

FCC Test Report

Report No.: RF160520W001-7

FCC ID: O57PB2650Y

Test Model: Lenovo PB2-650Y

Received Date: May 20, 2016

Test Date: May 21, 2016 ~ Jun. 13, 2016

Issued Date: Jun. 14, 2016

Applicant: Lenovo(Shanghai) Electronics Technology Co., Ltd.

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Release Control Record

Issue No.	Description	Date Issued
RF160520W001-7	Original release	Jun. 14, 2016

1 Certificate of Conformity

Product: Lenovo Mobile Phone
Brand: Lenovo
Test Model: Lenovo PB2-650Y
Sample Status: Identical Prototype
Applicant: Lenovo(Shanghai) Electronics Technology Co., Ltd.
Test Date: May 21, 2016 ~ Jun. 13, 2016
Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10: 2013

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

Prepared by :  , **Date:** Jun. 14, 2016
Amyee Qian / Engineer

Approved by :  , **Date:** Jun. 14, 2016
William Chung / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is 12.37dB at 0.1620MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -1.69dB at 5470MHz.
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	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	9KHZ ~ 30MHZ	2.74 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Lenovo Mobile Phone
Brand	Lenovo
Test Model	Lenovo PB2-650Y
Power Supply Rating	5.2Vdc (adapter or host equipment) 3.8Vdc (battery)
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
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)
Output Power	21.330mW for 5180 ~ 5240MHz 21.038mW for 5260 ~ 5320MHz 20.606mW for 5500 ~ 5700MHz 20.654mW for 5745 ~ 5825MHz
Antenna Type	5180 ~ 5240MHz: PIFA Antenna with -3.9dBi gain 5260 ~ 5320MHz: PIFA Antenna with -3.9dBi gain 5500 ~ 5700MHz: PIFA Antenna with -4.8dBi gain 5745 ~ 5825MHz: PIFA Antenna with -6.2dBi gain
I/O Ports	Refer to user's manual
Cable Supplied	USB Cable: Shielded, Detachable, 1.1m

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitters and one receivers.

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

- There were Sample A and Sample B for this project, the difference is as below:

SAMPLE	EUT CONFIGURATION INFORMATION
A	LCD panel +TP1+Front camera 1+back camera 1+eMMC 1/ eMMC 2+speaker 1+receiver 1+vibrator 1+battery 1
B	LCD panel +TP2+Front camera 2+back camera 2+eMMC 3/ eMMC 4+speaker 2+receiver 2+vibrator 2+battery 2

- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

LIST OF ACCESSORIES:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
AC Adapter 1	Lenovo	Acbel	C-P35	I/P:100-240Vac, 500mA O/P:5.2Vdc, 2000mA
AC Adapter 2	Lenovo	Huntkey	C-P35	I/P:100-240Vac, 500mA O/P:5.2Vdc, 2000mA
Battery 1	Lenovo	SCUD	L16D1P31	Rating: 3.8Vdc, 4050mAh
Battery 2	Lenovo	SUNWODA	L16D1P32	Rating: 3.8Vdc, 4050mAh
USB Cable 1	LIQI	--	LQ-025254	1.0m non-shielded cable w/o core
USB Cable 2	STARW	--	XJ-007046-1	1.0m non-shielded cable w/o core
LCD Panel+TP1	Tianma	--	TM065JVSP03-00IPS gold MIPI	--
LCD Panel+TP2	GIS	--	TC064GFL01 IPS Black MIPI	--
Front Camera 1	O-Film	--	L5693F20	--
Front Camera 2	Q Technology Limited	--	F5693AQ	--
Back Camera 1	Q Technology Limited	--	F3M2YBX	--
Back Camera 2	Sunny Opotech	--	F13S05Y	--
eMMC 1	SAMSUNG	--	KMRX1000BM-B614	32G
eMMC2	Samsung	--	KMQE10013M-B318	16G
eMMC 3	Hynix	--	H9TQ26ADFTACUR-KUM	32G
eMMC 4	Hynix	--	H9TQ17ABJTACUR-KUM	16G
Speaker 1	Haosheng	--	P9898_SPK_BOX_ASM	--
Speaker 2	Midi	--	P9898_SPK_BOX_ASM_MD	--
receiver 1	Xichun	--	KFR1506G2.8-32-HV	--
receiver 2	Midi	--	MIDRC1506M2.8	--
vibrator 1	Hongzhifa	--	HZF1027A-P02L9	--
vibrator 2	AWA SEIMITSU	--	LC-B68L	--

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz

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

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

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

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≥1G	RE<1G	PLC	APCM	
A	√	√	√	-	Powered by Adapter with wifi(5G) link
B	-	-	-	√	Powered by Battery with wifi(5G) link
C	-	-	-	-	Powered by USB with wifi(5G) link

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

NOTE:

- The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.
- "-" means no effect.

Radiated Emission Test (Above 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
A	802.11a	5725-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5320	36 to 64	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)
A	802.11a	5180-5320	36 to 64	36	OFDM	BPSK	6.0

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	MCS0
A	802.11a	5725-5825	149 to 165	149, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

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)
B	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
B	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
B	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
B	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
B	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
B	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
B	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
B	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
B	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
B	802.11a	5725-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
B	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Alex Chen
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Alex Chen
PLC	25deg. C, 68%RH	120Vac, 60Hz	Yuqiang Yin
APCM	21deg. C, 60%RH	120Vac, 60Hz	Yuqiang Yin

3.3 Duty Cycle of Test Signal

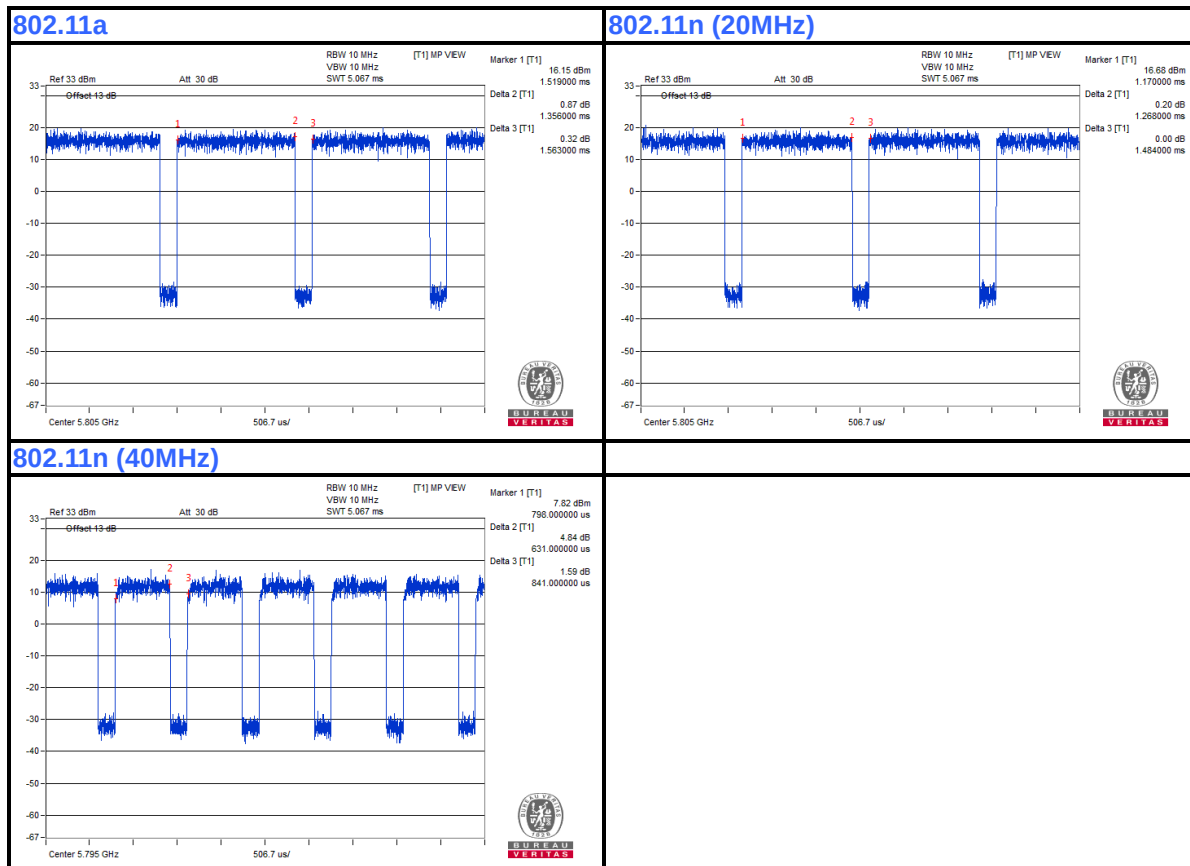
MODULATION TYPE: BPSK

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

802.11a: Duty cycle = $1.356/1.563 = 0.868$, Duty factor = $10 * \log(1/0.868) = 0.62$

802.11n (20MHz): Duty cycle = $1.268/1.484 = 0.854$, Duty factor = $10 * \log(1/0.854) = 0.69$

802.11n (40MHz): Duty cycle = $0.631/0.841 = 0.750$, Duty factor = $10 * \log(1/0.750) = 1.25$



3.4 Description of Support Units

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

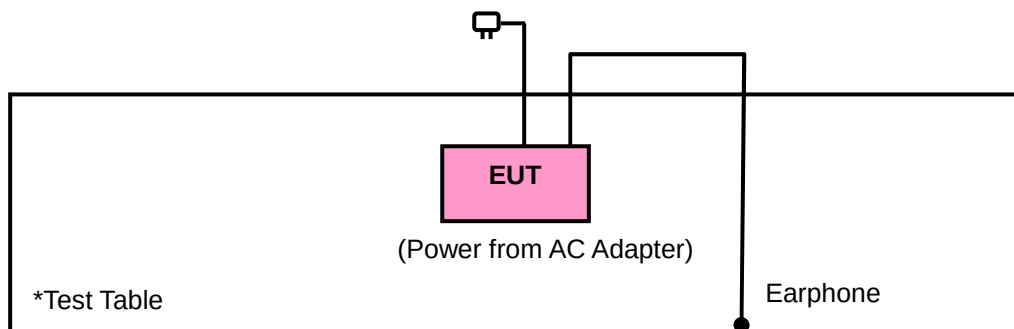
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	AC Line: Unshielded, Detachable 1.5m

NOTE:

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedure New Rules v01

ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

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:

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

4.1.2 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 05,16	Apr. 04,17
Loop Antenna	Daze	ZN30900A	0708	Dec. 30, 15	Dec. 29, 16
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 16, 15	Jul. 15, 16
Loop Antenna	Daze	ZN30900A	0708	Dec. 30, 15	Dec. 29, 16
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 30, 14	May 29, 17
Amplifier	Burgeon	BPA-530	100220	Apr. 05,16	Apr. 04,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,15	Nov. 19,17
Pre-Amplifier	HP	8449B	3008A00409	Apr. 25,15	Apr. 24,17
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Aug. 08, 14	Aug. 07, 16
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 12,16	Mar. 11,18
Test Software	ADT	ADT_Radiated V7.6.15.9.2	N/A	N/A	N/A

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 Test Procedure

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

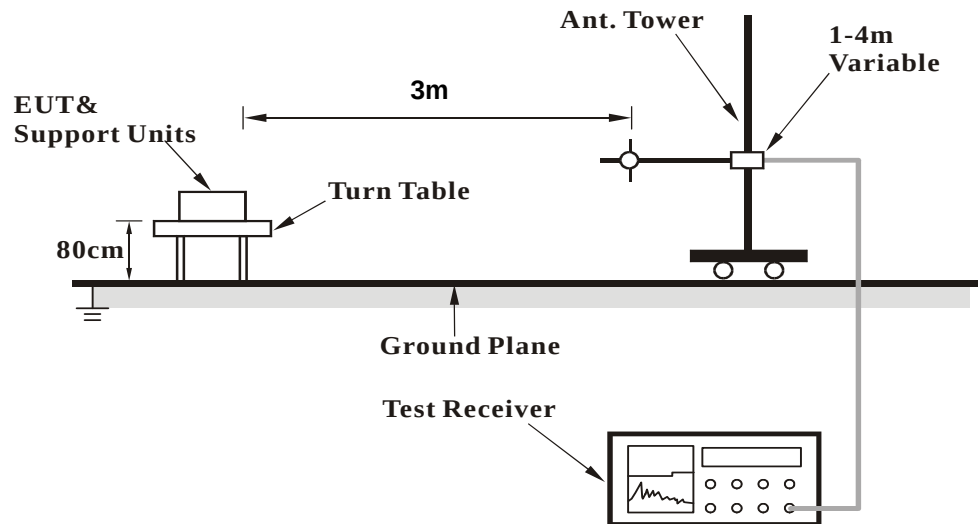
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor ($10 \log(1/\text{duty cycle})$).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

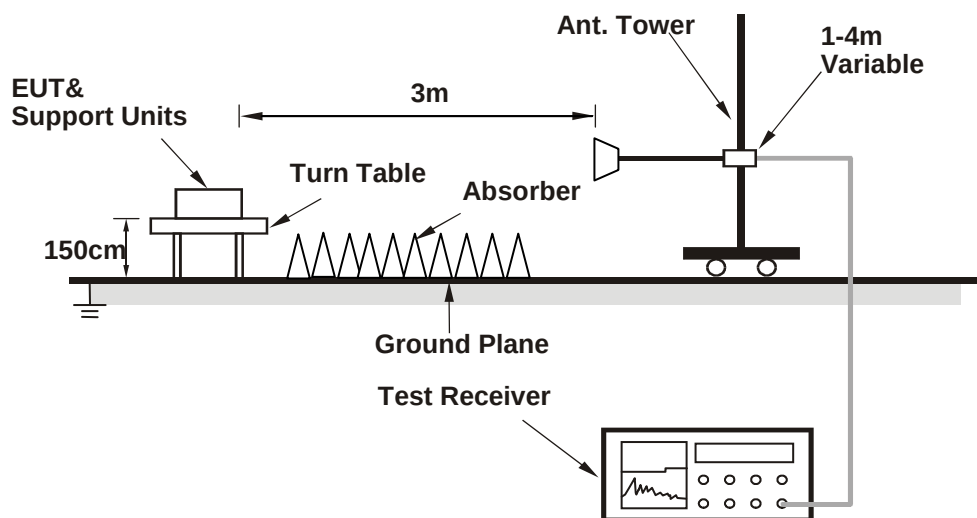
No deviation.

4.1.5 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Condition

- Set the EUT under full load condition and placed them on a testing table.
- Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- The necessary accessories enable the EUT in full functions.

4.1.7 Test Results

BELOW 1GHz WORST-CASE DATA:

9 KHz – 30 MHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

30 MHz – 1GHz data:

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
32.91	15.10	36.71	40.00	-24.90	15.09	0.84	37.54	101	270	QP
89.17	13.72	42.44	43.50	-29.78	6.88	1.45	37.05	101	270	QP
155.13	20.12	45.26	43.50	-23.38	9.71	1.91	36.76	101	270	QP
195.87	26.25	50.61	43.50	-17.25	10.06	2.15	36.57	101	270	QP
340.40	12.79	31.79	46.00	-33.21	14.70	2.89	36.59	101	270	QP
540.22	18.58	32.82	46.00	-27.42	19.16	3.68	37.08	101	270	QP
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
32.91	25.88	47.49	40.00	-14.12	15.09	0.84	37.54	101	153	QP
46.49	22.89	51.48	40.00	-17.11	7.80	1.03	37.42	101	153	QP
71.71	18.78	47.87	40.00	-21.22	6.85	1.30	37.24	101	153	QP
195.87	21.79	46.15	43.50	-21.71	10.06	2.15	36.57	101	153	QP
430.61	17.69	33.67	46.00	-28.31	17.57	3.24	36.79	101	153	QP
641.10	21.39	33.12	46.00	-24.61	21.45	4.12	37.30	101	153	QP

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.

ABOVE 1GHz WORST-CASE DATA: Band 1
802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.50	45.32	54.00	-9.50	34.48	13.71	49.01	145	125	Average
5150	53.86	54.68	74.00	-20.14	34.48	13.71	49.01	145	125	Peak
5180	94.04	94.75			34.52	13.79	49.02	145	125	Average
5180	101.96	102.67			34.52	13.79	49.02	145	125	Peak
5350	42.06	42.14	54.00	-11.94	34.72	14.28	49.08	145	125	Average
5350	52.69	52.77	74.00	-21.31	34.72	14.28	49.08	145	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	47.49	48.31	54.00	-6.51	34.48	13.71	49.01	100	225	Average
5150	61.20	62.02	74.00	-12.80	34.48	13.71	49.01	100	225	Peak
5180	98.77	99.48			34.52	13.79	49.02	100	225	Average
5180	106.65	107.36			34.52	13.79	49.02	100	225	Peak
5350	41.65	41.73	54.00	-12.35	34.72	14.28	49.08	100	225	Average
5350	52.72	52.80	74.00	-21.28	34.72	14.28	49.08	100	225	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5180MHz: Fundamental frequency.

CHANNEL	TX Channel 44	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.33	44.15	54.00	-10.67	34.48	13.71	49.01	142	126	Average
5150	52.64	53.46	74.00	-21.36	34.48	13.71	49.01	142	126	Peak
5220	94.01	94.58			34.56	13.91	49.04	142	126	Average
5220	100.37	100.94			34.56	13.91	49.04	142	126	Peak
5350	42.10	42.18	54.00	-11.90	34.72	14.28	49.08	142	126	Average
5350	52.99	53.07	74.00	-21.01	34.72	14.28	49.08	142	126	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5140.1	45.39	46.25	54.00	-8.61	34.47	13.68	49.01	100	222	Average
5140.1	54.13	54.99	74.00	-19.87	34.47	13.68	49.01	100	222	Peak
5220	97.70	98.27			34.56	13.91	49.04	100	222	Average
5220	103.70	104.27			34.56	13.91	49.04	100	222	Peak
5350	41.86	41.94	54.00	-12.14	34.72	14.28	49.08	100	222	Average
5350	52.36	52.44	74.00	-21.64	34.72	14.28	49.08	100	222	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5220MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.70	43.52	54.00	-11.30	34.48	13.71	49.01	155	215	Average
5150	54.58	55.40	74.00	-19.42	34.48	13.71	49.01	155	215	Peak
5240	95.40	95.88			34.59	13.97	49.04	155	215	Average
5240	103.02	103.50			34.59	13.97	49.04	155	215	Peak
5350	42.40	42.48	54.00	-11.60	34.72	14.28	49.08	155	215	Average
5350	52.99	53.07	74.00	-21.01	34.72	14.28	49.08	155	215	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.44	44.26	54.00	-10.56	34.48	13.71	49.01	100	228	Average
5150	53.33	54.15	74.00	-20.67	34.48	13.71	49.01	100	228	Peak
5240	97.65	98.13			34.59	13.97	49.04	100	228	Average
5240	104.02	104.50			34.59	13.97	49.04	100	228	Peak
5350	42.14	42.22	54.00	-11.86	34.72	14.28	49.08	100	228	Average
5350	53.23	53.31	74.00	-20.77	34.72	14.28	49.08	100	228	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5240MHz: Fundamental frequency.

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										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.16	44.98	54.00	-9.84	34.48	13.71	49.01	105	212	Average
5150	56.46	57.28	74.00	-17.54	34.48	13.71	49.01	105	212	Peak
5180	94.57	95.28			34.52	13.79	49.02	105	212	Average
5180	101.68	102.39			34.52	13.79	49.02	105	212	Peak
5350	41.88	41.96	54.00	-12.12	34.72	14.28	49.08	105	212	Average
5350	52.58	52.66	74.00	-21.42	34.72	14.28	49.08	105	212	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	46.56	47.38	54.00	-7.44	34.48	13.71	49.01	100	220	Average
5150	59.92	60.74	74.00	-14.08	34.48	13.71	49.01	100	220	Peak
5180	97.63	98.34			34.52	13.79	49.02	100	220	Average
5180	105.42	106.13			34.52	13.79	49.02	100	220	Peak
5350	41.87	41.95	54.00	-12.13	34.72	14.28	49.08	100	220	Average
5350	53.35	53.43	74.00	-20.65	34.72	14.28	49.08	100	220	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5180MHz: Fundamental frequency.

CHANNEL	TX Channel 44	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.46	44.28	54.00	-10.54	34.48	13.71	49.01	165	250	Average
5150	53.85	54.67	74.00	-20.15	34.48	13.71	49.01	165	250	Peak
5220	90.53	91.10			34.56	13.91	49.04	165	250	Average
5220	100.58	101.15			34.56	13.91	49.04	165	250	Peak
5350	41.97	42.05	54.00	-12.03	34.72	14.28	49.08	165	250	Average
5350	53.22	53.30	74.00	-20.78	34.72	14.28	49.08	165	250	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.48	46.30	54.00	-8.52	34.48	13.71	49.01	100	221	Average
5150	53.77	54.59	74.00	-20.23	34.48	13.71	49.01	100	221	Peak
5220	96.47	97.04			34.56	13.91	49.04	100	221	Average
5220	103.35	103.92			34.56	13.91	49.04	100	221	Peak
5350	41.94	42.02	54.00	-12.06	34.72	14.28	49.08	100	221	Average
5350	52.38	52.46	74.00	-21.62	34.72	14.28	49.08	100	221	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5220MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.58	43.40	54.00	-11.42	34.48	13.71	49.01	155	248	Average
5150	52.73	53.55	74.00	-21.27	34.48	13.71	49.01	155	248	Peak
5240	94.28	94.76			34.59	13.97	49.04	155	248	Average
5240	100.86	101.34			34.59	13.97	49.04	155	248	Peak
5350	42.05	42.13	54.00	-11.95	34.72	14.28	49.08	155	248	Average
5350	51.72	51.80	74.00	-22.28	34.72	14.28	49.08	155	248	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.25	44.07	54.00	-10.75	34.48	13.71	49.01	100	200	Average
5150	54.02	54.84	74.00	-19.98	34.48	13.71	49.01	100	200	Peak
5240	95.79	96.27			34.59	13.97	49.04	100	200	Average
5240	103.59	104.07			34.59	13.97	49.04	100	200	Peak
5350	42.12	42.20	54.00	-11.88	34.72	14.28	49.08	100	200	Average
5350	54.05	54.13	74.00	-19.95	34.72	14.28	49.08	100	200	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5240MHz: Fundamental frequency.

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										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	49.84	50.66	54.00	-4.16	34.48	13.71	49.01	160	240	Average
5150	59.82	60.64	74.00	-14.18	34.48	13.71	49.01	160	240	Peak
5190	88.91	89.59			34.53	13.82	49.03	160	240	Average
5190	95.74	96.42			34.53	13.82	49.03	160	240	Peak
5350	42.05	42.13	54.00	-11.95	34.72	14.28	49.08	160	240	Average
5350	51.92	52.00	74.00	-22.08	34.72	14.28	49.08	160	240	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.12	51.94	54.00	-2.88	34.48	13.71	49.01	100	225	Average
5150	62.52	63.34	74.00	-11.48	34.48	13.71	49.01	100	225	Peak
5190	90.07	90.75			34.53	13.82	49.03	100	225	Average
5190	97.99	98.67			34.53	13.82	49.03	100	225	Peak
5350	42.02	42.10	54.00	-11.98	34.72	14.28	49.08	100	225	Average
5350	52.27	52.35	74.00	-21.73	34.72	14.28	49.08	100	225	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5190MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.46	44.28	54.00	-10.54	34.48	13.71	49.01	160	238	Average
5150	53.43	54.25	74.00	-20.57	34.48	13.71	49.01	160	238	Peak
5230	92.03	92.55			34.58	13.94	49.04	160	238	Average
5230	99.53	100.05			34.58	13.94	49.04	160	238	Peak
5350	42.12	42.20	54.00	-11.88	34.72	14.28	49.08	160	238	Average
5350	51.91	51.99	74.00	-22.09	34.72	14.28	49.08	160	238	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.76	44.58	54.00	-10.24	34.48	13.71	49.01	100	198	Average
5150	53.96	54.78	74.00	-20.04	34.48	13.71	49.01	100	198	Peak
5230	92.49	93.01			34.58	13.94	49.04	100	198	Average
5230	100.98	101.50			34.58	13.94	49.04	100	198	Peak
5350	41.78	41.86	54.00	-12.22	34.72	14.28	49.08	100	198	Average
5350	53.07	53.15	74.00	-20.93	34.72	14.28	49.08	100	198	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5230MHz: Fundamental frequency.

ABOVE 1GHz WORST-CASE DATA: Band 2
802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.79	43.61	54.00	-11.21	34.48	13.71	49.01	150	223	Average
5150	52.85	53.67	74.00	-21.15	34.48	13.71	49.01	150	223	Peak
5260	97.58	98.00			34.61	14.02	49.05	150	223	Average
5260	103.68	104.10			34.61	14.02	49.05	150	223	Peak
5350	43.12	43.20	54.00	-10.88	34.72	14.28	49.08	150	223	Average
5350	54.00	54.08	74.00	-20.00	34.72	14.28	49.08	150	223	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.31	44.13	54.00	-10.69	34.48	13.71	49.01	100	216	Average
5150	52.74	53.56	74.00	-21.26	34.48	13.71	49.01	100	216	Peak
5260	97.65	98.07			34.61	14.02	49.05	100	216	Average
5260	104.37	104.79			34.61	14.02	49.05	100	216	Peak
5350	42.70	42.78	54.00	-11.30	34.72	14.28	49.08	100	216	Average
5350	52.48	52.56	74.00	-21.52	34.72	14.28	49.08	100	216	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5260MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.70	43.52	54.00	-11.30	34.48	13.71	49.01	150	228	Average
5150	52.86	53.68	74.00	-21.14	34.48	13.71	49.01	150	228	Peak
5300	96.83	97.09			34.66	14.14	49.06	150	228	Average
5300	103.52	103.78			34.66	14.14	49.06	150	228	Peak
5350	44.34	44.42	54.00	-9.66	34.72	14.28	49.08	150	228	Average
5350	54.92	55.00	74.00	-19.08	34.72	14.28	49.08	150	228	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.24	44.06	54.00	-10.76	34.48	13.71	49.01	100	205	Average
5150	52.86	53.68	74.00	-21.14	34.48	13.71	49.01	100	205	Peak
5300	95.84	96.10			34.66	14.14	49.06	100	205	Average
5300	102.45	102.71			34.66	14.14	49.06	100	205	Peak
5350	43.06	43.14	54.00	-10.94	34.72	14.28	49.08	100	205	Average
5350	53.91	53.99	74.00	-20.09	34.72	14.28	49.08	100	205	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5300MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.10	42.92	54.00	-11.90	34.48	13.71	49.01	100	215	Average
5150	52.38	53.20	74.00	-21.62	34.48	13.71	49.01	100	215	Peak
5320	96.61	96.80			34.68	14.20	49.07	100	215	Average
5320	103.30	103.49			34.68	14.20	49.07	100	215	Peak
5350	46.05	46.13	54.00	-7.95	34.72	14.28	49.08	100	215	Average
5350	56.27	56.35	74.00	-17.73	34.72	14.28	49.08	100	215	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.26	43.08	54.00	-11.74	34.48	13.71	49.01	160	230	Average
5150	53.29	54.11	74.00	-20.71	34.48	13.71	49.01	160	230	Peak
5320	96.95	97.14			34.68	14.20	49.07	160	230	Average
5320	103.43	103.62			34.68	14.20	49.07	160	230	Peak
5350	45.85	45.93	54.00	-8.15	34.72	14.28	49.08	160	230	Average
5350	55.04	55.12	74.00	-18.96	34.72	14.28	49.08	160	230	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5320MHz: Fundamental frequency.

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.31	43.13	54.00	-11.69	34.48	13.71	49.01	160	345	Average
5150	52.42	53.24	74.00	-21.58	34.48	13.71	49.01	160	345	Peak
5260	93.07	93.49			34.61	14.02	49.05	160	345	Average
5260	101.71	102.13			34.61	14.02	49.05	160	345	Peak
5350	42.34	42.42	54.00	-11.66	34.72	14.28	49.08	160	345	Average
5350	51.71	51.79	74.00	-22.29	34.72	14.28	49.08	160	345	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.36	43.18	54.00	-11.64	34.48	13.71	49.01	105	50	Average
5150	53.53	54.35	74.00	-20.47	34.48	13.71	49.01	105	50	Peak
5260	95.93	96.35			34.61	14.02	49.05	105	50	Average
5260	102.94	103.36			34.61	14.02	49.05	105	50	Peak
5350	43.06	43.14	54.00	-10.94	34.72	14.28	49.08	105	50	Average
5350	52.96	53.04	74.00	-21.04	34.72	14.28	49.08	105	50	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5260MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.08	42.90	54.00	-11.92	34.48	13.71	49.01	155	342	Average
5150	53.18	54.00	74.00	-20.82	34.48	13.71	49.01	155	342	Peak
5300	92.21	92.47			34.66	14.14	49.06	155	342	Average
5300	100.30	100.56			34.66	14.14	49.06	155	342	Peak
5350	42.74	42.82	54.00	-11.26	34.72	14.28	49.08	155	342	Average
5350	52.02	52.10	74.00	-21.98	34.72	14.28	49.08	155	342	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.38	43.20	54.00	-11.62	34.48	13.71	49.01	105	48	Average
5150	52.45	53.27	74.00	-21.55	34.48	13.71	49.01	105	48	Peak
5300	95.55	96.07			34.58	13.94	49.04	105	48	Average
5300	102.36	102.88			34.58	13.94	49.04	105	48	Peak
5350	44.16	44.24	54.00	-9.84	34.72	14.28	49.08	105	48	Average
5350	55.38	55.46	74.00	-18.62	34.72	14.28	49.08	105	48	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5300MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.00	42.82	54.00	-12.00	34.48	13.71	49.01	158	340	Average
5150	52.58	53.40	74.00	-21.42	34.48	13.71	49.01	158	340	Peak
5320	92.89	93.08			34.68	14.20	49.07	158	340	Average
5320	99.55	99.74			34.68	14.20	49.07	158	340	Peak
5350	43.06	43.14	54.00	-10.94	34.72	14.28	49.08	158	340	Average
5350	53.25	53.33	74.00	-20.75	34.72	14.28	49.08	158	340	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.01	42.83	54.00	-11.99	34.48	13.71	49.01	105	48	Average
5150	52.58	53.40	74.00	-21.42	34.48	13.71	49.01	105	48	Peak
5320	96.58	96.77			34.68	14.20	49.07	105	48	Average
5320	103.56	103.75			34.68	14.20	49.07	105	48	Peak
5350	45.28	45.36	54.00	-8.72	34.72	14.28	49.08	105	48	Average
5350	54.32	54.40	74.00	-19.68	34.72	14.28	49.08	105	48	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5320MHz: Fundamental frequency.

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.26	43.08	54.00	-11.74	34.48	13.71	49.01	160	342	Average
5150	53.71	54.53	74.00	-20.29	34.48	13.71	49.01	160	342	Peak
5270	89.55	89.93			34.62	14.05	49.05	160	342	Average
5270	97.90	98.28			34.62	14.05	49.05	160	342	Peak
5350	42.46	42.54	54.00	-11.54	34.72	14.28	49.08	160	342	Average
5350	50.99	51.07	74.00	-23.01	34.72	14.28	49.08	160	342	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.52	43.34	54.00	-11.48	34.48	13.71	49.01	105	55	Average
5150	53.08	53.90	74.00	-20.92	34.48	13.71	49.01	105	55	Peak
5270	93.26	93.64			34.62	14.05	49.05	105	55	Average
5270	101.22	101.60			34.62	14.05	49.05	105	55	Peak
5350	43.60	43.68	54.00	-10.40	34.72	14.28	49.08	105	55	Average
5350	53.51	53.59	74.00	-20.49	34.72	14.28	49.08	105	55	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5270MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.95	42.77	54.00	-12.05	34.48	13.71	49.01	100	40	Average
5150	52.48	53.30	74.00	-21.52	34.48	13.71	49.01	100	40	Peak
5310	91.46	91.68			34.67	14.17	49.06	100	40	Average
5310	99.14	99.36			34.67	14.17	49.06	100	40	Peak
5350	49.77	49.85	54.00	-4.23	34.72	14.28	49.08	100	40	Average
5350	62.27	62.35	74.00	-11.73	34.72	14.28	49.08	100	40	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.32	43.14	54.00	-11.68	34.48	13.71	49.01	110	55	Average
5150	52.84	53.66	74.00	-21.16	34.48	13.71	49.01	110	55	Peak
5310	92.77	92.99			34.67	14.17	49.06	110	55	Average
5310	100.03	100.25			34.67	14.17	49.06	110	55	Peak
5350	51.89	51.97	54.00	-2.11	34.72	14.28	49.08	110	55	Average
5350	62.62	62.70	74.00	-11.38	34.72	14.28	49.08	110	55	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5310MHz: Fundamental frequency.

ABOVE 1GHz WORST-CASE DATA: Band 3

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	44.93	44.59	54.00	-9.07	34.85	14.60	49.11	150	315	Average
5460	51.26	50.92	74.00	-22.74	34.85	14.60	49.11	150	315	Peak
*5470	52.84	52.47	68.30	-15.46	34.86	14.62	49.11	150	315	Peak
5500	97.73	97.24			34.90	14.71	49.12	150	315	Average
5500	102.96	102.47			34.90	14.71	49.12	150	315	Peak
*5725	56.84	54.63	68.30	-11.46	35.17	16.18	49.14	150	315	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.49	45.15	54.00	-8.51	34.85	14.60	49.11	100	30	Average
5460	54.82	54.48	74.00	-19.18	34.85	14.60	49.11	100	30	Peak
*5470	54.92	54.55	68.30	-13.38	34.86	14.62	49.11	100	30	Peak
5500	100.61	100.12			34.90	14.71	49.12	100	30	Average
5500	105.66	105.17			34.90	14.71	49.12	100	30	Peak
*5725	55.89	53.68	68.30	-12.41	35.17	16.18	49.14	100	30	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5500MHz: Fundamental frequency.
- *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.76	42.42	54.00	-11.24	34.85	14.60	49.11	148	311	Average
5460	52.81	52.47	74.00	-21.19	34.85	14.60	49.11	148	311	Peak
*5470	52.99	52.62	68.30	-15.31	34.86	14.62	49.11	148	311	Peak
5580	99.38	98.28			35.00	15.23	49.13	148	311	Average
5580	104.32	103.22			35.00	15.23	49.13	148	311	Peak
*5725	56.71	54.50	68.30	-11.59	35.17	16.18	49.14	148	311	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.93	42.59	54.00	-11.07	34.85	14.60	49.11	102	32	Average
5460	53.63	53.29	74.00	-20.37	34.85	14.60	49.11	102	32	Peak
*5470	54.16	53.79	68.30	-14.14	34.86	14.62	49.11	102	32	Peak
5580	101.94	100.84			35.00	15.23	49.13	102	32	Average
5580	106.46	105.36			35.00	15.23	49.13	102	32	Peak
*5725	56.32	54.11	68.30	-11.98	35.17	16.18	49.14	102	32	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5580MHz: Fundamental frequency.
3. *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.23	41.89	54.00	-11.77	34.85	14.60	49.11	146	310	Average
5460	52.18	51.84	74.00	-21.82	34.85	14.60	49.11	146	310	Peak
*5470	53.82	53.45	68.30	-14.48	34.86	14.62	49.11	146	310	Peak
5700	100.29	98.28			35.14	16.01	49.14	146	310	Average
5700	105.36	103.35			35.14	16.01	49.14	146	310	Peak
*5725	64.48	62.27	68.30	-3.82	35.17	16.18	49.14	146	310	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5393	42.21	42.13	54.00	-11.79	34.77	14.40	49.09	105	28	Average
5393	52.87	52.79	74.00	-21.13	34.77	14.40	49.09	105	28	Peak
*5470	52.71	52.34	68.30	-15.59	34.86	14.62	49.11	105	28	Peak
5700	100.55	98.54			35.14	16.01	49.14	105	28	Average
5700	107.00	104.99			35.14	16.01	49.14	105	28	Peak
*5725	63.86	61.65	68.30	-4.44	35.17	16.18	49.14	105	28	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5700MHz: Fundamental frequency.
3. *: Out of restricted band.

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	44.53	44.19	54.00	-9.47	34.85	14.60	49.11	145	322	Average
5460	53.92	53.58	74.00	-20.08	34.85	14.60	49.11	145	322	Peak
*5470	58.81	58.44	68.30	-9.49	34.86	14.62	49.11	145	322	Peak
5500	95.88	95.39			34.90	14.71	49.12	145	322	Average
5500	101.61	101.12			34.90	14.71	49.12	145	322	Peak
*5725	58.47	56.26	68.30	-9.83	35.17	16.18	49.14	145	322	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.43	45.09	54.00	-8.57	34.85	14.60	49.11	100	36	Average
5460	55.05	54.71	74.00	-18.95	34.85	14.60	49.11	100	36	Peak
*5470	62.17	61.80	68.30	-6.13	34.86	14.62	49.11	100	36	Peak
5500	99.44	98.95			34.90	14.71	49.12	100	36	Average
5500	105.18	104.69			34.90	14.71	49.12	100	36	Peak
*5725	57.93	55.72	68.30	-10.37	35.17	16.18	49.14	100	36	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5500MHz: Fundamental frequency.
3. *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.56	42.22	54.00	-11.44	34.85	14.60	49.11	145	310	Average
5460	51.80	51.46	74.00	-22.20	34.85	14.60	49.11	145	310	Peak
*5470	53.37	53.00	68.30	-14.93	34.86	14.62	49.11	145	310	Peak
5580	97.54	96.44			35.00	15.23	49.13	145	310	Average
5580	102.91	101.81			35.00	15.23	49.13	145	310	Peak
*5725	58.28	56.07	68.30	-10.02	35.17	16.18	49.14	145	310	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.90	42.56	54.00	-11.10	34.85	14.60	49.11	104	33	Average
5460	52.28	51.94	74.00	-21.72	34.85	14.60	49.11	104	33	Peak
*5470	54.21	53.84	68.30	-14.09	34.86	14.62	49.11	104	33	Peak
5580	100.09	98.99			35.00	15.23	49.13	104	33	Average
5580	105.46	104.36			35.00	15.23	49.13	104	33	Peak
*5725	57.01	54.80	68.30	-11.29	35.17	16.18	49.14	104	33	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5580MHz: Fundamental frequency.
3. *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.24	41.90	54.00	-11.76	34.85	14.60	49.11	142	318	Average
5460	52.48	52.14	74.00	-21.52	34.85	14.60	49.11	142	318	Peak
*5470	54.83	54.46	68.30	-13.47	34.86	14.62	49.11	142	318	Peak
5700	99.10	97.09			35.14	16.01	49.14	142	318	Average
5700	105.06	103.05			35.14	16.01	49.14	142	318	Peak
*5725	65.23	63.02	68.30	-3.07	35.17	16.18	49.14	142	318	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5449.7	42.28	41.97	54.00	-11.72	34.84	14.57	49.10	100	30	Average
5449.7	52.96	52.65	74.00	-21.04	34.84	14.57	49.10	100	30	Peak
*5470	53.22	52.85	68.30	-15.08	34.86	14.62	49.11	100	30	Peak
5700	99.15	97.14			35.14	16.01	49.14	100	30	Average
5700	105.48	103.47			35.14	16.01	49.14	100	30	Peak
*5725	65.34	63.13	68.30	-2.96	35.17	16.18	49.14	100	30	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5700MHz: Fundamental frequency.
3. *: Out of restricted band.

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.65	45.31	54.00	-8.35	34.85	14.60	49.11	100	318	Average
5460	53.98	53.64	74.00	-20.02	34.85	14.60	49.11	100	318	Peak
*5470	66.61	66.24	68.30	-1.69	34.86	14.62	49.11	100	318	Peak
5510	91.60	91.03			34.91	14.78	49.12	100	318	Average
5510	98.67	98.10			34.91	14.78	49.12	100	318	Peak
*5725	56.44	54.23	68.30	-11.86	35.17	16.18	49.14	100	318	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	47.05	46.71	54.00	-6.95	34.85	14.60	49.11	100	33	Average
5460	55.57	55.23	74.00	-18.43	34.85	14.60	49.11	100	33	Peak
*5470	66.22	65.85	68.30	-2.08	34.86	14.62	49.11	100	33	Peak
5510	93.87	93.30			34.91	14.78	49.12	100	33	Average
5510	100.78	100.21			34.91	14.78	49.12	100	33	Peak
*5725	55.83	53.62	68.30	-12.47	35.17	16.18	49.14	100	33	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5510MHz: Fundamental frequency.
- *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.18	42.84	54.00	-10.82	34.85	14.60	49.11	150	316	Average
5460	53.21	52.87	74.00	-20.79	34.85	14.60	49.11	150	316	Peak
*5470	55.37	55.00	68.30	-12.93	34.86	14.62	49.11	150	316	Peak
5550	93.74	92.86			34.96	15.04	49.12	150	316	Average
5550	99.69	98.81			34.96	15.04	49.12	150	316	Peak
*5725	58.31	56.10	68.30	-9.99	35.17	16.18	49.14	150	316	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.61	43.27	54.00	-10.39	34.85	14.60	49.11	102	32	Average
5460	54.05	53.71	74.00	-19.95	34.85	14.60	49.11	102	32	Peak
*5470	55.46	55.09	68.30	-12.84	34.86	14.62	49.11	102	32	Peak
5550	96.62	95.74			34.96	15.04	49.12	102	32	Average
5550	102.36	101.48			34.96	15.04	49.12	102	32	Peak
*5725	56.31	54.10	68.30	-11.99	35.17	16.18	49.14	102	32	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5500MHz: Fundamental frequency.
3. *: Out of restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5368.5	41.79	41.80	54.00	-12.21	34.74	14.33	49.08	142	308	Average
5368.5	51.88	51.89	74.00	-22.12	34.74	14.33	49.08	142	308	Peak
*5470	54.83	54.46	68.30	-13.47	34.86	14.62	49.11	142	308	Peak
5670	95.51	93.73			35.10	15.82	49.14	142	308	Average
5670	102.20	100.42			35.10	15.82	49.14	142	308	Peak
*5725	60.59	58.38	68.30	-7.71	35.17	16.18	49.14	142	308	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5452.2	42.24	41.94	54.00	-11.76	34.84	14.57	49.11	100	36	Average
5452.2	52.49	52.19	74.00	-21.51	34.84	14.57	49.11	100	36	Peak
*5470	55.06	54.69	68.30	-13.24	34.86	14.62	49.11	100	36	Peak
5670	96.86	95.08			35.10	15.82	49.14	100	36	Average
5670	102.94	101.16			35.10	15.82	49.14	100	36	Peak
*5725	61.91	59.70	68.30	-6.39	35.17	16.18	49.14	100	36	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5670MHz: Fundamental frequency.
3. *: Out of restricted band.

ABOVE 1GHz WORST-CASE DATA: Band 4 802.11a

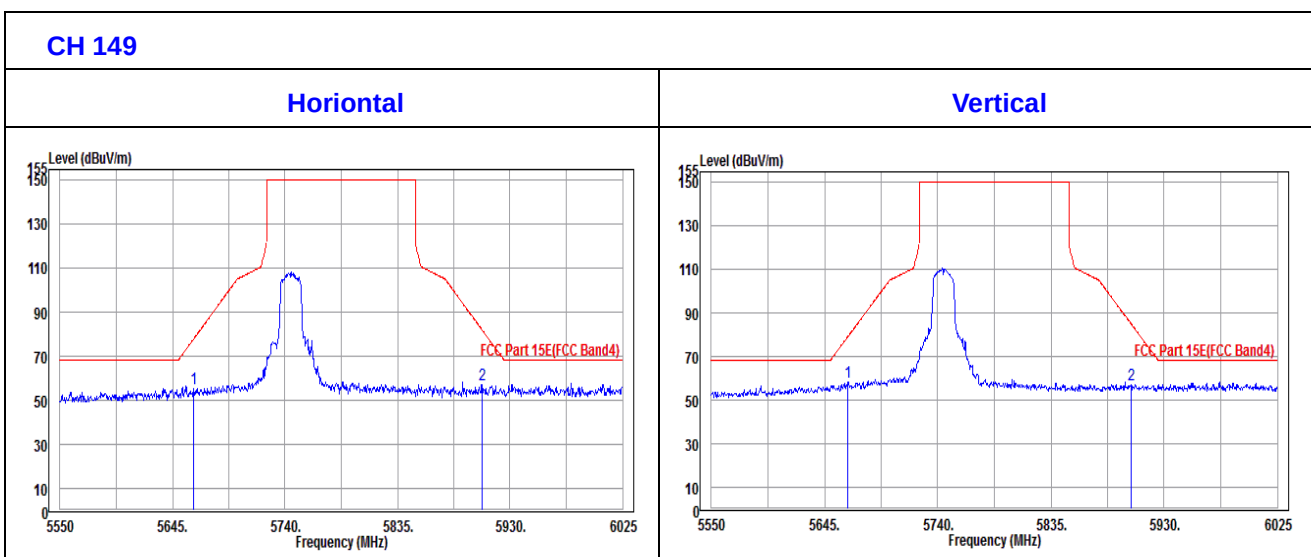
CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	98.50	96.14			35.19	16.31	49.14	150	305	Average
5745	105.57	103.21			35.19	16.31	49.14	150	305	Peak
11490	46.85	36.83	54.00	-7.15	39.10	19.08	48.16	100	96	Average
11490	57.91	47.89	74.00	-16.09	39.10	19.08	48.16	100	96	Peak
5663.05	55.43	53.7	77.99	-22.56	35.1	15.77	49.14	150	140	Peak
5906.25	57.19	53.6	82.14	-24.95	35.39	17.36	49.16	150	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	100.07	97.71			35.19	16.31	49.14	108	50	Average
5745	105.94	103.58			35.19	16.31	49.14	108	50	Peak
11490	46.87	36.85	54.00	-7.13	39.10	19.08	48.16	100	212	Average
11490	58.04	48.02	74.00	-15.96	39.10	19.08	48.16	100	212	Peak
5664.47	58.15	56.41	79.05	-20.9	35.1	15.78	49.14	140	190	Peak
5901.97	57.04	53.49	85.3	-28.26	35.38	17.33	49.16	140	190	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5745MHz: Fundamental frequency.

Oobe Data 802.11a



CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

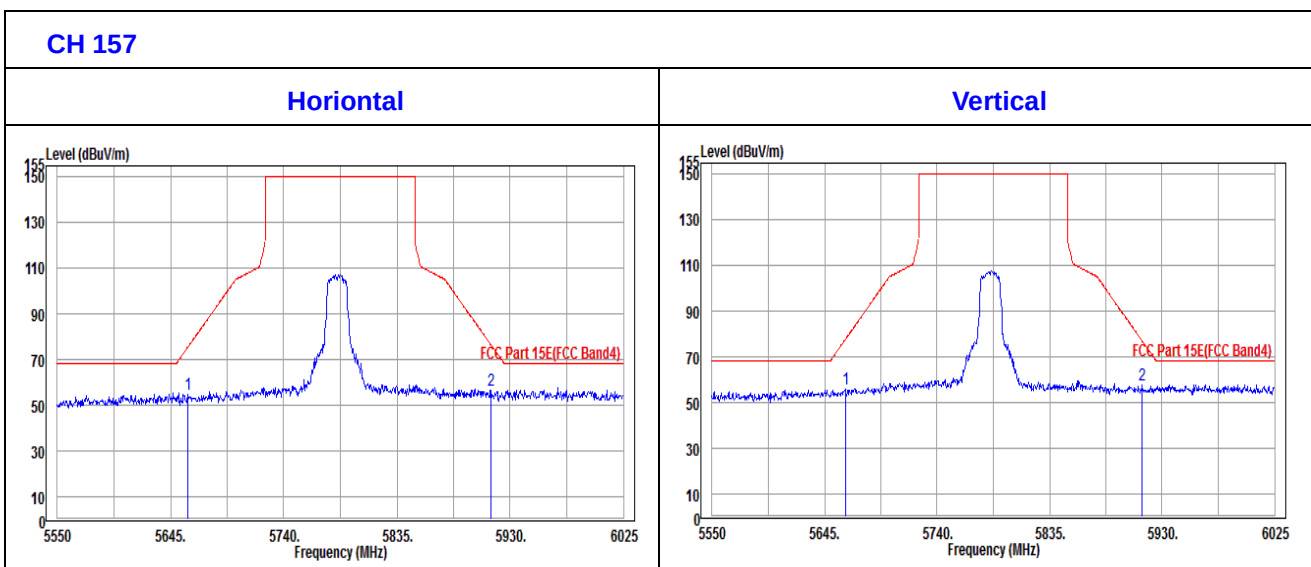
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	101.74	99.08			35.24	16.57	49.15	150	302	Average
5785	108.12	105.46			35.24	16.57	49.15	150	302	Peak
11570	46.23	36.12	54.00	-7.77	39.16	19.12	48.17	100	254	Average
11570	60.48	50.37	74.00	-13.52	39.16	19.12	48.17	100	254	Peak
5659.25	54.57	52.87	75.17	-20.6	35.09	15.75	49.14	150	140	Peak
5913.85	56.87	53.22	76.52	-19.65	35.4	17.41	49.16	150	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	99.93	97.27			35.24	16.57	49.15	105	48	Average
5785	106.62	103.96			35.24	16.57	49.15	105	48	Peak
11570	46.97	36.86	54.00	-7.03	39.16	19.12	48.17	100	176	Average
11570	60.27	50.16	74.00	-13.73	39.16	19.12	48.17	100	176	Peak
5662.58	55.78	54.05	77.64	-21.86	35.1	15.77	49.14	140	190	Peak
5913.38	57.57	53.92	76.87	-19.3	35.4	17.41	49.16	140	190	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5785MHz: Fundamental frequency.

OOBE DATA

802.11a



CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

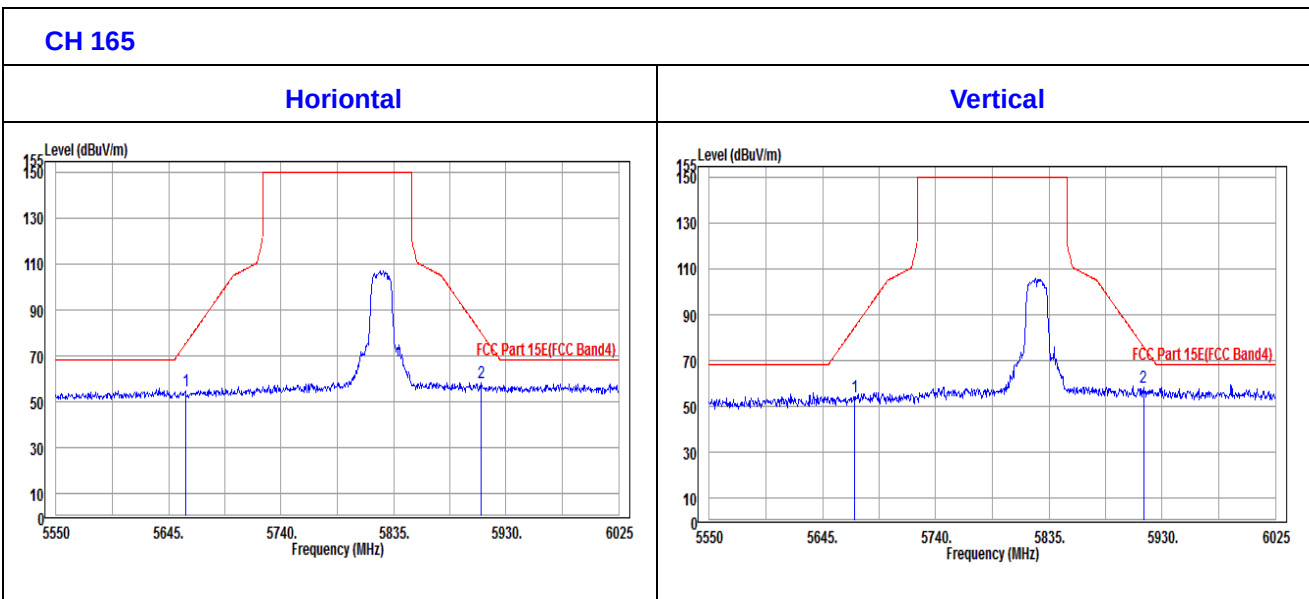
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	101.63	98.66			35.29	16.83	49.15	150	302	Average
5825	108.38	105.41			35.29	16.83	49.15	150	302	Peak
11650	46.90	36.70	54.00	-7.10	39.22	19.16	48.18	100	82	Average
11650	61.24	51.04	74.00	-12.76	39.22	19.16	48.18	100	82	Peak
5659.25	54.6	52.9	75.17	-20.57	35.09	15.75	49.14	150	140	Peak
5909.10	58.34	54.73	80.03	-21.69	35.39	17.38	49.16	150	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	100.61	97.64			35.29	16.83	49.15	105	52	Average
5825	106.96	103.99			35.29	16.83	49.15	105	52	Peak
11650	46.92	36.72	54.00	-7.08	39.22	19.16	48.18	105	166	Average
11650	60.42	50.22	74.00	-13.58	39.22	19.16	48.18	105	166	Peak
5671.6	54.48	52.68	84.32	-29.84	35.11	15.83	49.14	140	190	Peak
5914.3	58.07	54.42	76.17	-18.1	35.4	17.41	49.16	140	190	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5825MHz: Fundamental frequency.

OOBE DATA

802.11a



802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	100.68	98.32			35.19	16.31	49.14	150	308	Average
5745	107.00	104.64			35.19	16.31	49.14	150	308	Peak
11490	46.68	36.66	54.00	-7.32	39.10	19.08	48.16	100	136	Average
11490	60.73	50.71	74.00	-13.27	39.10	19.08	48.16	100	136	Peak
5659.3	55.54	53.84	75.17	-19.63	35.09	15.75	49.14	150	140	Peak
5914.8	57.1	53.45	75.82	-18.72	35.4	17.41	49.16	150	140	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	96.92	94.56			35.19	16.31	49.14	100	50	Average
5745	105.18	102.82			35.19	16.31	49.14	100	50	Peak
11490	46.94	36.92	54.00	-7.06	39.10	19.08	48.16	100	234	Average
11490	61.25	51.23	74.00	-12.75	39.10	19.08	48.16	100	234	Peak
5663	55.52	53.79	77.99	-22.47	35.1	15.77	49.14	140	190	Peak
5915.7	55.41	51.75	75.12	-19.71	35.4	17.42	49.16	140	190	Peak

REMARKS:

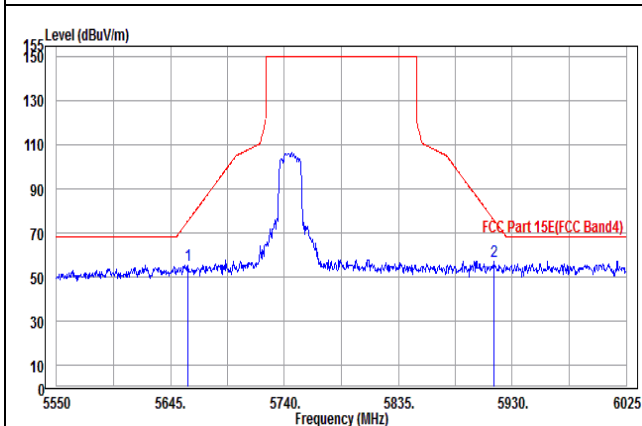
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5745MHz: Fundamental frequency.

OOBE DATA

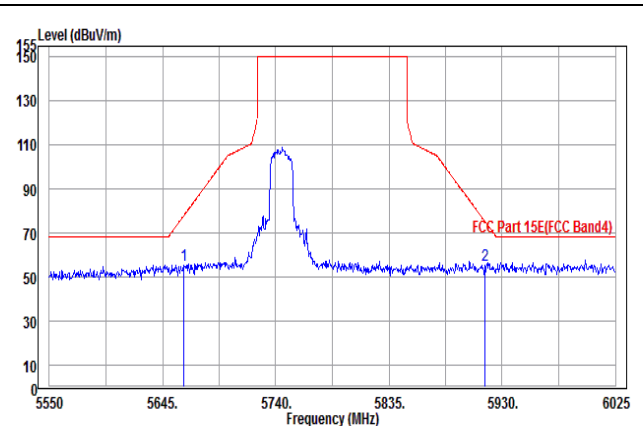
802.11n (20MHz)

CH 149

Horizontal



Vertical



CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

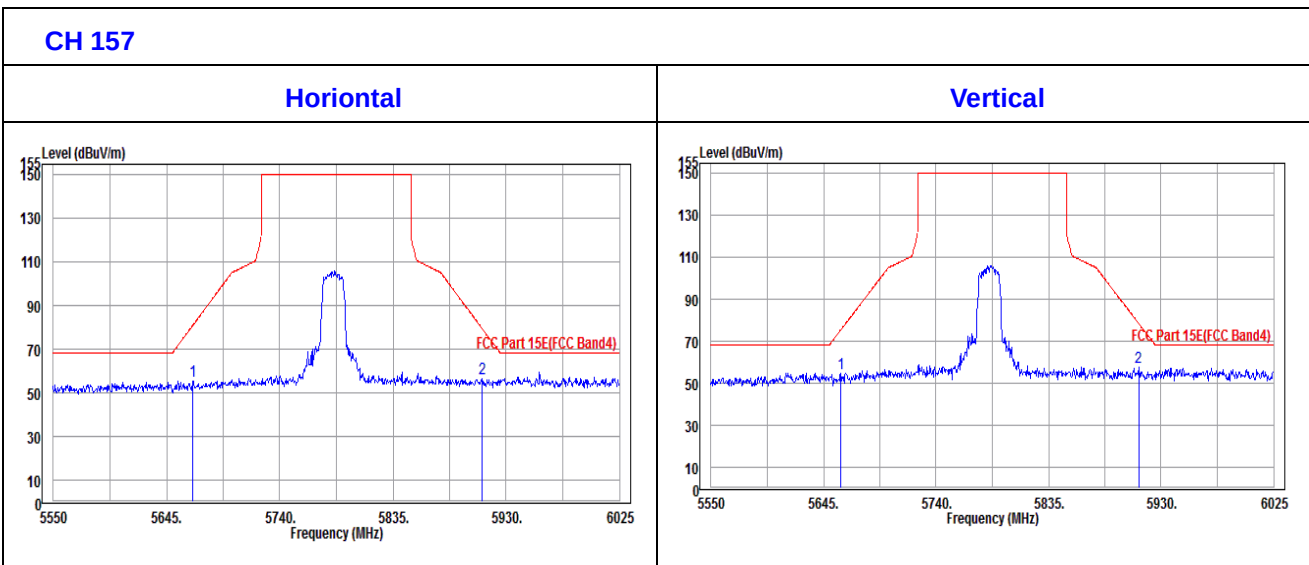
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	100.16	97.50			35.24	16.57	49.15	100	263	Average
5785	107.00	104.34			35.24	16.57	49.15	100	263	Peak
11570	47.02	36.91	54.00	-6.98	39.16	19.12	48.17	100	56	Average
11570	60.60	50.49	74.00	-13.40	39.16	19.12	48.17	100	56	Peak
5666.8	55.41	53.65	80.81	-25.4	35.1	15.8	49.14	150	140	Peak
5910	56.65	53.04	79.33	-22.68	35.39	17.38	49.16	150	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	98.17	95.51			35.24	16.57	49.15	100	45	Average
5785	105.10	102.44			35.24	16.57	49.15	100	45	Peak
11570	46.66	36.55	54.00	-7.34	39.16	19.12	48.17	100	142	Average
11570	60.93	50.82	74.00	-13.07	39.16	19.12	48.17	100	142	Peak
5659	55.07	53.37	75.17	-20.1	35.09	15.75	49.14	140	190	Peak
5911	57.51	53.89	78.63	-21.12	35.39	17.39	49.16	140	190	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5785MHz: Fundamental frequency.

OOBE DATA

802.11n (20MHZ)



CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

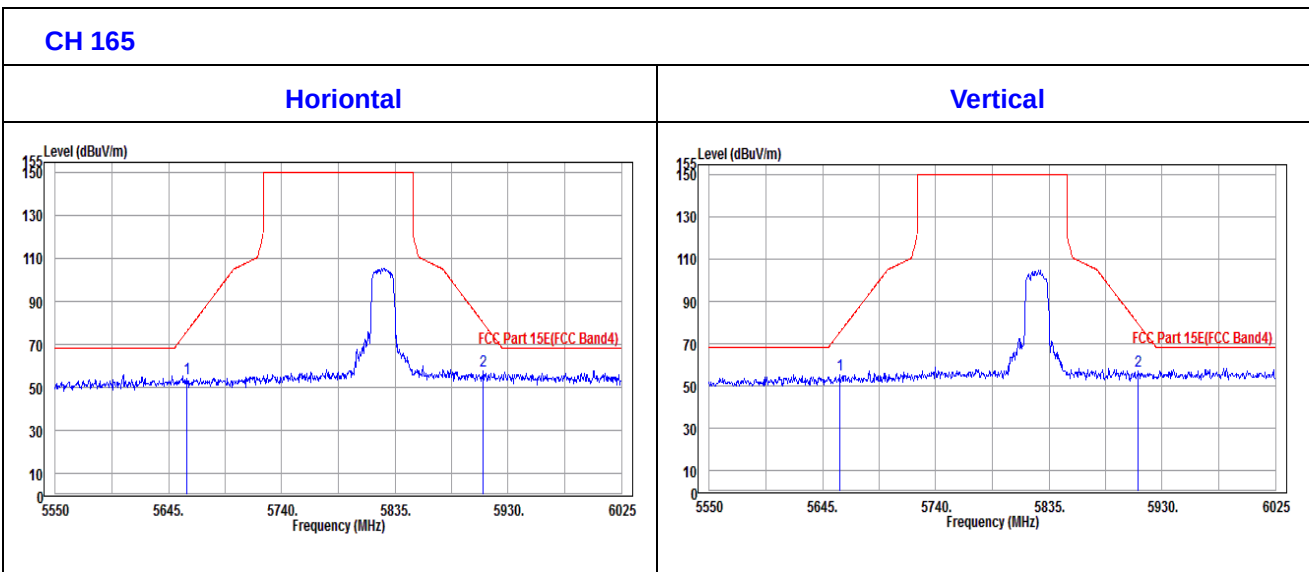
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	99.80	96.83			35.29	16.83	49.15	150	298	Average
5825	106.18	103.21			35.29	16.83	49.15	150	298	Peak
11650	47.18	36.98	54.00	-6.82	39.22	19.16	48.18	100	33	Average
11650	61.61	51.41	74.00	-12.39	39.22	19.16	48.18	100	33	Peak
5660.2	54.18	52.48	75.87	-21.69	35.09	15.75	49.14	150	140	Peak
5909.1	57.53	53.92	80.03	-22.5	35.39	17.38	49.16	150	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	97.63	94.66			35.29	16.83	49.15	100	111	Average
5825	104.47	101.50			35.29	16.83	49.15	100	111	Peak
11650	46.74	36.54	54.00	-7.26	39.22	19.16	48.18	100	50	Average
11650	61.44	51.24	74.00	-12.56	39.22	19.16	48.18	100	50	Peak
5659	55.65	53.95	75.17	-19.52	35.09	15.75	49.14	140	186	Peak
5910	57.29	53.68	79.33	-22.04	35.39	17.38	49.16	140	186	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5825MHz: Fundamental frequency.

OOBE DATA

802.11n (20MHZ)



802.11n (40MHz)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	97.20	94.77			35.21	16.37	49.15	150	312	Average
5755	103.75	101.32			35.21	16.37	49.15	150	312	Peak
11510	47.25	37.21	54.00	-6.75	39.11	19.09	48.16	100	68	Average
11510	60.30	50.26	74.00	-13.70	39.11	19.09	48.16	100	68	Peak
5663.5	56.31	54.57	78.34	-22.03	35.1	15.78	49.14	148	135	Peak
5904.8	57.6	54.02	83.19	-25.59	35.39	17.35	49.16	148	135	Peak

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	95.88	93.45			35.21	16.37	49.15	105	52	Average
5755	103.16	100.73			35.21	16.37	49.15	105	52	Peak
11510	46.85	36.81	54.00	-7.15	39.11	19.09	48.16	100	168	Average
11510	60.26	50.22	74.00	-13.74	39.11	19.09	48.16	100	168	Peak
5665.4	55.35	53.6	79.75	-24.4	35.1	15.79	49.14	140	186	Peak
5906.7	55.86	52.27	81.79	-25.93	35.39	17.36	49.16	140	186	Peak

REMARKS:

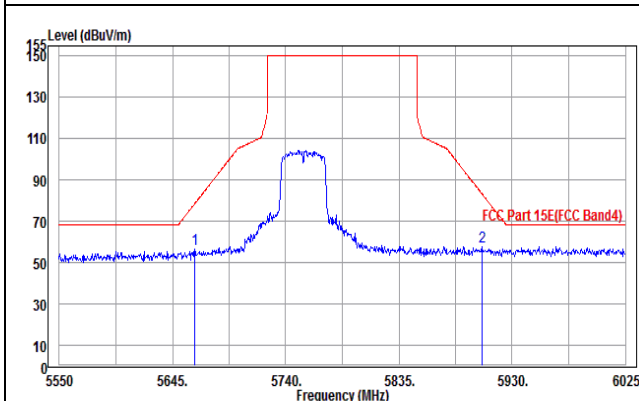
- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5755MHz: Fundamental frequency.

OOBE DATA

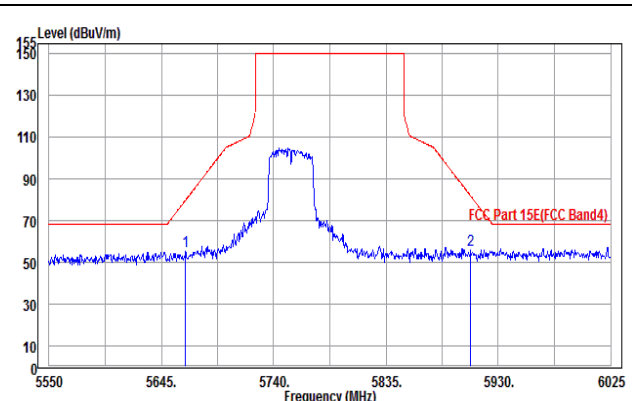
802.11n (40MHz)

CH 151

Horizontal



Vertical



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

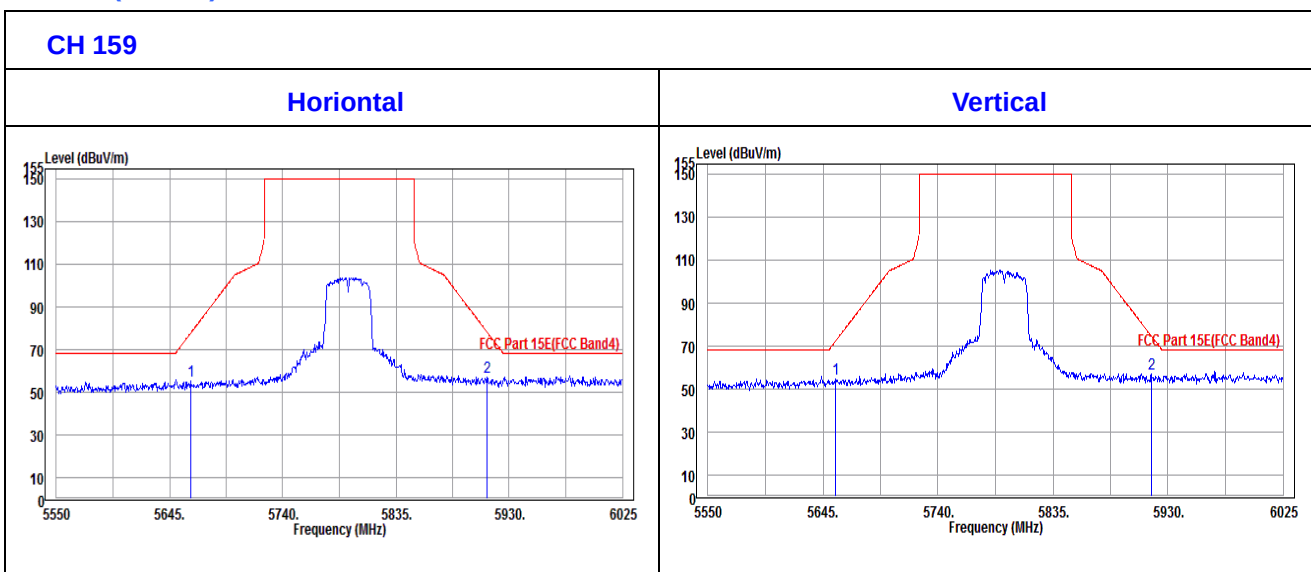
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	96.75	94.02			35.25	16.63	49.15	150	305	Average
5795	104.22	101.49			35.25	16.63	49.15	150	305	Peak
11590	47.35	37.22	54.00	-6.65	39.17	19.13	48.17	100	144	Average
11590	61.39	51.26	74.00	-12.61	39.17	19.13	48.17	100	144	Peak
5663.1	55.22	53.49	77.99	-22.77	35.1	15.77	49.14	148	135	Peak
5911.5	56.94	53.32	78.28	-21.34	35.39	17.39	49.16	148	135	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	94.78	92.05			35.25	16.63	49.15	105	55	Average
5795	102.76	100.03			35.25	16.63	49.15	105	55	Peak
11590	47.08	36.95	54.00	-6.92	39.17	19.13	48.17	105	126	Average
11590	60.74	50.61	74.00	-13.26	39.17	19.13	48.17	105	126	Peak
5655.5	54.71	53.04	72.35	-17.64	35.09	15.72	49.14	138	200	Peak
5916.2	56.95	53.29	74.77	-17.82	35.4	17.42	49.16	138	200	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5795MHz: Fundamental frequency.

OOBE DATA

802.11n (40MHZ)



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	100340	May 11,15	May 10,17
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 04,16	Mar. 03,17
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,16	Apr. 04,17
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jan. 08,16	Jan. 07,17
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

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

2. The test was performed in HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedure

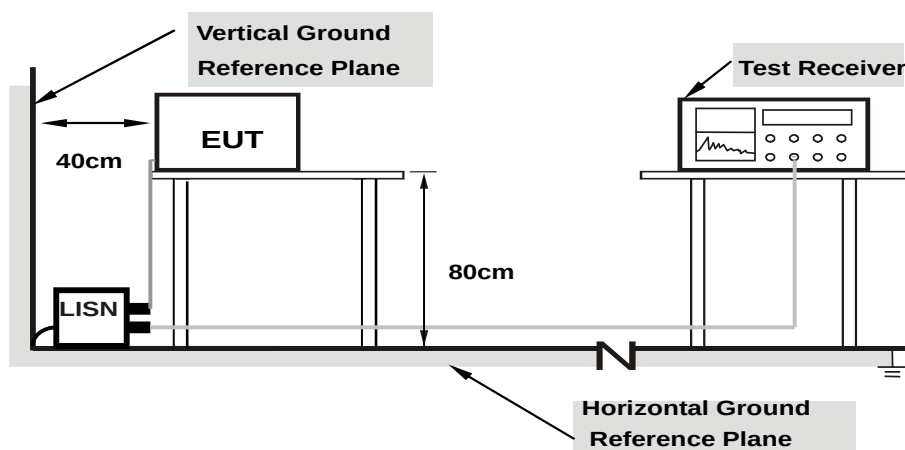
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

4.2.7 Test Results

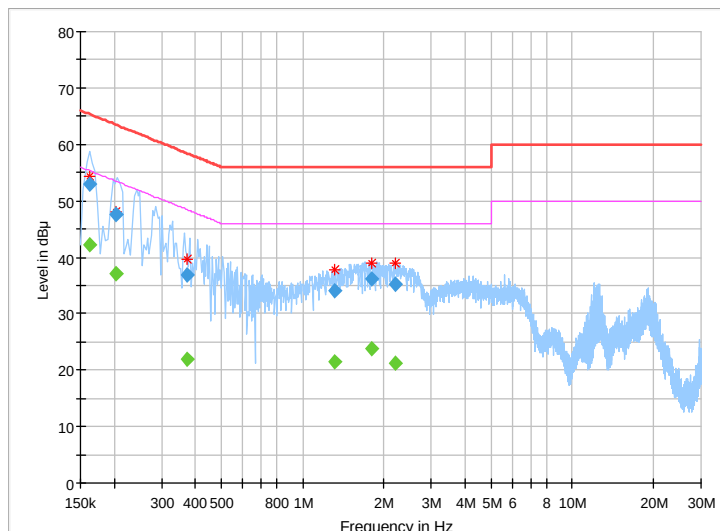
Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	---	42.30	55.36	13.06	L	ON	9.6
0.162000	52.99	---	65.36	12.37	L	ON	9.6
0.204000	---	37.13	53.45	16.32	L	ON	9.7
0.204000	47.48	---	63.45	15.97	L	ON	9.7
0.372000	---	21.87	48.46	26.59	L	ON	9.7
0.372000	36.81	---	58.46	21.65	L	ON	9.7
1.314000	---	21.35	46.00	24.65	L	ON	9.7
1.314000	34.09	---	56.00	21.91	L	ON	9.7
1.804000	---	23.89	46.00	22.11	L	ON	9.7
1.804000	36.22	---	56.00	19.78	L	ON	9.7
2.208000	---	21.12	46.00	24.88	L	ON	9.7
2.208000	35.22	---	56.00	20.78	L	ON	9.7

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.

Full Spectrum

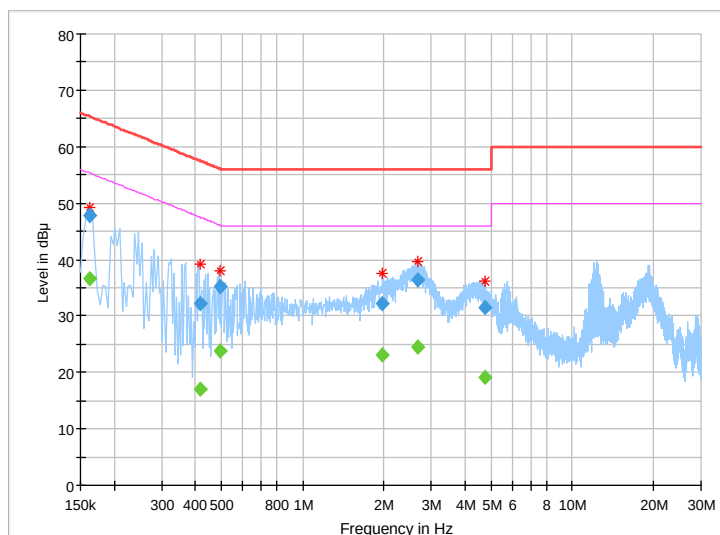


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)				
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	---	36.58	55.36	18.78	N	ON	10.1
0.162000	47.71	---	65.36	17.65	N	ON	10.1
0.416000	---	16.96	47.53	30.57	N	ON	10.1
0.416000	32.29	---	57.53	25.24	N	ON	10.1
0.492000	---	23.68	46.13	22.45	N	ON	10.1
0.492000	35.26	---	56.13	20.87	N	ON	10.1
1.980000	---	23.20	46.00	22.80	N	ON	9.8
1.980000	32.24	---	56.00	23.76	N	ON	9.8
2.668000	---	24.49	46.00	21.51	N	ON	9.8
2.668000	36.34	---	56.00	19.66	N	ON	9.8
4.744000	---	19.06	46.00	26.94	N	ON	9.8
4.744000	31.53	---	56.00	24.47	N	ON	9.8

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.

Full Spectrum



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

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

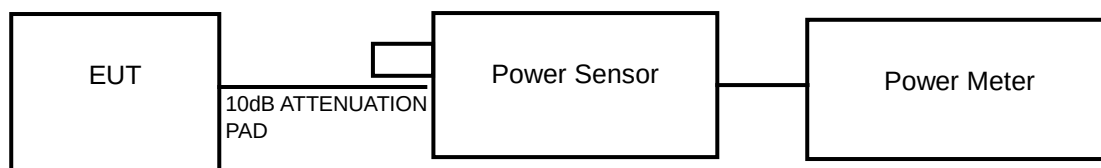
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

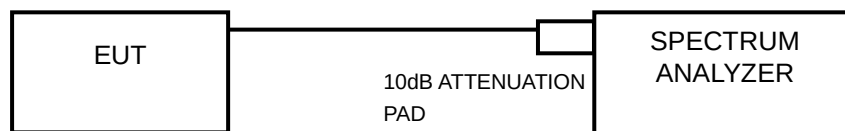
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER MEASUREMENT

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

FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

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%.

FOR 6dB BANDWIDTH

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

OUTPUT POWER:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	21.330	13.29	24	PASS
40	5200	20.893	13.20	24	PASS
48	5240	20.277	13.07	24	PASS
52	5260	20.512	13.12	24	PASS
60	5300	21.038	13.23	24	PASS
64	5320	20.654	13.15	24	PASS
100	5500	20.606	13.14	24	PASS
116	5580	20.045	13.02	24	PASS
132	5660	20.184	13.05	24	PASS
140	5700	20.559	13.13	24	PASS
149	5745	20.324	13.08	30	PASS
157	5785	20.654	13.15	30	PASS
165	5825	20.277	13.07	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	16.596	12.20	24	PASS
40	5200	15.740	11.97	24	PASS
48	5240	15.560	11.92	24	PASS
52	5260	15.885	12.01	24	PASS
60	5300	15.524	11.91	24	PASS
64	5320	17.061	12.32	24	PASS
100	5500	16.444	12.16	24	PASS
116	5580	16.218	12.10	24	PASS
132	5660	16.144	12.08	24	PASS
140	5700	16.482	12.17	24	PASS
149	5745	16.032	12.05	30	PASS
157	5785	15.524	11.91	30	PASS
165	5825	15.276	11.84	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	16.106	12.07	24	PASS
46	5230	16.069	12.06	24	PASS
54	5270	15.668	11.95	24	PASS
62	5310	16.293	12.12	24	PASS
102	5510	16.444	12.16	24	PASS
110	5550	16.482	12.17	24	PASS
134	5670	15.453	11.89	24	PASS
151	5755	15.488	11.90	30	PASS
159	5795	15.311	11.85	30	PASS

99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.68	19.89	PASS
40	5200	16.62	19.93	PASS
48	5240	16.50	19.92	PASS
52	5260	16.56	19.62	PASS
60	5300	16.56	19.68	PASS
64	5320	16.62	19.87	PASS
100	5500	16.56	19.91	PASS
116	5580	16.50	19.91	PASS
132	5660	16.50	19.66	PASS
140	5700	16.62	19.92	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	16.56	16.36	PASS
157	5785	16.62	16.38	PASS
165	5825	16.56	16.37	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.70	19.87	PASS
40	5200	17.64	19.92	PASS
48	5240	17.70	19.93	PASS
52	5260	17.64	19.92	PASS
60	5300	17.64	19.88	PASS
64	5320	17.64	19.91	PASS
100	5500	17.64	19.91	PASS
116	5580	17.64	19.87	PASS
132	5660	17.64	19.87	
140	5700	17.64	19.85	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	17.64	17.60	PASS
157	5785	17.58	17.60	PASS
165	5825	17.64	17.60	PASS

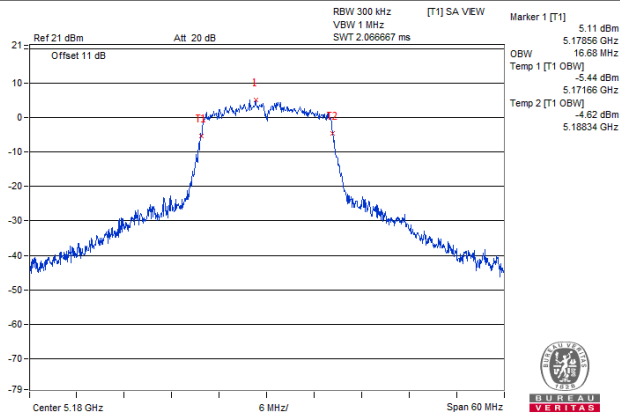
802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.12	40.90	PASS
46	5230	36.12	40.90	PASS
54	5270	36.18	40.68	PASS
62	5310	36.12	40.80	PASS
102	5510	36.18	40.83	PASS
110	5550	36.12	40.68	PASS
134	5670	36.12	40.67	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.12	36.34	PASS
159	5795	36.12	36.36	PASS

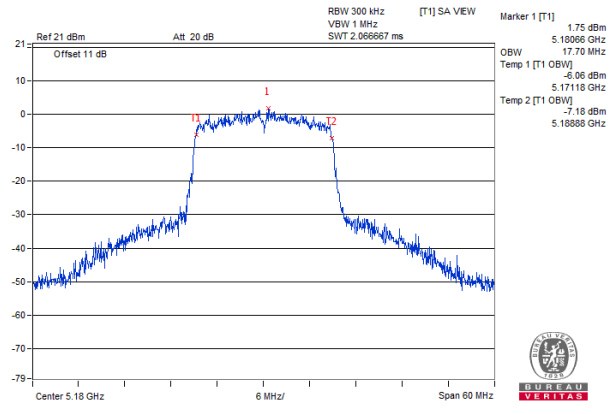
For U-NII-1:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

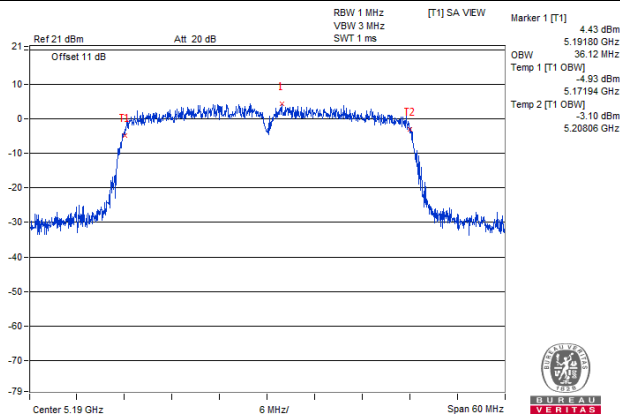
802.11a



802.11n (20MHz)

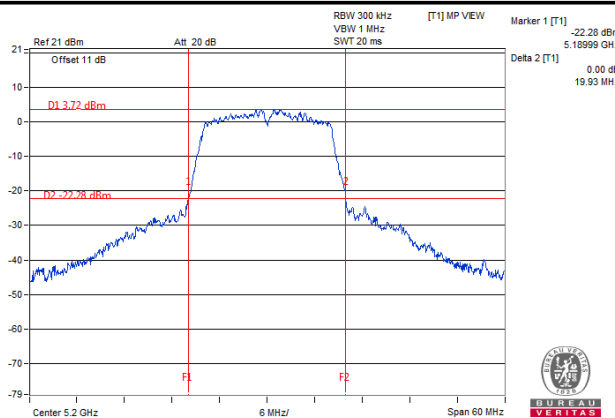


802.11n (40MHz)

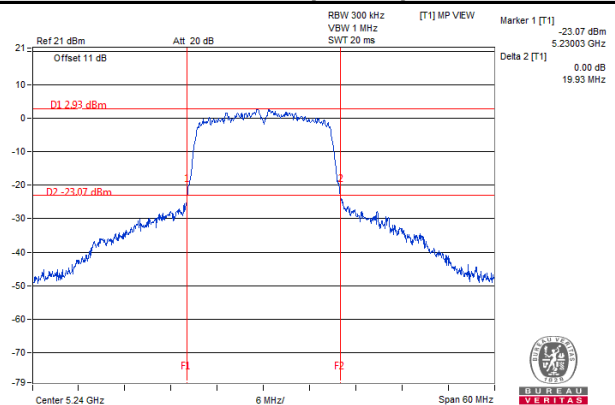


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

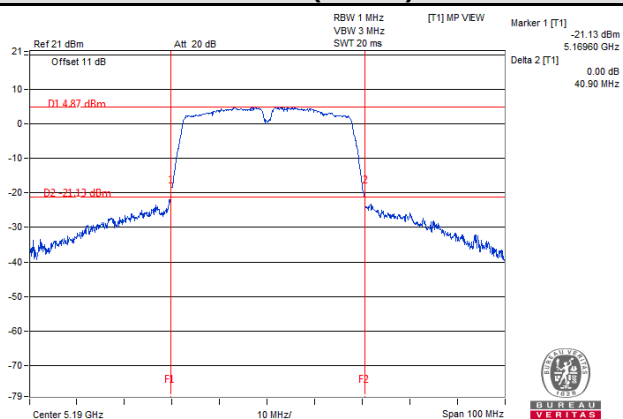
802.11a



802.11n (20MHz)



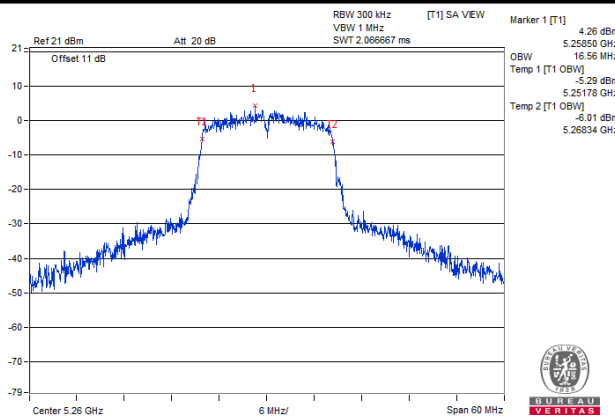
802.11n (40MHz)



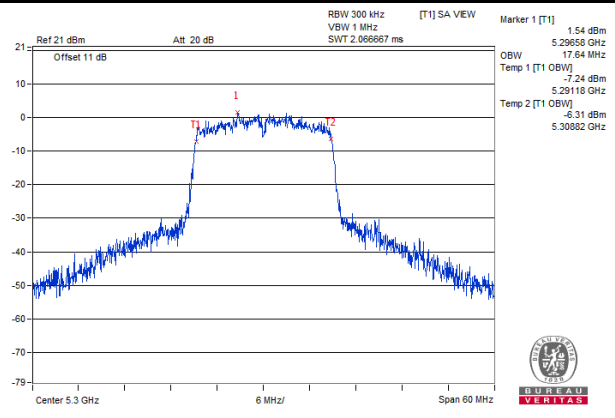
For U-NII-2A:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

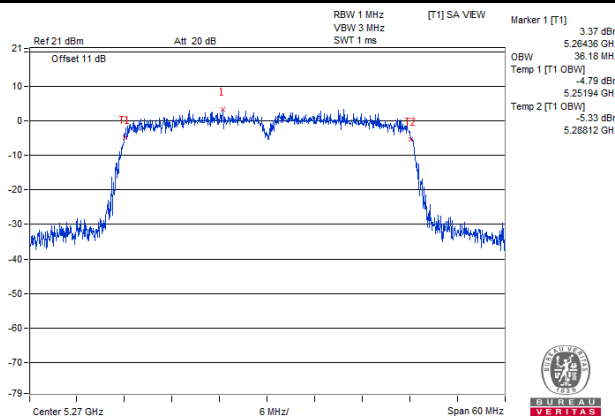
802.11a



802.11n (20MHz)

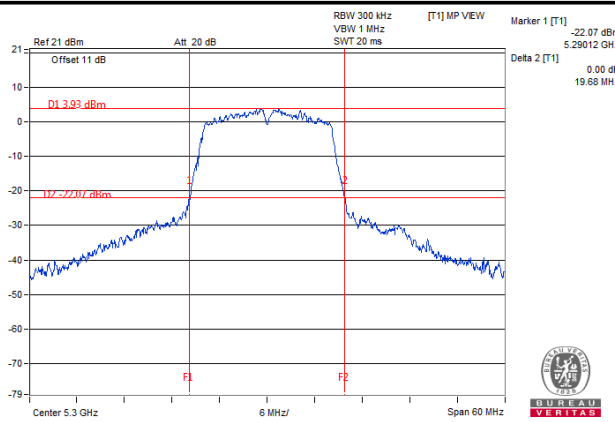


802.11n (40MHz)

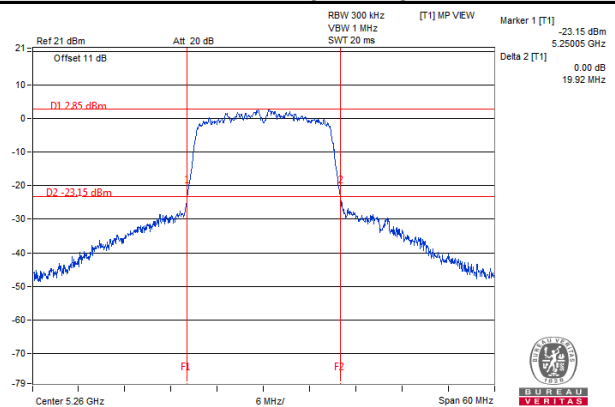


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

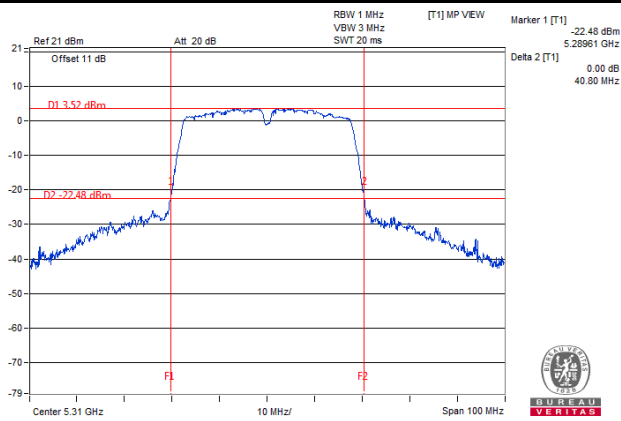
802.11a



802.11n (20MHz)



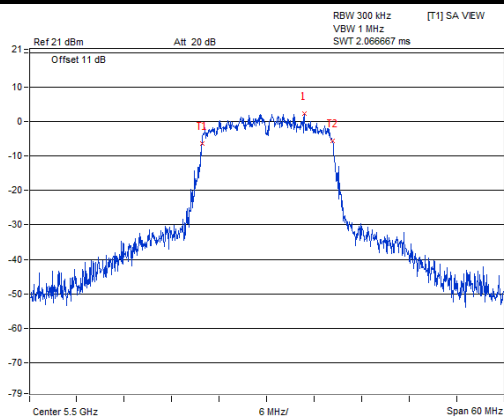
802.11n (40MHz)



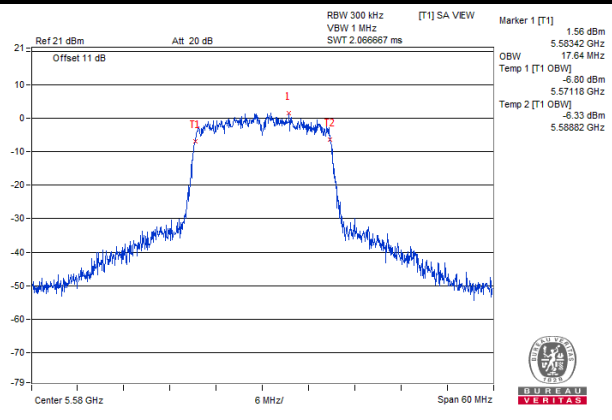
For U-NII-2C:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

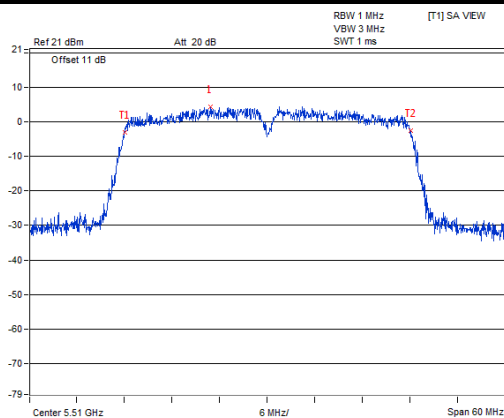
802.11a



802.11n (20MHz)

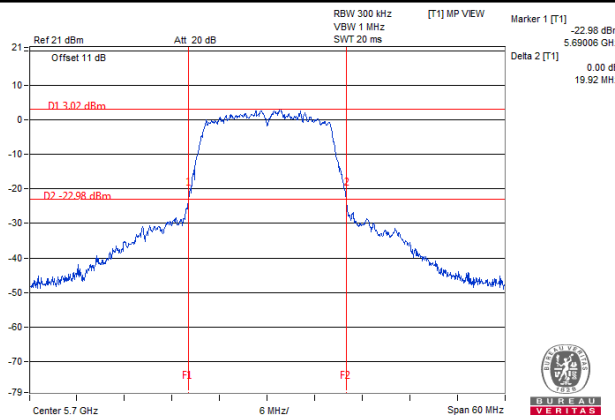


802.11n (40MHz)

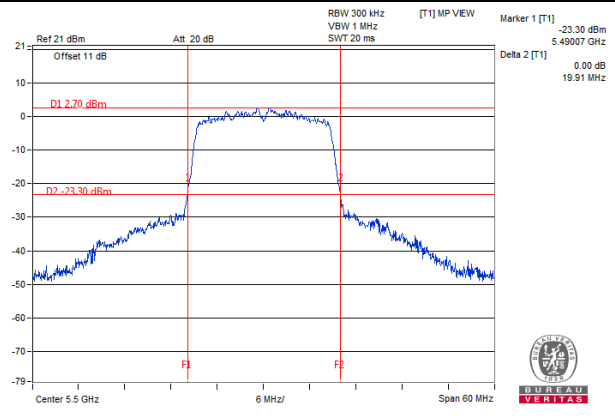


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

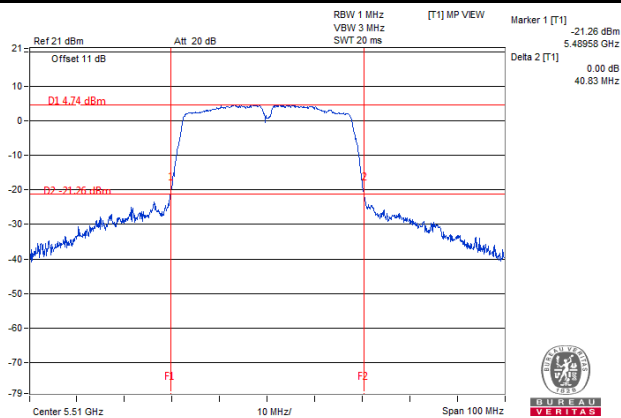
802.11a



802.11n (20MHz)



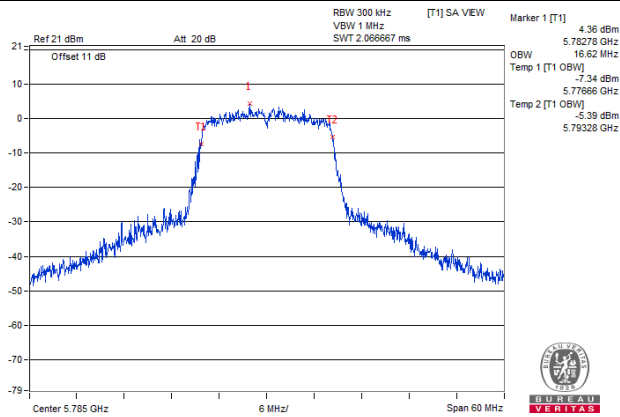
802.11n (40MHz)



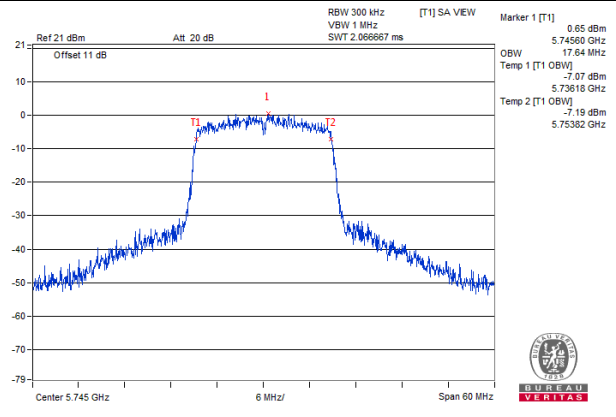
For U-NII-3:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

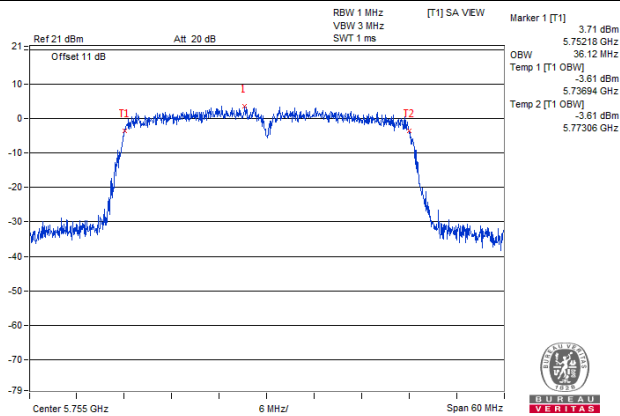
802.11a



802.11n (20MHz)

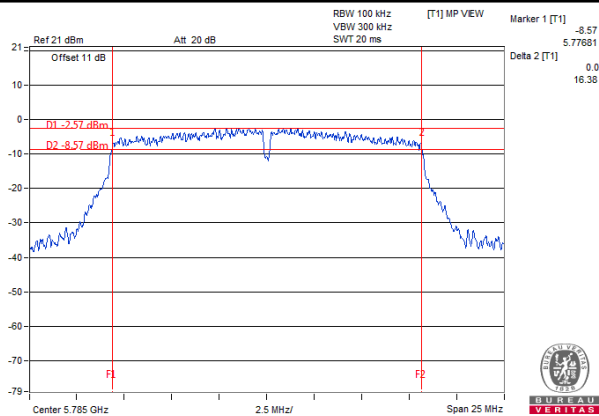


802.11n (40MHz)

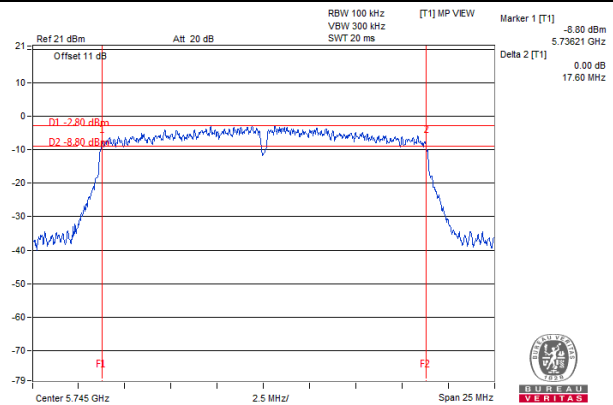


SPECTRUM PLOT OF WORST VALUE of 6dB Bandwidth

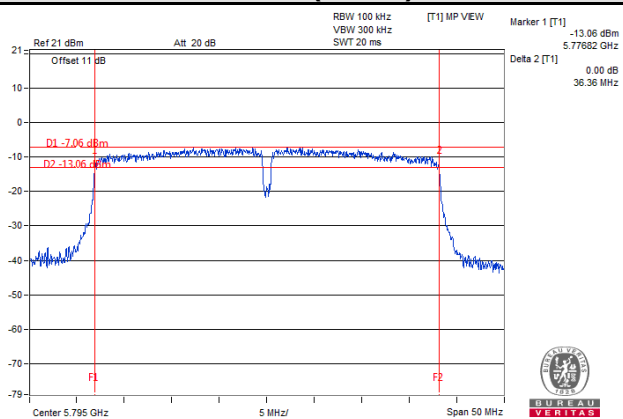
802.11a



802.11n (20MHz)



802.11n (40MHz)

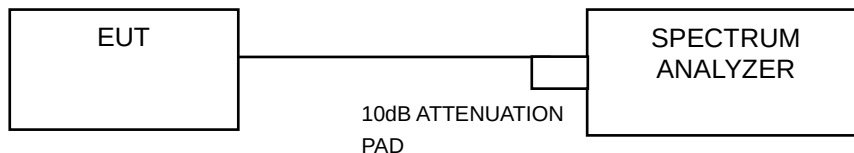


4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedure

Using method SA-1

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.3.6.

4.4.7 Test Results

For U-NII-1, U-NII-2A & U-NII-2C:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	5.92	0.64	6.56	11	PASS
40	5200	5.90	0.64	6.54	11	PASS
48	5240	5.97	0.64	6.61	11	PASS
52	5260	6.25	0.64	6.89	11	PASS
60	5300	5.92	0.64	6.56	11	PASS
64	5320	6.25	0.64	6.89	11	PASS
100	5500	6.05	0.64	6.69	11	PASS
116	5580	6.11	0.64	6.75	11	PASS
132	5660	6.06	0.64	6.70	11	PASS
140	5700	4.98	0.64	5.62	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	4.97	0.69	5.66	11	PASS
40	5200	4.46	0.69	5.15	11	PASS
48	5240	5.26	0.69	5.95	11	PASS
52	5260	5.13	0.69	5.82	11	PASS
60	5300	4.53	0.69	5.22	11	PASS
64	5320	5.03	0.69	5.72	11	PASS
100	5500	5.02	0.69	5.71	11	PASS
116	5580	4.78	0.69	5.47	11	PASS
132	5660	5.09	0.69	5.78	11	PASS
140	5700	5.29	0.69	5.98	11	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	1.66	1.25	2.91	11	PASS
46	5230	1.10	1.25	2.35	11	PASS
54	5270	0.64	1.25	1.89	11	PASS
62	5310	0.72	1.25	1.97	11	PASS
102	5510	1.42	1.25	2.67	11	PASS
110	5550	1.68	1.25	2.93	11	PASS
134	5670	1.76	1.25	3.01	11	PASS

For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	5.87	0.64	6.51	30	PASS
157	5785	5.32	0.64	5.96	30	PASS
165	5825	4.36	0.64	5.00	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	4.72	0.69	5.41	30	PASS
157	5785	3.87	0.69	4.56	30	PASS
165	5825	4.31	0.69	5.00	30	PASS

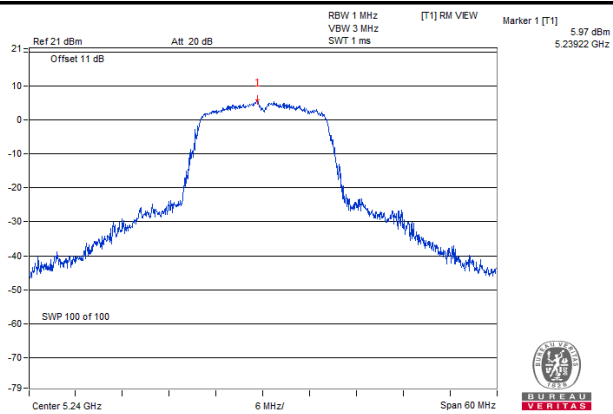
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	1.29	1.25	2.54	30	PASS
159	5795	0.86	1.25	2.11	30	PASS

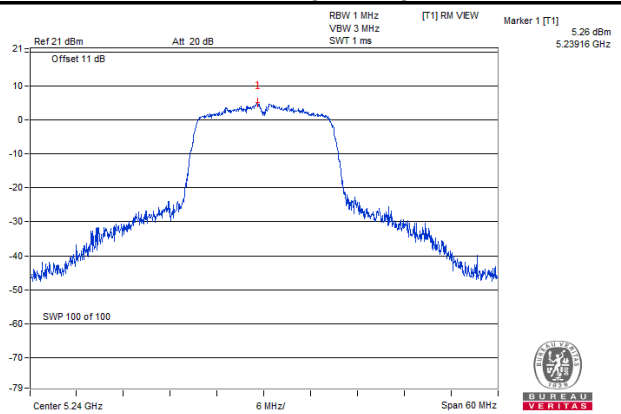
For 5180~5240MHz

PSD w/o Duty Factor

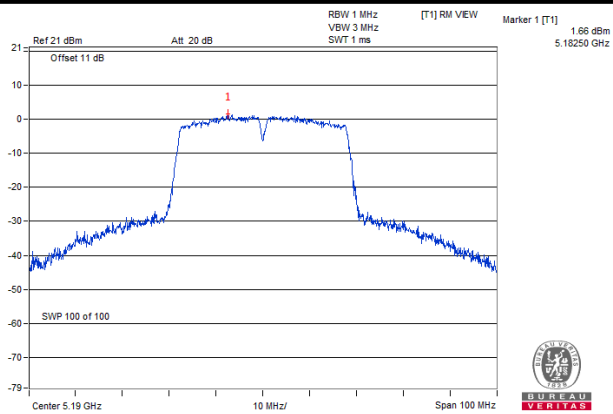
802.11a



802.11n (20MHz)



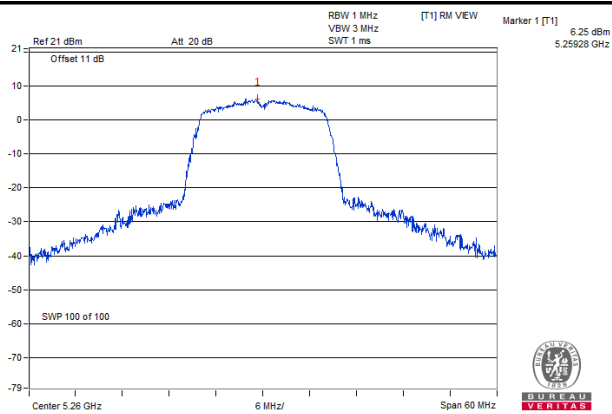
802.11n (40MHz)



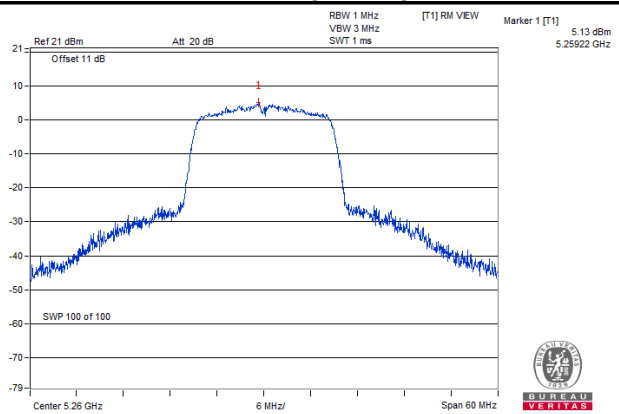
For 5260~ 5320MHZ

PSD w/o Duty Factor

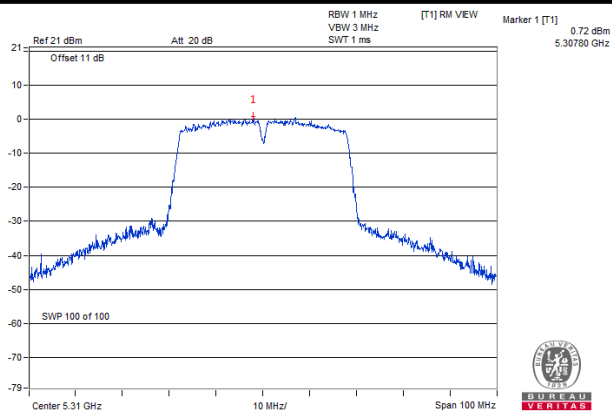
802.11a



802.11n (20MHz)



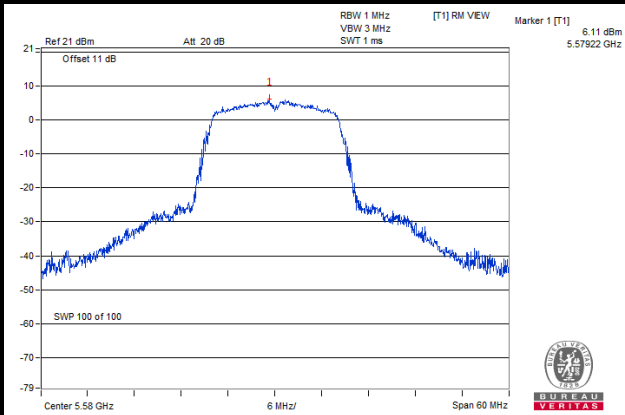
802.11n (40MHz)



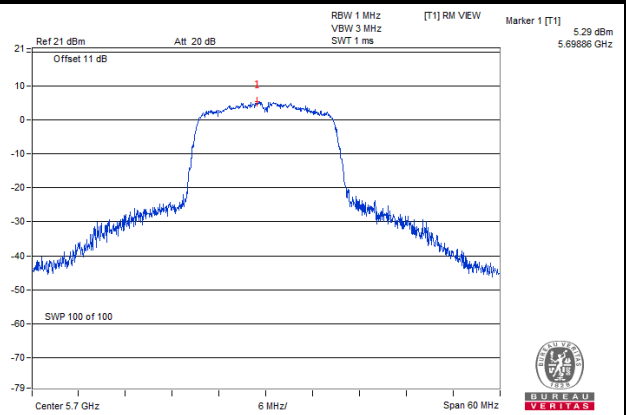
For 5500~5700MHz

PSD w/o Duty Factor

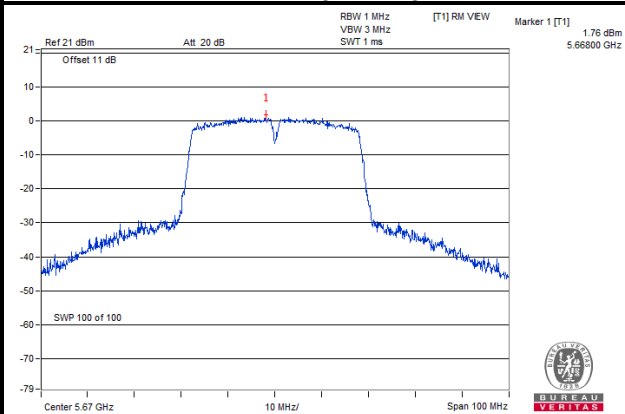
802.11a



802.11n (20MHz)



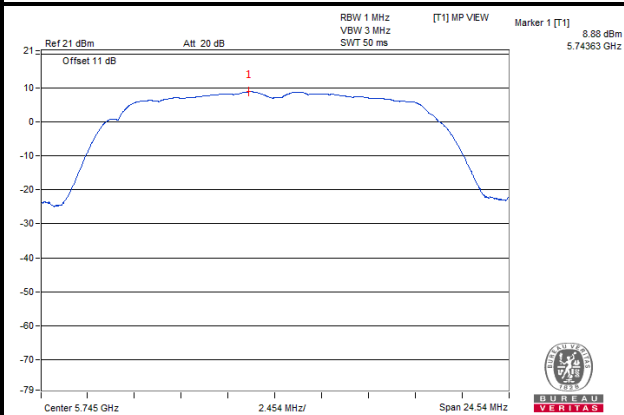
802.11n (40MHz)



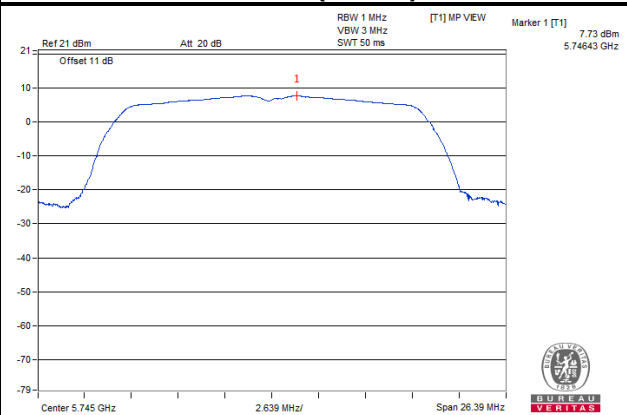
For 5745~5825MHz

PSD w/o Duty Factor

802.11a



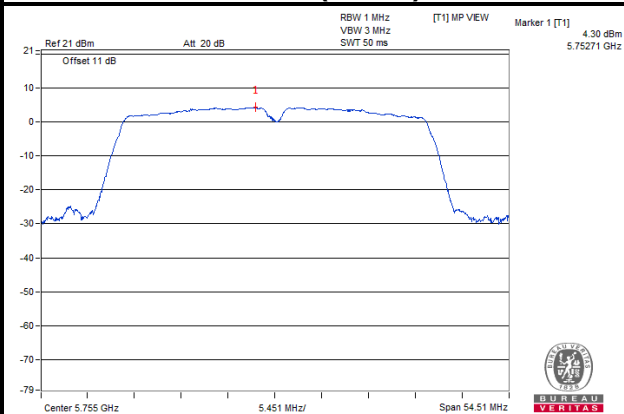
802.11n (20MHz)



Note: The peak power spectral density is a “calculated” value derived from the conducted value: 8.88dBm/MHz=5.87dBm/500kHz

Note: The peak power spectral density is a “calculated” value derived from the conducted value: 7.73dBm/MHz=4.72dBm/500kHz

802.11n (40MHz)



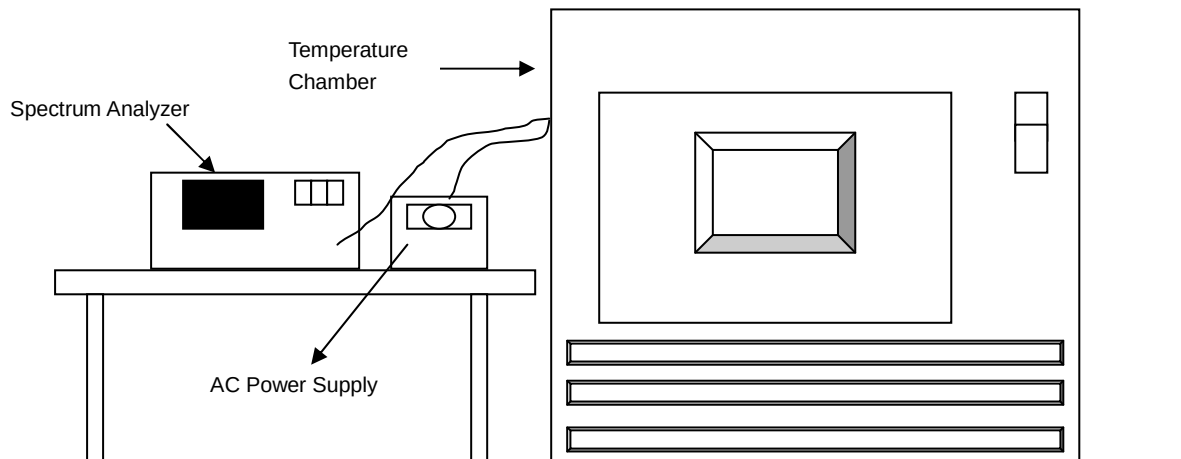
Note: The peak power spectral density is a “calculated” value derived from the conducted value: 4.30dBm/MHz=1.29dBm/500kHz

4.5 Frequency Stability Measurement

4.5.1 Limits of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- 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 (Vdc)	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	3.8	5180.0096	1.853	5180.0098	1.892	5180.0091	1.757	5180.0137	2.645
40	3.8	5180.0144	2.780	5180.0134	2.587	5180.0136	2.625	5180.0181	3.494
30	3.8	5180.0263	5.077	5180.0219	4.228	5180.0199	3.842	5180.0241	4.653
20	3.8	5180.0212	4.093	5180.0162	3.127	5180.0257	4.961	5180.0199	3.842
10	3.8	5179.975	-4.826	5179.9785	-4.151	5179.9805	-3.764	5179.9742	-4.981
0	3.8	5179.9901	-1.911	5179.9918	-1.583	5179.9899	-1.950	5179.9902	-1.892
-10	3.8	5180.0128	2.471	5180.0089	1.718	5180.0138	2.664	5180.0119	2.297
-20	3.8	5180.0082	1.583	5180.0042	0.811	5180.0089	1.718	5180.0048	0.927
-30	3.8	5180.0087	1.680	5180.0088	1.699	5180.0093	1.795	5180.0108	2.085

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	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	4.4	5180.0229	4.421	5180.0162	3.127	5180.0251	4.846	5180.0202	3.900
	3.8	5180.0212	4.093	5180.0162	3.127	5180.0257	4.961	5180.0199	3.842
	3.5	5180.0223	4.305	5180.0159	3.069	5180.0243	4.691	5180.0201	3.880

FREQUENCY STABILITY VERSUS TEMP.

OPERATING FREQUENCY: 5785MHz

TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	3.8	5785.0182	3.146	5785.0102	1.763	5785.0167	2.887	5785.0181	3.129
40	3.8	5784.9809	-3.302	5784.988	-2.074	5784.9817	-3.163	5784.9851	-2.576
30	3.8	5784.9941	-1.020	5784.9927	-1.262	5784.9933	-1.158	5784.9911	-1.538
20	3.8	5785.0168	2.904	5785.0252	4.356	5785.0252	4.356	5785.0164	2.835
10	3.8	5784.9829	-2.956	5784.9882	-2.040	5784.9873	-2.195	5784.9846	-2.662
0	3.8	5784.9694	-5.290	5784.9711	-4.996	5784.9788	-3.665	5784.9713	-4.961
-10	3.8	5785	0.000	5784.9994	-0.104	5785.0016	0.277	5785.0096	1.659
-20	3.8	5785.0169	2.921	5785.013	2.247	5785.0194	3.354	5785.0205	3.544
-30	3.8	5784.9786	-3.699	5784.9828	-2.973	5784.9838	-2.800	5784.9759	-4.166

FREQUENCY STABILITY VERSUS VOLTAGE

OPERATING FREQUENCY: 5785MHz

TEMP. (°C)	POWER SUPPLY (Vdc)	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	4.4	5785.0152	2.627	5785.0236	4.080	5785.0256	4.425	5785.016	2.766
	3.8	5785.0168	2.904	5785.0252	4.356	5785.0252	4.356	5785.0164	2.835
	3.5	5785.0162	2.800	5785.0245	4.235	5785.0259	4.477	5785.0166	2.869

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF Lab/Telecom Lab

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety

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.

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