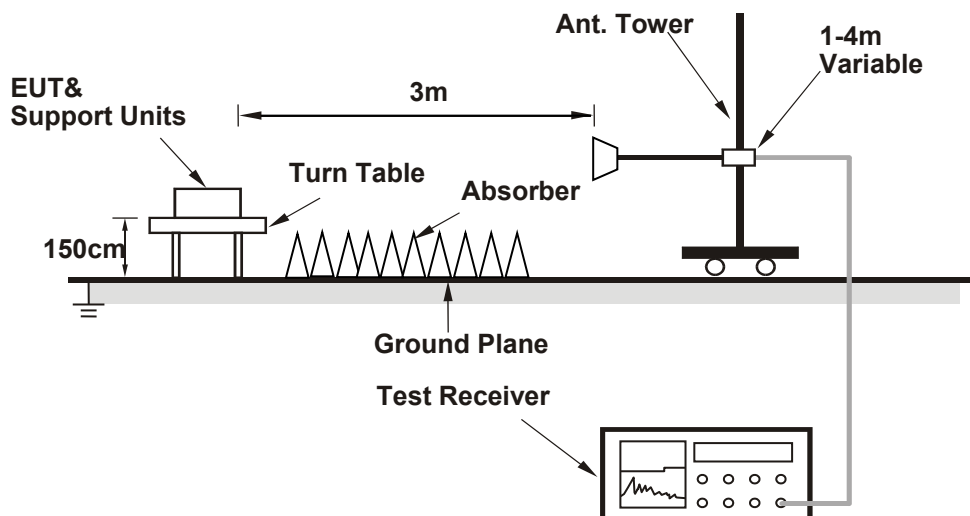
For Radiated emission below 30MHz



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

Test Mode A

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

Test Mode B

- Set the EUT plugged in the cradle and connected with a notebook system via a USB cable and placed on a testing table.
- The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.8 PK	74.0	-7.2	3.27 H	110	64.2	2.6
2	5150.00	46.5 AV	54.0	-7.5	3.27 H	110	43.9	2.6
3	*5180.00	104.5 PK			3.33 H	104	63.6	40.9
4	*5180.00	94.5 AV			3.33 H	104	53.6	40.9
5	#10360.00	59.5 PK	74.0	-14.5	2.89 H	191	44.7	14.8
6	#10360.00	46.5 AV	54.0	-7.5	2.89 H	191	31.7	14.8
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	5150.00	72.6 PK	74.0	-1.4	1.91 V	213	70.0	2.6
2	5150.00	51.1 AV	54.0	-2.9	1.91 V	213	48.5	2.6
3	*5180.00	110.0 PK			1.99 V	218	69.1	40.9
4	*5180.00	99.4 AV			1.99 V	218	58.5	40.9
5	#10360.00	58.4 PK	74.0	-15.6	1.49 V	282	43.6	14.8
6	#10360.00	46.4 AV	54.0	-7.6	1.49 V	282	31.6	14.8

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.7 PK			3.40 H	105	66.8	40.9
2	*5200.00	97.3 AV			3.40 H	105	56.4	40.9
3	#10400.00	59.9 PK	74.0	-14.1	2.83 H	194	45.0	14.9
4	#10400.00	46.7 AV	54.0	-7.3	2.83 H	194	31.8	14.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	112.5 PK			1.93 V	217	71.6	40.9
2	*5200.00	101.4 AV			1.93 V	217	60.5	40.9
3	#10400.00	59.3 PK	74.0	-14.7	1.56 V	287	44.4	14.9
4	#10400.00	46.7 AV	54.0	-7.3	1.56 V	287	31.8	14.9

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.2 PK			3.33 H	102	66.5	40.7
2	*5240.00	97.2 AV			3.33 H	102	56.5	40.7
3	5350.00	55.7 PK	74.0	-18.3	3.47 H	98	52.9	2.8
4	5350.00	43.1 AV	54.0	-10.9	3.47 H	98	40.3	2.8
5	#10480.00	59.6 PK	74.0	-14.4	2.94 H	200	44.9	14.7
6	#10480.00	46.2 AV	54.0	-7.8	2.94 H	200	31.5	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	111.9 PK			1.87 V	209	71.2	40.7
2	*5240.00	101.2 AV			1.87 V	209	60.5	40.7
3	5350.00	57.0 PK	74.0	-17.0	1.94 V	201	54.2	2.8
4	5350.00	43.7 AV	54.0	-10.3	1.94 V	201	40.9	2.8
5	#10480.00	59.4 PK	74.0	-14.6	1.51 V	280	44.7	14.7
6	#10480.00	46.3 AV	54.0	-7.7	1.51 V	280	31.6	14.7

Remarks:

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

CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.8 PK	74.0	-18.2	3.41 H	113	53.2	2.6
2	5150.00	43.0 AV	54.0	-11.0	3.41 H	113	40.4	2.6
3	*5260.00	106.8 PK			3.30 H	110	66.1	40.7
4	*5260.00	96.4 AV			3.30 H	110	55.7	40.7
5	#10520.00	59.3 PK	74.0	-14.7	2.47 H	249	44.5	14.8
6	#10520.00	46.4 AV	54.0	-7.6	2.47 H	249	31.6	14.8
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	5150.00	56.4 PK	74.0	-17.6	1.69 V	205	53.8	2.6
2	5150.00	43.2 AV	54.0	-10.8	1.69 V	205	40.6	2.6
3	*5260.00	112.2 PK			1.63 V	217	71.5	40.7
4	*5260.00	101.4 AV			1.63 V	217	60.7	40.7
5	#10520.00	59.0 PK	74.0	-15.0	1.34 V	59	44.2	14.8
6	#10520.00	46.2 AV	54.0	-7.8	1.34 V	59	31.4	14.8

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.8 PK			3.22 H	112	66.2	40.6
2	*5300.00	96.1 AV			3.22 H	112	55.5	40.6
3	10600.00	60.0 PK	74.0	-14.0	2.44 H	253	44.8	15.2
4	10600.00	46.9 AV	54.0	-7.1	2.44 H	253	31.7	15.2
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	*5300.00	111.5 PK			1.71 V	219	70.9	40.6
2	*5300.00	100.9 AV			1.71 V	219	60.3	40.6
3	10600.00	60.3 PK	74.0	-13.7	1.36 V	66	45.1	15.2
4	10600.00	47.1 AV	54.0	-6.9	1.36 V	66	31.9	15.2

Remarks:

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

CHANNEL	TX Channel 64	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.2 PK			3.40 H	111	63.5	40.7
2	*5320.00	93.6 AV			3.40 H	111	52.9	40.7
3	5350.00	65.3 PK	74.0	-8.7	3.49 H	120	62.5	2.8
4	5350.00	47.0 AV	54.0	-7.0	3.49 H	120	44.2	2.8
5	10640.00	60.0 PK	74.0	-14.0	2.41 H	238	44.6	15.4
6	10640.00	46.9 AV	54.0	-7.1	2.41 H	238	31.5	15.4
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	*5320.00	109.0 PK			1.75 V	214	68.3	40.7
2	*5320.00	98.7 AV			1.75 V	214	58.0	40.7
3	5350.00	72.9 PK	74.0	-1.1	1.80 V	218	70.1	2.8
4	5350.00	52.3 AV	54.0	-1.7	1.80 V	218	49.5	2.8
5	10640.00	60.3 PK	74.0	-13.7	1.33 V	49	44.9	15.4
6	10640.00	47.1 AV	54.0	-6.9	1.33 V	49	31.7	15.4

Remarks:

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

CHANNEL	TX Channel 100	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.7 PK	74.0	-16.3	1.80 H	177	54.5	3.2
2	5460.00	44.7 AV	54.0	-9.3	1.80 H	177	41.5	3.2
3	#5470.00	69.9 PK	74.0	-4.1	1.88 H	162	66.7	3.2
4	#5470.00	46.3 AV	54.0	-7.7	1.88 H	162	43.1	3.2
5	*5500.00	104.9 PK			1.84 H	175	63.4	41.5
6	*5500.00	94.7 AV			1.84 H	175	53.2	41.5
7	11000.00	60.1 PK	74.0	-13.9	1.50 H	62	44.1	16.0
8	11000.00	47.0 AV	54.0	-7.0	1.50 H	62	31.0	16.0
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	5460.00	62.2 PK	74.0	-11.8	1.82 V	214	59.0	3.2
2	5460.00	46.4 AV	54.0	-7.6	1.82 V	214	43.2	3.2
3	#5470.00	72.7 PK	74.0	-1.3	1.80 V	208	69.5	3.2
4	#5470.00	50.3 AV	54.0	-3.7	1.80 V	208	47.1	3.2
5	*5500.00	108.8 PK			1.75 V	205	67.3	41.5
6	*5500.00	98.4 AV			1.75 V	205	56.9	41.5
7	11000.00	60.3 PK	74.0	-13.7	2.35 V	144	44.3	16.0
8	11000.00	47.2 AV	54.0	-6.8	2.35 V	144	31.2	16.0

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.2 PK			3.00 H	168	66.3	41.9
2	*5580.00	97.6 AV			3.00 H	168	55.7	41.9
3	11160.00	60.2 PK	74.0	-13.8	1.68 H	70	44.5	15.7
4	11160.00	47.1 AV	54.0	-6.9	1.68 H	70	31.4	15.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	112.0 PK			1.84 V	208	70.1	41.9
2	*5580.00	101.1 AV			1.84 V	208	59.2	41.9
3	11160.00	60.5 PK	74.0	-13.5	2.28 V	149	44.8	15.7
4	11160.00	47.3 AV	54.0	-6.7	2.28 V	149	31.6	15.7

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.3 PK			3.06 H	166	62.2	42.1
2	*5700.00	94.1 AV			3.06 H	166	52.0	42.1
3	#5725.00	69.2 PK	74.0	-4.8	2.98 H	175	65.5	3.7
4	#5725.00	47.0 AV	54.0	-7.0	2.98 H	175	43.3	3.7
5	11400.00	60.0 PK	74.0	-14.0	1.59 H	67	44.0	16.0
6	11400.00	46.8 AV	54.0	-7.2	1.59 H	67	30.8	16.0
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	*5700.00	108.1 PK			1.78 V	210	66.0	42.1
2	*5700.00	97.4 AV			1.78 V	210	55.3	42.1
3	#5725.00	72.6 PK	74.0	-1.4	1.71 V	213	68.9	3.7
4	#5725.00	51.4 AV	54.0	-2.6	1.71 V	213	47.7	3.7
5	11400.00	60.2 PK	74.0	-13.8	2.34 V	140	44.2	16.0
6	11400.00	47.0 AV	54.0	-7.0	2.34 V	140	31.0	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5619.20	58.0 PK	68.2	-10.2	3.09 H	159	54.5	3.5
2	*5745.00	106.6 PK			3.09 H	159	64.4	42.2
3	*5745.00	96.2 AV			3.09 H	159	54.0	42.2
4	#5943.20	58.6 PK	68.2	-9.6	3.09 H	159	54.1	4.5
5	11490.00	60.0 PK	74.0	-14.0	1.94 H	21	43.8	16.2
6	11490.00	46.9 AV	54.0	-7.1	1.94 H	21	30.7	16.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5618.40	57.5 PK	68.2	-10.7	1.69 V	210	54.0	3.5
2	*5745.00	111.9 PK			1.69 V	210	69.7	42.2
3	*5745.00	101.2 AV			1.69 V	210	59.0	42.2
4	#5963.20	58.0 PK	68.2	-10.2	1.69 V	210	53.3	4.7
5	11490.00	60.3 PK	74.0	-13.7	2.70 V	98	44.1	16.2
6	11490.00	47.2 AV	54.0	-6.8	2.70 V	98	31.0	16.2

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5605.60	57.8 PK	68.2	-10.4	3.08 H	157	54.2	3.6
2	*5785.00	107.4 PK			3.08 H	157	65.0	42.4
3	*5785.00	97.1 AV			3.08 H	157	54.7	42.4
4	#5955.20	58.6 PK	68.2	-9.6	3.08 H	157	53.9	4.7
5	11570.00	60.0 PK	74.0	-14.0	1.98 H	26	44.0	16.0
6	11570.00	46.9 AV	54.0	-7.1	1.98 H	26	30.9	16.0
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	#5604.00	58.5 PK	68.2	-9.7	1.63 V	209	54.9	3.6
2	*5785.00	111.9 PK			1.63 V	209	69.5	42.4
3	*5785.00	100.7 AV			1.63 V	209	58.3	42.4
4	#5940.80	58.8 PK	68.2	-9.4	1.63 V	209	54.3	4.5
5	11570.00	60.3 PK	74.0	-13.7	2.77 V	91	44.3	16.0
6	11570.00	47.2 AV	54.0	-6.8	2.77 V	91	31.2	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5627.20	57.9 PK	68.2	-10.3	3.16 H	158	54.4	3.5
2	*5825.00	107.7 PK			3.16 H	158	64.9	42.8
3	*5825.00	97.1 AV			3.16 H	158	54.3	42.8
4	#5998.40	58.9 PK	68.2	-9.3	3.16 H	158	54.2	4.7
5	11650.00	59.3 PK	74.0	-14.7	2.01 H	23	43.9	15.4
6	11650.00	46.3 AV	54.0	-7.7	2.01 H	23	30.9	15.4
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	#5600.00	58.5 PK	68.2	-9.7	1.59 V	211	54.8	3.7
2	*5825.00	110.9 PK			1.59 V	211	68.1	42.8
3	*5825.00	100.5 AV			1.59 V	211	57.7	42.8
4	#5951.20	59.1 PK	68.2	-9.1	1.59 V	211	54.5	4.6
5	11650.00	59.7 PK	74.0	-14.3	2.68 V	87	44.3	15.4
6	11650.00	46.5 AV	54.0	-7.5	2.68 V	87	31.1	15.4

Remarks:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.9 PK	74.0	-9.1	3.22 H	109	62.3	2.6
2	5150.00	45.4 AV	54.0	-8.6	3.22 H	109	42.8	2.6
3	*5180.00	104.1 PK			3.19 H	102	63.2	40.9
4	*5180.00	93.7 AV			3.19 H	102	52.8	40.9
5	#10360.00	59.8 PK	74.0	-14.2	2.71 H	211	45.0	14.8
6	#10360.00	46.3 AV	54.0	-7.7	2.71 H	211	31.5	14.8
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	5150.00	72.9 PK	74.0	-1.1	1.95 V	214	70.3	2.6
2	5150.00	51.0 AV	54.0	-3.0	1.95 V	214	48.4	2.6
3	*5180.00	110.0 PK			1.84 V	219	69.1	40.9
4	*5180.00	99.0 AV			1.84 V	219	58.1	40.9
5	#10360.00	60.1 PK	74.0	-13.9	1.44 V	302	45.3	14.8
6	#10360.00	46.1 AV	54.0	-7.9	1.44 V	302	31.3	14.8

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.0 PK			3.39 H	104	66.1	40.9
2	*5200.00	96.0 AV			3.39 H	104	55.1	40.9
3	#10400.00	60.1 PK	74.0	-13.9	2.77 H	206	45.2	14.9
4	#10400.00	46.6 AV	54.0	-7.4	2.77 H	206	31.7	14.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	111.8 PK			1.85 V	208	70.9	40.9
2	*5200.00	101.2 AV			1.85 V	208	60.3	40.9
3	#10400.00	60.4 PK	74.0	-13.6	1.48 V	309	45.5	14.9
4	#10400.00	46.5 AV	54.0	-7.5	1.48 V	309	31.6	14.9

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.1 PK			3.33 H	100	66.4	40.7
2	*5240.00	95.9 AV			3.33 H	100	55.2	40.7
3	5350.00	55.9 PK	74.0	-18.1	3.28 H	89	53.1	2.8
4	5350.00	43.4 AV	54.0	-10.6	3.28 H	89	40.6	2.8
5	#10480.00	59.7 PK	74.0	-14.3	2.70 H	222	45.0	14.7
6	#10480.00	46.2 AV	54.0	-7.8	2.70 H	222	31.5	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	111.7 PK			1.96 V	215	71.0	40.7
2	*5240.00	101.0 AV			1.96 V	215	60.3	40.7
3	5350.00	56.9 PK	74.0	-17.1	2.01 V	199	54.1	2.8
4	5350.00	43.9 AV	54.0	-10.1	2.01 V	199	41.1	2.8
5	#10480.00	60.1 PK	74.0	-13.9	1.59 V	320	45.4	14.7
6	#10480.00	46.5 AV	54.0	-7.5	1.59 V	320	31.8	14.7

Remarks:

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

CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.1 PK	74.0	-17.9	3.57 H	108	53.5	2.6
2	5150.00	43.1 AV	54.0	-10.9	3.57 H	108	40.5	2.6
3	*5260.00	106.3 PK			3.51 H	107	65.6	40.7
4	*5260.00	96.2 AV			3.51 H	107	55.5	40.7
5	#10520.00	59.6 PK	74.0	-14.4	2.50 H	250	44.8	14.8
6	#10520.00	46.6 AV	54.0	-7.4	2.50 H	250	31.8	14.8
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	5150.00	57.0 PK	74.0	-17.0	1.60 V	210	54.4	2.6
2	5150.00	43.7 AV	54.0	-10.3	1.60 V	210	41.1	2.6
3	*5260.00	112.3 PK			1.55 V	223	71.6	40.7
4	*5260.00	101.5 AV			1.55 V	223	60.8	40.7
5	#10520.00	59.3 PK	74.0	-14.7	1.37 V	51	44.5	14.8
6	#10520.00	46.4 AV	54.0	-7.6	1.37 V	51	31.6	14.8

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	106.0 PK			3.48 H	105	65.4	40.6
2	*5300.00	96.2 AV			3.48 H	105	55.6	40.6
3	10600.00	59.8 PK	74.0	-14.2	2.61 H	259	44.6	15.2
4	10600.00	46.7 AV	54.0	-7.3	2.61 H	259	31.5	15.2
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	*5300.00	111.4 PK			1.57 V	221	70.8	40.6
2	*5300.00	101.3 AV			1.57 V	221	60.7	40.6
3	10600.00	60.1 PK	74.0	-13.9	1.40 V	44	44.9	15.2
4	10600.00	47.0 AV	54.0	-7.0	1.40 V	44	31.8	15.2

Remarks:

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

CHANNEL	TX Channel 64	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.5 PK			3.39 H	101	62.8	40.7
2	*5320.00	93.7 AV			3.39 H	101	53.0	40.7
3	5350.00	65.4 PK	74.0	-8.6	3.34 H	96	62.6	2.8
4	5350.00	47.2 AV	54.0	-6.8	3.34 H	96	44.4	2.8
5	10640.00	60.3 PK	74.0	-13.7	3.00 H	239	44.9	15.4
6	10640.00	47.1 AV	54.0	-6.9	3.00 H	239	31.7	15.4
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	*5320.00	109.3 PK			1.61 V	218	68.6	40.7
2	*5320.00	98.8 AV			1.61 V	218	58.1	40.7
3	5350.00	72.8 PK	74.0	-1.2	1.66 V	224	70.0	2.8
4	5350.00	52.1 AV	54.0	-1.9	1.66 V	224	49.3	2.8
5	10640.00	60.8 PK	74.0	-13.2	1.31 V	47	45.4	15.4
6	10640.00	47.4 AV	54.0	-6.6	1.31 V	47	32.0	15.4

Remarks:

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

CHANNEL	TX Channel 100	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.0 PK	74.0	-15.0	1.79 H	178	55.8	3.2
2	5460.00	44.9 AV	54.0	-9.1	1.79 H	178	41.7	3.2
3	#5470.00	69.2 PK	74.0	-4.8	1.95 H	174	66.0	3.2
4	#5470.00	46.7 AV	54.0	-7.3	1.95 H	174	43.5	3.2
5	*5500.00	105.2 PK			1.89 H	171	63.7	41.5
6	*5500.00	94.8 AV			1.89 H	171	53.3	41.5
7	11000.00	60.4 PK	74.0	-13.6	1.60 H	57	44.4	16.0
8	11000.00	47.3 AV	54.0	-6.7	1.60 H	57	31.3	16.0
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	5460.00	62.9 PK	74.0	-11.1	1.68 V	199	59.7	3.2
2	5460.00	45.8 AV	54.0	-8.2	1.68 V	199	42.6	3.2
3	#5470.00	72.8 PK	74.0	-1.2	1.79 V	211	69.6	3.2
4	#5470.00	49.7 AV	54.0	-4.3	1.79 V	211	46.5	3.2
5	*5500.00	109.5 PK			1.76 V	206	68.0	41.5
6	*5500.00	98.7 AV			1.76 V	206	57.2	41.5
7	11000.00	60.8 PK	74.0	-13.2	2.40 V	128	44.8	16.0
8	11000.00	47.4 AV	54.0	-6.6	2.40 V	128	31.4	16.0

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.4 PK			3.03 H	163	66.5	41.9
2	*5580.00	97.9 AV			3.03 H	163	56.0	41.9
3	11160.00	60.3 PK	74.0	-13.7	1.74 H	52	44.6	15.7
4	11160.00	47.2 AV	54.0	-6.8	1.74 H	52	31.5	15.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	111.9 PK			1.69 V	202	70.0	41.9
2	*5580.00	101.3 AV			1.69 V	202	59.4	41.9
3	11160.00	60.8 PK	74.0	-13.2	2.22 V	133	45.1	15.7
4	11160.00	47.4 AV	54.0	-6.6	2.22 V	133	31.7	15.7

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	104.1 PK			3.09 H	169	62.0	42.1
2	*5700.00	93.9 AV			3.09 H	169	51.8	42.1
3	#5725.00	68.8 PK	74.0	-5.2	3.02 H	178	65.1	3.7
4	#5725.00	47.3 AV	54.0	-6.7	3.02 H	178	43.6	3.7
5	11400.00	60.2 PK	74.0	-13.8	1.48 H	40	44.2	16.0
6	11400.00	47.0 AV	54.0	-7.0	1.48 H	40	31.0	16.0
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	*5700.00	107.9 PK			1.71 V	210	65.8	42.1
2	*5700.00	96.4 AV			1.71 V	210	54.3	42.1
3	#5725.00	72.5 PK	74.0	-1.5	1.71 V	209	68.8	3.7
4	#5725.00	52.9 AV	54.0	-1.1	1.71 V	209	49.2	3.7
5	11400.00	60.3 PK	74.0	-13.7	2.46 V	129	44.3	16.0
6	11400.00	47.2 AV	54.0	-6.8	2.46 V	129	31.2	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.60	57.6 PK	68.2	-10.6	3.15 H	160	54.1	3.5
2	*5745.00	106.9 PK			3.15 H	160	64.7	42.2
3	*5745.00	96.3 AV			3.15 H	160	54.1	42.2
4	#5944.00	59.2 PK	68.2	-9.0	3.15 H	160	54.7	4.5
5	11490.00	61.0 PK	74.0	-13.0	1.88 H	19	44.8	16.2
6	11490.00	47.3 AV	54.0	-6.7	1.88 H	19	31.1	16.2
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	#5607.20	58.0 PK	68.2	-10.2	1.67 V	208	54.5	3.5
2	*5745.00	110.6 PK			1.67 V	208	68.4	42.2
3	*5745.00	100.5 AV			1.67 V	208	58.3	42.2
4	#5962.40	58.9 PK	68.2	-9.3	1.67 V	208	54.2	4.7
5	11490.00	61.3 PK	74.0	-12.7	2.82 V	100	45.1	16.2
6	11490.00	48.2 AV	54.0	-5.8	2.82 V	100	32.0	16.2

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5606.40	57.8 PK	68.2	-10.4	3.06 H	160	54.3	3.5
2	*5785.00	107.0 PK			3.06 H	160	64.6	42.4
3	*5785.00	96.5 AV			3.06 H	160	54.1	42.4
4	#5953.60	58.9 PK	68.2	-9.3	3.06 H	160	54.3	4.6
5	11570.00	60.6 PK	74.0	-13.4	1.78 H	30	44.6	16.0
6	11570.00	47.5 AV	54.0	-6.5	1.78 H	30	31.5	16.0
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	#5643.20	58.0 PK	68.2	-10.2	1.64 V	209	54.6	3.4
2	*5785.00	111.4 PK			1.64 V	209	69.0	42.4
3	*5785.00	100.8 AV			1.64 V	209	58.4	42.4
4	#5975.20	59.0 PK	68.2	-9.2	1.64 V	209	54.4	4.6
5	11570.00	61.2 PK	74.0	-12.8	2.84 V	105	45.2	16.0
6	11570.00	47.8 AV	54.0	-6.2	2.84 V	105	31.8	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5628.80	58.0 PK	68.2	-10.2	3.04 H	158	54.5	3.5
2	*5825.00	107.0 PK			3.04 H	158	64.2	42.8
3	*5825.00	96.9 AV			3.04 H	158	54.1	42.8
4	#5951.20	58.9 PK	68.2	-9.3	3.04 H	158	54.3	4.6
5	11650.00	60.5 PK	74.0	-13.5	1.73 H	11	45.1	15.4
6	11650.00	47.1 AV	54.0	-6.9	1.73 H	11	31.7	15.4
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	#5624.00	57.4 PK	68.2	-10.8	1.72 V	209	53.9	3.5
2	*5825.00	110.7 PK			1.72 V	209	67.9	42.8
3	*5825.00	100.1 AV			1.72 V	209	57.3	42.8
4	#5989.60	58.8 PK	68.2	-9.4	1.72 V	209	54.1	4.7
5	11650.00	60.6 PK	74.0	-13.4	2.86 V	82	45.2	15.4
6	11650.00	47.3 AV	54.0	-6.7	2.86 V	82	31.9	15.4

Remarks:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.0 PK	74.0	-10.0	3.38 H	118	61.4	2.6
2	5150.00	48.0 AV	54.0	-6.0	3.38 H	118	45.4	2.6
3	*5190.00	97.5 PK			3.35 H	110	56.6	40.9
4	*5190.00	87.2 AV			3.35 H	110	46.3	40.9
5	#10380.00	59.4 PK	74.0	-14.6	2.88 H	262	44.6	14.8
6	#10380.00	46.2 AV	54.0	-7.8	2.88 H	262	31.4	14.8
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	5150.00	72.0 PK	74.0	-2.0	1.63 V	217	69.4	2.6
2	5150.00	53.0 AV	54.0	-1.0	1.63 V	217	50.4	2.6
3	*5190.00	104.2 PK			1.62 V	220	63.3	40.9
4	*5190.00	93.1 AV			1.62 V	220	52.2	40.9
5	#10380.00	59.6 PK	74.0	-14.4	1.29 V	338	44.8	14.8
6	#10380.00	46.5 AV	54.0	-7.5	1.29 V	338	31.7	14.8

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	103.8 PK			2.98 H	109	63.1	40.7
2	*5230.00	93.1 AV			2.98 H	109	52.4	40.7
3	5350.00	57.2 PK	74.0	-16.8	3.10 H	123	54.4	2.8
4	5350.00	43.6 AV	54.0	-10.4	3.10 H	123	40.8	2.8
5	#10460.00	59.5 PK	74.0	-14.5	2.91 H	255	44.7	14.8
6	#10460.00	46.4 AV	54.0	-7.6	2.91 H	255	31.6	14.8
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	*5230.00	108.5 PK			1.81 V	212	67.8	40.7
2	*5230.00	98.2 AV			1.81 V	212	57.5	40.7
3	5350.00	58.1 PK	74.0	-15.9	1.88 V	229	55.3	2.8
4	5350.00	45.4 AV	54.0	-8.6	1.88 V	229	42.6	2.8
5	#10406.00	60.1 PK	74.0	-13.9	1.34 V	349	45.2	14.9
6	#10406.00	46.7 AV	54.0	-7.3	1.34 V	349	31.8	14.9

Remarks:

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

CHANNEL	TX Channel 54	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.4 PK	74.0	-17.6	3.24 H	120	53.8	2.6
2	5150.00	43.6 AV	54.0	-10.4	3.24 H	120	41.0	2.6
3	*5270.00	103.6 PK			3.32 H	105	63.0	40.6
4	*5270.00	93.5 AV			3.32 H	105	52.9	40.6
5	5350.00	63.6 PK	74.0	-10.4	3.30 H	91	60.8	2.8
6	5350.00	46.7 AV	54.0	-7.3	3.30 H	91	43.9	2.8
7	#10540.00	59.5 PK	74.0	-14.5	2.98 H	245	44.6	14.9
8	#10540.00	46.3 AV	54.0	-7.7	2.98 H	245	31.4	14.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.69 V	228	55.2	2.6
2	5150.00	44.5 AV	54.0	-9.5	1.69 V	228	41.9	2.6
3	*5270.00	109.1 PK			1.60 V	223	68.5	40.6
4	*5270.00	98.8 AV			1.60 V	223	58.2	40.6
5	5350.00	68.4 PK	74.0	-5.6	1.54 V	218	65.6	2.8
6	5350.00	51.2 AV	54.0	-2.8	1.54 V	218	48.4	2.8
7	#10540.00	59.9 PK	74.0	-14.1	1.29 V	27	45.0	14.9
8	#10540.00	46.6 AV	54.0	-7.4	1.29 V	27	31.7	14.9

Remarks:

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

CHANNEL	TX Channel 62	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	97.8 PK			3.28 H	114	57.2	40.6
2	*5310.00	87.0 AV			3.28 H	114	46.4	40.6
3	5350.00	66.1 PK	74.0	-7.9	3.24 H	129	63.3	2.8
4	5350.00	47.6 AV	54.0	-6.4	3.24 H	129	44.8	2.8
5	10620.00	59.5 PK	74.0	-14.5	3.04 H	288	44.2	15.3
6	10620.00	46.4 AV	54.0	-7.6	3.04 H	288	31.1	15.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	103.0 PK			1.60 V	222	62.4	40.6
2	*5310.00	92.1 AV			1.60 V	222	51.5	40.6
3	5350.00	71.3 PK	74.0	-2.7	1.58 V	219	68.5	2.8
4	5350.00	52.6 AV	54.0	-1.4	1.58 V	219	49.8	2.8
5	10620.00	59.9 PK	74.0	-14.1	1.30 V	33	44.6	15.3
6	10620.00	46.8 AV	54.0	-7.2	1.30 V	33	31.5	15.3

Remarks:

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

CHANNEL	TX Channel 102	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.1 PK	74.0	-14.9	3.13 H	165	55.9	3.2
2	5460.00	45.2 AV	54.0	-8.8	3.13 H	165	42.0	3.2
3	#5470.00	68.0 PK	74.0	-6.0	3.18 H	181	64.8	3.2
4	#5470.00	47.3 AV	54.0	-6.7	3.18 H	181	44.1	3.2
5	*5510.00	99.1 PK			3.10 H	172	57.5	41.6
6	*5510.00	88.8 AV			3.10 H	172	47.2	41.6
7	11020.00	59.3 PK	74.0	-14.7	1.82 H	38	43.5	15.8
8	11020.00	46.5 AV	54.0	-7.5	1.82 H	38	30.7	15.8
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	5460.00	62.0 PK	74.0	-12.0	1.66 V	194	58.8	3.2
2	5460.00	46.4 AV	54.0	-7.6	1.66 V	194	43.2	3.2
3	#5470.00	71.6 PK	74.0	-2.4	1.69 V	215	68.4	3.2
4	#5470.00	52.7 AV	54.0	-1.3	1.69 V	215	49.5	3.2
5	*5510.00	102.8 PK			1.72 V	209	61.2	41.6
6	*5510.00	92.5 AV			1.72 V	209	50.9	41.6
7	11020.00	59.6 PK	74.0	-14.4	2.62 V	115	43.8	15.8
8	11020.00	46.9 AV	54.0	-7.1	2.62 V	115	31.1	15.8

Remarks:

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

CHANNEL	TX Channel 110	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	105.0 PK			3.22 H	169	63.2	41.8
2	*5550.00	94.8 AV			3.22 H	169	53.0	41.8
3	11100.00	60.3 PK	74.0	-13.7	1.87 H	41	44.6	15.7
4	11100.00	47.0 AV	54.0	-7.0	1.87 H	41	31.3	15.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	108.9 PK			1.74 V	210	67.1	41.8
2	*5550.00	98.2 AV			1.74 V	210	56.4	41.8
3	11100.00	60.7 PK	74.0	-13.3	2.56 V	119	45.0	15.7
4	11100.00	47.3 AV	54.0	-6.7	2.56 V	119	31.6	15.7

Remarks:

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

CHANNEL	TX Channel 134	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	101.8 PK			3.20 H	161	60.0	41.8
2	*5670.00	91.6 AV			3.20 H	161	49.8	41.8
3	#5725.00	67.0 PK	74.0	-7.0	3.28 H	155	63.3	3.7
4	#5725.00	48.8 AV	54.0	-5.2	3.28 H	155	45.1	3.7
5	11340.00	60.3 PK	74.0	-13.7	1.90 H	44	44.3	16.0
6	11340.00	47.2 AV	54.0	-6.8	1.90 H	44	31.2	16.0
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	*5670.00	105.6 PK			1.80 V	206	63.8	41.8
2	*5670.00	95.1 AV			1.80 V	206	53.3	41.8
3	#5725.00	70.9 PK	74.0	-3.1	1.79 V	208	67.2	3.7
4	#5725.00	52.7 AV	54.0	-1.3	1.79 V	208	49.0	3.7
5	11340.00	60.8 PK	74.0	-13.2	2.51 V	107	44.8	16.0
6	11340.00	47.4 AV	54.0	-6.6	2.51 V	107	31.4	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.80	57.9 PK	68.2	-10.3	3.08 H	156	54.4	3.5
2	*5755.00	103.5 PK			3.08 H	156	61.2	42.3
3	*5755.00	92.5 AV			3.08 H	156	50.2	42.3
4	#5976.00	59.0 PK	68.2	-9.2	3.08 H	156	54.4	4.6
5	11510.00	59.5 PK	74.0	-14.5	2.00 H	8	43.5	16.0
6	11510.00	46.9 AV	54.0	-7.1	2.00 H	8	30.9	16.0
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	#5650.40	61.4 PK	68.5	-7.1	1.67 V	210	58.0	3.4
2	*5755.00	108.5 PK			1.67 V	210	66.2	42.3
3	*5755.00	97.9 AV			1.67 V	210	55.6	42.3
4	#5947.20	58.8 PK	68.2	-9.4	1.67 V	210	54.2	4.6
5	11510.00	59.3 PK	74.0	-14.7	2.58 V	82	43.3	16.0
6	11510.00	46.7 AV	54.0	-7.3	2.58 V	82	30.7	16.0

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5608.80	57.6 PK	68.2	-10.6	3.07 H	127	54.1	3.5
2	*5795.00	104.3 PK			3.07 H	127	61.8	42.5
3	*5795.00	94.0 AV			3.07 H	127	51.5	42.5
4	#5937.60	58.7 PK	68.2	-9.5	3.07 H	127	54.2	4.5
5	11590.00	59.5 PK	74.0	-14.5	2.04 H	4	43.7	15.8
6	11590.00	46.9 AV	54.0	-7.1	2.04 H	4	31.1	15.8
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	#5615.20	57.3 PK	68.2	-10.9	1.63 V	210	53.8	3.5
2	*5795.00	107.9 PK			1.63 V	211	65.4	42.5
3	*5795.00	97.6 AV			1.63 V	211	55.1	42.5
4	#5939.20	58.1 PK	68.2	-10.1	1.63 V	210	53.6	4.5
5	11590.00	59.6 PK	74.0	-14.4	2.65 V	73	43.8	15.8
6	11590.00	46.8 AV	54.0	-7.2	2.65 V	73	31.0	15.8

Remarks:

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

Below 1GHz Worst-Case Data: 802.11a

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	25.6 QP	40.0	-14.4	1.00 H	211	40.0	-14.4
2	70.73	22.2 QP	40.0	-17.8	1.50 H	6	38.4	-16.2
3	84.34	17.6 QP	40.0	-22.4	1.50 H	242	36.7	-19.1
4	515.97	24.1 QP	46.0	-21.9	1.50 H	104	33.2	-9.1
5	543.19	26.0 QP	46.0	-20.0	1.99 H	104	34.7	-8.7
6	570.41	23.6 QP	46.0	-22.4	1.99 H	81	31.9	-8.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.62	23.0 QP	40.0	-17.0	1.00 V	249	38.0	-15.0
2	57.12	21.0 QP	40.0	-19.0	1.00 V	249	35.4	-14.4
3	70.73	16.4 QP	40.0	-23.6	1.50 V	129	32.6	-16.2
4	111.56	15.7 QP	43.5	-27.8	1.00 V	89	32.9	-17.2
5	405.15	18.6 QP	46.0	-27.4	2.00 V	158	29.7	-11.1
6	549.03	20.9 QP	46.0	-25.1	1.00 V	351	29.5	-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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	26.9 QP	40.0	-13.1	2.00 H	72	41.3	-14.4
2	70.73	24.1 QP	40.0	-15.9	2.00 H	116	40.3	-16.2
3	84.34	20.6 QP	40.0	-19.4	2.00 H	100	39.7	-19.1
4	279.17	41.8 QP	46.0	-4.2	1.00 H	84	55.0	-13.2
5	294.32	40.3 QP	46.0	-5.7	1.00 H	87	53.2	-12.9
6	356.54	30.1 QP	46.0	-15.9	1.00 H	107	42.1	-12.0
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	41.57	27.4 QP	40.0	-12.6	1.00 V	239	42.0	-14.6
2	57.12	22.8 QP	40.0	-17.2	1.00 V	74	37.2	-14.4
3	70.73	19.4 QP	40.0	-20.6	1.00 V	172	35.6	-16.2
4	144.61	20.5 QP	43.5	-23.0	1.00 V	12	34.7	-14.2
5	279.26	40.2 QP	46.0	-5.8	1.70 V	313	53.4	-13.2
6	354.60	29.3 QP	46.0	-16.7	1.49 V	45	41.3	-12.0

Remarks:

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

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

Test Date: Jan. 23, 2018

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 23, 2017	Nov. 22, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2017	Sep. 04, 2018
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 15, 2017	Aug. 14, 2018
Software ADT	BV ADT_Conc_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1.

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

4.2.3 Test Procedures

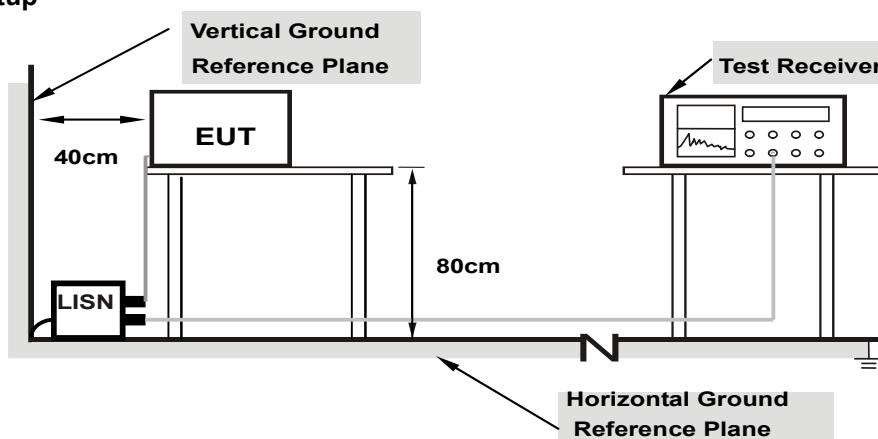
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

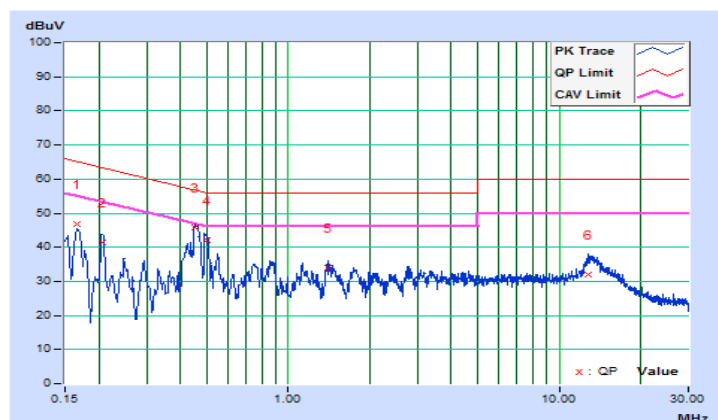
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16569	10.10	36.55	25.94	46.65	36.04	65.17	55.17	-18.52	-19.13
2	0.20511	10.10	31.46	20.74	41.56	30.84	63.40	53.40	-21.84	-22.56
3	0.45455	10.12	35.82	31.35	45.94	41.47	56.79	46.79	-10.85	-5.32
4	0.50000	10.12	32.06	27.62	42.18	37.74	56.00	46.00	-13.82	-8.26
5	1.40902	10.16	23.69	16.39	33.85	26.55	56.00	46.00	-22.15	-19.45
6	12.86532	10.79	21.13	14.64	31.92	25.43	60.00	50.00	-28.08	-24.57

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.

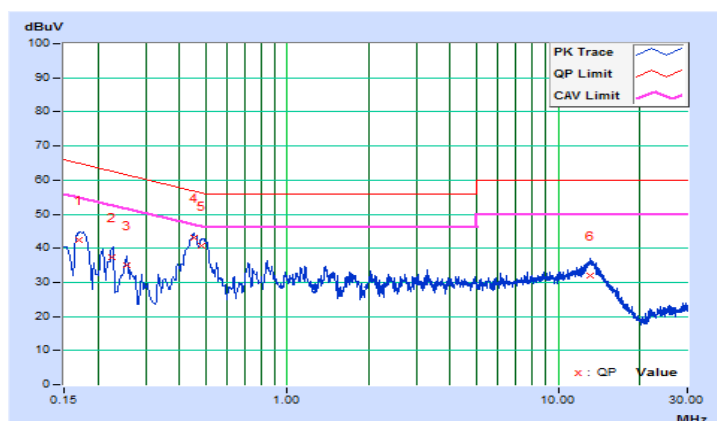


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16955	10.10	32.26	18.57	42.36	28.67	64.98	54.98	-22.62	-26.31
2	0.22612	10.11	27.42	14.29	37.53	24.40	62.59	52.59	-25.06	-28.19
3	0.25526	10.11	24.84	14.59	34.95	24.70	61.58	51.58	-26.63	-26.88
4	0.45097	10.12	32.84	23.13	42.96	33.25	56.86	46.86	-13.90	-13.61
5	0.48422	10.12	30.54	18.63	40.66	28.75	56.27	46.27	-15.61	-17.52
6	13.06082	10.65	21.50	15.02	32.15	25.67	60.00	50.00	-27.85	-24.33

REMARKS:

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



4.3 Transmit Power Measurement

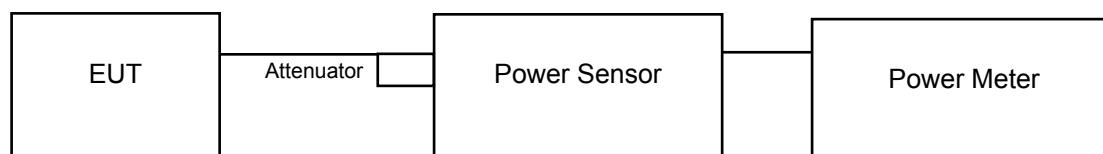
4.3.1 Limits of Transmit Power Measurement

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

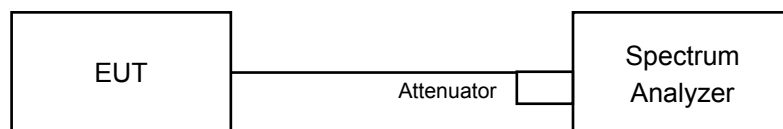
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

For Power Output
802.11a, 802.11n (HT20), 802.11n (HT40)



For 26dB and Occupied Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

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

For 26dB Bandwidth

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

For Occupied Bandwidth

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Conducted Power (mW)	Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	40.738	16.10	24.00	Pass
40	5200	39.537	15.97	24.00	Pass
48	5240	42.756	16.31	24.00	Pass
52	5260	40.926	16.12	24.00	Pass
60	5300	39.537	15.97	24.00	Pass
64	5320	41.783	16.21	24.00	Pass
100	5500	33.266	15.22	24.00	Pass
116	5580	37.670	15.76	24.00	Pass
140	5700	26.607	14.25	24.00	Pass
149	5745	44.463	16.48	30.00	Pass
157	5785	43.954	16.43	30.00	Pass
165	5825	42.855	16.32	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(40.63) = 27.09\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(38.45) = 26.85\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(39.88) = 27.01\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(40.41) = 27.06\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(40.59) = 27.08\text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log(37.54) = 26.74\text{ dBm} > 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Conducted Power (mW)	Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	31.769	15.02	24.00	Pass
40	5200	30.130	14.79	24.00	Pass
48	5240	33.189	15.21	24.00	Pass
52	5260	32.359	15.10	24.00	Pass
60	5300	31.477	14.98	24.00	Pass
64	5320	32.584	15.13	24.00	Pass
100	5500	34.041	15.32	24.00	Pass
116	5580	33.729	15.28	24.00	Pass
140	5700	24.434	13.88	24.00	Pass
149	5745	34.995	15.44	30.00	Pass
157	5785	34.119	15.33	30.00	Pass
165	5825	34.594	15.39	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(40.42) = 27.07\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(40.58) = 27.08\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(38.34) = 26.84\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(41.26) = 27.16\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(42.98) = 27.33\text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log(34.58) = 26.39\text{ dBm} > 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Conducted Power (mW)	Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	16.634	12.21	24.00	Pass
46	5230	27.102	14.33	24.00	Pass
54	5270	26.607	14.25	24.00	Pass
62	5310	16.866	12.27	24.00	Pass
102	5510	15.776	11.98	24.00	Pass
110	5550	28.973	14.62	24.00	Pass
134	5670	28.249	14.51	24.00	Pass
151	5755	27.861	14.45	30.00	Pass
159	5795	27.479	14.39	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(60.03) = 28.78\text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log(46.49) = 27.67\text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log(45.74) = 27.60\text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log(79.90) = 30.03\text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log(84.22) = 30.25\text{ dBm} > 24\text{dBm}$

26dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	38.42
40	5200	41.54
48	5240	39.15
52	5260	40.63
60	5300	38.45
64	5320	39.88
100	5500	40.41
116	5580	40.59
140	5700	37.54

802.11n (HT20)

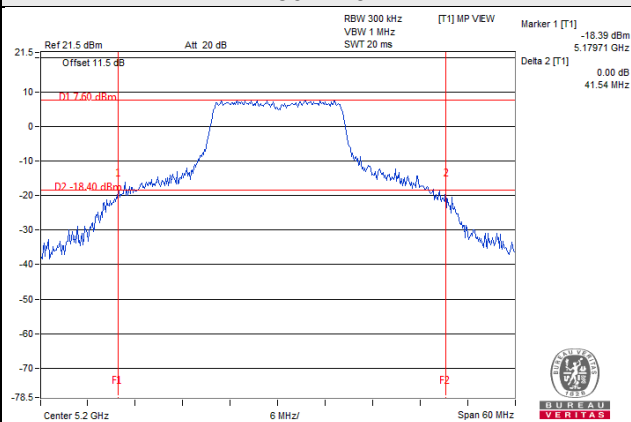
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	38.85
40	5200	40.14
48	5240	41.41
52	5260	40.42
60	5300	40.58
64	5320	38.34
100	5500	41.26
116	5580	42.98
140	5700	34.58

802.11n (HT40)

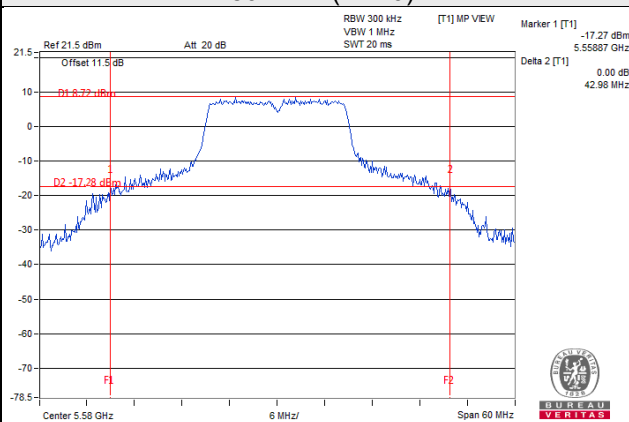
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
38	5190	51.33
46	5230	66.95
54	5270	60.03
62	5310	46.49
102	5510	45.74
110	5550	79.90
134	5670	84.22

Spectrum Plot of Worst Value

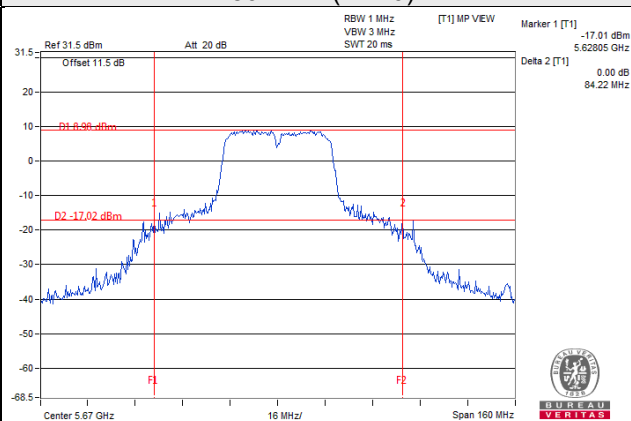
802.11a



802.11n (HT20)



802.11n (HT40)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	41.783	16.21
5470~5725	37.670	15.76

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

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	32.584	15.13
5470~5725	34.041	15.32

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

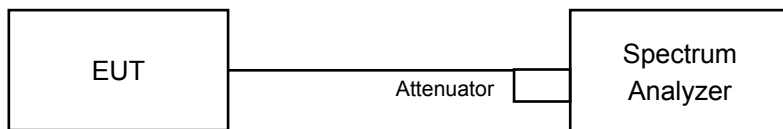
802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	26.607	14.25
5470~5725	28.973	14.62

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

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Test Result

802.11a

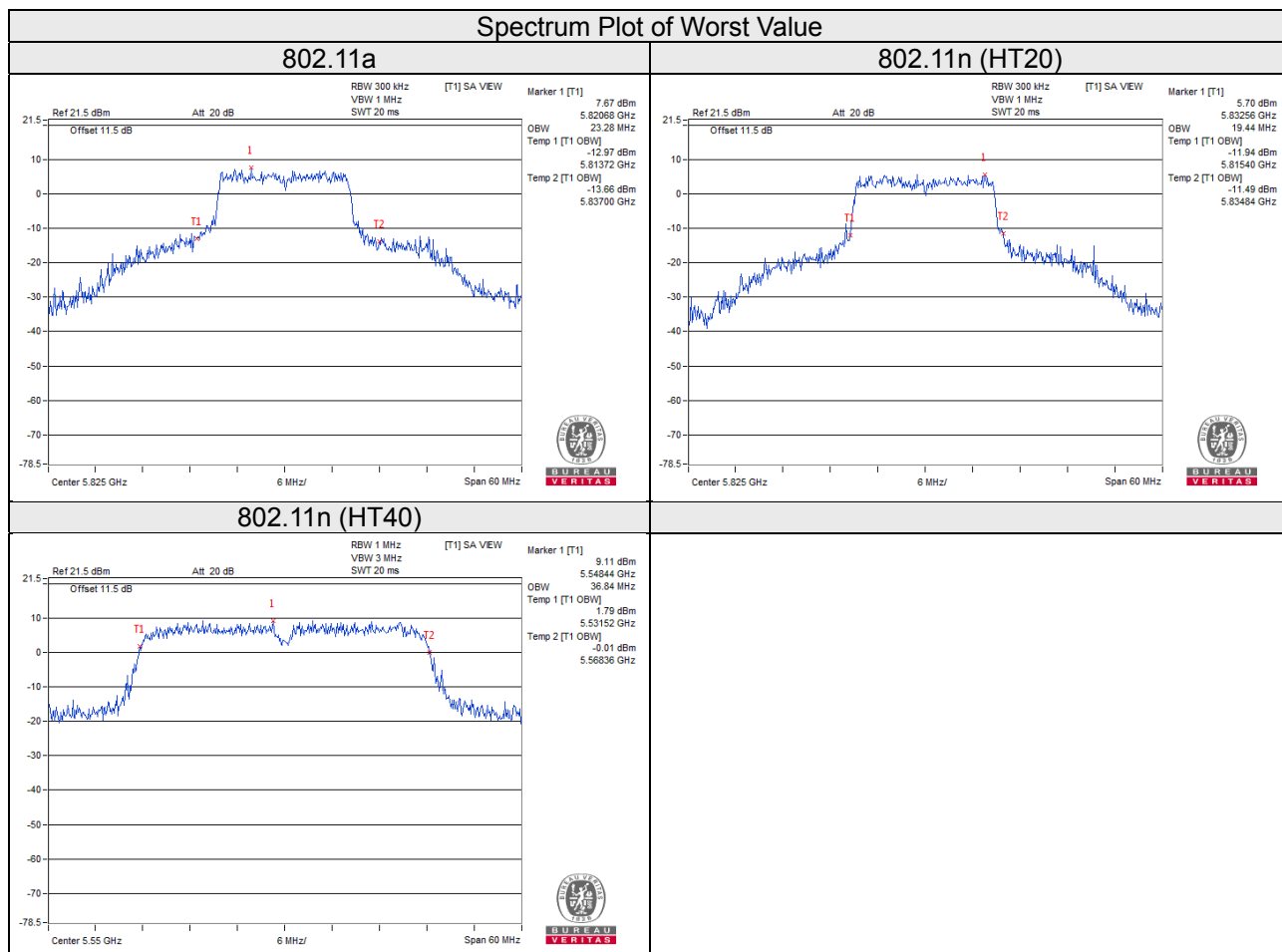
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.88
40	5200	18.12
48	5240	18.12
52	5260	18.12
60	5300	18.12
64	5320	18.24
100	5500	18.24
116	5580	19.20
140	5700	17.40
149	5745	21.60
157	5785	22.32
165	5825	23.28

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	18.36
40	5200	18.60
48	5240	18.48
52	5260	18.36
60	5300	18.36
64	5320	18.48
100	5500	19.32
116	5580	18.96
140	5700	18.12
149	5745	19.08
157	5785	19.08
165	5825	19.44

802.11n (HT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.48
46	5230	36.60
54	5270	36.72
62	5310	36.60
102	5510	36.48
110	5550	36.84
134	5670	36.84
151	5755	36.84
159	5795	36.72

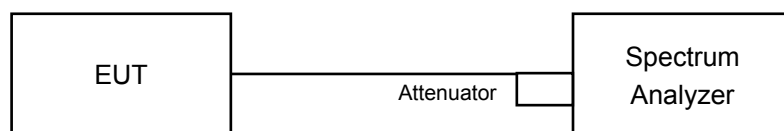


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

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

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

Using method SA-1

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

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

Using method SA-2

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

For U-NII-3 band:

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

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS.
- 3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- 4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured 1) power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz} / 300 \text{ kHz})$.
- 5) Sweep time = auto, trigger set to "free run".
- 6) Trace average at least 100 traces in power averaging mode.
- 7) Record the max value.

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

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- 4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- 5) Sweep time = auto, trigger set to "free run".
- 6) Trace average at least 100 traces in power averaging mode.
- 7) Record the max value and add $10 \log (1/\text{duty cycle})$

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Freq. (MHz)	PSD Without Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	1.78	0.70	2.48	11	Pass
40	5200	1.78	0.70	2.48	11	Pass
48	5240	1.97	0.70	2.67	11	Pass
52	5260	2.00	0.70	2.70	11	Pass
60	5300	2.11	0.70	2.81	11	Pass
64	5320	2.11	0.70	2.81	11	Pass
100	5500	1.74	0.70	2.44	11	Pass
116	5580	3.13	0.70	3.83	11	Pass
140	5700	0.32	0.70	1.02	11	Pass

NOTE: Refer to section 3.1 for duty cycle spectrum plot.

802.11n (HT20)

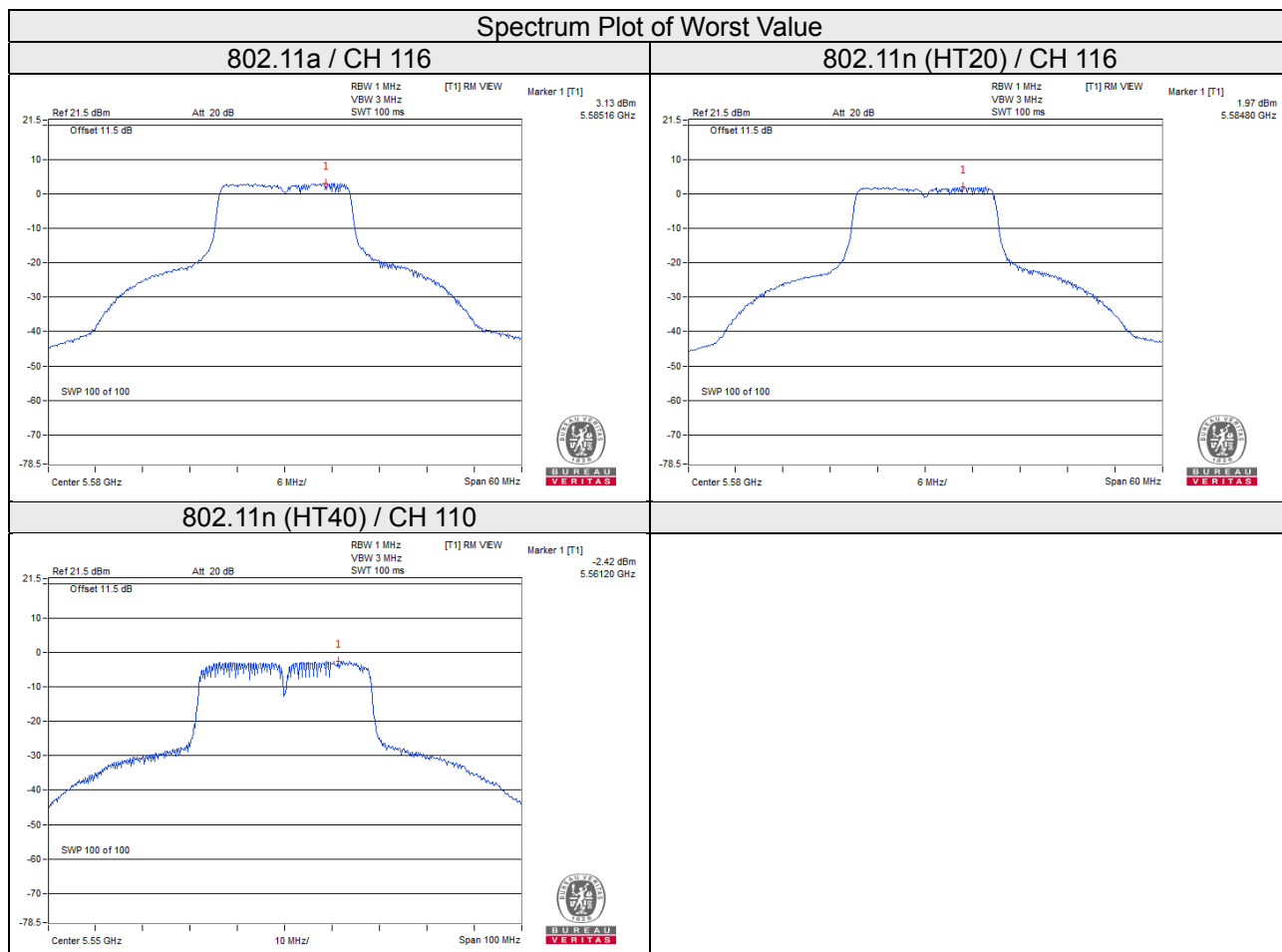
Chan.	Freq. (MHz)	PSD Without Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	0.01	0.63	0.64	11	Pass
40	5200	0.57	0.63	1.20	11	Pass
48	5240	0.56	0.63	1.19	11	Pass
52	5260	1.17	0.63	1.80	11	Pass
60	5300	0.62	0.63	1.25	11	Pass
64	5320	0.87	0.63	1.50	11	Pass
100	5500	1.54	0.63	2.17	11	Pass
116	5580	1.97	0.63	2.60	11	Pass
140	5700	-0.51	0.63	0.12	11	Pass

NOTE: Refer to section 3.1 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD Without Duty Factor (dBm/MHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
38	5190	-6.46	1.20	-5.26	11	Pass
46	5230	-3.70	1.20	-2.50	11	Pass
54	5270	-3.97	1.20	-2.77	11	Pass
62	5310	-5.15	1.20	-3.95	11	Pass
102	5510	-5.25	1.20	-4.05	11	Pass
110	5550	-2.42	1.20	-1.22	11	Pass
134	5670	-3.49	1.20	-2.29	11	Pass

NOTE: Refer to section 3.1 for duty cycle spectrum plot.



For U-NII-3 band:

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-4.74	-2.52	0.70	-1.82	30.00	Pass
157	5785	-5.29	-3.07	0.70	-2.37	30.00	Pass
165	5825	-5.79	-3.57	0.70	-2.87	30.00	Pass

NOTE: Refer to section 3.1 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-6.75	-4.53	0.63	-3.90	30.00	Pass
157	5785	-6.59	-4.37	0.63	-3.74	30.00	Pass
165	5825	-7.10	-4.88	0.63	-4.25	30.00	Pass

NOTE: Refer to section 3.1 for duty cycle spectrum plot.

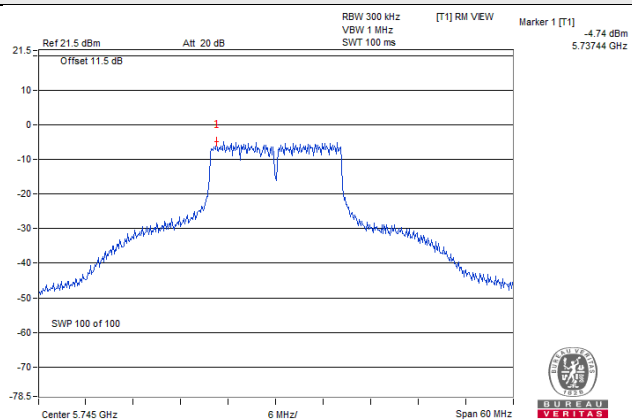
802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-11.60	-9.38	1.20	-8.18	30.00	Pass
159	5795	-12.00	-9.78	1.20	-8.58	30.00	Pass

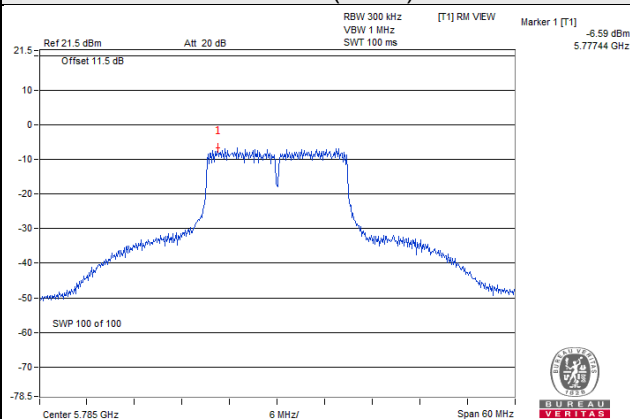
NOTE: Refer to section 3.1 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

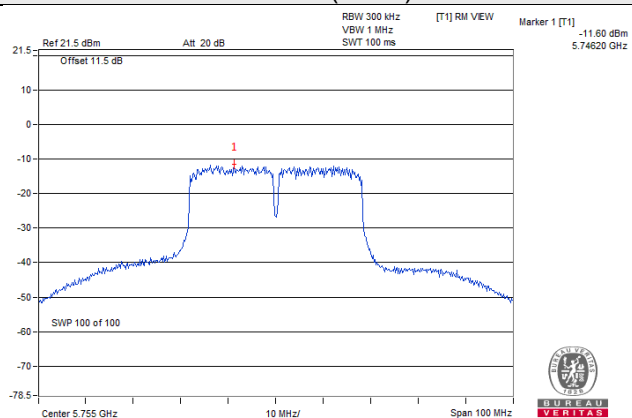
802.11a



802.11n (HT20)



802.11n (HT40)

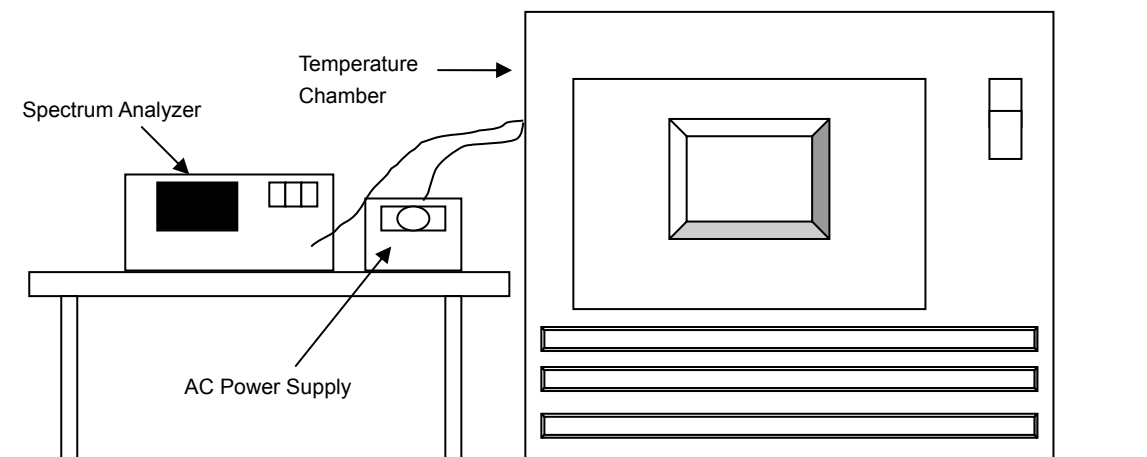


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5180.0097	PASS	5180.0095	PASS	5180.0129	PASS	5180.0097	PASS
40	120	5179.9798	PASS	5179.9767	PASS	5179.9765	PASS	5179.9807	PASS
30	120	5180.022	PASS	5180.0224	PASS	5180.0217	PASS	5180.0196	PASS
20	120	5179.9979	PASS	5179.9974	PASS	5179.9965	PASS	5179.9992	PASS
10	120	5179.9861	PASS	5179.9818	PASS	5179.9841	PASS	5179.9825	PASS
0	120	5179.9911	PASS	5179.9905	PASS	5179.9892	PASS	5179.9879	PASS
-10	120	5179.9994	PASS	5180.0027	PASS	5179.9994	PASS	5180.0015	PASS
-20	120	5180.0067	PASS	5180.0077	PASS	5180.0093	PASS	5180.0103	PASS
-30	120	5180.0196	PASS	5180.0194	PASS	5180.0197	PASS	5180.0195	PASS

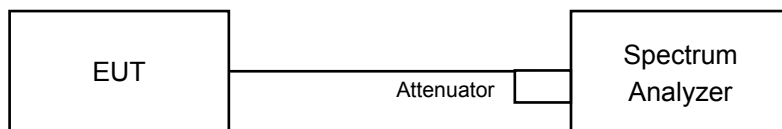
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.997	PASS	5179.9966	PASS	5179.9956	PASS	5180	PASS
	120	5179.9979	PASS	5179.9974	PASS	5179.9965	PASS	5179.9992	PASS
	102	5179.9973	PASS	5179.9971	PASS	5179.9959	PASS	5179.9989	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

Measurement Procedure REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.41	0.5	Pass
157	5785	16.42	0.5	Pass
165	5825	16.41	0.5	Pass

802.11n (HT20)

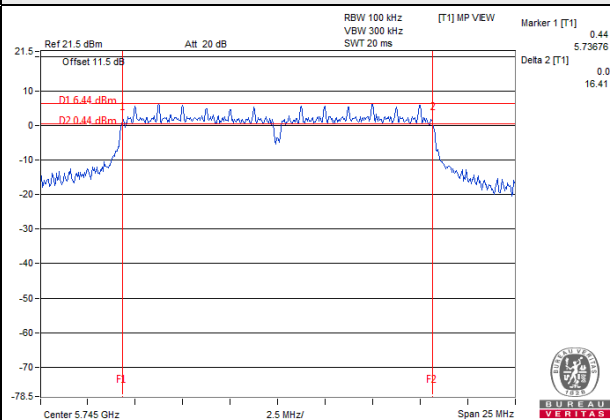
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.63	0.5	Pass
157	5785	17.62	0.5	Pass
165	5825	17.61	0.5	Pass

802.11n (HT40)

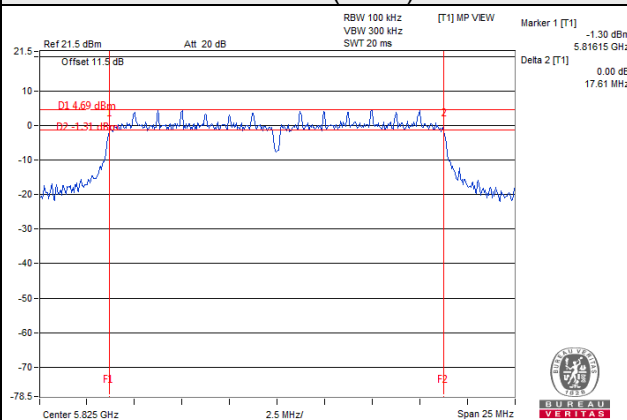
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.47	0.5	Pass
159	5795	35.33	0.5	Pass

Spectrum Plot of Worst Value

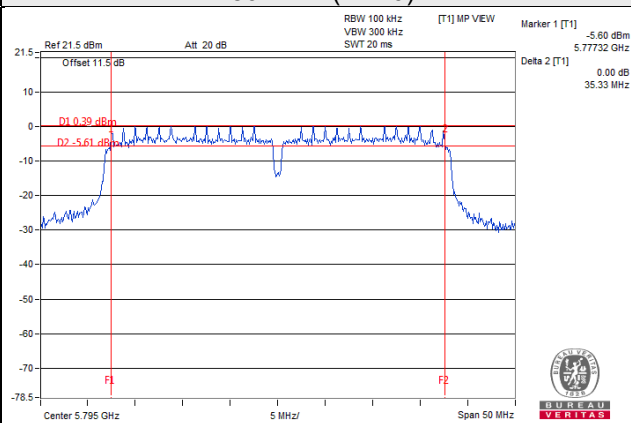
802.11a



802.11n (HT20)



802.11n (HT40)

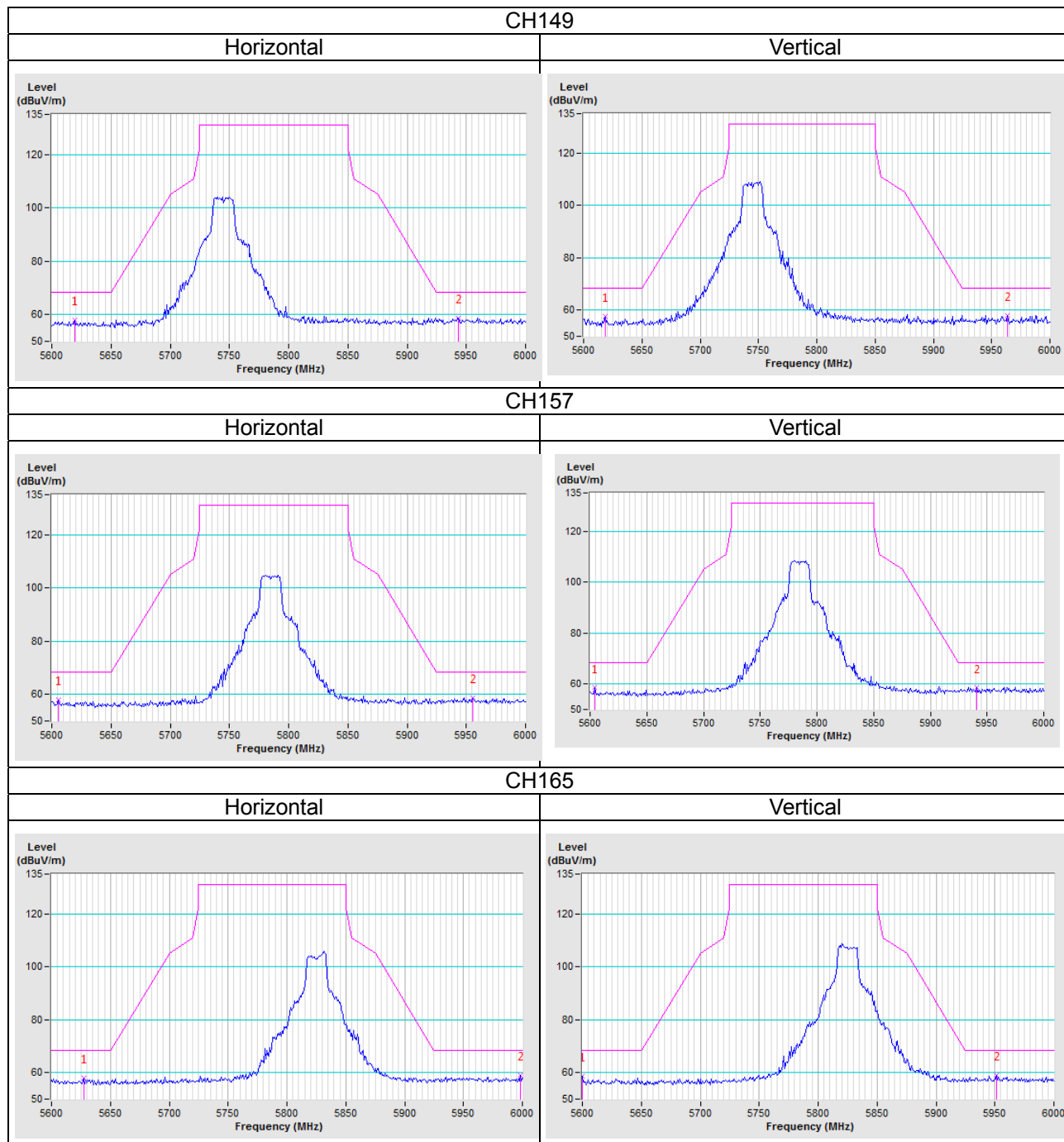


5 Pictures of Test Arrangements

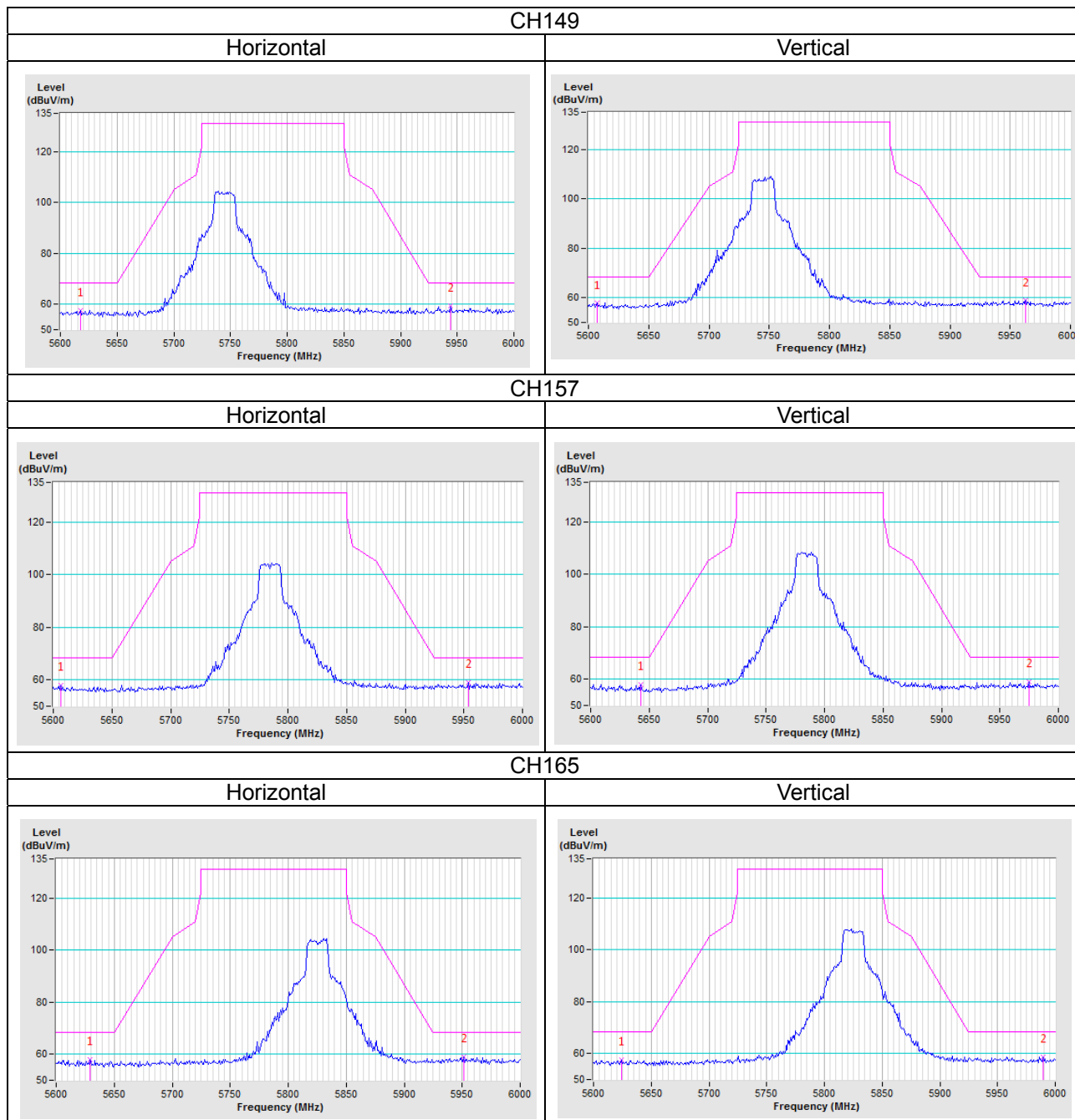
Please refer to the attached file (Test Setup Photo).

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

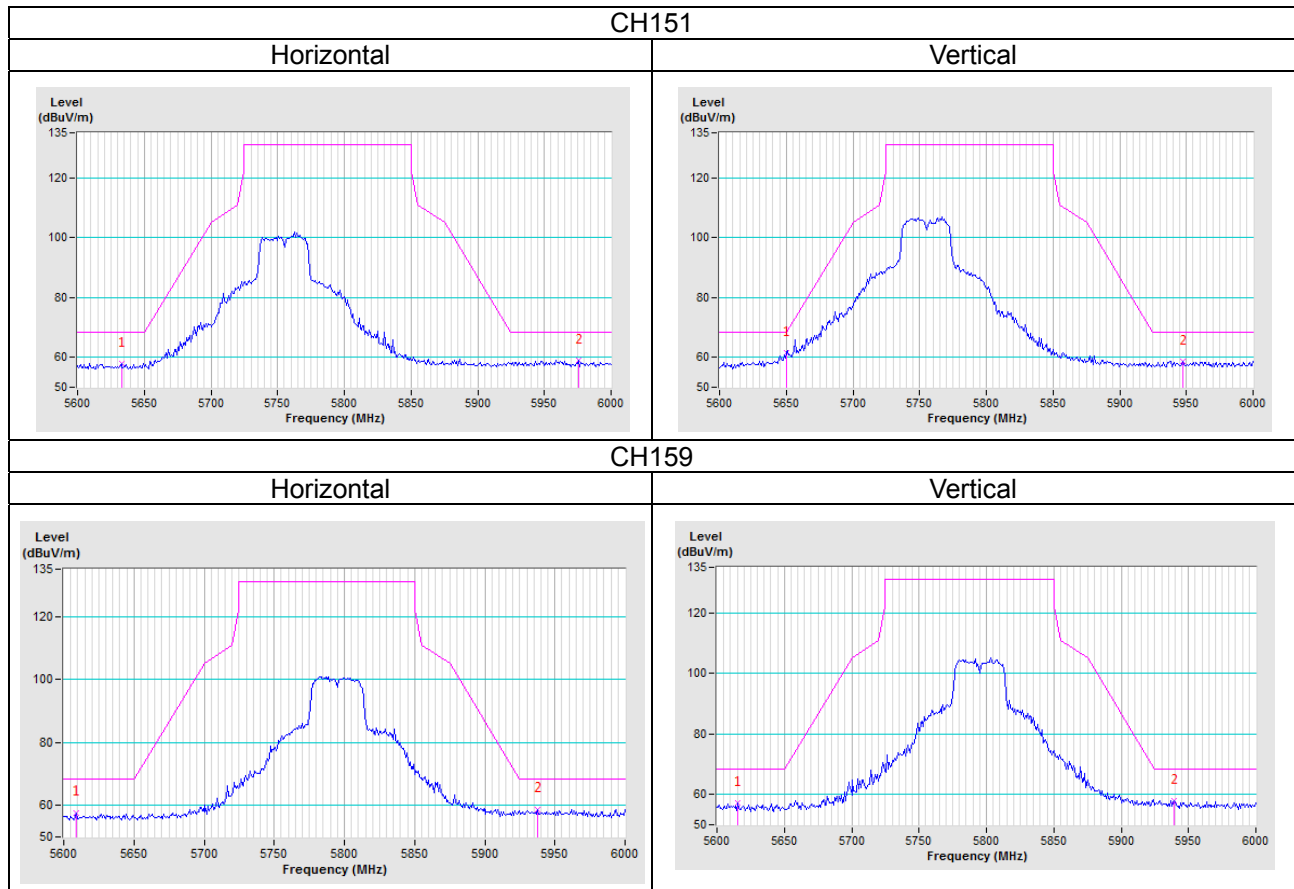
802.11a



802.11n (HT20)



802.11n (HT40)



Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

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Web Site: 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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