FCC TEST REPORT
(WLAN 15.407)

REPORT NO.:	RF130923D14-1
MODEL NO.:	DC-NU2-UMPC
FCC ID:	2AA69001
RECEIVED:	Sep. 23, 2013
TESTED:	Sep. 24 ~ Oct. 24, 2013
ISSUED:	Oct. 25, 2013

APPLICANT:	Capsule Technologie SAS
ADDRESS:	9 villa Pierre Ginier 75018 Paris, France

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF130923D14-1	Original release	Oct. 25, 2013

1. CERTIFICATION

PRODUCT:	Neuron 2
BRAND NAME:	Capsule
MODEL:	DC-NU2-UMPC
APPLICANT:	Capsule Technologie SAS
TESTED:	Sep. 24 ~ Oct. 24, 2013
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

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

PREPARED BY : Annie Chang , **DATE:** Oct. 25, 2013

(Annie Chang / Supervisor)

APPROVED BY : Rex. Lai , **DATE:** Oct. 25, 2013

(Rex Lai / Assistant 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 Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.02dB at 0.15019MHz.
15.407(b/1/2/3)(b)(6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -6.3dB at 10640.00, 11100.00 & 11160.00MHz.
15.407(a/1/2)	Max Average Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

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	150kHz~30MHz	2.41 dB
Radiated emissions	30MHz ~ 1GHz	4.30 dB
	Above 1GHz	3.36 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	Neuron 2
MODEL NO.	DC-NU2-UMPC
POWER SUPPLY	17-21Vdc from Adapter or 11.1Vdc from battery
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5500 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz)
OUTPUT POWER	38.5mW for 5180 ~ 5240MHz 37.8mW for 5260 ~ 5320MHz 35.7mW for 5500 ~ 5700MHz
ANTENNA TYPE	PCB antenna with 2dBi gain
ANTENNA CONNECTOR	N/A
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Refer to Note as below

NOTE:

1. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11a	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

2. The EUT was power supplied from the following power adapter or battery:

Item	Brand	Model	Spec.
Adapter	PROTEK POWER	PMP60-13-1-B5	AC I/P: 100-240V, 1.22-0.68A, 47-63Hz DC O/P: 17-21V, 3.53A, 60W Non-shielded AC 3-pin cable (1.8m) Non-shielded DC cable (1.3m) with one ferrite core.
Battery 1	Capsule	DC-NU2-BAT	11.1V, 2.6Ah, 28.8Wh
Battery 2	Capsule	DC-NU2-EXTBAT	11.1V, 5.2Ah, 57.7Wh

3. The EUT was pre-tested with the following modes:
   - ✧ Operating Mode (EUT stand-alone)
   - ✧ Operating + Charging Mode (EUT + Adapter)

   The worst emission level was found when the EUT tested under **Operating + Charging Mode (EUT + Adapter)**, therefore, only its test data was recorded in this report.

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

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

3 channels are provided for 802.11n (40MHz):

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

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE≥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 3 axis. The worst case was found when positioned on **Y-plane.**

RADIATED EMISSION TEST (ABOVE 1GHz):

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

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

POWER LINE CONDUCTED EMISSION TEST:

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

MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	5180-5240	36 to 48	36	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.

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	6.5
802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	24deg. C, 77% RH	120Vac, 60Hz	Joey Liu
RE<1G	24deg. C, 77% RH	120Vac, 60Hz	Joey Liu
PLC	26deg. C, 78% RH	120Vac, 60Hz	Aaron You
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chad Lee

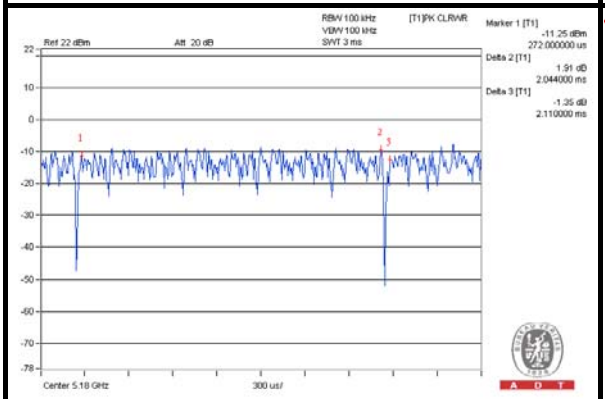
3.3 DUTY CYCLE OF TEST SIGNAL

Duty factor shall be considered (Duty cycle of test signal of QPSK is > 98 %).

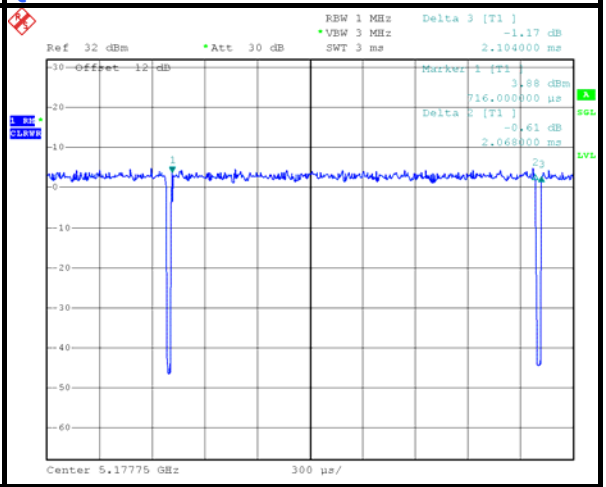
802.11a:

BPSK: Duty cycle = 2.044 / 2.110 = 0.969 , Duty factor = 10 * log(1/ 0.969) = 0.14
QPSK: Duty cycle = 2.068 / 2.104 = 0.983
16QAM: Duty cycle = 1.780 / 1.860 = 0.957 , Duty factor = 10 * log(1/ 0.957) = 0.19
64QAM: Duty cycle = 0.696 / 0.734 = 0.948 , Duty factor = 10 * log(1/ 0.948) = 0.23

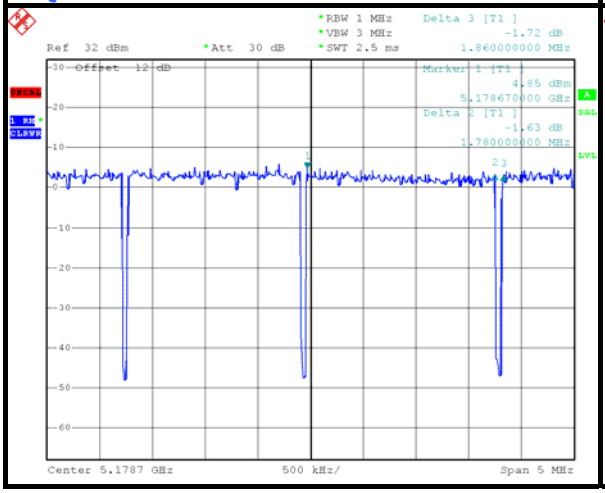
BPSK



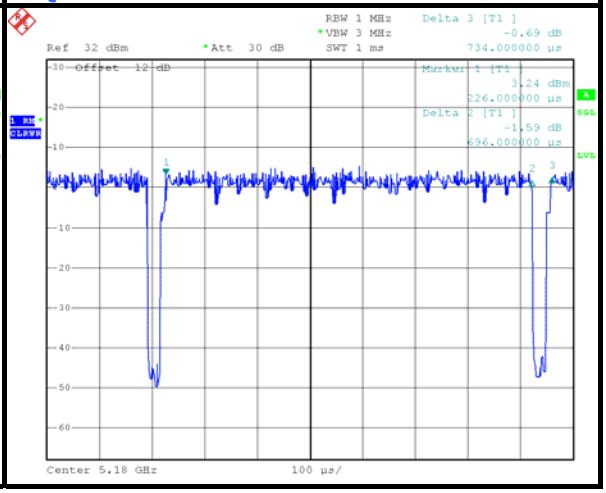
QPSK



16QAM



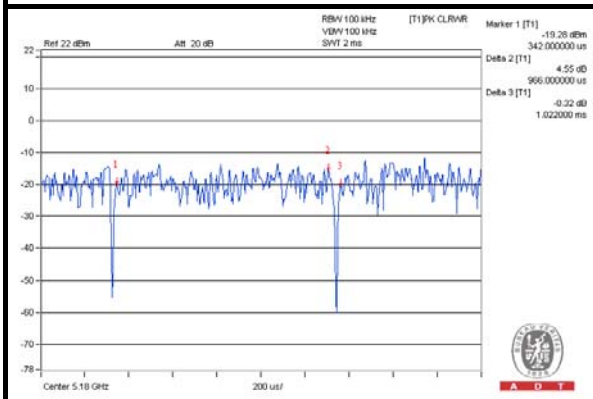
64QAM



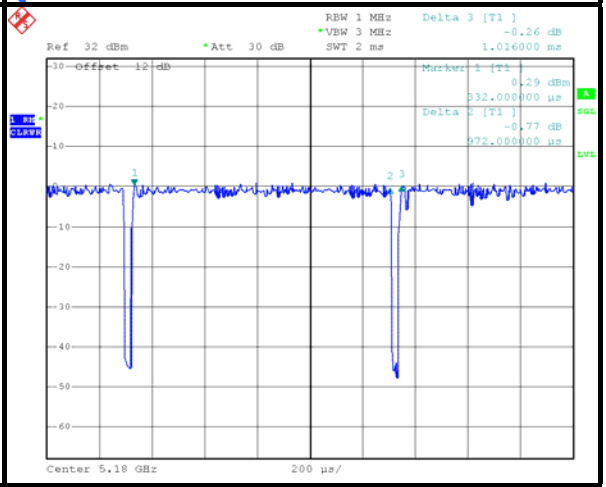
802.11n (20MHz)

BPSK: Duty cycle = 0.966 / 1.022 = 0.945 , Duty factor = 10 * log(1/ 0.945) = 0.25
QPSK: Duty cycle = 0.972 / 1.016 = 0.957 , Duty factor = 10 * log(1/ 0.957) = 0.19
16QAM: Duty cycle = 0.504 / 0.540 = 0.933 , Duty factor = 10 * log(1/ 0.933) = 0.30
64QAM: Duty cycle = 0.268 / 0.294 = 0.912 , Duty factor = 10 * log(1/ 0.912) = 0.40

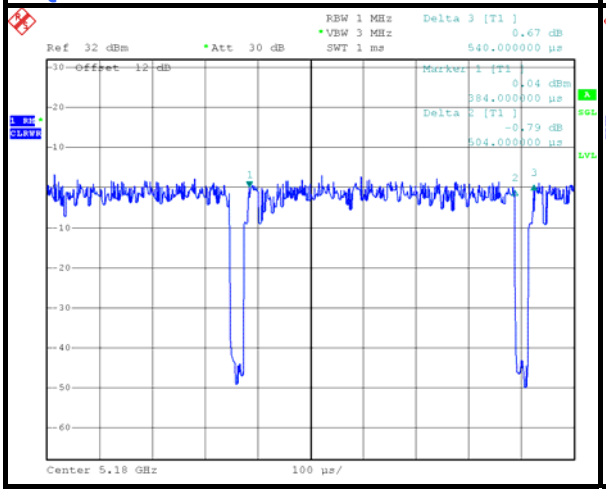
BPSK



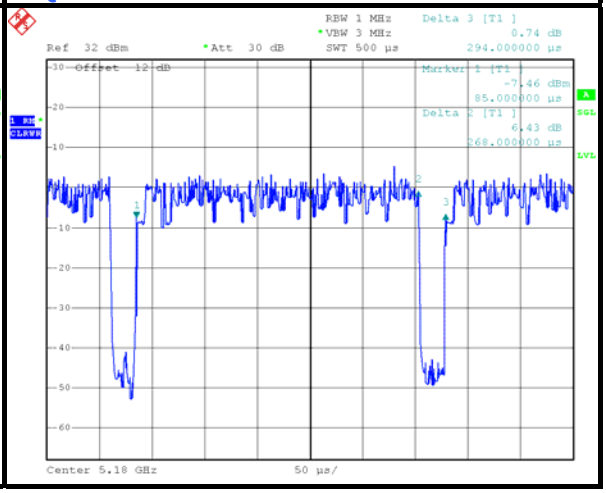
QPSK



16QAM



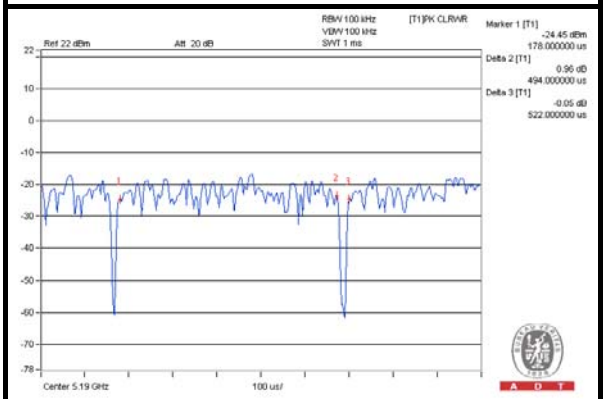
64QAM



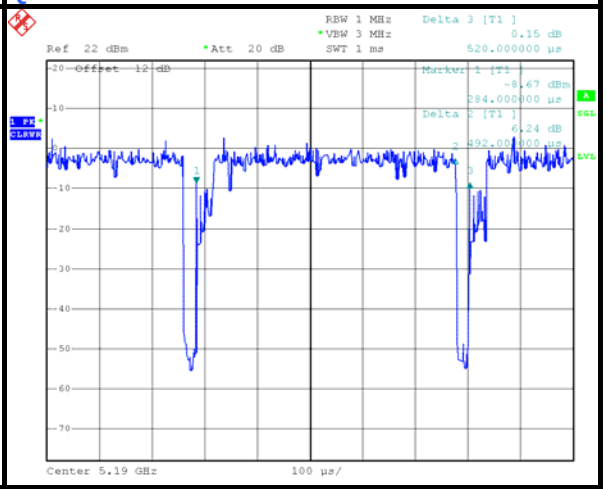
802.11n (40MHz):

BPSK: Duty cycle = 0.494 / 0.522 = 0.946 , Duty factor = 10 * log(1/ 0.946) = 0.24
QPSK: Duty cycle = 0.492 / 0.520 = 0.946 , Duty factor = 10 * log(1/ 0.946) = 0.24
16QAM: Duty cycle = 0.263 / 0.289 = 0.910 , Duty factor = 10 * log(1/ 0.910) = 0.41
64QAM: Duty cycle = 0.151 / 0.178 = 0.848 , Duty factor = 10 * log(1/ 0.848) = 0.71

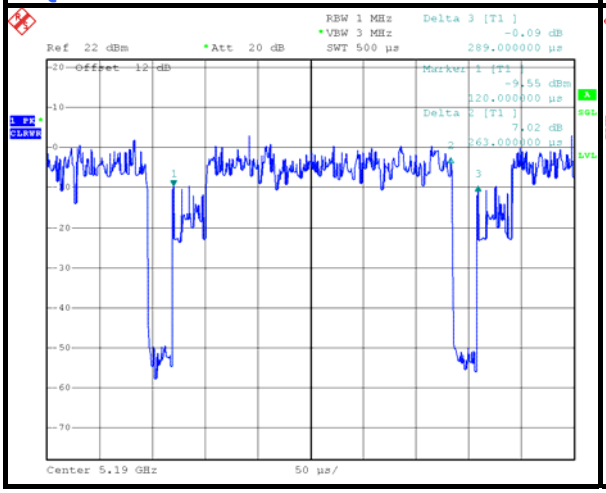
BPSK



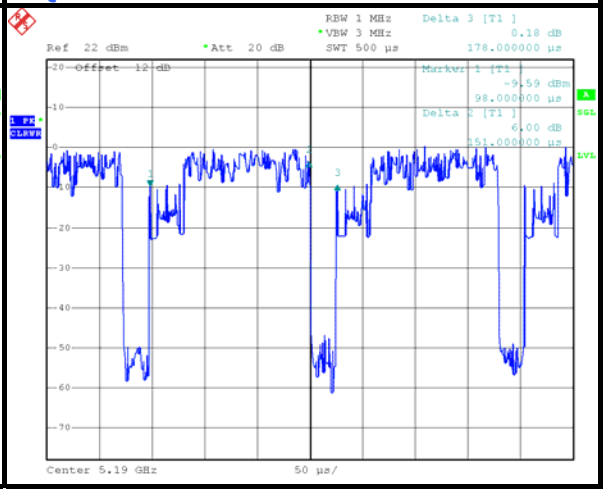
QPSK



16QAM



64QAM



3.4 DESCRIPTION OF SUPPORT UNITS

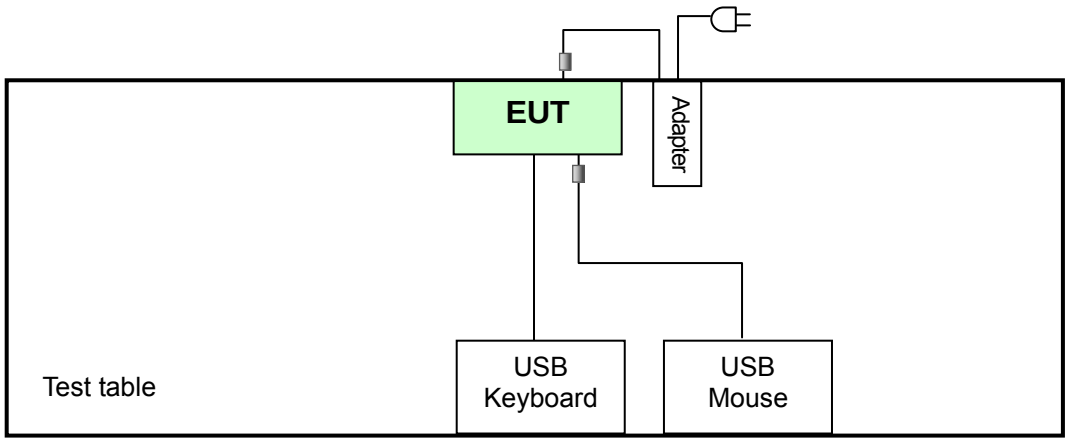
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	USB KEYBOARD	BTC	5200U	G09302046486	E5XKB5122U
2	USB Mouse	Microsoft	1113	9170515897028	FCC DOC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.5 m braid shielded wire, terminated with USB connector via drain wire, w/o core.
2	1.5 m braid shielded wire, terminated with USB connector via drain wire, w/. one core.

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
789033 D01 General UNII Test Procedures v01 r03
662911 D01 Multiple Transmitter Output v01 r02
ANSI C63.10-2009

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

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

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

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 26, 2013	Feb. 25, 2014
HP Preamplifier	8449B	3008A01201	Feb. 26, 2013	Feb. 25, 2014
Agilent TEST RECEIVER	N9038A	MY51210129	Jan. 03, 2013	Jan. 02, 2014
Schwarzbeck Antenna	VULB 9168	137	Mar. 20, 2013	Mar. 19, 2014
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2013	May 28, 2014
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	ADT_Radiated_V 7.6.15.9.2	NA	NA	NA
SUHNER RF cable	SF102	CABLE-CH6	Aug. 19, 2013	Aug. 18, 2014
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	May 13, 2013	May 12, 2014
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	May. 17, 2013	May. 16, 2014
Anritsu Power Sensor	MA2411B	0738404	Apr. 24, 2013	Apr. 23, 2014
Anritsu Power Meter	ML2495A	0842014	Apr. 25, 2013	Apr. 24, 2014

NOTE: 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.
5. The FCC Site Registration No. is 447212.

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 camber. 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:

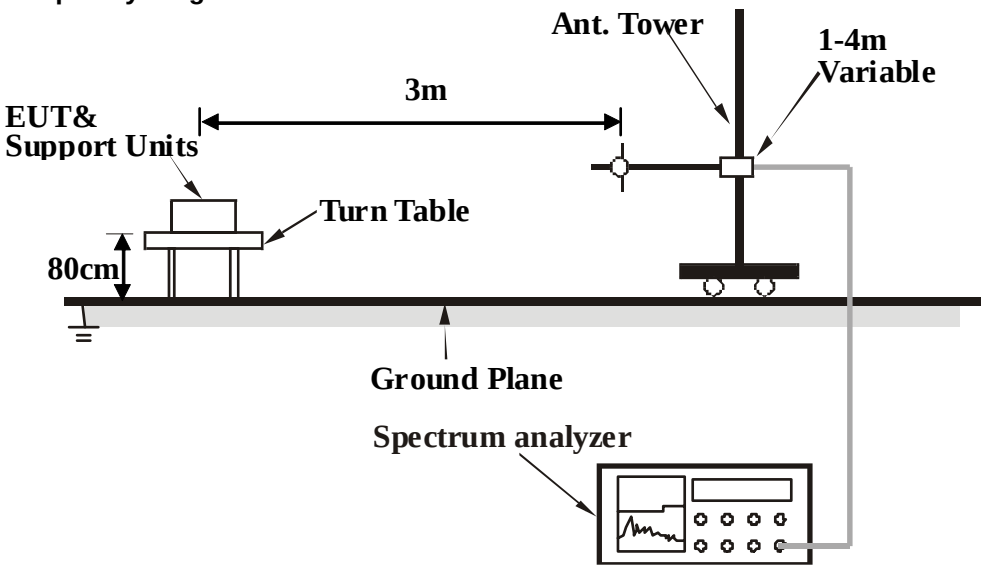
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

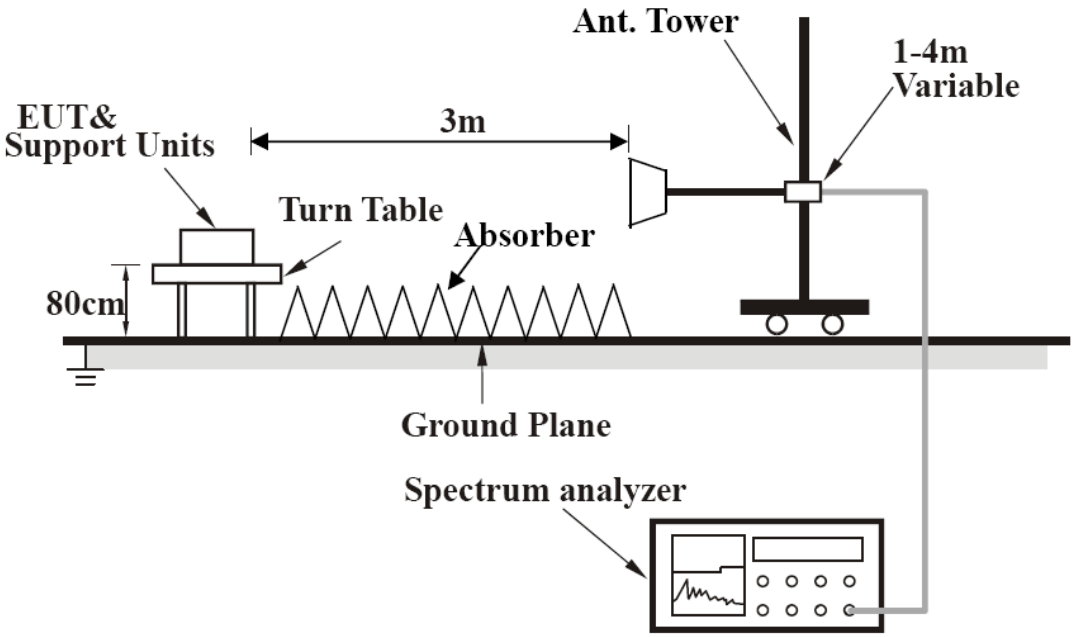
No deviation.

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

The EUT ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.8 TEST RESULTS

ABOVE 1GHz DATA

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	42.9 PK	74.0	-31.1	1.47 H	241	38.82	4.05
2	5150.00	35.2 AV	54.0	-18.8	1.47 H	241	31.17	4.05
3	*5180.00	102.4 PK			1.47 H	241	98.21	4.14
4	*5180.00	91.8 AV			1.47 H	241	87.63	4.14
5	10360.00	52.4 PK	74.0	-21.6	1.42 H	244	37.71	14.73
6	10360.00	46.5 AV	54.0	-7.5	1.42 H	244	31.77	14.73
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	43.1 PK	74.0	-30.9	1.36 V	131	39.06	4.05
2	5150.00	35.7 AV	54.0	-18.3	1.36 V	131	31.64	4.05
3	*5180.00	106.1 PK			1.36 V	131	101.92	4.14
4	*5180.00	95.5 AV			1.36 V	131	91.31	4.14
5	10360.00	52.0 PK	74.0	-22.0	1.33 V	121	37.27	14.73
6	10360.00	46.6 AV	54.0	-7.5	1.33 V	121	31.82	14.73

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 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	*5200.00	103.2 PK			1.33 H	209	98.97	4.19
2	*5200.00	92.6 AV			1.33 H	209	88.41	4.19
3	10400.00	52.4 PK	74.0	-21.6	1.23 H	200	37.32	15.12
4	10400.00	46.9 AV	54.0	-7.1	1.23 H	200	31.74	15.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	105.7 PK			1.35 V	124	101.53	4.19
2	*5200.00	95.7 AV			1.35 V	124	91.46	4.19
3	10400.00	52.1 PK	74.0	-21.9	1.33 V	118	36.94	15.12
4	10400.00	46.4 AV	54.0	-7.6	1.33 V	118	31.24	15.12

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.1 PK			1.34 H	212	98.74	4.35
2	*5240.00	93.0 AV			1.34 H	212	88.63	4.35
3	5350.00	43.5 PK	74.0	-30.5	1.34 H	212	38.79	4.71
4	5350.00	36.0 AV	54.0	-18.0	1.34 H	212	31.29	4.71
5	10480.00	52.6 PK	74.0	-21.4	1.23 H	210	37.70	14.92
6	10480.00	46.8 AV	54.0	-7.3	1.23 H	210	31.83	14.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	105.6 PK			1.34 V	123	101.21	4.35
2	*5240.00	95.4 AV			1.34 V	123	91.03	4.35
3	5350.00	44.1 PK	74.0	-29.9	1.34 V	123	39.42	4.71
4	5350.00	35.9 AV	54.0	-18.1	1.34 V	123	31.15	4.71
5	10480.00	51.8 PK	74.0	-22.2	1.31 V	122	36.85	14.92
6	10480.00	46.9 AV	54.0	-7.1	1.31 V	122	31.97	14.92

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	42.4 PK	74.0	-31.6	1.00 H	74	38.32	4.05
2	5150.00	35.0 AV	54.0	-19.0	1.00 H	74	30.91	4.05
3	*5260.00	98.1 PK			1.00 H	74	93.67	4.42
4	*5260.00	77.6 AV			1.00 H	74	73.17	4.42
5	10520.00	53.2 PK	74.0	-20.9	1.00 H	82	38.17	14.98
6	10520.00	44.9 AV	54.0	-9.1	1.00 H	82	29.94	14.98
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	42.3 PK	74.0	-31.8	1.00 V	228	38.20	4.05
2	5150.00	34.8 AV	54.0	-19.2	1.00 V	228	30.72	4.05
3	*5260.00	101.2 PK			1.00 V	228	96.76	4.42
4	*5260.00	91.0 AV			1.00 V	228	86.61	4.42
5	10520.00	52.3 PK	74.0	-21.7	1.00 V	231	37.31	14.98
6	10520.00	45.6 AV	54.0	-8.4	1.00 V	231	30.63	14.98

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	98.1 PK			1.00 H	74	93.51	4.58
2	*5300.00	88.0 AV			1.00 H	74	83.45	4.58
3	10600.00	53.6 PK	74.0	-20.4	1.00 H	84	38.15	15.41
4	10600.00	45.2 AV	54.0	-8.8	1.00 H	84	29.78	15.41
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	101.5 PK			1.00 V	227	96.96	4.58
2	*5300.00	90.7 AV			1.00 V	227	86.11	4.58
3	10600.00	58.2 PK	74.0	-15.8	1.00 V	234	42.78	15.41
4	10600.00	46.1 AV	54.0	-7.9	1.00 V	234	30.71	15.41

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	99.0 PK			1.00 H	65	94.32	4.63
2	*5320.00	88.7 AV			1.00 H	65	84.07	4.63
3	5350.00	43.7 PK	74.0	-30.3	1.00 H	65	38.99	4.71
4	5350.00	34.2 AV	54.0	-19.8	1.00 H	65	29.51	4.71
5	10640.00	59.2 PK	74.0	-14.8	1.00 H	78	43.87	15.35
6	**10640.00**	**47.7 AV**	**54.0**	**-6.3**	**1.00 H**	**78**	**32.36**	**15.35**
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	101.1 PK			1.00 V	226	96.48	4.63
2	*5320.00	90.7 AV			1.00 V	226	86.07	4.63
3	5350.00	43.6 PK	74.0	-30.4	1.00 V	226	38.93	4.71
4	5350.00	34.9 AV	54.0	-19.2	1.00 V	226	30.14	4.71
5	10640.00	58.1 PK	74.0	-15.9	1.00 V	228	42.78	15.35
6	10640.00	47.1 AV	54.0	-6.9	1.00 V	228	31.78	15.35

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	46.9 PK	74.0	-27.2	1.00 H	61	41.78	5.07
2	5460.00	35.3 AV	54.0	-18.7	1.00 H	61	30.24	5.07
3	5470.00	48.0 PK	74.0	-26.0	1.00 H	61	42.94	5.10
4	5470.00	35.9 AV	54.0	-18.1	1.00 H	61	30.79	5.10
5	*5500.00	99.0 PK			1.00 H	61	93.75	5.22
6	*5500.00	88.3 AV			1.00 H	61	83.12	5.22
7	11000.00	58.3 PK	74.0	-15.7	1.00 H	53	42.22	16.11
8	11000.00	46.9 AV	54.0	-7.1	1.00 H	53	30.78	16.11
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	46.4 PK	74.0	-27.6	1.00 V	224	41.32	5.07
2	5460.00	35.7 AV	54.0	-18.3	1.00 V	224	30.63	5.07
3	5470.00	47.7 PK	74.0	-26.3	1.00 V	227	42.58	5.10
4	5470.00	36.8 AV	54.0	-17.2	1.00 V	227	31.72	5.10
5	*5500.00	101.5 PK			1.00 V	227	96.29	5.22
6	*5500.00	91.5 AV			1.00 V	227	86.27	5.22
7	11000.00	56.8 PK	74.0	-17.2	1.00 V	236	40.72	16.11
8	11000.00	46.3 AV	54.0	-7.8	1.00 V	236	30.14	16.11

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.4 PK			1.00 H	58	93.08	5.31
2	*5580.00	87.7 AV			1.00 H	58	82.41	5.31
3	11160.00	57.4 PK	74.0	-16.6	1.00 H	245	40.78	16.60
4	11160.00	46.9 AV	54.0	-7.1	1.00 H	245	30.32	16.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	101.2 PK			1.00 V	228	95.92	5.31
2	*5580.00	90.4 AV			1.00 V	228	85.13	5.31
3	11160.00	56.4 PK	74.0	-17.6	1.00 V	238	39.78	16.60
4	11160.00	46.0 AV	54.0	-8.0	1.00 V	238	29.38	16.60

REMARKS:

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

CHANNEL	TX Channel 132	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	*5660.00	98.2 PK			1.00 H	40	92.83	5.35
2	*5660.00	87.5 AV			1.00 H	40	82.15	5.35
3	11320.00	54.9 PK	74.0	-19.1	1.00 H	52	38.76	16.16
4	11320.00	45.1 AV	54.0	-8.9	1.00 H	52	28.96	16.16
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	*5660.00	101.2 PK			1.00 V	187	95.86	5.35
2	*5660.00	92.2 AV			1.00 V	187	86.85	5.35
3	11320.00	57.4 PK	74.0	-16.6	1.00 V	199	41.21	16.16
4	11320.00	45.9 AV	54.0	-8.1	1.00 V	199	29.75	16.16

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	98.6 PK			1.00 H	40	93.21	5.35
2	*5700.00	89.0 AV			1.00 H	40	83.61	5.35
3	5825.00	43.7 PK	74.0	-30.3	1.00 H	40	38.15	5.57
4	5825.00	35.2 AV	54.0	-18.8	1.00 H	40	29.67	5.57
5	11400.00	55.1 PK	74.0	-18.9	1.00 H	53	38.96	16.10
6	11400.00	45.7 AV	54.0	-8.3	1.00 H	53	29.63	16.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	101.4 PK			1.00 V	187	96.09	5.35
2	*5700.00	90.9 AV			1.00 V	187	85.52	5.35
3	5825.00	43.9 PK	74.0	-30.1	1.00 V	187	38.33	5.57
4	5825.00	35.5 AV	54.0	-18.5	1.00 V	187	29.89	5.57
5	11400.00	54.9 PK	74.0	-19.1	1.00 V	224	38.79	16.10
6	11400.00	47.6 AV	54.0	-6.5	1.00 V	224	31.45	16.10

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	42.7 PK	74.0	-31.3	1.00 H	274	38.67	4.05
2	5150.00	35.9 AV	54.0	-18.1	1.00 H	274	31.83	4.05
3	*5180.00	100.3 PK			1.00 H	274	96.15	4.14
4	*5180.00	87.8 AV			1.00 H	274	83.61	4.14
5	10360.00	51.3 PK	74.0	-22.7	1.00 H	277	36.58	14.73
6	10360.00	45.9 AV	54.0	-8.1	1.00 H	277	31.17	14.73
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	42.1 PK	74.0	-31.9	1.03 V	322	38.09	4.05
2	5150.00	36.0 AV	54.0	-18.0	1.03 V	322	31.96	4.05
3	*5180.00	103.0 PK			1.03 V	322	98.86	4.14
4	*5180.00	90.7 AV			1.03 V	322	86.58	4.14
5	10360.00	51.8 PK	74.0	-22.3	1.03 V	319	37.02	14.73
6	10360.00	46.0 AV	54.0	-8.1	1.03 V	319	31.22	14.73

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 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	*5200.00	100.8 PK			1.04 H	271	96.58	4.19
2	*5200.00	87.7 AV			1.04 H	271	83.52	4.19
3	10400.00	51.6 PK	74.0	-22.4	1.00 H	264	36.50	15.12
4	10400.00	46.7 AV	54.0	-7.3	1.00 H	264	31.54	15.12
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.4 PK			1.03 V	322	99.17	4.19
2	*5200.00	91.0 AV			1.03 V	322	86.76	4.19
3	10400.00	51.6 PK	74.0	-22.4	1.00 V	321	36.51	15.12
4	10400.00	46.3 AV	54.0	-7.7	1.00 V	321	31.22	15.12

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	100.5 PK			1.04 H	273	96.17	4.35
2	*5240.00	87.6 AV			1.04 H	273	83.24	4.35
3	5350.00	44.5 PK	74.0	-29.5	1.04 H	273	39.76	4.71
4	5350.00	36.1 AV	54.0	-17.9	1.04 H	273	31.41	4.71
5	10480.00	51.8 PK	74.0	-22.2	1.04 H	271	36.86	14.92
6	10480.00	46.6 AV	54.0	-7.4	1.04 H	271	31.64	14.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.8 PK			1.02 V	321	99.48	4.35
2	*5240.00	91.5 AV			1.02 V	321	87.19	4.35
3	5350.00	43.0 PK	74.0	-31.0	1.02 V	321	38.31	4.71
4	5350.00	36.1 AV	54.0	-17.9	1.02 V	321	31.36	4.71
5	10480.00	53.4 PK	74.0	-20.6	1.02 V	318	38.52	14.92
6	10480.00	46.3 AV	54.0	-7.7	1.02 V	318	31.35	14.92

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.6 PK	74.0	-29.4	1.00 H	75	40.52	4.05
2	5150.00	34.9 AV	54.0	-19.1	1.00 H	75	30.85	4.05
3	*5260.00	96.3 PK			1.00 H	75	91.85	4.42
4	*5260.00	84.3 AV			1.00 H	75	79.91	4.42
5	10520.00	56.5 PK	74.0	-17.5	1.00 H	82	41.49	14.98
6	10520.00	45.3 AV	54.0	-8.7	1.00 H	82	30.33	14.98
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	42.8 PK	74.0	-31.2	1.04 V	314	38.76	4.05
2	5150.00	34.8 AV	54.0	-19.2	1.04 V	314	30.78	4.05
3	*5260.00	99.5 PK			1.04 V	314	95.12	4.42
4	*5260.00	87.6 AV			1.04 V	314	83.17	4.42
5	10520.00	54.2 PK	74.0	-19.8	1.04 V	321	39.18	14.98
6	10520.00	44.1 AV	54.0	-9.9	1.04 V	321	29.13	14.98

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	96.0 PK			1.00 H	73	91.45	4.58
2	*5300.00	83.5 AV			1.00 H	73	78.95	4.58
3	10600.00	57.6 PK	74.0	-16.4	1.00 H	78	42.17	15.41
4	10600.00	45.5 AV	54.0	-8.5	1.00 H	78	30.07	15.41
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	98.9 PK			1.00 V	311	94.29	4.58
2	*5300.00	86.6 AV			1.00 V	311	82.04	4.58
3	10600.00	55.6 PK	74.0	-18.4	1.00 V	321	40.21	15.41
4	10600.00	44.8 AV	54.0	-9.2	1.00 V	321	29.38	15.41

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	96.2 PK			1.00 H	73	91.61	4.63
2	*5320.00	84.0 AV			1.00 H	73	79.35	4.63
3	5350.00	47.2 PK	74.0	-26.8	1.00 H	73	42.45	4.71
4	5350.00	36.5 AV	54.0	-17.5	1.00 H	73	31.78	4.71
5	10640.00	54.2 PK	74.0	-19.8	1.00 H	78	38.81	15.35
6	10640.00	44.7 AV	54.0	-9.3	1.00 H	78	29.38	15.35
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	98.4 PK			1.00 V	313	93.76	4.63
2	*5320.00	86.3 AV			1.00 V	313	81.69	4.63
3	5350.00	43.6 PK	74.0	-30.4	1.00 V	313	38.89	4.71
4	5350.00	35.2 AV	54.0	-18.8	1.00 V	313	30.46	4.71
5	10640.00	54.3 PK	74.0	-19.7	1.00 V	311	38.97	15.35
6	10640.00	45.7 AV	54.0	-8.3	1.00 V	311	30.38	15.35

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	46.9 PK	74.0	-27.2	1.00 H	26	41.78	5.07
2	5460.00	43.2 AV	54.0	-10.8	1.00 H	26	38.16	5.07
3	5470.00	45.1 PK	74.0	-28.9	1.00 H	26	39.96	5.10
4	5470.00	34.8 AV	54.0	-19.2	1.00 H	26	29.68	5.10
5	*5500.00	96.1 PK			1.00 H	26	90.83	5.22
6	*5500.00	84.9 AV			1.00 H	26	79.72	5.22
7	11000.00	56.4 PK	74.0	-17.6	1.00 H	34	40.25	16.11
8	11000.00	46.4 AV	54.0	-7.6	1.00 H	34	30.33	16.11
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	44.0 PK	74.0	-30.0	1.00 V	348	38.93	5.07
2	5460.00	34.4 AV	54.0	-19.6	1.00 V	348	29.31	5.07
3	5470.00	44.6 PK	74.0	-29.4	1.00 V	348	39.54	5.10
4	5470.00	35.4 AV	54.0	-18.6	1.00 V	348	30.33	5.10
5	*5500.00	98.8 PK			1.00 V	348	93.61	5.22
6	*5500.00	86.8 AV			1.00 V	348	81.53	5.22
7	11000.00	54.8 PK	74.0	-19.2	1.00 V	355	38.69	16.11
8	11000.00	47.2 AV	54.0	-6.8	1.00 V	355	31.08	16.11

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	96.1 PK			1.00 H	26	90.76	5.31
2	*5580.00	84.4 AV			1.00 H	26	79.07	5.31
3	11160.00	57.4 PK	74.0	-16.6	1.00 H	30	40.78	16.60
4	**11160.00**	**47.7 AV**	**54.0**	**-6.3**	**1.00 H**	**30**	**31.09**	**16.60**
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.8 PK			1.00 V	342	93.51	5.31
2	*5580.00	87.1 AV			1.00 V	342	81.82	5.31
3	11160.00	57.8 PK	74.0	-16.2	1.00 V	337	41.20	16.60
4	11160.00	46.9 AV	54.0	-7.1	1.00 V	337	30.26	16.60

REMARKS:

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

CHANNEL	TX Channel 132	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	*5660.00	96.2 PK			1.00 H	33	90.86	5.35
2	*5660.00	83.4 AV			1.00 H	33	78.01	5.35
3	11320.00	56.3 PK	74.0	-17.7	1.00 H	42	40.17	16.16
4	11320.00	47.4 AV	54.0	-6.6	1.00 H	42	31.22	16.16
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	*5660.00	98.8 PK			1.00 V	344	93.43	5.35
2	*5660.00	86.7 AV			1.00 V	344	81.38	5.35
3	11320.00	54.8 PK	74.0	-19.2	1.00 V	354	38.67	16.16
4	11320.00	45.8 AV	54.0	-8.2	1.00 V	354	29.63	16.16

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	95.9 PK			1.00 H	33	90.52	5.35
2	*5700.00	82.7 AV			1.00 H	33	77.34	5.35
3	5825.00	44.3 PK	74.0	-29.7	1.00 H	33	38.77	5.57
4	5825.00	36.6 AV	54.0	-17.4	1.00 H	33	31.04	5.57
5	11400.00	54.3 PK	74.0	-19.7	1.00 H	50	38.23	16.10
6	11400.00	45.4 AV	54.0	-8.6	1.00 H	50	29.34	16.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	98.6 PK			1.00 V	340	93.28	5.35
2	*5700.00	86.2 AV			1.00 V	340	80.82	5.35
3	5825.00	48.8 PK	74.0	-25.2	1.00 V	340	43.21	5.57
4	5825.00	36.8 AV	54.0	-17.2	1.00 V	340	31.22	5.57
5	11400.00	54.4 PK	74.0	-19.6	1.00 V	356	38.29	16.10
6	11400.00	46.4 AV	54.0	-7.6	1.00 V	356	30.33	16.10

REMARKS:

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

802.11n (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.3 PK	74.0	-29.7	1.37 H	99	40.24	4.05
2	5150.00	36.5 AV	54.0	-17.6	1.37 H	99	32.40	4.05
3	*5190.00	100.4 PK			1.37 H	99	96.27	4.16
4	*5190.00	88.3 AV			1.37 H	99	84.16	4.16
5	10380.00	52.4 PK	74.0	-21.6	1.34 H	100	37.49	14.92
6	10380.00	46.4 AV	54.0	-7.6	1.34 H	100	31.44	14.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	44.8 PK	74.0	-29.2	1.06 V	136	40.71	4.05
2	5150.00	37.4 AV	54.0	-16.6	1.06 V	136	33.39	4.05
3	*5190.00	102.2 PK			1.06 V	136	98.02	4.16
4	*5190.00	90.7 AV			1.06 V	136	86.53	4.16
5	10380.00	51.6 PK	74.0	-22.5	1.05 V	133	36.63	14.92
6	10380.00	46.6 AV	54.0	-7.4	1.05 V	133	31.65	14.92

REMARKS:

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

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	*5230.00	100.5 PK			1.30 H	99	96.19	4.31
2	*5230.00	88.4 AV			1.30 H	99	84.04	4.31
3	5350.00	43.1 PK	74.0	-30.9	1.30 H	99	38.36	4.71
4	5350.00	35.9 AV	54.0	-18.1	1.30 H	99	31.23	4.71
5	10460.00	52.8 PK	74.0	-21.3	1.30 H	97	37.78	14.97
6	10460.00	46.3 AV	54.0	-7.7	1.30 H	97	31.37	14.97
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	*5230.00	102.6 PK			1.16 V	139	98.33	4.31
2	*5230.00	90.5 AV			1.16 V	139	86.18	4.31
3	5350.00	43.6 PK	74.0	-30.4	1.16 V	139	38.91	4.71
4	5350.00	36.2 AV	54.0	-17.8	1.16 V	139	31.46	4.71
5	10460.00	52.5 PK	74.0	-21.6	1.15 V	133	37.48	14.97
6	10460.00	46.8 AV	54.0	-7.2	1.15 V	133	31.79	14.97

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	1.00 H	75	45.73	4.05
2	5150.00	36.7 AV	54.0	-17.3	1.00 H	75	32.67	4.05
3	*5270.00	92.8 PK			1.00 H	75	88.33	4.47
4	*5270.00	81.3 AV			1.00 H	75	76.84	4.47
5	10540.00	54.1 PK	74.0	-19.9	1.00 H	82	38.99	15.08
6	10540.00	45.4 AV	54.0	-8.6	1.00 H	82	30.35	15.08
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	42.8 PK	74.0	-31.2	1.00 V	312	38.77	4.05
2	5150.00	34.3 AV	54.0	-19.7	1.00 V	312	30.24	4.05
3	*5270.00	98.7 PK			1.00 V	312	94.18	4.47
4	*5270.00	87.6 AV			1.00 V	312	83.11	4.47
5	10540.00	56.2 PK	74.0	-17.8	1.00 V	332	41.08	15.08
6	10540.00	45.6 AV	54.0	-8.4	1.00 V	332	30.53	15.08

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	96.1 PK			1.00 H	76	91.52	4.60
2	*5310.00	84.2 AV			1.00 H	76	79.58	4.60
3	5350.00	46.2 PK	74.0	-27.8	1.00 H	76	41.53	4.71
4	5350.00	35.4 AV	54.0	-18.6	1.00 H	76	30.67	4.71
5	10620.00	54.2 PK	74.0	-19.8	1.00 H	80	38.79	15.39
6	10620.00	45.7 AV	54.0	-8.4	1.00 H	80	30.26	15.39
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	98.2 PK			1.00 V	315	93.61	4.60
2	*5310.00	86.2 AV			1.00 V	315	81.62	4.60
3	5350.00	47.9 PK	74.0	-26.1	1.00 V	315	43.21	4.71
4	5350.00	37.2 AV	54.0	-16.8	1.00 V	315	32.45	4.71
5	10620.00	54.2 PK	74.0	-19.8	1.00 V	322	38.79	15.39
6	10620.00	45.7 AV	54.0	-8.4	1.00 V	322	30.26	15.39

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	47.2 PK	74.0	-26.8	1.00 H	82	42.11	5.07
2	5460.00	36.9 AV	54.0	-17.2	1.00 H	82	31.78	5.07
3	5470.00	48.6 PK	74.0	-25.4	1.00 H	82	43.53	5.10
4	5470.00	37.8 AV	54.0	-16.2	1.00 H	82	32.68	5.10
5	*5510.00	95.8 PK			1.00 H	82	90.56	5.22
6	*5510.00	85.9 AV			1.00 H	82	80.71	5.22
7	11020.00	56.4 PK	74.0	-17.6	1.00 H	88	40.22	16.17
8	11020.00	47.4 AV	54.0	-6.6	1.00 H	88	31.27	16.17
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	47.2 PK	74.0	-26.8	1.00 V	321	42.15	5.07
2	5460.00	36.4 AV	54.0	-17.6	1.00 V	321	31.33	5.07
3	5470.00	48.8 PK	74.0	-25.2	1.00 V	321	43.68	5.10
4	5470.00	37.3 AV	54.0	-16.8	1.00 V	321	32.15	5.10
5	*5510.00	98.2 PK			1.00 V	321	93.00	5.22
6	*5510.00	86.4 AV			1.00 V	321	81.15	5.22
7	11020.00	56.9 PK	74.0	-17.1	1.00 V	332	40.77	16.17
8	11020.00	47.1 AV	54.0	-6.9	1.00 V	332	30.91	16.17

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	96.3 PK			1.00 H	70	91.05	5.27
2	*5550.00	84.2 AV			1.00 H	70	78.95	5.27
3	11100.00	55.7 PK	74.0	-18.3	1.00 H	66	39.25	16.47
4	**11100.00**	**47.7 AV**	**54.0**	**-6.3**	**1.00 H**	**66**	**31.26**	**16.47**
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	*5550.00	97.8 PK			1.00 V	307	92.51	5.27
2	*5550.00	85.6 AV			1.00 V	307	80.36	5.27
3	11100.00	57.0 PK	74.0	-17.0	1.00 V	311	40.55	16.47
4	11100.00	47.5 AV	54.0	-6.5	1.00 V	311	31.06	16.47

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	96.0 PK			1.00 H	77	90.64	5.35
2	*5670.00	84.2 AV			1.00 H	77	78.88	5.35
3	5725.00	49.7 PK	74.0	-24.3	1.00 H	77	44.32	5.39
4	5725.00	37.6 AV	54.0	-16.4	1.00 H	77	32.19	5.39
5	11340.00	54.8 PK	74.0	-19.2	1.00 H	79	38.66	16.15
6	11340.00	46.0 AV	54.0	-8.0	1.00 H	79	29.83	16.15
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	98.2 PK			1.00 V	330	92.86	5.35
2	*5670.00	86.1 AV			1.00 V	330	80.79	5.35
3	5725.00	47.7 PK	74.0	-26.3	1.00 V	330	42.35	5.39
4	5725.00	36.7 AV	54.0	-17.3	1.00 V	330	31.33	5.39
5	11340.00	56.9 PK	74.0	-17.1	1.00 V	335	40.78	16.15
6	11340.00	46.4 AV	54.0	-7.6	1.00 V	335	30.28	16.15

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.

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	34.48	32.3 QP	40.0	-7.7	2.23 H	357	47.37	-15.10
2	96.14	32.7 QP	43.5	-10.8	1.78 H	286	51.44	-18.77
3	144.02	36.3 QP	43.5	-7.3	1.08 H	94	49.54	-13.29
4	240.00	38.2 QP	46.0	-7.8	1.22 H	155	52.23	-14.06
5	336.36	38.4 QP	46.0	-7.6	1.67 H	304	49.07	-10.65
6	432.01	37.2 QP	46.0	-8.8	1.43 H	53	45.95	-8.72
7	528.21	37.2 QP	46.0	-8.8	2.33 H	345	44.14	-6.90
8	785.78	37.2 QP	46.0	-8.8	1.55 H	143	39.29	-2.05
9	950.32	36.2 QP	46.0	-9.8	1.39 H	133	35.93	0.31
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	39.42	32.2 QP	40.0	-7.8	1.34 V	145	46.97	-14.73
2	47.92	30.8 QP	40.0	-9.2	1.24 V	78	44.63	-13.85
3	96.01	33.5 QP	43.5	-10.0	3.12 V	78	52.31	-18.80
4	291.31	35.1 QP	46.0	-10.9	2.11 V	133	46.83	-11.69
5	432.11	36.4 QP	46.0	-9.6	1.23 V	42	45.10	-8.72
6	624.22	35.9 QP	46.0	-10.1	1.39 V	197	40.63	-4.69
7	833.53	38.4 QP	46.0	-7.6	1.66 V	215	39.94	-1.50
8	975.09	40.4 QP	54.0	-13.6	1.38 V	177	39.66	0.70

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

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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100276	Jan. 07, 2013	Jan. 06, 2014
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH3-Z5	100219	Nov. 28, 2012	Nov. 27, 2013
LISN With Adapter (for EUT)	AD10	C10Ada-001	Nov. 28, 2012	Nov. 27, 2013
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Dec. 05, 2012	Dec. 04, 2013
Software	ADT_Cond_V7.3.7	NA	NA	NA
Software	ADT_ISN_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C10.01	Feb. 19, 2013	Feb. 18, 2014
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010773	Feb. 06, 2013	Feb. 05, 2014

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in Shielded Room No. 10.

3. The VCCI Site Registration No. C-1852.

4.2.3 TEST PROCEDURES

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

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

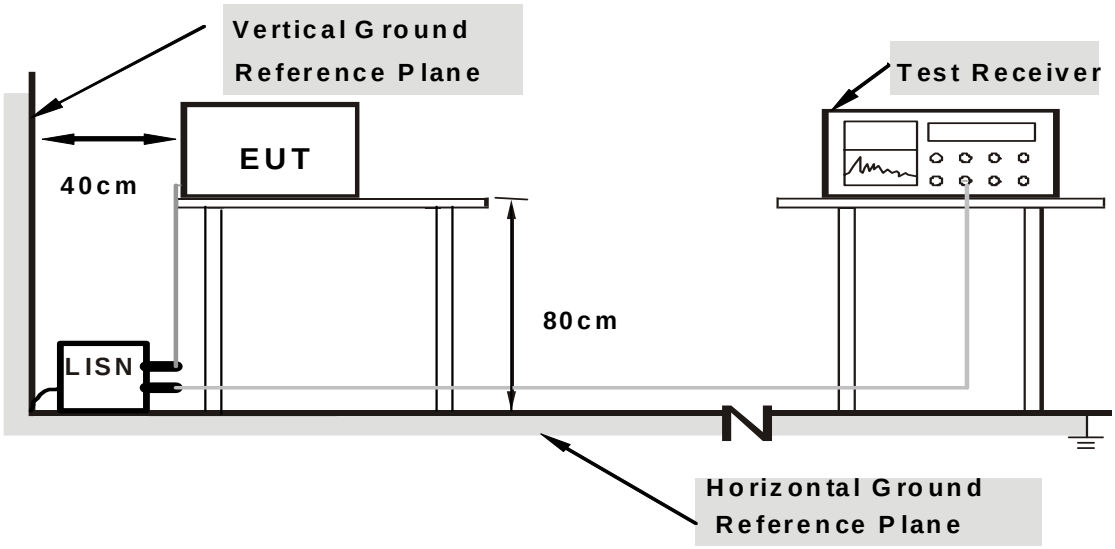
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: 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: Support units were connected to second LISN.

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

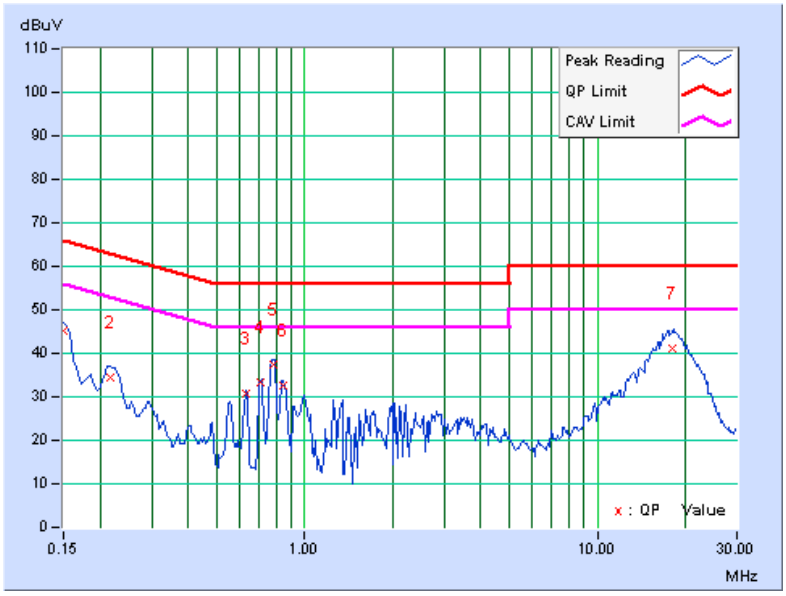
CONDUCTED WORST-CASE DATA：802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15019**	**0.14**	**45.12**	**43.83**	**45.26**	**43.97**	**65.99**	**55.99**	**-20.73**	**-12.02**
2	0.21641	0.14	34.14	25.61	34.28	25.75	62.96	52.96	-28.67	-27.20
3	0.63438	0.18	30.72	23.81	30.90	23.99	56.00	46.00	-25.10	-22.01
4	0.71122	0.18	33.23	23.72	33.41	23.90	56.00	46.00	-22.59	-22.10
5	0.77870	0.18	37.38	31.08	37.56	31.26	56.00	46.00	-18.44	-14.74
6	0.84269	0.18	32.51	25.21	32.69	25.39	56.00	46.00	-23.31	-20.61
7	18.06199	1.07	40.22	29.63	41.29	30.70	60.00	50.00	-18.71	-19.30

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

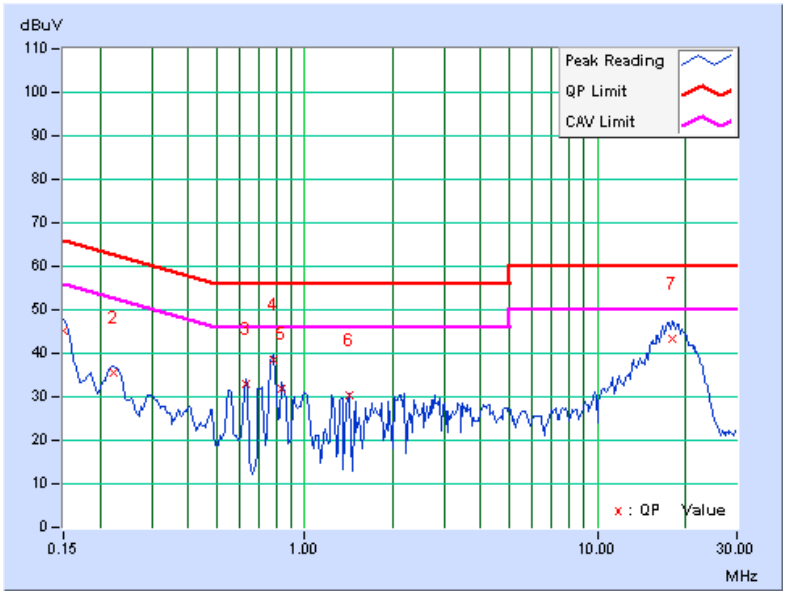


PHASE	Line 2	6dB BANDWIDTH	9kHz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15007	0.11	45.18	43.62	45.29	43.73	66.00	56.00	-20.71	-12.27
2	0.22335	0.11	35.52	32.88	35.63	32.99	62.69	52.69	-27.06	-19.70
3	0.63309	0.14	32.72	24.96	32.86	25.10	56.00	46.00	-23.14	-20.90
4	0.78290	0.15	38.37	30.92	38.52	31.07	56.00	46.00	-17.48	-14.93
5	0.83750	0.15	31.76	24.34	31.91	24.49	56.00	46.00	-24.09	-21.51
6	1.41797	0.17	30.30	16.42	30.47	16.59	56.00	46.00	-25.53	-29.41
7	18.10938	0.74	42.64	31.48	43.38	32.22	60.00	50.00	-16.62	-17.78

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 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.250 ~ 5.350GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.470 ~ 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB

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

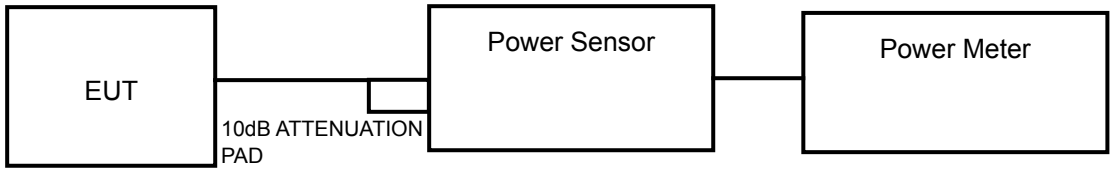
Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20-MHz channel widths with NANT ≥ 5.

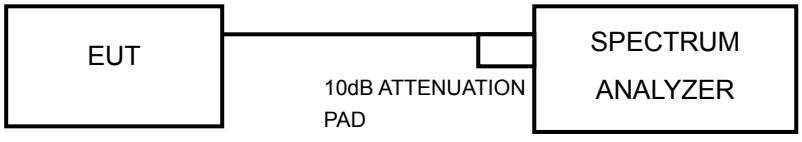
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



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

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

FOR 26dB BANDWIDTH

1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	15.86	**38.5**	17	PASS
40	5200	15.53	35.7	17	PASS
48	5240	15.65	36.7	17	PASS
52	5260	15.78	**37.8**	24	PASS
60	5300	15.64	36.6	24	PASS
64	5320	15.32	34.0	24	PASS
100	5500	15.53	**35.7**	24	PASS
116	5580	15.51	35.6	24	PASS
132	5660	15.34	34.2	24	PASS
140	5700	15.32	34.0	24	PASS

1. 4dBm + 10log(31.77) = 19.02 dBm >17dBm.
2. 4dBm + 10log(32.60) = 19.13 dBm >17dBm.
3. 4dBm + 10log(32.68) = 19.14 dBm >17dBm.
4. 11dBm + 10log(23.47) = 24.71 dBm >24dBm.
5. 11dBm + 10log(23.82) = 24.77 dBm >24dBm.
6. 11dBm + 10log(21.54) = 24.33 dBm >24dBm.
7. 11dBm + 10log(27.01) = 25.32 dBm >24dBm.
8. 11dBm + 10log(25.50) = 25.07 dBm >24dBm.
9. 11dBm + 10log(28.60) = 25.56 dBm >24dBm.
10. 11dBm + 10log(34.74) = 26.41 dBm >24dBm.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	10.30	10.72	22.5	13.53	17	PASS
40	5200	10.17	10.57	21.8	13.38	17	PASS
48	5240	10.21	10.62	22.0	13.43	17	PASS
52	5260	10.48	10.15	21.5	13.33	24	PASS
60	5300	10.24	10.35	21.4	13.31	24	PASS
64	5320	10.56	10.61	22.9	13.60	24	PASS
100	5500	10.04	10.34	20.9	13.20	24	PASS
116	5580	10.78	10.35	22.8	13.58	24	PASS
132	5660	10.38	10.75	22.8	13.58	24	PASS
140	5700	10.27	10.84	22.8	13.57	24	PASS

CHAIN 0

1. 4dBm + 10log(20.81) = 17.18 dBm >17dBm.
2. 4dBm + 10log(20.92) = 17.21 dBm >17dBm.
3. 4dBm + 10log(20.92) = 17.21 dBm >17dBm.
4. 11dBm + 10log(20.84) = 24.19 dBm >24dBm.
5. 11dBm + 10log(21.19) = 24.26 dBm >24dBm.
6. 11dBm + 10log(21.05) = 24.23 dBm >24dBm.
7. 11dBm + 10log(21.21) = 24.27 dBm >24dBm.
8. 11dBm + 10log(20.74) = 24.17 dBm >24dBm.
9. 11dBm + 10log(21.13) = 24.25 dBm >24dBm.
10. 11dBm + 10log(21.18) = 24.26 dBm >24dBm.

CHAIN 1

1. 4dBm + 10log(21.05) = 17.23 dBm >17dBm.
2. 4dBm + 10log(21.26) = 17.28 dBm >17dBm.
3. 4dBm + 10log(21.38) = 17.30 dBm >17dBm.
4. 11dBm + 10log(20.95) = 24.21 dBm >24dBm.
5. 11dBm + 10log(21.17) = 24.26 dBm >24dBm.
6. 11dBm + 10log(21.05) = 24.23 dBm >24dBm.
7. 11dBm + 10log(21.01) = 24.22 dBm >24dBm.
8. 11dBm + 10log(21.27) = 24.28 dBm >24dBm.
9. 11dBm + 10log(21.21) = 24.27 dBm >24dBm.
10. 11dBm + 10log(20.82) = 24.18 dBm >24dBm.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	10.10	10.61	21.7	13.37	17	PASS
46	5230	9.75	10.31	20.2	13.05	17	PASS
54	5270	10.10	10.42	21.2	13.27	24	PASS
62	5310	10.75	10.78	23.9	13.78	24	PASS
102	5510	10.21	10.54	21.8	13.39	24	PASS
110	5550	10.30	10.64	22.3	13.48	24	PASS
134	5670	10.01	10.28	20.7	13.16	24	PASS

CHAIN 0

1. 4dBm + 10log(40.63) = 20.09 dBm >17dBm.
2. 4dBm + 10log(40.58) = 20.08 dBm >17dBm.
3. 11dBm + 10log(40.67) = 27.09 dBm >24dBm.
4. 11dBm + 10log(40.78) = 27.10 dBm >24dBm.
5. 11dBm + 10log(40.55) = 27.08 dBm >24dBm.
6. 11dBm + 10log(40.57) = 27.08 dBm >24dBm.
7. 11dBm + 10log(40.66) = 27.09 dBm >24dBm.

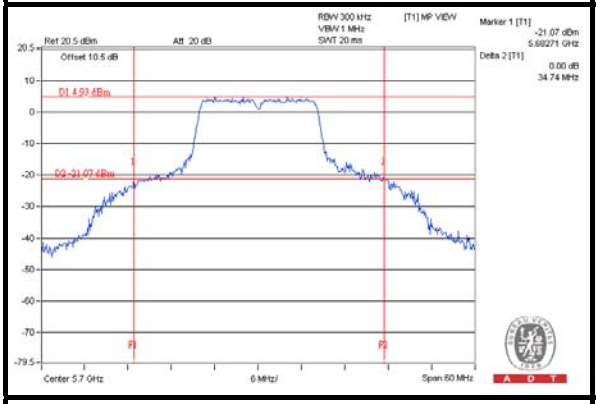
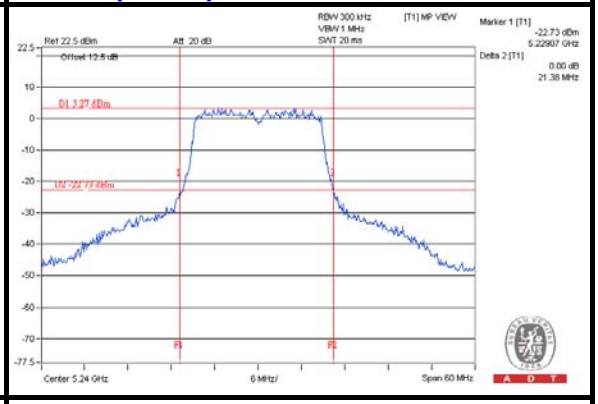
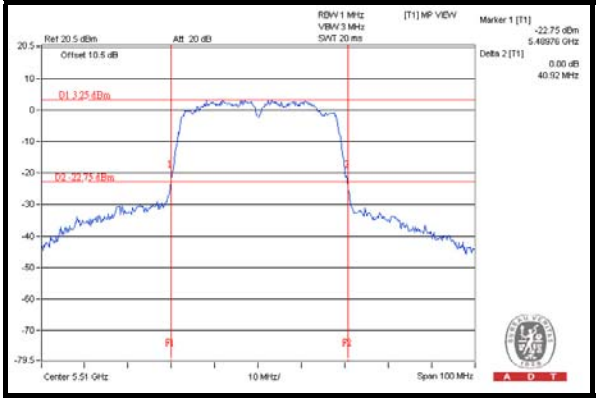
CHAIN 1

1. 4dBm + 10log(40.57) = 20.08 dBm >17dBm.
2. 4dBm + 10log(40.76) = 20.10 dBm >17dBm.
3. 11dBm + 10log(40.67) = 27.09 dBm >24dBm.
4. 11dBm + 10log(40.70) = 27.10 dBm >24dBm.
5. 11dBm + 10log(40.92) = 27.12 dBm >24dBm.
6. 11dBm + 10log(40.88) = 27.12 dBm >24dBm.
7. 11dBm + 10log(40.60) = 27.09 dBm >24dBm.

26dB BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
802.11a			
36	5180	31.77	PASS
40	5200	32.60	PASS
48	5240	32.68	PASS
52	5260	23.47	PASS
60	5300	23.82	PASS
64	5320	21.54	PASS
100	5500	27.01	PASS
116	5580	25.50	PASS
132	5660	28.60	PASS
140	5700	34.74	PASS

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)		PASS / FAIL
		CHAIN 0	CHAIN 1	
802.11n (20MHz)				
36	5180	20.81	21.05	PASS
40	5200	20.92	21.26	PASS
48	5240	20.92	21.38	PASS
52	5260	20.84	20.95	PASS
60	5300	21.19	21.17	PASS
64	5320	21.05	21.05	PASS
100	5500	21.21	21.01	PASS
116	5580	20.74	21.27	PASS
132	5660	21.13	21.21	PASS
140	5700	21.18	20.82	PASS
802.11n (40MHz)				
38	5190	40.63	40.57	PASS
46	5230	40.58	40.76	PASS
54	5270	40.67	40.67	PASS
62	5310	40.78	40.70	PASS
102	5510	40.55	40.92	PASS
110	5550	40.57	40.88	PASS
134	5670	40.66	40.60	PASS

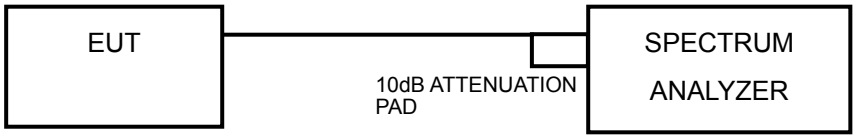
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	
	

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	4dBm
5.250 ~ 5.350GHz	11dBm
5.470 ~ 5.725GHz	11dBm

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-2

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 and add 10 log (1/duty cycle)

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	PSD WITH DUTY FACTOR (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	3.21	0.14	3.35	4	PASS
40	5200	2.40	0.14	2.54	4	PASS
48	5240	2.68	0.14	2.82	4	PASS
52	5260	0.03	0.14	0.17	11	PASS
60	5300	-0.26	0.14	-0.12	11	PASS
64	5320	-0.68	0.14	-0.54	11	PASS
100	5500	0.04	0.14	0.18	11	PASS
116	5580	-0.01	0.14	0.13	11	PASS
132	5660	-0.23	0.14	-0.09	11	PASS
140	5700	0.03	0.14	0.17	11	PASS

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1					
36	5180	-2.82	-3.20	0	0.25	0.25	4	PASS
40	5200	-4.05	-3.68	-0.85	0.25	-0.60	4	PASS
48	5240	-3.59	-3.00	-0.27	0.25	-0.02	4	PASS
52	5260	-5.73	-7.41	-3.48	0.25	-3.23	11	PASS
60	5300	-6.02	-6.58	-3.28	0.25	-3.03	11	PASS
64	5320	-6.04	-6.21	-3.11	0.25	-2.86	11	PASS
100	5500	-6.57	-6.43	-3.49	0.25	-3.24	11	PASS
116	5580	-6.25	-5.96	-3.09	0.25	-2.84	11	PASS
132	5660	-5.94	-5.68	-2.80	0.25	-2.55	11	PASS
140	5700	-6.10	-5.54	-2.80	0.25	-2.55	11	PASS

NOTE:

1. Method a of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the power spectral density limit is not reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	PSD (dBm)		TOTAL PSD W/O DUTY FACTOR (dBm)	DUTY FACTOR	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1					
38	5190	-6.21	-5.92	-3.05	0.24	-2.81	4	PASS
46	5230	-6.31	-5.88	-3.08	0.24	-2.84	4	PASS
54	5270	-9.50	-9.43	-6.45	0.24	-6.21	11	PASS
62	5310	-7.80	-8.41	-5.08	0.24	-4.84	11	PASS
102	5510	-9.06	-7.95	-5.46	0.24	-5.22	11	PASS
110	5550	-8.57	-8.17	-5.36	0.24	-5.12	11	PASS
134	5670	-9.09	-9.05	-6.06	0.24	-5.82	11	PASS

NOTE:

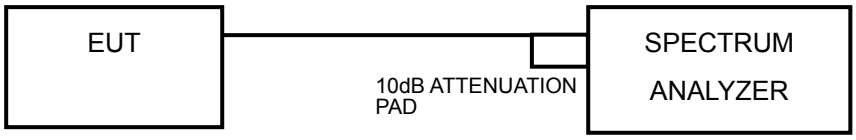
1. Method a of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 2dBi + 10log(2) = 5.01dBi < 6dBi , so the power spectral density limit is not reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB.

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

1) Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak.
2) Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3) Use the peak search function to find the peak of the spectrum.
4) Measure the PPSD.
5) Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD. Find the worst channel and modulation mode as above test procedure, and follow KDB 789033 D01 General UNII Test Procedures v01r03 and repeat step 1 to 5 for final testing of each modulation mode on a single channel (all modulation types) in a single operating band to compliance with the peak excursion requirement.

4.5.5 DEVIATION FROM TEST STANDARD

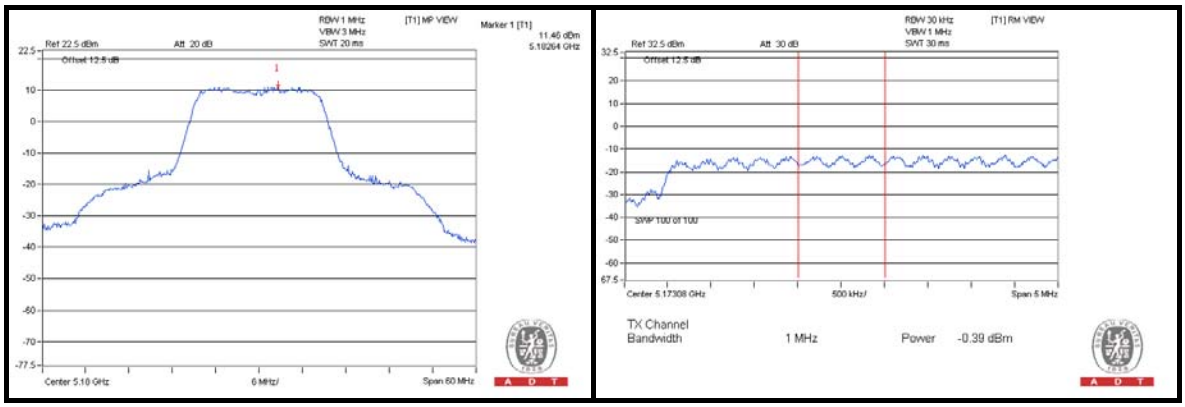
No deviation.

4.5.6 EUT OPERATING CONDITIONS

Same as 4.2.6

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5180	12.87	3.21	3.35	9.52	13	PASS
	QPSK		13.84	2.31	-	11.53	13	PASS
	16QAM		13.83	2.19	2.38	11.45	13	PASS
	64QAM		13.41	2.29	2.52	10.89	13	PASS
802.11n (20MHz)	BPSK	5180	8.60	-2.82	-2.58	11.18	13	PASS
	QPSK		11.46	-0.39	-0.20	11.66	13	PASS
	16QAM		11.05	-0.65	-0.35	11.40	13	PASS
	64QAM		11.30	-0.44	-0.04	11.34	13	PASS
802.11n (40MHz)	BPSK	5190	5.52	-6.21	-5.97	11.49	13	PASS
	QPSK		8.67	-2.08	-1.84	10.51	13	PASS
	16QAM		8.34	-3.00	-2.59	10.93	13	PASS
	64QAM		8.34	-3.34	-2.63	10.97	13	PASS

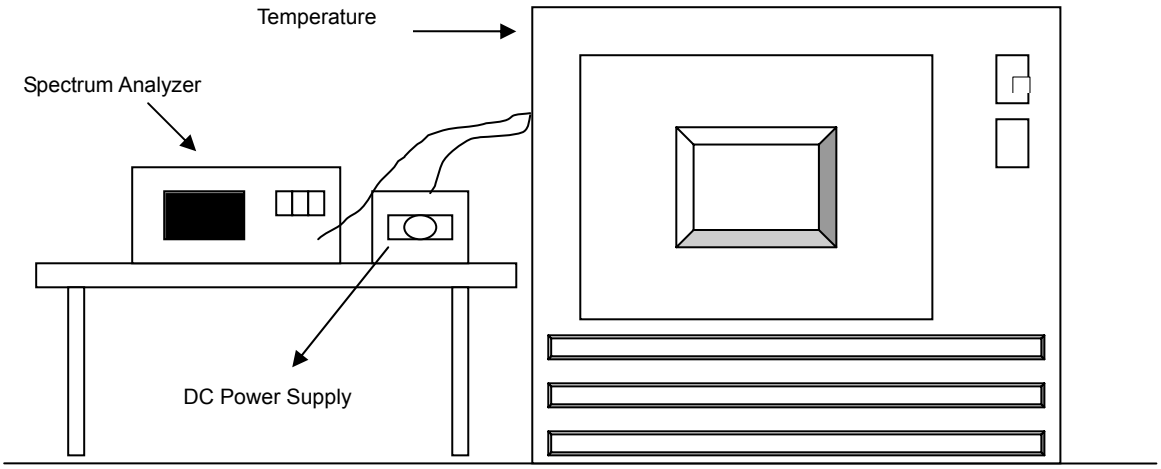


4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST SETUP



4.6.3 TEST INSTRUMENTS

Refer to section 4.1.3 to get information of above instrument.

4.6.4 TEST PROCEDURE

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

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

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

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

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

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

4.6.5 DEVIATION FROM TEST STANDARD

No deviation.

4.6.6 EUT OPERATING CONDITION

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

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
50	5.0	5180.055892	10.7899226	5180.056212	10.8517993	5180.056219	10.8530463	5180.056254	10.8598084
40	5.0	5180.056529	10.9128849	5180.056169	10.8433419	5180.056111	10.8322644	5180.056177	10.8449597
30	5.0	5180.056363	10.8808603	5180.056007	10.8121307	5180.056026	10.8158578	5180.056222	10.8536472
20	5.0	5180.056174	10.8443587	5180.056144	10.8386958	5180.056047	10.8199745	5180.056253	10.8596334
10	5.0	5180.056195	10.8484491	5180.055918	10.7949940	5180.056394	10.8868844	5180.056146	10.8389925
0	5.0	5180.056132	10.8362223	5180.056474	10.9023393	5180.055915	10.7944042	5180.05618	10.8455769
-10	5.0	5180.056178	10.8451150	5180.056456	10.8987882	5180.056305	10.8696065	5180.056231	10.8553511
-20	5.0	5180.056222	10.8537114	5180.056183	10.8460877	5180.056257	10.8604192	5180.056249	10.8588163

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	5.8	5180.056369	10.8821264	5180.056313	10.8712567	5180.056103	10.8306111	5180.056131	10.8361713
	5.0	5180.056174	10.8443587	5180.056144	10.8386958	5180.056047	10.8199745	5180.056253	10.8596334
	4.3	5180.056033	10.8172617	5180.056319	10.8724571	5180.056491	10.9055464	5180.05637	10.8823071

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 Lab:
Tel: 886-3-5935343
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Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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---