FCC Test Report

Report No.:	RF150514C34A
FCC ID:	E2K-APL410BA
Test Model:	APL41-0BA
Received Date:	May 11, 2015
Test Date:	Jun. 10 ~ Jun. 26, 2015
Issued Date:	Oct. 13, 2015
Applicant:	Dell Inc.
Address:	One Dell Way, Round Rock, Texas 78682, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
RF150514C34A	Original release.	Oct. 13, 2015

1 Certificate of Conformity

Product:	Wireless Network Security Appliance
Brand:	DELL, DELL SONICWALL, SONICWALL
Test Model:	APL41-0BA
Sample Status:	Engineering sample
Applicant:	Dell Inc.
Test Date:	Jun. 10 ~ Jun. 26, 2015
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Oct. 13, 2015

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** Oct. 13, 2015

Ken Liu / Senior Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -14.25dB at 0.15391MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.4dB at 49.34MHz.
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(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is RSMA not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Network Security Appliance
Brand	DELL, DELL SONICWALL, SONICWALL
Test Model	APL41-0BA
Status of EUT	Engineering sample
Power Supply Rating	12Vdc (Adapter)
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 450.0Mbps
Operating Frequency	5260 ~ 5320MHz, 5500 ~ 5700MHz
Number of Channel	5260 ~ 5320MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (HT20) 3 for 802.11n (HT40)
Output Power	5260 ~ 5320MHz: 36.315mW 5500 ~ 5700MHz: 61.937mW
Antenna Type	Dipole antenna with 4dBi gain
Antenna Connector	RSMA
Accessory Device	Adapter
Data Cable Supplied	1.8m RJ45 non-shielded cable without core

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report is adding 5.26GHz to 5.32GHz and 5.50GHz to 5.70GHz by software.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

Modulation Mode	TX FUNCTION
802.11a	3TX
802.11n (HT20)	3TX
802.11n (HT40)	3TX

3. The EUT consumes power from the following adapters.

Adapter 1	
Brand	AMIGO
Model	AMS117-1202000F2
Input Power	100-240Vac~50/60Hz, 0.8A Max
Output Power	12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded power cord without core DC: 1.5m power cable with 1 core attached on adapter

Adapter 2	
Brand	Sunny COMPUTER TECHNOLOGY CO., LTD.
Model	SYS1544-2412-T3
Input Power	100-240Vac~, 1.0A MAX, 50-60Hz
Output Power	+12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded power cord without core DC: 1.85m power cable with 1 core attached on adapter

4. The EUT has disabled the 5600-5650MHz band by S/W to avoid 5600-5650MHz.
5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 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

3 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter 1
B	-	√	√	-	Power from adapter 2

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

Radiated Emission Test (Below 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5260-5320	52 to 64	52	OFDM	BPSK	6.0
		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)
A, B	802.11a	5260-5320	52 to 64	52	OFDM	BPSK	6.0
		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)
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
A	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	15.0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
A	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	15.0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	18deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
RE<1G	22deg. C, 67%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

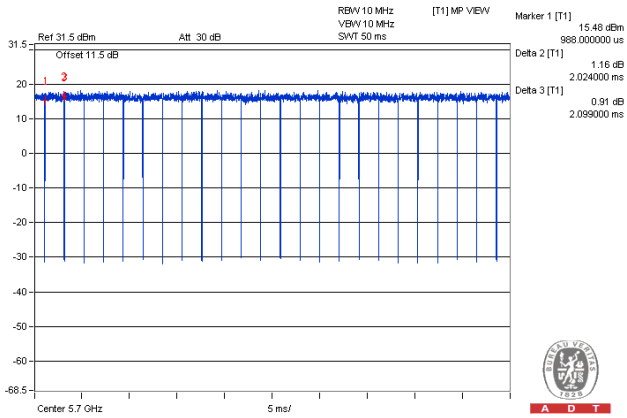
Duty cycle of test signal is < 98 %, duty factor is required

802.11a: Duty cycle = 2.024/2.099 = 0.964, Duty factor = 10 * log(1/0.964) = 0.16

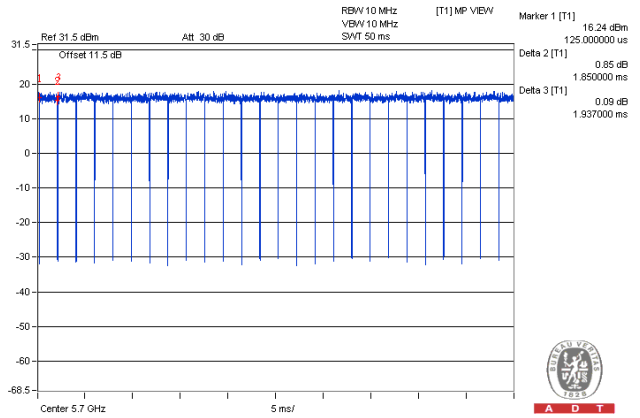
802.11n (HT20): Duty cycle = 1.85/1.937 = 0.955, Duty factor = 10 * log(1/0.955) = 0.20

802.11n (HT40): Duty cycle = 0.9/0.962 = 0.936, Duty factor = 10 * log(1/0.936) = 0.29

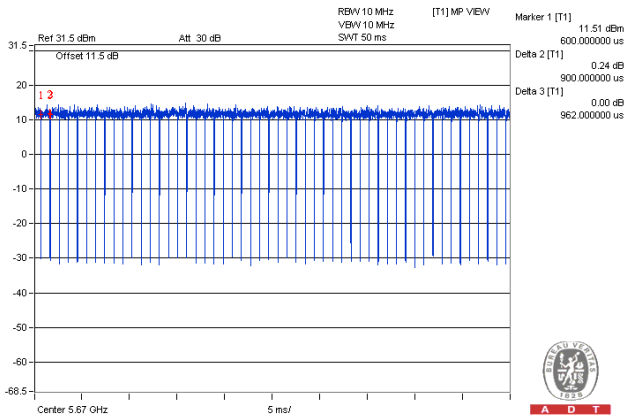
802.11a



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	External Hard Disk	WD	WDBACY5000ABL-01	WX51C1245403	NA	-
C.	Load	NA	NA	NA	NA	-

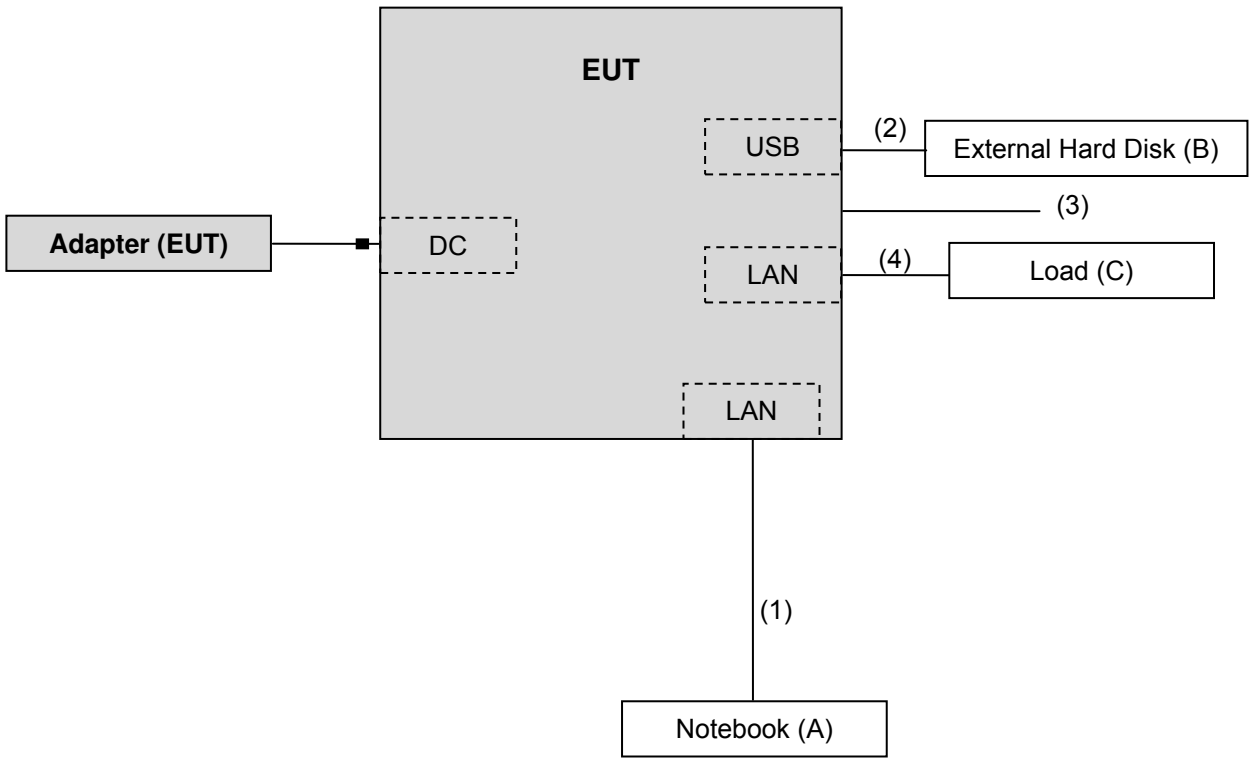
Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	1	10	N	0	Cat5e
2.	USB cable	1	1.8	Y	0	Cat5e
3.	Console cable	1	1.5	N	0	Provided by client.
4.	LAN cable	4	1.8	N	0	Cat5e

Note: The core(s) is(are) originally attached to the cable(s).

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 Procedure New Rules v01r01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. 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 (dBμV/m)	AV:54 (dBμV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) [*1] PK:-17 (dBm/MHz) [*2]	PK: 68.2(dBμV/m) [*1] PK:78.2 (dBμV/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:

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 10, 2015	Apr. 09, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Aug. 29, 2014	Aug. 28, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Feb. 05, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	9120D	209	Feb. 09, 2015	Feb. 08, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2014	Oct. 17, 2015
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	214378/4	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6 +309224/4	Aug. 22, 2014	Aug. 21, 2015
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
High Speed Peak Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2014	Oct. 17, 2015
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 HP 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:

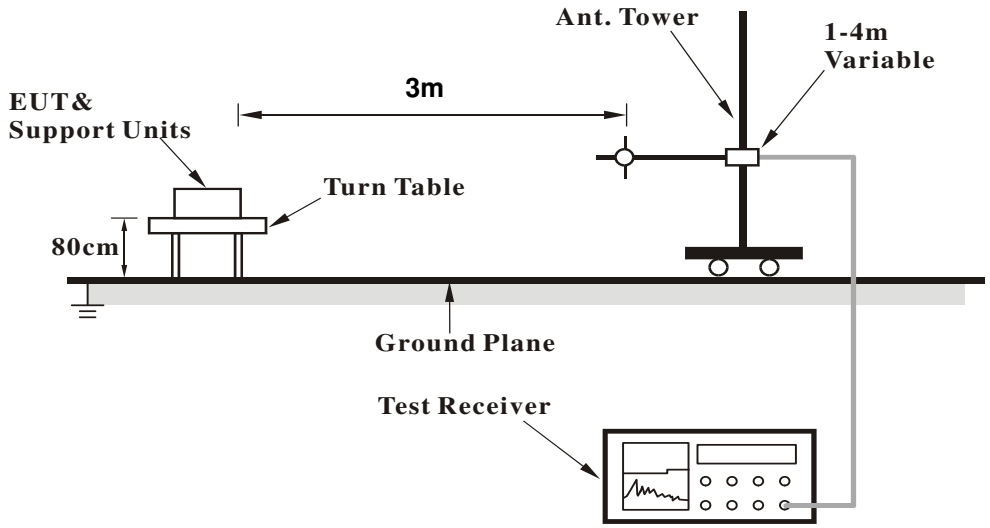
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 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

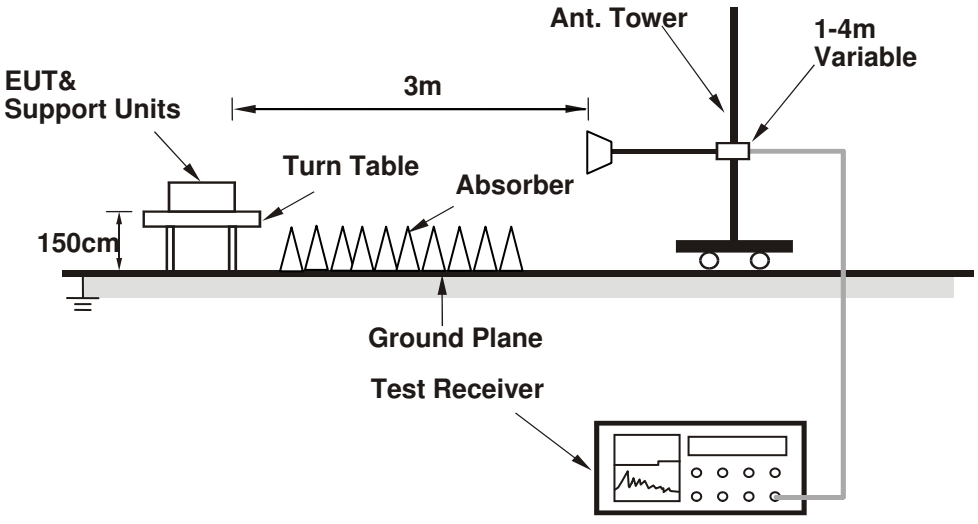
No deviation.

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. Placed the EUT on the testing table.
b. Prepared notebook to act as communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".
e. The necessary accessories enable the system in full functions.

4.1.7 Test Results

Above 1GHz Data

802.11a

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

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	5000.00	56.1 PK	74.0	-17.9	1.00 H	218	50.40	5.70
2	5000.00	45.2 AV	54.0	-8.8	1.00 H	218	39.50	5.70
3	5150.00	56.4 PK	74.0	-17.6	1.13 H	237	50.40	6.00
4	5150.00	43.7 AV	54.0	-10.3	1.13 H	237	37.70	6.00
5	*5260.00	100.8 PK			1.00 H	197	61.10	39.70
6	*5260.00	91.4 AV			1.00 H	197	51.70	39.70
7	#10520.00	60.0 PK	74.0	-14.0	1.31 H	49	40.80	19.20
8	#10520.00	46.8 AV	54.0	-7.2	1.31 H	49	27.60	19.20
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	5000.00	60.8 PK	74.0	-13.2	1.53 V	214	55.10	5.70
2	5000.00	52.6 AV	54.0	-1.4	1.53 V	214	46.90	5.70
3	5150.00	56.5 PK	74.0	-17.5	1.10 V	206	50.50	6.00
4	5150.00	44.1 AV	54.0	-9.9	1.10 V	206	38.10	6.00
5	*5260.00	112.3 PK			1.00 V	179	72.60	39.70
6	*5260.00	102.3 AV			1.00 V	179	62.60	39.70
7	#10520.00	59.3 PK	74.0	-14.7	1.03 V	127	40.10	19.20
8	#10520.00	46.8 AV	54.0	-7.2	1.03 V	127	27.60	19.20

Remark:

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	5000.00	56.8 PK	74.0	-17.2	1.22 H	195	51.10	5.70
2	5000.00	45.8 AV	54.0	-8.2	1.22 H	195	40.10	5.70
3	*5300.00	98.5 PK			1.00 H	330	58.80	39.70
4	*5300.00	89.8 AV			1.00 H	330	50.10	39.70
5	10600.00	60.1 PK	74.0	-13.9	1.25 H	65	41.00	19.10
6	10600.00	46.4 AV	54.0	-7.6	1.25 H	65	27.30	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	5000.00	60.1 PK	74.0	-13.9	1.62 V	214	54.40	5.70
2	5000.00	52.4 AV	54.0	-1.6	1.62 V	214	46.70	5.70
3	*5300.00	112.0 PK			1.10 V	130	72.30	39.70
4	*5300.00	102.5 AV			1.10 V	130	62.80	39.70
5	10600.00	59.3 PK	74.0	-14.7	1.03 V	106	40.20	19.10
6	10600.00	46.5 AV	54.0	-7.5	1.03 V	106	27.40	19.10

Remark:

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.

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

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	5000.00	56.2 PK	74.0	-17.8	1.19 H	193	50.50	5.70
2	5000.00	44.4 AV	54.0	-9.6	1.19 H	193	38.70	5.70
3	*5320.00	99.1 PK			1.00 H	237	59.40	39.70
4	*5320.00	90.2 AV			1.00 H	237	50.50	39.70
5	5350.00	56.2 PK	74.0	-17.8	1.14 H	302	50.10	6.10
6	5350.00	43.9 AV	54.0	-10.1	1.14 H	302	37.80	6.10
7	10640.00	58.4 PK	74.0	-15.6	1.14 H	69	39.50	18.90
8	10640.00	45.3 AV	54.0	-8.7	1.14 H	69	26.40	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.8 PK	74.0	-14.2	1.72 V	307	54.10	5.70
2	5000.00	52.1 AV	54.0	-1.9	1.72 V	307	46.40	5.70
3	*5320.00	111.5 PK			1.34 V	239	71.80	39.70
4	*5320.00	101.3 AV			1.34 V	239	61.60	39.70
5	5350.00	57.8 PK	74.0	-16.2	1.03 V	214	51.70	6.10
6	5350.00	45.0 AV	54.0	-9.0	1.03 V	214	38.90	6.10
7	10640.00	58.3 PK	74.0	-15.7	1.06 V	158	39.40	18.90
8	10640.00	45.4 AV	54.0	-8.6	1.06 V	158	26.50	18.90

Remark:

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.

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

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	5000.00	55.7 PK	74.0	-18.3	1.14 H	132	50.00	5.70
2	5000.00	43.2 AV	54.0	-10.8	1.14 H	132	37.50	5.70
3	5350.00	56.4 PK	74.0	-17.6	1.33 H	201	50.30	6.10
4	5350.00	44.1 AV	54.0	-9.9	1.33 H	201	38.00	6.10
5	#5470.00	57.1 PK	74.0	-16.9	1.20 H	158	50.70	6.40
6	#5470.00	45.0 AV	54.0	-9.0	1.20 H	158	38.60	6.40
7	*5500.00	105.2 PK			1.32 H	138	65.20	40.00
8	*5500.00	95.7 AV			1.32 H	138	55.70	40.00
9	11000.00	59.2 PK	74.0	-14.8	1.34 H	182	39.60	19.60
10	11000.00	46.1 AV	54.0	-7.9	1.34 H	182	26.50	19.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.0 PK	74.0	-14.0	1.12 V	349	54.30	5.70
2	5000.00	52.5 AV	54.0	-1.5	1.12 V	349	46.80	5.70
3	5350.00	60.8 PK	74.0	-13.2	1.73 V	314	54.70	6.10
4	5350.00	46.8 AV	54.0	-7.2	1.73 V	314	40.70	6.10
5	#5470.00	72.2 PK	74.0	-1.8	2.12 V	319	65.80	6.40
6	#5470.00	51.5 AV	54.0	-2.5	2.12 V	319	45.10	6.40
7	*5500.00	113.9 PK			1.63 V	143	73.90	40.00
8	*5500.00	104.2 AV			1.63 V	143	64.20	40.00
9	11000.00	59.2 PK	74.0	-14.8	1.16 V	86	39.60	19.60
10	11000.00	46.4 AV	54.0	-7.6	1.16 V	86	26.80	19.60

Remark:

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

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

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	5000.00	56.3 PK	74.0	-17.7	1.15 H	191	50.60	5.70
2	5000.00	44.2 AV	54.0	-9.8	1.15 H	191	38.50	5.70
3	*5580.00	104.8 PK			1.24 H	139	64.70	40.10
4	*5580.00	94.8 AV			1.24 H	139	54.70	40.10
5	11160.00	57.5 PK	74.0	-16.5	1.27 H	93	38.30	19.20
6	11160.00	45.0 AV	54.0	-9.0	1.27 H	93	25.80	19.20
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	5000.00	60.5 PK	74.0	-13.5	1.19 V	350	54.80	5.70
2	5000.00	52.4 AV	54.0	-1.6	1.19 V	350	46.70	5.70
3	*5580.00	116.1 PK			1.95 V	136	76.00	40.10
4	*5580.00	106.2 AV			1.95 V	136	66.10	40.10
5	11160.00	57.4 PK	74.0	-16.6	1.36 V	9	38.20	19.20
6	11160.00	44.8 AV	54.0	-9.2	1.36 V	9	25.60	19.20

Remark:

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.

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

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	5000.00	53.8 PK	74.0	-20.2	1.11 H	118	48.10	5.70
2	5000.00	43.5 AV	54.0	-10.5	1.11 H	118	37.80	5.70
3	*5700.00	101.8 PK			1.29 H	138	61.50	40.30
4	*5700.00	91.3 AV			1.29 H	138	51.00	40.30
5	#5725.00	56.7 PK	74.0	-17.3	1.15 H	177	49.90	6.80
6	#5725.00	44.9 AV	54.0	-9.1	1.15 H	177	38.10	6.80
7	11400.00	59.1 PK	74.0	-14.9	1.31 H	224	40.60	18.50
8	11400.00	46.2 AV	54.0	-7.8	1.31 H	224	27.70	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.0 PK	74.0	-13.0	1.19 V	351	55.30	5.70
2	5000.00	52.5 AV	54.0	-1.5	1.19 V	351	46.80	5.70
3	*5700.00	113.3 PK			1.81 V	210	73.00	40.30
4	*5700.00	103.0 AV			1.81 V	210	62.70	40.30
5	#5725.00	69.1 PK	74.0	-4.9	1.91 V	18	62.30	6.80
6	#5725.00	52.3 AV	54.0	-1.7	1.91 V	18	45.50	6.80
7	11400.00	59.2 PK	74.0	-14.8	1.22 V	106	40.70	18.50
8	11400.00	45.9 AV	54.0	-8.1	1.22 V	106	27.40	18.50

Remark:

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

802.11n (HT20)

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

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	5000.00	56.4 PK	74.0	-17.6	1.00 H	220	50.70	5.70
2	5000.00	45.1 AV	54.0	-8.9	1.00 H	220	39.40	5.70
3	5150.00	56.1 PK	74.0	-17.9	1.18 H	302	50.10	6.00
4	5150.00	43.3 AV	54.0	-10.7	1.18 H	302	37.30	6.00
5	*5260.00	100.8 PK			1.00 H	219	61.10	39.70
6	*5260.00	91.5 AV			1.00 H	219	51.80	39.70
7	#10520.00	59.0 PK	74.0	-15.0	1.24 H	64	39.80	19.20
8	#10520.00	46.5 AV	54.0	-7.5	1.24 H	64	27.30	19.20
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	5000.00	60.7 PK	74.0	-13.3	1.04 V	349	55.00	5.70
2	5000.00	52.4 AV	54.0	-1.6	1.04 V	349	46.70	5.70
3	5150.00	56.2 PK	74.0	-17.8	1.19 V	336	50.20	6.00
4	5150.00	44.2 AV	54.0	-9.8	1.19 V	336	38.20	6.00
5	*5260.00	113.0 PK			1.11 V	118	73.30	39.70
6	*5260.00	103.0 AV			1.11 V	118	63.30	39.70
7	#10520.00	59.2 PK	74.0	-14.8	1.06 V	65	40.00	19.20
8	#10520.00	46.7 AV	54.0	-7.3	1.06 V	65	27.50	19.20

Remark:

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	5000.00	56.5 PK	74.0	-17.5	1.15 H	226	50.80	5.70
2	5000.00	44.3 AV	54.0	-9.7	1.15 H	226	38.60	5.70
3	*5300.00	100.1 PK			1.07 H	202	60.40	39.70
4	*5300.00	90.1 AV			1.07 H	202	50.40	39.70
5	10600.00	59.4 PK	74.0	-14.6	1.21 H	142	40.30	19.10
6	10600.00	46.4 AV	54.0	-7.6	1.21 H	142	27.30	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	5000.00	60.4 PK	74.0	-13.6	1.18 V	351	54.70	5.70
2	5000.00	52.5 AV	54.0	-1.5	1.18 V	351	46.80	5.70
3	*5300.00	111.5 PK			1.67 V	39	71.80	39.70
4	*5300.00	101.7 AV			1.67 V	39	62.00	39.70
5	10600.00	59.0 PK	74.0	-15.0	1.11 V	92	39.90	19.10
6	10600.00	46.3 AV	54.0	-7.7	1.11 V	92	27.20	19.10

Remark:

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.

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

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	5000.00	55.9 PK	74.0	-18.1	1.13 H	225	50.20	5.70
2	5000.00	44.0 AV	54.0	-10.0	1.13 H	225	38.30	5.70
3	*5320.00	98.8 PK			1.00 H	239	59.10	39.70
4	*5320.00	90.0 AV			1.00 H	239	50.30	39.70
5	5350.00	55.9 PK	74.0	-18.1	1.08 H	322	49.80	6.10
6	5350.00	43.7 AV	54.0	-10.3	1.08 H	322	37.60	6.10
7	10640.00	57.9 PK	74.0	-16.1	1.21 H	91	39.00	18.90
8	10640.00	45.8 AV	54.0	-8.2	1.21 H	91	26.90	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.7 PK	74.0	-14.3	1.18 V	351	54.00	5.70
2	5000.00	52.1 AV	54.0	-1.9	1.18 V	351	46.40	5.70
3	*5320.00	109.6 PK			1.00 V	237	69.90	39.70
4	*5320.00	100.1 AV			1.00 V	237	60.40	39.70
5	5350.00	57.6 PK	74.0	-16.4	1.00 V	225	51.50	6.10
6	5350.00	44.5 AV	54.0	-9.5	1.00 V	225	38.40	6.10
7	10640.00	58.9 PK	74.0	-15.1	1.06 V	141	40.00	18.90
8	10640.00	46.6 AV	54.0	-7.4	1.06 V	141	27.70	18.90

Remark:

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.

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

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	5000.00	57.0 PK	74.0	-17.0	1.10 H	106	51.30	5.70
2	5000.00	43.3 AV	54.0	-10.7	1.10 H	106	37.60	5.70
3	5460.00	57.0 PK	74.0	-17.0	1.03 H	201	50.60	6.40
4	5460.00	44.6 AV	54.0	-9.4	1.03 H	201	38.20	6.40
5	#5470.00	59.2 PK	74.0	-14.8	1.09 H	199	52.80	6.40
6	#5470.00	45.5 AV	54.0	-8.5	1.09 H	199	39.10	6.40
7	*5500.00	103.0 PK			1.00 H	209	63.00	40.00
8	*5500.00	93.3 AV			1.00 H	209	53.30	40.00
9	11000.00	59.6 PK	74.0	-14.4	1.32 H	200	40.00	19.60
10	11000.00	46.1 AV	54.0	-7.9	1.32 H	200	26.50	19.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.5 PK	74.0	-13.5	1.19 V	352	54.80	5.70
2	5000.00	51.9 AV	54.0	-2.1	1.19 V	352	46.20	5.70
3	5460.00	58.8 PK	74.0	-15.2	1.67 V	45	52.40	6.40
4	5460.00	46.8 AV	54.0	-7.2	1.67 V	45	40.40	6.40
5	#5470.00	71.2 PK	74.0	-2.8	1.76 V	43	64.80	6.40
6	#5470.00	52.3 AV	54.0	-1.7	1.76 V	43	45.90	6.40
7	*5500.00	115.2 PK			1.74 V	129	75.20	40.00
8	*5500.00	105.6 AV			1.74 V	129	65.60	40.00
9	11000.00	59.6 PK	74.0	-14.4	1.16 V	92	40.00	19.60
10	11000.00	46.6 AV	54.0	-7.4	1.16 V	92	27.00	19.60

Remark:

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

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

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	5000.00	56.4 PK	74.0	-17.6	1.06 H	62	50.70	5.70
2	5000.00	43.3 AV	54.0	-10.7	1.06 H	62	37.60	5.70
3	*5580.00	105.2 PK			1.25 H	139	65.10	40.10
4	*5580.00	95.0 AV			1.25 H	139	54.90	40.10
5	11160.00	57.5 PK	74.0	-16.5	1.24 H	153	38.30	19.20
6	11160.00	45.2 AV	54.0	-8.8	1.24 H	153	26.00	19.20
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	5000.00	60.5 PK	74.0	-13.5	1.26 V	349	54.80	5.70
2	5000.00	52.2 AV	54.0	-1.8	1.26 V	349	46.50	5.70
3	*5580.00	116.7 PK			1.93 V	132	76.60	40.10
4	*5580.00	106.7 AV			1.93 V	132	66.60	40.10
5	11160.00	57.7 PK	74.0	-16.3	1.43 V	59	38.50	19.20
6	11160.00	45.4 AV	54.0	-8.6	1.43 V	59	26.20	19.20

Remark:

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	5000.00	55.0 PK	74.0	-19.0	1.05 H	139	49.30	5.70
2	5000.00	42.5 AV	54.0	-11.5	1.05 H	139	36.80	5.70
3	*5700.00	102.4 PK			1.47 H	129	62.10	40.30
4	*5700.00	92.8 AV			1.47 H	129	52.50	40.30
5	#5725.00	57.6 PK	74.0	-16.4	1.42 H	302	50.80	6.80
6	#5725.00	44.9 AV	54.0	-9.1	1.42 H	302	38.10	6.80
7	11400.00	58.4 PK	74.0	-15.6	1.35 H	94	39.90	18.50
8	11400.00	46.2 AV	54.0	-7.8	1.35 H	94	27.70	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.1 PK	74.0	-13.9	1.18 V	351	54.40	5.70
2	5000.00	52.2 AV	54.0	-1.8	1.18 V	351	46.50	5.70
3	*5700.00	114.5 PK			1.73 V	133	74.20	40.30
4	*5700.00	104.6 AV			1.73 V	133	64.30	40.30
5	#5725.00	70.1 PK	74.0	-3.9	1.91 V	4	63.30	6.80
6	#5725.00	52.4 AV	54.0	-1.6	1.91 V	4	45.60	6.80
7	11400.00	59.3 PK	74.0	-14.7	1.17 V	70	40.80	18.50
8	11400.00	46.0 AV	54.0	-8.0	1.17 V	70	27.50	18.50

Remark:

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

802.11n (HT40)

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

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	5000.00	56.0 PK	74.0	-18.0	1.00 H	219	50.30	5.70
2	5000.00	44.9 AV	54.0	-9.1	1.00 H	219	39.20	5.70
3	5150.00	56.4 PK	74.0	-17.6	1.12 H	271	50.40	6.00
4	5150.00	44.3 AV	54.0	-9.7	1.12 H	271	38.30	6.00
5	*5270.00	96.1 PK			1.00 H	209	56.40	39.70
6	*5270.00	87.2 AV			1.00 H	209	47.50	39.70
7	#10540.00	59.5 PK	74.0	-14.5	1.33 H	94	40.30	19.20
8	#10540.00	47.7 AV	54.0	-6.3	1.33 H	94	28.50	19.20
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	5000.00	59.8 PK	74.0	-14.2	1.20 V	351	54.10	5.70
2	5000.00	52.4 AV	54.0	-1.6	1.20 V	351	46.70	5.70
3	5150.00	56.3 PK	74.0	-17.7	1.33 V	272	50.30	6.00
4	5150.00	44.7 AV	54.0	-9.3	1.33 V	272	38.70	6.00
5	*5270.00	107.3 PK			1.41 V	174	67.60	39.70
6	*5270.00	97.7 AV			1.41 V	174	58.00	39.70
7	#10540.00	58.9 PK	74.0	-15.1	1.03 V	201	39.70	19.20
8	#10540.00	47.7 AV	54.0	-6.3	1.03 V	201	28.50	19.20

Remark:

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	5000.00	55.7 PK	74.0	-18.3	1.22 H	128	50.00	5.70
2	5000.00	43.5 AV	54.0	-10.5	1.22 H	128	37.80	5.70
3	*5310.00	94.5 PK			1.01 H	238	54.80	39.70
4	*5310.00	85.5 AV			1.01 H	238	45.80	39.70
5	5350.00	59.1 PK	74.0	-14.9	1.03 H	237	53.00	6.10
6	5350.00	46.1 AV	54.0	-7.9	1.03 H	237	40.00	6.10
7	10620.00	58.8 PK	74.0	-15.2	1.25 H	86	39.80	19.00
8	10620.00	47.1 AV	54.0	-6.9	1.25 H	86	28.10	19.00
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	5000.00	59.6 PK	74.0	-14.4	1.19 V	350	53.90	5.70
2	5000.00	52.0 AV	54.0	-2.0	1.19 V	350	46.30	5.70
3	*5310.00	105.8 PK			1.24 V	163	66.10	39.70
4	*5310.00	96.7 AV			1.24 V	163	57.00	39.70
5	5350.00	72.2 PK	74.0	-1.8	1.65 V	296	66.10	6.10
6	5350.00	51.4 AV	54.0	-2.6	1.65 V	296	45.30	6.10
7	10620.00	59.7 PK	74.0	-14.3	1.22 V	96	40.70	19.00
8	10620.00	46.3 AV	54.0	-7.7	1.22 V	96	27.30	19.00

Remark:

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.

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

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	5000.00	55.9 PK	74.0	-18.1	1.07 H	115	50.20	5.70
2	5000.00	42.5 AV	54.0	-11.5	1.07 H	115	36.80	5.70
3	5460.00	57.0 PK	74.0	-17.0	1.18 H	120	50.60	6.40
4	5460.00	45.4 AV	54.0	-8.6	1.18 H	120	39.00	6.40
5	#5470.00	57.0 PK	74.0	-17.0	1.34 H	106	50.60	6.40
6	#5470.00	45.9 AV	54.0	-8.1	1.34 H	106	39.50	6.40
7	*5510.00	98.7 PK			1.35 H	132	58.70	40.00
8	*5510.00	89.9 AV			1.35 H	132	49.90	40.00
9	11020.00	58.9 PK	74.0	-15.1	1.41 H	99	39.50	19.40
10	11020.00	46.9 AV	54.0	-7.1	1.41 H	99	27.50	19.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.6 PK	74.0	-14.4	1.19 V	351	53.90	5.70
2	5000.00	51.9 AV	54.0	-2.1	1.19 V	351	46.20	5.70
3	5460.00	57.5 PK	74.0	-16.5	1.58 V	261	51.10	6.40
4	5460.00	46.1 AV	54.0	-7.9	1.58 V	261	39.70	6.40
5	#5470.00	72.2 PK	74.0	-1.8	1.63 V	255	65.80	6.40
6	**#5470.00**	**53.0 AV**	**54.0**	**-1.0**	**1.63 V**	**255**	**46.60**	**6.40**
7	*5510.00	108.9 PK			1.65 V	132	68.90	40.00
8	*5510.00	99.1 AV			1.65 V	132	59.10	40.00
9	11020.00	59.2 PK	74.0	-14.8	1.28 V	83	39.80	19.40
10	11020.00	47.1 AV	54.0	-6.9	1.28 V	83	27.70	19.40

Remark:

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

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

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	5000.00	56.2 PK	74.0	-17.8	1.18 H	173	50.50	5.70
2	5000.00	44.1 AV	54.0	-9.9	1.18 H	173	38.40	5.70
3	*5550.00	101.8 PK			1.35 H	131	61.70	40.10
4	*5550.00	92.2 AV			1.35 H	131	52.10	40.10
5	11100.00	58.9 PK	74.0	-15.1	1.25 H	64	40.00	18.90
6	11100.00	46.5 AV	54.0	-7.5	1.25 H	64	27.60	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.5 PK	74.0	-14.5	1.18 V	349	53.80	5.70
2	5000.00	52.6 AV	54.0	-1.4	1.18 V	349	46.90	5.70
3	*5550.00	112.2 PK			1.95 V	314	72.10	40.10
4	*5550.00	103.4 AV			1.95 V	314	63.30	40.10
5	11100.00	59.2 PK	74.0	-14.8	1.52 V	242	40.30	18.90
6	11100.00	46.5 AV	54.0	-7.5	1.52 V	242	27.60	18.90

Remark:

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.

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

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	5000.00	56.9 PK	74.0	-17.1	1.20 H	222	51.20	5.70
2	5000.00	44.8 AV	54.0	-9.2	1.20 H	222	39.10	5.70
3	*5670.00	97.0 PK			1.22 H	138	56.80	40.20
4	*5670.00	87.7 AV			1.22 H	138	47.50	40.20
5	#5725.00	57.5 PK	74.0	-16.5	1.23 H	318	50.70	6.80
6	#5725.00	45.3 AV	54.0	-8.7	1.23 H	318	38.50	6.80
7	11340.00	59.1 PK	74.0	-14.9	1.22 H	211	39.90	19.20
8	11340.00	47.2 AV	54.0	-6.8	1.22 H	211	28.00	19.20
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	5000.00	60.3 PK	74.0	-13.7	1.18 V	349	54.60	5.70
2	5000.00	52.8 AV	54.0	-1.2	1.18 V	349	47.10	5.70
3	*5670.00	110.6 PK			1.76 V	128	70.40	40.20
4	*5670.00	100.7 AV			1.76 V	128	60.50	40.20
5	#5725.00	62.2 PK	74.0	-11.8	1.67 V	138	55.40	6.80
6	#5725.00	48.1 AV	54.0	-5.9	1.67 V	138	41.30	6.80
7	11340.00	60.0 PK	74.0	-14.0	1.41 V	82	40.80	19.20
8	11340.00	46.8 AV	54.0	-7.2	1.41 V	82	27.60	19.20

Remark:

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

Below 1GHz worst-case data

802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	A		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	49.34	28.6 QP	40.0	-11.4	1.51 H	78	43.00	-14.40
2	125.17	31.0 QP	43.5	-12.5	1.51 H	77	47.10	-16.10
3	249.60	28.5 QP	46.0	-17.5	1.01 H	134	42.90	-14.40
4	500.42	35.9 QP	46.0	-10.1	2.00 H	349	44.30	-8.40
5	624.85	38.6 QP	46.0	-7.4	1.01 H	16	44.20	-5.60
6	875.67	38.4 QP	46.0	-7.6	1.01 H	140	39.50	-1.10
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	30.00	27.8 QP	40.0	-12.2	1.49 V	137	43.50	-15.70
2	59.06	26.6 QP	40.0	-13.4	1.00 V	338	41.10	-14.50
3	249.60	28.4 QP	46.0	-17.6	1.00 V	220	42.80	-14.40
4	500.42	35.6 QP	46.0	-10.4	1.00 V	216	44.00	-8.40
5	624.85	35.0 QP	46.0	-11.0	1.00 V	229	40.60	-5.60
6	875.67	36.6 QP	46.0	-9.4	1.00 V	182	37.70	-1.10

Remark:

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

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		
TEST MODE	B		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	57.12	30.8 QP	40.0	-9.2	1.99 H	63	45.40	-14.60
2	125.17	30.3 QP	43.5	-13.2	1.49 H	86	46.40	-16.10
3	210.72	30.4 QP	43.5	-13.1	1.49 H	220	47.10	-16.70
4	249.60	33.6 QP	46.0	-12.4	1.00 H	228	48.00	-14.40
5	624.85	38.5 QP	46.0	-7.5	1.49 H	149	44.10	-5.60
6	751.23	38.4 QP	46.0	-7.6	1.00 H	1	41.60	-3.20
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	37.68	34.8 QP	40.0	-5.2	1.01 V	17	50.10	-15.30
2	**49.34**	**35.6 QP**	**40.0**	**-4.4**	**1.01 V**	**31**	**50.00**	**-14.40**
3	249.60	28.5 QP	46.0	-17.5	1.01 V	216	42.90	-14.40
4	500.42	35.2 QP	46.0	-10.8	1.01 V	224	43.60	-8.40
5	751.23	32.1 QP	46.0	-13.9	1.49 V	89	35.30	-3.20
6	1000.00	38.4 QP	54.0	-15.6	1.00 V	287	37.60	0.80

Remark:

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.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 11, 2014	Nov. 10, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 02, 2015	Mar. 01, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

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

4.2.3 Test Procedures

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.

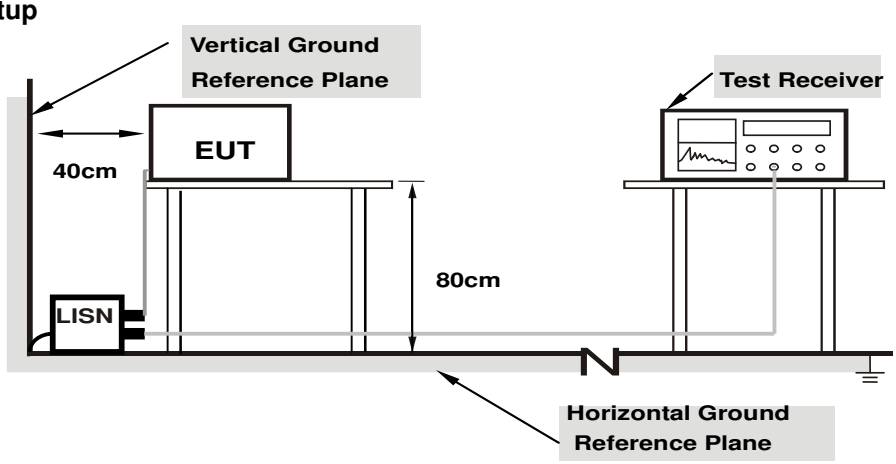
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

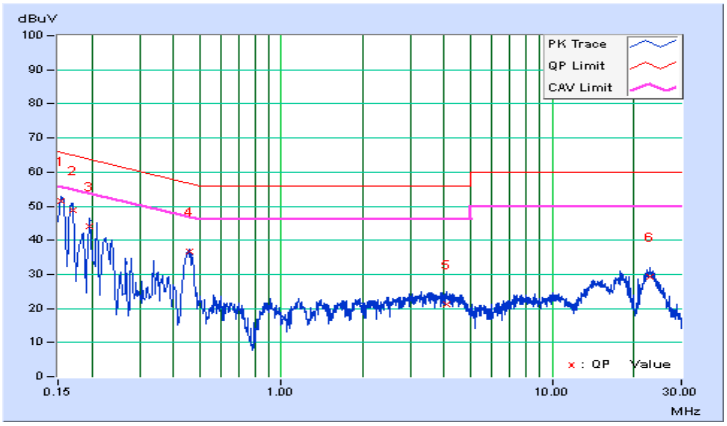
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15391**	**0.05**	**51.49**	**40.67**	**51.54**	**40.72**	**65.79**	**55.79**	**-14.25**	**-15.07**
2	0.16955	0.05	48.63	35.43	48.68	35.48	64.98	54.98	-16.30	-19.50
3	0.19692	0.06	44.14	30.05	44.20	30.11	63.74	53.74	-19.54	-23.63
4	0.45889	0.06	36.79	28.64	36.85	28.70	56.71	46.71	-19.86	-18.01
5	4.05609	0.19	20.88	13.34	21.07	13.53	56.00	46.00	-34.93	-32.47
6	23.00004	0.98	28.25	23.15	29.23	24.13	60.00	50.00	-30.77	-25.87

Remarks:

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

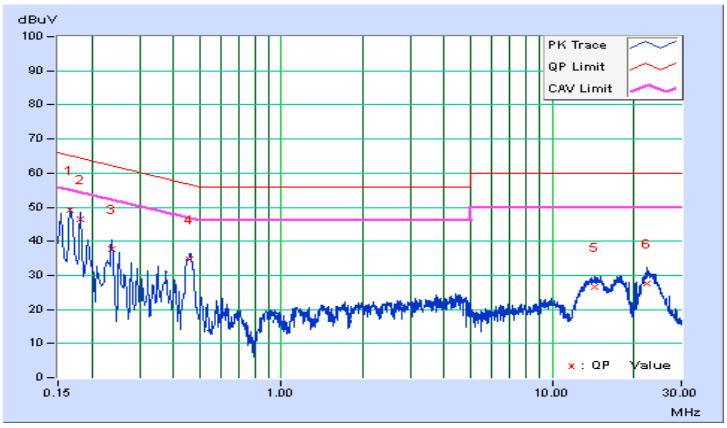


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16564	0.05	49.05	33.83	49.10	33.88	65.18	55.18	-16.08	-21.30
2	0.18128	0.05	46.49	29.73	46.54	29.78	64.43	54.43	-17.89	-24.65
3	0.23602	0.05	37.67	27.02	37.72	27.07	62.24	52.24	-24.51	-25.16
4	0.46058	0.06	34.57	26.81	34.63	26.87	56.68	46.68	-22.05	-19.81
5	14.41759	0.56	25.99	19.04	26.55	19.60	60.00	50.00	-33.45	-30.40
6	22.43700	0.76	26.77	21.65	27.53	22.41	60.00	50.00	-32.47	-27.59

Remarks:

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

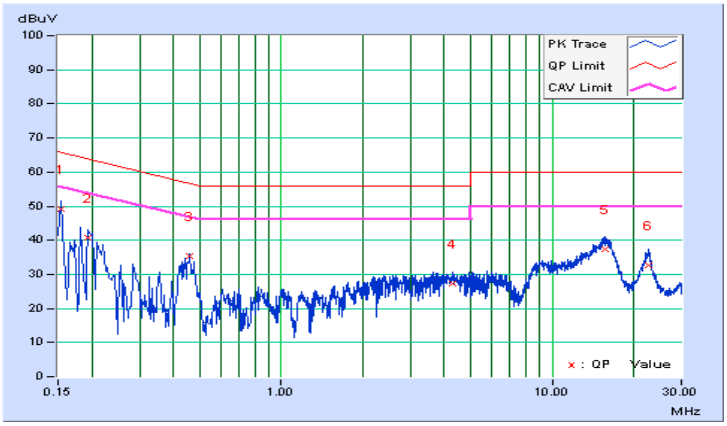


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.05	49.22	37.20	49.27	37.25	65.79	55.79	-16.52	-18.54
2	0.19305	0.06	40.56	24.05	40.62	24.11	63.90	53.90	-23.29	-29.80
3	0.45889	0.06	35.44	28.66	35.50	28.72	56.71	46.71	-21.21	-17.99
4	4.31415	0.20	27.01	18.93	27.21	19.13	56.00	46.00	-28.79	-26.87
5	15.73526	0.71	36.66	30.16	37.37	30.87	60.00	50.00	-22.63	-19.13
6	22.78499	0.98	31.81	26.75	32.79	27.73	60.00	50.00	-27.21	-22.27

Remarks:

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

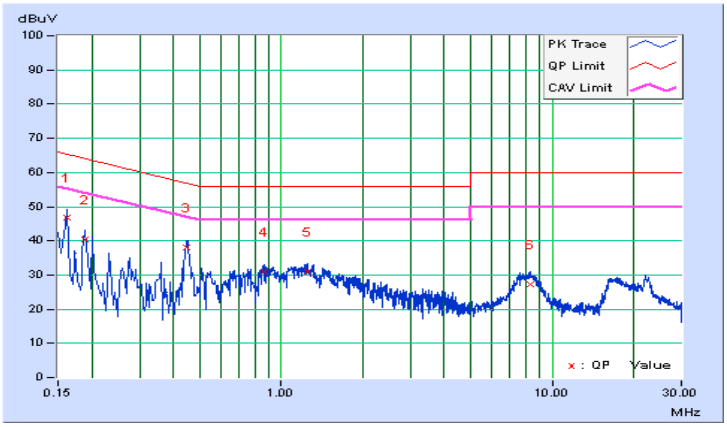


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16173	0.05	46.73	29.10	46.78	29.15	65.37	55.37	-18.59	-26.22
2	0.18903	0.05	40.41	24.51	40.46	24.56	64.08	54.08	-23.62	-29.52
3	0.44978	0.06	38.00	29.53	38.06	29.59	56.88	46.88	-18.82	-17.29
4	0.86913	0.08	30.78	23.89	30.86	23.97	56.00	46.00	-25.14	-22.03
5	1.25262	0.09	31.05	23.80	31.14	23.89	56.00	46.00	-24.86	-22.11
6	8.32972	0.36	26.80	20.82	27.16	21.18	60.00	50.00	-32.84	-28.82

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 Measurment

4.3.1 Limits of Transmit Power Measurement

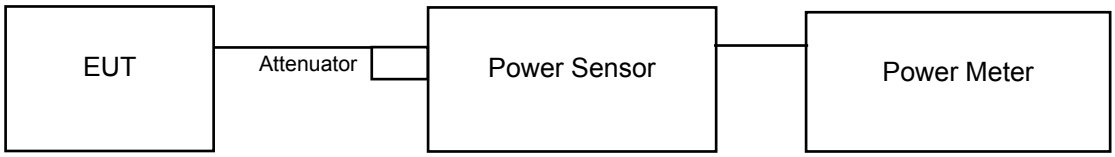
Operation Band	EUT Category		LIMIT
U-NII-1	---	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	---	Fixed point-to-point Access Point	1 Watt (30 dBm)
	---	Indoor Access Point	1 Watt (30 dBm)
	---	Mobile and Portable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

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

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



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR AVERAGE POWER MEASUREMENT

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

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

FOR OCCUPIED BANDWIDTH

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300 kHz RBW and 1MHz VBW. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
52	5260	10.77	11.09	10.31	35.533	15.51	24.00	Pass
60	5300	9.87	11.17	10.09	33.006	15.19	24.00	Pass
64	5320	10.30	11.44	10.04	34.740	15.41	24.00	Pass
100	5500	12.75	12.54	12.01	52.668	17.22	24.00	Pass
116	5580	13.73	12.88	12.77	**61.937**	17.92	24.00	Pass
140	5700	12.96	12.71	11.58	52.822	17.23	24.00	Pass

Note:

Chain 0

1. 11dBm + 10log(25.33) = 25.04 dBm > 24dBm.
2. 11dBm + 10log(26.70) = 25.27 dBm > 24dBm.
3. 11dBm + 10log(27.99) = 25.47 dBm > 24dBm.
4. 11dBm + 10log(38.07) = 26.81 dBm > 24dBm.
5. 11dBm + 10log(35.12) = 26.46 dBm > 24dBm.
6. 11dBm + 10log(33.65) = 26.27 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(22.64) = 24.55 dBm > 24dBm.
2. 11dBm + 10log(23.32) = 24.68 dBm > 24dBm.
3. 11dBm + 10log(23.03) = 24.62 dBm > 24dBm.
4. 11dBm + 10log(31.98) = 26.05 dBm > 24dBm.
5. 11dBm + 10log(31.48) = 25.98 dBm > 24dBm.
6. 11dBm + 10log(25.71) = 25.10 dBm > 24dBm.

Chain 2

1. 11dBm + 10log(22.70) = 24.56 dBm > 24dBm.
2. 11dBm + 10log(22.06) = 24.44 dBm > 24dBm.
3. 11dBm + 10log(22.15) = 24.45 dBm > 24dBm.
4. 11dBm + 10log(23.57) = 24.72 dBm > 24dBm.
5. 11dBm + 10log(23.96) = 24.79 dBm > 24dBm.
6. 11dBm + 10log(23.45) = 24.70 dBm > 24dBm.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
52	5260	10.79	11.51	10.07	**36.315**	15.60	24.00	Pass
60	5300	10.06	11.42	9.51	32.940	15.18	24.00	Pass
64	5320	10.30	11.83	9.61	35.097	15.45	24.00	Pass
100	5500	12.44	12.37	11.56	49.119	16.91	24.00	Pass
116	5580	13.81	12.64	12.72	61.116	17.86	24.00	Pass
140	5700	12.72	12.73	11.61	51.945	17.16	24.00	Pass

Note:
Chain 0
1. 11dBm + 10log(25.30) = 25.03 dBm > 24dBm.
2. 11dBm + 10log(29.64) = 25.72 dBm > 24dBm.
3. 11dBm + 10log(29.33) = 25.67 dBm > 24dBm.
4. 11dBm + 10log(35.21) = 26.47 dBm > 24dBm.
5. 11dBm + 10log(34.98) = 26.44 dBm > 24dBm.
6. 11dBm + 10log(35.47) = 26.50 dBm > 24dBm.

Chain 1
1. 11dBm + 10log(23.56) = 24.72 dBm > 24dBm.
2. 11dBm + 10log(23.26) = 24.67 dBm > 24dBm.
3. 11dBm + 10log(23.28) = 24.67 dBm > 24dBm.
4. 11dBm + 10log(26.67) = 25.26 dBm > 24dBm.
5. 11dBm + 10log(32.31) = 26.09 dBm > 24dBm.
6. 11dBm + 10log(27.74) = 25.43 dBm > 24dBm.

Chain 2
1. 11dBm + 10log(23.45) = 24.70 dBm > 24dBm.
2. 11dBm + 10log(23.44) = 24.70 dBm > 24dBm.
3. 11dBm + 10log(22.92) = 24.60 dBm > 24dBm.
4. 11dBm + 10log(23.41) = 24.69 dBm > 24dBm.
5. 11dBm + 10log(24.52) = 24.90 dBm > 24dBm.
6. 11dBm + 10log(25.22) = 25.02 dBm > 24dBm.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
54	5270	9.32	9.98	8.87	26.214	14.19	24.00	Pass
62	5310	9.66	10.50	9.61	29.608	14.71	24.00	Pass
102	5510	9.27	8.28	8.02	21.522	13.33	24.00	Pass
110	5550	13.02	11.50	11.59	48.591	16.87	24.00	Pass
134	5670	12.70	11.33	10.78	44.171	16.45	24.00	Pass

Note:

Chain 0

1. 11dBm + 10log(58.66) = 28.68 dBm > 24dBm.
2. 11dBm + 10log(64.85) = 29.12 dBm > 24dBm.
3. 11dBm + 10log(71.25) = 29.53 dBm > 24dBm.
4. 11dBm + 10log(77.76) = 29.91 dBm > 24dBm.
5. 11dBm + 10log(76.07) = 29.81 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(48.32) = 27.84 dBm > 24dBm.
2. 11dBm + 10log(49.34) = 27.93 dBm > 24dBm.
3. 11dBm + 10log(49.10) = 27.91 dBm > 24dBm.
4. 11dBm + 10log(62.30) = 28.94 dBm > 24dBm.
5. 11dBm + 10log(50.78) = 28.06 dBm > 24dBm.

Chain 2

1. 11dBm + 10log(48.06) = 27.82 dBm > 24dBm.
2. 11dBm + 10log(48.68) = 27.87 dBm > 24dBm.
3. 11dBm + 10log(48.56) = 27.86 dBm > 24dBm.
4. 11dBm + 10log(47.75) = 27.79 dBm > 24dBm.
5. 11dBm + 10log(49.17) = 27.92 dBm > 24dBm.

26dB Bandwidth:

802.11a

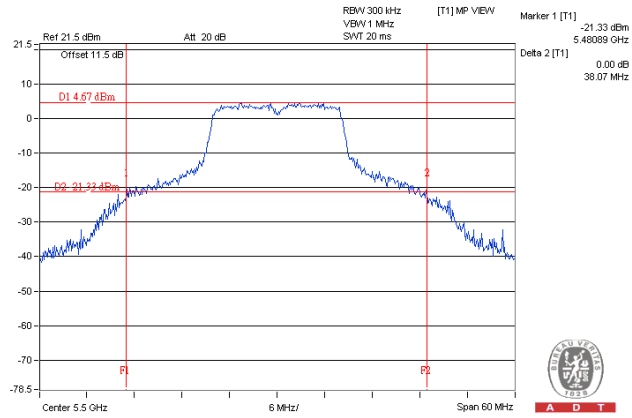
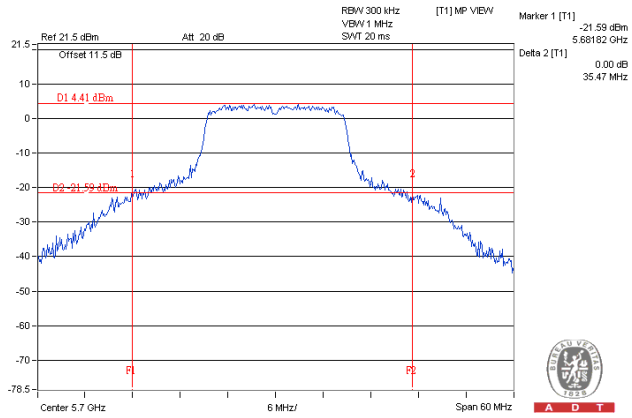
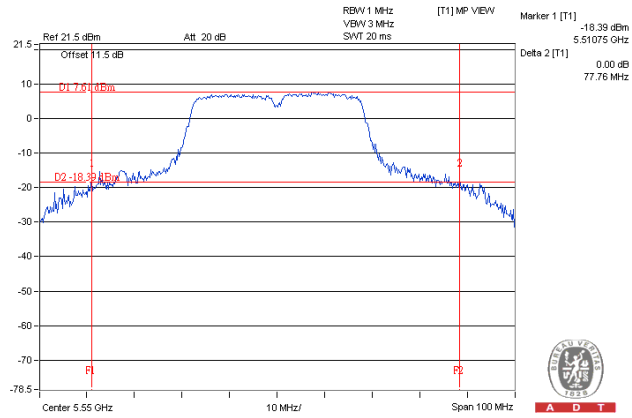
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
52	5260	25.33	22.64	22.70	Pass
60	5300	26.70	23.32	22.06	Pass
64	5320	27.99	23.03	22.15	Pass
100	5500	38.07	31.98	23.57	Pass
116	5580	35.12	31.48	23.96	Pass
140	5700	33.65	25.71	23.45	Pass

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
52	5260	25.30	23.56	23.45	Pass
60	5300	29.64	23.26	23.44	Pass
64	5320	29.33	23.28	22.92	Pass
100	5500	35.21	26.67	23.41	Pass
116	5580	34.98	32.31	24.52	Pass
140	5700	35.47	27.74	25.22	Pass

802.11n (HT40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
54	5270	58.66	48.32	48.06	Pass
62	5310	64.85	49.34	48.68	Pass
102	5510	71.25	49.10	48.56	Pass
110	5550	77.76	62.30	47.75	Pass
134	5670	76.07	50.78	49.17	Pass

Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	
	

Occupied Bandwidth:

802.11a

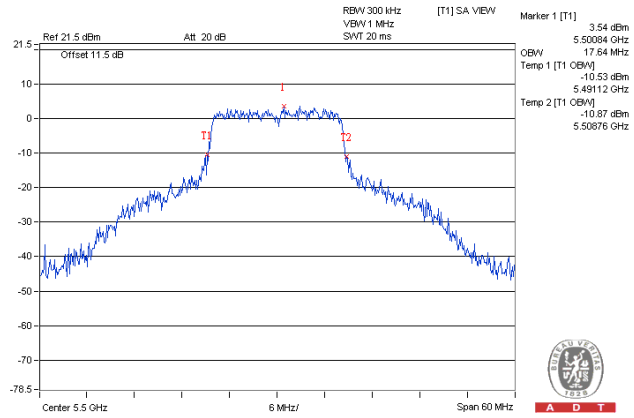
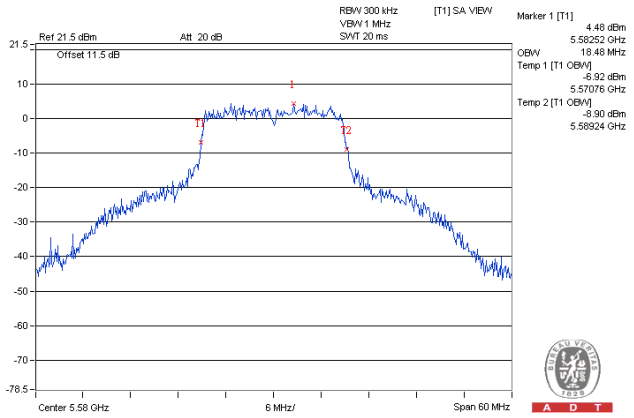
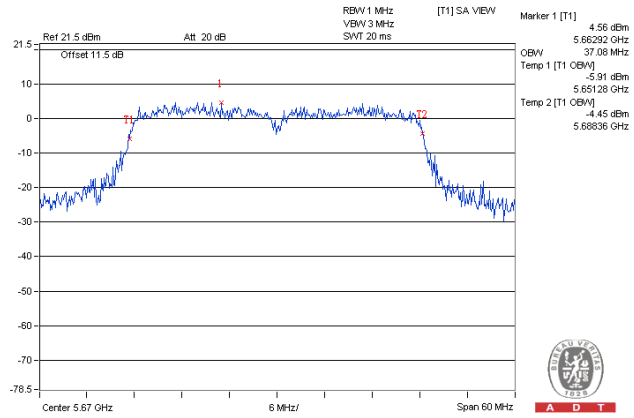
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
52	5260	17.04	16.68	16.68	Pass
60	5300	16.92	16.68	16.68	Pass
64	5320	16.80	16.68	16.68	Pass
100	5500	17.64	16.80	16.68	Pass
116	5580	17.28	17.04	16.80	Pass
140	5700	17.16	16.92	16.68	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
52	5260	17.88	17.76	17.76	Pass
60	5300	18.00	17.76	17.88	Pass
64	5320	18.12	17.88	17.76	Pass
100	5500	18.36	17.88	17.88	Pass
116	5580	18.48	18.00	18.00	Pass
140	5700	18.24	18.00	17.88	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
54	5270	36.84	36.96	36.84	Pass
62	5310	36.96	36.96	36.72	Pass
102	5510	36.84	36.72	36.84	Pass
110	5550	37.08	36.72	36.72	Pass
134	5670	37.08	36.72	36.96	Pass

Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	
	

EUT MAXIMUM CONDUCTED POWER

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	35.533	15.51
5470~5725	61.937	17.92

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

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	36.315	15.60
5470~5725	61.116	17.86

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

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	29.608	14.71
5470~5725	48.591	16.87

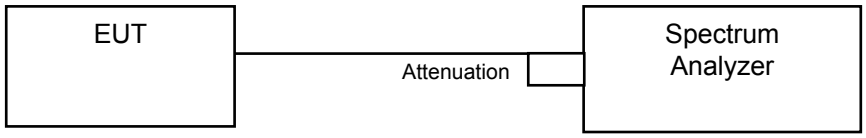
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

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

Using method SA-2
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 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/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

802.11a

Channel	Frequency (MHz)	PSD (dBm)			Total PSD W/O Duty Factor (dBm)	Duty Factor	Total PSD With Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
52	5260	-2.35	-1.30	-3.28	2.54	0.16	2.70	8.23	Pass
60	5300	-3.39	-1.62	-3.99	1.89	0.16	2.05	8.23	Pass
64	5320	-3.71	-1.53	-3.98	1.84	0.16	2.00	8.23	Pass
100	5500	-0.28	-0.39	-1.59	4.06	0.16	4.22	8.23	Pass
116	5580	0.58	0.17	-0.35	4.92	0.16	5.08	8.23	Pass
140	5700	-0.82	-0.49	-2.26	3.65	0.16	3.81	8.23	Pass

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

2. Directional gain = 4dBi + 10log(3) = 8.77dBi > 6dBi, so the power density limit shall be reduced to 11-(8.77-6) = 8.23dBm.

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

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm)			Total PSD W/O Duty Factor (dBm)	Duty Factor	Total PSD With Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
52	5260	-2.70	-1.67	-3.58	2.19	0.20	2.39	8.23	Pass
60	5300	-3.85	-1.91	-4.31	1.54	0.20	1.74	8.23	Pass
64	5320	-4.13	-1.77	-4.58	1.46	0.20	1.66	8.23	Pass
100	5500	-0.96	-1.28	-2.79	3.16	0.20	3.36	8.23	Pass
116	5580	0.29	0.23	-0.80	4.71	0.20	4.91	8.23	Pass
140	5700	-0.79	-0.67	-2.58	3.51	0.20	3.71	8.23	Pass

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

2. Directional gain = 4dBi + 10log(3) = 8.77dBi > 6dBi, so the power density limit shall be reduced to 11-(8.77-6) = 8.23dBm.

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

802.11n (HT40)

Channel	Frequency (MHz)	PSD (dBm)			Total PSD W/O Duty Factor (dBm)	Duty Factor	Total PSD With Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
54	5270	-7.32	-6.21	-8.09	-2.37	0.29	-2.08	8.23	Pass
62	5310	-7.61	-6.01	-7.94	-2.33	0.29	-2.04	8.23	Pass
102	5510	-7.04	-7.74	-6.00	-2.10	0.29	-1.81	8.23	Pass
110	5550	-3.59	-4.65	-5.12	0.36	0.29	0.65	8.23	Pass
134	5670	-5.44	-5.38	-6.27	-0.91	0.29	-0.62	8.23	Pass

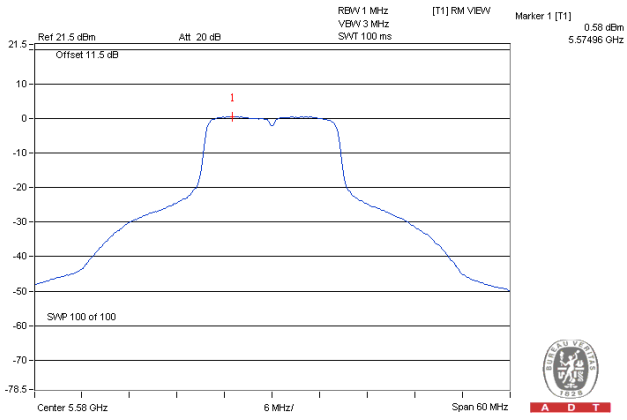
Note: 1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 4dBi + 10log(3) = 8.77dBi > 6dBi, so the power density limit shall be reduced to 11-(8.77-6) = 8.23dBm.

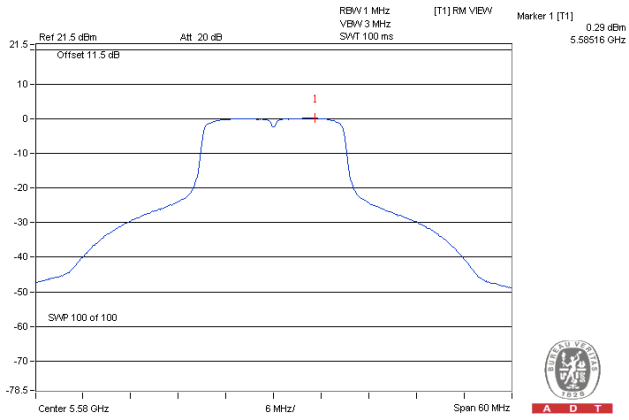
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

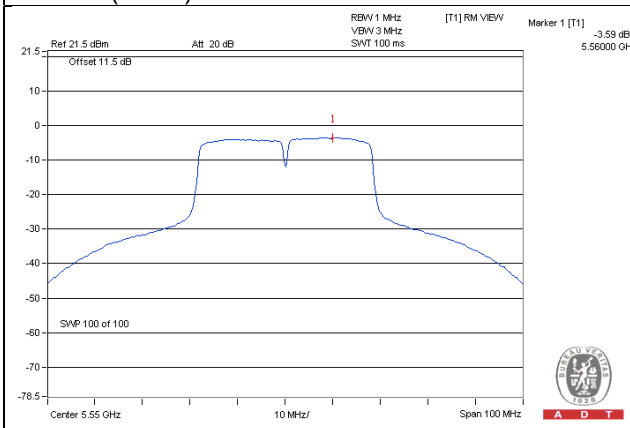
802.11a



802.11n (HT20)



802.11n (HT40)

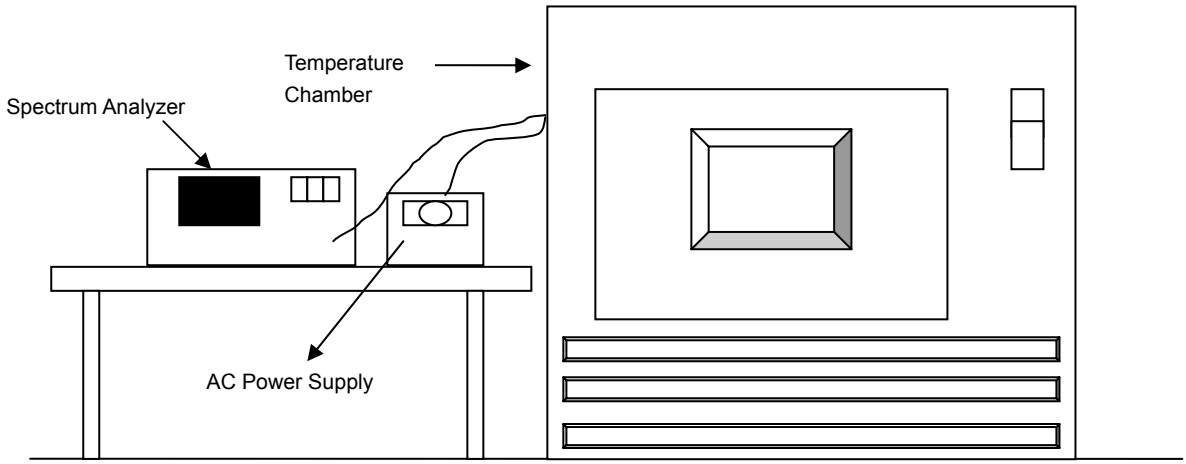


4.5 Frequency Stability

4.5.1 Limits of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

Frequemcy Stability Versus Temp.									
Operating Frequency: 5320MHz									
Temp. (℃)	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	5320.0058	0.00011	5320.0094	0.00018	5320.0083	0.00016	5320.0070	0.00013
40	120	5320.0125	0.00023	5320.0101	0.00019	5320.0135	0.00025	5320.0089	0.00017
30	120	5320.0064	0.00012	5320.0085	0.00016	5320.0091	0.00017	5320.0091	0.00017
20	120	5320.0213	0.00040	5320.0205	0.00039	5320.0200	0.00038	5320.0220	0.00041
10	120	5320.0281	0.00053	5320.0249	0.00047	5320.0261	0.00049	5320.0252	0.00047
0	120	5319.9854	-0.00027	5319.9850	-0.00028	5319.9846	-0.00029	5319.9850	-0.00028
-10	120	5320.0009	0.00002	5320.0005	0.00001	5320.0001	0.00000	5320.0018	0.00003
-20	120	5319.9985	-0.00003	5319.9974	-0.00005	5320.0014	0.00003	5320.0005	0.00001
-30	120	5320.0132	0.00025	5320.0118	0.00022	5320.0124	0.00023	5320.0137	0.00026

Frequemcy Stability Versus Temp.									
Operating Frequency: 5320MHz									
Temp. (℃)	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	5320.0206	0.00039	5320.0206	0.00039	5320.0205	0.00039	5320.0221	0.00042
	120	5320.0213	0.00040	5320.0205	0.00039	5320.0200	0.00038	5320.0220	0.00041
	102	5320.0210	0.00039	5320.0206	0.00039	5320.0205	0.00039	5320.0216	0.00041

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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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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