

FCC Test Report

Report No.: RF160704C18-1

FCC ID: HD5-RC12ABGN

Test Model: RC12ABGN

Received Date: Nov. 05, 2015

Test Date: Nov. 21, 2015 ~ Jul. 07, 2016

Issued Date: Jul. 19, 2016

Applicant: Honeywell International Inc

Address: 9680 Old Bailes Rd Fort Mill South Carolina 29707 United States

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

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Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	8
3.2.1 Test Mode Applicability and Tested Channel Detail	9
3.3 Duty Cycle of Test Signal	11
3.4 Description of Support Units	12
3.4.1 Configuration of System under Test	12
3.5 General Description of Applied Standards	13
4 Test Types and Results	14
4.1 Radiated Emission and Bandedge Measurement	14
4.1.1 Limits of Radiated Emission and Bandedge Measurement	14
4.1.2 Test Instruments	15
4.1.3 Test Procedures	17
4.1.4 Deviation from Test Standard	17
4.1.5 Test Set Up	18
4.1.6 EUT Operating Conditions	18
4.1.7 Test Results	19
4.2 Conducted Emission Measurement	44
4.2.1 Limits of Conducted Emission Measurement	44
4.2.2 Test Instruments	44
4.2.3 Test Procedures	45
4.2.4 Deviation from Test Standard	45
4.2.5 Test Setup	45
4.2.6 EUT Operating Conditions	45
4.2.7 Test Results	46
4.3 Transmit Power Measurement	48
4.3.1 Limits of Transmit Power Measurement	48
4.3.2 Test Setup	48
4.3.3 Test Instruments	48
4.3.4 Test Procedure	48
4.3.5 Deviation from Test Standard	48
4.3.6 EUT Operating Conditions	48
4.3.7 Test Result	49
4.4 Peak Power Spectral Density Measurement	56
4.4.1 Limits of Peak Power Spectral Density Measurement	56
4.4.2 Test Setup	56
4.4.3 Test Instruments	56
4.4.4 Test Procedures	56
4.4.5 Deviation from Test Standard	57
4.4.6 EUT Operating Conditions	57
4.4.7 Test Results	58
4.5 Frequency Stability	61
4.5.1 Limits of Frequency Stability Measurement	61
4.5.2 Test Setup	61
4.5.3 Test Instruments	61
4.5.4 Test Procedure	61
4.5.5 Deviation from Test Standard	61
4.5.6 EUT Operating Condition	61

4.5.7 Test Results	62
4.6 6dB Bandwidth Measurment.....	63
4.6.1 Limits of 6dB Bandwidth Measurement.....	63
4.6.2 Test Setup.....	63
4.6.3 Test Instruments	63
4.6.4 Test Procedure	63
4.6.5 Deviation from Test Standard	63
4.6.6 EUT Operating Condition	63
4.6.7 Test Results	64
5 Pictures of Test Arrangements.....	65
Appendix – Information on the Testing Laboratories	66

Release Control Record

Issue No.	Description	Date Issued
RF160704C18-1	Original release	Jul. 19, 2016

1 Certificate of Conformity

Product: WLAN board

Brand: Intermec, Honeywell

Test Model: RC12ABGN

Sample Status: Engineering sample

Applicant: Honeywell International Inc

Test Date: Nov. 21, 2015 ~ Jul. 07, 2016

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

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

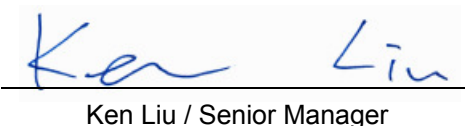
Prepared by :


Ivy Lin / Specialist

Date:

Jul. 19, 2016

Approved by :


Ken Liu / Senior Manager

Date:

Jul. 19, 2016

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.55dB at 0.50156MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5150.00MHz.
15.407(a)(1/2 /3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2 /3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is R-TNC 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) (
-------------	-----------	---------------------------------

3 General Information

3.1 General Description of EUT

Product	WLAN board
Brand	Intermec, Honeywell
Test Model	RC12ABGN
Status of EUT	Engineering sample
Power Supply Rating	5Vdc (Host equipment)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 72.2Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz & 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (HT20) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (HT20) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20)
Output Power	5180 ~ 5240MHz: 52.602mW 5260 ~ 5320MHz: 53.088mW 5500 ~ 5700MHz: 44.055mW 5745 ~ 5825MHz: 36.983mW
Antenna Type	Dipole antenna with 3.70dBi gain
Antenna Connector	R-TNC
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

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

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

2. 2.4GHz and 5GHz technology can not transmit at same time.

3. The EUT has disabled the 5600-5650MHz band.

3.2 Description of Test Modes

For 5180 ~ 5240MHz

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

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

For 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

For 5500 ~ 5700MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

For 5745 ~ 5825MHz:

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5

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	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0

Power Line Conducted Emission Test:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0

Antenna Port Conducted Measurement:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5

Test Condition:

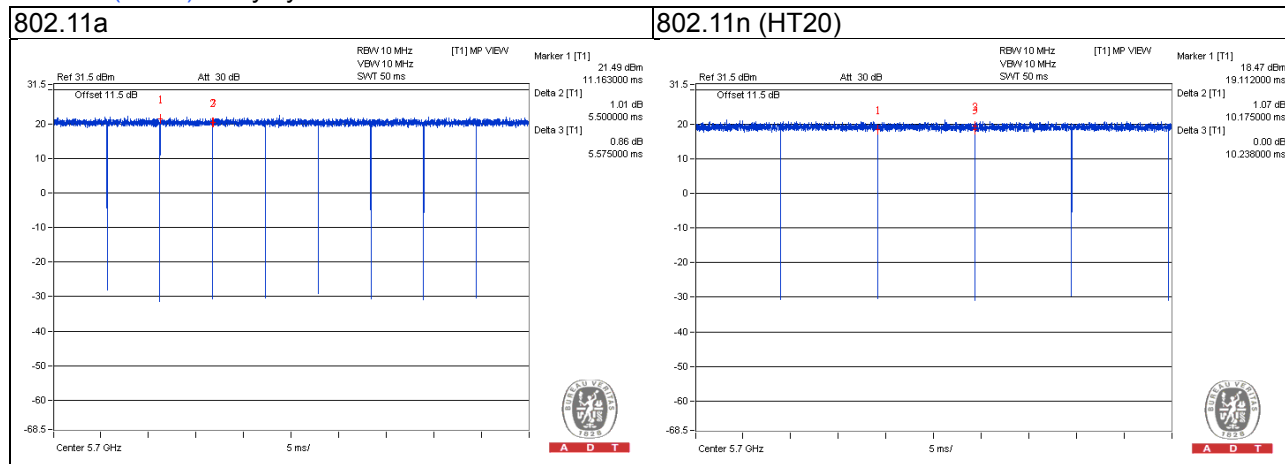
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
RE _≥ 1G	21deg. C, 66%RH	120Vac, 60Hz	Jones Chang
RE _{<} 1G	19deg. C, 70%RH	120Vac, 60Hz	Jones Chang
PLC	20deg. C, 70%RH	120Vac, 60Hz	Jones Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

3.3 Duty Cycle of Test Signal

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

802.11a: Duty cycle = $5.500/5.575 = 0.987$

802.11n (HT20): Duty cycle = $10.175/10.238 = 0.994$



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.	Fixture	N/A	N/A	N/A	N/A	Provided by manufacturer
C.	DC Power Supply	TOPWARD	6303D	802236	N/A	-
D.	Adapter	Intermec Technologies Corporation	074749	N/A	N/A	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.	Cable	1	0.10	-	1	Provided by manufacturer
2.	DC cable	1	1.8	-	0	Provided by manufacturer
3.	DC cable	1	1.8	N	0	-

3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedure New Rules v01r02

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:

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01r02	FIELD STRENGTH AT 3m	
	PK:74 (dBuV/m)	AV:54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) ^{*1} PK:-17 (dBm/MHz) ^{*2}	PK: 68.2(dBuV/m) ^{*1} PK:78.2 (dBuV/m) ^{*2}

Note: ^{*1} beyond 10MHz of the band edge ^{*2} within 10 MHz of band edge

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

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

4.1.2 Test Instruments

Test Date: Nov. 21, 2015 ~ Apr. 01, 2016 (All tests except radiated emission below 1GHz & conducted emission test)

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 10, 2015	Apr. 09, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Sep. 02, 2015	Sep. 01, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Feb. 02, 2015	Feb. 01, 2016
			Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	9120D	209	Feb. 09, 2015	Feb. 08, 2016
			Jan. 20, 2016	Jan. 19, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
			Jan. 18, 2016	Jan. 17, 2017
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2015	Oct. 17, 2016
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2015	Aug. 21, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2015	Oct. 17, 2016
High Speed Peak Power Meter	ML2495A	0824011	Jul. 09, 2015	Jul. 08, 2016
Power Sensor	MA2411B	0738171	Jul. 09, 2015	Jul. 08, 2016
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2015	Jun. 07, 2016

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 988962.
5. The IC Site Registration No. is IC 7450F-3.

Test Date: Jul. 06 ~ Jul. 07, 2016 (Radiated emission below 1GHz test)

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Sep. 02, 2015	Sep. 01, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	9120D	209	Jan. 20, 2016	Jan. 19, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2015	Oct. 17, 2016
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2015	Aug. 21, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2015	Aug. 21, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Chamber 3.
 3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 988962.
 5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedures

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

Note:

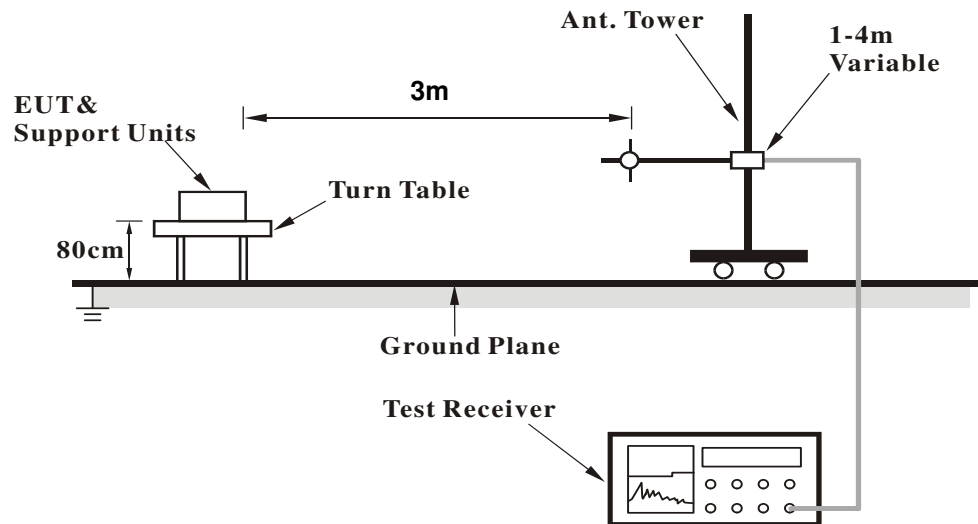
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

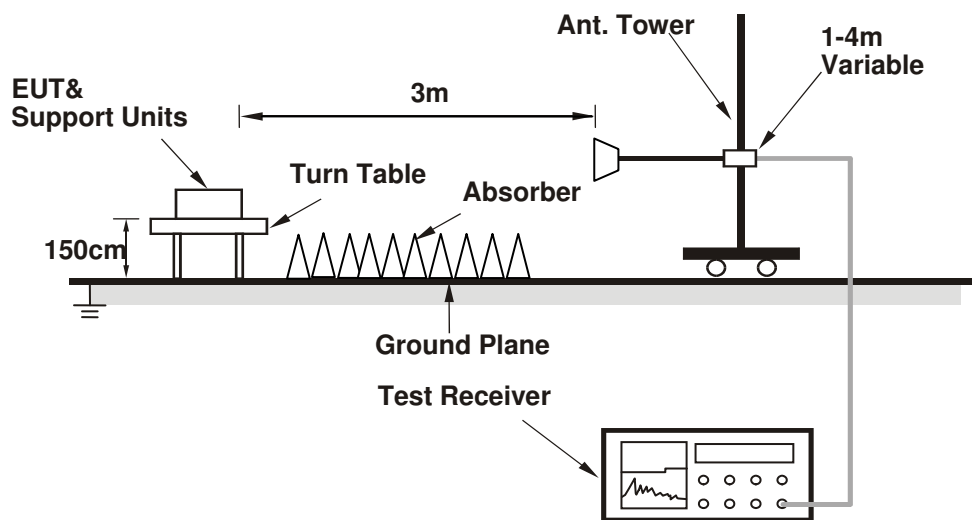
No deviation.

4.1.5 Test Set Up

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz Worst-case 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	59.2 PK	74.0	-14.8	1.63 H	146	53.00	6.20
2	5150.00	47.1 AV	54.0	-6.9	1.63 H	146	40.90	6.20
3	*5180.00	102.1 PK			2.15 H	332	62.60	39.50
4	*5180.00	92.8 AV			2.15 H	332	53.30	39.50
5	#10360.00	59.6 PK	74.0	-14.4	1.50 H	233	42.60	17.00
6	#10360.00	46.4 AV	54.0	-7.6	1.50 H	233	29.40	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	73.0 PK	74.0	-1.0	1.72 V	107	66.80	6.20
2	5150.00	51.8 AV	54.0	-2.2	1.72 V	107	45.60	6.20
3	*5180.00	111.7 PK			2.51 V	355	72.20	39.50
4	*5180.00	101.6 AV			2.51 V	355	62.10	39.50
5	#10360.00	60.0 PK	74.0	-14.0	1.72 V	115	43.00	17.00
6	#10360.00	47.2 AV	54.0	-6.8	1.72 V	115	30.20	17.00

Remarks:

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

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	101.8 PK			1.72 H	327	62.20	39.60
2	*5200.00	91.9 AV			1.72 H	327	52.30	39.60
3	#10400.00	59.6 PK	74.0	-14.4	1.57 H	250	42.60	17.00
4	#10400.00	46.6 AV	54.0	-7.4	1.57 H	250	29.60	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.3 PK	74.0	-13.7	1.69 V	90	54.10	6.20
2	5150.00	47.2 AV	54.0	-6.8	1.69 V	90	41.00	6.20
3	*5200.00	112.3 PK			2.41 V	356	72.70	39.60
4	*5200.00	102.0 AV			2.41 V	356	62.40	39.60
5	#10400.00	61.6 PK	74.0	-12.4	1.82 V	193	44.60	17.00
6	#10400.00	48.9 AV	54.0	-5.1	1.82 V	193	31.90	17.00

Remarks:

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

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	104.2 PK			2.15 H	331	64.60	39.60
2	*5240.00	94.3 AV			2.15 H	331	54.70	39.60
3	5400.00	59.9 PK	74.0	-14.1	2.10 H	333	53.20	6.70
4	5400.00	46.9 AV	54.0	-7.1	2.10 H	333	40.20	6.70
5	#10480.00	60.3 PK	74.0	-13.7	1.55 H	242	42.30	18.00
6	#10480.00	47.5 AV	54.0	-6.5	1.55 H	242	29.50	18.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.3 PK			1.22 V	132	72.70	39.60
2	*5240.00	102.9 AV			1.22 V	132	63.30	39.60
3	5400.00	60.8 PK	74.0	-13.2	1.69 V	243	54.10	6.70
4	5400.00	48.3 AV	54.0	-5.7	1.69 V	243	41.60	6.70
5	#10480.00	61.5 PK	74.0	-12.5	1.78 V	101	43.50	18.00
6	#10480.00	48.6 AV	54.0	-5.4	1.78 V	101	30.60	18.00

Remarks:

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

CHANNEL	TX Channel 52	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	56.7 PK	74.0	-17.3	2.00 H	300	50.50	6.20
2	5150.00	45.4 AV	54.0	-8.6	2.00 H	300	39.20	6.20
3	*5260.00	102.6 PK			2.22 H	230	62.90	39.70
4	*5260.00	92.4 AV			2.22 H	230	52.70	39.70
5	#10520.00	60.3 PK	74.0	-13.7	1.68 H	169	42.00	18.30
6	#10520.00	47.2 AV	54.0	-6.8	1.68 H	169	28.90	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.7 PK	74.0	-15.3	1.68 V	154	52.50	6.20
2	5150.00	46.5 AV	54.0	-7.5	1.68 V	154	40.30	6.20
3	*5260.00	111.1 PK			2.48 V	357	71.40	39.70
4	*5260.00	100.8 AV			2.48 V	357	61.10	39.70
5	#10520.00	61.0 PK	74.0	-13.0	1.55 V	0	42.70	18.30
6	#10520.00	47.9 AV	54.0	-6.1	1.55 V	0	29.60	18.30

Remarks:

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

CHANNEL	TX Channel 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	104.2 PK			2.29 H	334	64.50	39.70
2	*5300.00	94.0 AV			2.29 H	334	54.30	39.70
3	10600.00	59.8 PK	74.0	-14.2	1.64 H	253	41.60	18.20
4	10600.00	46.7 AV	54.0	-7.3	1.64 H	253	28.50	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.0 PK			2.46 V	360	70.30	39.70
2	*5300.00	100.2 AV			2.46 V	360	60.50	39.70
3	10600.00	60.3 PK	74.0	-13.7	2.08 V	246	42.10	18.20
4	10600.00	47.2 AV	54.0	-6.8	2.08 V	246	29.00	18.20

Remarks:

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

CHANNEL	TX Channel 64	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	*5320.00	103.0 PK			2.21 H	333	63.30	39.70
2	*5320.00	92.7 AV			2.21 H	333	53.00	39.70
3	5350.00	58.7 PK	74.0	-15.3	1.79 H	280	52.30	6.40
4	5350.00	35.9 AV	54.0	-18.1	1.79 H	280	29.50	6.40
5	10640.00	59.8 PK	74.0	-14.2	2.00 H	19	41.70	18.10
6	10640.00	46.8 AV	54.0	-7.2	2.00 H	19	28.70	18.10
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	110.2 PK			2.24 V	285	70.50	39.70
2	*5320.00	100.3 AV			2.24 V	285	60.60	39.70
3	5350.00	72.1 PK	74.0	-1.9	2.47 V	288	65.70	6.40
4	5350.00	51.4 AV	54.0	-2.6	2.47 V	288	45.00	6.40
5	10640.00	60.5 PK	74.0	-13.5	1.70 V	120	42.40	18.10
6	10640.00	47.7 AV	54.0	-6.3	1.70 V	120	29.60	18.10

Remarks:

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

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	59.3 PK	74.0	-14.7	2.10 H	327	52.50	6.80
2	5460.00	46.4 AV	54.0	-7.6	2.10 H	327	39.60	6.80
3	#5470.00	64.8 PK	74.0	-9.2	2.10 H	327	58.00	6.80
4	#5470.00	47.2 AV	54.0	-6.8	2.10 H	327	40.40	6.80
5	*5500.00	102.0 PK			2.22 H	327	62.00	40.00
6	*5500.00	92.0 AV			2.22 H	327	52.00	40.00
7	11000.00	60.5 PK	74.0	-13.5	1.57 H	90	41.40	19.10
8	11000.00	47.4 AV	54.0	-6.6	1.57 H	90	28.30	19.10
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	63.7 PK	74.0	-10.3	2.26 V	276	56.90	6.80
2	5460.00	47.1 AV	54.0	-6.9	2.26 V	276	40.30	6.80
3	#5470.00	72.7 PK	74.0	-1.3	2.29 V	276	65.90	6.80
4	#5470.00	52.0 AV	54.0	-2.0	2.29 V	276	45.20	6.80
5	*5500.00	110.2 PK			2.50 V	334	70.20	40.00
6	*5500.00	99.6 AV			2.50 V	334	59.60	40.00
7	11000.00	61.4 PK	74.0	-12.6	1.56 V	174	42.30	19.10
8	11000.00	48.4 AV	54.0	-5.6	1.56 V	174	29.30	19.10

Remarks:

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

CHANNEL	TX Channel 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	108.7 PK			2.40 H	338	68.60	40.10
2	*5580.00	98.4 AV			2.40 H	338	58.30	40.10
3	11160.00	60.8 PK	74.0	-13.2	2.00 H	179	42.10	18.70
4	11160.00	47.7 AV	54.0	-6.3	2.00 H	179	29.00	18.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.7 PK			2.40 V	338	68.60	40.10
2	*5580.00	98.4 AV			2.40 V	338	58.30	40.10
3	11160.00	60.8 PK	74.0	-13.2	2.00 V	179	42.10	18.70
4	11160.00	47.7 AV	54.0	-6.3	2.00 V	179	29.00	18.70

Remarks:

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

CHANNEL	TX Channel 140	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	*5700.00	101.8 PK			2.18 H	328	61.50	40.30
2	*5700.00	91.5 AV			2.18 H	328	51.20	40.30
3	#5725.00	60.4 PK	74.0	-13.6	2.08 H	330	53.20	7.20
4	#5725.00	47.4 AV	54.0	-6.6	2.08 H	330	40.20	7.20
5	11400.00	60.0 PK	74.0	-14.0	1.66 H	23	41.70	18.30
6	11400.00	46.9 AV	54.0	-7.1	1.66 H	23	28.60	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.5 PK			2.40 V	358	67.20	40.30
2	*5700.00	97.5 AV			2.40 V	358	57.20	40.30
3	#5725.00	71.0 PK	74.0	-3.0	1.46 V	196	63.80	7.20
4	#5725.00	50.7 AV	54.0	-3.3	1.46 V	196	43.50	7.20
5	11400.00	60.1 PK	74.0	-13.9	1.43 V	111	41.80	18.30
6	11400.00	47.3 AV	54.0	-6.7	1.43 V	111	29.00	18.30

Remarks:

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

CHANNEL	TX Channel 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	#5714.00	57.9 PK	74.0	-16.1	2.21 H	300	50.70	7.20
2	#5714.00	47.0 AV	54.0	-7.0	2.21 H	300	39.80	7.20
3	#5722.00	71.0 PK	78.2	-7.2	2.20 H	334	63.80	7.20
4	#5725.00	57.5 PK	78.2	-20.7	2.21 H	334	50.30	7.20
5	*5745.00	101.6 PK			2.38 H	331	61.20	40.40
6	*5745.00	91.0 AV			2.38 H	331	50.60	40.40
7	11490.00	59.3 PK	74.0	-14.7	1.49 H	85	41.00	18.30
8	11490.00	46.1 AV	54.0	-7.9	1.49 H	85	27.80	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.00	60.6 PK	74.0	-13.4	1.73 V	222	53.40	7.20
2	#5714.00	49.1 AV	54.0	-4.9	1.73 V	222	41.90	7.20
3	#5722.00	73.0 PK	78.2	-5.2	1.66 V	231	65.80	7.20
4	#5725.00	63.0 PK	78.2	-15.2	1.66 V	231	55.80	7.20
5	*5745.00	107.7 PK			2.26 V	297	67.30	40.40
6	*5745.00	97.5 AV			2.26 V	297	57.10	40.40
7	11490.00	60.9 PK	74.0	-13.1	1.80 V	211	42.60	18.30
8	11490.00	47.8 AV	54.0	-6.2	1.80 V	211	29.50	18.30

Remarks:

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

CHANNEL	TX Channel 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	*5785.00	99.8 PK			2.34 H	329	59.30	40.50
2	*5785.00	90.0 AV			2.34 H	329	49.50	40.50
3	11570.00	59.2 PK	74.0	-14.8	1.54 H	181	41.00	18.20
4	11570.00	46.2 AV	54.0	-7.8	1.54 H	181	28.00	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	106.8 PK			2.14 V	297	66.30	40.50
2	*5785.00	97.1 AV			2.14 V	297	56.60	40.50
3	11570.00	59.4 PK	74.0	-14.6	1.74 V	300	41.20	18.20
4	11570.00	46.4 AV	54.0	-7.6	1.74 V	300	28.20	18.20

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	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	*5825.00	101.3 PK			1.48 H	117	60.80	40.50
2	*5825.00	91.6 AV			1.48 H	117	51.10	40.50
3	#5850.00	51.0 PK	78.2	-27.2	1.55 H	116	43.50	7.50
4	#5853.00	60.2 PK	78.2	-18.0	1.55 H	116	52.60	7.60
5	#5861.00	58.0 PK	74.0	-16.0	1.57 H	123	50.40	7.60
6	#5861.00	46.2 AV	54.0	-7.8	1.57 H	123	38.60	7.60
7	11650.00	60.8 PK	74.0	-13.2	1.20 H	123	42.10	18.70
8	11650.00	47.6 AV	54.0	-6.4	1.20 H	123	28.90	18.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	107.1 PK			2.27 V	151	66.60	40.50
2	*5825.00	96.8 AV			2.27 V	151	56.30	40.50
3	#5850.00	57.0 PK	78.2	-21.2	1.40 V	200	49.50	7.50
4	#5853.00	67.9 PK	78.2	-10.3	1.40 V	200	60.30	7.60
5	#5861.00	59.8 PK	74.0	-14.2	1.37 V	195	52.20	7.60
6	#5861.00	47.1 AV	54.0	-6.9	1.37 V	195	39.50	7.60
7	11650.00	61.1 PK	74.0	-12.9	2.01 V	55	42.40	18.70
8	11650.00	48.2 AV	54.0	-5.8	2.01 V	55	29.50	18.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	57.1 PK	74.0	-16.9	1.70 H	204	50.90	6.20
2	5150.00	45.8 AV	54.0	-8.2	1.70 H	204	39.60	6.20
3	*5180.00	103.2 PK			1.85 H	330	63.70	39.50
4	*5180.00	93.3 AV			1.85 H	330	53.80	39.50
5	#10360.00	58.7 PK	74.0	-15.3	1.40 H	243	41.70	17.00
6	#10360.00	45.8 AV	54.0	-8.2	1.40 H	243	28.80	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.6 PK	74.0	-3.4	1.74 V	106	64.40	6.20
2	5150.00	52.1 AV	54.0	-1.9	1.74 V	106	45.90	6.20
3	*5180.00	110.2 PK			1.74 V	274	70.70	39.50
4	*5180.00	100.3 AV			1.74 V	274	60.80	39.50
5	#10360.00	59.2 PK	74.0	-14.8	1.36 V	30	42.20	17.00
6	#10360.00	46.1 AV	54.0	-7.9	1.36 V	30	29.10	17.00

Remarks:

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

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	105.1 PK			2.10 H	340	65.50	39.60
2	*5200.00	95.9 AV			2.10 H	340	56.30	39.60
3	#10480.00	60.1 PK	74.0	-13.9	1.60 H	244	42.10	18.00
4	#10480.00	47.3 AV	54.0	-6.7	1.60 H	244	29.30	18.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.7 PK			1.78 V	293	71.10	39.60
2	*5200.00	101.1 AV			1.78 V	293	61.50	39.60
3	#10400.00	59.7 PK	74.0	-14.3	1.33 V	98	42.70	17.00
4	#10400.00	46.8 AV	54.0	-7.2	1.33 V	98	29.80	17.00

Remarks:

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

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	106.7 PK			2.14 H	333	67.10	39.60
2	*5240.00	96.4 AV			2.14 H	333	56.80	39.60
3	5350.00	59.1 PK	74.0	-14.9	1.93 H	300	52.70	6.40
4	5350.00	46.3 AV	54.0	-7.7	1.93 H	300	39.90	6.40
5	#10480.00	60.3 PK	74.0	-13.7	1.56 H	201	42.30	18.00
6	#10480.00	47.4 AV	54.0	-6.6	1.56 H	201	29.40	18.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.5 PK			1.75 V	290	70.90	39.60
2	*5240.00	100.8 AV			1.75 V	290	61.20	39.60
3	5400.00	61.7 PK	74.0	-12.3	1.73 V	290	55.00	6.70
4	5400.00	49.7 AV	54.0	-4.3	1.73 V	290	43.00	6.70
5	#10480.00	61.0 PK	74.0	-13.0	1.23 V	140	43.00	18.00
6	#10480.00	47.8 AV	54.0	-6.2	1.23 V	140	29.80	18.00

Remarks:

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

CHANNEL	TX Channel 52	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	47.7 PK	74.0	-26.3	1.79 H	209	41.50	6.20
2	5150.00	45.7 AV	54.0	-8.3	1.79 H	209	39.50	6.20
3	*5260.00	103.4 PK			2.26 H	334	63.70	39.70
4	*5260.00	93.2 AV			2.26 H	334	53.50	39.70
5	#10520.00	60.2 PK	74.0	-13.8	2.00 H	44	41.90	18.30
6	#10520.00	47.2 AV	54.0	-6.8	2.00 H	44	28.90	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.1 PK	74.0	-16.9	1.64 V	279	50.90	6.20
2	5150.00	46.1 AV	54.0	-7.9	1.64 V	279	39.90	6.20
3	*5260.00	109.2 PK			2.52 V	274	69.50	39.70
4	*5260.00	99.8 AV			2.52 V	274	60.10	39.70
5	#10520.00	60.8 PK	74.0	-13.2	1.70 V	300	42.50	18.30
6	#10520.00	47.7 AV	54.0	-6.3	1.70 V	300	29.40	18.30

Remarks:

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

CHANNEL	TX Channel 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	103.3 PK			2.51 H	336	63.60	39.70
2	*5300.00	92.5 AV			2.51 H	336	52.80	39.70
3	10600.00	59.9 PK	74.0	-14.1	1.59 H	219	41.70	18.20
4	10600.00	47.0 AV	54.0	-7.0	1.59 H	219	28.80	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.2 PK			2.10 V	288	69.50	39.70
2	*5300.00	99.1 AV			2.10 V	288	59.40	39.70
3	10600.00	60.4 PK	74.0	-13.6	1.96 V	321	42.20	18.20
4	10600.00	47.4 AV	54.0	-6.6	1.96 V	321	29.20	18.20

Remarks:

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

CHANNEL	TX Channel 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	103.6 PK			2.38 H	337	63.90	39.70
2	*5320.00	93.2 AV			2.38 H	337	53.50	39.70
3	5350.00	60.3 PK	74.0	-13.7	1.81 H	256	53.90	6.40
4	5350.00	47.3 AV	54.0	-6.7	1.81 H	256	40.90	6.40
5	10640.00	59.7 PK	74.0	-14.3	1.94 H	22	41.60	18.10
6	10640.00	46.7 AV	54.0	-7.3	1.94 H	22	28.60	18.10
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	108.9 PK			2.10 V	288	69.30	39.60
2	*5320.00	99.0 AV			2.10 V	288	59.40	39.60
3	5350.00	72.1 PK	74.0	-1.9	2.53 V	279	65.70	6.40
4	5350.00	50.5 AV	54.0	-3.5	2.53 V	279	44.10	6.40
5	10640.00	60.6 PK	74.0	-13.4	1.74 V	336	42.50	18.10
6	10640.00	47.4 AV	54.0	-6.6	1.74 V	336	29.30	18.10

Remarks:

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

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	57.0 PK	74.0	-17.0	1.68 H	131	50.20	6.80
2	5460.00	45.8 AV	54.0	-8.2	1.68 H	131	39.00	6.80
3	#5470.00	57.6 PK	74.0	-16.4	1.68 H	131	50.80	6.80
4	#5470.00	46.5 AV	54.0	-7.5	1.68 H	131	39.70	6.80
5	*5500.00	102.6 PK			2.39 H	338	62.60	40.00
6	*5500.00	92.8 AV			2.39 H	338	52.80	40.00
7	11000.00	60.5 PK	74.0	-13.5	1.70 H	266	41.40	19.10
8	11000.00	47.1 AV	54.0	-6.9	1.70 H	266	28.00	19.10
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	62.3 PK	74.0	-11.7	1.51 V	262	55.50	6.80
2	5460.00	47.7 AV	54.0	-6.3	1.51 V	262	40.90	6.80
3	#5470.00	72.1 PK	74.0	-1.9	1.51 V	262	65.30	6.80
4	#5470.00	52.3 AV	54.0	-1.7	1.51 V	262	45.50	6.80
5	*5500.00	109.7 PK			2.44 V	347	69.70	40.00
6	*5500.00	98.8 AV			2.44 V	347	58.80	40.00
7	11000.00	61.3 PK	74.0	-12.7	1.64 V	359	42.20	19.10
8	11000.00	48.0 AV	54.0	-6.0	1.64 V	359	28.90	19.10

Remarks:

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

CHANNEL	TX Channel 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	101.7 PK			2.33 H	329	61.60	40.10
2	*5580.00	91.7 AV			2.33 H	329	51.60	40.10
3	11160.00	60.1 PK	74.0	-13.9	1.53 H	350	41.40	18.70
4	11160.00	47.0 AV	54.0	-7.0	1.53 H	350	28.30	18.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.9 PK			2.21 V	294	68.80	40.10
2	*5580.00	98.4 AV			2.21 V	294	58.30	40.10
3	11160.00	60.7 PK	74.0	-13.3	1.90 V	30	42.00	18.70
4	11160.00	47.5 AV	54.0	-6.5	1.90 V	30	28.80	18.70

Remarks:

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

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	101.2 PK			2.31 H	331	60.90	40.30
2	*5700.00	91.7 AV			2.31 H	331	51.40	40.30
3	#5725.00	59.8 PK	74.0	-14.2	1.85 H	324	52.60	7.20
4	#5725.00	47.2 AV	54.0	-6.8	1.85 H	324	40.00	7.20
5	11400.00	59.7 PK	74.0	-14.3	1.71 H	230	41.40	18.30
6	11400.00	46.7 AV	54.0	-7.3	1.71 H	230	28.40	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.8 PK			2.16 V	302	66.50	40.30
2	*5700.00	97.2 AV			2.16 V	302	56.90	40.30
3	#5725.00	70.8 PK	74.0	-3.2	1.50 V	200	63.60	7.20
4	#5725.00	51.6 AV	54.0	-2.4	1.50 V	200	44.40	7.20
5	11400.00	60.1 PK	74.0	-13.9	1.60 V	189	41.80	18.30
6	11400.00	47.1 AV	54.0	-6.9	1.60 V	189	28.80	18.30

Remarks:

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

CHANNEL	TX Channel 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	#5714.00	58.3 PK	74.0	-15.7	2.37 H	333	51.10	7.20
2	#5714.00	47.1 AV	54.0	-6.9	2.37 H	333	39.90	7.20
3	#5722.00	72.9 PK	78.2	-5.3	2.19 H	329	65.70	7.20
4	#5725.00	57.3 PK	78.2	-20.9	2.19 H	329	50.10	7.20
5	*5745.00	100.5 PK			2.37 H	335	60.10	40.40
6	*5745.00	90.4 AV			2.37 H	335	50.00	40.40
7	11490.00	59.5 PK	74.0	-14.5	1.59 H	222	41.20	18.30
8	11490.00	46.3 AV	54.0	-7.7	1.59 H	222	28.00	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.00	67.5 PK	74.0	-6.5	1.66 V	234	60.30	7.20
2	#5714.00	48.2 AV	54.0	-5.8	1.66 V	234	41.00	7.20
3	#5722.00	76.9 PK	78.2	-1.3	1.69 V	224	69.70	7.20
4	#5725.00	65.5 PK	78.2	-12.7	1.69 V	224	58.30	7.20
5	*5745.00	106.0 PK			2.22 V	3	65.60	40.40
6	*5745.00	97.1 AV			2.22 V	3	56.70	40.40
7	11490.00	60.3 PK	74.0	-13.7	1.66 V	199	42.00	18.30
8	11490.00	47.1 AV	54.0	-6.9	1.66 V	199	28.80	18.30

Remarks:

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

CHANNEL	TX Channel 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	*5785.00	99.6 PK			2.35 H	327	59.10	40.50
2	*5785.00	89.8 AV			2.35 H	327	49.30	40.50
3	11570.00	59.2 PK	74.0	-14.8	1.50 H	227	41.00	18.20
4	11570.00	46.1 AV	54.0	-7.9	1.50 H	227	27.90	18.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	108.0 PK			2.18 V	351	67.50	40.50
2	*5785.00	97.8 AV			2.18 V	351	57.30	40.50
3	11570.00	59.9 PK	74.0	-14.1	1.77 V	288	41.70	18.20
4	11570.00	46.8 AV	54.0	-7.2	1.77 V	288	28.60	18.20

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	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	*5825.00	100.9 PK			1.46 H	116	60.40	40.50
2	*5825.00	90.6 AV			1.46 H	116	50.10	40.50
3	#5850.00	50.4 PK	78.2	-27.8	1.54 H	123	42.90	7.50
4	#5853.00	59.2 PK	78.2	-19.0	1.54 H	123	51.60	7.60
5	#5861.00	59.7 PK	74.0	-14.3	1.46 H	119	52.10	7.60
6	#5861.00	46.6 AV	54.0	-7.4	1.46 H	119	39.00	7.60
7	11650.00	60.4 PK	74.0	-13.6	1.22 H	19	41.70	18.70
8	11650.00	47.5 AV	54.0	-6.5	1.22 H	19	28.80	18.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	106.7 PK			2.26 V	150	66.20	40.50
2	*5825.00	96.2 AV			2.26 V	150	55.70	40.50
3	#5850.00	54.6 PK	78.2	-23.6	1.51 V	193	47.10	7.50
4	#5853.00	67.0 PK	78.2	-11.2	1.51 V	193	59.40	7.60
5	#5861.00	58.4 PK	74.0	-15.6	1.64 V	160	50.80	7.60
6	#5861.00	46.6 AV	54.0	-7.4	1.64 V	160	39.00	7.60
7	11650.00	60.6 PK	74.0	-13.4	1.99 V	66	41.90	18.70
8	11650.00	47.7 AV	54.0	-6.3	1.99 V	66	29.00	18.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	30.3 QP	40.0	-9.7	1.99 H	286	44.90	-14.60
2	138.78	30.6 QP	43.5	-12.9	1.99 H	274	45.30	-14.70
3	202.94	37.2 QP	43.5	-6.3	1.99 H	10	53.70	-16.50
4	241.83	35.1 QP	46.0	-10.9	1.00 H	116	49.60	-14.50
5	327.38	27.2 QP	46.0	-18.8	1.00 H	328	38.60	-11.40
6	729.84	31.4 QP	46.0	-14.6	1.00 H	293	34.70	-3.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.34	32.7 QP	40.0	-7.3	1.00 V	3	47.10	-14.40
2	76.56	29.3 QP	40.0	-10.7	1.00 V	209	47.30	-18.00
3	175.72	27.2 QP	43.5	-16.3	1.00 V	117	41.80	-14.60
4	210.72	28.4 QP	43.5	-15.1	1.51 V	215	44.70	-16.30
5	574.30	29.2 QP	46.0	-16.8	1.00 V	248	35.90	-6.70
6	747.34	36.4 QP	46.0	-9.6	2.00 V	232	39.20	-2.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)– 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.

4.2.3 Test Procedures

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

Note: 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

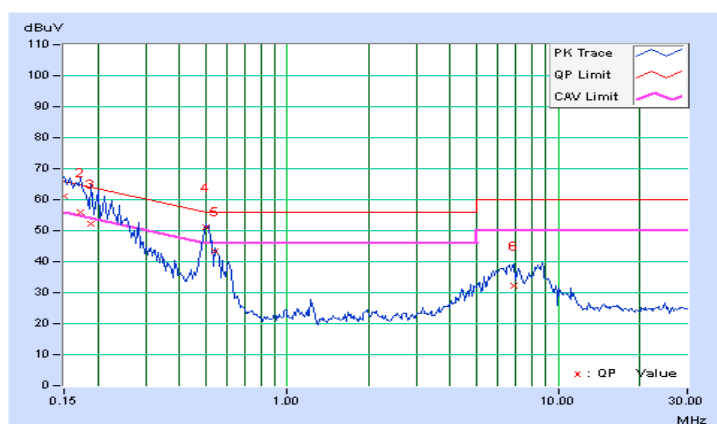
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.12	51.03	20.54	61.15	30.66	66.00	56.00	-4.85	-25.34
2	0.17344	10.14	45.78	15.88	55.92	26.02	64.79	54.79	-8.87	-28.77
3	0.18906	10.15	42.21	12.96	52.36	23.11	64.08	54.08	-11.72	-30.97
4	0.50156	10.20	40.93	32.25	51.13	42.45	56.00	46.00	-4.87	-3.55
5	0.54453	10.20	33.19	25.70	43.39	35.90	56.00	46.00	-12.61	-10.10
6	6.83594	10.42	21.76	15.94	32.18	26.36	60.00	50.00	-27.82	-23.64

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.

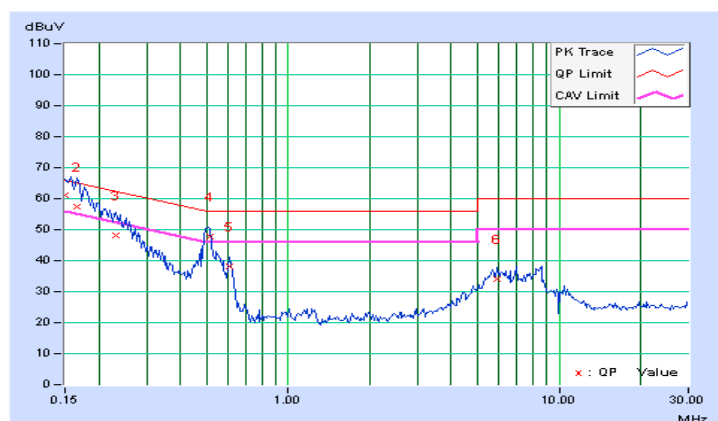


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.13	50.81	20.40	60.94	30.53	66.00	56.00	-5.06	-25.47
2	0.16562	10.14	47.42	17.34	57.56	27.48	65.18	55.18	-7.62	-27.70
3	0.23203	10.16	37.81	8.83	47.97	18.99	62.38	52.38	-14.41	-33.39
4	0.51328	10.19	37.46	29.13	47.65	39.32	56.00	46.00	-8.35	-6.68
5	0.60313	10.20	27.80	22.20	38.00	32.40	56.00	46.00	-18.00	-13.60
6	5.90625	10.44	23.76	18.41	34.20	28.85	60.00	50.00	-25.80	-21.15

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)

*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

For Power Output Measurement

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

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	44.157	16.45	24.00	Pass
40	5200	52.36	17.19	24.00	Pass
48	5240	52.602	17.21	24.00	Pass
52	5260	53.088	17.25	24.00	Pass
60	5300	51.761	17.14	24.00	Pass
64	5320	46.452	16.67	24.00	Pass
100	5500	44.055	16.44	24.00	Pass
116	5580	40.926	16.12	24.00	Pass
140	5700	38.371	15.84	24.00	Pass
149	5745	36.983	15.68	30.00	Pass
157	5785	35.156	15.46	30.00	Pass
165	5825	33.963	15.31	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log (36.59) = 25.63 > 24\text{dBm}$
2. $11\text{dBm} + 10\log (35.69) = 25.53 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (35.57) = 25.51 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (36.92) = 26.67 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (37.30) = 26.72 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (31.95) = 26.04 > 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	51.404	17.11	24.00	Pass
40	5200	50.816	17.06	24.00	Pass
48	5240	51.523	17.12	24.00	Pass
52	5260	51.168	17.09	24.00	Pass
60	5300	50.582	17.04	24.00	Pass
64	5320	40.179	16.04	24.00	Pass
100	5500	40.087	16.03	24.00	Pass
116	5580	43.853	16.42	24.00	Pass
140	5700	36.813	15.66	24.00	Pass
149	5745	34.995	15.44	30.00	Pass
157	5785	34.119	15.33	30.00	Pass
165	5825	32.885	15.17	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log (38.45) = 25.85 > 24\text{dBm}$
2. $11\text{dBm} + 10\log (38.43) = 25.85 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (34.99) = 25.44 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (36.57) = 26.63 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (36.37) = 26.61 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (34.56) = 26.39 > 24\text{dBm}$

26dB Bandwidth:

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	33.33	Pass
40	5200	35.20	Pass
48	5240	37.41	Pass
52	5260	36.59	Pass
60	5300	35.69	Pass
64	5320	35.57	Pass
100	5500	36.92	Pass
116	5580	37.30	Pass
140	5700	31.95	Pass

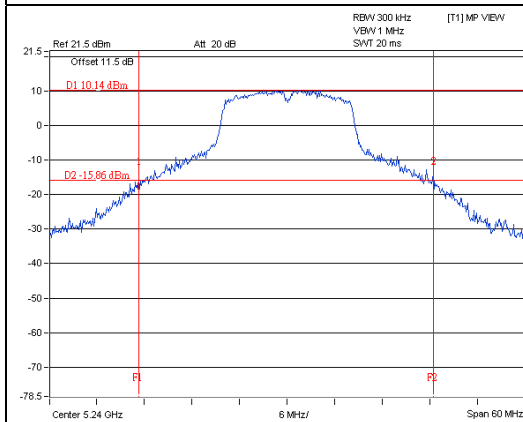
802.11n (HT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	Pass / Fail
36	5180	33.38	Pass
40	5200	40.07	Pass
48	5240	36.71	Pass
52	5260	38.45	Pass
60	5300	38.43	Pass
64	5320	34.99	Pass
100	5500	36.57	Pass
116	5580	36.37	Pass
140	5700	34.56	Pass

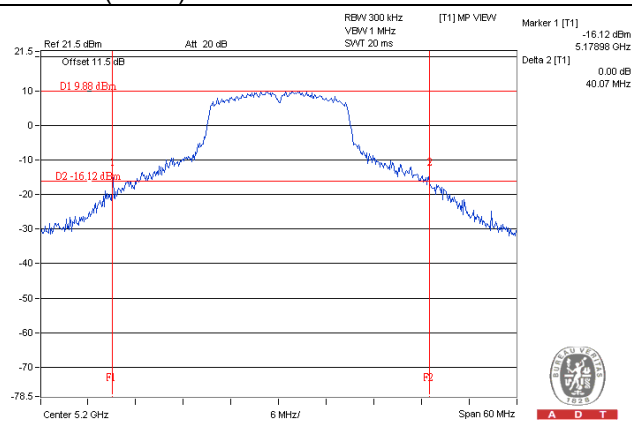
Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



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A D T

Occupied Bandwidth:

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	17.40
40	5200	17.40
48	5240	19.68
52	5260	18.72
60	5300	19.20
64	5320	18.36
100	5500	18.24
116	5580	18.24
140	5700	17.16
149	5745	18.12
157	5785	18.12
165	5825	16.92

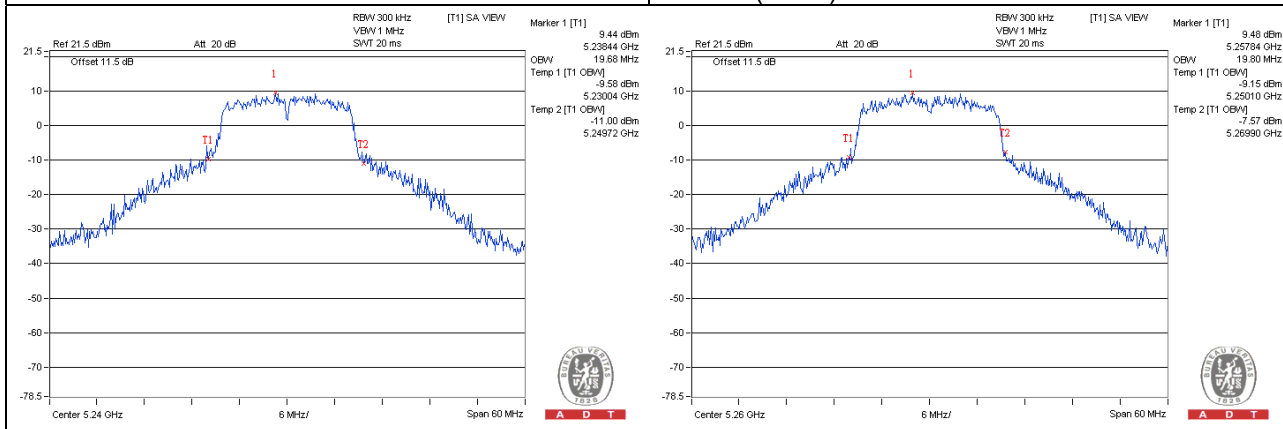
802.11n (HT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	18.36
40	5200	19.68
48	5240	19.32
52	5260	19.80
60	5300	19.44
64	5320	18.36
100	5500	18.36
116	5580	18.96
140	5700	18.24
149	5745	18.12
157	5785	18.00
165	5825	18.00

Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



EUT MAXIMUM CONDUCTED POWER

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	53.088	17.25
5470~5725	44.055	16.44

802.11n (HT20)

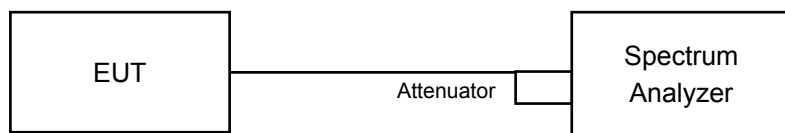
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	51.168	17.09
5470~5725	43.853	16.42

4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

For duty cycle $\geq 98\%$

Using method SA-1

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

For U-NII-3 band:

For duty cycle $\geq 98\%$

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

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

802.11a

Chan.	Freq. (MHz)	PSD (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	4.73	11.00	Pass
40	5200	4.62	11.00	Pass
48	5240	5.60	11.00	Pass
52	5260	5.48	11.00	Pass
60	5300	5.44	11.00	Pass
64	5320	5.15	11.00	Pass
100	5500	4.75	11.00	Pass
116	5580	4.81	11.00	Pass
140	5700	4.00	11.00	Pass

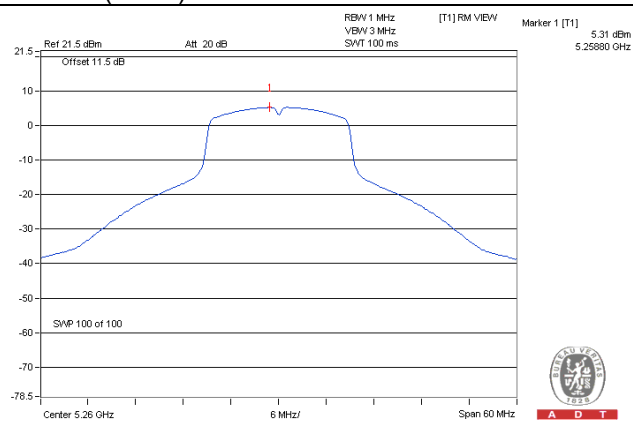
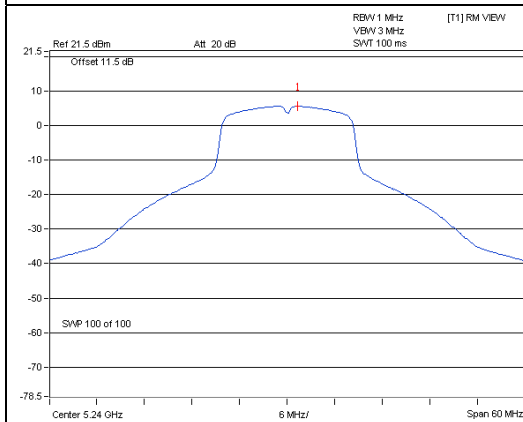
802.11n (HT20)

Chan.	Freq. (MHz)	PSD (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	4.31	11.00	Pass
40	5200	5.25	11.00	Pass
48	5240	5.24	11.00	Pass
52	5260	5.31	11.00	Pass
60	5300	5.10	11.00	Pass
64	5320	4.28	11.00	Pass
100	5500	3.99	11.00	Pass
116	5580	4.44	11.00	Pass
140	5700	2.90	11.00	Pass

Spectrum Plot of Worst Value

802.11a

802.11n (HT20)



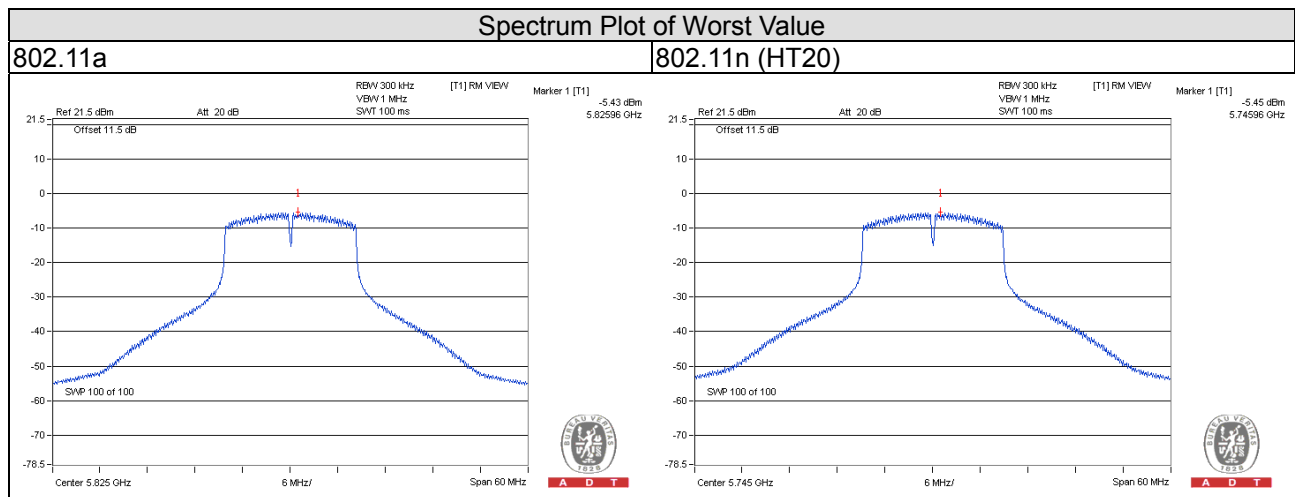
For U-NII-3 Band

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-5.48	-3.26	30.00	Pass
157	5785	-5.67	-3.45	30.00	Pass
165	5825	-5.43	-3.21	30.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-5.45	-3.23	30.00	Pass
157	5785	-5.61	-3.39	30.00	Pass
165	5825	-5.80	-3.58	30.00	Pass

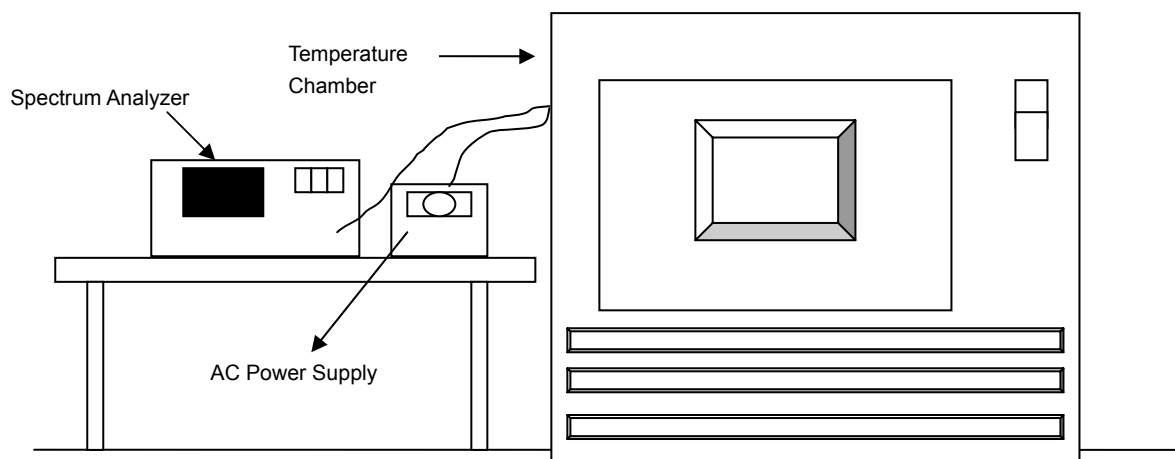


4.5 Frequency Stability

4.5.1 Limits of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

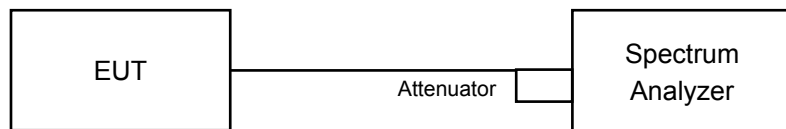
Frequency Stability Versus Temp.	
Temp. (	Operating Frequency: 5180MHz

4.6 6dB Bandwidth Measurement

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

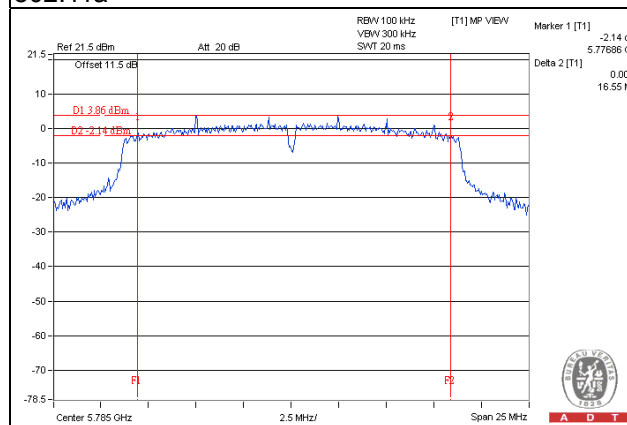
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.06	0.5	Pass
157	5785	16.55	0.5	Pass
165	5825	15.93	0.5	Pass

802.11n (HT20)

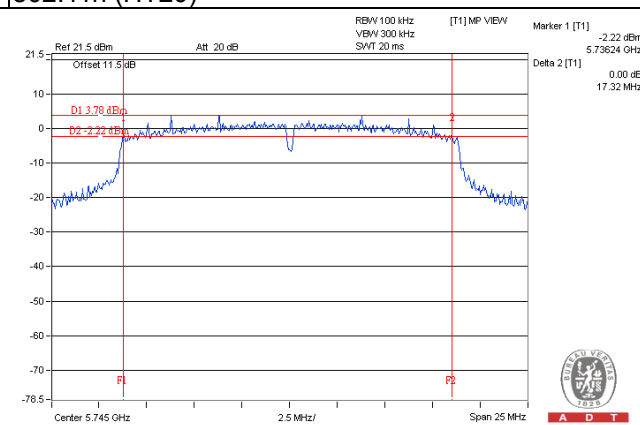
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.32	0.5	Pass
157	5785	15.71	0.5	Pass
165	5825	15.98	0.5	Pass

Spectrum Plot of Worst Value

802.11a



802.11n (HT20)



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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

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