

FCC TEST REPORT

(15.407)

REPORT NO.: RF140515D01-1

MODEL NO.: V5US14

FCC ID: R48V5US

RECEIVED: Jun. 26, 2014

TESTED: Sep. 10 ~ Oct. 8, 2014

ISSUED: Oct. 14, 2014

APPLICANT: MEILOON INDUSTRIAL CO., LTD

ADDRESS: No. 77, Lane 1775, Chuen-Ryh Road, Taoyuan
City, Taiwan

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

LAB ADDRESS: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
New Taipei City, Taiwan, R.O.C.

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	6
3. GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	9
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	11
3.3 DUTY CYCLE OF TEST SIGNAL	13
3.4 DESCRIPTION OF SUPPORT UNITS	14
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	14
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
4. TEST TYPES AND RESULTS	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS ..	16
4.1.3 TEST INSTRUMENTS	17
4.1.4 TEST PROCEDURES	18
4.1.5 DEVIATION FROM TEST STANDARD	18
4.1.6 TEST SETUP	19
4.1.7 EUT OPERATING CONDITION	19
4.1.8 TEST RESULTS	20
4.2 CONDUCTED EMISSION MEASUREMENT	56
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	56
4.2.2 TEST INSTRUMENTS	56
4.2.3 TEST PROCEDURES	57
4.2.4 DEVIATION FROM TEST STANDARD	57
4.2.5 TEST SETUP	57
4.2.6 EUT OPERATING CONDITIONS	57
4.2.7 TEST RESULTS	58
4.3 TRANSMIT POWER MEASUREMENT	60
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT	60
4.3.2 TEST SETUP	60
4.3.3 TEST INSTRUMENTS	60
4.3.4 TEST PROCEDURE	61
4.3.5 DEVIATION FROM TEST STANDARD	61
4.3.6 EUT OPERATING CONDITIONS	61
4.3.7 TEST RESULTS	62
4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT	68
4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	68
4.4.2 TEST SETUP	68
4.4.3 TEST INSTRUMENTS	68
4.4.4 TEST PROCEDURES	69
4.4.5 DEVIATION FROM TEST STANDARD	69
4.4.6 EUT OPERATING CONDITIONS	69
4.4.7 TEST RESULTS	70



A D T

4.5	FREQUENCY STABILITY	74
4.5.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	74
4.5.2	TEST SETUP	74
4.5.3	TEST INSTRUMENTS	74
4.5.4	TEST PROCEDURE	75
4.5.5	DEVIATION FROM TEST STANDARD	75
4.5.6	EUT OPERATING CONDITION	75
4.5.7	TEST RESULTS	76
4.6	6DB BANDWIDTH MEASUREMENT	77
4.6.1	LIMITS OF 6DB BANDWIDTH MEASUREMENT	77
4.6.2	TEST SETUP	77
4.6.3	TEST INSTRUMENTS	77
4.6.4	TEST PROCEDURE	77
4.6.5	DEVIATION FROM TEST STANDARD	77
4.6.6	EUT OPERATING CONDITIONS	77
4.6.7	TEST RESULTS	78
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	80
6.	INFORMATION ON THE TESTING LABORATORIES	81
7.	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	82



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140515D01-1	Original release.	Oct. 14, 2014

1. CERTIFICATION

PRODUCT: Universal Wireless Speaker
MODEL: V5US14
BRAND: WREN
APPLICANT: MEILOON INDUSTRIAL CO., LTD
TESTED: Sep. 10 ~ Oct. 8, 2014
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (model: V5US14) 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 : Jessica Cheng , **DATE:** Oct. 14, 2014
(Jessica Cheng / Senior Specialist)

APPROVED BY : Rex Lai , **DATE:** Oct. 14, 2014
(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 Under New Rule)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -7.20dB at 0.29063MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.2dB at 383.18MHz.
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	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	3.43 dB
Radiated emissions	30MHz ~ 1GHz	4.00 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	Universal Wireless Speaker
MODEL NO.	V5US14
POWER SUPPLY	100-240Vac, 47-63Hz
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 150.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz 5745 ~ 5825MHz
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) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) for 802.11n (40MHz)
OUTPUT POWER	5180 ~ 5240MHz: 22.0mW 5260 ~ 5320MHz: 20.4mW 5500 ~ 5700MHz: 20.1mW 5745 ~ 5825MHz: 20.8mW
ANTENNA TYPE	PCB DIPOLE antenna with 6.62dBi gain
ANTENNA CONNECTOR	N/A
DATA CABLE	N/A
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	N/A

NOTE:

1. The EUT provides one completed transmitter and one receiver.

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

2. 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 (40 MHz)

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

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

2 channels are provided for 802.11n (40 MHz)

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 (40 MHz)

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

FOR 5745 ~ 5825MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755MHz	159	5795MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE ³ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE³1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

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	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
-	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	6.5
-	802.11n (40MHz)		151 to 159	151, 159	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.

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

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

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	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, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	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	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE ³ 1G	28deg. C, 71% RH	120Vac, 60Hz	Aaron You
RE<1G	26deg. C, 79% RH	120Vac, 60Hz	Aaron You
PLC	25deg. C, 69% RH	120Vac, 60Hz	Dalen Dai
APCM	25deg. C, 60% RH	120Vac, 60Hz	Saxon Lee

3.3 DUTY CYCLE OF TEST SIGNAL

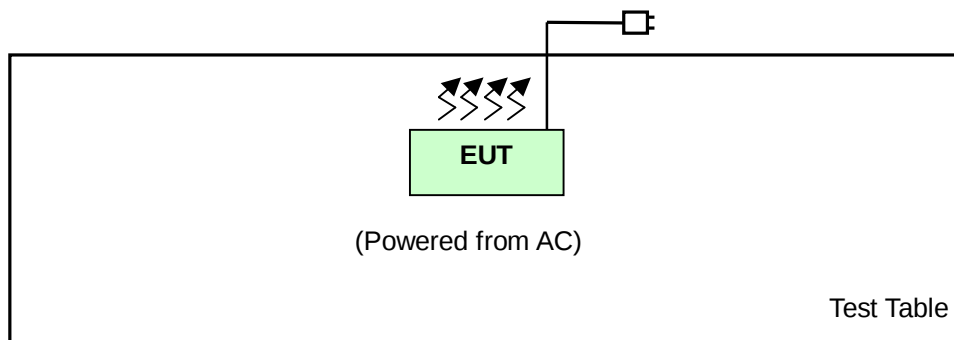
: Duty cycle of test signal is 100 %



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without other necessary accessories or support units.

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

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	
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.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 26, 2014	Feb. 25, 2015
HP Preamplifier	8449B	3008A01201	Feb. 26, 2014	Feb. 25, 2015
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Mar. 01, 2014	Feb. 28, 2015
Agilent Spectrum	E4446A	MY51100009	Jun. 14, 2014	Jun. 13, 2015
Agilent TEST RECEIVER	N9038A	MY51210129	Jan. 18, 2014	Jan. 17, 2015
Schwarzbeck Antenna	VULB 9168	139	Feb. 24, 2014	Feb. 23, 2015
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2013	May 28, 2015
Schwarzbeck Horn Antenna	BBHA-9170	212	Aug. 26, 2014	Aug. 25, 2015
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Aug. 26, 2014	Aug. 25, 2015
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	ADT_Radiated_V 7.6.15.9.4	NA	NA	NA
SUHNER RF cable	SF104	CABLE-CH6	Aug. 15, 2014	Aug. 14, 2015
SUHNER RF cable	SF102	Cable-CH8-3.6m	Aug. 15, 2014	Aug. 14, 2015
EMCO Horn Antenna	3115	00028257	Aug. 28, 2014	Aug. 27, 2015
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSP 40	100036	May 17, 2014	May 16, 2015
Anritsu Power Sensor	MA2411B	0738404	Apr. 21, 2014	Apr. 20, 2015
Anritsu Power Meter	ML2495A	0842014	Apr. 21, 2014	Apr. 20, 2015

- 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 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:

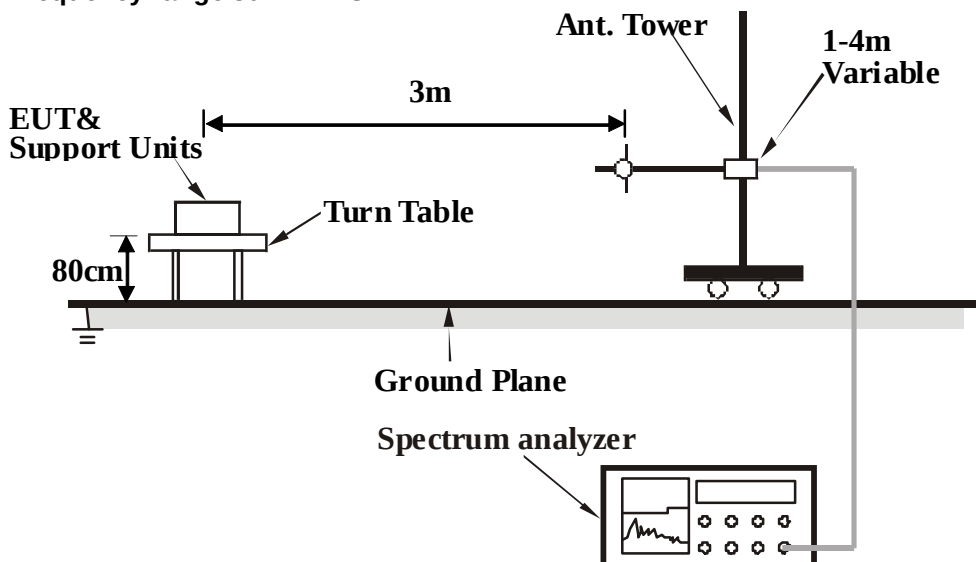
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution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

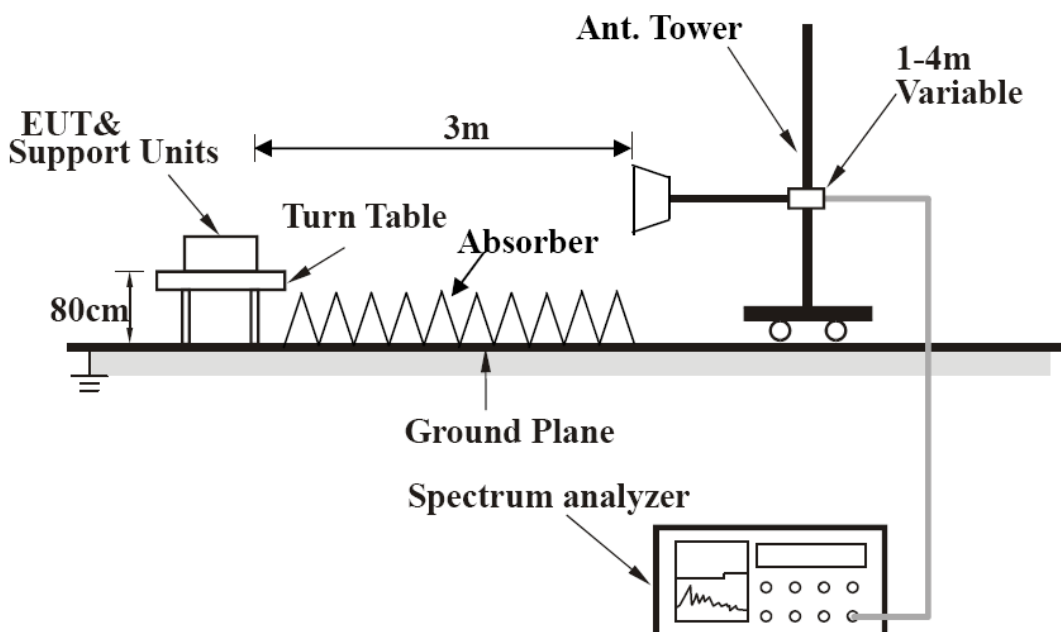
No deviation.

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

Set the EUT under transmission condition continuously at specific channel frequency.

4.1.8 TEST RESULTS

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	47.95	38.5 QP	40.0	-1.5	2.35 H	17	52.27	-13.79
2	95.86	41.2 QP	43.5	-2.3	2.17 H	3	60.05	-18.81
3	143.68	40.8 QP	43.5	-2.7	2.29 H	360	54.64	-13.87
4	191.60	41.8 QP	43.5	-1.7	2.08 H	314	57.95	-16.19
5	225.41	40.5 QP	46.0	-5.6	1.97 H	360	56.64	-16.19
6	294.91	43.3 QP	46.0	-2.8	2.00 H	40	55.49	-12.24
7	383.18	44.8 QP	46.0	-1.2	1.73 H	165	55.22	-10.46
8	417.81	42.0 QP	46.0	-4.1	1.84 H	221	51.79	-9.84
9	817.06	40.4 QP	46.0	-5.7	1.00 H	360	43.01	-2.66
10	884.76	41.4 QP	46.0	-4.6	1.00 H	288	43.23	-1.86
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.58	38.4 QP	40.0	-1.7	1.43 V	277	53.91	-15.56
2	47.80	38.6 QP	40.0	-1.5	1.22 V	78	52.35	-13.80
3	72.05	37.2 QP	40.0	-2.8	1.08 V	67	53.34	-16.15
4	193.93	37.0 QP	43.5	-6.5	1.00 V	105	53.25	-16.25
5	540.71	40.5 QP	46.0	-5.5	2.41 V	69	48.12	-7.65
6	712.73	38.5 QP	46.0	-7.5	2.30 V	266	43.27	-4.73
7	909.35	39.4 QP	46.0	-6.6	1.61 V	67	40.54	-1.17

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

ABOVE 1GHz 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	55.4 PK	74.0	-18.6	1.00 H	20	52.17	3.27
2	5150.00	43.7 AV	54.0	-10.3	1.00 H	20	40.41	3.27
3	*5180.00	95.4 PK			1.00 H	20	92.17	3.25
4	*5180.00	86.8 AV			1.00 H	20	83.54	3.25
5	#10360.00	55.6 PK	74.0	-18.4	1.07 H	229	41.78	13.83
6	#10360.00	44.0 AV	54.0	-10.0	1.07 H	229	30.19	13.83
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	64.6 PK	74.0	-9.4	1.02 V	264	61.32	3.27
2	5150.00	50.0 AV	54.0	-4.0	1.02 V	264	46.74	3.27
3	*5180.00	108.9 PK			1.02 V	264	105.69	3.25
4	*5180.00	99.1 AV			1.02 V	264	95.88	3.25
5	#10360.00	56.6 PK	74.0	-17.4	1.12 V	207	42.73	13.83
6	#10360.00	44.9 AV	54.0	-9.1	1.12 V	207	31.08	13.83

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	*5200.00	92.7 PK			1.00 H	257	89.48	3.22
2	*5200.00	84.2 AV			1.00 H	257	80.99	3.22
3	#10400.00	55.7 PK	74.0	-18.3	1.08 H	307	41.93	13.80
4	#10400.00	44.9 AV	54.0	-9.2	1.08 H	307	31.05	13.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.5 PK			1.02 V	263	104.31	3.22
2	*5200.00	98.1 AV			1.02 V	263	94.91	3.22
3	#10400.00	57.7 PK	74.0	-16.3	1.13 V	227	43.86	13.80
4	#10400.00	46.3 AV	54.0	-7.7	1.13 V	227	32.51	13.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	*5240.00	94.1 PK			1.02 H	256	90.79	3.29
2	*5240.00	84.4 AV			1.02 H	256	81.14	3.29
3	5350.00	55.4 PK	74.0	-18.6	1.02 H	256	51.96	3.48
4	5350.00	42.6 AV	54.0	-11.4	1.02 H	256	39.10	3.48
5	#10480.00	56.1 PK	74.0	-17.9	1.21 H	198	41.63	14.45
6	#10480.00	45.0 AV	54.0	-9.0	1.21 H	198	30.59	14.45
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	105.8 PK			1.09 V	274	102.48	3.29
2	*5240.00	96.0 AV			1.09 V	274	92.66	3.29
3	5350.00	59.0 PK	74.0	-15.0	1.00 V	274	55.49	3.48
4	5350.00	44.0 AV	54.0	-10.0	1.00 V	274	40.48	3.48
5	#10480.00	58.5 PK	74.0	-15.5	1.00 V	308	44.01	14.45
6	#10480.00	47.0 AV	54.0	-7.0	1.00 V	308	32.57	14.45

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 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	55.3 PK	74.0	-18.7	1.16 H	253	52.03	3.27
2	5150.00	43.1 AV	54.0	-10.9	1.16 H	253	39.85	3.27
3	*5260.00	94.5 PK			1.16 H	253	91.17	3.31
4	*5260.00	85.0 AV			1.16 H	253	81.64	3.31
5	#10520.00	55.8 PK	74.0	-18.2	1.05 H	134	41.33	14.51
6	#10520.00	44.6 AV	54.0	-9.4	1.05 H	134	30.08	14.51
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.5 PK	74.0	-18.5	1.02 V	270	52.25	3.27
2	5150.00	43.5 AV	54.0	-10.5	1.02 V	270	40.26	3.27
3	*5260.00	107.3 PK			1.02 V	270	103.98	3.31
4	*5260.00	97.7 AV			1.02 V	270	94.38	3.31
5	#10520.00	57.7 PK	74.0	-16.3	1.30 V	217	43.17	14.51
6	#10520.00	46.6 AV	54.0	-7.4	1.30 V	217	32.08	14.51

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	94.7 PK			1.00 H	249	91.33	3.38
2	*5300.00	85.4 AV			1.00 H	249	82.03	3.38
3	11600.00	57.0 PK	74.0	-17.0	1.33 H	207	42.01	14.95
4	11600.00	45.2 AV	54.0	-8.8	1.33 H	207	30.27	14.95
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	106.9 PK			1.00 V	268	103.51	3.38
2	*5300.00	97.3 AV			1.00 V	268	93.87	3.38
3	10600.00	57.2 PK	74.0	-16.8	1.12 V	87	43.07	14.14
4	10600.00	46.3 AV	54.0	-7.8	1.12 V	87	32.11	14.14

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	94.2 PK			1.00 H	249	90.93	3.31
2	*5320.00	84.2 AV			1.00 H	249	80.92	3.31
3	5350.00	55.2 PK	74.0	-18.8	1.00 H	249	51.73	3.48
4	5350.00	42.7 AV	54.0	-11.3	1.00 H	249	39.20	3.48
5	10640.00	56.9 PK	74.0	-17.2	1.11 H	257	42.19	14.66
6	10640.00	45.7 AV	54.0	-8.3	1.11 H	257	31.02	14.66
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	106.9 PK			1.01 V	271	103.48	3.41
2	*5320.00	97.3 AV			1.01 V	271	93.93	3.41
3	5350.00	62.3 PK	74.0	-11.7	1.01 V	271	58.78	3.48
4	5350.00	47.3 AV	54.0	-6.7	1.01 V	271	43.85	3.48
5	10640.00	58.5 PK	74.0	-15.5	1.20 V	316	43.81	14.66
6	10640.00	47.2 AV	54.0	-6.8	1.20 V	316	32.50	14.66

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	54.9 PK	74.0	-19.1	1.14 H	360	51.09	3.80
2	5460.00	43.0 AV	54.0	-11.0	1.14 H	360	39.21	3.80
3	#5470.00	55.5 PK	74.0	-18.5	1.14 H	360	51.69	3.83
4	#5470.00	43.6 AV	54.0	-10.4	1.14 H	360	39.77	3.83
5	*5500.00	95.1 PK			1.14 H	360	91.19	3.94
6	*5500.00	85.4 AV			1.14 H	360	81.45	3.94
7	11000.00	58.3 PK	74.0	-15.7	1.03 H	261	42.33	15.98
8	11000.00	46.3 AV	54.0	-7.7	1.03 H	261	30.28	15.98
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	5460.00	56.6 PK	74.0	-17.4	1.00 V	295	52.83	3.80
2	5460.00	44.1 AV	54.0	-9.9	1.00 V	295	40.34	3.80
3	#5470.00	62.3 PK	74.0	-11.7	1.00 V	295	58.43	3.83
4	#5470.00	47.7 AV	54.0	-6.3	1.00 V	295	43.87	3.83
5	*5500.00	107.7 PK			1.00 V	295	103.72	3.94
6	*5500.00	98.0 AV			1.00 V	295	94.01	3.94
7	11000.00	59.3 PK	74.0	-14.8	1.06 V	110	43.27	15.98
8	11000.00	47.1 AV	54.0	-6.9	1.06 V	110	31.09	15.98

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	97.5 PK			1.02 H	7	93.17	4.31
2	*5580.00	87.7 AV			1.02 H	7	83.38	4.31
3	11160.00	58.2 PK	74.0	-15.8	1.02 H	173	42.03	16.15
4	11160.00	47.4 AV	54.0	-6.6	1.02 H	173	31.27	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	*5580.00	107.1 PK			1.05 V	300	102.75	4.31
2	*5580.00	97.4 AV			1.05 V	300	93.06	4.31
3	11160.00	60.1 PK	74.0	-13.9	1.27 V	207	43.91	16.15
4	11160.00	48.2 AV	54.0	-5.8	1.27 V	207	32.05	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.

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	96.3 PK			1.00 H	7	92.02	4.30
2	*5660.00	87.0 AV			1.00 H	7	82.67	4.30
3	11320.00	57.9 PK	74.0	-16.1	1.19 H	283	42.18	15.76
4	11320.00	46.8 AV	54.0	-7.2	1.19 H	283	31.07	15.76
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	107.5 PK			1.02 V	301	103.20	4.30
2	*5660.00	97.7 AV			1.02 V	301	93.43	4.30
3	11320.00	58.8 PK	74.0	-15.2	1.30 V	215	43.03	15.76
4	11320.00	47.7 AV	54.0	-6.3	1.30 V	215	31.97	15.76

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	95.6 PK			1.12 H	313	91.37	4.22
2	*5700.00	85.8 AV			1.12 H	313	81.61	4.22
3	#5725.00	56.2 PK	74.0	-17.8	1.12 H	313	51.83	4.35
4	#5725.00	44.3 AV	54.0	-9.7	1.12 H	313	39.95	4.35
5	11400.00	58.3 PK	74.0	-15.7	1.10 H	241	42.11	16.19
6	11400.00	47.3 AV	54.0	-6.7	1.10 H	241	31.08	16.19
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	106.1 PK			1.05 V	297	101.87	4.22
2	*5700.00	97.0 AV			1.05 V	297	92.74	4.22
3	#5725.00	60.7 PK	74.0	-13.3	1.05 V	297	56.34	4.35
4	#5725.00	48.4 AV	54.0	-5.6	1.05 V	297	44.02	4.35
5	11400.00	59.4 PK	74.0	-14.6	1.18 V	230	43.19	16.19
6	11400.00	48.8 AV	54.0	-5.2	1.18 V	230	32.58	16.19

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	#5725.00	63.9 PK	74.0	-10.1	1.09 H	312	59.58	4.35
2	#5725.00	47.8 AV	54.0	-6.2	1.09 H	312	43.48	4.35
3	*5745.00	95.5 PK			1.09 H	312	91.03	4.46
4	*5745.00	86.0 AV			1.09 H	312	81.54	4.46
5	11490.00	58.3 PK	74.0	-15.7	1.22 H	215	42.00	16.33
6	11490.00	47.4 AV	54.0	-6.6	1.22 H	215	31.08	16.33
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	#5725.00	74.1 PK	78.2	-4.1	1.03 V	293	69.74	4.35
2	*5745.00	107.0 PK			1.03 V	293	102.53	4.46
3	*5745.00	97.2 AV			1.03 V	293	92.73	4.46
4	11490.00	59.4 PK	74.0	-14.6	1.25 V	224	43.07	16.33
5	11490.00	49.2 AV	54.0	-4.8	1.25 V	224	32.83	16.33

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	*5785.00	94.2 PK			1.09 H	315	89.53	4.68
2	*5785.00	85.0 AV			1.09 H	315	80.31	4.68
3	11570.00	56.7 PK	74.0	-17.3	1.13 H	158	41.37	15.36
4	11570.00	45.9 AV	54.0	-8.1	1.13 H	158	30.56	15.36
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	105.7 PK			1.00 V	305	101.05	4.68
2	*5785.00	95.9 AV			1.00 V	305	91.24	4.68
3	11570.00	58.1 PK	74.0	-15.9	1.05 V	251	42.76	15.36
4	11570.00	47.3 AV	54.0	-6.7	1.05 V	251	31.92	15.36

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	93.9 PK			1.08 H	313	89.12	4.80
2	*5825.00	84.4 AV			1.08 H	313	79.63	4.80
3	#5850.00	57.1 PK	74.0	-16.9	1.08 H	313	52.21	4.85
4	#5850.00	44.8 AV	54.0	-9.2	1.08 H	313	39.99	4.85
5	11650.00	57.4 PK	74.0	-16.6	1.27 H	229	42.15	15.24
6	11650.00	46.3 AV	54.0	-7.8	1.27 H	229	31.01	15.24
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	105.5 PK			1.01 V	294	100.67	4.80
2	*5825.00	95.9 AV			1.01 V	294	91.06	4.80
3	#5850.00	62.0 PK	74.0	-12.0	1.01 V	294	57.12	4.85
4	#5850.00	50.5 AV	54.0	-3.5	1.01 V	294	45.63	4.85
5	11650.00	58.4 PK	74.0	-15.6	1.17 V	191	43.19	15.24
6	11650.00	47.7 AV	54.0	-6.3	1.17 V	191	32.43	15.24

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	55.7 PK	74.0	-18.3	1.00 H	358	52.39	3.27
2	5150.00	43.8 AV	54.0	-10.2	1.00 H	358	40.55	3.27
3	*5180.00	95.6 PK			1.00 H	358	92.35	3.25
4	*5180.00	86.7 AV			1.00 H	358	83.47	3.25
5	#10360.00	54.8 PK	74.0	-19.2	1.05 H	211	40.97	13.83
6	#10360.00	43.4 AV	54.0	-10.6	1.05 H	211	29.58	13.83
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	62.6 PK	74.0	-11.4	1.09 V	271	59.37	3.27
2	5150.00	48.1 AV	54.0	-5.9	1.09 V	271	44.85	3.27
3	*5180.00	106.8 PK			1.09 V	271	103.55	3.25
4	*5180.00	98.1 AV			1.09 V	271	94.83	3.25
5	#10360.00	55.7 PK	74.0	-18.3	1.01 V	174	41.88	13.83
6	#10360.00	44.5 AV	54.0	-9.5	1.01 V	174	30.64	13.83

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	*5200.00	93.4 PK			1.00 H	355	90.13	3.22
2	*5200.00	84.2 AV			1.00 H	355	81.02	3.22
3	#10400.00	54.6 PK	74.0	-19.4	1.06 H	216	40.82	13.80
4	#10400.00	44.5 AV	54.0	-9.6	1.06 H	216	30.65	13.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	105.6 PK			1.04 V	276	102.38	3.22
2	*5200.00	96.1 AV			1.04 V	276	92.86	3.22
3	#10400.00	56.1 PK	74.0	-17.9	1.08 V	181	42.33	13.80
4	#10400.00	45.0 AV	54.0	-9.0	1.08 V	181	31.19	13.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	*5240.00	93.2 PK			1.00 H	351	89.93	3.29
2	*5240.00	83.5 AV			1.00 H	351	80.22	3.29
3	5350.00	54.7 PK	74.0	-19.3	1.00 H	351	51.26	3.48
4	5350.00	42.0 AV	54.0	-12.1	1.00 H	351	38.47	3.48
5	#10480.00	54.8 PK	74.0	-19.2	1.07 H	213	40.33	14.45
6	#10480.00	44.6 AV	54.0	-9.4	1.07 H	213	30.17	14.45
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	104.4 PK			1.09 V	269	101.09	3.29
2	*5240.00	94.3 AV			1.09 V	269	90.98	3.29
3	5350.00	57.9 PK	74.0	-16.1	1.09 V	269	54.38	3.48
4	5350.00	42.4 AV	54.0	-11.6	1.09 V	269	38.92	3.48
5	#10480.00	57.6 PK	74.0	-16.4	1.02 V	177	43.15	14.45
6	#10480.00	45.4 AV	54.0	-8.6	1.02 V	177	30.94	14.45

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 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	54.4 PK	74.0	-19.7	1.00 H	355	51.08	3.27
2	5150.00	42.2 AV	54.0	-11.8	1.00 H	355	38.96	3.27
3	*5260.00	93.4 PK			1.00 H	355	90.10	3.31
4	*5260.00	83.6 AV			1.00 H	355	80.27	3.31
5	#10520.00	54.8 PK	74.0	-19.2	1.07 H	210	40.26	14.51
6	#10520.00	44.1 AV	54.0	-10.0	1.07 H	210	29.54	14.51
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.7 PK	74.0	-19.3	1.08 V	273	51.39	3.27
2	5150.00	43.4 AV	54.0	-10.6	1.08 V	273	40.12	3.27
3	*5260.00	105.6 PK			1.08 V	273	102.25	3.31
4	*5260.00	96.1 AV			1.08 V	273	92.83	3.31
5	#10520.00	57.0 PK	74.0	-17.0	1.01 V	180	42.51	14.51
6	#10520.00	45.5 AV	54.0	-8.6	1.01 V	180	30.94	14.51

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	93.9 PK			1.02 H	350	90.52	3.38
2	*5300.00	84.4 AV			1.02 H	350	80.97	3.38
3	10600.00	54.5 PK	74.0	-19.5	1.13 H	207	40.39	14.14
4	10600.00	43.6 AV	54.0	-10.4	1.13 H	207	29.45	14.14
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	105.3 PK			1.16 V	275	101.95	3.38
2	*5300.00	95.5 AV			1.16 V	275	92.14	3.38
3	10600.00	55.7 PK	74.0	-18.3	1.02 V	177	41.59	14.14
4	10600.00	45.2 AV	54.0	-8.8	1.02 V	177	31.07	14.14

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	94.0 PK			1.03 H	357	90.54	3.41
2	*5320.00	84.1 AV			1.03 H	357	80.68	3.41
3	5350.00	54.4 PK	74.0	-19.6	1.03 H	357	50.92	3.48
4	5350.00	42.9 AV	54.0	-11.1	1.03 H	357	39.41	3.48
5	10640.00	55.6 PK	74.0	-18.4	1.08 H	205	40.95	14.66
6	10640.00	45.3 AV	54.0	-8.7	1.08 H	205	30.66	14.66
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	105.3 PK			1.10 V	279	101.84	3.41
2	*5320.00	95.9 AV			1.10 V	279	92.46	3.41
3	5350.00	60.7 PK	74.0	-13.3	1.10 V	279	57.19	3.48
4	5350.00	46.5 AV	54.0	-7.5	1.10 V	279	42.98	3.48
5	10640.00	57.5 PK	74.0	-16.5	1.06 V	191	42.88	14.66
6	10640.00	45.7 AV	54.0	-8.3	1.06 V	191	31.06	14.66

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	55.0 PK	74.0	-19.0	1.06 H	348	51.24	3.80
2	5460.00	43.3 AV	54.0	-10.7	1.06 H	348	39.52	3.80
3	#5470.00	55.9 PK	74.0	-18.1	1.06 H	348	52.03	3.83
4	#5470.00	44.0 AV	54.0	-10.0	1.06 H	348	40.17	3.83
5	*5500.00	94.3 PK			1.06 H	348	90.36	3.94
6	*5500.00	84.2 AV			1.06 H	348	80.29	3.94
7	11000.00	57.4 PK	74.0	-16.6	1.07 H	204	41.38	15.98
8	11000.00	45.4 AV	54.0	-8.6	1.07 H	204	29.43	15.98
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	5460.00	56.6 PK	74.0	-17.4	1.08 V	276	52.77	3.80
2	5460.00	44.4 AV	54.0	-9.6	1.08 V	276	40.59	3.80
3	#5470.00	61.7 PK	74.0	-12.3	1.08 V	276	57.91	3.83
4	#5470.00	46.5 AV	54.0	-7.5	1.08 V	276	42.66	3.83
5	*5500.00	106.1 PK			1.08 V	276	102.15	3.94
6	*5500.00	96.6 AV			1.08 V	276	92.64	3.94
7	11000.00	58.1 PK	74.0	-15.9	1.03 V	175	42.15	15.98
8	11000.00	46.3 AV	54.0	-7.8	1.03 V	175	30.27	15.98

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	96.4 PK			1.00 H	354	92.08	4.31
2	*5580.00	87.3 AV			1.00 H	354	82.94	4.31
3	11160.00	56.8 PK	74.0	-17.2	1.09 H	211	40.65	16.15
4	11160.00	46.2 AV	54.0	-7.8	1.09 H	211	30.09	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	*5580.00	105.4 PK			1.11 V	280	101.06	4.31
2	*5580.00	95.6 AV			1.11 V	280	91.25	4.31
3	11160.00	59.0 PK	74.0	-15.0	1.05 V	179	42.88	16.15
4	11160.00	47.1 AV	54.0	-6.9	1.05 V	179	30.94	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.

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	95.2 PK			1.03 H	351	90.86	4.30
2	*5660.00	85.0 AV			1.03 H	351	80.72	4.30
3	11320.00	56.8 PK	74.0	-17.2	1.06 H	204	41.06	15.76
4	11320.00	46.0 AV	54.0	-8.0	1.06 H	204	30.22	15.76
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	106.3 PK			1.10 V	278	101.98	4.30
2	*5660.00	96.4 AV			1.10 V	278	92.07	4.30
3	11320.00	57.3 PK	74.0	-16.7	1.03 V	179	41.55	15.76
4	11320.00	46.4 AV	54.0	-7.6	1.03 V	179	30.61	15.76

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	95.3 PK			1.05 H	350	91.04	4.22
2	*5700.00	85.1 AV			1.05 H	350	80.86	4.22
3	#5725.00	55.3 PK	74.0	-18.7	1.05 H	350	50.92	4.35
4	#5725.00	44.4 AV	54.0	-9.6	1.05 H	350	40.07	4.35
5	11400.00	56.8 PK	74.0	-17.3	1.15 H	207	40.56	16.19
6	11400.00	46.6 AV	54.0	-7.4	1.15 H	207	30.38	16.19
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	105.9 PK			1.12 V	278	101.64	4.22
2	*5700.00	96.1 AV			1.12 V	278	91.83	4.22
3	#5725.00	59.3 PK	74.0	-14.7	1.12 V	278	54.96	4.35
4	#5725.00	47.2 AV	54.0	-6.8	1.12 V	278	42.84	4.35
5	11400.00	58.7 PK	74.0	-15.3	1.04 V	168	42.53	16.19
6	11400.00	47.2 AV	54.0	-6.8	1.04 V	168	30.97	16.19

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	#5725.00	64.0 PK	74.0	-10.0	1.02 H	356	59.61	4.35
2	#5725.00	48.4 AV	54.0	-5.6	1.02 H	356	44.07	4.35
3	*5745.00	95.2 PK			1.02 H	356	90.75	4.46
4	*5745.00	85.3 AV			1.02 H	356	80.83	4.46
5	11490.00	57.7 PK	74.0	-16.3	1.06 H	208	41.35	16.33
6	11490.00	46.9 AV	54.0	-7.1	1.06 H	208	30.61	16.33
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	#5725.00	72.7 PK	78.2	-5.5	1.07 V	274	68.38	4.35
2	*5745.00	105.5 PK			1.07 V	274	101.08	4.46
3	*5745.00	95.7 AV			1.07 V	274	91.24	4.46
4	11490.00	58.8 PK	74.0	-15.2	1.06 V	178	42.51	16.33
5	11490.00	48.7 AV	54.0	-5.3	1.06 V	178	32.37	16.33

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	*5785.00	93.4 PK			1.04 H	353	88.67	4.68
2	*5785.00	84.5 AV			1.04 H	353	79.84	4.68
3	11570.00	56.1 PK	74.0	-17.9	1.06 H	220	40.72	15.36
4	11570.00	44.8 AV	54.0	-9.2	1.06 H	220	29.41	15.36
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	104.9 PK			1.10 V	280	100.26	4.68
2	*5785.00	95.2 AV			1.10 V	280	90.52	4.68
3	11570.00	57.6 PK	74.0	-16.4	1.03 V	169	42.21	15.36
4	11570.00	46.6 AV	54.0	-7.4	1.03 V	169	31.25	15.36

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	93.5 PK			1.02 H	358	88.69	4.80
2	*5825.00	83.6 AV			1.02 H	358	78.75	4.80
3	#5850.00	55.9 PK	74.0	-18.1	1.02 H	358	51.07	4.85
4	#5850.00	44.3 AV	54.0	-9.7	1.02 H	358	39.46	4.85
5	11650.00	56.3 PK	74.0	-17.7	1.07 H	217	41.08	15.24
6	11650.00	45.4 AV	54.0	-8.6	1.07 H	217	30.16	15.24
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	104.4 PK			1.07 V	279	99.57	4.80
2	*5825.00	94.6 AV			1.07 V	279	89.81	4.80
3	#5850.00	61.3 PK	74.0	-12.7	1.07 V	279	56.48	4.85
4	#5850.00	49.7 AV	54.0	-4.3	1.07 V	279	44.82	4.85
5	11650.00	57.8 PK	74.0	-16.2	1.03 V	167	42.55	15.24
6	11650.00	46.3 AV	54.0	-7.7	1.03 V	167	31.09	15.24

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	54.6 PK	74.0	-19.4	1.02 H	339	51.33	3.27
2	5150.00	43.5 AV	54.0	-10.5	1.02 H	339	40.27	3.27
3	*5190.00	94.6 PK			1.02 H	339	91.37	3.23
4	*5190.00	85.8 AV			1.02 H	339	82.54	3.23
5	#10380.00	54.7 PK	74.0	-19.3	1.07 H	224	40.87	13.81
6	#10380.00	43.4 AV	54.0	-10.6	1.07 H	224	29.62	13.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.6 PK	74.0	-14.4	1.07 V	265	56.31	3.27
2	5150.00	46.6 AV	54.0	-7.4	1.07 V	265	43.29	3.27
3	*5190.00	106.2 PK			1.07 V	265	102.94	3.23
4	*5190.00	97.0 AV			1.07 V	265	93.79	3.23
5	#10380.00	55.5 PK	74.0	-18.6	1.02 V	166	41.64	13.81
6	#10380.00	44.7 AV	54.0	-9.3	1.02 V	166	30.87	13.81

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 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	93.7 PK			1.01 H	345	90.38	3.27
2	*5230.00	84.5 AV			1.01 H	345	81.25	3.27
3	5350.00	54.6 PK	74.0	-19.5	1.01 H	345	51.07	3.48
4	5350.00	41.8 AV	54.0	-12.2	1.01 H	345	38.35	3.48
5	#10460.00	54.9 PK	74.0	-19.1	1.05 H	221	40.66	14.28
6	#10460.00	44.5 AV	54.0	-9.5	1.05 H	221	30.21	14.28
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	104.6 PK			1.06 V	274	101.28	3.27
2	*5230.00	94.1 AV			1.06 V	274	90.87	3.27
3	5350.00	57.4 PK	74.0	-16.6	1.06 V	274	53.94	3.48
4	5350.00	42.2 AV	54.0	-11.8	1.06 V	274	38.75	3.48
5	#10460.00	57.3 PK	74.0	-16.7	1.04 V	171	42.98	14.28
6	#10460.00	45.3 AV	54.0	-8.7	1.04 V	171	31.04	14.28

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 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	53.8 PK	74.0	-20.2	1.00 H	348	50.54	3.27
2	5150.00	42.0 AV	54.0	-12.0	1.00 H	348	38.72	3.27
3	*5270.00	93.6 PK			1.00 H	348	90.28	3.33
4	*5270.00	84.0 AV			1.00 H	348	80.65	3.33
5	#10540.00	54.8 PK	74.0	-19.2	1.06 H	207	40.35	14.43
6	#10540.00	44.0 AV	54.0	-10.0	1.06 H	207	29.61	14.43
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	54.7 PK	74.0	-19.3	1.09 V	269	51.45	3.27
2	5150.00	43.6 AV	54.0	-10.4	1.09 V	269	40.36	3.27
3	*5270.00	105.3 PK			1.09 V	269	101.95	3.33
4	*5270.00	95.9 AV			1.09 V	269	92.61	3.33
5	#10540.00	56.4 PK	74.0	-17.6	1.02 V	181	41.93	14.43
6	#10540.00	45.3 AV	54.0	-8.8	1.02 V	181	30.82	14.43

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	94.3 PK			1.05 H	349	90.85	3.40
2	*5310.00	84.3 AV			1.05 H	349	80.91	3.40
3	5350.00	57.7 PK	74.0	-16.3	1.05 H	349	54.18	3.48
4	5350.00	47.1 AV	54.0	-7.0	1.05 H	349	43.57	3.48
5	10620.00	55.2 PK	74.0	-18.8	1.01 H	206	40.77	14.41
6	10620.00	44.8 AV	54.0	-9.2	1.01 H	206	30.42	14.41
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	*5310.00	105.0 PK			1.09 V	277	101.63	3.40
2	*5310.00	95.3 AV			1.09 V	277	91.85	3.40
3	5350.00	61.9 PK	74.0	-12.1	1.09 V	277	58.42	3.48
4	5350.00	49.9 AV	54.0	-4.1	1.09 V	277	46.39	3.48
5	10620.00	57.3 PK	74.0	-16.7	1.03 V	192	42.91	14.41
6	10620.00	45.9 AV	54.0	-8.1	1.03 V	192	31.45	14.41

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 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	55.2 PK	74.0	-18.8	1.05 H	351	51.41	3.80
2	5460.00	43.9 AV	54.0	-10.1	1.05 H	351	40.08	3.80
3	#5470.00	55.8 PK	74.0	-18.3	1.05 H	351	51.92	3.83
4	#5470.00	44.5 AV	54.0	-9.5	1.05 H	351	40.67	3.83
5	*5510.00	95.0 PK			1.05 H	351	91.06	3.98
6	*5510.00	84.8 AV			1.05 H	351	80.83	3.98
7	11020.00	56.9 PK	74.0	-17.2	1.09 H	208	40.89	15.96
8	11020.00	45.5 AV	54.0	-8.5	1.09 H	208	29.57	15.96
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.3 PK	74.0	-16.8	1.06 V	269	53.45	3.80
2	5460.00	45.1 AV	54.0	-8.9	1.06 V	269	41.26	3.80
3	#5470.00	58.0 PK	74.0	-16.0	1.06 V	269	54.18	3.83
4	#5470.00	46.5 AV	54.0	-7.5	1.06 V	269	42.66	3.83
5	*5510.00	105.8 PK			1.06 V	269	101.82	3.98
6	*5510.00	96.3 AV			1.06 V	269	92.27	3.98
7	11020.00	58.3 PK	74.0	-15.7	1.00 V	164	42.33	15.96
8	11020.00	47.0 AV	54.0	-7.0	1.00 V	164	31.05	15.96

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 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	95.8 PK			1.03 H	347	91.62	4.17
2	*5550.00	86.5 AV			1.03 H	347	82.37	4.17
3	11100.00	56.7 PK	74.0	-17.3	1.06 H	207	40.88	15.86
4	11100.00	46.1 AV	54.0	-7.9	1.06 H	207	30.27	15.86
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	105.5 PK			1.10 V	276	101.34	4.17
2	*5550.00	95.8 AV			1.10 V	276	91.67	4.17
3	11100.00	58.8 PK	74.0	-15.2	1.04 V	172	42.97	15.86
4	11100.00	46.7 AV	54.0	-7.3	1.04 V	172	30.85	15.86

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	95.5 PK			1.03 H	356	91.22	4.27
2	*5670.00	85.3 AV			1.03 H	356	80.98	4.27
3	#5725.00	55.2 PK	74.0	-18.8	1.03 H	356	50.81	4.35
4	#5725.00	44.6 AV	54.0	-9.4	1.03 H	356	40.27	4.35
5	11340.00	56.1 PK	74.0	-17.9	1.17 H	215	40.25	15.87
6	11340.00	46.0 AV	54.0	-8.0	1.17 H	215	30.13	15.87
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	105.6 PK			1.13 V	281	101.37	4.27
2	*5670.00	95.9 AV			1.13 V	281	91.64	4.27
3	#5725.00	57.7 PK	74.0	-16.3	1.13 V	281	53.39	4.35
4	#5725.00	46.9 AV	54.0	-7.1	1.13 V	281	42.51	4.35
5	11340.00	58.2 PK	74.0	-15.8	1.06 V	172	42.32	15.87
6	11340.00	46.8 AV	54.0	-7.3	1.06 V	172	30.88	15.87

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	#5725.00	63.8 PK	74.0	-10.2	1.01 H	357	59.42	4.35
2	#5725.00	48.7 AV	54.0	-5.3	1.01 H	357	44.39	4.35
3	*5755.00	95.2 PK			1.01 H	357	90.63	4.52
4	*5755.00	84.9 AV			1.01 H	357	80.35	4.52
5	11510.00	57.7 PK	74.0	-16.3	1.08 H	213	41.52	16.21
6	11510.00	46.8 AV	54.0	-7.3	1.08 H	213	30.54	16.21
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	73.5 PK	78.2	-4.7	1.08 V	277	69.14	4.35
2	*5755.00	105.7 PK			1.08 V	277	101.21	4.52
3	*5755.00	95.9 AV			1.08 V	277	91.38	4.52
4	11510.00	58.9 PK	74.0	-15.1	1.02 V	173	42.68	16.21
5	11510.00	48.6 AV	54.0	-5.4	1.02 V	173	32.42	16.21

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	93.9 PK			1.03 H	355	89.13	4.73
2	*5795.00	84.6 AV			1.03 H	355	79.85	4.73
3	#5850.00	55.0 PK	74.0	-19.0	1.03 H	355	50.19	4.85
4	#5850.00	43.6 AV	54.0	-10.4	1.03 H	355	38.74	4.85
5	11590.00	56.0 PK	74.0	-18.0	1.04 H	223	40.96	15.08
6	11590.00	45.7 AV	54.0	-8.4	1.04 H	223	30.57	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	*5795.00	104.5 PK			1.05 V	277	99.81	4.73
2	*5795.00	94.5 AV			1.05 V	277	89.74	4.73
3	#5850.00	59.2 PK	74.0	-14.8	1.05 V	277	54.32	4.85
4	#5850.00	47.8 AV	54.0	-6.2	1.05 V	277	42.91	4.85
5	11590.00	57.9 PK	74.0	-16.1	1.02 V	169	42.83	15.08
6	11590.00	46.6 AV	54.0	-7.4	1.02 V	169	31.49	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.
6. " # ": The radiated frequency is out of the restricted band.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

- NOTE:** 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	834115/016	Apr. 28, 2014	Apr. 27, 2015
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ESH2-Z5	828075/003	Sep. 04, 2014	Sep. 03, 2015
LISN With Adapter (for EUT)	AD10	C03Ada-001	Sep. 04, 2014	Sep. 03, 2015
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	Jul. 24, 2014	Jul. 23, 2015
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 08, 2014	May 07, 2015
Software	ADT_Conc_V7.3.7	NA	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C03.01	Sep. 24, 2014	Sep. 23, 2015
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-300	Jan. 17, 2014	Jan. 16, 2015
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-301	Jan. 27, 2014	Jan. 26, 2015

- Notes: 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. 3.
 3. The VCCI Site Registration No. C-274.

4.2.3 TEST PROCEDURES

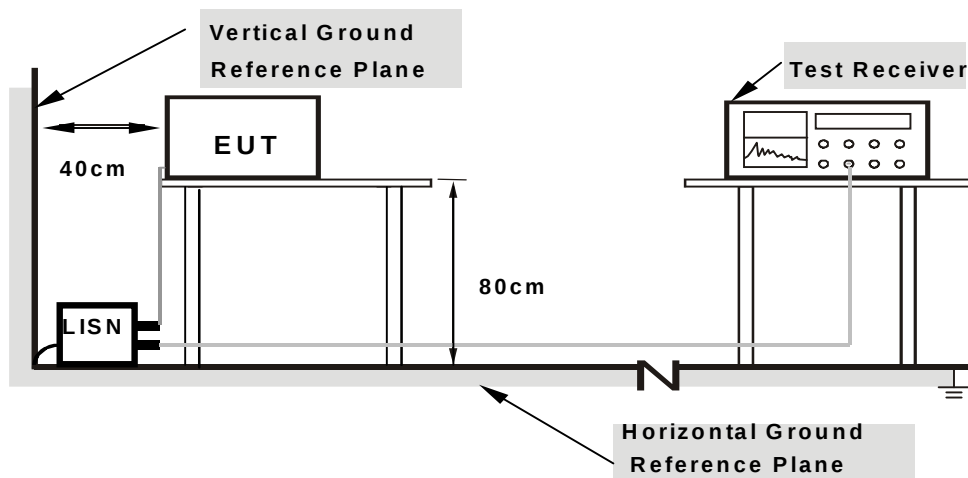
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

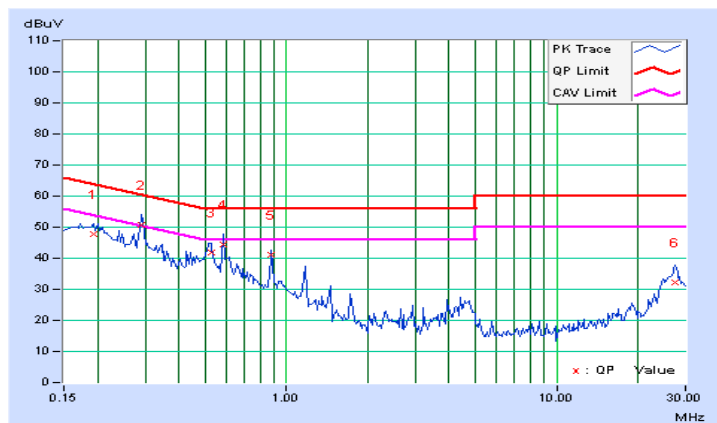
CONDUCTED WORST-CASE DATA: 802.11a

PHASE	Line 1	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19297	0.23	47.38	37.62	47.61	37.85	63.91	53.91	-16.30	-16.06
2	0.29063	0.24	50.33	42.98	50.57	43.22	60.51	50.51	-9.94	-7.29
3	0.52500	0.26	41.58	32.92	41.84	33.18	56.00	46.00	-14.16	-12.82
4	0.58750	0.26	44.17	38.51	44.43	38.77	56.00	46.00	-11.57	-7.23
5	0.87656	0.27	40.72	35.54	40.99	35.81	56.00	46.00	-15.01	-10.19
6	27.43359	0.23	32.07	21.89	32.30	22.12	60.00	50.00	-27.70	-27.88

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

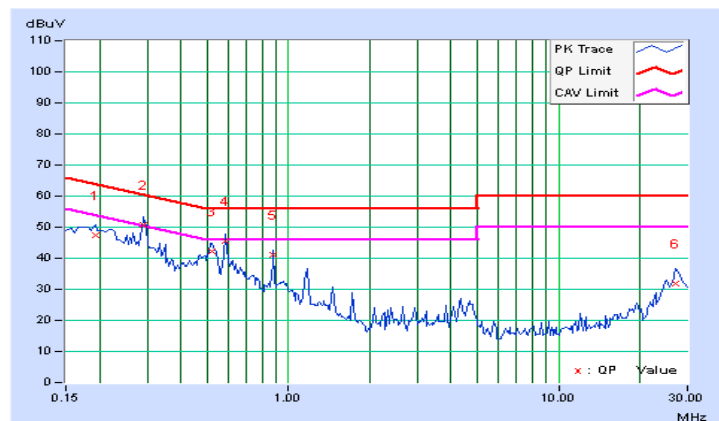


PHASE	Line 2	6dB BANDWIDTH	9kHz
-------	--------	---------------	------

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19297	0.31	47.20	37.62	47.51	37.93	63.91	53.91	-16.40	-15.98
2	0.29063	0.32	50.33	42.98	50.65	43.30	60.51	50.51	-9.85	-7.20
3	0.52109	0.35	41.99	33.66	42.34	34.01	56.00	46.00	-13.66	-11.99
4	0.58359	0.35	45.36	38.06	45.71	38.41	56.00	46.00	-10.29	-7.59
5	0.87656	0.36	40.72	36.52	41.08	36.88	56.00	46.00	-14.92	-9.12
6	27.23047	0.27	31.59	21.89	31.86	22.16	60.00	50.00	-28.14	-27.84

Remarks:

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



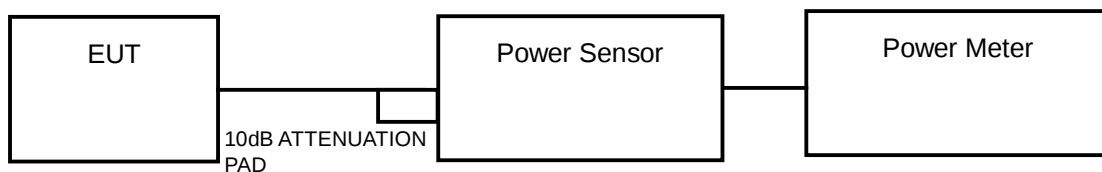
4.3 TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

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

*B is the 26 dB emission bandwidth in megahertz

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 (HT20), 802.11n (HT40)

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

FOR 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)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	22.0	13.42	23.38	PASS
40	5200	20.2	13.05	23.38	PASS
48	5240	20.5	13.11	23.38	PASS
52	5260	20.0	13.02	23.38	PASS
60	5300	20.4	13.09	23.38	PASS
64	5320	20.0	13.00	23.38	PASS
100	5500	20.1	13.04	23.38	PASS
116	5580	20.0	13.02	23.38	PASS
140	5700	20.0	13.00	23.38	PASS
149	5745	20.0	13.02	29.38	PASS
157	5785	20.8	13.18	29.38	PASS
165	5825	20.1	13.04	29.38	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (25.36) = 25.04 > 24\text{dBm}$
2. $11\text{dBm} + 10\log (23.39) = 24.69 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (23.00) = 24.62 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (23.41) = 24.69 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (25.57) = 25.08 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (20.51) = 24.12 > 24\text{dBm}$

For U-NII-1 & U-NII-2A & U-NII-2C: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $24 - (6.62 - 6) = 23.38\text{dBm}$.

For U-NII-3: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $30 - (6.62 - 6) = 29.38\text{dBm}$.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.6	11.33	23.38	PASS
40	5200	13.8	11.41	23.38	PASS
48	5240	14.3	11.54	23.38	PASS
52	5260	13.9	11.42	23.38	PASS
60	5300	14.0	11.45	23.38	PASS
64	5320	13.1	11.18	23.38	PASS
100	5500	13.3	11.24	23.38	PASS
116	5580	13.8	11.41	23.38	PASS
140	5700	12.6	11.02	23.38	PASS
149	5745	12.6	11.00	29.38	PASS
157	5785	13.2	11.22	29.38	PASS
165	5825	13.4	11.28	29.38	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (25.67) = 25.09 > 24\text{dBm}$
2. $11\text{dBm} + 10\log (22.41) = 24.50 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (20.79) = 24.18 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (20.73) = 24.17 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (20.94) = 24.21 > 24\text{dBm}$
6. $11\text{dBm} + 10\log (20.69) = 24.16 > 24\text{dBm}$

For U-NII-1 & U-NII-2A & U-NII-2C: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $24 - (6.62 - 6) = 23.38\text{dBm}$.

For U-NII-3: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $30 - (6.62 - 6) = 29.38\text{dBm}$.

802.11n (40 MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.8	11.08	23.38	PASS
46	5230	13.3	11.25	23.38	PASS
54	5270	13.2	11.21	23.38	PASS
62	5310	13.3	11.24	23.38	PASS
102	5510	12.6	11.02	23.38	PASS
110	5550	12.6	11.00	23.38	PASS
134	5670	12.7	11.05	23.38	PASS
151	5755	13.0	11.14	29.38	PASS
159	5795	12.6	11.02	29.38	PASS

NOTE:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (51.75) = 28.14 > 24\text{dBm}$
2. $11\text{dBm} + 10\log (42.47) = 27.28 > 24\text{dBm}$
3. $11\text{dBm} + 10\log (42.41) = 27.27 > 24\text{dBm}$
4. $11\text{dBm} + 10\log (42.30) = 27.26 > 24\text{dBm}$
5. $11\text{dBm} + 10\log (42.31) = 27.26 > 24\text{dBm}$

For U-NII-1 & U-NII-2A & U-NII-2C: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $24 - (6.62 - 6) = 23.38\text{dBm}$.

For U-NII-3: Gain = 6.62dBi > 6dBi, so the conducted power limit shall be reduced to $30 - (6.62 - 6) = 29.38\text{dBm}$.

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	25.36	PASS
60	5300	23.39	PASS
64	5320	23.00	PASS
100	5500	23.41	PASS
116	5580	25.57	PASS
140	5700	20.51	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
52	5260	25.67	PASS
60	5300	22.41	PASS
64	5320	20.79	PASS
100	5500	20.73	PASS
116	5580	20.94	PASS
140	5700	20.69	PASS

802.11n (40MHz)

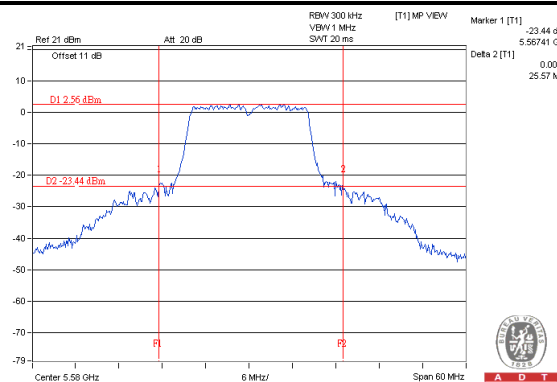
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	PASS / FAIL
54	5270	51.75	PASS
62	5310	42.47	PASS
102	5510	42.41	PASS
110	5550	42.30	PASS
134	5670	42.31	PASS



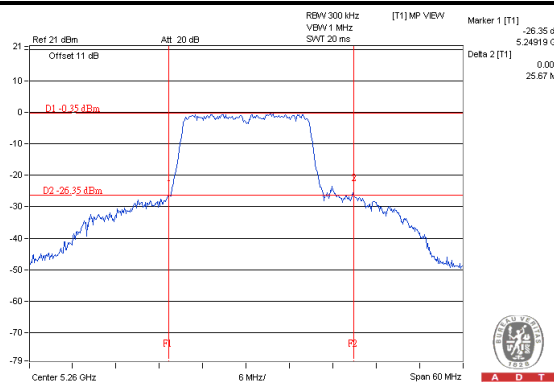
A D T

SPECTRUM PLOT OF WORST VALUE

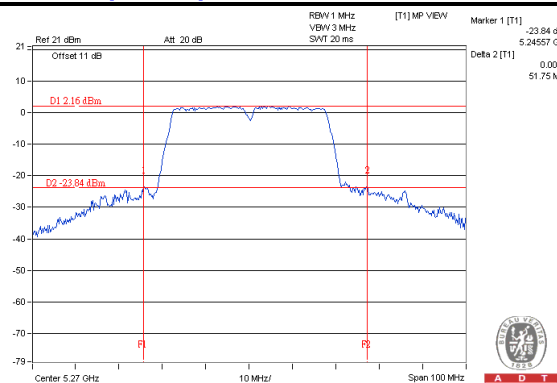
802.11a



802.11n (20 MHz)



802.11n (40MHz)



EUT MAXIMUM CONDUCTED POWER

802.11a

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	20.4	13.09
5470~5725	20.1	13.04

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

802.11n (20MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	14.0	11.45
5470~5725	13.8	11.41

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

802.11n (40MHz)

FREQUENCY BAND (MHz)	MAX. POWER	
	OUTPUT POWER (mW)	OUTPUT POWER (dBm)
5250~5350	13.3	11.24
5470~5725	12.7	11.05

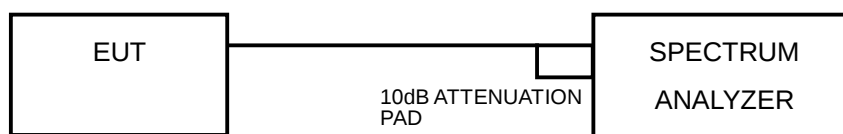
NOTE: Manufacturer provides Transmit Power Control description to meet this requirement.

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

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 U-NII-2A, U-NII-2C 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 $\geq$ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value

For U-NII-3 band:

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300kHz, 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 and add $10 \log (1/\text{duty cycle})$

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6.

4.4.7 TEST RESULTS

For U-NII-1, U-NII-2A, U-NII-2C Band

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-1.45	10.38	PASS
40	5200	-1.52	10.38	PASS
48	5240	-1.34	10.38	PASS
52	5260	-1.78	10.38	PASS
60	5300	-1.60	10.38	PASS
64	5320	-2.17	10.38	PASS
100	5500	-1.94	10.38	PASS
116	5580	-1.89	10.38	PASS
140	5700	-2.47	10.38	PASS

Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to $11-(6.62-6) = 10.38\text{dBm}$.

802.11n (20MHz)

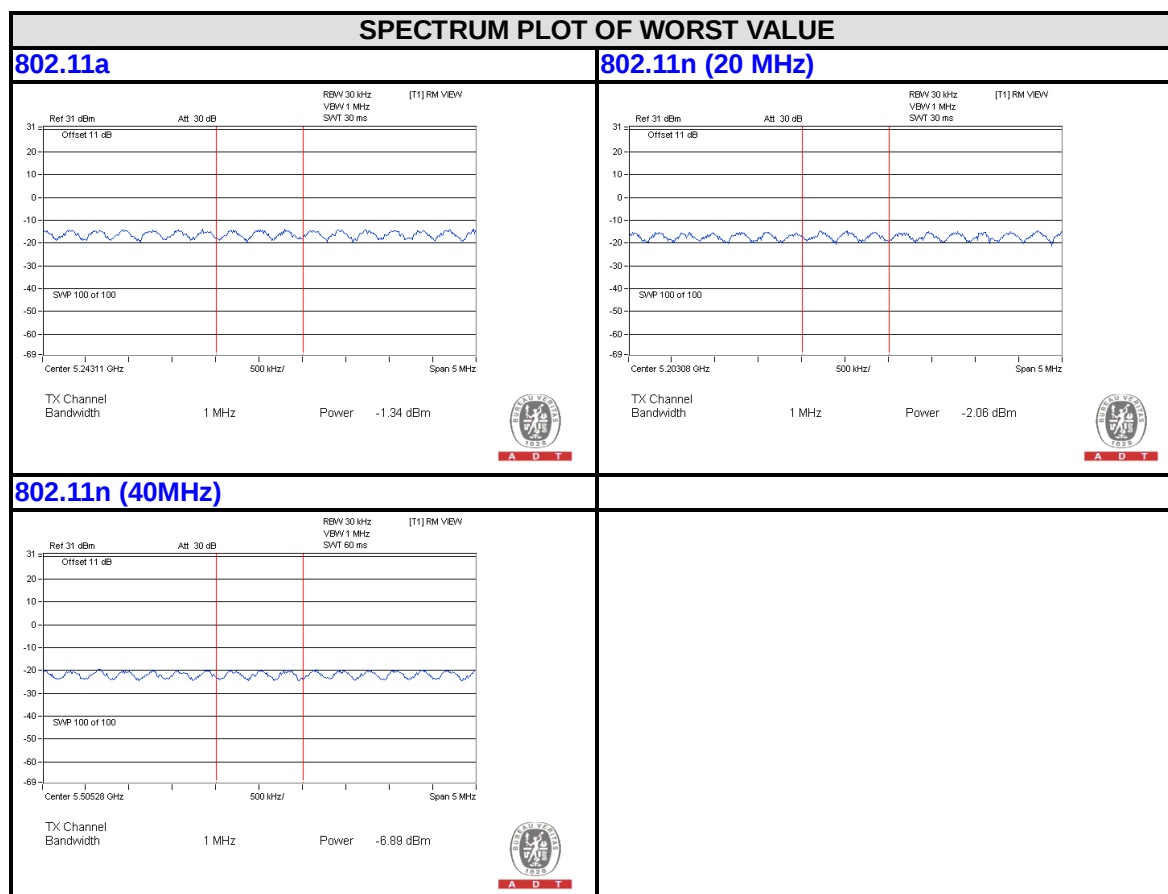
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	-3.54	10.38	PASS
40	5200	-2.06	10.38	PASS
48	5240	-4.44	10.38	PASS
52	5260	-4.56	10.38	PASS
60	5300	-5.21	10.38	PASS
64	5320	-6.07	10.38	PASS
100	5500	-3.83	10.38	PASS
116	5580	-3.78	10.38	PASS
140	5700	-4.00	10.38	PASS

Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to $11-(6.62-6) = 10.38\text{dBm}$.

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
38	5190	-8.01	10.38	PASS
46	5230	-7.76	10.38	PASS
54	5270	-7.85	10.38	PASS
62	5310	-8.63	10.38	PASS
102	5510	-6.89	10.38	PASS
110	5550	-7.13	10.38	PASS
134	5670	-7.22	10.38	PASS

Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to 11-(6.62-6) = 10.38dBm.



For U-NII-3 Band

802.11a

Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
149	5745	4.42	6.64	29.38	PASS
157	5785	4.91	7.13	29.38	PASS
165	5825	4.21	6.43	29.38	PASS

Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to $30-(6.62-6) = 29.38\text{dBm}$

802.11n (20MHz)

Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
149	5745	1.84	4.06	29.38	PASS
157	5785	2.21	4.43	29.38	PASS
165	5825	2.30	4.52	29.38	PASS

Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to $30-(6.62-6) = 29.38\text{dBm}$

802.11n (40MHz)

Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
151	5755	-0.06	2.16	29.38	PASS
159	5795	-0.58	1.64	29.38	PASS

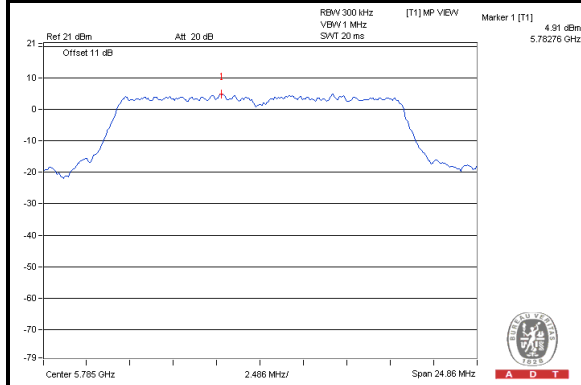
Directional gain = 6.62dBi = 6.62dBi > 6dBi , so the power density limit shall be reduced to $30-(6.62-6) = 29.38\text{dBm}$

AVGPSD-1 RBW/VBW=300kHz/1MHz,

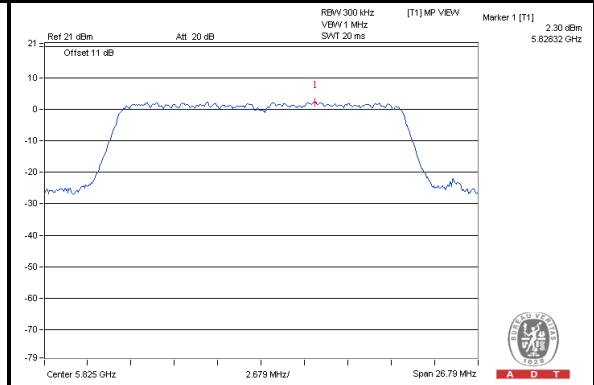
$\text{PSD}(\text{dBm}/500\text{kHz}) = \text{PSD}(\text{dBm}/300\text{kHz}) + 10 \cdot \log(500\text{kHz}/300\text{kHz}) = \text{PSD}(\text{dBm}/300\text{kHz}) + 2.22\text{dB}$

SPECTRUM PLOT OF WORST VALUE

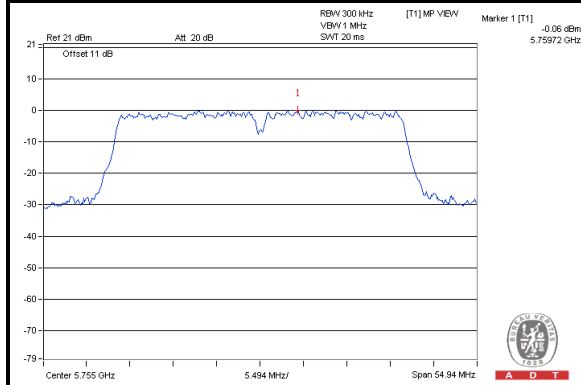
802.11a



802.11n (20MHz)



802.11n (40MHz)

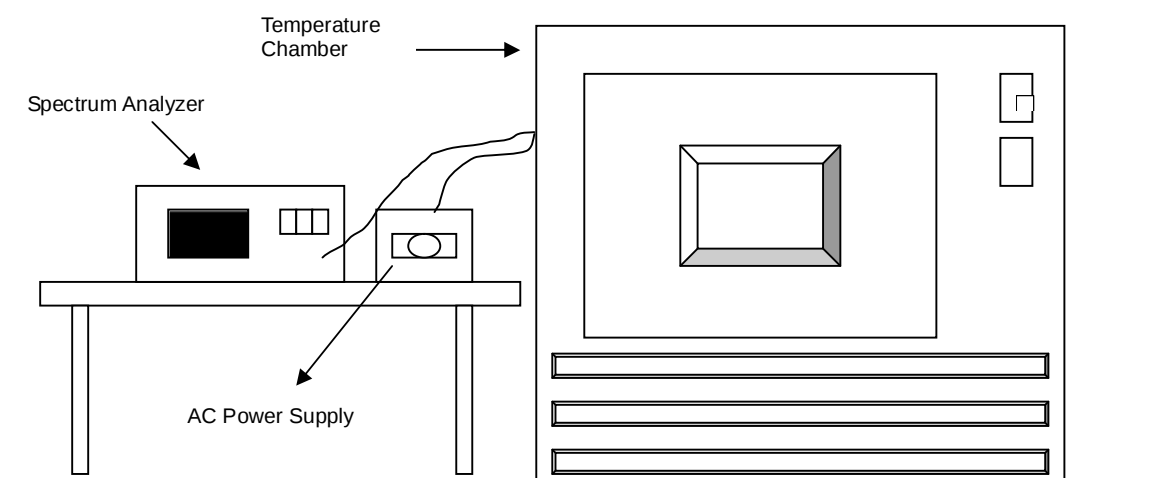


4.5 FREQUENCY STABILITY

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: 5180MHz									
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	5180.042446	8.1942302	5180.042803	8.2630537	5180.042529	8.2102790	5180.042948	8.2911540
40	120	5180.042571	8.2183868	5180.042766	8.2559323	5180.042819	8.2661853	5180.042806	8.2637099
30	120	5180.042935	8.2885181	5180.042873	8.2765616	5180.042743	8.2514681	5180.0429	8.2818994
20	120	5180.042709	8.2449761	5180.042631	8.2298580	5180.042931	8.2878639	5180.042954	8.2923164
10	120	5180.043356	8.3699784	5180.04305	8.3108682	5180.042867	8.2755705	5180.043329	8.3647076
0	120	5180.042898	8.2813749	5180.043109	8.3222735	5180.042716	8.2463261	5180.042766	8.2560385
-10	120	5180.042577	8.2195410	5180.042726	8.2482636	5180.042412	8.1876281	5180.042599	8.2237507
-20	120	5180.042812	8.2649152	5180.043287	8.3566485	5180.042886	8.2792189	5180.043248	8.3490677

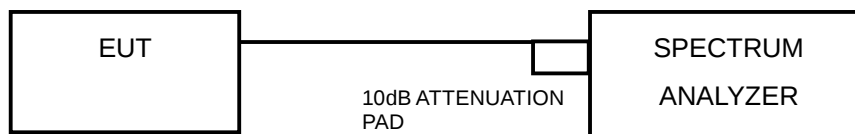
FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5180.042935	8.2886831	5180.042756	8.2540417	5180.042677	8.2388990	5180.042982	8.2977178
	120	5180.042709	8.2449761	5180.042631	8.2298580	5180.042931	8.2878639	5180.042954	8.2923164
	102	5180.043064	8.3134808	5180.042788	8.2602843	5180.042906	8.2830344	5180.042854	8.2730456

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	16.62	0.5	PASS
157	5785	16.58	0.5	PASS
165	5825	16.59	0.5	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	17.83	0.5	PASS
157	5785	17.88	0.5	PASS
165	5825	17.86	0.5	PASS

802.11n (40MHz)

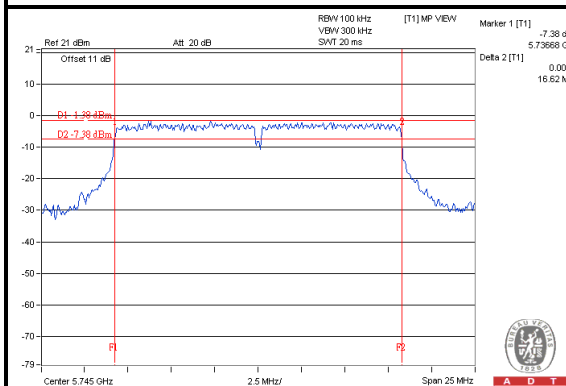
CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
151	5755	36.63	0.5	PASS
159	5795	36.55	0.5	PASS



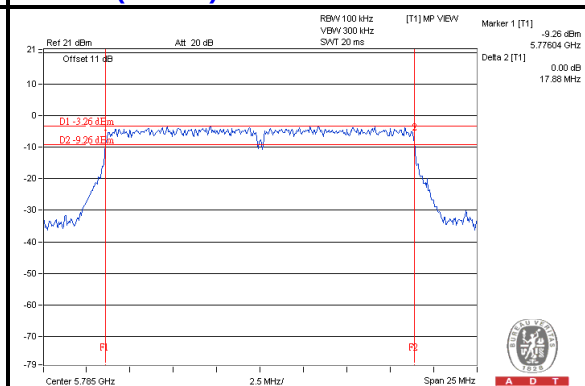
A D T

SPECTRUM PLOT OF WORST VALUE

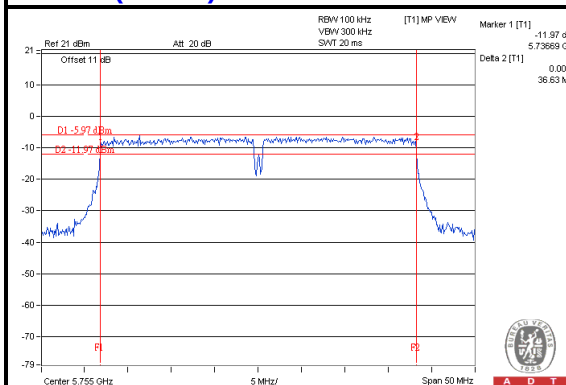
802.11a



802.11n (20MHz)



802.11n (40MHz)



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---