

FCC TEST REPORT (15.407)

REPORT NO.: RF141108C01A

MODEL NO.: AP 100X

FCC ID: 2ACTO-AP100X

RECEIVED: Nov. 08, 2014

TESTED: Nov. 26 ~ Dec. 03, 2014

ISSUED: Dec. 23, 2014

APPLICANT: Sophos Ltd

ADDRESS: The Pentagon, Abingdon, OX14 3YP, United Kingdom

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141108C01A	Original release.	Dec. 23, 2014

1. CERTIFICATION

PRODUCT: Sophos wireless Access Point AP 100X

MODEL: AP 100X

BRAND: Sophos

APPLICANT: Sophos Ltd

TESTED: Nov. 26 ~ Dec. 03, 2014

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart E (Section 15.407)

The above equipment (model: AP 100X) 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 : Celine Chou , **DATE :** Dec. 23, 2014
Celine Chou / Specialist

APPROVED BY : Ken Liu , **DATE :** Dec. 23, 2014
Ken Liu / Senior Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407 UNDER OLD RULE)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -5.83dB at 21.66282MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5725.00, 5350.00 and 5470.00MHz.
15.407(a/1/2)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	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 N plug. (The device is professionally installed)

2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.63 dB
	200MHz ~1000MHz	3.64 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Sophos wireless Access Point AP 100X
MODEL NO.	AP 100X
POWER SUPPLY	54Vdc max from POE
MODULATION TYPE	256QAM, 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 450Mbps 802.11ac: 1300Mbps
OPERATING FREQUENCY	5260 ~ 5320MHz, 5500 ~ 5700MHz
NUMBER OF CHANNEL	5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 3 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	123.725mW for 5260 ~ 5320MHz 122.837mW for 5500 ~ 5700MHz
ANTENNA TYPE	Dipole antenna with 6dBi gain
ANTENNA CONNECTOR	N Plug
DATA CABLE	0.95m shielded ground cable without core
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Bracket

NOTE:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report of BV ADT report no.: RF141108C01-1. Difference compared with the original report is adding 5260~5320MHz and 5500~5700MHz band. Therefore, the EUT was re-tested and presented in the test report.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

MODULATION MODE	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX
802.11ac (20MHz)	3TX
802.11ac (40MHz)	3TX
802.11ac (80MHz)	3TX

3. The EUT consumes power from the following POE. (provided as support units only)

POE	
BRAND:	Power Desine
MODEL:	PD-9001GR/AC
INPUT:	100-240Vac, 50-60Hz, 0.67A
OUTPUT:	55Vdc, 0.6A

4. The above EUT information is 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 (20MHz), 802.11ac (20MHz):

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

2 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
58	5290MHz

FOR 5500 ~ 5700MHz

8 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (20MHz):

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 (40MHz), 802.11ac (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	134	5670 MHz
110	5550 MHz		

1 channel is provided for 802.11ac (80MHz):

CHANNEL	FREQUENCY
106	5530MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE \geq 1G**: Radiated Emission above 1GHz **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 **Y-plane** for **802.11a** and **Z-plane** for **802.11n**.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
-	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
-	802.11ac (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
-	802.11ac (80MHz)		58	58	OFDM	BPSK	87.8
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
-	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
-	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
-	802.11ac (80MHz)		106	106	OFDM	BPSK	87.8

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

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

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGUR E MODE	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	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
-	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
-	802.11ac (40MHz)		54 to 62	54, 62	OFDM	BPSK	15.0
-	802.11ac (80MHz)		58	58	OFDM	BPSK	87.8
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
-	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
-	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15.0
-	802.11ac (80MHz)		106	106	OFDM	BPSK	87.8

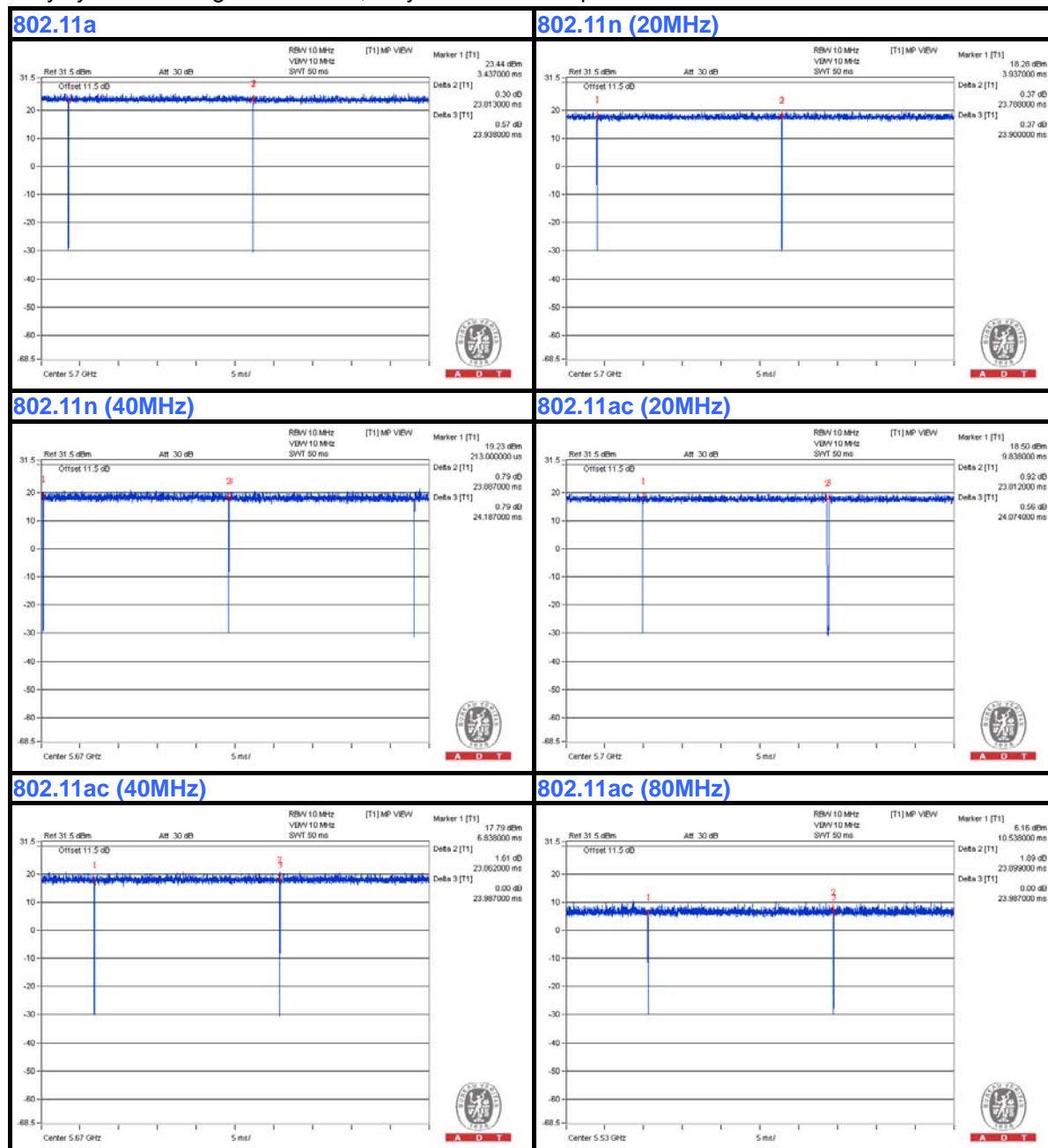
TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	25deg. C, 60%RH	120Vac, 60Hz	Ted Chang
RE<1G	25deg. C, 60%RH	120Vac, 60Hz	Tank Wu
PLC	25deg. C, 60%RH	120Vac, 60Hz	Tank Wu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu

3.3 DUTY CYCLE OF TEST SIGNAL

MODULATION TYPE: BPSK

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



MODULATION TYPE: QPSK

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





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MODULATION TYPE: 16QAM

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





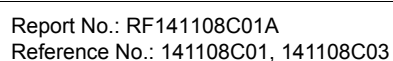
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MODULATION TYPE: 64QAM

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



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



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.

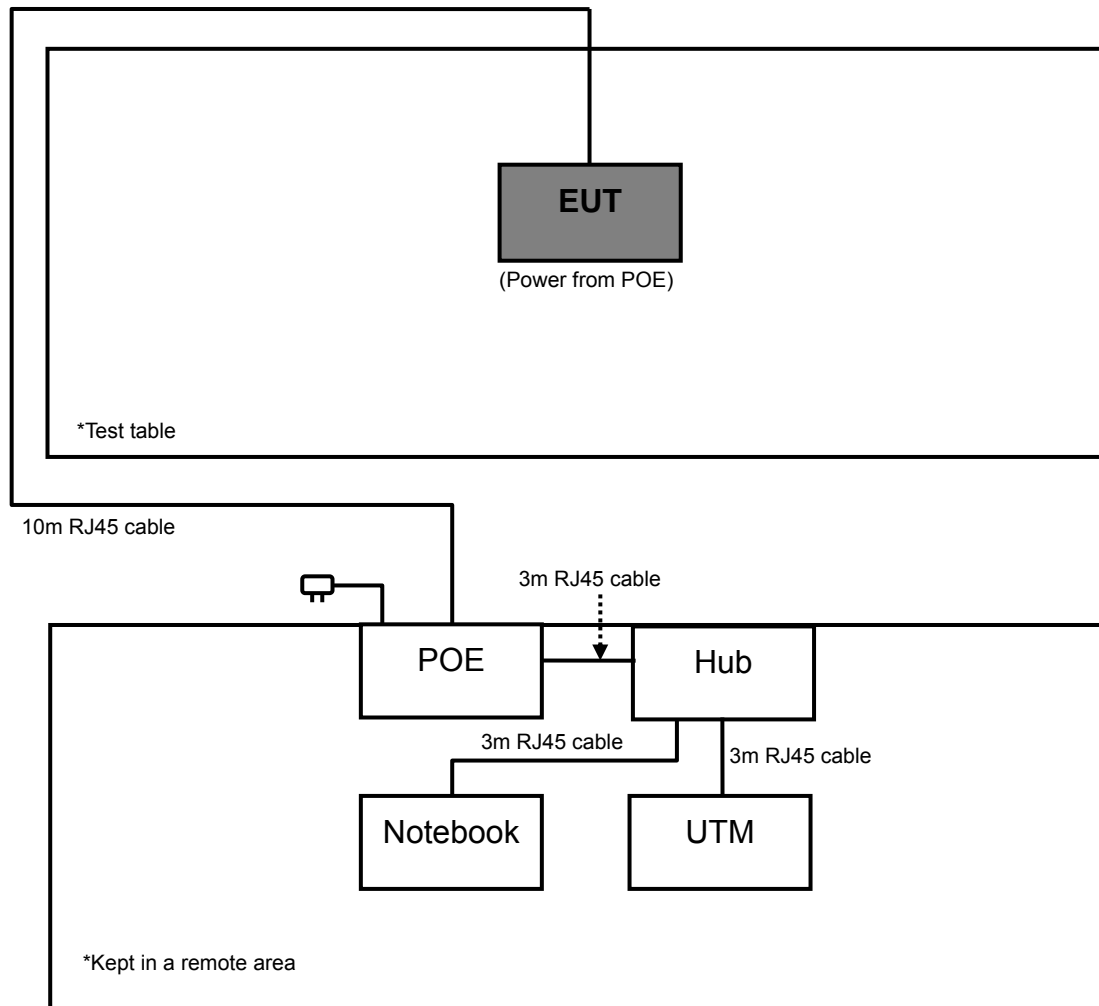
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	HUB	D-Link	DIR-810	NA	NA
2	UTM	SOPHOS	UTM110/120/100 rev.5	NA	NA
3	NOTEBOOK	DELL	D531	CN-0XM006-48643-81 U-2610	QDS-BRCM1020
4	POE	Power Desine	PD-9001GR/AC	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	3m RJ45 Cable.
2	3m RJ45 Cable.
3	3m RJ45 Cable.
4	10m RJ45 Cable.

NOTE:

1. All power cords of the above support units are non-shielded (1.8 m).
2. Item 2 & 4 were provided by the manufacturer.
3. Item 1-4 acted as a communication partner to transfer data.

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

789033 D01 General UNII Test Procedures Old Rules v01r04

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBμV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m)
	PK	PK
	-27	68.3

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100289	Nov. 29, 2013	Nov. 28, 2014
			Nov. 29, 2014	Nov. 28, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Feb. 11, 2014	Feb. 10, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Feb. 25, 2014	Feb. 24, 2015
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Aug. 25, 2014	Aug. 24, 2015
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
Preamplifier Agilent	8449B	3008A01911	Aug. 09, 2014	Aug. 08, 2015
Preamplifier Agilent	8447D	2944A10638	Aug. 09, 2014	Aug. 08, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	248780/4 309222/4 274092/4	Aug. 09, 2014	Aug. 08, 2015
RF signal cable Worken	8D-FB	Cable-CH9-01	Aug. 11, 2014	Aug. 10, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn Table Controller EMCO	2090	NA	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2014	Oct. 17, 2015
High Speed Peak Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 09, 2014	Jun. 08, 2015

- 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 9.
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 215374.
5. The IC Site Registration No. is IC 7450F-9.

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. 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 antenna is a broadband antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

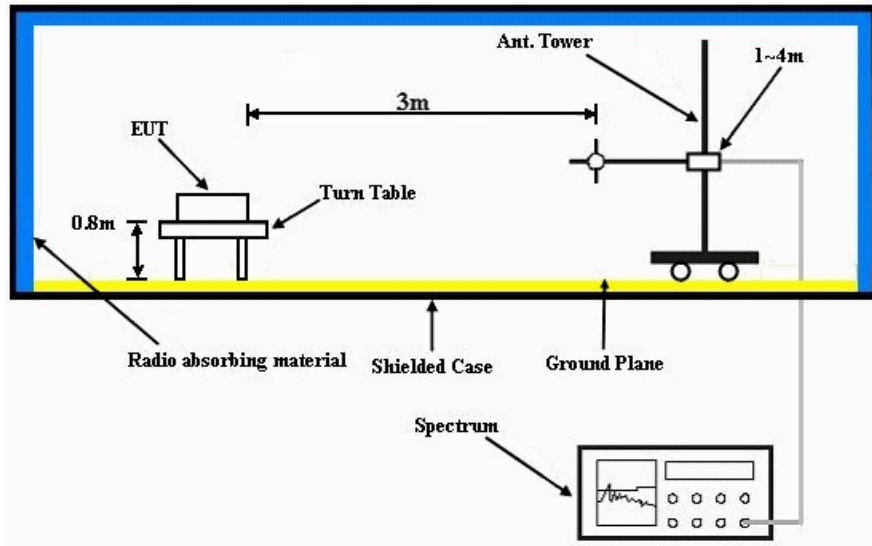
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

4.1.5 DEVIATION FROM TEST STANDARD

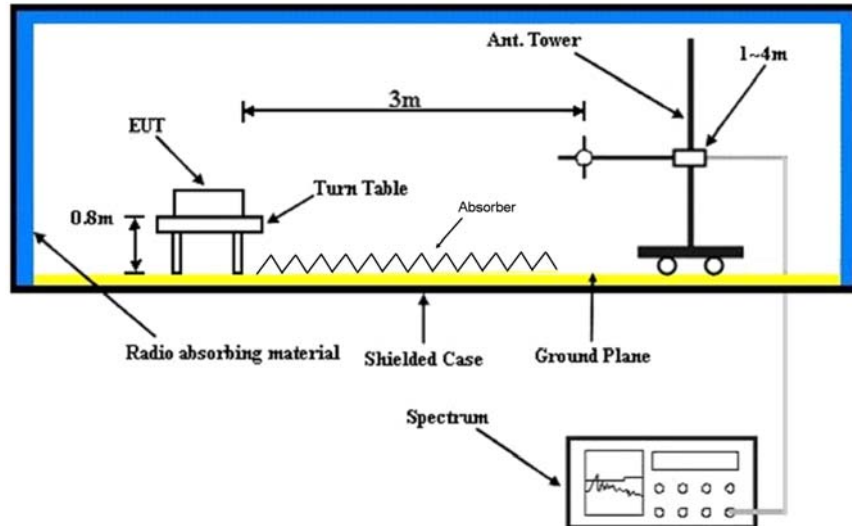
No deviation.

4.1.6 TEST SETUP

Frequency range 30MHz~1GHz



Frequency range above 1GHz



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

4.1.7 EUT OPERATING CONDITION

- a. Placed the EUT on the testing table.
- b. Prepared notebook to act as a communication partner and placed it outside of testing area.
- c. The communication partners connected with EUT via a RJ45 cable and run 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".

4.1.8 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	5150.00	65.9 PK	74.0	-8.1	1.08 H	84	63.90	2.00
2	5150.00	46.5 AV	54.0	-7.5	1.08 H	84	44.50	2.00
3	*5260.00	114.4 PK			1.54 H	88	74.30	40.10
4	*5260.00	102.9 AV			1.54 H	88	62.80	40.10
5	5350.00	67.9 PK	74.0	-6.1	1.05 H	344	65.90	2.00
6	5350.00	47.9 AV	54.0	-6.1	1.05 H	344	45.90	2.00
7	#10520.00	61.8 PK	74.0	-12.2	1.02 H	38	45.90	15.90
8	#10520.00	49.5 AV	54.0	-4.5	1.02 H	38	33.60	15.90
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	5150.00	57.2 PK	74.0	-16.8	1.02 V	84	55.20	2.00
2	5150.00	44.6 AV	54.0	-9.4	1.02 V	84	42.60	2.00
3	*5260.00	99.1 PK			1.05 V	28	59.00	40.10
4	*5260.00	87.7 AV			1.05 V	28	47.60	40.10
5	5350.00	57.7 PK	74.0	-16.3	1.02 V	58	55.70	2.00
6	5350.00	44.5 AV	54.0	-9.5	1.02 V	58	42.50	2.00
7	#10520.00	61.9 PK	74.0	-12.1	1.52 V	354	46.00	15.90
8	#10520.00	48.4 AV	54.0	-5.6	1.52 V	354	32.50	15.90

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	117.6 PK			1.52 H	63	77.50	40.10
2	*5300.00	107.1 AV			1.52 H	63	67.00	40.10
3	5350.00	68.8 PK	74.0	-5.2	1.02 H	63	66.80	2.00
4	5350.00	51.7 AV	54.0	-2.3	1.02 H	63	49.70	2.00
5	10600.00	63.4 PK	74.0	-10.6	1.04 H	89	46.80	16.60
6	10600.00	49.2 AV	54.0	-4.8	1.04 H	89	32.60	16.60
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	*5300.00	101.6 PK			1.05 V	36	61.50	40.10
2	*5300.00	91.1 AV			1.05 V	36	51.00	40.10
3	5350.00	56.9 PK	74.0	-17.1	1.05 V	22	54.90	2.00
4	5350.00	44.0 AV	54.0	-10.0	1.05 V	22	42.00	2.00
5	10600.00	62.3 PK	74.0	-11.7	1.41 V	88	45.70	16.60
6	10600.00	48.8 AV	54.0	-5.2	1.41 V	88	32.20	16.60

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.

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	114.9 PK			1.13 H	188	74.70	40.20
2	*5320.00	104.1 AV			1.13 H	188	63.90	40.20
3	5350.00	65.7 PK	74.0	-8.3	1.14 H	193	63.70	2.00
4	5350.00	52.5 AV	54.0	-1.5	1.14 H	193	50.50	2.00
5	10640.00	62.7 PK	74.0	-11.3	1.00 H	310	45.90	16.80
6	10640.00	49.4 AV	54.0	-4.6	1.00 H	310	32.60	16.80
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	100.4 PK			1.00 V	174	60.20	40.20
2	*5320.00	89.6 AV			1.00 V	174	49.40	40.20
3	5350.00	57.6 PK	74.0	-16.4	1.00 V	174	55.60	2.00
4	5350.00	44.5 AV	54.0	-9.5	1.00 V	174	42.50	2.00
5	10640.00	63.0 PK	74.0	-11.0	1.00 V	102	46.20	16.80
6	10640.00	49.3 AV	54.0	-4.7	1.00 V	102	32.50	16.80

REMARKS:

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

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	5460.00	63.3 PK	74.0	-10.7	1.00 H	185	61.20	2.10
2	5460.00	47.9 AV	54.0	-6.1	1.00 H	185	45.80	2.10
3	#5470.00	68.7 PK	74.0	-5.3	1.00 H	185	66.50	2.20
4	#5470.00	52.5 AV	54.0	-1.5	1.00 H	185	50.30	2.20
5	*5500.00	117.4 PK			1.00 H	185	77.10	40.30
6	*5500.00	106.2 AV			1.00 H	185	65.90	40.30
7	11000.00	61.9 PK	74.0	-12.1	1.00 H	102	43.60	18.30
8	11000.00	49.0 AV	54.0	-5.0	1.00 H	102	30.70	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.6 PK	74.0	-16.4	1.00 V	22	55.50	2.10
2	5460.00	44.3 AV	54.0	-9.7	1.00 V	22	42.20	2.10
3	#5470.00	57.4 PK	74.0	-16.6	1.00 V	25	55.20	2.20
4	#5470.00	44.9 AV	54.0	-9.1	1.00 V	25	42.70	2.20
5	*5500.00	100.5 PK			1.00 V	27	60.20	40.30
6	*5500.00	89.6 AV			1.00 V	27	49.30	40.30
7	11000.00	61.2 PK	74.0	-12.8	1.00 V	219	42.90	18.30
8	11000.00	48.2 AV	54.0	-5.8	1.00 V	219	29.90	18.30

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 116	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	5460.00	65.1 PK	74.0	-8.9	1.02 H	96	63.00	2.10
2	5460.00	47.1 AV	54.0	-6.9	1.02 H	96	45.00	2.10
3	#5470.00	67.2 PK	74.0	-6.8	1.05 H	332	65.00	2.20
4	#5470.00	47.2 AV	54.0	-6.8	1.05 H	332	45.00	2.20
5	*5580.00	113.5 PK			1.05 H	21	73.00	40.50
6	*5580.00	101.8 AV			1.05 H	21	61.30	40.50
7	11160.00	62.5 PK	74.0	-11.5	1.00 H	63	44.90	17.60
8	11160.00	50.1 AV	54.0	-3.9	1.00 H	63	32.50	17.60
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	5460.00	57.9 PK	74.0	-16.1	1.05 V	34	55.80	2.10
2	5460.00	44.2 AV	54.0	-9.8	1.05 V	34	42.10	2.10
3	#5470.00	58.0 PK	74.0	-16.0	1.24 V	195	55.80	2.20
4	#5470.00	44.8 AV	54.0	-9.2	1.24 V	195	42.60	2.20
5	*5580.00	98.3 PK			1.58 V	44	57.80	40.50
6	*5580.00	86.2 AV			1.58 V	44	45.70	40.50
7	11160.00	63.6 PK	74.0	-10.4	1.50 V	24	46.00	17.60
8	11160.00	49.8 AV	54.0	-4.2	1.50 V	24	32.20	17.60

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 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	114.9 PK			1.06 H	24	74.10	40.80
2	*5700.00	104.1 AV			1.06 H	24	63.30	40.80
3	#5725.00	68.9 PK	74.0	-5.1	1.06 H	26	66.30	2.60
4	#5725.00	53.0 AV	54.0	-1.0	1.06 H	26	50.40	2.60
5	11400.00	62.6 PK	74.0	-11.4	1.00 H	262	46.10	16.50
6	11400.00	49.0 AV	54.0	-5.0	1.00 H	262	32.50	16.50
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	*5700.00	100.0 PK			1.00 V	170	59.20	40.80
2	*5700.00	89.6 AV			1.00 V	170	48.80	40.80
3	#5725.00	57.7 PK	74.0	-16.3	1.00 V	170	55.10	2.60
4	#5725.00	44.6 AV	54.0	-9.4	1.00 V	170	42.00	2.60
5	11400.00	62.0 PK	74.0	-12.0	1.00 V	100	45.50	16.50
6	11400.00	48.5 AV	54.0	-5.5	1.00 V	100	32.00	16.50

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.0 PK	74.0	-16.0	1.02 H	65	56.00	2.00
2	5150.00	44.6 AV	54.0	-9.4	1.02 H	65	42.60	2.00
3	*5260.00	99.5 PK			1.05 H	34	59.40	40.10
4	*5260.00	88.9 AV			1.05 H	34	48.80	40.10
5	5350.00	58.0 PK	74.0	-16.0	1.00 H	360	56.00	2.00
6	5350.00	44.2 AV	54.0	-9.8	1.00 H	360	42.20	2.00
7	#10520.00	61.6 PK	74.0	-12.4	1.01 H	48	45.70	15.90
8	#10520.00	47.5 AV	54.0	-6.5	1.01 H	48	31.60	15.90
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	5150.00	61.0 PK	74.0	-13.0	1.00 V	159	59.00	2.00
2	5150.00	48.2 AV	54.0	-5.8	1.00 V	159	46.20	2.00
3	*5260.00	121.2 PK			1.00 V	220	81.10	40.10
4	*5260.00	111.2 AV			1.00 V	220	71.10	40.10
5	5350.00	62.4 PK	74.0	-11.6	1.31 V	158	60.40	2.00
6	5350.00	48.8 AV	54.0	-5.2	1.31 V	158	46.80	2.00
7	#10520.00	61.9 PK	74.0	-12.1	1.05 V	32	46.00	15.90
8	#10520.00	49.1 AV	54.0	-4.9	1.05 V	32	33.20	15.90

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 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	5150.00	57.5 PK	74.0	-16.5	1.05 H	34	55.50	2.00
2	5150.00	44.6 AV	54.0	-9.4	1.05 H	34	42.60	2.00
3	*5300.00	102.1 PK			1.05 H	221	62.00	40.10
4	*5300.00	91.5 AV			1.05 H	221	51.40	40.10
5	5350.00	57.9 PK	74.0	-16.1	1.02 H	352	55.90	2.00
6	5350.00	44.6 AV	54.0	-9.4	1.02 H	352	42.60	2.00
7	10600.00	62.4 PK	74.0	-11.6	1.52 H	47	45.80	16.60
8	10600.00	48.8 AV	54.0	-5.2	1.52 H	47	32.20	16.60
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	5150.00	60.7 PK	74.0	-13.3	1.02 V	64	58.70	2.00
2	5150.00	47.5 AV	54.0	-6.5	1.02 V	64	45.50	2.00
3	*5300.00	123.7 PK			1.02 V	351	83.60	40.10
4	*5300.00	112.8 AV			1.02 V	351	72.70	40.10
5	5350.00	65.8 PK	74.0	-8.2	1.51 V	35	63.80	2.00
6	5350.00	50.4 AV	54.0	-3.6	1.51 V	35	48.40	2.00
7	10600.00	63.1 PK	74.0	-10.9	1.45 V	153	46.50	16.60
8	10600.00	49.8 AV	54.0	-4.2	1.45 V	153	33.20	16.60

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.

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	101.8 PK			1.16 H	227	61.60	40.20
2	*5320.00	91.3 AV			1.16 H	227	51.10	40.20
3	5350.00	57.6 PK	74.0	-16.4	1.58 H	360	55.60	2.00
4	5350.00	44.6 AV	54.0	-9.4	1.58 H	360	42.60	2.00
5	10640.00	62.0 PK	74.0	-12.0	1.05 H	44	45.20	16.80
6	10640.00	49.0 AV	54.0	-5.0	1.05 H	44	32.20	16.80
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	122.6 PK			1.00 V	211	82.40	40.20
2	*5320.00	112.2 AV			1.00 V	211	72.00	40.20
3	5350.00	69.0 PK	74.0	-5.0	1.00 V	221	67.00	2.00
4	5350.00	53.0 AV	54.0	-1.0	1.00 V	221	51.00	2.00
5	10640.00	63.6 PK	74.0	-10.4	1.05 V	96	46.80	16.80
6	10640.00	50.3 AV	54.0	-3.7	1.05 V	96	33.50	16.80

REMARKS:

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

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	5460.00	56.7 PK	74.0	-17.3	1.04 H	88	54.60	2.10
2	5460.00	44.3 AV	54.0	-9.7	1.04 H	88	42.20	2.10
3	#5470.00	60.8 PK	74.0	-13.2	1.06 H	34	58.60	2.20
4	#5470.00	45.7 AV	54.0	-8.3	1.06 H	34	43.50	2.20
5	*5500.00	101.8 PK			1.20 H	232	61.50	40.30
6	*5500.00	91.2 AV			1.20 H	232	50.90	40.30
7	11000.00	63.9 PK	74.0	-10.1	1.02 H	325	45.60	18.30
8	11000.00	49.5 AV	54.0	-4.5	1.02 H	325	31.20	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.8 PK	74.0	-13.2	1.05 V	166	58.70	2.10
2	5460.00	47.9 AV	54.0	-6.1	1.05 V	166	45.80	2.10
3	#5470.00	69.8 PK	74.0	-4.2	1.02 V	178	67.60	2.20
4	#5470.00	52.5 AV	54.0	-1.5	1.02 V	178	50.30	2.20
5	*5500.00	121.8 PK			1.02 V	156	81.50	40.30
6	*5500.00	111.4 AV			1.02 V	156	71.10	40.30
7	11000.00	64.3 PK	74.0	-9.7	1.02 V	6	46.00	18.30
8	11000.00	50.9 AV	54.0	-3.1	1.02 V	6	32.60	18.30

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 116	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	5460.00	58.8 PK	74.0	-15.2	1.04 H	84	56.70	2.10
2	5460.00	44.6 AV	54.0	-9.4	1.04 H	84	42.50	2.10
3	#5470.00	60.8 PK	74.0	-13.2	1.21 H	56	58.60	2.20
4	#5470.00	45.7 AV	54.0	-8.3	1.21 H	56	43.50	2.20
5	*5580.00	103.4 PK			1.02 H	63	62.90	40.50
6	*5580.00	92.5 AV			1.02 H	63	52.00	40.50
7	11160.00	63.6 PK	74.0	-10.4	1.25 H	224	46.00	17.60
8	11160.00	50.1 AV	54.0	-3.9	1.25 H	224	32.50	17.60
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	5460.00	64.2 PK	74.0	-9.8	1.02 V	44	62.10	2.10
2	5460.00	47.2 AV	54.0	-6.8	1.02 V	44	45.10	2.10
3	#5470.00	67.9 PK	74.0	-6.1	1.02 V	65	65.70	2.20
4	#5470.00	48.5 AV	54.0	-5.5	1.02 V	65	46.30	2.20
5	*5580.00	124.0 PK			1.02 V	36	83.50	40.50
6	*5580.00	112.5 AV			1.02 V	36	72.00	40.50
7	11160.00	63.3 PK	74.0	-10.7	1.54 V	88	45.70	17.60
8	11160.00	49.8 AV	54.0	-4.2	1.54 V	88	32.20	17.60

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 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	#5280.00	58.0 PK	74.0	-16.0	1.00 H	63	56.00	2.00
2	#5280.00	44.4 AV	54.0	-9.6	1.00 H	63	42.40	2.00
3	*5700.00	100.5 PK			1.00 H	257	59.70	40.80
4	*5700.00	90.3 AV			1.00 H	257	49.50	40.80
5	#5725.00	58.6 PK	74.0	-15.4	1.02 H	64	56.00	2.60
6	#5725.00	45.2 AV	54.0	-8.8	1.02 H	64	42.60	2.60
7	11400.00	61.4 PK	74.0	-12.6	1.03 H	62	44.90	16.50
8	11400.00	47.7 AV	54.0	-6.3	1.03 H	62	31.20	16.50
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	#5280.00	61.0 PK	74.0	-13.0	1.00 V	215	59.00	2.00
2	#5280.00	51.0 AV	54.0	-3.0	1.00 V	215	49.00	2.00
3	*5700.00	118.0 PK			1.43 V	207	77.20	40.80
4	*5700.00	107.3 AV			1.43 V	207	66.50	40.80
5	#5725.00	68.9 PK	74.0	-5.1	1.46 V	220	66.30	2.60
6	#5725.00	52.6 AV	54.0	-1.4	1.46 V	220	50.00	2.60
7	11400.00	61.8 PK	74.0	-12.2	1.54 V	152	45.30	16.50
8	11400.00	49.0 AV	54.0	-5.0	1.54 V	152	32.50	16.50

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.

802.11n (40MHz)

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	5150.00	57.6 PK	74.0	-16.4	1.05 H	84	55.60	2.00
2	5150.00	43.6 AV	54.0	-10.4	1.05 H	84	41.60	2.00
3	*5270.00	98.0 PK			1.02 H	63	57.90	40.10
4	*5270.00	86.7 AV			1.02 H	63	46.60	40.10
5	5350.00	57.8 PK	74.0	-16.2	1.02 H	64	55.80	2.00
6	5350.00	44.6 AV	54.0	-9.4	1.02 H	64	42.60	2.00
7	#10540.00	62.9 PK	74.0	-11.1	1.51 H	96	46.80	16.10
8	#10540.00	49.3 AV	54.0	-4.7	1.51 H	96	33.20	16.10
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	5150.00	59.5 PK	74.0	-14.5	1.02 V	63	57.50	2.00
2	5150.00	47.1 AV	54.0	-6.9	1.02 V	63	45.10	2.00
3	*5270.00	118.5 PK			1.00 V	252	78.40	40.10
4	*5270.00	110.6 AV			1.00 V	252	70.50	40.10
5	5350.00	66.2 PK	74.0	-7.8	1.02 V	64	64.20	2.00
6	5350.00	52.1 AV	54.0	-1.9	1.02 V	64	50.10	2.00
7	#10540.00	63.6 PK	74.0	-10.4	1.05 V	84	47.50	16.10
8	#10540.00	49.7 AV	54.0	-4.3	1.05 V	84	33.60	16.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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	92.8 PK			1.00 H	121	52.70	40.10
2	*5310.00	82.3 AV			1.00 H	121	42.20	40.10
3	5350.00	57.9 PK	74.0	-16.1	1.03 H	179	55.90	2.00
4	5350.00	44.9 AV	54.0	-9.1	1.03 H	179	42.90	2.00
5	10620.00	63.1 PK	74.0	-10.9	1.00 H	231	46.50	16.60
6	10620.00	49.7 AV	54.0	-4.3	1.00 H	231	33.10	16.60
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	*5310.00	113.8 PK			1.02 V	160	73.70	40.10
2	*5310.00	103.3 AV			1.02 V	160	63.20	40.10
3	5350.00	68.5 PK	74.0	-5.5	1.00 V	170	66.50	2.00
4	5350.00	52.7 AV	54.0	-1.3	1.00 V	170	50.70	2.00
5	10620.00	62.8 PK	74.0	-11.2	1.00 V	102	46.20	16.60
6	10620.00	49.3 AV	54.0	-4.7	1.00 V	102	32.70	16.60

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.

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	5460.00	58.1 PK	74.0	-15.9	1.00 H	211	56.00	2.10
2	5460.00	44.5 AV	54.0	-9.5	1.00 H	211	42.40	2.10
3	#5470.00	58.2 PK	74.0	-15.8	1.00 H	102	56.00	2.20
4	#5470.00	44.7 AV	54.0	-9.3	1.00 H	102	42.50	2.20
5	*5510.00	95.7 PK			1.00 H	162	55.40	40.30
6	*5510.00	86.1 AV			1.00 H	162	45.80	40.30
7	11020.00	61.6 PK	74.0	-12.4	1.00 H	56	43.50	18.10
8	11020.00	49.9 AV	54.0	-4.1	1.00 H	56	31.80	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.5 PK	74.0	-10.5	1.01 V	226	61.40	2.10
2	5460.00	48.6 AV	54.0	-5.4	1.01 V	226	46.50	2.10
3	#5470.00	69.5 PK	74.0	-4.5	1.36 V	144	67.30	2.20
4	#5470.00	52.9 AV	54.0	-1.1	1.36 V	144	50.70	2.20
5	*5510.00	116.2 PK			1.38 V	159	75.90	40.30
6	*5510.00	105.1 AV			1.38 V	159	64.80	40.30
7	11020.00	61.0 PK	74.0	-13.0	1.00 V	321	42.90	18.10
8	11020.00	49.2 AV	54.0	-4.8	1.00 V	321	31.10	18.10

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 110	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	5460.00	57.8 PK	74.0	-16.2	1.05 H	89	55.70	2.10
2	5460.00	44.7 AV	54.0	-9.3	1.05 H	89	42.60	2.10
3	#5470.00	59.0 PK	74.0	-15.0	1.04 H	51	56.80	2.20
4	#5470.00	45.1 AV	54.0	-8.9	1.04 H	51	42.90	2.20
5	*5550.00	99.5 PK			1.02 H	63	59.10	40.40
6	*5550.00	88.9 AV			1.02 H	63	48.50	40.40
7	11100.00	62.4 PK	74.0	-11.6	1.07 H	85	44.60	17.80
8	11100.00	48.3 AV	54.0	-5.7	1.07 H	85	30.50	17.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.3 PK	74.0	-9.7	1.02 V	35	62.20	2.10
2	5460.00	50.1 AV	54.0	-3.9	1.02 V	35	48.00	2.10
3	#5470.00	67.9 PK	74.0	-6.1	1.02 V	64	65.70	2.20
4	#5470.00	51.3 AV	54.0	-2.7	1.02 V	64	49.10	2.20
5	*5550.00	118.8 PK			1.00 V	58	78.40	40.40
6	*5550.00	108.9 AV			1.00 V	58	68.50	40.40
7	11100.00	62.7 PK	74.0	-11.3	1.02 V	96	44.90	17.80
8	11100.00	49.3 AV	54.0	-4.7	1.02 V	96	31.50	17.80

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	#5280.00	57.9 PK	74.0	-16.1	1.00 H	66	55.90	2.00
2	#5280.00	44.3 AV	54.0	-9.7	1.00 H	66	42.30	2.00
3	*5670.00	98.7 PK			1.06 H	161	58.00	40.70
4	*5670.00	88.5 AV			1.06 H	161	47.80	40.70
5	#5725.00	56.4 PK	74.0	-17.6	1.00 H	166	53.80	2.60
6	#5725.00	43.2 AV	54.0	-10.8	1.00 H	166	40.60	2.60
7	11340.00	62.6 PK	74.0	-11.4	1.00 H	233	45.80	16.80
8	11340.00	48.9 AV	54.0	-5.1	1.00 H	233	32.10	16.80
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	#5280.00	61.1 PK	74.0	-12.9	1.00 V	216	59.10	2.00
2	#5280.00	49.6 AV	54.0	-4.4	1.00 V	216	47.60	2.00
3	*5670.00	116.6 PK			1.56 V	207	75.90	40.70
4	*5670.00	106.2 AV			1.56 V	207	65.50	40.70
5	#5725.00	68.3 PK	74.0	-5.7	1.56 V	223	65.70	2.60
6	#5725.00	52.9 AV	54.0	-1.1	1.56 V	223	50.30	2.60
7	11340.00	62.5 PK	74.0	-11.5	1.00 V	102	45.70	16.80
8	11340.00	48.8 AV	54.0	-5.2	1.00 V	102	32.00	16.80

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.

802.11ac (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	1.02 H	84	55.60	2.00
2	5150.00	44.5 AV	54.0	-9.5	1.02 H	84	42.50	2.00
3	*5260.00	61.0 PK			1.02 H	34	59.00	2.00
4	*5260.00	50.6 AV			1.02 H	34	48.60	2.00
5	5350.00	57.7 PK	74.0	-16.3	1.09 H	95	55.70	2.00
6	5350.00	44.4 AV	54.0	-9.6	1.09 H	95	42.40	2.00
7	#10520.00	61.7 PK	74.0	-12.3	1.04 H	154	45.80	15.90
8	#10520.00	47.6 AV	54.0	-6.4	1.04 H	154	31.70	15.90
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	5150.00	60.6 PK	74.0	-13.4	1.02 V	64	58.60	2.00
2	5150.00	47.8 AV	54.0	-6.2	1.02 V	64	45.80	2.00
3	*5260.00	120.8 PK			1.02 V	35	80.70	40.10
4	*5260.00	112.0 AV			1.02 V	35	71.90	40.10
5	5350.00	62.0 PK	74.0	-12.0	1.05 V	27	60.00	2.00
6	5350.00	48.1 AV	54.0	-5.9	1.05 V	27	46.10	2.00
7	#10520.00	61.7 PK	74.0	-12.3	1.11 V	18	45.80	15.90
8	#10520.00	48.6 AV	54.0	-5.4	1.11 V	18	32.70	15.90

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 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	5150.00	56.9 PK	74.0	-17.1	1.02 H	75	54.90	2.00
2	5150.00	44.6 AV	54.0	-9.4	1.02 H	75	42.60	2.00
3	*5300.00	101.9 PK			1.02 H	63	61.80	40.10
4	*5300.00	91.2 AV			1.02 H	63	51.10	40.10
5	5350.00	57.7 PK	74.0	-16.3	1.65 H	49	55.70	2.00
6	5350.00	44.7 AV	54.0	-9.3	1.65 H	49	42.70	2.00
7	10600.00	61.9 PK	74.0	-12.1	1.04 H	177	45.30	16.60
8	10600.00	48.7 AV	54.0	-5.3	1.04 H	177	32.10	16.60
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	5150.00	60.5 PK	74.0	-13.5	1.02 V	34	58.50	2.00
2	5150.00	47.9 AV	54.0	-6.1	1.02 V	34	45.90	2.00
3	*5300.00	123.5 PK			1.02 V	14	83.40	40.10
4	*5300.00	112.6 AV			1.02 V	14	72.50	40.10
5	5350.00	65.4 PK	74.0	-8.6	1.25 V	95	63.40	2.00
6	5350.00	50.1 AV	54.0	-3.9	1.25 V	95	48.10	2.00
7	10600.00	62.3 PK	74.0	-11.7	1.48 V	87	45.70	16.60
8	10600.00	49.7 AV	54.0	-4.3	1.48 V	87	33.10	16.60

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.

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	99.5 PK			1.00 H	193	59.30	40.20
2	*5320.00	89.2 AV			1.00 H	193	49.00	40.20
3	5350.00	61.9 PK	74.0	-12.1	1.05 H	24	59.90	2.00
4	5350.00	44.6 AV	54.0	-9.4	1.05 H	24	42.60	2.00
5	10640.00	62.3 PK	74.0	-11.7	1.54 H	85	45.50	16.80
6	10640.00	49.3 AV	54.0	-4.7	1.54 H	85	32.50	16.80
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	120.6 PK			1.00 V	211	80.40	40.20
2	*5320.00	110.3 AV			1.00 V	211	70.10	40.20
3	5350.00	69.3 PK	74.0	-4.7	1.00 V	216	67.30	2.00
4	5350.00	52.5 AV	54.0	-1.5	1.00 V	216	50.50	2.00
5	10640.00	62.6 PK	74.0	-11.4	1.02 V	63	45.80	16.80
6	10640.00	49.9 AV	54.0	-4.1	1.02 V	63	33.10	16.80

REMARKS:

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

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	5460.00	57.3 PK	74.0	-16.7	1.20 H	335	55.20	2.10
2	5460.00	44.3 AV	54.0	-9.7	1.20 H	335	42.20	2.10
3	#5470.00	60.1 PK	74.0	-13.9	1.02 H	354	57.90	2.20
4	#5470.00	45.4 AV	54.0	-8.6	1.02 H	354	43.20	2.20
5	*5500.00	101.5 PK			1.04 H	84	61.20	40.30
6	*5500.00	91.0 AV			1.04 H	84	50.70	40.30
7	11000.00	63.1 PK	74.0	-10.9	1.51 H	115	44.80	18.30
8	11000.00	50.5 AV	54.0	-3.5	1.51 H	115	32.20	18.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.7 PK	74.0	-13.3	1.19 V	223	58.60	2.10
2	5460.00	48.3 AV	54.0	-5.7	1.19 V	223	46.20	2.10
3	#5470.00	69.5 PK	74.0	-4.5	1.19 V	223	67.30	2.20
4	#5470.00	52.7 AV	54.0	-1.3	1.19 V	223	50.50	2.20
5	*5500.00	121.5 PK			1.10 V	52	81.20	40.30
6	*5500.00	111.3 AV			1.10 V	52	71.00	40.30
7	11000.00	64.5 PK	74.0	-9.5	1.02 V	34	46.20	18.30
8	11000.00	50.9 AV	54.0	-3.1	1.02 V	34	32.60	18.30

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 116	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	5460.00	58.6 PK	74.0	-15.4	1.54 H	119	56.50	2.10
2	5460.00	44.9 AV	54.0	-9.1	1.54 H	119	42.80	2.10
3	#5470.00	60.4 PK	74.0	-13.6	1.24 H	74	58.20	2.20
4	#5470.00	45.3 AV	54.0	-8.7	1.24 H	74	43.10	2.20
5	*5580.00	103.0 PK			1.67 H	158	62.50	40.50
6	*5580.00	92.2 AV			1.67 H	158	51.70	40.50
7	11160.00	62.6 PK	74.0	-11.4	1.24 H	123	45.00	17.60
8	11160.00	49.8 AV	54.0	-4.2	1.24 H	123	32.20	17.60
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	5460.00	63.7 PK	74.0	-10.3	1.02 V	34	61.60	2.10
2	5460.00	46.6 AV	54.0	-7.4	1.02 V	34	44.50	2.10
3	#5470.00	67.4 PK	74.0	-6.6	1.05 V	87	65.20	2.20
4	#5470.00	48.2 AV	54.0	-5.8	1.05 V	87	46.00	2.20
5	*5580.00	123.7 PK			1.24 V	47	83.20	40.50
6	*5580.00	112.4 AV			1.24 V	47	71.90	40.50
7	11160.00	62.8 PK	74.0	-11.2	1.02 V	334	45.20	17.60
8	11160.00	49.7 AV	54.0	-4.3	1.02 V	334	32.10	17.60

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 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	#5280.00	58.0 PK	74.0	-16.0	1.02 H	65	56.00	2.00
2	#5280.00	44.6 AV	54.0	-9.4	1.02 H	65	42.60	2.00
3	*5700.00	100.3 PK			1.02 H	22	59.50	40.80
4	*5700.00	90.1 AV			1.02 H	22	49.30	40.80
5	#5725.00	58.4 PK	74.0	-15.6	1.02 H	36	55.80	2.60
6	#5725.00	45.2 AV	54.0	-8.8	1.02 H	36	42.60	2.60
7	11400.00	61.8 PK	74.0	-12.2	1.95 H	54	45.30	16.50
8	11400.00	47.7 AV	54.0	-6.3	1.95 H	54	31.20	16.50
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	#5280.00	60.7 PK	74.0	-13.3	1.02 V	63	58.70	2.00
2	#5280.00	50.7 AV	54.0	-3.3	1.02 V	63	48.70	2.00
3	*5700.00	117.8 PK			1.00 V	15	77.00	40.80
4	*5700.00	107.0 AV			1.00 V	15	66.20	40.80
5	#5725.00	68.0 PK	74.0	-6.0	1.40 V	208	65.40	2.60
6	#5725.00	53.0 AV	54.0	-1.0	1.40 V	208	50.40	2.60
7	11400.00	63.4 PK	74.0	-10.6	1.04 V	84	46.90	16.50
8	11400.00	49.7 AV	54.0	-4.3	1.04 V	84	33.20	16.50

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.

802.11ac (40MHz)

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	5150.00	57.1 PK	74.0	-16.9	1.02 H	34	55.10	2.00
2	5150.00	43.1 AV	54.0	-10.9	1.02 H	34	41.10	2.00
3	*5270.00	97.6 PK			1.08 H	84	57.50	40.10
4	*5270.00	86.2 AV			1.08 H	84	46.10	40.10
5	5350.00	58.5 PK	74.0	-15.5	1.53 H	95	56.50	2.00
6	5350.00	44.1 AV	54.0	-9.9	1.53 H	95	42.10	2.00
7	#10540.00	61.7 PK	74.0	-12.3	1.00 H	88	45.60	16.10
8	#10540.00	48.7 AV	54.0	-5.3	1.00 H	88	32.60	16.10
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	5150.00	59.1 PK	74.0	-14.9	1.05 V	96	57.10	2.00
2	5150.00	46.7 AV	54.0	-7.3	1.05 V	96	44.70	2.00
3	*5270.00	118.2 PK			1.56 V	96	78.10	40.10
4	*5270.00	110.3 AV			1.56 V	96	70.20	40.10
5	5350.00	65.8 PK	74.0	-8.2	1.00 V	84	63.80	2.00
6	5350.00	51.7 AV	54.0	-2.3	1.00 V	84	49.70	2.00
7	#10540.00	63.2 PK	74.0	-10.8	1.02 V	48	47.10	16.10
8	#10540.00	49.7 AV	54.0	-4.3	1.02 V	48	33.60	16.10

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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	92.9 PK			1.02 H	63	52.80	40.10
2	*5310.00	82.4 AV			1.02 H	63	42.30	40.10
3	5350.00	58.6 PK	74.0	-15.4	1.52 H	62	56.60	2.00
4	5350.00	44.5 AV	54.0	-9.5	1.52 H	62	42.50	2.00
5	10620.00	61.1 PK	74.0	-12.9	1.55 H	117	44.50	16.60
6	10620.00	49.1 AV	54.0	-4.9	1.55 H	117	32.50	16.60
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	*5310.00	113.8 PK			1.00 V	178	73.70	40.10
2	*5310.00	103.3 AV			1.00 V	178	63.20	40.10
3	5350.00	67.6 PK	74.0	-6.4	1.00 V	167	65.60	2.00
4	5350.00	52.9 AV	54.0	-1.1	1.00 V	167	50.90	2.00
5	10620.00	63.5 PK	74.0	-10.5	1.05 V	64	46.90	16.60
6	10620.00	49.8 AV	54.0	-4.2	1.05 V	64	33.20	16.60

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.

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	5460.00	58.0 PK	74.0	-16.0	1.02 H	54	55.90	2.10
2	5460.00	44.7 AV	54.0	-9.3	1.02 H	54	42.60	2.10
3	#5470.00	58.8 PK	74.0	-15.2	1.02 H	64	56.60	2.20
4	#5470.00	44.5 AV	54.0	-9.5	1.02 H	64	42.30	2.20
5	*5510.00	95.6 PK			1.08 H	88	55.30	40.30
6	*5510.00	85.9 AV			1.08 H	88	45.60	40.30
7	11020.00	63.4 PK	74.0	-10.6	1.02 H	85	45.30	18.10
8	11020.00	50.6 AV	54.0	-3.4	1.02 H	85	32.50	18.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.4 PK	74.0	-10.6	1.38 V	164	61.30	2.10
2	5460.00	48.6 AV	54.0	-5.4	1.38 V	164	46.50	2.10
3	#5470.00	70.8 PK	74.0	-3.2	1.38 V	164	68.60	2.20
4	#5470.00	52.9 AV	54.0	-1.1	1.38 V	164	50.70	2.20
5	*5510.00	116.0 PK			1.02 V	84	75.70	40.30
6	*5510.00	105.0 AV			1.02 V	84	64.70	40.30
7	11020.00	63.8 PK	74.0	-10.2	1.02 V	34	45.70	18.10
8	11020.00	50.3 AV	54.0	-3.7	1.02 V	34	32.20	18.10

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 110	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	5460.00	57.2 PK	74.0	-16.8	1.52 H	48	55.10	2.10
2	5460.00	44.6 AV	54.0	-9.4	1.52 H	48	42.50	2.10
3	#5470.00	58.4 PK	74.0	-15.6	1.15 H	85	56.20	2.20
4	#5470.00	44.8 AV	54.0	-9.2	1.15 H	85	42.60	2.20
5	*5550.00	99.0 PK			1.05 H	24	58.60	40.40
6	*5550.00	88.5 AV			1.05 H	24	48.10	40.40
7	11100.00	63.0 PK	74.0	-11.0	1.05 H	325	45.20	17.80
8	11100.00	48.2 AV	54.0	-5.8	1.05 H	325	30.40	17.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.9 PK	74.0	-10.1	1.02 V	34	61.80	2.10
2	5460.00	49.6 AV	54.0	-4.4	1.02 V	34	47.50	2.10
3	#5470.00	67.3 PK	74.0	-6.7	1.00 V	24	65.10	2.20
4	#5470.00	50.7 AV	54.0	-3.3	1.00 V	24	48.50	2.20
5	*5550.00	118.4 PK			1.06 V	95	78.00	40.40
6	*5550.00	108.5 AV			1.06 V	95	68.10	40.40
7	11100.00	62.9 PK	74.0	-11.1	1.05 V	48	45.10	17.80
8	11100.00	50.3 AV	54.0	-3.7	1.05 V	48	32.50	17.80

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	#5280.00	58.1 PK	74.0	-15.9	1.00 H	76	56.10	2.00
2	#5280.00	44.4 AV	54.0	-9.6	1.00 H	76	42.40	2.00
3	*5670.00	99.6 PK			1.00 H	261	58.90	40.70
4	*5670.00	89.7 AV			1.00 H	261	49.00	40.70
5	#5725.00	56.8 PK	74.0	-17.2	1.00 H	168	54.20	2.60
6	#5725.00	43.7 AV	54.0	-10.3	1.00 H	168	41.10	2.60
7	11340.00	62.6 PK	74.0	-11.4	1.00 H	159	45.80	16.80
8	11340.00	49.0 AV	54.0	-5.0	1.00 H	159	32.20	16.80
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	#5280.00	62.9 PK	74.0	-11.1	1.23 V	215	60.90	2.00
2	#5280.00	49.8 AV	54.0	-4.2	1.23 V	215	47.80	2.00
3	*5670.00	115.7 PK			1.03 V	178	75.00	40.70
4	*5670.00	105.7 AV			1.03 V	178	65.00	40.70
5	#5725.00	67.6 PK	74.0	-6.4	1.59 V	220	65.00	2.60
6	#5725.00	53.0 AV	54.0	-1.0	1.59 V	220	50.40	2.60
7	11340.00	62.3 PK	74.0	-11.7	1.00 V	143	45.50	16.80
8	11340.00	48.6 AV	54.0	-5.4	1.00 V	143	31.80	16.80

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.

802.11ac (80MHz)

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	5150.00	55.8 PK	74.0	-18.2	1.00 H	110	53.80	2.00
2	5150.00	43.3 AV	54.0	-10.7	1.00 H	110	41.30	2.00
3	*5290.00	86.7 PK			1.00 H	113	46.60	40.10
4	*5290.00	76.2 AV			1.00 H	113	36.10	40.10
5	5350.00	57.6 PK	74.0	-16.4	1.00 H	186	55.60	2.00
6	5350.00	44.8 AV	54.0	-9.2	1.00 H	186	42.80	2.00
7	#10580.00	63.7 PK	74.0	-10.3	1.00 H	179	47.40	16.30
8	#10580.00	49.4 AV	54.0	-4.6	1.00 H	179	33.10	16.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.6 PK	74.0	-17.4	1.00 V	298	54.60	2.00
2	5150.00	43.8 AV	54.0	-10.2	1.00 V	298	41.80	2.00
3	*5290.00	106.8 PK			1.00 V	159	66.70	40.10
4	*5290.00	96.6 AV			1.00 V	159	56.50	40.10
5	5350.00	69.4 PK	74.0	-4.6	1.00 V	148	67.40	2.00
6	5350.00	52.8 AV	54.0	-1.2	1.00 V	148	50.80	2.00
7	#10580.00	63.8 PK	74.0	-10.2	1.00 V	56	47.50	16.30
8	#10580.00	49.8 AV	54.0	-4.2	1.00 V	56	33.50	16.30

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 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	5460.00	56.9 PK	74.0	-17.1	1.00 H	53	54.80	2.10
2	5460.00	44.9 AV	54.0	-9.1	1.00 H	53	42.80	2.10
3	#5470.00	61.1 PK	74.0	-12.9	1.00 H	39	58.90	2.20
4	#5470.00	46.0 AV	54.0	-8.0	1.00 H	39	43.80	2.20
5	*5530.00	87.6 PK			1.00 H	258	47.20	40.40
6	*5530.00	77.3 AV			1.00 H	258	36.90	40.40
7	11060.00	64.5 PK	74.0	-9.5	1.00 H	311	46.50	18.00
8	11060.00	49.8 AV	54.0	-4.2	1.00 H	311	31.80	18.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.8 PK	74.0	-13.2	1.00 V	141	58.70	2.10
2	5460.00	48.5 AV	54.0	-5.5	1.00 V	141	46.40	2.10
3	#5470.00	72.9 PK	74.0	-1.1	1.00 V	147	70.70	2.20
4	#5470.00	53.0 AV	54.0	-1.0	1.00 V	147	50.80	2.20
5	*5530.00	105.9 PK			1.09 V	141	65.50	40.40
6	*5530.00	95.7 AV			1.09 V	141	55.30	40.40
7	11060.00	64.8 PK	74.0	-9.2	1.00 V	126	46.80	18.00
8	11060.00	50.1 AV	54.0	-3.9	1.00 V	126	32.10	18.00

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.

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	152.80	29.7 QP	43.5	-13.8	1.24 H	242	43.40	-13.70
2	270.96	43.4 QP	46.0	-2.6	1.00 H	121	56.80	-13.40
3	323.80	37.6 QP	46.0	-8.4	1.00 H	237	49.40	-11.80
4	483.91	41.5 QP	46.0	-4.5	1.49 H	218	50.40	-8.90
5	525.88	42.7 QP	46.0	-3.3	1.24 H	144	50.90	-8.20
6	900.51	44.6 QP	46.0	-1.4	1.24 H	208	46.00	-1.40
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	31.55	33.3 QP	40.0	-6.7	1.24 V	12	49.30	-16.00
2	98.40	32.7 QP	43.5	-10.8	1.00 V	275	51.70	-19.00
3	148.14	31.4 QP	43.5	-12.1	1.24 V	12	45.50	-14.10
4	270.70	41.8 QP	46.0	-4.2	1.53 V	172	55.20	-13.40
5	525.88	39.8 QP	46.0	-6.2	1.00 V	104	48.00	-8.20
6	900.51	44.0 QP	46.0	-2.0	1.24 V	180	45.40	-1.40

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 OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100612	Sep. 30, 2014	Sep. 29, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 27, 2013	Dec. 26, 2014
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 13, 2014	Feb. 12, 2015
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

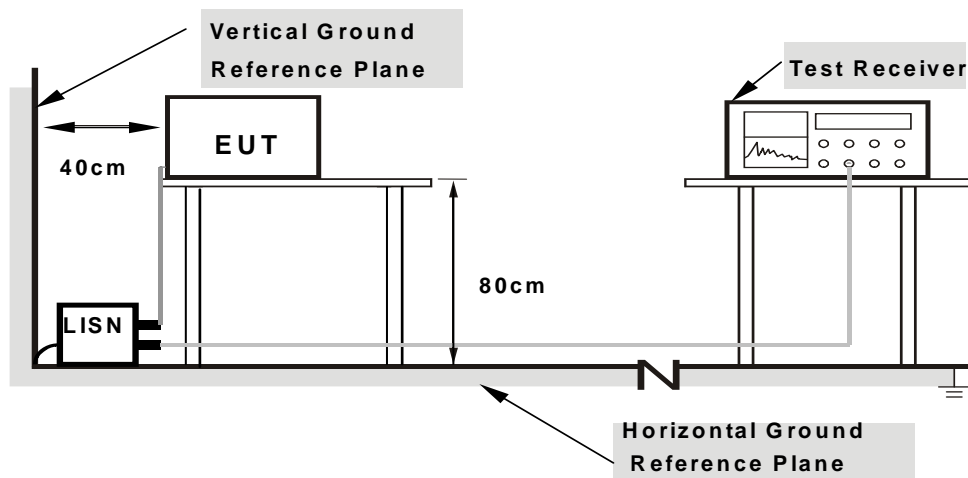
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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) were not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

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

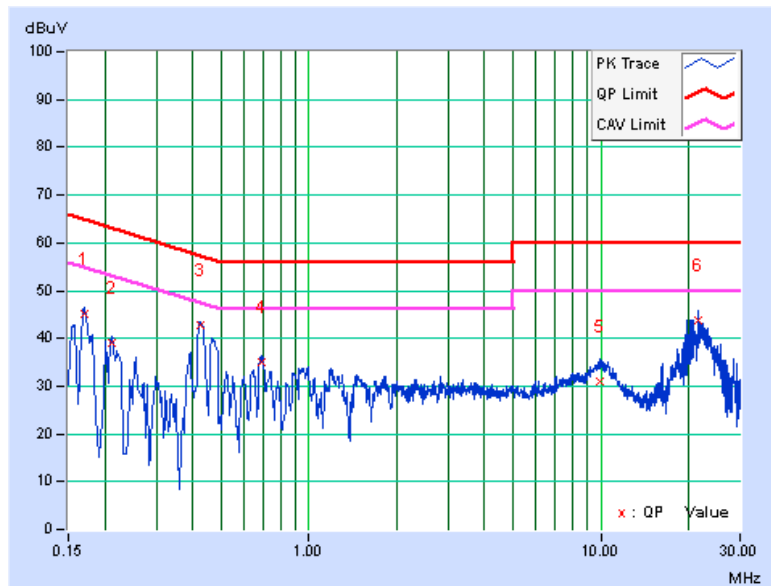
CONDUCTED WORST-CASE DATA : 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16967	0.08	45.17	36.46	45.25	36.54	64.98	54.98	-19.73	-18.44
2	0.21226	0.07	39.05	31.35	39.12	31.42	63.12	53.12	-24.00	-21.70
3	0.42334	0.08	42.55	36.40	42.63	36.48	57.38	47.38	-14.75	-10.90
4	0.68564	0.09	34.78	27.73	34.87	27.82	56.00	46.00	-21.13	-18.18
5	9.97974	0.51	30.48	25.07	30.99	25.58	60.00	50.00	-29.01	-24.42
6	21.66282	1.09	42.82	40.94	43.91	42.03	60.00	50.00	-16.09	-7.97

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

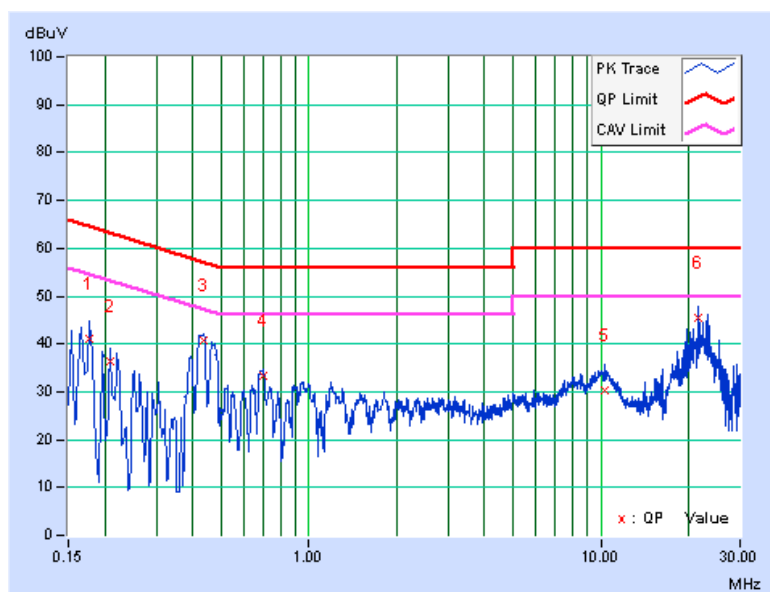


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17744	0.05	41.04	28.81	41.09	28.86	64.60	54.60	-23.51	-25.74
2	0.20865	0.05	36.36	24.30	36.41	24.35	63.26	53.26	-26.85	-28.91
3	0.43543	0.07	40.63	34.19	40.70	34.26	57.15	47.15	-16.45	-12.89
4	0.69349	0.08	33.31	25.81	33.39	25.89	56.00	46.00	-22.61	-20.11
5	10.26126	0.45	29.91	24.32	30.36	24.77	60.00	50.00	-29.64	-25.23
6	21.66282	0.95	44.57	43.22	45.52	44.17	60.00	50.00	-14.48	-5.83

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

FREQUENCY BAND	LIMIT
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

Per KDB 662911 D01 Multiple Transmitter Output v02r01 Method of conducted output power measurement on IEEE 802.11 devices,

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

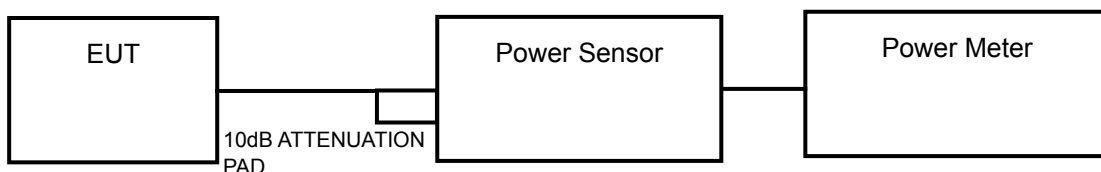
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

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

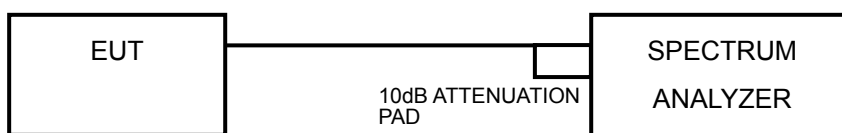
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)



For 802.11ac (80MHz)



4.3.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.3.4 TEST PROCEDURE

FOR AVERAGE POWER MEASUREMENT

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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 802.11ac (80MHz)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to “free run”.
- 3) Set RBW = 1 MHz.
- 4) Set VBW \geq 3 MHz
- 5) Number of points in sweep \geq 2 Span / RBW.
- 6) Sweep time \leq (number of points in sweep) * T
- 7) Detector = RMS.
- 8) Trace mode = max hold.
- 9) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

FOR 26dB 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 specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
52	5260	119.399	20.77	24	PASS
60	5300	113.763	20.56	24	PASS
64	5320	121.619	20.85	24	PASS
100	5500	112.720	20.52	24	PASS
116	5580	120.504	20.81	24	PASS
140	5700	102.802	20.12	24	PASS

NOTE:

1. $11\text{dBm} + 10\log(32.53) = 26.12\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(29.77) = 25.74\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(22.13) = 24.45\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(21.93) = 24.41\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(24.90) = 24.96\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(21.96) = 24.42\text{ dBm} > 24\text{dBm}$.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	14.10	13.70	15.20	82.259	19.15	24	PASS
60	5300	14.20	13.90	16.10	91.588	19.62	24	PASS
64	5320	14.00	13.80	15.90	88.012	19.45	24	PASS
100	5500	13.40	13.50	15.10	76.624	18.84	24	PASS
116	5580	13.50	13.60	15.20	78.409	18.94	24	PASS
140	5700	14.30	13.70	15.90	89.262	19.51	24	PASS

NOTE:

CHAIN 0

1. $11\text{dBm} + 10\log(23.18) = 24.65\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.17) = 24.65\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(23.34) = 24.68\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.17) = 24.65\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(22.89) = 24.60\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.18) = 24.65\text{ dBm} > 24\text{dBm}$.

CHAIN 1

1. $11\text{dBm} + 10\log(23.52) = 24.71\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.20) = 24.65\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(23.48) = 24.71\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.82) = 24.77\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(23.62) = 24.73\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.78) = 24.76\text{ dBm} > 24\text{dBm}$.

CHAIN 2

1. $11\text{dBm} + 10\log(22.97) = 24.61\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.04) = 24.62\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(23.07) = 24.63\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.02) = 24.62\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(23.21) = 24.66\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.34) = 24.68\text{ dBm} > 24\text{dBm}$.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	15.39	15.21	17.30	121.486	20.85	24	PASS
62	5310	13.03	12.93	14.71	69.305	18.41	24	PASS
102	5510	14.29	13.68	15.29	83.994	19.24	24	PASS
110	5550	15.53	15.03	17.19	119.929	20.79	24	PASS
134	5670	15.70	14.63	17.37	120.770	20.82	24	PASS

NOTE:

CHAIN 0

1. $11\text{dBm} + 10\log(45.61) = 27.59\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(47.83) = 27.80\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(46.34) = 27.66\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(46.50) = 27.67\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(46.11) = 27.64\text{ dBm} > 24\text{dBm}$.

CHAIN 1

1. $11\text{dBm} + 10\log(46.90) = 27.71\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(46.51) = 27.68\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(45.61) = 27.59\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(45.37) = 27.57\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(45.43) = 27.57\text{ dBm} > 24\text{dBm}$.

CHAIN 2

1. $11\text{dBm} + 10\log(44.47) = 27.48\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(47.17) = 27.74\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(47.26) = 27.74\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(45.58) = 27.59\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(45.21) = 27.55\text{ dBm} > 24\text{dBm}$.

802.11ac (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
52	5260	14.00	13.80	15.10	81.466	19.11	24	PASS
60	5300	14.10	13.70	16.00	88.957	19.49	24	PASS
64	5320	14.20	13.90	16.00	90.661	19.57	24	PASS
100	5500	13.30	13.50	15.20	76.880	18.86	24	PASS
116	5580	13.40	13.60	15.10	77.146	18.87	24	PASS
140	5700	14.20	13.60	15.80	87.231	19.41	24	PASS

NOTE:

CHAIN 0

1. $11\text{dBm} + 10\log(23.20) = 24.65\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.48) = 24.71\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(23.48) = 24.71\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.41) = 24.69\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(23.02) = 24.62\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.39) = 24.69\text{ dBm} > 24\text{dBm}$.

CHAIN 1

1. $11\text{dBm} + 10\log(24.12) = 24.82\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.23) = 24.66\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(24.08) = 24.82\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.81) = 24.77\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(23.07) = 24.63\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.08) = 24.63\text{ dBm} > 24\text{dBm}$.

CHAIN 2

1. $11\text{dBm} + 10\log(23.20) = 24.65\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.29) = 24.67\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(23.65) = 24.74\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(23.36) = 24.68\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(23.44) = 24.70\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(23.04) = 24.62\text{ dBm} > 24\text{dBm}$.

802.11ac (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
54	5270	15.50	15.46	17.25	123.725	20.92	24	PASS
62	5310	13.43	13.32	15.16	76.317	18.83	24	PASS
102	5510	14.22	13.71	15.31	83.883	19.24	24	PASS
110	5550	15.57	15.12	17.21	121.169	20.83	24	PASS
134	5670	15.76	14.82	17.39	122.837	20.89	24	PASS

NOTE:

CHAIN 0

1. $11\text{dBm} + 10\log(46.65) = 27.69\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(46.27) = 27.65\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(47.23) = 27.74\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(46.15) = 27.64\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(46.16) = 27.64\text{ dBm} > 24\text{dBm}$.

CHAIN 1

1. $11\text{dBm} + 10\log(46.08) = 27.64\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(46.16) = 27.64\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(46.15) = 27.64\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(45.65) = 27.59\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(46.04) = 27.63\text{ dBm} > 24\text{dBm}$.

CHAIN 2

1. $11\text{dBm} + 10\log(46.17) = 27.64\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(46.17) = 27.64\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(46.90) = 27.71\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(45.39) = 27.57\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(45.52) = 27.58\text{ dBm} > 24\text{dBm}$.

802.11ac (80MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
58	5290	10.51	10.31	11.93	37.582	15.75	24	PASS
106	5530	9.46	9.26	10.53	28.562	14.56	24	PASS

NOTE:

CHAIN 0

1. $11\text{dBm} + 10\log(94.78) = 30.77\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(90.15) = 30.55\text{ dBm} > 24\text{dBm}$.

CHAIN 1

1. $11\text{dBm} + 10\log(88.40) = 30.46\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(89.41) = 30.51\text{ dBm} > 24\text{dBm}$.

CHAIN 2

1. $11\text{dBm} + 10\log(90.60) = 30.57\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(90.91) = 30.59\text{ dBm} > 24\text{dBm}$.

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	32.53	PASS
60	5300	29.77	PASS
64	5320	22.13	PASS
100	5500	21.93	PASS
116	5580	24.90	PASS
140	5700	21.96	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	23.18	23.52	22.97	PASS
60	5300	23.17	23.20	23.04	PASS
64	5320	23.34	23.48	23.07	PASS
100	5500	23.17	23.82	23.02	PASS
116	5580	22.89	23.62	23.21	PASS
140	5700	23.18	23.78	23.34	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	45.61	46.90	44.47	PASS
62	5310	47.83	46.51	47.17	PASS
102	5510	46.34	45.61	47.26	PASS
110	5550	46.50	45.37	45.58	PASS
134	5670	46.11	45.43	45.21	PASS

**A D T****802.11ac (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
52	5260	23.20	24.12	23.20	PASS
60	5300	23.48	23.23	23.29	PASS
64	5320	23.48	24.08	23.65	PASS
100	5500	23.41	23.81	23.36	PASS
116	5580	23.02	23.07	23.44	PASS
140	5700	23.39	23.08	23.04	PASS

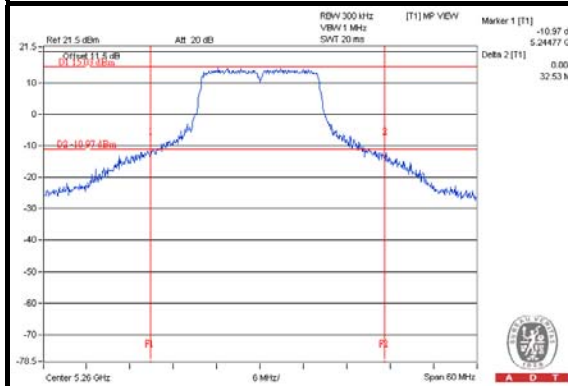
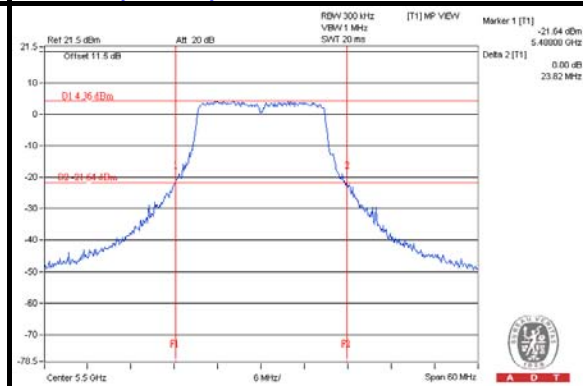
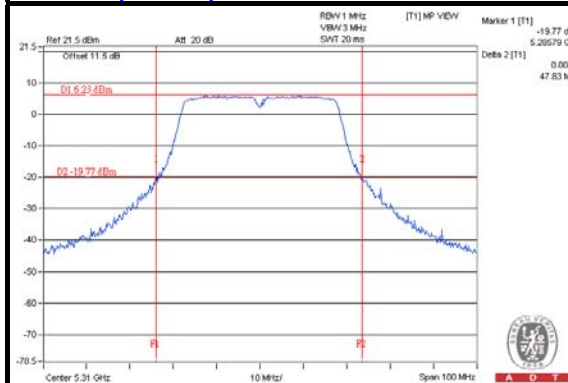
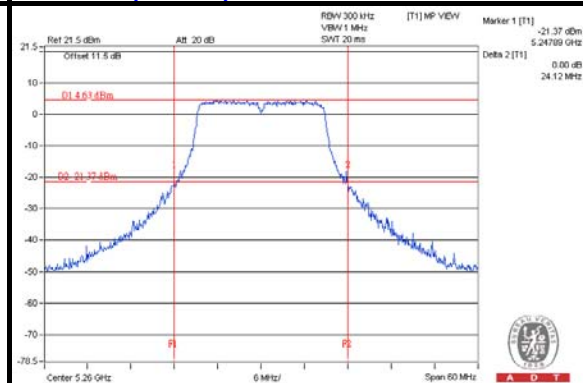
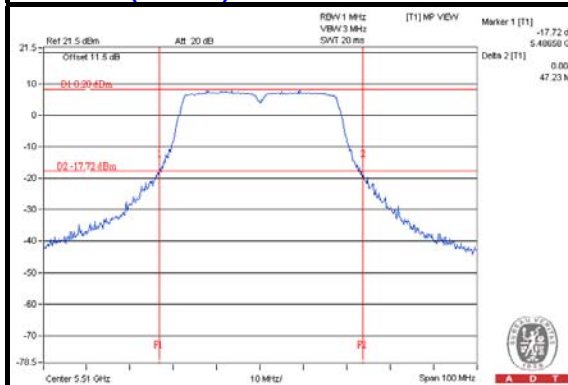
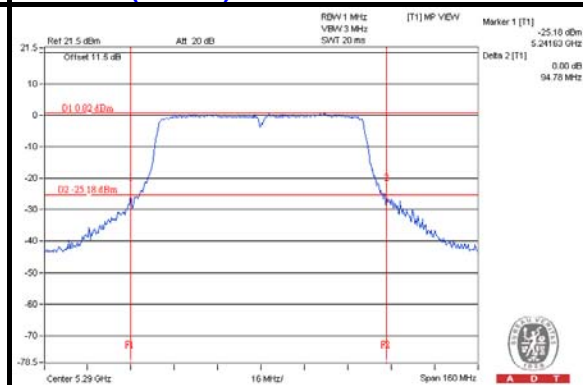
802.11ac (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
54	5270	46.65	46.08	46.17	PASS
62	5310	46.27	46.16	46.17	PASS
102	5510	47.23	46.15	46.90	PASS
110	5550	46.15	45.65	45.39	PASS
134	5670	46.16	46.04	45.52	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
58	5290	94.78	88.40	90.60	PASS
106	5530	90.15	89.41	90.91	PASS

SPECTRUM PLOT OF WORST VALUE

802.11a

802.11n (20MHz)

802.11n (40MHz)

802.11ac (20MHz)

802.11ac (40MHz)

802.11ac (80MHz)


EUT MAXIMUM CONDUCTED POWER

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	121.619	20.85
5470~5725	120.504	20.81

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

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	91.588	19.62
5470~5725	89.262	19.51

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

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	121.486	20.85
5470~5725	120.770	20.82

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

802.11ac (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	90.661	19.57
5470~5725	87.231	19.41

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

802.11ac (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	123.725	20.92
5470~5725	122.837	20.89

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

802.11ac (80MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	37.582	15.75
5470~5725	28.562	14.56

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

FREQUENCY BAND	LIMIT
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW \geq 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
52	5260	10.23	11	PASS
60	5300	10.12	11	PASS
64	5320	7.56	11	PASS
100	5500	7.28	11	PASS
116	5580	10.11	11	PASS
140	5700	6.69	11	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
52	5260	0.49	0.38	1.74	5.69	6.23	PASS
60	5300	0.99	0.57	2.44	6.18	6.23	PASS
64	5320	0.81	0.23	2.77	6.18	6.23	PASS
100	5500	1.20	0.24	2.02	5.98	6.23	PASS
116	5580	0.96	0.31	2.52	6.14	6.23	PASS
140	5700	0.89	0.31	2.24	5.99	6.23	PASS

NOTE:

- 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.
- Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (10.77 - 6) = 6.23\text{dBm}$.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
54	5270	0.90	0.80	1.68	5.92	6.23	PASS
62	5310	-4.10	-3.47	-2.06	1.65	6.23	PASS
102	5510	-2.43	-2.99	-1.43	2.54	6.23	PASS
110	5550	0.96	0.72	2.16	6.10	6.23	PASS
134	5670	0.87	0.60	2.40	6.14	6.23	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 = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (10.77 - 6) = 6.23\text{dBm}$.

802.11ac (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
52	5260	0.83	0.50	1.83	5.86	6.23	PASS
60	5300	1.08	0.70	2.21	6.15	6.23	PASS
64	5320	0.79	0.48	2.25	6.02	6.23	PASS
100	5500	1.24	0.73	2.20	6.20	6.23	PASS
116	5580	1.16	0.58	2.26	6.16	6.23	PASS
140	5700	1.01	0.73	2.28	6.16	6.23	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 = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (10.77 - 6) = 6.23\text{dBm}$.

802.11ac (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
54	5270	1.15	0.98	2.02	6.18	6.23	PASS
62	5310	-3.73	-4.05	-1.84	1.68	6.23	PASS
102	5510	-2.33	-2.76	-1.56	2.58	6.23	PASS
110	5550	0.79	0.89	2.43	6.21	6.23	PASS
134	5670	0.80	0.82	2.33	6.15	6.23	PASS

NOTE:

- 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.
- Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (10.77 - 6) = 6.23\text{dBm}$.

802.11ac (80MHz)

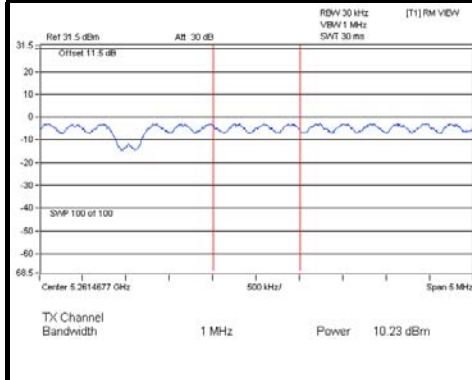
CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
58	5290	-9.64	-9.99	-8.27	-4.46	6.23	PASS
106	5530	-10.51	-11.07	-9.98	-5.73	6.23	PASS

NOTE:

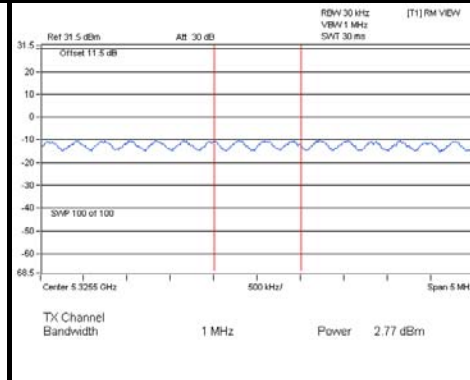
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (10.77 - 6) = 6.23\text{dBm}$.

SPECTRUM PLOT OF WORST VALUE

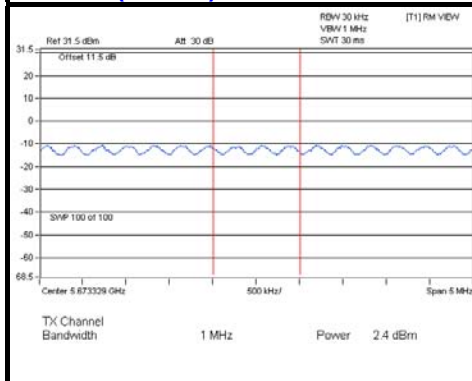
802.11a



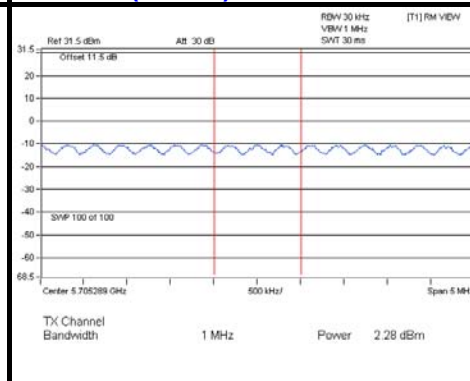
802.11n (20MHz)



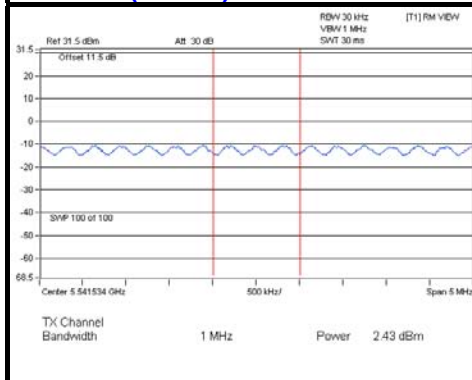
802.11n (40MHz)



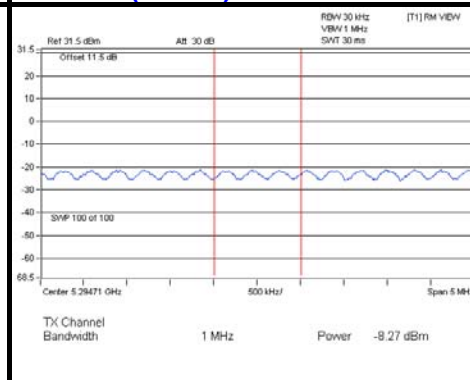
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)

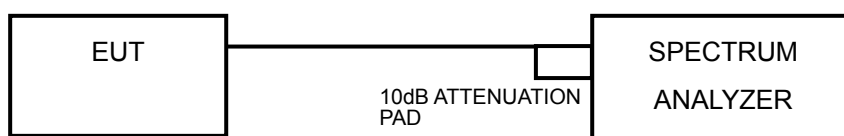


4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- 1) Set RBW = 1 MHz, VBW \geq 3 MHz, Detector = peak.
- 2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
- 3) Use the peak search function to find the peak of the spectrum.
- 4) Measure the PPSD.
- 5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.
Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures Old Rules v01r04 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

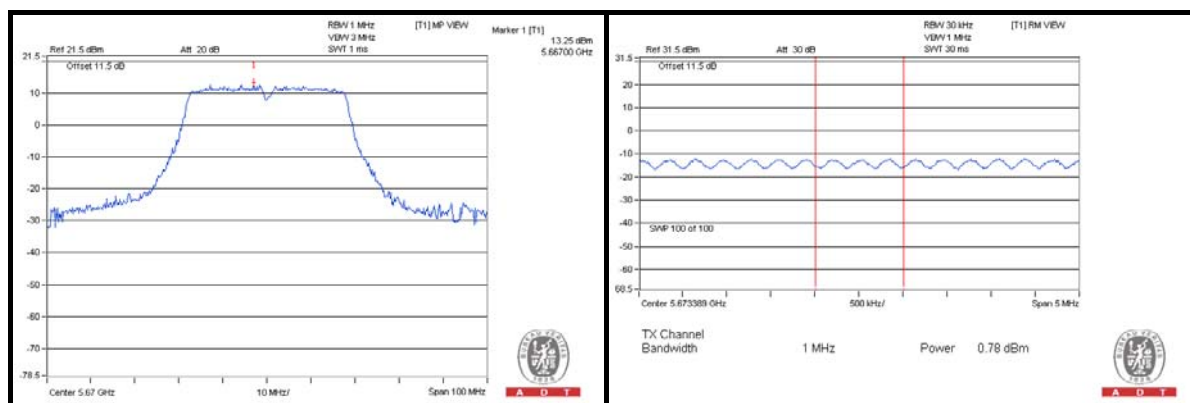
No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHANNEL FREQUENCY (MHz)	PEAK VALUE (dBm)	PPSD (dBm)	PEAK ESCURSION (dB)	LIMIT (dB)	PASS / FAIL
802.11a	BPSK	5700	16.83	6.69	10.14	13	PASS
	QPSK		18.03	6.89	11.14	13	PASS
	16QAM		18.49	6.74	11.75	13	PASS
	64QAM		18.54	6.91	11.63	13	PASS
802.11n (20MHz)	BPSK	5700	11.60	0.89	10.71	13	PASS
	QPSK		11.82	0.54	11.28	13	PASS
	16QAM		9.49	0.88	8.61	13	PASS
	64QAM		12.56	0.94	11.62	13	PASS
802.11n (40MHz)	BPSK	5670	11.42	0.87	10.55	13	PASS
	QPSK		11.85	0.71	11.14	13	PASS
	16QAM		12.19	0.60	11.59	13	PASS
	64QAM		12.20	0.77	11.43	13	PASS
802.11ac (20MHz)	BPSK	5700	11.62	1.01	10.61	13	PASS
	QPSK		12.13	0.99	11.14	13	PASS
	16QAM		12.96	1.09	11.87	13	PASS
	64QAM		12.46	0.80	11.66	13	PASS
	256QAM		13.00	0.85	12.15	13	PASS
802.11ac (40MHz)	BPSK	5670	11.13	0.80	10.33	13	PASS
	QPSK		11.91	0.66	11.25	13	PASS
	16QAM		12.69	0.69	12.00	13	PASS
	64QAM		13.25	0.78	12.47	13	PASS
	256QAM		12.69	0.65	12.04	13	PASS
802.11ac (80MHz)	BPSK	5530	0.01	-10.51	10.52	13	PASS
	QPSK		1.95	-10.29	12.24	13	PASS
	16QAM		1.53	-10.58	12.11	13	PASS
	64QAM		1.96	-9.90	11.86	13	PASS
	256QAM		1.69	-9.92	11.61	13	PASS

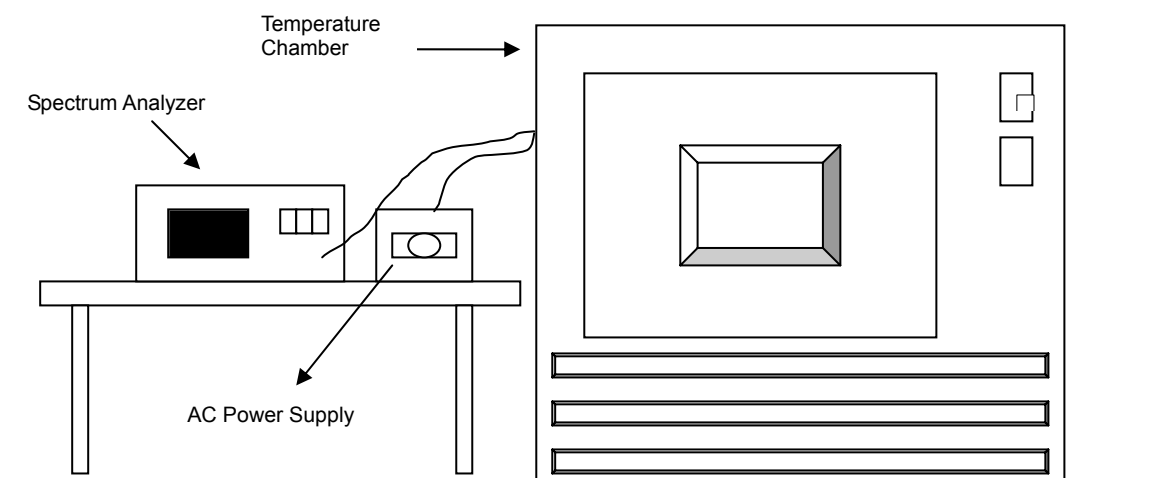


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 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.

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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

4.6.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 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	5320.0191	0.00036	5320.0205	0.00039	5320.0203	0.00038	5320.0238	0.00045
40	120	5319.9925	-0.00014	5319.992	-0.00015	5319.9919	-0.00015	5319.9917	-0.00016
30	120	5320.0016	0.00003	5320.005	0.00009	5320.0009	0.00002	5320.0012	0.00002
20	120	5319.9875	-0.00023	5319.9892	-0.00020	5319.9885	-0.00022	5319.9903	-0.00018
10	120	5319.9973	-0.00005	5319.9947	-0.00010	5319.9986	-0.00003	5319.9967	-0.00006
0	120	5319.9713	-0.00054	5319.9759	-0.00045	5319.9733	-0.00050	5319.9743	-0.00048
-10	120	5320.0245	0.00046	5320.0259	0.00049	5320.0247	0.00046	5320.0256	0.00048
-20	120	5320.0212	0.00040	5320.0209	0.00039	5320.019	0.00036	5320.0193	0.00036
-30	120	5320.012	0.00023	5320.0141	0.00027	5320.0146	0.00027	5320.0128	0.00024

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	5319.9873	-0.00024	5319.9891	-0.00020	5319.9883	-0.00022	5319.9904	-0.00018
	120	5319.9875	-0.00023	5319.9892	-0.00020	5319.9885	-0.00022	5319.9903	-0.00018
	102	5319.9868	-0.00025	5319.9893	-0.00020	5319.9889	-0.00021	5319.9903	-0.00018

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. 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.

7. APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

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