

FCC Test Report

Report No.: RF140710C17B-1

FCC ID: PY314200260

Test Model: C6300BD

Received Date: July 22, 2014

Test Date: July 22, 2014 to Jan. 29, 2015

Issued Date: May 19, 2015

Applicant: NETGEAR INC.

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

Issue No.	Description	Date Issued
RF140710C17B-1	Original release.	May 19, 2015



1 Certificate of Conformity

Product: Wireless Cable Data Gateway

Brand: NETGEAR

Test Model: C6300BD

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR INC.

Test Date: July 22, 2014 to Jan. 29, 2015

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2009

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 :  , **Date:** May 19, 2015
Lori Chung / Specialist

Approved by :  , **Date:** May 19, 2015
May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407 Under New Rule)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -10.04dB at 11.54763MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5420.00MHz, 5441.00MHz
15.407(a)(1/2/3)	Max Average Transmit Power 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(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is I-PEX not a standard connector.

NOTE: 1. This report is prepared for FCC class II permissive change. (Add DFS band: 5250~5350MHz & 5470~5725MHz).

2. The DFS report was recorded in another test report.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

The listed uncertainties are the worst case uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.86 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.37 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.65 dB
	6GHz ~ 18GHz	3.88 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	Wireless Cable Data Gateway
Brand	NETGEAR
Test Model	C6300BD
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 12V from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54Mbps 802.11n: up to 450Mbps 802.11ac: up to 1300Mbps
Operating Frequency	5.26 ~ 5.32GHz, 5.5~5.7GHz
Number of Channel	15 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 7 for 802.11n (HT40), 802.11ac (VHT40) 3 for 802.11ac (VHT80)
Output Power	802.11a: 207.65mW 802.11ac (VHT20): 209.626mW 802.11ac (VHT40): 205.495mW 802.11ac (VHT80): 185.667mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the Report No.: RF140710C17-1 design is as the following:

- ◆ Add DFS band <5250~5350MHz & 5470~5725MHz>

2. According to above condition, all test items need to be performed. And all data were verified to meet the requirements.

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

For 2.4GHz used						
Ant. No.	Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Connector type
1	Chain (0)	Master Wave	98P92UIPF030	PCB	2	I-PEX
2	Chain (1)		98P92UIPF031		2	
3	Chain (2)		98P92UIPF033		2	
For 5GHz used						
Ant. No.	Transmitter Circuit	Brand	Model	Antenna Type	Antenna Gain (dBi)	Connector type
4	Chain (0)	Master Wave	98P92UIPF033	PCB	2	I-PEX
5	Chain (1)		98P92UIPF034		2	
6	Chain (2)		98P92UIPF034		2	

4. The EUT could be supplied with a power adapter as the following table:

No.	Brand	Model No.	Spec.
1	Netgear	2AAF042F	AC I/P: 100-240V, 1.5A, 50/60Hz DC O/P: 12V, 3.5A DC output cable (Unshielded, 1.8m)
2	Netgear	AD898F20	AC I/P: 100-240V, 1A, 50/60Hz DC O/P: 12V, 3.5A DC output cable (Unshielded, 1.8m)

Note: From the above adapters, the worst radiated test was found in **Adapter 1**. Therefore only the test data of the modes were recorded in this report.

5. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX FUNCTION	
802.11b	1 ~ 11Mbps	3TX	3RX
802.11g	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
5GHz Band			
MODULATION MODE	DATA RATE (MCS)	TX & RX FUNCTION	
802.11a	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
802.11ac (VHT20)	MCS0~8 Nss= 1	3TX	3RX
	MCS0~8 Nss= 2	3TX	3RX
	MCS0~9 Nss= 3	3TX	3RX
802.11ac (VHT40)	MCS0~9 Nss= 1	3TX	3RX
	MCS0~9 Nss= 2	3TX	3RX
	MCS0~9 Nss= 3	3TX	3RX
802.11ac (VHT80)	MCS0~9 Nss= 1	3TX	3RX
	MCS0~9 Nss= 2	3TX	3RX
	MCS0~9 Nss= 3	3TX	3RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

6. The emission of the simultaneous operation (2.4GHz & 5GHz) has been evaluated and no non-compliance was found.
7. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Description of Test Modes

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY
58	5290MHz

FOR 5500 ~ 5700MHz

11 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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), 802.11ac (VHT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channels are provided for 802.11ac (VHT80):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530MHz	122	5610 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	Adapter 1
2	-	-	√	-	Adapter 2

Where **RE≥1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE: 1. The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-plane**.

Radiated Emission Test (Above 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5 MCS 0 / NSS=1
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5 MCS 0 NSS=1
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3 MCS 0 NSS=1
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 120, 140	OFDM	BPSK	6.5 MCS 0 / NSS=1
802.11ac (VHT40)		102 to 134	102, 118, 134	OFDM	BPSK	13.5 MCS 0 NSS=1
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3 MCS 0 NSS=1

Radiated Emission Test (Below 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11ac (VHT20)	5500-5700	100 to 140	120	OFDM	BPSK	6.5 MCS 0 / NSS=1

Power Line Conducted Emission Test:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11ac (VHT20)	5500-5700	100 to 140	120	OFDM	BPSK	6.5 MCS 0 / NSS=1

Antenna Port Conducted Measurement:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5 MCS 0 / NSS=1
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5 MCS 0 NSS=1
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3 MCS 0 NSS=1
802.11a	5500-5700	100 to 140	100, 120, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 120, 140	OFDM	BPSK	6.5 MCS 0 / NSS=1
802.11ac (VHT40)		102 to 134	102, 118, 134	OFDM	BPSK	13.5 MCS 0 NSS=1
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3 MCS 0 NSS=1

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Tim Ho
	25deg. C, 72%RH		Gary Cheng
RE<1G	25deg. C, 73%RH	120Vac, 60Hz	Gary Cheng
PLC	21deg. C, 67%RH	120Vac, 60Hz	Wythe Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

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

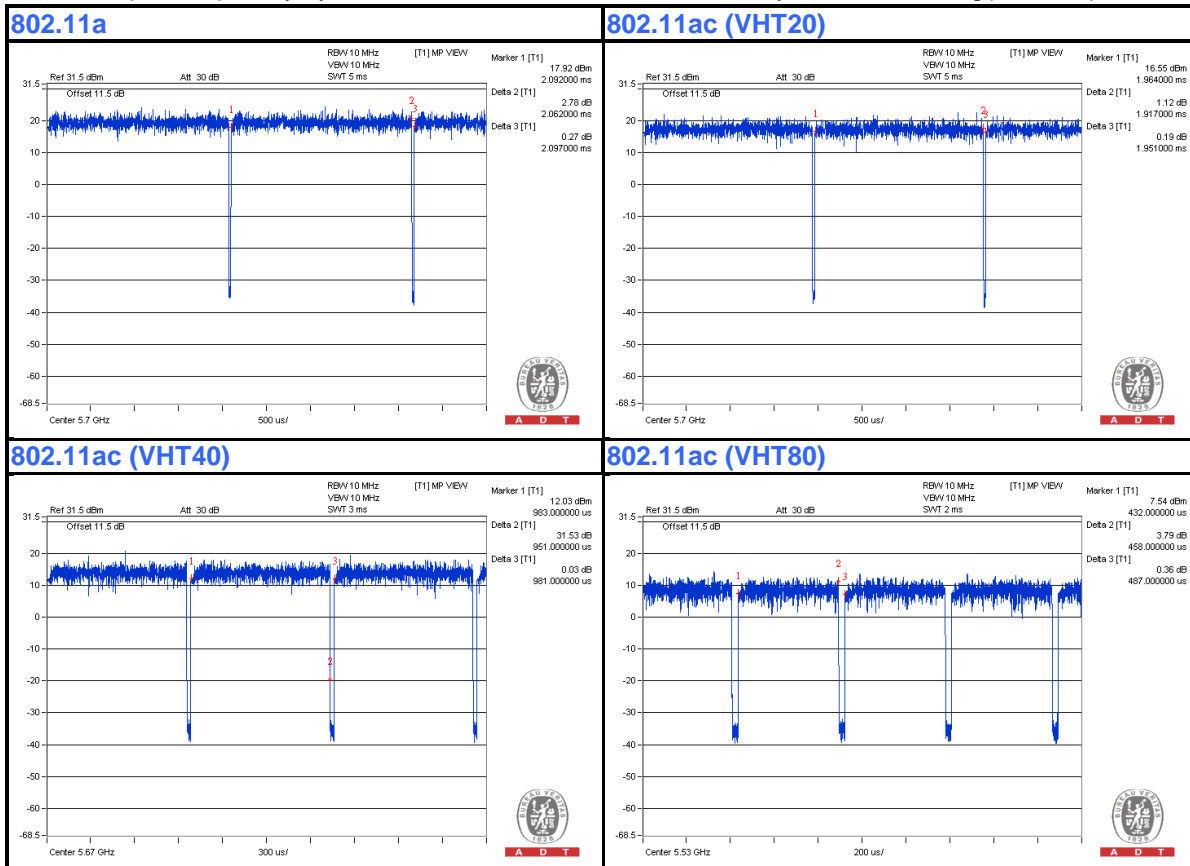
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.062 \text{ ms} / 2.097 \text{ ms} = 0.983$

802.11ac (VHT20): Duty cycle = $1.917 \text{ ms} / 1.951 \text{ ms} = 0.983$

802.11ac (VHT40): Duty cycle = $0.951 \text{ ms} / 0.981 \text{ ms} = 0.969$, Duty factor = $10 * \log(1/0.969) = 0.13$

802.11ac (VHT80): Duty cycle = $0.458 \text{ ms} / 0.487 \text{ ms} = 0.940$, Duty factor = $10 * \log(1/0.940) = 0.27$



3.4 Description of Support Units

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

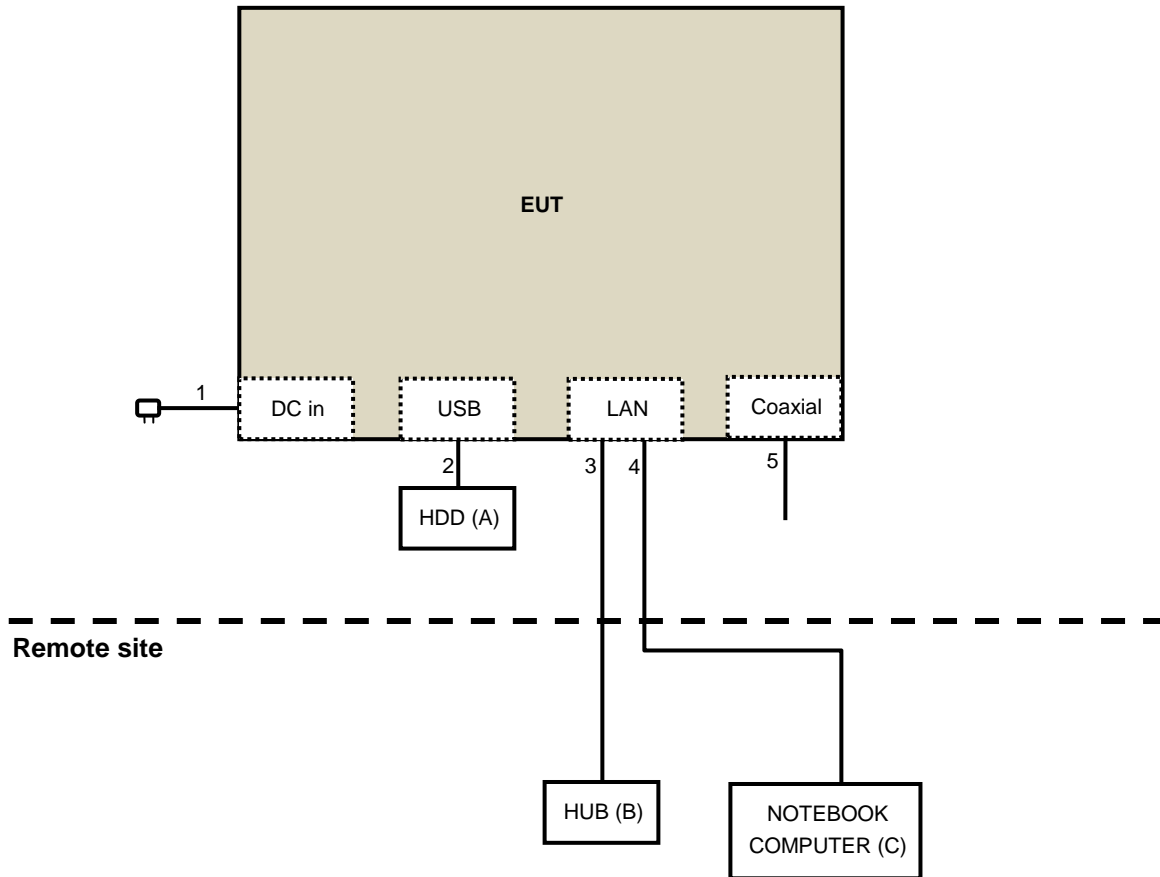
No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	HDD	WD	WDBACW0010HBK-S ESN	WCAZAL625787	FCC DoC	Provided by Lab
B	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab
C	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC	Provided by Lab

NOTE:

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

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	DC cable	1	1.8	No	0	Supplied by client
2	USB Cable	1	1.8	Yes	0	Provided by Lab
3	UTP RJ45	3	10	No	0	Provided by Lab
4	UTP RJ45	1	10	No	0	Provided by Lab
5	Coaxial Cable	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test





3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)
789033 D02 General UNII Test Procedures New Rules v01
662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2009

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (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:

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



4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 04, 2014	Oct. 03, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Aug. 27, 2014	Aug. 26, 2015
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	131205 131214 SNMY23684/4	Jan. 16, 2015	Jan. 15, 2016
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier EMCI	EMC184045	980143	Jan. 16, 2015	Jan. 15, 2016
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	RF104-121 RF104-204	Dec. 05, 2014	Dec. 04, 2015
Antenna Tower & Turn Table CT	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 3 The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
- 5 The VCCI Site Registration No. is G-137.
- 6 The CANADA Site Registration No. is IC 7450H-2.
- 7 Tested Date: Jan. 23 to 29, 2015

4.1.3 Test Procedures

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

Note:

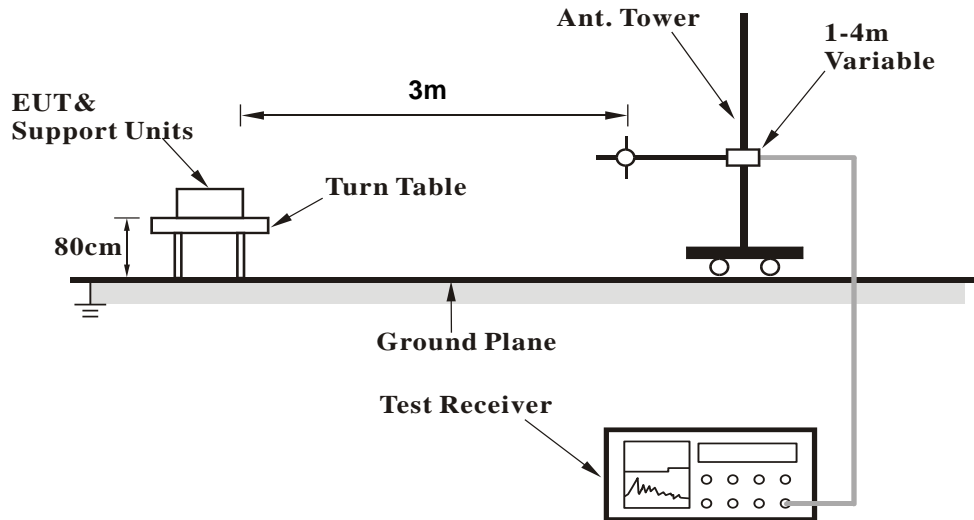
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

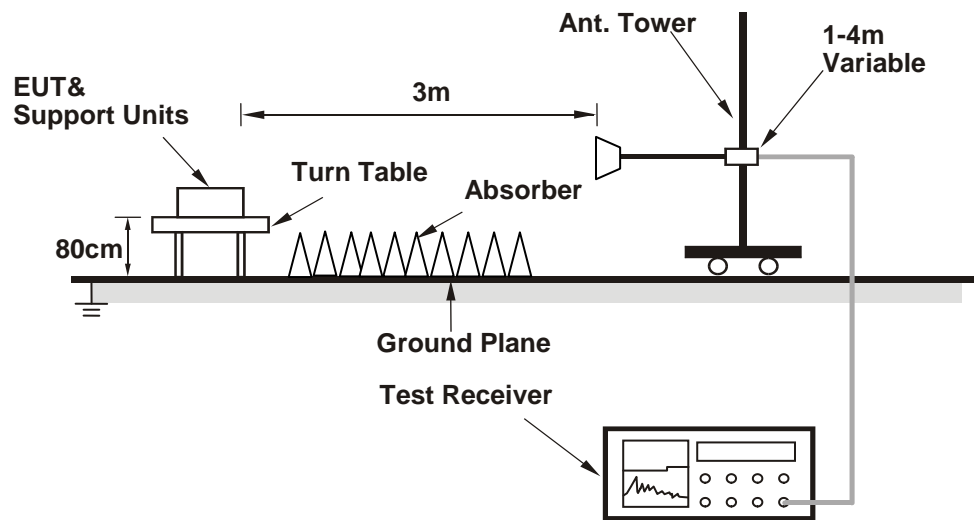
No deviation.

4.1.5 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



4.1.6 EUT Operating Conditions

1. Placed the EUT on testing table.
2. Prepared computer system (support unit C) to act as communication partner.
3. The communication partner ran test program "Mtool.exe[v2.0.1.1]" to enable EUT under transmission/receiving condition continuously.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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	5040.00	55.1 PK	74.0	-18.9	1.00 H	250	48.62	6.48
2	5040.00	49.6 AV	54.0	-4.4	1.00 H	250	43.12	6.48
3	*5260.00	110.6 PK			1.00 H	250	103.42	7.18
4	*5260.00	100.0 AV			1.00 H	250	92.82	7.18
5	5421.00	61.3 PK	74.0	-12.7	1.00 H	250	53.52	7.78
6	5421.00	51.4 AV	54.0	-2.6	1.00 H	250	43.62	7.78
7	#10520.00	53.0 PK	68.2	-15.2	1.00 H	350	39.78	13.22
8	15780.00	62.7 PK	74.0	-11.3	1.03 H	360	44.19	18.51
9	15780.00	50.0 AV	54.0	-4.0	1.03 H	360	31.49	18.51

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	5040.00	57.7 PK	74.0	-16.3	1.24 V	159	51.22	6.48
2	5040.00	51.7 AV	54.0	-2.3	1.24 V	159	45.22	6.48
3	*5260.00	116.6 PK			1.13 V	156	109.42	7.18
4	*5260.00	107.4 AV			1.13 V	156	100.22	7.18
5	5421.00	63.8 PK	74.0	-10.2	1.09 V	139	56.02	7.78
6	5421.00	53.8 AV	54.0	-0.2	1.09 V	139	46.02	7.78
7	#10520.00	56.0 PK	68.2	-12.2	1.01 V	17	42.78	13.22
8	15780.00	63.2 PK	74.0	-10.8	1.06 V	2	44.69	18.51
9	15780.00	50.2 AV	54.0	-3.8	1.06 V	2	31.69	18.51

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 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	*5300.00	108.8 PK			1.02 H	255	101.51	7.29
2	*5300.00	98.4 AV			1.02 H	255	91.11	7.29
3	5380.00	57.6 PK	74.0	-16.4	1.02 H	255	49.98	7.62
4	5380.00	47.7 AV	54.0	-6.3	1.02 H	255	40.08	7.62
5	5458.00	61.6 PK	74.0	-12.4	1.02 H	255	53.70	7.90
6	5458.00	51.4 AV	54.0	-2.6	1.02 H	255	43.50	7.90
7	#5741.00	58.2 PK	68.2	-10.0	1.02 H	255	49.79	8.41
8	10600.00	52.7 PK	74.0	-21.3	1.02 H	357	39.17	13.53
9	10600.00	41.7 AV	54.0	-12.3	1.02 H	357	28.17	13.53
10	15900.00	63.6 PK	74.0	-10.4	1.00 H	360	44.95	18.65
11	15900.00	50.9 AV	54.0	-3.1	1.00 H	360	32.25	18.65

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	115.8 PK			1.03 V	160	108.51	7.29
2	*5300.00	106.4 AV			1.03 V	160	99.11	7.29
3	5380.00	59.6 PK	74.0	-14.4	1.21 V	181	51.98	7.62
4	5380.00	49.6 AV	54.0	-4.4	1.21 V	181	41.98	7.62
5	5458.00	63.4 PK	74.0	-10.6	1.00 V	169	55.50	7.90
6	5458.00	53.4 AV	54.0	-0.6	1.00 V	169	45.50	7.90
7	#5741.00	60.3 PK	68.2	-7.9	1.03 V	159	51.89	8.41
8	10600.00	55.3 PK	74.0	-18.7	1.04 V	21	41.77	13.53
9	10600.00	41.2 AV	54.0	-12.8	1.04 V	21	27.67	13.53
10	15900.00	63.3 PK	74.0	-10.7	1.06 V	20	44.65	18.65
11	15900.00	49.2 AV	54.0	-4.8	1.06 V	20	30.55	18.65

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 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	109.2 PK			1.02 H	256	101.82	7.38
2	*5320.00	99.6 AV			1.02 H	256	92.22	7.38
3	5350.00	65.4 PK	74.0	-8.6	1.02 H	256	57.91	7.49
4	5350.00	51.3 AV	54.0	-2.7	1.02 H	256	43.81	7.49
5	5401.00	57.4 PK	74.0	-16.6	1.04 H	247	49.69	7.71
6	5401.00	47.4 AV	54.0	-6.6	1.04 H	247	39.69	7.71
7	#5480.00	63.2 PK	68.2	-5.0	1.05 H	241	55.25	7.95
8	#5763.00	55.6 PK	68.2	-12.6	1.15 H	300	47.14	8.46
9	10640.00	52.9 PK	74.0	-21.1	1.02 H	360	39.27	13.63
10	10640.00	41.8 AV	54.0	-12.2	1.02 H	360	28.17	13.63
11	15960.00	63.4 PK	74.0	-10.6	1.02 H	360	44.79	18.61
12	15960.00	50.5 AV	54.0	-3.5	1.02 H	360	31.89	18.61

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	117.2 PK			1.23 V	170	109.82	7.38
2	*5320.00	107.6 AV			1.23 V	170	100.22	7.38
3	5350.00	67.7 PK	74.0	-6.3	1.12 V	158	60.21	7.49
4	5350.00	53.2 AV	54.0	-0.8	1.12 V	158	45.71	7.49
5	5401.00	61.2 PK	74.0	-12.8	1.11 V	160	53.49	7.71
6	5401.00	50.5 AV	54.0	-3.5	1.11 V	160	42.79	7.71
7	#5480.00	65.8 PK	68.2	-2.4	1.00 V	143	57.85	7.95
8	#5763.00	59.7 PK	68.2	-8.5	1.14 V	158	51.24	8.46
9	10640.00	57.1 PK	74.0	-16.9	1.02 V	3	43.47	13.63
10	10640.00	43.2 AV	54.0	-10.8	1.02 V	3	29.57	13.63
11	15960.00	64.5 PK	74.0	-9.5	1.08 V	8	45.89	18.61
12	15960.00	51.3 AV	54.0	-2.7	1.08 V	8	32.69	18.61

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 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	#5340.00	60.3 PK	74.0	-13.7	1.03 H	264	52.84	7.46
2	#5340.00	50.6 AV	54.0	-3.4	1.03 H	264	43.14	7.46
3	5420.00	61.4 PK	74.0	-12.6	1.00 H	216	53.62	7.78
4	5420.00	51.3 AV	54.0	-2.7	1.00 H	216	43.52	7.78
5	*5500.00	110.3 PK			1.01 H	258	102.28	8.02
6	*5500.00	101.0 AV			1.01 H	258	92.98	8.02
7	#5960.00	56.5 PK	74.0	-17.5	1.08 H	198	47.47	9.03
8	#5960.00	50.6 AV	54.0	-3.4	1.08 H	198	41.57	9.03
9	11000.00	52.8 PK	74.0	-21.2	1.00 H	360	38.38	14.42
10	11000.00	41.8 AV	54.0	-12.2	1.00 H	360	27.38	14.42
11	#16500.00	63.9 PK	74.0	-10.1	1.00 H	360	42.96	20.94
12	#16500.00	50.8 AV	54.0	-3.2	1.00 H	360	29.86	20.94

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	#5340.00	63.4 PK	74.0	-10.6	1.03 V	139	55.94	7.46
2	#5340.00	53.8 AV	54.0	-0.2	1.03 V	139	46.34	7.46
3	5420.00	63.8 PK	74.0	-10.2	1.10 V	160	56.02	7.78
4	5420.00	53.9 AV	54.0	-0.1	1.10 V	160	46.12	7.78
5	*5500.00	118.9 PK			1.00 V	144	110.88	8.02
6	*5500.00	109.0 AV			1.00 V	144	100.98	8.02
7	#5960.00	58.5 PK	74.0	-15.5	1.00 V	193	49.47	9.03
8	#5960.00	52.2 AV	54.0	-1.8	1.00 V	193	43.17	9.03
9	11000.00	56.5 PK	74.0	-17.5	1.00 V	10	42.08	14.42
10	11000.00	42.8 AV	54.0	-11.2	1.00 V	10	28.38	14.42
11	#16500.00	64.3 PK	74.0	-9.7	1.00 V	10	43.36	20.94
12	#16500.00	51.3 AV	54.0	-2.7	1.00 V	10	30.36	20.94

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 120	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	5441.00	61.8 PK	74.0	-12.2	1.05 H	244	53.97	7.83
2	5441.00	51.3 AV	54.0	-2.7	1.05 H	244	43.47	7.83
3	*5600.00	110.2 PK			1.00 H	250	101.99	8.21
4	*5600.00	100.6 AV			1.00 H	250	92.39	8.21
5	#5780.00	62.3 PK	68.2	-5.9	1.00 H	250	53.83	8.47
6	11200.00	52.4 PK	74.0	-21.6	1.02 H	360	38.14	14.26
7	11200.00	41.4 AV	54.0	-12.6	1.02 H	360	27.14	14.26
8	#16800.00	63.9 PK	68.2	-4.3	1.06 H	360	42.60	21.30

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	5441.00	63.8 PK	74.0	-10.2	1.06 V	158	55.97	7.83
2	5441.00	53.9 AV	54.0	-0.1	1.06 V	158	46.07	7.83
3	*5600.00	118.5 PK			1.05 V	151	110.29	8.21
4	*5600.00	108.7 AV			1.05 V	151	100.49	8.21
5	#5780.00	65.9 PK	68.2	-2.3	1.03 V	132	57.43	8.47
6	11200.00	57.0 PK	74.0	-17.0	1.02 V	19	42.74	14.26
7	11200.00	43.2 AV	54.0	-10.8	1.02 V	19	28.94	14.26
8	#16800.00	64.4 PK	68.2	-3.8	1.01 V	22	43.10	21.30

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) – 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	110.5 PK			1.06 H	244	102.15	8.35
2	*5700.00	102.3 AV			1.06 H	244	93.95	8.35
3	#5725.00	68.4 PK	74.0	-5.6	1.06 H	244	60.01	8.39
4	#5725.00	51.2 AV	54.0	-2.8	1.06 H	244	42.81	8.39
5	#5779.00	66.2 PK	68.2	-2.0	1.02 H	268	57.73	8.47
6	#5860.00	63.3 PK	68.2	-4.9	1.00 H	200	54.59	8.71
7	11400.00	52.4 PK	74.0	-21.6	1.05 H	360	37.98	14.42
8	11400.00	41.5 AV	54.0	-12.5	1.05 H	360	27.08	14.42
9	#17100.00	63.7 PK	68.2	-4.5	1.03 H	360	41.93	21.77

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	118.9 PK			1.05 V	131	110.55	8.35
2	*5700.00	110.3 AV			1.05 V	131	101.95	8.35
3	#5725.00	70.2 PK	74.0	-3.8	1.03 V	154	61.81	8.39
4	#5725.00	53.4 AV	54.0	-0.6	1.03 V	154	45.01	8.39
5	#5779.00	68.0 PK	68.2	-0.2	1.03 V	131	59.53	8.47
6	#5860.00	66.5 PK	68.2	-1.7	1.02 V	146	57.79	8.71
7	11400.00	56.9 PK	74.0	-17.1	1.03 V	20	42.48	14.42
8	11400.00	43.2 AV	54.0	-10.8	1.03 V	20	28.78	14.42
9	#17100.00	64.2 PK	68.2	-4.0	1.02 V	36	42.43	21.77

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.

802.11ac (VHT20)

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	5040.00	55.3 PK	74.0	-18.7	1.03 H	252	48.82	6.48
2	5040.00	49.8 AV	54.0	-4.2	1.03 H	252	43.32	6.48
3	*5260.00	110.2 PK			1.04 H	252	103.02	7.18
4	*5260.00	100.4 AV			1.04 H	252	93.22	7.18
5	5420.00	62.1 PK	74.0	-11.9	1.04 H	233	54.32	7.78
6	5420.00	51.3 AV	54.0	-2.7	1.04 H	233	43.52	7.78
7	#10520.00	52.0 PK	68.2	-16.2	1.07 H	360	38.78	13.22
8	15780.00	63.7 PK	74.0	-10.3	1.06 H	360	45.19	18.51
9	15780.00	50.5 AV	54.0	-3.5	1.06 H	360	31.99	18.51

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	5040.00	57.7 PK	74.0	-16.3	1.16 V	184	51.22	6.48
2	5040.00	52.0 AV	54.0	-2.0	1.16 V	184	45.52	6.48
3	*5260.00	117.5 PK			1.05 V	169	110.32	7.18
4	*5260.00	108.0 AV			1.05 V	169	100.82	7.18
5	5420.00	64.5 PK	74.0	-9.5	1.15 V	162	56.72	7.78
6	5420.00	53.9 AV	54.0	-0.1	1.15 V	162	46.12	7.78
7	#10520.00	57.2 PK	68.2	-11.0	1.08 V	27	43.98	13.22
8	15780.00	64.3 PK	74.0	-9.7	1.03 V	34	45.79	18.51
9	15780.00	51.2 AV	54.0	-2.8	1.03 V	34	32.69	18.51

REMARKS:

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

CHANNEL	TX Channel 60	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	*5300.00	110.3 PK			1.03 H	245	103.01	7.29
2	*5300.00	99.6 AV			1.03 H	245	92.31	7.29
3	5380.00	58.3 PK	74.0	-15.7	1.20 H	293	50.68	7.62
4	5380.00	48.2 AV	54.0	-5.8	1.20 H	293	40.58	7.62
5	5458.00	60.2 PK	74.0	-13.8	1.22 H	289	52.30	7.90
6	5458.00	50.1 AV	54.0	-3.9	1.22 H	289	42.20	7.90
7	#5741.00	55.9 PK	74.0	-18.1	1.11 H	286	47.49	8.41
8	#5741.00	46.6 AV	54.0	-7.4	1.11 H	286	38.19	8.41
9	10600.00	52.2 PK	74.0	-21.8	1.02 H	360	38.67	13.53
10	10600.00	41.2 AV	54.0	-12.8	1.02 H	360	27.67	13.53
11	15900.00	63.3 PK	74.0	-10.7	1.00 H	360	44.65	18.65
12	15900.00	50.6 AV	54.0	-3.4	1.00 H	360	31.95	18.65

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	116.3 PK			1.00 V	110	109.01	7.29
2	*5300.00	106.5 AV			1.00 V	110	99.21	7.29
3	5380.00	60.8 PK	74.0	-13.2	1.08 V	107	53.18	7.62
4	5380.00	50.3 AV	54.0	-3.7	1.08 V	107	42.68	7.62
5	5458.00	63.5 PK	74.0	-10.5	1.05 V	108	55.60	7.90
6	5458.00	53.5 AV	54.0	-0.5	1.05 V	108	45.60	7.90
7	#5741.00	57.3 PK	74.0	-16.7	1.01 V	89	48.89	8.41
8	#5741.00	50.2 AV	54.0	-3.8	1.01 V	89	41.79	8.41
9	10600.00	57.4 PK	74.0	-16.6	1.03 V	10	43.87	13.53
10	10600.00	43.6 AV	54.0	-10.4	1.03 V	10	30.07	13.53
11	15900.00	64.6 PK	74.0	-9.4	1.03 V	10	45.95	18.65
12	15900.00	51.6 AV	54.0	-2.4	1.03 V	10	32.95	18.65

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 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	108.6 PK			1.22 H	248	101.22	7.38
2	*5320.00	98.7 AV			1.22 H	248	91.32	7.38
3	5350.00	67.8 PK	74.0	-6.2	1.00 H	201	60.31	7.49
4	5350.00	50.2 AV	54.0	-3.8	1.00 H	201	42.71	7.49
5	5401.00	57.2 PK	74.0	-16.8	1.01 H	246	49.49	7.71
6	5401.00	47.1 AV	54.0	-6.9	1.01 H	246	39.39	7.71
7	#5763.00	55.3 PK	74.0	-18.7	4.00 H	287	46.84	8.46
8	#5763.00	46.6 AV	54.0	-7.4	4.00 H	287	38.14	8.46
9	10640.00	52.6 PK	74.0	-21.4	1.04 H	354	38.97	13.63
10	10640.00	41.6 AV	54.0	-12.4	1.04 H	354	27.97	13.63
11	15960.00	63.5 PK	74.0	-10.5	1.02 H	360	44.89	18.61
12	15960.00	50.8 AV	54.0	-3.2	1.02 H	360	32.19	18.61

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	116.6 PK			1.00 V	113	109.22	7.38
2	*5320.00	106.9 AV			1.00 V	113	99.52	7.38
3	5350.00	70.2 PK	74.0	-3.8	1.08 V	109	62.71	7.49
4	5350.00	53.5 AV	54.0	-0.5	1.08 V	109	46.01	7.49
5	5401.00	60.2 PK	74.0	-13.8	1.06 V	109	52.49	7.71
6	5401.00	51.1 AV	54.0	-2.9	1.06 V	109	43.39	7.71
7	#5763.00	58.4 PK	74.0	-15.6	1.00 V	88	49.94	8.46
8	#5763.00	52.7 AV	54.0	-1.3	1.00 V	88	44.24	8.46
9	10640.00	56.8 PK	74.0	-17.2	1.03 V	13	43.17	13.63
10	10640.00	42.8 AV	54.0	-11.2	1.03 V	13	29.17	13.63
11	15960.00	64.3 PK	74.0	-9.7	1.04 V	7	45.69	18.61
12	15960.00	50.7 AV	54.0	-3.3	1.04 V	7	32.09	18.61

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 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	5420.00	56.5 PK	74.0	-17.5	1.20 H	212	48.72	7.78
2	5420.00	48.6 AV	54.0	-5.4	1.20 H	212	40.82	7.78
3	*5500.00	106.5 PK			1.22 H	243	98.48	8.02
4	*5500.00	96.2 AV			1.22 H	243	88.18	8.02
5	#5958.30	58.3 PK	74.0	-15.7	1.16 H	221	49.27	9.03
6	#5958.30	51.0 AV	54.0	-3.0	1.16 H	221	41.97	9.03
7	11000.00	51.2 PK	74.0	-22.8	1.06 H	347	36.78	14.42
8	11000.00	38.4 AV	54.0	-15.6	1.06 H	347	23.98	14.42
9	#16500.00	60.3 PK	74.0	-13.7	1.04 H	360	39.36	20.94
10	#16500.00	48.4 AV	54.0	-5.6	1.04 H	360	27.46	20.94

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	5420.00	58.6 PK	74.0	-15.4	1.00 V	173	50.82	7.78
2	5420.00	50.9 AV	54.0	-3.1	1.00 V	173	43.12	7.78
3	*5500.00	115.2 PK			1.30 V	161	107.18	8.02
4	*5500.00	104.9 AV			1.30 V	161	96.88	8.02
5	#5958.30	60.1 PK	74.0	-13.9	1.15 V	153	51.07	9.03
6	#5958.30	53.6 AV	54.0	-0.4	1.15 V	153	44.57	9.03
7	11000.00	54.3 PK	74.0	-19.7	1.00 V	19	39.88	14.42
8	11000.00	40.3 AV	54.0	-13.7	1.00 V	19	25.88	14.42
9	#16500.00	61.4 PK	74.0	-12.6	1.07 V	15	40.46	20.94
10	#16500.00	48.6 AV	54.0	-5.4	1.07 V	15	27.66	20.94

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 120	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	5440.80	61.1 PK	74.0	-12.9	1.19 H	231	53.27	7.83
2	5440.80	51.3 AV	54.0	-2.7	1.19 H	231	43.47	7.83
3	*5600.00	108.3 PK			1.20 H	244	100.09	8.21
4	*5600.00	98.6 AV			1.20 H	244	90.39	8.21
5	#5760.50	63.4 PK	68.2	-4.8	1.21 H	240	54.95	8.45
6	11200.00	52.3 PK	74.0	-21.7	1.02 H	360	38.04	14.26
7	11200.00	41.2 AV	54.0	-12.8	1.02 H	360	26.94	14.26
8	#16800.00	63.5 PK	68.2	-4.7	1.10 H	360	42.20	21.30

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	5440.80	63.6 PK	74.0	-10.4	1.24 V	180	55.77	7.83
2	5440.80	53.7 AV	54.0	-0.3	1.24 V	180	45.87	7.83
3	*5600.00	117.8 PK			1.00 V	127	109.59	8.21
4	*5600.00	107.8 AV			1.00 V	127	99.59	8.21
5	#5760.50	65.3 PK	68.2	-2.9	1.01 V	133	56.85	8.45
6	11200.00	56.7 PK	74.0	-17.3	1.09 V	27	42.44	14.26
7	11200.00	42.5 AV	54.0	-11.5	1.09 V	27	28.24	14.26
8	#16800.00	64.4 PK	68.2	-3.8	1.00 V	11	43.10	21.30

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) – 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	107.3 PK			1.22 H	246	98.95	8.35
2	*5700.00	97.3 AV			1.22 H	246	88.95	8.35
3	#5725.00	62.2 PK	68.2	-6.0	1.22 H	240	53.81	8.39
4	#5777.00	66.3 PK	68.2	-1.9	1.16 H	231	57.83	8.47
5	11400.00	51.8 PK	74.0	-22.2	1.05 H	346	37.38	14.42
6	11400.00	38.8 AV	54.0	-15.2	1.05 H	346	24.38	14.42
7	#17100.00	60.8 PK	68.2	-7.4	1.00 H	360	39.03	21.77

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	114.5 PK			1.37 V	58	106.15	8.35
2	*5700.00	105.7 AV			1.37 V	58	97.35	8.35
3	#5725.00	64.6 PK	68.2	-3.6	1.38 V	50	56.21	8.39
4	#5777.00	68.0 PK	68.2	-0.2	1.19 V	122	59.53	8.47
5	11400.00	55.9 PK	74.0	-18.1	1.06 V	20	41.48	14.42
6	11400.00	42.4 AV	54.0	-11.6	1.06 V	20	27.98	14.42
7	#17100.00	63.1 PK	68.2	-5.1	1.12 V	10	41.33	21.77

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.



802.11ac (VHT40)

CHANNEL	TX Channel 54	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	*5270.00	106.5 PK			1.22 H	246	99.28	7.22
2	*5270.00	96.1 AV			1.22 H	246	88.88	7.22
3	5352.00	61.4 PK	74.0	-12.6	1.16 H	238	53.89	7.51
4	5352.00	51.2 AV	54.0	-2.8	1.16 H	238	43.69	7.51
5	5430.00	59.8 PK	74.0	-14.2	1.20 H	240	52.00	7.80
6	5430.00	50.3 AV	54.0	-3.7	1.20 H	240	42.50	7.80
7	#5709.00	58.2 PK	68.2	-10.0	1.35 H	204	49.84	8.36
8	#10540.00	51.2 PK	68.2	-17.0	1.05 H	346	37.91	13.29
9	15810.00	59.7 PK	74.0	-14.3	1.00 H	360	41.13	18.57
10	15810.00	45.6 AV	54.0	-8.4	1.00 H	360	27.03	18.57

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	*5270.00	114.5 PK			1.00 V	111	107.28	7.22
2	*5270.00	104.1 AV			1.00 V	111	96.88	7.22
3	5352.50	63.7 PK	74.0	-10.3	1.00 V	108	56.18	7.52
4	5352.50	53.3 AV	54.0	-0.7	1.00 V	108	45.78	7.52
5	5430.00	62.0 PK	74.0	-12.0	1.00 V	144	54.20	7.80
6	5430.00	52.0 AV	54.0	-2.0	1.00 V	144	44.20	7.80
7	#5709.10	60.0 PK	68.2	-8.2	1.00 V	111	51.64	8.36
8	#10540.00	54.2 PK	68.2	-14.0	1.11 V	333	40.91	13.29
9	15810.00	62.7 PK	74.0	-11.3	1.02 V	360	44.13	18.57
10	15810.00	49.6 AV	54.0	-4.4	1.02 V	360	31.03	18.57

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 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	*5310.00	102.1 PK			1.22 H	246	94.77	7.33
2	*5310.00	92.1 AV			1.22 H	246	84.77	7.33
3	5350.00	57.9 PK	74.0	-16.1	1.30 H	215	50.41	7.49
4	5350.00	52.2 AV	54.0	-1.8	1.30 H	215	44.71	7.49
5	#5752.50	60.0 PK	74.0	-14.0	1.18 H	241	51.57	8.43
6	#5752.50	50.5 AV	54.0	-3.5	1.18 H	241	42.07	8.43
7	10620.00	51.5 PK	74.0	-22.5	1.08 H	360	37.91	13.59
8	10620.00	38.7 AV	54.0	-15.3	1.08 H	360	25.11	13.59
9	15930.00	59.5 PK	74.0	-14.5	1.00 H	360	40.86	18.64
10	15930.00	45.7 AV	54.0	-8.3	1.00 H	360	27.06	18.64

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	110.7 PK			1.03 V	112	103.37	7.33
2	*5310.00	100.8 AV			1.03 V	112	93.47	7.33
3	5350.00	67.0 PK	74.0	-7.0	1.07 V	107	59.51	7.49
4	5350.00	53.4 AV	54.0	-0.6	1.07 V	107	45.91	7.49
5	#5752.50	56.6 PK	74.0	-17.4	1.33 V	120	48.17	8.43
6	#5752.50	52.5 AV	54.0	-1.5	1.33 V	120	44.07	8.43
7	10620.00	52.3 PK	74.0	-21.7	1.04 V	333	38.71	13.59
8	10620.00	39.2 AV	54.0	-14.8	1.04 V	333	25.61	13.59
9	15930.00	60.7 PK	74.0	-13.3	1.03 V	360	42.06	18.64
10	15930.00	48.9 AV	54.0	-5.1	1.03 V	360	30.26	18.64

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 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	5425.00	59.8 PK	74.0	-14.2	1.00 H	242	52.01	7.79
2	5425.00	48.3 AV	54.0	-5.7	1.00 H	242	40.51	7.79
3	#5470.00	57.8 PK	74.0	-16.2	1.24 H	201	49.87	7.93
4	#5470.00	52.3 AV	54.0	-1.7	1.24 H	201	44.37	7.93
5	*5510.00	102.3 PK			1.22 H	246	94.26	8.04
6	*5510.00	92.3 AV			1.22 H	246	84.26	8.04
7	#5969.00	59.3 PK	74.0	-14.7	1.14 H	242	50.23	9.07
8	#5969.00	50.0 AV	54.0	-4.0	1.14 H	242	40.93	9.07
9	11020.00	51.7 PK	74.0	-22.3	1.05 H	346	37.33	14.37
10	11020.00	39.0 AV	54.0	-15.0	1.05 H	346	24.63	14.37
11	#16530.00	59.5 PK	74.0	-14.5	1.00 H	360	38.58	20.92
12	#16530.00	45.4 AV	54.0	-8.6	1.00 H	360	24.48	20.92

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	5425.00	61.1 PK	74.0	-12.9	1.00 V	142	53.31	7.79
2	5425.00	50.6 AV	54.0	-3.4	1.00 V	142	42.81	7.79
3	#5470.00	67.2 PK	74.0	-6.8	1.00 V	142	59.27	7.93
4	#5470.00	53.3 AV	54.0	-0.7	1.00 V	142	45.37	7.93
5	*5510.00	110.6 PK			1.08 V	157	102.56	8.04
6	*5510.00	100.7 AV			1.08 V	157	92.66	8.04
7	#5969.00	59.2 PK	74.0	-14.8	1.00 V	135	50.13	9.07
8	#5969.00	52.3 AV	54.0	-1.7	1.00 V	135	43.23	9.07
9	11020.00	51.6 PK	74.0	-22.4	1.05 V	331	37.23	14.37
10	11020.00	38.8 AV	54.0	-15.2	1.05 V	331	24.43	14.37
11	#16530.00	60.9 PK	74.0	-13.1	1.02 V	360	39.98	20.92
12	#16530.00	49.0 AV	54.0	-5.0	1.02 V	360	28.08	20.92

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 118	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	5433.00	60.5 PK	74.0	-13.5	1.00 H	215	52.68	7.82
2	5433.00	50.1 AV	54.0	-3.9	1.00 H	215	42.28	7.82
3	#5465.00	59.6 PK	74.0	-14.4	1.03 H	237	51.69	7.91
4	#5465.00	48.1 AV	54.0	-5.9	1.03 H	237	40.19	7.91
5	*5590.00	105.9 PK			1.21 H	253	97.71	8.19
6	*5590.00	95.8 AV			1.21 H	253	87.61	8.19
7	#5745.00	59.1 PK	74.0	-14.9	1.12 H	256	50.68	8.42
8	#5745.00	49.9 AV	54.0	-4.1	1.12 H	256	41.48	8.42
9	11180.00	51.0 PK	74.0	-23.0	1.01 H	347	36.75	14.25
10	11180.00	38.2 AV	54.0	-15.8	1.01 H	347	23.95	14.25
11	#16770.00	59.9 PK	74.0	-14.1	1.04 H	360	38.69	21.21
12	#16770.00	46.1 AV	54.0	-7.9	1.04 H	360	24.89	21.21

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	5433.00	61.5 PK	74.0	-12.5	1.08 V	37	53.68	7.82
2	5433.00	51.0 AV	54.0	-3.0	1.08 V	37	43.18	7.82
3	#5465.00	58.9 PK	74.0	-15.1	1.00 V	130	50.99	7.91
4	#5465.00	48.4 AV	54.0	-5.6	1.00 V	130	40.49	7.91
5	*5590.00	114.5 PK			1.19 V	165	106.31	8.19
6	*5590.00	104.0 AV			1.19 V	165	95.81	8.19
7	#5745.00	68.8 PK	74.0	-5.2	1.05 V	64	60.38	8.42
8	#5745.00	53.6 AV	54.0	-0.4	1.05 V	64	45.18	8.42
9	11180.00	54.0 PK	74.0	-20.0	1.15 V	333	39.75	14.25
10	11180.00	42.3 AV	54.0	-11.7	1.15 V	333	28.05	14.25
11	#16770.00	62.4 PK	74.0	-11.6	1.01 V	360	41.19	21.21
12	#16770.00	49.4 AV	54.0	-4.6	1.01 V	360	28.19	21.21

REMARKS:

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

CHANNEL	TX Channel 134	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	*5670.00	108.6 PK			1.00 H	310	100.29	8.31
2	*5670.00	97.6 AV			1.00 H	310	89.29	8.31
3	#5734.00	59.5 PK	74.0	-14.5	1.00 H	36	51.09	8.41
4	#5734.00	46.6 AV	54.0	-7.4	1.00 H	36	38.19	8.41
5	11340.00	51.3 PK	74.0	-22.7	1.00 H	334	36.98	14.32
6	11340.00	38.6 AV	54.0	-15.4	1.00 H	334	24.28	14.32
7	#17010.00	60.4 PK	74.0	-13.6	1.00 H	360	38.87	21.53
8	#17010.00	46.4 AV	54.0	-7.6	1.00 H	360	24.87	21.53

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	113.7 PK			1.01 V	114	105.39	8.31
2	*5670.00	103.1 AV			1.01 V	114	94.79	8.31
3	#5734.00	66.8 PK	74.0	-7.2	1.00 V	114	58.39	8.41
4	#5734.00	53.2 AV	54.0	-0.8	1.00 V	114	44.79	8.41
5	11340.00	54.2 PK	74.0	-19.8	1.12 V	331	39.88	14.32
6	11340.00	42.3 AV	54.0	-11.7	1.12 V	331	27.98	14.32
7	#17010.00	62.6 PK	74.0	-11.4	1.03 V	360	41.07	21.53
8	#17010.00	49.5 AV	54.0	-4.5	1.03 V	360	27.97	21.53

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.

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CHANNEL	TX Channel 58	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	*5290.00	101.7 PK			1.00 H	286	94.42	7.28
2	*5290.00	91.1 AV			1.00 H	286	83.82	7.28
3	5350.00	60.2 PK	74.0	-13.8	1.00 H	296	52.71	7.49
4	5350.00	46.9 AV	54.0	-7.1	1.00 H	296	39.41	7.49
5	#5877.00	60.9 PK	68.2	-7.3	1.00 H	288	52.13	8.77
6	#10580.00	51.1 PK	68.2	-17.1	1.00 H	340	37.65	13.45
7	15870.00	60.5 PK	74.0	-13.5	1.00 H	360	41.88	18.62
8	15870.00	46.7 AV	54.0	-7.3	1.00 H	360	28.08	18.62

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	*5290.00	105.6 PK			1.00 V	113	98.32	7.28
2	*5290.00	95.6 AV			1.00 V	113	88.32	7.28
3	5350.00	66.3 PK	74.0	-7.7	1.00 V	113	58.81	7.49
4	5350.00	53.4 AV	54.0	-0.6	1.00 V	113	45.91	7.49
5	#5877.00	65.2 PK	68.2	-3.0	1.21 V	158	56.43	8.77
6	#10580.00	54.0 PK	68.2	-14.2	1.17 V	320	40.55	13.45
7	15870.00	62.4 PK	74.0	-11.6	1.00 V	360	43.78	18.62
8	15870.00	49.4 AV	54.0	-4.6	1.00 V	360	30.78	18.62

REMARKS:

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

CHANNEL	TX Channel 106	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	5456.00	61.8 PK	74.0	-12.2	1.00 H	295	53.92	7.88
2	5456.00	47.8 AV	54.0	-6.2	1.00 H	295	39.92	7.88
3	#5470.00	59.9 PK	74.0	-14.1	1.07 H	289	51.97	7.93
4	#5470.00	47.6 AV	54.0	-6.4	1.07 H	289	39.67	7.93
5	*5530.00	102.7 PK			1.00 H	246	94.62	8.08
6	*5530.00	91.4 AV			1.00 H	246	83.32	8.08
7	11060.00	51.9 PK	74.0	-22.1	1.00 H	325	37.60	14.30
8	11060.00	39.1 AV	54.0	-14.9	1.00 H	325	24.80	14.30
9	#16590.00	60.8 PK	74.0	-13.2	1.03 H	360	39.90	20.90
10	#16590.00	46.9 AV	54.0	-7.1	1.03 H	360	26.00	20.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5456.00	65.2 PK	74.0	-8.8	1.00 V	144	57.32	7.88
2	5456.00	52.4 AV	54.0	-1.6	1.00 V	144	44.52	7.88
3	#5470.00	70.4 PK	74.0	-3.6	1.00 V	145	62.47	7.93
4	#5470.00	53.8 AV	54.0	-0.2	1.00 V	145	45.87	7.93
5	*5530.00	106.3 PK			1.00 V	142	98.22	8.08
6	*5530.00	95.7 AV			1.00 V	142	87.62	8.08
7	11060.00	54.2 PK	74.0	-19.8	1.09 V	327	39.90	14.30
8	11060.00	42.4 AV	54.0	-11.6	1.09 V	327	28.10	14.30
9	#16590.00	62.8 PK	74.0	-11.2	1.03 V	360	41.90	20.90
10	#16590.00	49.9 AV	54.0	-4.1	1.03 V	360	29.00	20.90

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 122	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	4986.00	62.1 PK	74.0	-11.9	1.00 H	282	55.74	6.36
2	4986.00	47.6 AV	54.0	-6.4	1.00 H	282	41.24	6.36
3	5460.00	55.9 PK	74.0	-18.1	1.00 H	282	48.00	7.90
4	5460.00	44.1 AV	54.0	-9.9	1.00 H	282	36.20	7.90
5	*5610.00	106.2 PK			1.00 H	59	97.97	8.23
6	*5610.00	96.2 AV			1.00 H	59	87.97	8.23
7	#5725.00	59.8 PK	74.0	-14.2	1.07 H	286	51.41	8.39
8	#5725.00	47.8 AV	54.0	-6.2	1.07 H	286	39.41	8.39
9	11220.00	51.1 PK	74.0	-22.9	1.03 H	334	36.84	14.26
10	11220.00	38.3 AV	54.0	-15.7	1.03 H	334	24.04	14.26
11	#16830.00	60.5 PK	74.0	-13.5	1.00 H	360	39.15	21.35
12	#16830.00	46.8 AV	54.0	-7.2	1.00 H	360	25.45	21.35

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	4986.00	56.3 PK	74.0	-17.7	1.07 V	97	49.94	6.36
2	4986.00	49.0 AV	54.0	-5.0	1.07 V	97	42.64	6.36
3	5460.00	57.6 PK	74.0	-16.4	1.00 V	99	49.70	7.90
4	5460.00	45.8 AV	54.0	-8.2	1.00 V	99	37.90	7.90
5	*5610.00	110.5 PK			1.01 V	66	102.27	8.23
6	*5610.00	100.9 AV			1.01 V	66	92.67	8.23
7	#5725.00	66.2 PK	74.0	-7.8	1.41 V	107	57.81	8.39
8	#5725.00	53.8 AV	54.0	-0.2	1.41 V	107	45.41	8.39
9	11220.00	54.5 PK	74.0	-19.5	1.14 V	319	40.24	14.26
10	11220.00	42.7 AV	54.0	-11.3	1.14 V	319	28.44	14.26
11	#16830.00	62.6 PK	74.0	-11.4	1.01 V	360	41.25	21.35
12	#16830.00	49.7 AV	54.0	-4.3	1.01 V	360	28.35	21.35

REMARKS:

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

Below 1GHz Data:

802.11ac (VHT20)

CHANNEL	TX Channel 120	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	125.01	38.4 QP	43.5	-5.1	1.50 H	149	53.34	-14.92
2	250.00	35.5 QP	46.0	-10.5	1.50 H	223	49.81	-14.32
3	258.92	39.4 QP	46.0	-6.6	1.00 H	147	53.40	-13.97
4	375.03	37.4 QP	46.0	-8.6	1.50 H	243	47.67	-10.23
5	750.00	40.1 QP	46.0	-5.9	1.00 H	223	42.04	-1.94
6	875.02	38.9 QP	46.0	-7.1	1.00 H	302	39.38	-0.45

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	49.19	36.8 QP	40.0	-3.2	1.06 V	209	50.35	-13.51
2	57.55	36.4 QP	40.0	-3.6	1.50 V	249	50.19	-13.81
3	125.01	37.2 QP	43.5	-6.3	1.50 V	203	52.14	-14.92
4	374.98	36.2 QP	46.0	-9.8	1.00 V	142	46.44	-10.24
5	500.01	36.8 QP	46.0	-9.2	1.50 V	97	44.19	-7.36
6	625.00	36.6 QP	46.0	-9.4	1.00 V	224	41.01	-4.41

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYBAO)	5DFB	COCCAB-001	Mar. 10, 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 2014
Software ADT	BV ADT_Cond_V7.3.7. 3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: July 22 to 31, 2014

4.2.3 Test Procedures

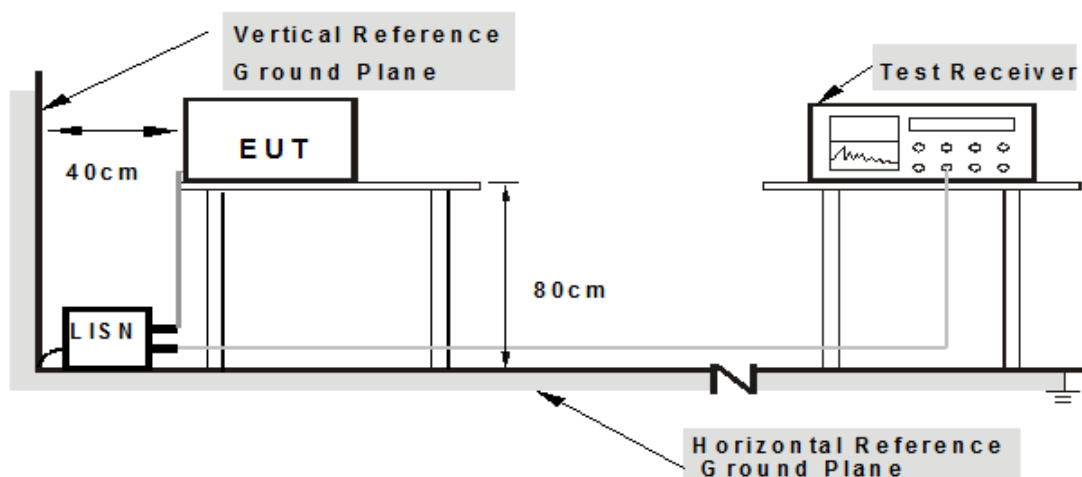
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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: 1. The resolution bandwidth of test receiver is 9kHz for Quasi-peak detection (QP) & Average detection (AV).

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 Eut Operating Conditions

Same as 4.1.6.

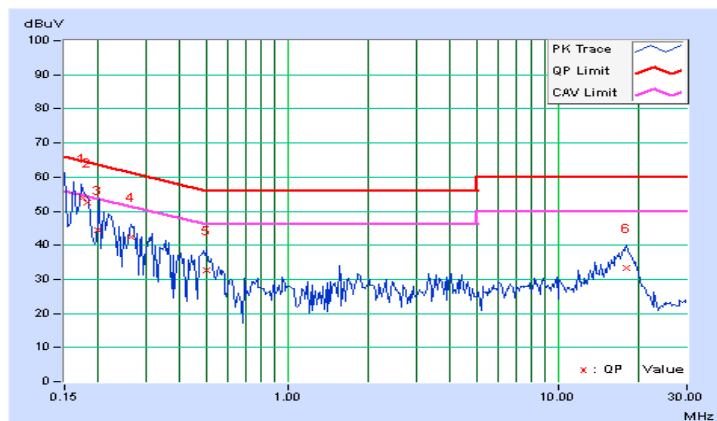
4.2.7 Test Results (Mode 1)

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17421	0.07	53.88	44.61	53.95	44.68	64.76	54.76	-10.81	-10.08
2	0.18113	0.07	52.59	41.63	52.66	41.70	64.43	54.43	-11.78	-12.74
3	0.20021	0.07	44.37	20.42	44.44	20.49	63.60	53.60	-19.16	-33.11
4	0.26363	0.08	42.23	33.57	42.31	33.65	61.32	51.32	-19.01	-17.67
5	0.50215	0.10	32.69	18.74	32.79	18.84	56.00	46.00	-23.21	-27.16
6	18.00814	0.65	32.74	25.88	33.39	26.53	60.00	50.00	-26.61	-23.47

REMARKS:

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

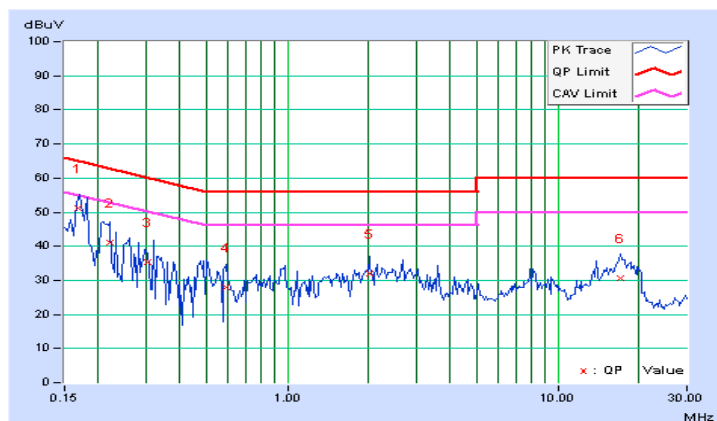


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16936	0.06	51.25	42.14	51.31	42.20	64.99	54.99	-13.68	-12.79
2	0.22115	0.06	41.14	27.68	41.20	27.74	62.78	52.78	-21.57	-25.03
3	0.30236	0.08	35.28	25.66	35.36	25.74	60.18	50.18	-24.82	-24.44
4	0.59136	0.10	27.90	18.35	28.00	18.45	56.00	46.00	-28.00	-27.55
5	2.01154	0.18	31.64	23.97	31.82	24.15	56.00	46.00	-24.18	-21.85
6	17.04697	0.66	30.11	22.81	30.77	23.47	60.00	50.00	-29.23	-26.53

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.



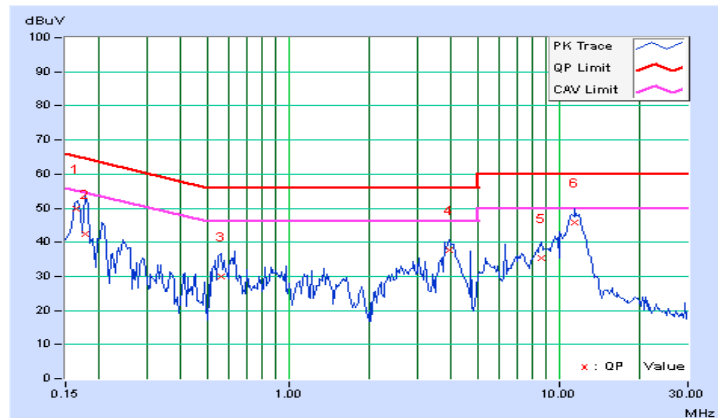
4.2.8 Test Results (Mode 2)

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	----------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16423	0.07	49.64	40.89	49.71	40.96	65.25	55.25	-15.54	-14.29
2	0.17799	0.07	42.35	19.53	42.42	19.60	64.58	54.58	-22.16	-34.98
3	0.56387	0.10	29.72	24.75	29.82	24.85	56.00	46.00	-26.18	-21.15
4	3.94411	0.25	37.55	28.90	37.80	29.15	56.00	46.00	-18.20	-16.85
5	8.63365	0.40	34.98	29.90	35.38	30.30	60.00	50.00	-24.62	-19.70
6	11.43230	0.49	45.24	39.41	45.73	39.90	60.00	50.00	-14.27	-10.10

REMARKS:

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

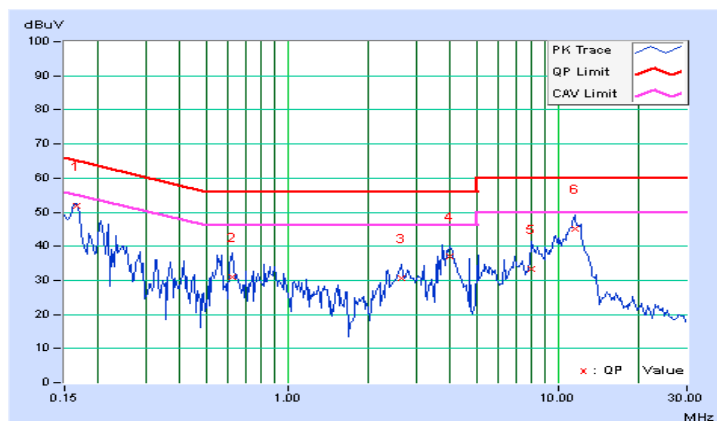


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16536	0.06	51.81	41.44	51.87	41.50	65.19	55.19	-13.32	-13.69
2	0.62751	0.11	30.92	20.23	31.03	20.34	56.00	46.00	-24.97	-25.66
3	2.62498	0.20	30.55	25.45	30.75	25.65	56.00	46.00	-25.25	-20.35
4	3.97311	0.26	36.66	28.80	36.92	29.06	56.00	46.00	-19.08	-16.94
5	7.98934	0.39	32.98	27.76	33.37	28.15	60.00	50.00	-26.63	-21.85
6	11.54763	0.51	44.62	39.45	45.13	39.96	60.00	50.00	-14.87	-10.04

REMARKS:

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



4.3 Transmit Power Measurement

4.3.1 Limits Of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT \leq 4;

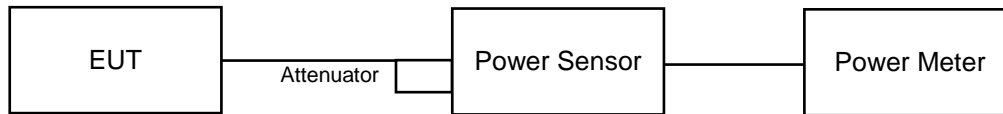
Array Gain = 0 dB (i.e., no array gain) for channel widths \geq 40 MHz for any NANT;

Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT \geq 5.

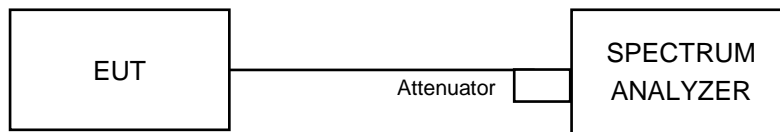
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB 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 POWER OUTPUT MEASUREMENT:

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 OCCUPIED BANDWIDTH

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. 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%.

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:

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
802.11a								
52	5260	16.15	16.58	16.92	135.913	21.33	23.23	PASS
60	5300	15.49	14.59	14.85	94.723	19.76	23.23	PASS
64	5320	17.10	16.81	16.25	141.429	21.51	23.23	PASS
100	5500	18.07	18.40	18.50	204.099	23.10	23.23	PASS
120	5600	18.10	18.47	18.62	207.65	23.17	23.23	PASS
140	5700	18.07	18.40	18.29	200.757	23.03	23.23	PASS
802.11ac (VHT20)								
52	5260	16.55	17.40	17.56	157.156	21.96	23.23	PASS
60	5300	16.73	17.17	17.32	153.168	21.85	23.23	PASS
64	5320	17.54	18.26	18.21	189.964	22.79	23.23	PASS
100	5500	15.56	16.15	16.65	123.423	20.91	23.23	PASS
120	5600	17.84	18.48	18.94	209.626	23.21	23.23	PASS
140	5700	16.34	16.92	17.40	147.211	21.68	23.23	PASS
802.11ac (VHT40)								
54	5270	17.53	18.04	18.21	186.526	22.71	23.23	PASS
62	5310	15.18	15.86	15.85	109.968	20.41	23.23	PASS
102	5510	14.91	15.52	16.29	109.179	20.38	23.23	PASS
118	5590	17.67	18.49	18.83	205.495	23.13	23.23	PASS
134	5670	16.85	17.58	18.01	168.938	22.28	23.23	PASS
802.11ac (VHT80)								
58	5290	12.39	13.12	13.65	61.024	17.86	23.23	PASS
106	5530	12.14	12.87	13.40	57.61	17.60	23.23	PASS
122	5610	17.04	17.85	18.70	185.667	22.69	23.23	PASS

802.11a

Power Limit = 11dBm + 10logB < UNII Band 2A~2C>

Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.23	24.05 > 24
60	5300	20.15	24.04 > 24
64	5320	20.31	24.07 > 24
100	5500	20.30	24.07 > 24
120	5600	20.45	24.1 > 24
140	5700	20.35	24.08 > 24

802.11ac (VHT20)

52	5260	20.57	24.13 > 24
60	5300	20.50	24.11 > 24
64	5320	20.50	24.11 > 24
100	5500	20.49	24.11 > 24
120	5600	20.53	24.12 > 24
140	5700	20.32	24.07 > 24

802.11ac (VHT40)

Power Limit = 11dBm + 10logB < UNII Band 2A~2C>

Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	40.99	27.12 > 24
62	5310	40.91	27.11 > 24
102	5510	40.95	27.12 > 24
118	5590	40.94	27.12 > 24
134	5670	40.94	27.12 > 24

802.11ac (VHT80)

Power Limit = 11dBm + 10logB < UNII Band 2A~2C>

Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.01	30.13 > 24
106	5530	82.39	30.15 > 24
122	5610	82.09	30.14 > 24

26dB BANDWIDTH:

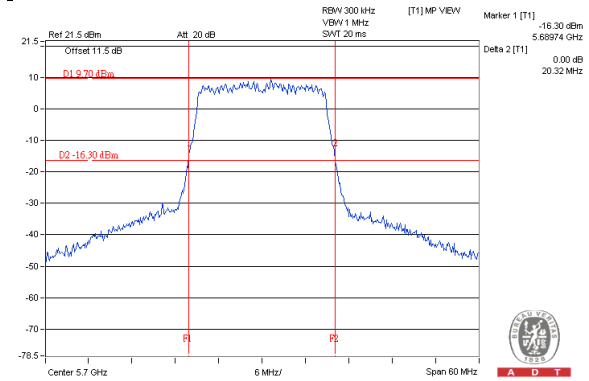
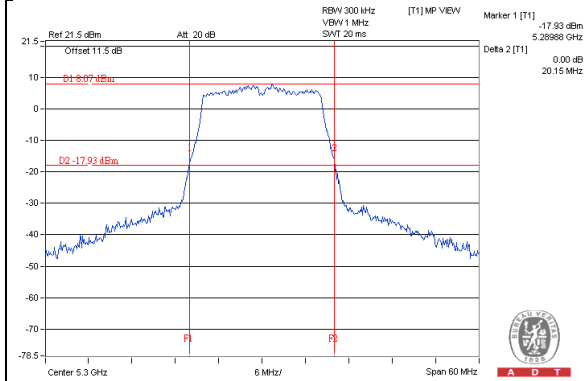
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		
		CHAIN 0	CHAIN 1	CHAIN 2
802.11a				
52	5260	20.47	20.23	20.36
60	5300	20.45	20.15	20.51
64	5320	20.31	20.34	20.60
100	5500	20.53	20.30	20.32
120	5600	20.52	20.45	20.48
140	5700	20.45	20.35	20.58
802.11ac (VHT20)				
52	5260	20.77	20.57	20.70
60	5300	20.88	20.50	20.57
64	5320	20.88	20.69	20.50
100	5500	20.78	20.49	20.67
120	5600	20.74	20.53	20.64
140	5700	20.59	20.32	20.76
802.11ac (VHT40)				
54	5270	41.43	40.99	41.03
62	5310	41.67	41.21	40.91
102	5510	41.49	41.08	40.95
118	5590	41.30	41.23	40.94
134	5670	41.44	41.11	40.94
802.11ac (VHT80)				
58	5290	82.83	82.01	82.86
106	5530	82.89	82.49	82.39
122	5610	82.68	82.74	82.09

Note: For FCC output power limitation is determined based on 26dB bandwidth.

SPECTRUM PLOT OF WORST VALUE

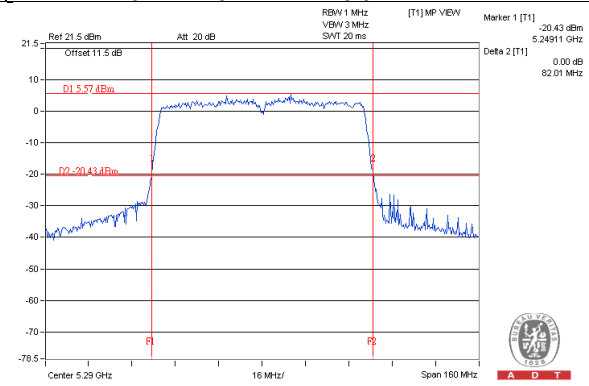
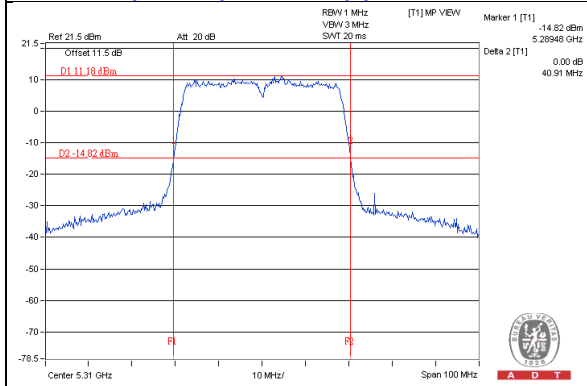
802.11a – Chain (1): CH 60

802.11ac (VHT20) – Chain (1): CH 140



802.11ac (VHT40) – Chain (2): CH 62

802.11ac (VHT80) – Chain (1): CH 58

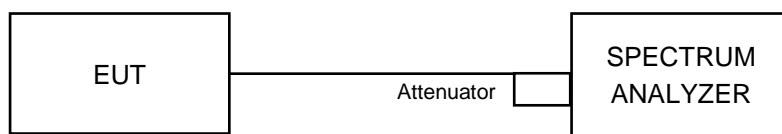


4.4 Peak Power Spectral Density Measurement

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/ MHz

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 802.11a & 802.11ac (VHT20)

Using method SA-1

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

For 802.11ac (VHT40) & 802.11ac (VHT80)

Using method SA-2

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

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-2A, U-NII-2C Band

802.11a							
CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
52	5260	2.26	3.20	2.89	7.57	10.23	PASS
60	5300	1.94	2.80	2.23	7.11	10.23	PASS
64	5320	3.77	4.87	4.32	9.11	10.23	PASS
100	5500	4.75	5.11	5.97	10.08	10.23	PASS
120	5600	4.03	4.73	5.53	9.58	10.23	PASS
140	5700	3.97	5.02	5.03	9.47	10.23	PASS
802.11ac (VHT20)							
52	5260	2.13	3.32	2.98	7.61	10.23	PASS
60	5300	2.50	3.23	3.50	7.87	10.23	PASS
64	5320	3.39	4.19	4.53	8.83	10.23	PASS
100	5500	1.61	2.06	3.02	7.04	10.23	PASS
120	5600	3.81	4.07	4.85	9.04	10.23	PASS
140	5700	2.38	2.49	3.17	7.47	10.23	PASS

NOTE: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For U-NII-2A Band:

Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.77-6) = 10.23\text{dBm}$.

For U-NII-2C Band:

Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.77-6) = 10.23\text{dBm}$.

802.11ac (VHT40)								
CHANNEL	CHANNEL FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)			DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	0.30	1.25	0.93	0.13	5.75	10.23	PASS
62	5310	-1.89	-1.02	-1.37	0.13	3.50	10.23	PASS
102	5510	-2.32	-1.34	-0.43	0.13	3.61	10.23	PASS
118	5590	0.51	1.28	1.98	0.13	6.21	10.23	PASS
134	5670	-0.71	-0.43	0.72	0.13	4.81	10.23	PASS
802.11ac (VHT80)								
58	5290	-8.22	-7.54	-6.80	0.27	-2.44	10.23	PASS
106	5530	-6.94	-6.23	-5.29	0.27	-1.06	10.23	PASS
122	5610	-3.35	-2.56	-2.00	0.27	2.44	10.23	PASS

NOTE: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For U-NII-2A Band:

Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.77-6) = 10.23\text{dBm}$.

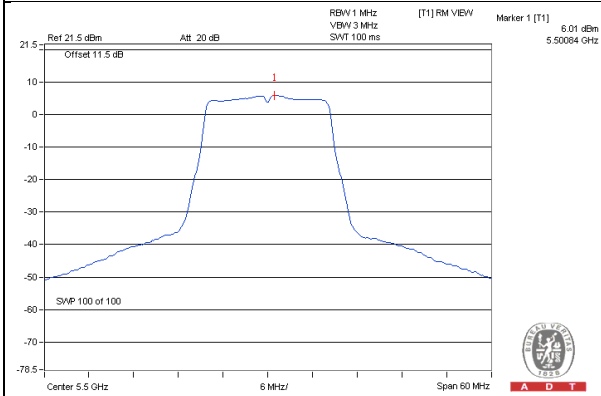
For U-NII-2C Band:

Directional gain = $2\text{dBi} + 10\log(3) = 6.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.77-6) = 10.23\text{dBm}$.

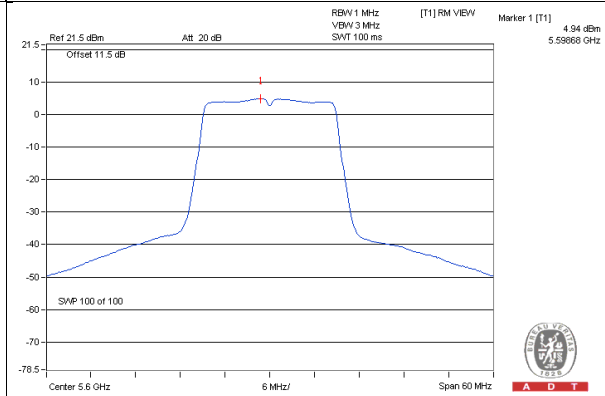
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

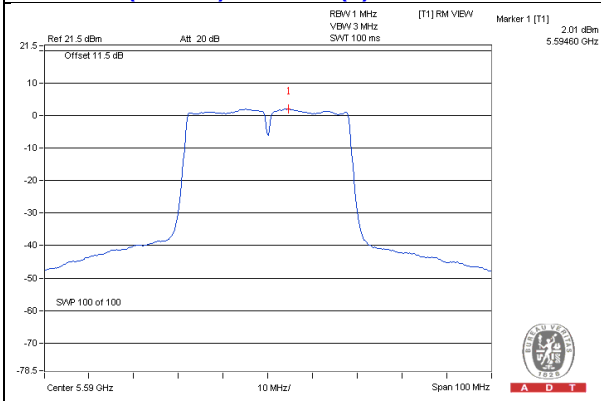
802.11a – Chain (2): CH 100



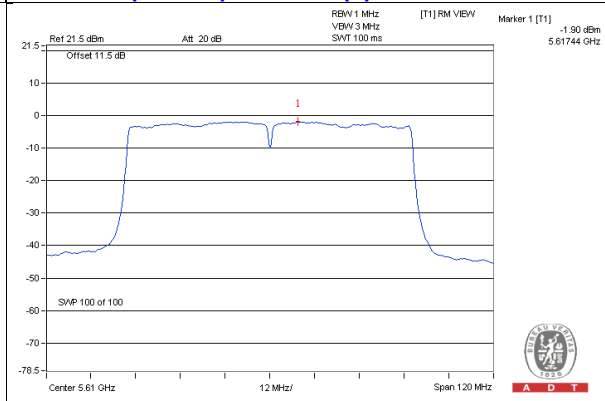
802.11ac (VHT20) – Chain (2): CH 120



802.11ac (VHT40) – Chain (2): CH 118



802.11ac (VHT80) – Chain (2): CH 122

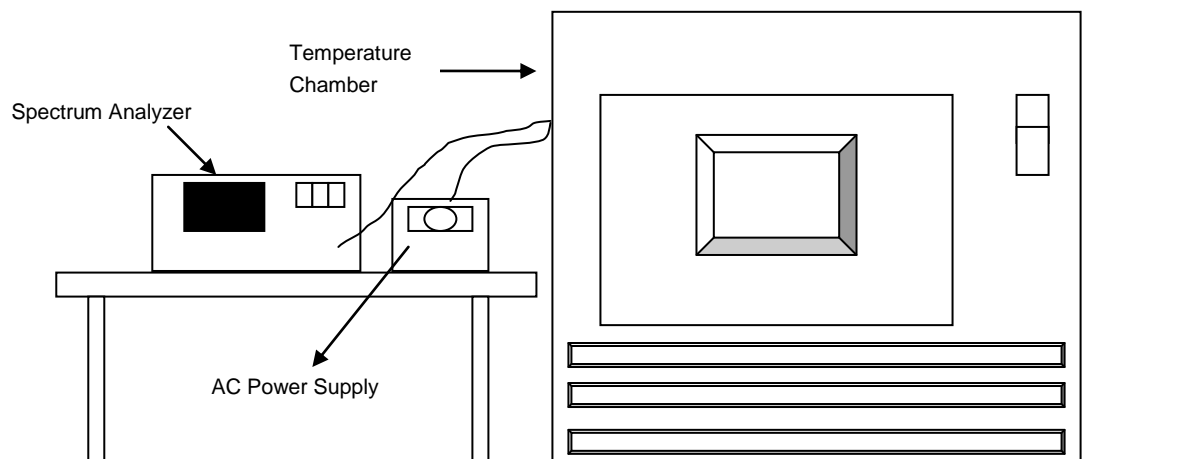


4.5 Frequency Stability

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

1. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. 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.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5319.9975	-0.00005	5319.9988	-0.00002	5320.0004	0.00001	5319.9989	-0.00002
40	120	5319.9976	-0.00005	5319.9979	-0.00004	5320.0011	0.00002	5320.0007	0.00001
30	120	5320.0163	0.00031	5320.0143	0.00027	5320.0147	0.00028	5320.0151	0.00028
20	120	5320.0227	0.00043	5320.0216	0.00041	5320.0216	0.00041	5320.0231	0.00043
10	120	5319.9903	-0.00018	5319.9885	-0.00022	5319.9915	-0.00016	5319.9875	-0.00023
0	120	5320.005	0.00009	5320.0101	0.00019	5320.0063	0.00012	5320.0099	0.00019
-10	120	5320.0002	0.00000	5319.9966	-0.00006	5319.999	-0.00002	5319.9973	-0.00005
-20	120	5319.9977	-0.00004	5319.997	-0.00006	5319.9996	-0.00001	5319.9985	-0.00003
-30	120	5319.9845	-0.00029	5319.9887	-0.00021	5319.9843	-0.00030	5319.9869	-0.00025

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5320.0237	0.00045	5320.0216	0.00041	5320.0216	0.00041	5320.0235	0.00044
	120	5320.0227	0.00043	5320.0216	0.00041	5320.0216	0.00041	5320.0231	0.00043
	102	5320.022	0.00041	5320.0215	0.00040	5320.0225	0.00042	5320.024	0.00045

5 Pictures of Test Arrangements

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



A D T

Appendix – Information on the Testing Laboratories

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

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

Linko EMC/RF Lab

Tel: 886-2-26052180

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Hsin Chu EMC/RF Lab/Telecom Lab

Tel: 886-3-5935343

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Email: service.adt@tw.bureauveritas.com

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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