

FCC TEST REPORT

(15.407)

REPORT NO.: RF141108C01-1

MODEL NO.: AP 100X

FCC ID: 2ACTO-AP100X

RECEIVED: Nov. 08, 2014

TESTED: Nov. 19 ~ Nov. 26, 2014

ISSUED: Dec. 02, 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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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141108C01-1	Original release	Dec. 02, 2014

1. CERTIFICATION

PRODUCT: Sophos wireless Access Point AP 100X

MODEL: AP 100X

BRAND: Sophos

APPLICANT: Sophos Ltd

TESTED: Nov. 19 ~ Nov. 26, 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. 02, 2014
Celine Chou / Specialist

APPROVED BY : Ken Liu , **DATE :** Dec. 02, 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)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -5.83dB at 21.66282MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5150.00, 5714.90, 11490.00, 11590.00 and 11650.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is 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	5180 ~ 5240MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz)
OUTPUT POWER	5180 ~ 5240MHz: 31.117mW 5745 ~ 5825MHz: 374.973mW
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. 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

2. 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

3. 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 5180 ~ 5240MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

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

CHANNEL	FREQUENCY
42	5210MHz

FOR 5745 ~ 5825MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

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

CHANNEL	FREQUENCY
155	5775MHz

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	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11ac (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (80MHz)		42	42	OFDM	BPSK	87.8
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11ac (40MHz)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (80MHz)		155	155	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	5180-5240	36 to 48	36	OFDM	BPSK	6.0
		5745-5825	149 to 165		OFDM	BPSK	6.0

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
		5745-5825	149 to 165		OFDM	BPSK	6.0

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11ac (40MHz)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (80MHz)		42	42	OFDM	BPSK	87.8
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11ac (40MHz)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (80MHz)		155	155	OFDM	BPSK	87.8

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	25deg. C, 60%RH	120Vac, 60Hz	Tank Wu
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

For U-NII-1 Band:

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

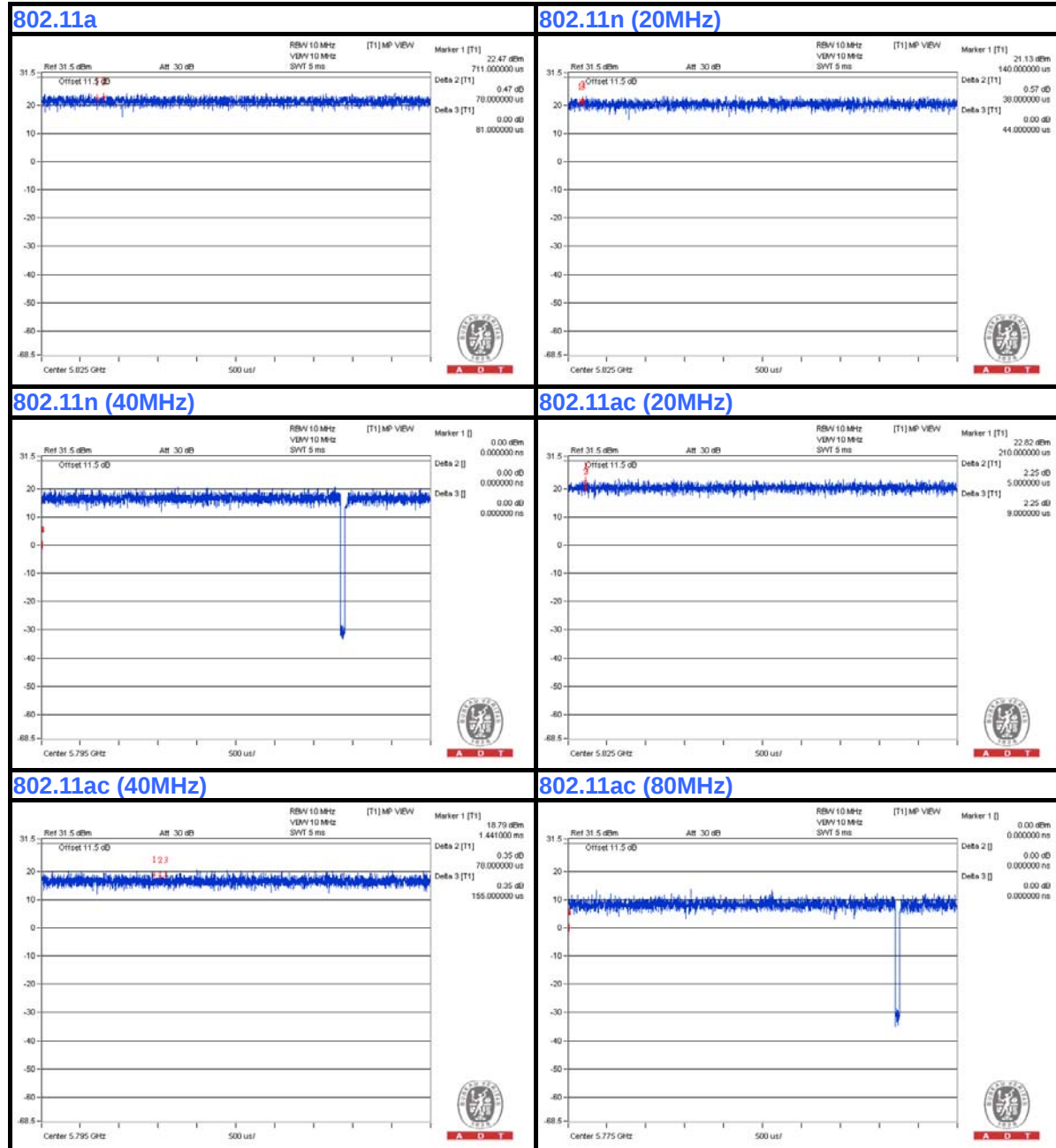




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For U-NII-3 Band:

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.

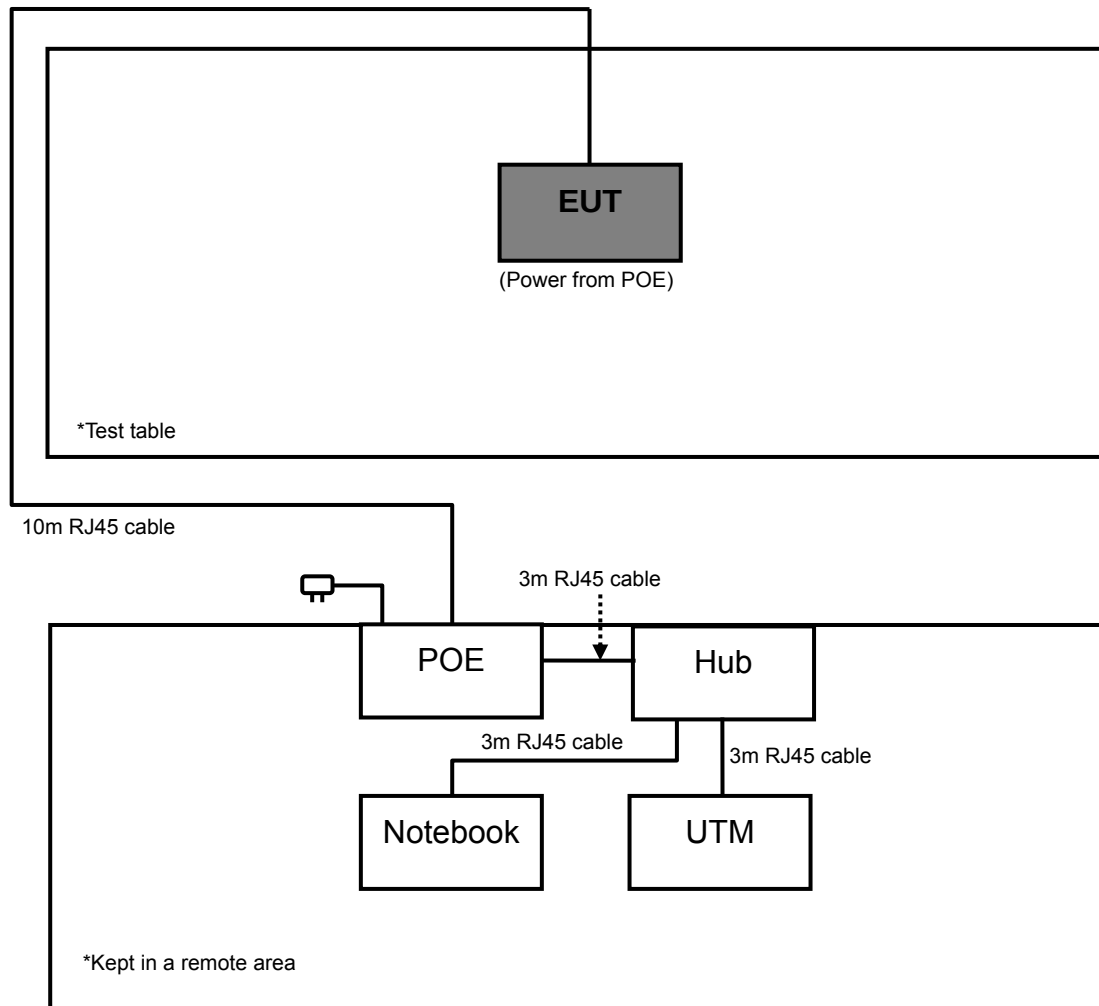
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	HUB	D-Link	DIR-810	NA	NA
2	UTM	SOPHOS	UTM110/120/100 rev.5	NA	NA
3	NOTEBOOK	DELL	D531	CN-0XM006-48643-81 U-2610	QDS-BRCM1020
4	POE	Power Desine	PD-9001GR/AC	NA	NA

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 D02 General UNII Test Procedures New Rules v01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

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	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBuV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) ^{*1} PK: -17 (dBm/MHz) ^{*2}	PK: 68.2 (dBuV/m) ^{*1} PK: 78.2 (dBuV/m) ^{*2}

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

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

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

4.1.3 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
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:

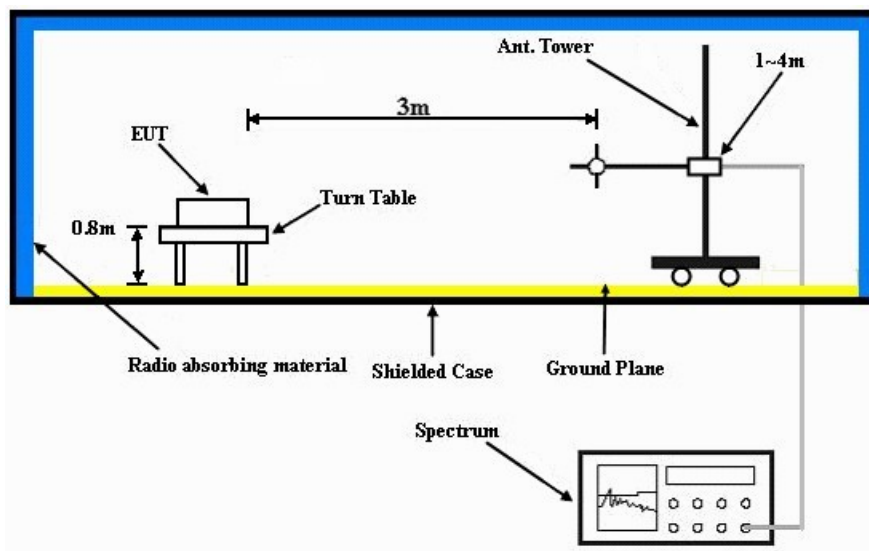
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

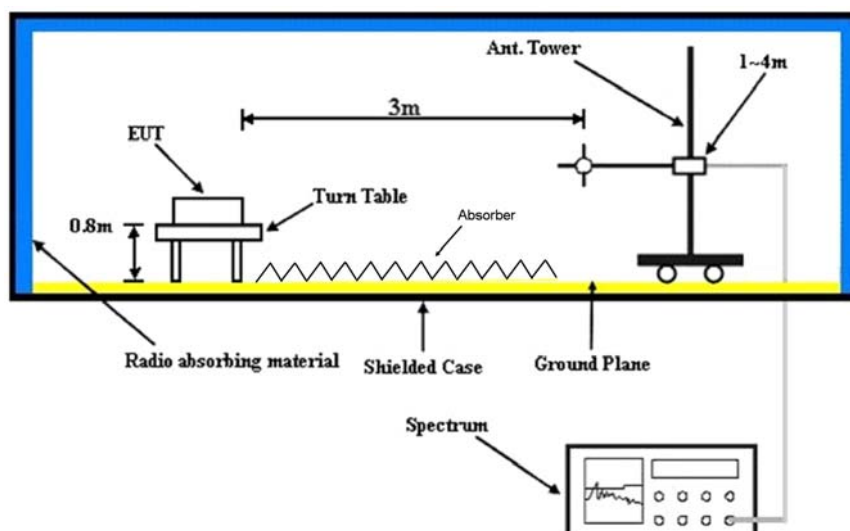
No deviation.

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 WORST-CASE DATA:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.1 PK	74.0	-4.9	1.17 H	3	67.10	2.00
2	5150.00	52.7 AV	54.0	-1.3	1.17 H	3	50.70	2.00
3	*5180.00	116.4 PK			1.17 H	3	76.40	40.00
4	*5180.00	105.6 AV			1.17 H	3	65.60	40.00
5	#10360.00	61.6 PK	74.0	-12.4	1.00 H	293	47.00	14.60
6	#10360.00	47.6 AV	54.0	-6.4	1.00 H	293	33.00	14.60
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	57.0 PK	74.0	-17.0	1.93 V	263	55.00	2.00
2	5150.00	44.1 AV	54.0	-9.9	1.93 V	263	42.10	2.00
3	*5180.00	101.8 PK			1.93 V	263	61.80	40.00
4	*5180.00	92.0 AV			1.93 V	263	52.00	40.00
5	#10360.00	60.5 PK	74.0	-13.5	1.00 V	125	45.90	14.60
6	#10360.00	47.4 AV	54.0	-6.6	1.00 V	125	32.80	14.60

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	69.8 PK	74.0	-4.2	1.18 H	2	67.80	2.00
2	5150.00	53.0 AV	54.0	-1.0	1.18 H	2	51.00	2.00
3	*5200.00	118.7 PK			1.18 H	2	78.60	40.10
4	*5200.00	108.4 AV			1.18 H	2	68.30	40.10
5	#10400.00	61.4 PK	74.0	-12.6	1.00 H	189	46.70	14.70
6	#10400.00	47.8 AV	54.0	-6.2	1.00 H	189	33.10	14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.1 PK	74.0	-17.9	1.00 V	235	54.10	2.00
2	5150.00	43.3 AV	54.0	-10.7	1.00 V	235	41.30	2.00
3	*5200.00	102.3 PK			1.00 V	235	62.20	40.10
4	*5200.00	91.8 AV			1.00 V	235	51.70	40.10
5	#10400.00	60.3 PK	74.0	-13.7	1.00 V	58	45.60	14.70
6	#10400.00	48.4 AV	54.0	-5.6	1.00 V	58	33.70	14.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.2 PK	74.0	-1.8	1.17 H	3	70.20	2.00
2	5150.00	52.9 AV	54.0	-1.1	1.17 H	3	50.90	2.00
3	*5240.00	122.6 PK			1.17 H	3	82.50	40.10
4	*5240.00	111.5 AV			1.17 H	3	71.40	40.10
5	5350.00	68.0 PK	74.0	-6.0	1.00 H	360	66.00	2.00
6	5350.00	50.4 AV	54.0	-3.6	1.00 H	360	48.40	2.00
7	#10480.00	61.9 PK	74.0	-12.1	1.00 H	202	46.30	15.60
8	#10480.00	48.8 AV	54.0	-5.2	1.00 H	202	33.20	15.60
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	56.9 PK	74.0	-17.1	1.00 V	95	54.90	2.00
2	5150.00	43.7 AV	54.0	-10.3	1.00 V	95	41.70	2.00
3	*5240.00	107.2 PK			1.00 V	96	67.10	40.10
4	*5240.00	95.7 AV			1.00 V	96	55.60	40.10
5	5350.00	57.2 PK	74.0	-16.8	1.00 V	102	55.20	2.00
6	5350.00	44.7 AV	54.0	-9.3	1.00 V	102	42.70	2.00
7	#10480.00	61.7 PK	74.0	-12.3	1.00 V	25	46.10	15.60
8	#10480.00	48.6 AV	54.0	-5.4	1.00 V	25	33.00	15.60

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	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	#5714.90	70.6 PK	74.0	-3.4	1.15 H	353	68.00	2.60
2	#5714.90	53.0 AV	54.0	-1.0	1.15 H	353	50.40	2.60
3	#5722.90	72.8 PK	78.2	-5.4	1.40 H	352	70.20	2.60
4	#5725.00	61.3 PK	78.2	-16.9	1.41 H	352	58.70	2.60
5	*5745.00	124.5 PK			1.40 H	353	83.50	41.00
6	*5745.00	113.9 AV			1.40 H	353	72.90	41.00
7	11490.00	62.3 PK	74.0	-11.7	1.00 H	155	45.30	17.00
8	11490.00	49.1 AV	54.0	-4.9	1.00 H	155	32.10	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	59.6 PK	74.0	-14.4	1.08 V	243	57.00	2.60
2	#5714.90	45.3 AV	54.0	-8.7	1.08 V	243	42.70	2.60
3	#5722.90	62.5 PK	78.2	-15.7	1.08 V	242	59.90	2.60
4	#5725.00	49.1 PK	78.2	-29.1	1.09 V	243	46.50	2.60
5	*5745.00	103.1 PK			1.09 V	243	62.10	41.00
6	*5745.00	92.8 AV			1.09 V	243	51.80	41.00
7	11490.00	62.7 PK	74.0	-11.3	1.00 V	33	45.70	17.00
8	11490.00	48.8 AV	54.0	-5.2	1.00 V	33	31.80	17.00

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.

CHANNEL	TX Channel 157	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	#5714.90	71.0 PK	74.0	-3.0	1.13 H	349	68.40	2.60
2	#5714.90	52.7 AV	54.0	-1.3	1.13 H	349	50.10	2.60
3	*5785.00	119.2 PK			1.11 H	350	78.10	41.10
4	*5785.00	108.4 AV			1.11 H	350	67.30	41.10
5	#5860.10	57.6 PK	74.0	-16.4	1.12 H	352	54.60	3.00
6	#5860.10	49.9 AV	54.0	-4.1	1.12 H	352	46.90	3.00
7	11570.00	61.3 PK	74.0	-12.7	1.00 H	221	44.60	16.70
8	11570.00	48.8 AV	54.0	-5.2	1.00 H	221	32.10	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	58.6 PK	74.0	-15.4	1.00 V	199	56.00	2.60
2	#5714.90	44.5 AV	54.0	-9.5	1.00 V	199	41.90	2.60
3	*5785.00	107.9 PK			1.00 V	199	66.80	41.10
4	*5785.00	96.8 AV			1.00 V	199	55.70	41.10
5	#5860.10	57.2 PK	74.0	-16.8	1.00 V	201	54.20	3.00
6	#5860.10	43.0 AV	54.0	-11.0	1.00 V	201	40.00	3.00
7	11570.00	61.8 PK	74.0	-12.2	1.00 V	82	45.10	16.70
8	11570.00	47.8 AV	54.0	-6.2	1.00 V	82	31.10	16.70

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR 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	*5825.00	115.7 PK			1.00 H	198	74.60	41.10
2	*5825.00	104.6 AV			1.00 H	198	63.50	41.10
3	#5850.00	59.3 PK	78.2	-18.9	1.00 H	198	56.30	3.00
4	#5852.10	72.0 PK	78.2	-6.2	1.02 H	198	69.00	3.00
5	#5860.10	68.4 PK	74.0	-5.6	1.01 H	198	65.40	3.00
6	#5860.10	52.7 AV	54.0	-1.3	1.01 H	198	49.70	3.00
7	11650.00	61.0 PK	74.0	-13.0	1.00 H	258	44.50	16.50
8	11650.00	48.3 AV	54.0	-5.7	1.00 H	258	31.80	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	*5825.00	101.4 PK			1.00 V	236	60.30	41.10
2	*5825.00	90.8 AV			1.00 V	236	49.70	41.10
3	#5850.00	44.6 PK	78.2	-33.6	1.00 V	236	41.60	3.00
4	#5852.10	61.2 PK	78.2	-17.0	1.00 V	236	58.20	3.00
5	#5860.10	55.7 PK	74.0	-18.3	1.00 V	236	52.70	3.00
6	#5860.10	43.1 AV	54.0	-10.9	1.00 V	236	40.10	3.00
7	11650.00	61.1 PK	74.0	-12.9	1.00 V	23	44.60	16.50
8	11650.00	48.6 AV	54.0	-5.4	1.00 V	23	32.10	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 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.8 PK	74.0	-18.2	1.00 H	120	53.80	2.00
2	5150.00	42.8 AV	54.0	-11.2	1.00 H	120	40.80	2.00
3	*5180.00	99.8 PK			1.00 H	245	59.80	40.00
4	*5180.00	89.2 AV			1.00 H	245	49.20	40.00
5	5350.00	57.4 PK	74.0	-16.6	1.00 H	147	55.40	2.00
6	5350.00	44.5 AV	54.0	-9.5	1.00 H	147	42.50	2.00
7	#10360.00	62.4 PK	74.0	-11.6	1.00 H	201	47.80	14.60
8	#10360.00	49.8 AV	54.0	-4.2	1.00 H	201	35.20	14.60
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	66.2 PK	74.0	-7.8	1.00 V	159	64.20	2.00
2	5150.00	52.5 AV	54.0	-1.5	1.00 V	159	50.50	2.00
3	*5180.00	119.2 PK			1.11 V	218	79.20	40.00
4	*5180.00	108.7 AV			1.11 V	218	68.70	40.00
5	5350.00	62.1 PK	74.0	-11.9	1.30 V	218	60.10	2.00
6	5350.00	49.3 AV	54.0	-4.7	1.30 V	218	47.30	2.00
7	#10360.00	62.6 PK	74.0	-11.4	1.00 V	143	48.00	14.60
8	#10360.00	49.9 AV	54.0	-4.1	1.00 V	143	35.30	14.60

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	252	53.80	2.00
2	5150.00	42.8 AV	54.0	-11.2	1.00 H	252	40.80	2.00
3	*5200.00	101.9 PK			1.00 H	246	61.80	40.10
4	*5200.00	91.6 AV			1.00 H	246	51.50	40.10
5	5350.00	57.7 PK	74.0	-16.3	1.00 H	232	55.70	2.00
6	5350.00	44.6 AV	54.0	-9.4	1.00 H	232	42.60	2.00
7	#10400.00	61.7 PK	74.0	-12.3	1.00 H	336	47.00	14.70
8	#10400.00	48.2 AV	54.0	-5.8	1.00 H	336	33.50	14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.5 PK	74.0	-6.5	1.00 V	220	65.50	2.00
2	5150.00	52.5 AV	54.0	-1.5	1.00 V	220	50.50	2.00
3	*5200.00	122.5 PK			1.00 V	220	82.40	40.10
4	*5200.00	112.4 AV			1.00 V	220	72.30	40.10
5	5350.00	61.8 PK	74.0	-12.2	1.00 V	215	59.80	2.00
6	5350.00	49.5 AV	54.0	-4.5	1.00 V	215	47.50	2.00
7	#10400.00	67.0 PK	74.0	-7.0	1.00 V	7	52.30	14.70
8	#10400.00	52.4 AV	54.0	-1.6	1.00 V	7	37.70	14.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.7 PK	74.0	-18.3	1.00 H	260	53.70	2.00
2	5150.00	42.8 AV	54.0	-11.2	1.00 H	260	40.80	2.00
3	*5240.00	103.9 PK			1.00 H	245	63.80	40.10
4	*5240.00	93.1 AV			1.00 H	245	53.00	40.10
5	5350.00	58.0 PK	74.0	-16.0	1.00 H	198	56.00	2.00
6	5350.00	44.6 AV	54.0	-9.4	1.00 H	198	42.60	2.00
7	#10480.00	61.7 PK	74.0	-12.3	1.00 H	340	46.10	15.60
8	#10480.00	49.0 AV	54.0	-5.0	1.00 H	340	33.40	15.60
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	60.8 PK	74.0	-13.2	1.00 V	219	58.80	2.00
2	5150.00	48.2 AV	54.0	-5.8	1.00 V	219	46.20	2.00
3	*5240.00	124.2 PK			1.00 V	217	84.10	40.10
4	*5240.00	113.4 AV			1.00 V	217	73.30	40.10
5	5350.00	62.5 PK	74.0	-11.5	1.00 V	216	60.50	2.00
6	5350.00	49.9 AV	54.0	-4.1	1.00 V	216	47.90	2.00
7	#10480.00	68.4 PK	74.0	-5.6	1.61 V	138	52.80	15.60
8	#10480.00	52.9 AV	54.0	-1.1	1.61 V	138	37.30	15.60

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	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	#5714.90	56.6 PK	74.0	-17.4	1.00 H	327	54.00	2.60
2	#5714.90	43.4 AV	54.0	-10.6	1.00 H	327	40.80	2.60
3	#5722.90	58.6 PK	78.2	-19.6	1.04 H	250	56.00	2.60
4	#5725.00	45.4 PK	78.2	-32.8	1.03 H	245	42.80	2.60
5	*5745.00	100.1 PK			1.00 H	251	59.10	41.00
6	*5745.00	90.0 AV			1.00 H	251	49.00	41.00
7	11490.00	63.6 PK	74.0	-10.4	1.00 H	144	46.60	17.00
8	11490.00	49.5 AV	54.0	-4.5	1.00 H	144	32.50	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	69.9 PK	74.0	-4.1	1.00 V	181	67.30	2.60
2	#5714.90	52.7 AV	54.0	-1.3	1.00 V	181	50.10	2.60
3	#5722.90	72.0 PK	78.2	-6.2	1.00 V	167	69.40	2.60
4	#5725.00	56.6 PK	78.2	-21.6	1.00 V	158	54.00	2.60
5	*5745.00	114.6 PK			1.31 V	211	73.60	41.00
6	*5745.00	104.6 AV			1.31 V	211	63.60	41.00
7	11490.00	67.4 PK	74.0	-6.6	1.60 V	61	50.40	17.00
8	11490.00	53.0 AV	54.0	-1.0	1.60 V	61	36.00	17.00

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR 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	#5714.90	57.4 PK	74.0	-16.6	1.00 H	261	54.80	2.60
2	#5714.90	43.8 AV	54.0	-10.2	1.00 H	261	41.20	2.60
3	*5785.00	99.6 PK			1.02 H	245	58.50	41.10
4	*5785.00	89.3 AV			1.02 H	245	48.20	41.10
5	#5860.10	55.7 PK	74.0	-18.3	1.00 H	271	52.70	3.00
6	#5860.10	42.4 AV	54.0	-11.6	1.00 H	271	39.40	3.00
7	11570.00	61.6 PK	74.0	-12.4	1.00 H	232	44.90	16.70
8	11570.00	48.9 AV	54.0	-5.1	1.00 H	232	32.20	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	59.2 PK	74.0	-14.8	1.00 V	165	56.60	2.60
2	#5714.90	45.0 AV	54.0	-9.0	1.00 V	165	42.40	2.60
3	*5785.00	113.2 PK			1.69 V	177	72.10	41.10
4	*5785.00	102.3 AV			1.69 V	177	61.20	41.10
5	#5860.10	55.6 PK	74.0	-18.4	1.39 V	217	52.60	3.00
6	#5860.10	43.4 AV	54.0	-10.6	1.39 V	217	40.40	3.00
7	11570.00	67.1 PK	74.0	-6.9	1.54 V	229	50.40	16.70
8	11570.00	52.6 AV	54.0	-1.4	1.54 V	229	35.90	16.70

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR 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	*5825.00	102.6 PK			1.02 H	142	61.50	41.10
2	*5825.00	92.2 AV			1.02 H	142	51.10	41.10
3	#5850.00	45.8 PK	78.2	-32.4	1.10 H	142	42.80	3.00
4	#5852.10	59.8 PK	78.2	-18.4	1.15 H	142	56.80	3.00
5	#5860.10	58.4 PK	74.0	-15.6	1.12 H	143	55.40	3.00
6	#5860.10	44.1 AV	54.0	-9.9	1.12 H	143	41.10	3.00
7	11650.00	62.2 PK	74.0	-11.8	1.00 H	145	45.70	16.50
8	11650.00	49.1 AV	54.0	-4.9	1.00 H	145	32.60	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	*5825.00	115.6 PK			1.42 V	221	74.50	41.10
2	*5825.00	105.4 AV			1.42 V	221	64.30	41.10
3	#5850.00	61.4 PK	78.2	-16.8	1.00 V	212	58.40	3.00
4	#5852.10	74.6 PK	78.2	-3.6	1.00 V	214	71.60	3.00
5	#5860.10	68.0 PK	74.0	-6.0	1.00 V	195	65.00	3.00
6	#5860.10	52.2 AV	54.0	-1.8	1.00 V	195	49.20	3.00
7	11650.00	68.1 PK	74.0	-5.9	1.00 V	337	51.60	16.50
8	11650.00	53.0 AV	54.0	-1.0	1.00 V	337	36.50	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 (40MHz)

CHANNEL	TX Channel 38	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	55.7 PK	74.0	-18.3	1.00 H	162	53.70	2.00
2	5150.00	42.9 AV	54.0	-11.1	1.00 H	162	40.90	2.00
3	*5190.00	93.3 PK			1.00 H	159	53.30	40.00
4	*5190.00	83.2 AV			1.00 H	159	43.20	40.00
5	#10380.00	60.1 PK	74.0	-13.9	1.00 H	103	45.50	14.60
6	#10380.00	47.4 AV	54.0	-6.6	1.00 H	103	32.80	14.60
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	68.7 PK	74.0	-5.3	1.00 V	204	66.70	2.00
2	5150.00	52.6 AV	54.0	-1.4	1.00 V	204	50.60	2.00
3	*5190.00	113.2 PK			1.00 V	220	73.20	40.00
4	*5190.00	102.3 AV			1.00 V	220	62.30	40.00
5	#10380.00	60.5 PK	74.0	-13.5	1.00 V	321	45.90	14.60
6	#10380.00	47.6 AV	54.0	-6.4	1.00 V	321	33.00	14.60

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.5 PK	74.0	-17.5	1.00 H	264	54.50	2.00
2	5150.00	43.9 AV	54.0	-10.1	1.00 H	264	41.90	2.00
3	*5230.00	100.4 PK			1.08 H	255	60.30	40.10
4	*5230.00	89.4 AV			1.08 H	255	49.30	40.10
5	5350.00	57.6 PK	74.0	-16.4	1.00 H	251	55.60	2.00
6	5350.00	44.2 AV	54.0	-9.8	1.00 H	251	42.20	2.00
7	#10460.00	62.1 PK	74.0	-11.9	1.00 H	120	46.80	15.30
8	#10460.00	48.2 AV	54.0	-5.8	1.00 H	120	32.90	15.30
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	66.8 PK	74.0	-7.2	1.00 V	210	64.80	2.00
2	5150.00	52.8 AV	54.0	-1.2	1.00 V	210	50.80	2.00
3	*5230.00	109.5 PK			1.00 V	218	69.40	40.10
4	*5230.00	99.4 AV			1.00 V	218	59.30	40.10
5	5350.00	61.5 PK	74.0	-12.5	1.00 V	212	59.50	2.00
6	5350.00	48.0 AV	54.0	-6.0	1.00 V	212	46.00	2.00
7	#10460.00	63.7 PK	74.0	-10.3	1.54 V	5	48.40	15.30
8	#10460.00	50.4 AV	54.0	-3.6	1.54 V	5	35.10	15.30

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 151	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	#5714.90	58.4 PK	74.0	-15.6	1.00 H	257	55.80	2.60
2	#5714.90	44.2 AV	54.0	-9.8	1.00 H	257	41.60	2.60
3	#5722.90	57.7 PK	78.2	-20.5	1.00 H	242	55.10	2.60
4	#5725.00	46.3 PK	78.2	-31.9	1.01 H	248	43.70	2.60
5	*5755.00	97.1 PK			1.06 H	259	56.10	41.00
6	*5755.00	86.8 AV			1.06 H	259	45.80	41.00
7	11510.00	63.7 PK	74.0	-10.3	1.00 H	318	46.80	16.90
8	11510.00	49.4 AV	54.0	-4.6	1.00 H	318	32.50	16.90
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	#5714.90	67.4 PK	74.0	-6.6	1.13 V	210	64.80	2.60
2	#5714.90	53.0 AV	54.0	-1.0	1.13 V	210	50.40	2.60
3	#5722.90	69.9 PK	78.2	-8.3	1.00 V	207	67.30	2.60
4	#5725.00	60.1 PK	78.2	-18.1	1.57 V	218	57.50	2.60
5	*5755.00	108.3 PK			1.00 V	173	67.30	41.00
6	*5755.00	98.4 AV			1.00 V	173	57.40	41.00
7	11510.00	63.9 PK	74.0	-10.1	1.00 V	193	47.00	16.90
8	11510.00	51.3 AV	54.0	-2.7	1.00 V	193	34.40	16.90

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	99.2 PK			1.00 H	251	58.10	41.10
2	*5795.00	89.2 AV			1.00 H	251	48.10	41.10
3	#5850.00	44.4 PK	78.2	-33.8	1.05 H	258	41.40	3.00
4	#5852.10	57.9 PK	78.2	-20.3	1.04 H	254	54.90	3.00
5	#5860.10	56.1 PK	74.0	-17.9	1.04 H	258	53.10	3.00
6	#5860.10	43.8 AV	54.0	-10.2	1.04 H	258	40.80	3.00
7	11590.00	65.0 PK	74.0	-9.0	1.00 H	98	48.30	16.70
8	11590.00	51.6 AV	54.0	-2.4	1.00 H	98	34.90	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	114.2 PK			1.38 V	212	73.10	41.10
2	*5795.00	103.3 AV			1.38 V	212	62.20	41.10
3	#5850.00	54.2 PK	78.2	-24.0	1.00 V	196	51.20	3.00
4	#5852.10	63.6 PK	78.2	-14.6	1.00 V	195	60.60	3.00
5	#5860.10	60.9 PK	74.0	-13.1	1.00 V	213	57.90	3.00
6	#5860.10	47.6 AV	54.0	-6.4	1.00 V	213	44.60	3.00
7	11590.00	67.4 PK	74.0	-6.6	1.00 V	230	50.70	16.70
8	11590.00	53.0 AV	54.0	-1.0	1.00 V	230	36.30	16.70

REMARKS:

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

802.11ac (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.9 PK	74.0	-18.1	1.00 H	224	53.90	2.00
2	5150.00	43.0 AV	54.0	-11.0	1.00 H	224	41.00	2.00
3	*5180.00	99.0 PK			1.00 H	244	59.00	40.00
4	*5180.00	88.8 AV			1.00 H	244	48.80	40.00
5	#10360.00	60.5 PK	74.0	-13.5	1.00 H	237	45.90	14.60
6	#10360.00	46.7 AV	54.0	-7.3	1.00 H	237	32.10	14.60
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	68.8 PK	74.0	-5.2	1.00 V	221	66.80	2.00
2	5150.00	52.9 AV	54.0	-1.1	1.00 V	221	50.90	2.00
3	*5180.00	119.3 PK			1.11 V	224	79.30	40.00
4	*5180.00	108.8 AV			1.11 V	224	68.80	40.00
5	#10360.00	62.2 PK	74.0	-11.8	1.00 V	8	47.60	14.60
6	#10360.00	48.8 AV	54.0	-5.2	1.00 V	8	34.20	14.60

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 40	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	56.2 PK	74.0	-17.8	1.00 H	203	54.20	2.00
2	5150.00	43.3 AV	54.0	-10.7	1.00 H	203	41.30	2.00
3	*5200.00	103.3 PK			1.00 H	159	63.20	40.10
4	*5200.00	92.7 AV			1.00 H	159	52.60	40.10
5	#10400.00	61.2 PK	74.0	-12.8	1.00 H	302	46.50	14.70
6	#10400.00	47.6 AV	54.0	-6.4	1.00 H	302	32.90	14.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.6 PK	74.0	-5.4	1.01 V	212	66.60	2.00
2	5150.00	52.6 AV	54.0	-1.4	1.01 V	212	50.60	2.00
3	*5200.00	122.0 PK			1.00 V	174	81.90	40.10
4	*5200.00	111.8 AV			1.00 V	174	71.70	40.10
5	#10400.00	66.5 PK	74.0	-7.5	1.00 V	8	51.80	14.70
6	#10400.00	52.7 AV	54.0	-1.3	1.00 V	8	38.00	14.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.9 PK	74.0	-18.1	1.00 H	254	53.90	2.00
2	5150.00	43.2 AV	54.0	-10.8	1.00 H	254	41.20	2.00
3	*5240.00	104.0 PK			1.01 H	245	63.90	40.10
4	*5240.00	93.3 AV			1.01 H	245	53.20	40.10
5	5350.00	58.5 PK	74.0	-15.5	1.00 H	189	56.50	2.00
6	5350.00	45.2 AV	54.0	-8.8	1.00 H	189	43.20	2.00
7	#10480.00	61.8 PK	74.0	-12.2	1.00 H	328	46.20	15.60
8	#10480.00	49.2 AV	54.0	-4.8	1.00 H	328	33.60	15.60
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	61.7 PK	74.0	-12.3	1.12 V	225	59.70	2.00
2	5150.00	49.2 AV	54.0	-4.8	1.12 V	225	47.20	2.00
3	*5240.00	123.7 PK			1.00 V	222	83.60	40.10
4	*5240.00	113.5 AV			1.00 V	222	73.40	40.10
5	5350.00	62.7 PK	74.0	-11.3	1.05 V	222	60.70	2.00
6	5350.00	49.6 AV	54.0	-4.4	1.05 V	222	47.60	2.00
7	#10480.00	68.1 PK	74.0	-5.9	1.61 V	145	52.50	15.60
8	#10480.00	52.8 AV	54.0	-1.2	1.61 V	145	37.20	15.60

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	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	#5714.90	56.8 PK	74.0	-17.2	1.01 H	96	54.20	2.60
2	#5714.90	43.8 AV	54.0	-10.2	1.01 H	96	41.20	2.60
3	#5722.90	58.2 PK	78.2	-20.0	1.01 H	96	55.60	2.60
4	#5725.00	46.1 PK	78.2	-32.1	1.01 H	69	43.50	2.60
5	*5745.00	99.7 PK			1.01 H	52	58.70	41.00
6	*5745.00	89.2 AV			1.01 H	52	48.20	41.00
7	11490.00	62.9 PK	74.0	-11.1	1.01 H	88	45.90	17.00
8	11490.00	48.2 AV	54.0	-5.8	1.01 H	88	31.20	17.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	69.3 PK	74.0	-4.7	1.00 V	205	66.70	2.60
2	#5714.90	51.6 AV	54.0	-2.4	1.00 V	205	49.00	2.60
3	#5722.90	72.1 PK	78.2	-6.1	1.02 V	63	69.50	2.60
4	#5725.00	57.7 PK	78.2	-20.5	1.02 V	3	55.10	2.60
5	*5745.00	114.2 PK			1.00 V	214	73.20	41.00
6	*5745.00	104.2 AV			1.00 V	214	63.20	41.00
7	11490.00	67.3 PK	74.0	-6.7	1.62 V	65	50.30	17.00
8	11490.00	52.6 AV	54.0	-1.4	1.62 V	65	35.60	17.00

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.

CHANNEL	TX Channel 157	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	*5785.00	99.2 PK			1.03 H	65	58.10	41.10
2	*5785.00	89.1 AV			1.03 H	65	48.00	41.10
3	11570.00	62.0 PK	74.0	-12.0	1.05 H	94	45.30	16.70
4	11570.00	49.1 AV	54.0	-4.9	1.05 H	94	32.40	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.9 PK			1.00 V	26	71.80	41.10
2	*5785.00	102.1 AV			1.00 V	26	61.00	41.10
3	11570.00	67.9 PK	74.0	-6.1	1.05 V	26	51.20	16.70
4	11570.00	52.5 AV	54.0	-1.5	1.05 V	26	35.80	16.70

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
– 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 165	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	*5825.00	102.2 PK			1.01 H	51	61.10	41.10
2	*5825.00	91.8 AV			1.01 H	51	50.70	41.10
3	#5850.00	46.2 PK	78.2	-32.0	1.02 H	31	43.20	3.00
4	#5852.10	59.9 PK	78.2	-18.3	1.41 H	58	56.90	3.00
5	#5860.10	58.4 PK	74.0	-15.6	1.02 H	32	55.40	3.00
6	#5860.10	44.2 AV	54.0	-9.8	1.02 H	32	41.20	3.00
7	11650.00	61.8 PK	74.0	-12.2	1.01 H	84	45.30	16.50
8	11650.00	48.7 AV	54.0	-5.3	1.01 H	84	32.20	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	*5825.00	115.3 PK			1.00 V	52	74.20	41.10
2	*5825.00	105.3 AV			1.00 V	52	64.20	41.10
3	#5850.00	61.7 PK	78.2	-16.5	1.01 V	89	58.70	3.00
4	#5852.10	74.8 PK	78.2	-3.4	1.01 V	32	71.80	3.00
5	#5860.10	67.8 PK	74.0	-6.2	1.02 V	33	64.80	3.00
6	#5860.10	52.2 AV	54.0	-1.8	1.02 V	33	49.20	3.00
7	11650.00	67.8 PK	74.0	-6.2	1.00 V	337	51.30	16.50
8	11650.00	52.8 AV	54.0	-1.2	1.00 V	337	36.30	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.

802.11ac (40MHz)

CHANNEL	TX Channel 38	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	56.3 PK	74.0	-17.7	1.02 H	64	54.30	2.00
2	5150.00	43.3 AV	54.0	-10.7	1.02 H	64	41.30	2.00
3	*5190.00	93.8 PK			1.02 H	31	53.80	40.00
4	*5190.00	83.4 AV			1.02 H	31	43.40	40.00
5	#10380.00	58.5 PK	74.0	-15.5	1.11 H	105	43.90	14.60
6	#10380.00	45.8 AV	54.0	-8.2	1.11 H	105	31.20	14.60
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	68.4 PK	74.0	-5.6	1.00 V	219	66.40	2.00
2	5150.00	52.6 AV	54.0	-1.4	1.00 V	219	50.60	2.00
3	*5190.00	113.0 PK			1.00 V	211	73.00	40.00
4	*5190.00	102.5 AV			1.00 V	211	62.50	40.00
5	#10380.00	59.8 PK	74.0	-14.2	1.05 V	96	45.20	14.60
6	#10380.00	47.1 AV	54.0	-6.9	1.05 V	96	32.50	14.60

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.2 PK	74.0	-17.8	1.02 H	95	54.20	2.00
2	5150.00	44.2 AV	54.0	-9.8	1.02 H	95	42.20	2.00
3	*5230.00	100.2 PK			1.08 H	94	60.10	40.10
4	*5230.00	89.2 AV			1.08 H	94	49.10	40.10
5	5350.00	56.9 PK	74.0	-17.1	1.01 H	8	54.90	2.00
6	5350.00	44.2 AV	54.0	-9.8	1.01 H	8	42.20	2.00
7	#10460.00	60.6 PK	74.0	-13.4	1.05 H	87	45.30	15.30
8	#10460.00	46.6 AV	54.0	-7.4	1.05 H	87	31.30	15.30
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	68.6 PK	74.0	-5.4	1.02 V	346	66.60	2.00
2	5150.00	52.7 AV	54.0	-1.3	1.02 V	346	50.70	2.00
3	*5230.00	109.2 PK			1.02 V	85	69.10	40.10
4	*5230.00	99.2 AV			1.02 V	85	59.10	40.10
5	5350.00	61.2 PK	74.0	-12.8	1.00 V	102	59.20	2.00
6	5350.00	48.2 AV	54.0	-5.8	1.00 V	102	46.20	2.00
7	#10460.00	64.1 PK	74.0	-9.9	1.02 V	54	48.80	15.30
8	#10460.00	50.5 AV	54.0	-3.5	1.02 V	54	35.20	15.30

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 151	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	#5714.90	58.3 PK	74.0	-15.7	1.00 H	255	55.70	2.60
2	#5714.90	44.4 AV	54.0	-9.6	1.00 H	255	41.80	2.60
3	#5722.90	58.0 PK	78.2	-20.2	1.00 H	240	55.40	2.60
4	#5725.00	46.5 PK	78.2	-31.7	1.00 H	249	43.90	2.60
5	*5755.00	96.6 PK			1.00 H	250	55.60	41.00
6	*5755.00	86.8 AV			1.00 H	250	45.80	41.00
7	11510.00	63.4 PK	74.0	-10.6	1.00 H	317	46.50	16.90
8	11510.00	49.0 AV	54.0	-5.0	1.00 H	317	32.10	16.90
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	#5714.90	68.6 PK	74.0	-5.4	1.00 V	183	66.00	2.60
2	#5714.90	52.9 AV	54.0	-1.1	1.00 V	183	50.30	2.60
3	#5722.90	71.8 PK	78.2	-6.4	1.00 V	204	69.20	2.60
4	#5725.00	60.4 PK	78.2	-17.8	1.55 V	217	57.80	2.60
5	*5755.00	108.2 PK			1.00 V	171	67.20	41.00
6	*5755.00	98.1 AV			1.00 V	171	57.10	41.00
7	11510.00	64.1 PK	74.0	-9.9	1.00 V	187	47.20	16.90
8	11510.00	51.7 AV	54.0	-2.3	1.00 V	187	34.80	16.90

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	98.9 PK			1.00 H	249	57.80	41.10
2	*5795.00	89.0 AV			1.00 H	249	47.90	41.10
3	#5850.00	44.8 PK	78.2	-33.4	1.03 H	257	41.80	3.00
4	#5852.10	57.8 PK	78.2	-20.4	1.03 H	255	54.80	3.00
5	#5860.10	56.3 PK	74.0	-17.7	1.03 H	256	53.30	3.00
6	#5860.10	44.1 AV	54.0	-9.9	1.03 H	256	41.10	3.00
7	11590.00	64.9 PK	74.0	-9.1	1.00 H	93	48.20	16.70
8	11590.00	51.5 AV	54.0	-2.5	1.00 H	93	34.80	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	114.0 PK			1.33 V	211	72.90	41.10
2	*5795.00	102.9 AV			1.33 V	211	61.80	41.10
3	#5850.00	54.8 PK	78.2	-23.4	1.00 V	199	51.80	3.00
4	#5852.10	63.9 PK	78.2	-14.3	1.00 V	195	60.90	3.00
5	#5860.10	60.7 PK	74.0	-13.3	1.00 V	220	57.70	3.00
6	#5860.10	47.3 AV	54.0	-6.7	1.00 V	220	44.30	3.00
7	11590.00	66.9 PK	74.0	-7.1	1.00 V	231	50.20	16.70
8	11590.00	52.9 AV	54.0	-1.1	1.00 V	231	36.20	16.70

REMARKS:

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

802.11ac (80MHz)

CHANNEL	TX Channel 42	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	55.7 PK	74.0	-18.3	1.00 H	191	53.70	2.00
2	5150.00	42.7 AV	54.0	-11.3	1.00 H	191	40.70	2.00
3	*5210.00	84.5 PK			1.00 H	161	44.40	40.10
4	*5210.00	74.4 AV			1.00 H	161	34.30	40.10
5	#10420.00	61.2 PK	74.0	-12.8	1.00 H	95	46.30	14.90
6	#10420.00	47.8 AV	54.0	-6.2	1.00 H	95	32.90	14.90
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	68.6 PK	74.0	-5.4	1.00 V	160	66.60	2.00
2	5150.00	52.6 AV	54.0	-1.4	1.00 V	160	50.60	2.00
3	*5210.00	104.7 PK			1.00 V	222	64.60	40.10
4	*5210.00	95.4 AV			1.00 V	222	55.30	40.10
5	#10420.00	61.4 PK	74.0	-12.6	1.00 V	213	46.50	14.90
6	#10420.00	48.1 AV	54.0	-5.9	1.00 V	213	33.20	14.90

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 155	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	#5714.90	59.1 PK	74.0	-14.9	1.16 H	259	56.50	2.60
2	#5714.90	44.8 AV	54.0	-9.2	1.16 H	259	42.20	2.60
3	#5722.90	61.6 PK	78.2	-16.6	1.00 H	150	59.00	2.60
4	#5725.00	46.1 PK	78.2	-32.1	1.00 H	250	43.50	2.60
5	*5775.00	91.6 PK			1.00 H	258	50.60	41.00
6	*5775.00	81.8 AV			1.00 H	258	40.80	41.00
7	#5850.00	56.5 PK	78.2	-21.7	1.00 H	70	53.50	3.00
8	#5860.10	55.7 PK	74.0	-18.3	1.00 H	276	52.70	3.00
9	#5860.10	42.7 AV	54.0	-11.3	1.00 H	276	39.70	3.00
10	11550.00	62.0 PK	74.0	-12.0	1.00 H	32	45.30	16.70
11	11550.00	49.1 AV	54.0	-4.9	1.00 H	32	32.40	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.90	70.3 PK	74.0	-3.7	1.00 V	176	67.70	2.60
2	#5714.90	52.9 AV	54.0	-1.1	1.00 V	176	50.30	2.60
3	#5722.90	73.9 PK	78.2	-4.3	1.00 V	170	71.30	2.60
4	#5725.00	60.1 PK	78.2	-18.1	1.00 V	216	57.50	2.60
5	*5775.00	103.6 PK			1.00 V	179	62.60	41.00
6	*5775.00	93.2 AV			1.00 V	179	52.20	41.00
7	#5850.00	60.0 PK	78.2	-18.2	1.00 V	216	57.00	3.00
8	#5860.10	59.8 PK	74.0	-14.2	1.00 V	214	56.80	3.00
9	#5860.10	45.1 AV	54.0	-8.9	1.00 V	214	42.10	3.00
10	11550.00	62.2 PK	74.0	-11.8	1.00 V	232	45.50	16.70
11	11550.00	49.4 AV	54.0	-4.6	1.00 V	232	32.70	16.70

REMARKS:

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

BELOW 1GHz WORST-CASE DATA:

802.11a

CHANNEL	TX Channel 36	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	106.17	34.9 QP	43.5	-8.6	1.49 H	102	52.50	-17.60
2	143.48	32.3 QP	43.5	-11.2	1.24 H	272	46.70	-14.40
3	261.62	43.9 QP	46.0	-2.1	1.00 H	119	57.70	-13.80
4	308.25	40.9 QP	46.0	-5.1	1.00 H	141	53.20	-12.30
5	525.01	44.4 QP	46.0	-1.6	1.22 H	163	52.60	-8.20
6	801.03	36.7 QP	46.0	-9.3	1.49 H	218	39.40	-2.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	42.98	35.2 QP	40.0	-4.8	1.00 V	165	49.90	-14.70
2	81.30	36.1 QP	40.0	-3.9	1.00 V	276	55.20	-19.10
3	262.53	43.2 QP	46.0	-2.8	1.49 V	196	57.00	-13.80
4	308.25	38.8 QP	46.0	-7.2	1.24 V	236	51.10	-12.30
5	525.88	41.9 QP	46.0	-4.1	1.49 V	165	50.10	-8.20
6	900.51	35.9 QP	46.0	-10.1	1.24 V	288	37.30	-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 (dBμV)	
	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

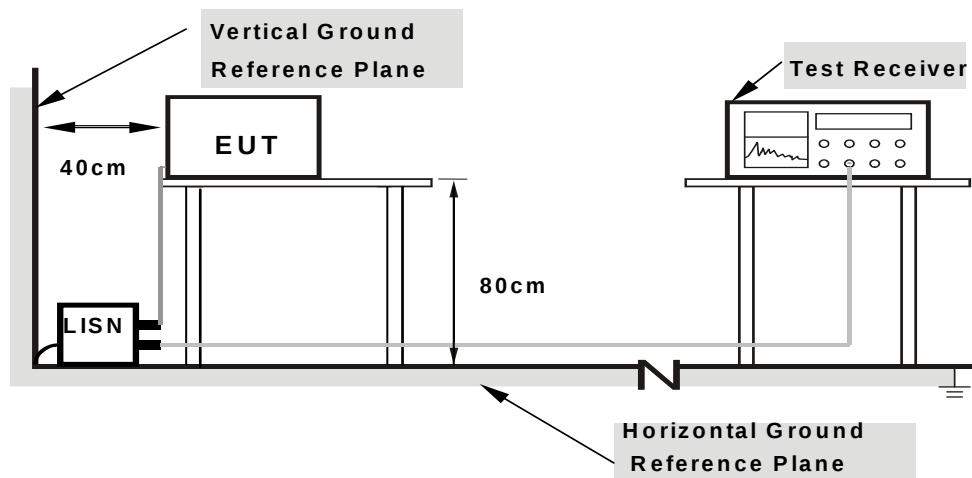
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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 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 4.1.7.

4.2.7 TEST RESULTS

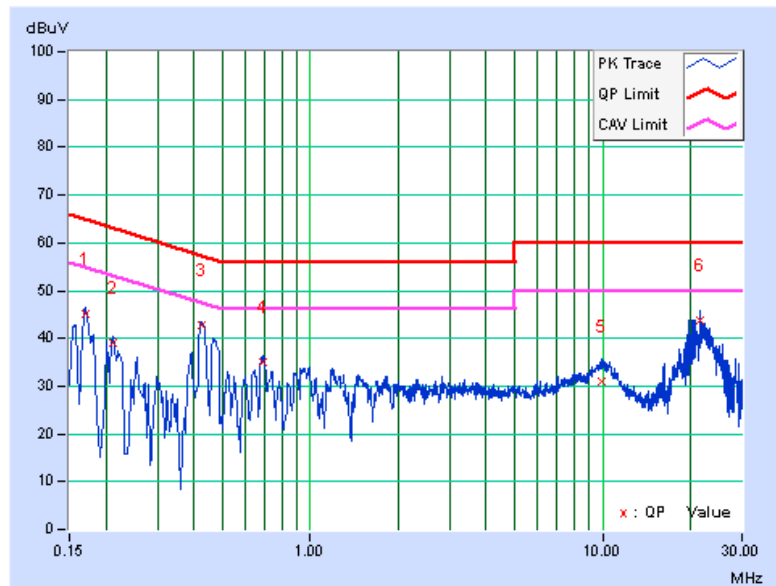
CONDUCTED WORST-CASE DATA : 802.11a

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

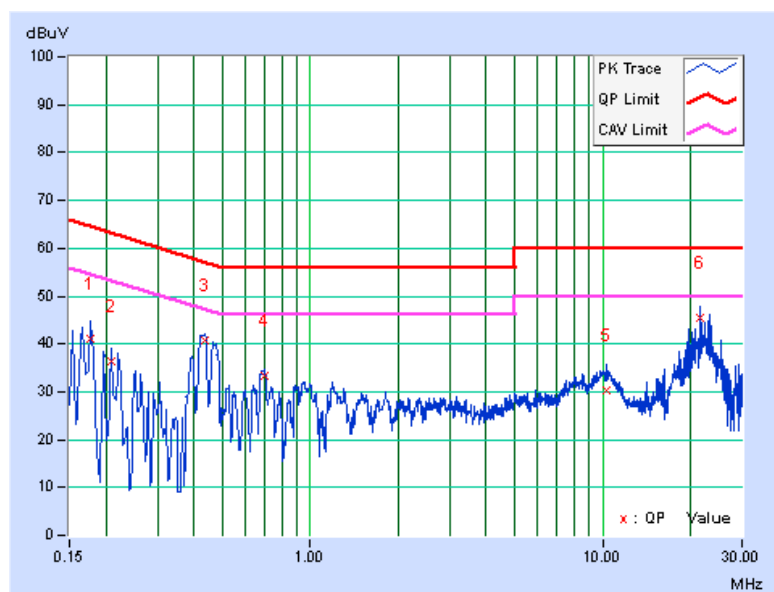


PHASE	Line 2	6dB BANDWIDTH	9kHz
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No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17744	0.05	41.04	28.81	41.09	28.86	64.60	54.60	-23.51	-25.74
2	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

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

*B is the 26 dB emission bandwidth in megahertz

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

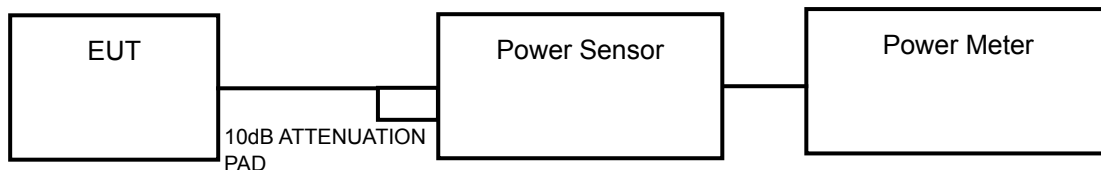
Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;

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



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), 802.11ac (20MHz), 802.11n (40MHz), 802.11ac (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.

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:

For U-NII-1 Band (Outdoor Access Point)

802.11a

CHAN.	FREQ. (MHz)	CONDUCTED POWER (mW)	CONDUCTED POWER (dBm)	CONDUCTED POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
36	5180	30.832	14.89	30	6	20.89	21	PASS
40	5200	31.117	14.93	30	6	20.93	21	PASS
48	5240	30.690	14.87	30	6	20.87	21	PASS

802.11n (20MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2							
36	5180	9.43	9.26	10.67	28.871	14.60	30	6	20.60	21	PASS
40	5200	9.37	9.34	10.56	28.616	14.57	30	6	20.57	21	PASS
48	5240	9.26	9.39	10.69	28.845	14.60	30	6	20.60	21	PASS

802.11n (40MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2							
38	5190	9.56	9.46	10.63	29.428	14.69	30	6	20.69	21	PASS
46	5230	9.37	9.46	10.55	28.831	14.60	30	6	20.60	21	PASS

802.11ac (20MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2							
36	5180	9.34	9.56	10.73	29.456	14.69	30	6	20.69	21	PASS
40	5200	9.21	9.13	10.59	27.977	14.47	30	6	20.47	21	PASS
48	5240	9.37	9.26	10.66	28.724	14.58	30	6	20.58	21	PASS

802.11ac (40MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2							
38	5190	9.33	9.26	10.67	28.671	14.57	30	6	20.57	21	PASS
46	5230	9.31	9.21	10.59	28.323	14.52	30	6	20.52	21	PASS

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	GAIN (dBi)	EIRP (dBm)	EIRP LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2							
42	5210	9.43	9.33	10.59	28.795	14.59	30	6	20.59	21	PASS

**A D T****For U-NII-3 Band****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
149	5745	69.502	18.42	30	PASS
157	5785	374.973	25.74	30	PASS
165	5825	91.411	19.61	30	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	15.24	14.71	17.06	113.816	20.56	30	PASS
157	5785	16.16	15.54	17.56	134.131	21.28	30	PASS
165	5825	18.80	18.46	18.73	220.649	23.44	30	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	15.12	14.51	16.81	108.731	20.36	30	PASS
159	5795	17.83	17.74	18.84	196.663	22.94	30	PASS

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

CHAN.	CHAN. FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
149	5745	15.13	14.80	17.17	114.903	20.60	30	PASS
157	5785	16.29	15.57	17.72	137.774	21.39	30	PASS
165	5825	18.87	18.58	18.70	223.332	23.49	30	PASS

802.11ac (40MHz)

CHAN.	CHAN. FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
151	5755	15.14	14.48	16.76	108.137	20.34	30	PASS
159	5795	17.83	17.71	18.85	196.43	22.93	30	PASS

802.11ac (80MHz)

CHAN.	CHAN. FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
155	5775	13.22	12.89	14.52	68.757	18.37	30	PASS

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

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

For U-NII-1 band:

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW ≥ 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.

For U-NII-3 band:

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

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

For U-NII-1 band

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.85	17	PASS
40	5200	2.82	17	PASS
48	5240	2.80	17	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			
36	5180	-2.92	-2.70	-1.67	2.38	12.23	PASS
40	5200	-2.92	-2.66	-1.82	2.33	12.23	PASS
48	5240	-2.82	-2.64	-1.62	2.44	12.23	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 $17 - (10.77 - 6) = 12.23\text{dBm}$.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
38	5190	-6.05	-5.98	-5.05	-0.90	12.23	PASS
46	5230	-5.94	-6.69	-5.17	-1.12	12.23	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 $17 - (10.77 - 6) = 12.23\text{dBm}$.

802.11ac (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
36	5180	-2.84	-2.82	-1.91	2.27	12.23	PASS
40	5200	-2.74	-2.76	-1.68	2.41	12.23	PASS
48	5240	-2.57	-2.67	-1.61	2.51	12.23	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 $17 - (10.77 - 6) = 12.23\text{dBm}$.

802.11ac (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
38	5190	-6.29	-6.04	-5.03	-0.98	12.23	PASS
46	5230	-5.84	-6.04	-5.00	-0.83	12.23	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 $17 - (10.77 - 6) = 12.23\text{dBm}$.

802.11ac (80MHz)

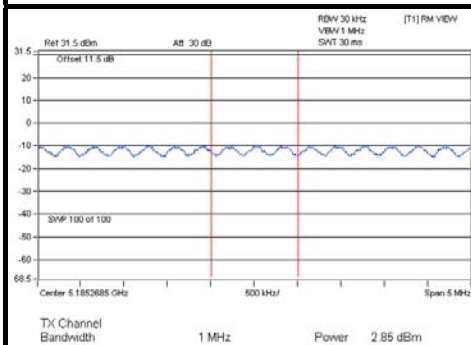
CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)			TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2			
42	5210	-9.38	-9.34	-8.34	-4.22	12.23	PASS

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.

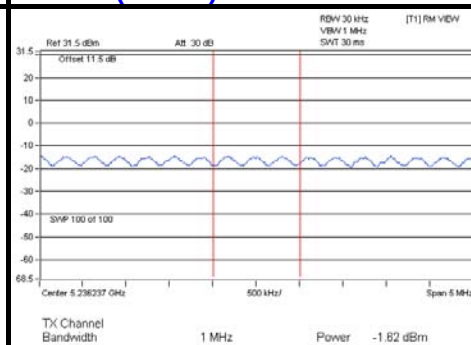
2. Directional gain = $6\text{dBi} + 10\log(3) = 10.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17 - (10.77 - 6) = 12.23\text{dBm}$.

SPECTRUM PLOT OF WORST VALUE

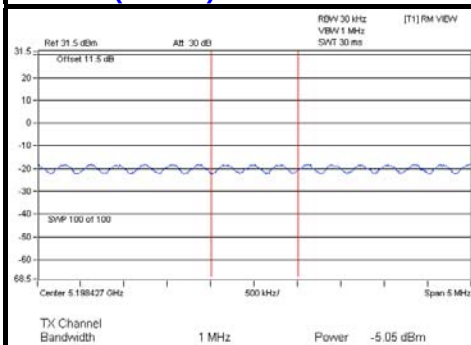
802.11a



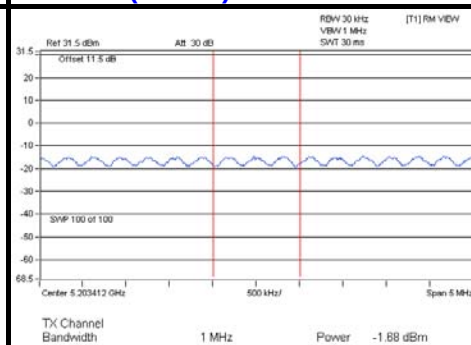
802.11n (20MHz)



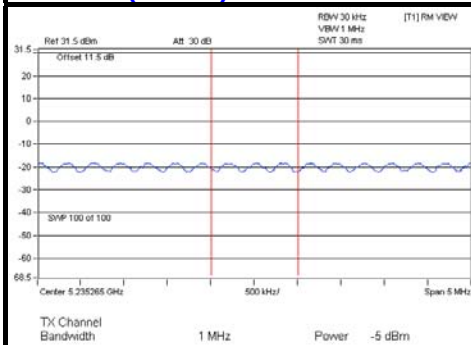
802.11n (40MHz)



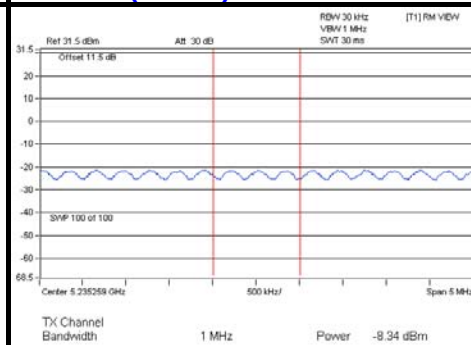
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)



For U-NII-3 band
802.11a

Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
149	5745	0.88	3.10	30	PASS
157	5785	7.83	10.05	30	PASS
165	5825	2.03	4.25	30	PASS

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=3) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	PASS /FAIL
0	149	5745	-2.47	-0.25	4.77	4.52	25.23	PASS
	157	5785	-1.72	0.50	4.77	5.27	25.23	PASS
	165	5825	0.86	3.08	4.77	7.85	25.23	PASS
1	149	5745	-2.13	0.09	4.77	4.86	25.23	PASS
	157	5785	-1.56	0.66	4.77	5.43	25.23	PASS
	165	5825	0.87	3.09	4.77	7.86	25.23	PASS
2	149	5745	-2.10	0.12	4.77	4.89	25.23	PASS
	157	5785	-1.55	0.67	4.77	5.44	25.23	PASS
	165	5825	0.86	3.08	4.77	7.85	25.23	PASS

NOTE: Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 30-(10.77-6) = 25.23dBm.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=3) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	PASS /FAIL
0	151	5755	-5.43	-3.21	4.77	1.56	25.23	PASS
	159	5795	-3.12	-0.90	4.77	3.87	25.23	PASS
1	151	5755	-5.34	-3.12	4.77	1.65	25.23	PASS
	159	5795	-3.08	-0.86	4.77	3.91	25.23	PASS
2	151	5755	-5.34	-3.12	4.77	1.65	25.23	PASS
	159	5795	-3.02	-0.80	4.77	3.97	25.23	PASS

NOTE: Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 30-(10.77-6) = 25.23dBm.

802.11ac (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=3) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	PASS /FAIL
0	149	5745	-2.31	-0.09	4.77	4.68	25.23	PASS
	157	5785	-1.52	0.70	4.77	5.47	25.23	PASS
	165	5825	0.96	3.18	4.77	7.95	25.23	PASS
1	149	5745	-2.00	0.22	4.77	4.99	25.23	PASS
	157	5785	-1.48	0.74	4.77	5.51	25.23	PASS
	165	5825	0.92	3.14	4.77	7.91	25.23	PASS
2	149	5745	-1.99	0.23	4.77	5.00	25.23	PASS
	157	5785	-1.47	0.75	4.77	5.52	25.23	PASS
	165	5825	0.92	3.14	4.77	7.91	25.23	PASS

NOTE: Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 30-(10.77-6) = 25.23dBm.

802.11ac (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=3) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	PASS /FAIL
0	151	5755	-5.27	-3.05	4.77	1.72	25.23	PASS
	159	5795	-2.95	-0.73	4.77	4.04	25.23	PASS
1	151	5755	-5.25	-3.03	4.77	1.74	25.23	PASS
	159	5795	-2.96	-0.74	4.77	4.03	25.23	PASS
2	151	5755	-5.27	-3.05	4.77	1.72	25.23	PASS
	159	5795	-2.93	-0.71	4.77	4.06	25.23	PASS

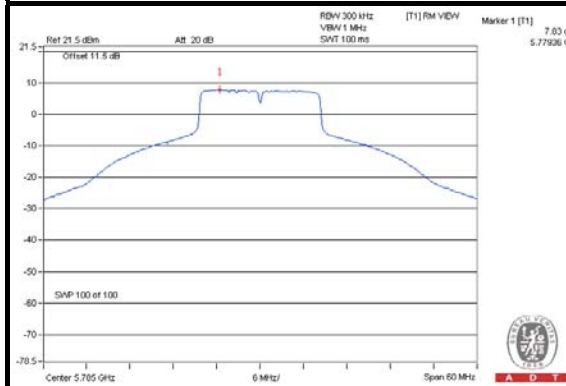
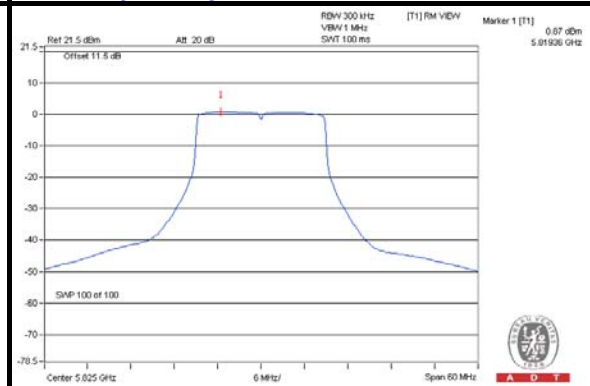
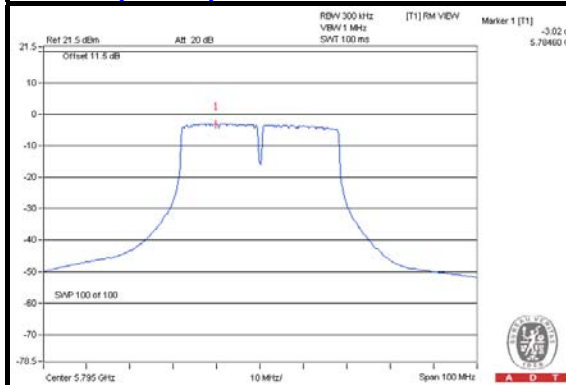
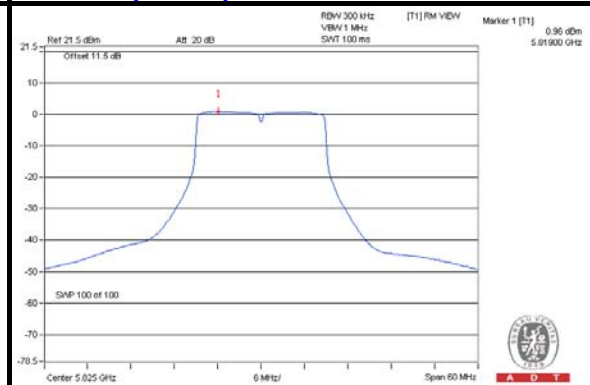
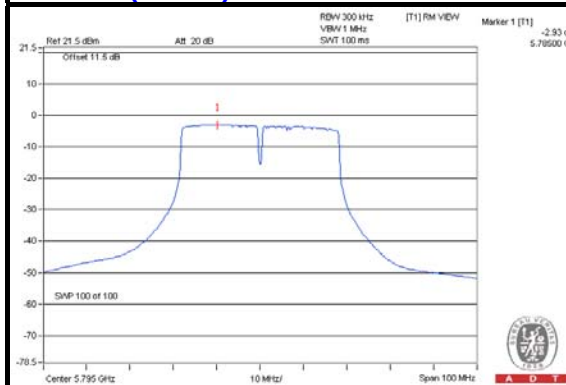
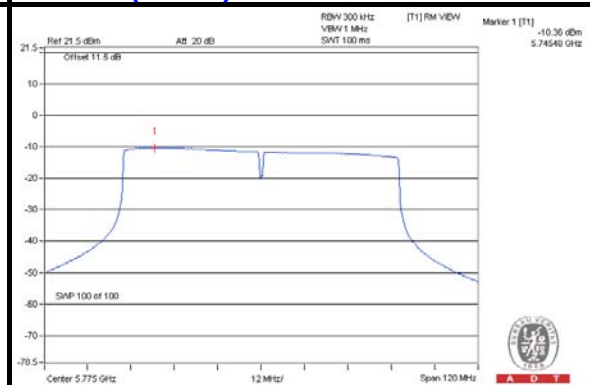
NOTE: Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 30-(10.77-6) = 25.23dBm.

802.11ac (80MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300 kHz)	PSD (dBm/500 kHz)	10 log (N=3) dB	Total PSD (dBm/500 kHz)	Limit (dBm/500 kHz)	PASS /FAIL
0	155	5775	-10.50	-8.28	4.77	-3.51	25.23	PASS
1	155	5775	-10.36	-8.14	4.77	-3.37	25.23	PASS
2	155	5775	-10.37	-8.15	4.77	-3.38	25.23	PASS

NOTE: Directional gain = 6dBi + 10log(3) = 10.77dBi > 6dBi, so the power density limit shall be reduced to 30-(10.77-6) = 25.23dBm.

SPECTRUM PLOT OF WORST VALUE

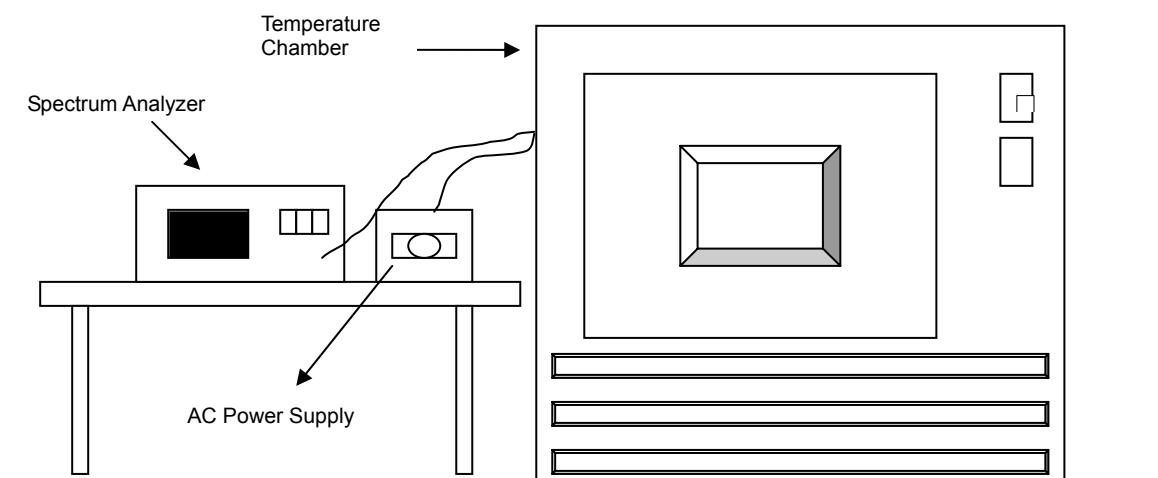
802.11a

802.11n (20MHz)

802.11n (40MHz)

802.11ac (20MHz)

802.11ac (40MHz)

802.11ac (80MHz)


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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

4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
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	5240.0007	0.00001	5239.9962	-0.00007	5239.9964	-0.00007	5239.9972	-0.00005
40	120	5240.0255	0.00049	5240.023	0.00044	5240.0223	0.00043	5240.0228	0.00044
30	120	5239.9825	-0.00033	5239.9802	-0.00038	5239.9812	-0.00036	5239.9809	-0.00036
20	120	5239.9932	-0.00013	5239.9933	-0.00013	5239.9907	-0.00018	5239.9918	-0.00016
10	120	5239.9964	-0.00007	5239.9966	-0.00006	5239.9962	-0.00007	5240.0008	0.00002
0	120	5239.9943	-0.00011	5239.9982	-0.00003	5239.9959	-0.00008	5239.9949	-0.00010
-10	120	5240.0008	0.00002	5239.9997	-0.00001	5239.9992	-0.00002	5239.9968	-0.00006
-20	120	5239.9828	-0.00033	5239.9856	-0.00027	5239.9837	-0.00031	5239.9825	-0.00033
-30	120	5240.0059	0.00011	5240.0071	0.00014	5240.0086	0.00016	5240.0077	0.00015

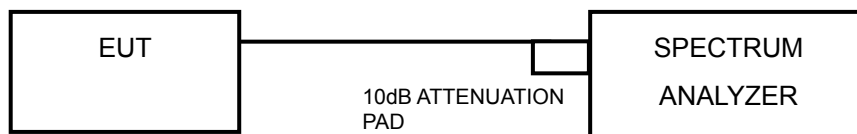
FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5239.9938	-0.00012	5239.994	-0.00011	5239.9912	-0.00017	5239.9917	-0.00016
	120	5239.9932	-0.00013	5239.9933	-0.00013	5239.9907	-0.00018	5239.9918	-0.00016
	102	5239.993	-0.00013	5239.9929	-0.00014	5239.9899	-0.00019	5239.9923	-0.00015

4.6 6dB BANDWIDTH MEASUREMENT

4.6.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.2 to get information of above instrument.

4.6.4 TEST PROCEDURE

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

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITIONS

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

4.6.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.38	0.5	PASS
157	5785	16.45	0.5	PASS
165	5825	16.41	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	17.63	17.64	17.64	0.5	PASS
157	5785	17.65	17.66	17.66	0.5	PASS
165	5825	17.63	17.64	17.65	0.5	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
151	5755	36.16	36.52	36.18	0.5	PASS
159	5795	36.45	36.21	36.20	0.5	PASS

802.11ac (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
149	5745	17.65	17.64	17.64	0.5	PASS
157	5785	17.68	17.63	17.65	0.5	PASS
165	5825	17.63	17.64	17.66	0.5	PASS

802.11ac (40MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
151	5755	36.18	36.20	36.18	0.5	PASS
159	5795	36.18	36.34	36.20	0.5	PASS

802.11ac (80MHz)

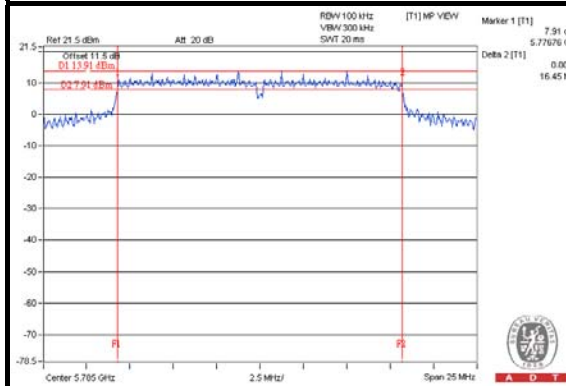
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)			MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2		
155	5775	76.03	74.33	76.20	0.5	PASS



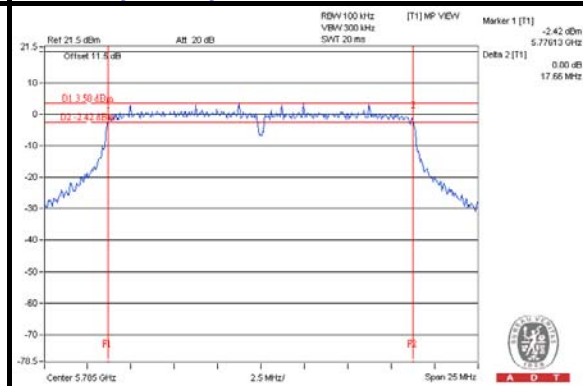
A D T

SPECTRUM PLOT OF WORST VALUE

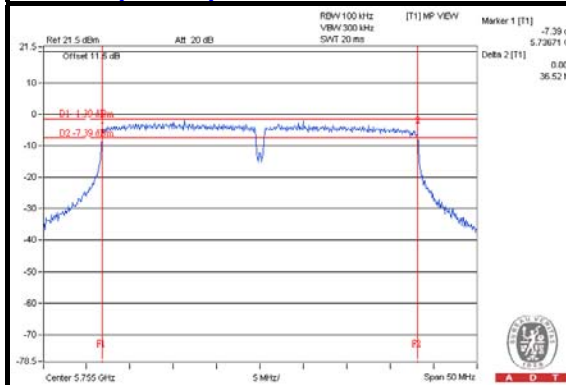
802.11a



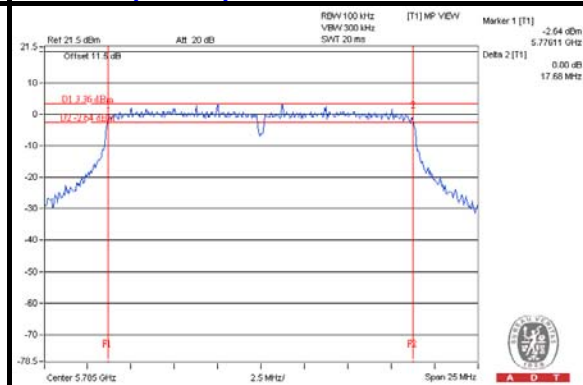
802.11n (20MHz)



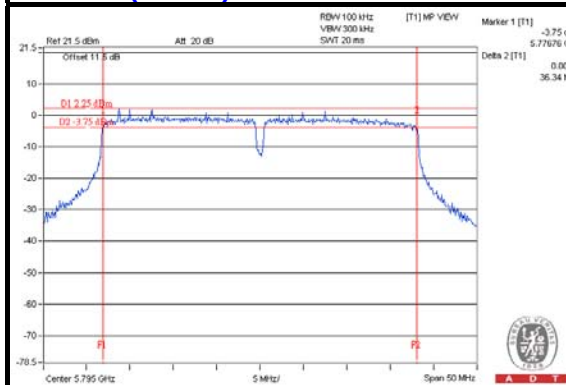
802.11n (40MHz)



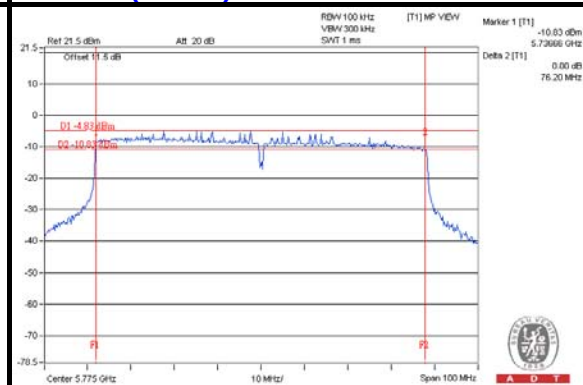
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)



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:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Lab:

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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.

---END---