FCC TEST REPORT

(Part 15, Subpart E)

Applicant:	Lenovo(Shanghai) Electronics Technology Co., Ltd.
Address:	Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

Manufacturer or Supplier:	Lenovo PC HK Limited
Address:	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Product:	ThinkReality A6 Compute Box
Brand Name:	ThinkReality
Model Name:	ThinkReality A6 Compute Pack
FCC ID:	O57TRA6CP
Date of tests:	Jun. 11, 2019 ~ Jul. 11, 2019
The tests have been carried out according to the requirements of the following standard:	
☒ **FCC Part 15, Subpart E, Section 15.407**	
CONCLUSION: The submitted sample was found to COMPLY with the test requirement	

Prepared by Alex Chen	Approved by Luke Lu
Engineer / Mobile Department	Manager / Mobile Department
Alex	Luke Lu
Date: Jul. 15, 2019	Date: Jul. 15, 2019

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190610W002-	Original release	Jul. 15, 2019

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -15.47dB at 23.184000MHz.
15.407(b) (1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -3.12dB at 5350.00MHz.
15.407(a/1/2/3)	Maximum conducted output 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(a) (1),(5)	26 dB Bandwidth	PASS	Meet the requirement of limit. (for U-NII-1/2A/2C Band)
15.407(e)	6 dB 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.

1.1 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	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
All Radiated emissions	±4.48dB
Conducted emissions	±2 dB
Occupied Channel Bandwidth	±21.7KHz
Conducted Output power	±1.03 dB
Power Spectral Density	±0.95 dB

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

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

EUT	ThinkReality A6 Compute Box
MODEL NO.	ThinkReality A6 Compute Pack
POWER SUPPLY	5.0/9Vdc (adapter) 3.85Vdc (Li-ion, 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 802.11ac: up to 390.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5805MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5720MHz: 12 for 802.11a, 802.11n (20MHz) 6 for 802.11n (40MHz) 3 for 802.11ac (80MHz) 5745 ~ 5805MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
AVERAGE POWER	49.49mW for 5180 ~ 5240MHz 51.77mW for 5260 ~ 5320MHz 55.80mW for 5500 ~ 5720MHz 64.72mW for 5745 ~ 5805MHz
ANTENNA TYPE	5180 ~ 5240MHz: FPC Antenna0 with 1.84dBi gain 5180 ~ 5240MHz: FPC Antenna1 with 0.96dBi gain 5260 ~ 5320MHz: FPC Antenna0 with 3.24dBi gain 5260 ~ 5320MHz: FPC Antenna1 with 1.03dBi gain 5500 ~ 5720MHz: FPC Antenna0 with 3.75dBi gain 5500 ~ 5720MHz: FPC Antenna1 with 3.11dBi gain 5745 ~ 5805MHz: FPC Antenna0 with 0.73dBi gain 5745 ~ 5805MHz: FPC Antenna1 with 2.79dBi gain
HW VERSION	SKY_BLUE_BOX V04
SW VERSION	A6_user_S760001_2019051604343_sdm845_4G_ROW_US

I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable1: non-shielded, detachable, 1.0m USB cable2: non-shielded, detachable, 1.0m

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

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

MODULATION MODE	TX FUNCTION
802.11a	2TX/2RX
802.11n (20MHz)	2TX/2RX
802.11n (40MHz)	2TX/2RX
802.11ac (80MHz)	2TX/2RX

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

4. The device will automatically discontinue transmission in case of either absence of information to transmit or operational failure.

5. List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
CPU	Qualcomm	SDA-845-A-914BMPSP-TR-02-0-AA	914NPSP
LPDDR4x	SAMSUNG	K3UH5H50MM-AGCJ	4G
UFS	SAMSUNG	KLUCG2K1EA-B0C1	64G
BT/WLAN Module	Qualcomm	WCN-3990-0-116WLPSP-SR-0K-0	-
Battery	Lenovo	L19D2P31	Rating: 3.85Vdc, 6800mAh
AC Adapter	Lenovo	SC-31	I/P:100-240Vac, 0.8A O/P: 5Vdc, 3A/9Vdc, 3A
USB Cable 1	Lenovo	LGBUC001-CS-H	(red)1.0m shielded cable w/o core
USB Cable 2	Lenovo	LGBUC004-CS-H	(black)1.0m shielded cable w/o core
Glass	ThinkReality	ThinkReality A6 Headset	-
Controller	ThinkReality	ThinkReality A6 Controller	-

2.2 DESCRIPTION OF TEST MODES

FOR 5150 ~ 5250MHz

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

FOR 5250 ~ 5350MHz

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

FOR 5470 ~ 5725MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	124	5620MHz
104	5520 MHz	128	5640MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	138	5690 MHz
122	5610 MHz		

FOR 5725 ~ 5805MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
144	5720MHz	157	5785 MHz
149	5745 MHz	161	5805 MHz
153	5765 MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
142	5710 MHz	159	5795 MHz
151	5755 MHz		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
138	5690 MHz	155	5775 MHz

2.2.1 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.**
NOTE: "-"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, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
A	802.11a	5500-5720	100 to 144	100, 116, 140,144	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140,144	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134,142	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		106	106,138	OFDM	BPSK	V0
A	802.11a	5725-5805	149 to 161	144, 149, 157, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	144, 149, 157, 161	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	142, 151, 159	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		155	138, 155	OFDM	BPSK	V0

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	802.11n40	5260-5320	54 to 62	62	OFDM	BPSK	MCS0

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	802.11n40	5260-5320	54 to 62	62	OFDM	BPSK	MCS0

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	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
A	802.11a	5500-5720	100 to 140	100, 140, 144	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 140, 144	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 134, 142	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		106	106, 138	OFDM	BPSK	V0
A	802.11a	5725-5805	149 to 161	144, 149, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	144, 149, 161	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	142, 151, 159	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		155	138, 155	OFDM	BPSK	V0

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	802.11ac (80MHz)		42	42	OFDM	BPSK	V0
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	802.11ac (80MHz)		58	58	OFDM	BPSK	V0
B	802.11a	5500-5700	100 to 140	100, 116, 140, 144	OFDM	BPSK	6.0
B	802.11n (20MHz)		100 to 140	100, 116, 140, 144	OFDM	BPSK	MCS0
B	802.11n (40MHz)		102 to 134	102, 110, 134, 142	OFDM	BPSK	MCS0
B	802.11ac (80MHz)		106	106, 138	OFDM	BPSK	V0
B	802.11a	5725-5805	149 to 161	144,149, 161	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 161	144,149, 161	OFDM	BPSK	MCS0
B	802.11n (40MHz)		151 to 159	142,151, 159	OFDM	BPSK	MCS0
B	802.11ac (80MHz)		155	138,155	OFDM	BPSK	V0

TEST CONDITION:

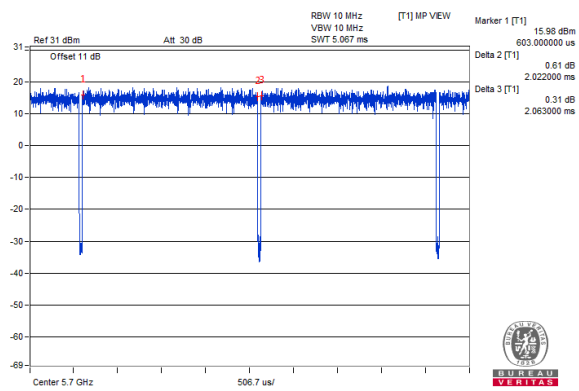
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5V from adaptor	Star Le
RE≥1G	23deg. C, 70%RH	DC 5V from adaptor	Star Le
PLC	23deg. C, 70%RH	DC 5V from adaptor	John Wen
APCM	23deg. C, 70%RH	DC 3.85V from battery	Rain Wang

2.3 DUTY CYCLE OF TEST SIGNAL

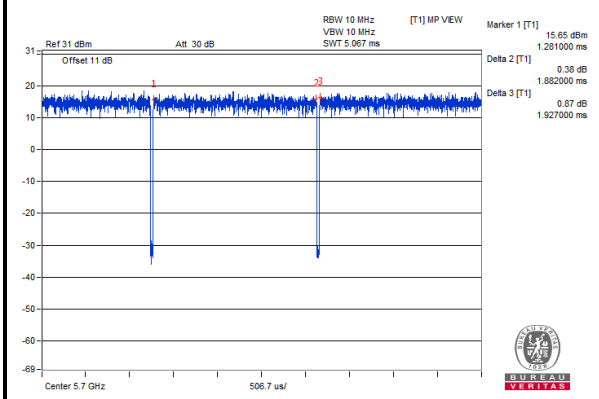
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.022/2.063 = 0.980, Duty factor = 10 * log(1/0.980) = 0.087
802.11n (20MHz): Duty cycle = 1.882/1.927 = 0.977, Duty factor = 10 * log(1/0.977) = 0.103
802.11n (40MHz): Duty cycle =923/972 = 0.950, Duty factor = 10 * log(1/0.950) = 0.225
802.11ac (80MHz): Duty cycle = 452/491 = 0.921, Duty factor = 10 * log(1/0.921) = 0.359

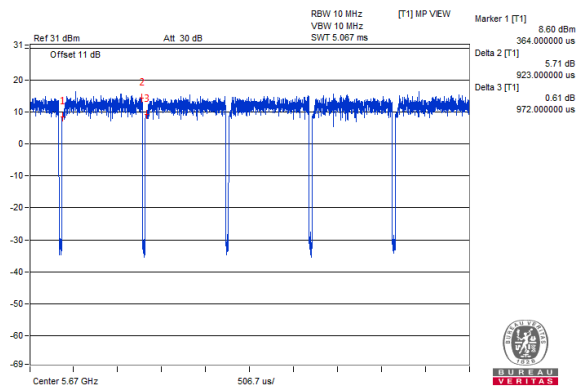
802.11a



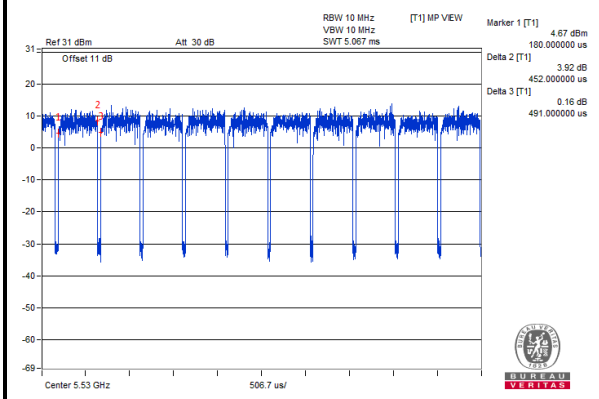
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



2.4 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.

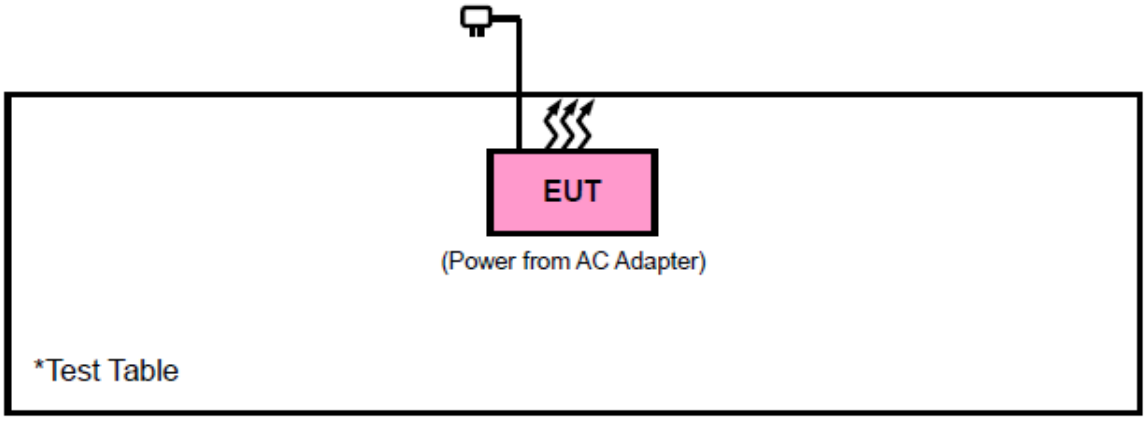
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PC	HP	A6608CN	3CR83825X3	N/A
2	DC source	LONG WEI	PS-6403D	010934269	N/A

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

NOTE:

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

2.4.1 CONFIGURATION OF SYSTEM UNDER TEST



2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
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 (Certification). The test report has been issued separately.

3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

3.1.2 LIMITS OF UNWANTED EMISSION

<table>
<tr><td rowspan="2">RESTRICTED BANDS</td><td>APPLICABLE TO</td><td colspan="2">LIMIT</td></tr>
<tr><td rowspan="2">789033 D02 General UNII Test Procedures New Rules v01r02</td><td colspan="2">FIELD STRENGTH AT 3m (dBµV/m)</td></tr>
<tr><td>PK : 74</td><td>AV : 54</td></tr>
<tr><td rowspan="5">OUT OF THE RESTRICTED BANDS</td><td>APPLICABLE TO</td><td>EIRP LIMIT (dBm/MHz)</td><td>EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)</td></tr>
<tr><td>15.407(b)(1)</td><td rowspan="3">PK : -27</td><td rowspan="3">PK : 68.3</td></tr>
<tr><td>15.407(b)(2)</td></tr>
<tr><td>15.407(b)(3)</td></tr>
<tr><td>15.407(b)(4)</td><td colspan="2">See note 2 (FCC 16-24)</td></tr>
</table>

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

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

2. All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

3.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Feb. 26,19	Feb. 25,20
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 26,19	Feb. 25,20
Horn Antenna	ETS-LINDGREN	3117	00168728	Feb. 26,19	Feb. 25,20
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 21, 18	Nov. 20, 19
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 09,18	Jul. 08,19
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 26,19	Feb. 25,20
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jun. 24,19	Jun. 23,20

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Chamber.
3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.1.4 TEST PROCEDURES

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 antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

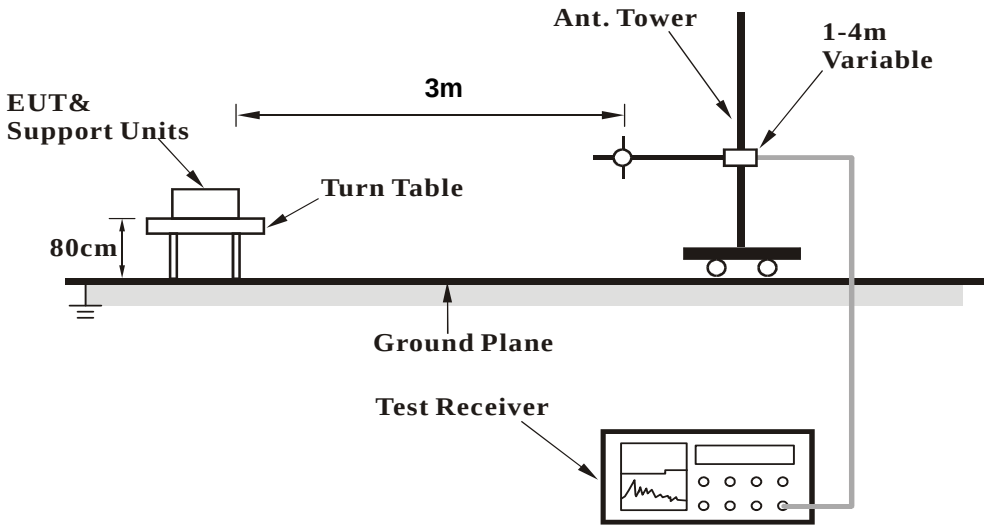
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

3.1.5 DEVIATION FROM TEST STANDARD

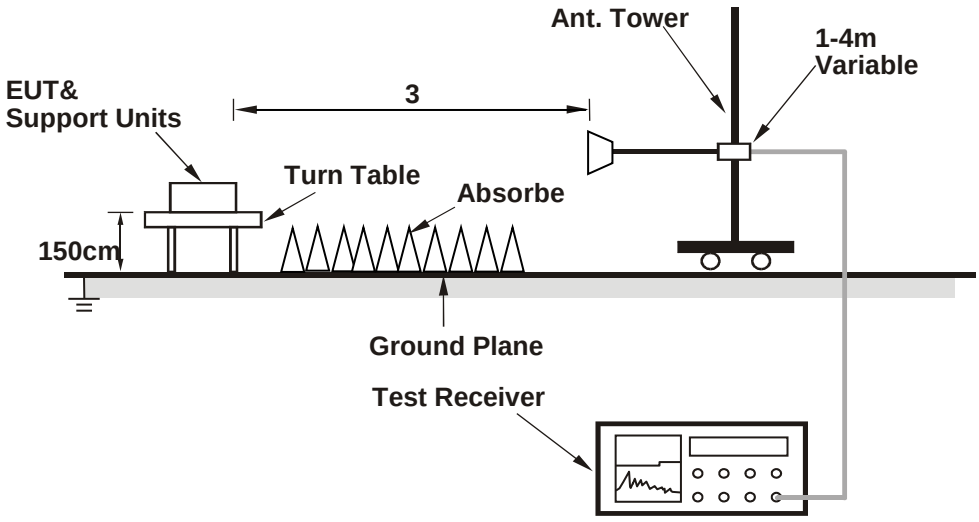
No deviation.

3.1.6 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



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

3.1.7 EUT OPERATING CONDITION

a. Set the EUT under full load condition and placed them on a testing table.

b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

c. The necessary accessories enable the EUT in full functions.

3.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA FROM ANT 0+ANT 1:

30 MHz – 1GHz data:

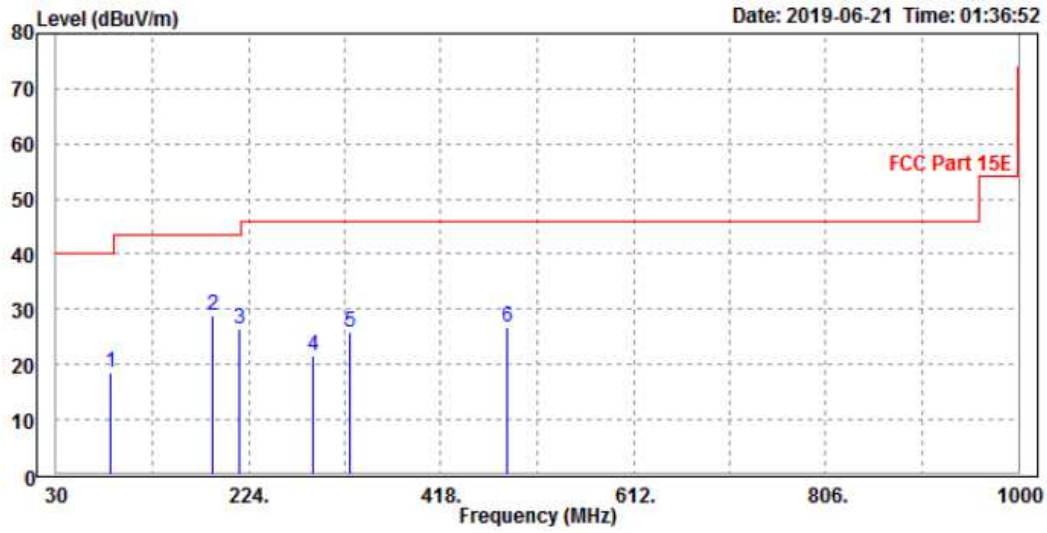
802.11n (40MHz)

CHANNEL	TX Channel 62	**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
85.34	18.61	46.35	40	-21.39	8.31	1.24	37.29	100	360	Peak
187.42	29.02	53.41	43.5	-14.48	10.49	1.73	36.61	100	360	Peak
215.42	26.54	49.77	43.5	-16.96	11.48	1.87	36.58	100	360	Peak
289.26	21.62	42.32	46	-24.38	13.86	2.17	36.73	100	360	Peak
325.64	25.72	45.28	46	-20.28	14.89	2.32	36.77	100	360	Peak
485.21	26.62	42.34	46	-19.38	18.31	2.94	36.97	100	360	Peak

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

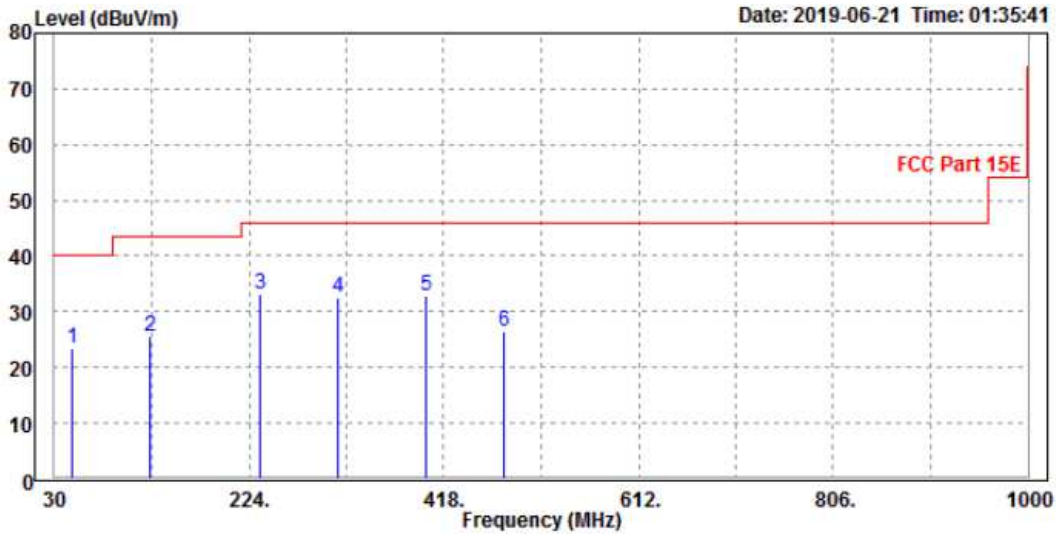


CHANNEL	Channel 62	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
48.51	23.48	52.36	40	-16.52	7.46	1.01	37.35	100	0	Peak
125.62	25.44	52.31	43.5	-18.06	8.7	1.47	37.04	100	0	Peak
235.14	33.25	55.41	46	-12.75	12.49	1.97	36.62	100	0	Peak
312.45	32.41	52.32	46	-13.59	14.59	2.26	36.76	100	0	Peak
400.12	32.95	49.86	46	-13.05	17.3	2.62	36.83	100	0	Peak
478.56	26.59	42.24	46	-19.41	18.4	2.91	36.96	100	0	Peak

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



ABOVE 1GHz WORST-CASE DATA FROM ANT 0 + ANT 1:

Note: For higher frequency, the emission is too low to be detected.

Band 1

802.11a

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

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	55.69	54.21	74	-18.31	35.95	7.42	41.89	100	165	Peak
5150	45.06	43.58	54	-8.94	35.95	7.42	41.89	100	165	Average
5180	108.54	107.02			35.98	7.43	41.89	100	165	Peak
5180	99.87	98.35			35.98	7.43	41.89	100	165	Average
5350	53.4	51.67	74	-20.6	36.15	7.47	41.89	100	165	Peak
5350	43.4	41.67	54	-10.6	36.15	7.47	41.89	100	165	Average
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	54.13	52.31	74	-19.87	36.29	7.42	41.89	191	208	Peak
5150	43.13	41.31	54	-10.87	36.29	7.42	41.89	191	208	Average
5180	102.85	101			36.31	7.43	41.89	191	208	Peak
5180	94.29	92.44			36.31	7.43	41.89	191	208	Average
5350	53.31	51.32	74	-20.69	36.41	7.47	41.89	191	208	Peak
5350	43.25	41.26	54	-10.75	36.41	7.47	41.89	191	208	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5180MHz: Fundamental frequency.

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

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	52.71	51.23	74	-21.29	35.95	7.42	41.89	100	170	Peak
5150	42.73	41.25	54	-11.27	35.95	7.42	41.89	100	170	Average
5200	108.89	107.35			36	7.43	41.89	100	170	Peak
5200	100.29	98.75			36	7.43	41.89	100	170	Average
5350	52.85	51.12	74	-21.15	36.15	7.47	41.89	100	170	Peak
5350	43.35	41.62	54	-10.65	36.15	7.47	41.89	100	170	Average
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	54.16	52.34	74	-19.84	36.29	7.42	41.89	150	185	Peak
5150	45.43	43.61	54	-8.57	36.29	7.42	41.89	150	185	Average
5200	103.11	101.25			36.32	7.43	41.89	150	185	Peak
5200	95.32	93.46			36.32	7.43	41.89	150	185	Average
5350	53.31	51.32	74	-20.69	36.41	7.47	41.89	150	185	Peak
5350	43.66	41.67	54	-10.34	36.41	7.47	41.89	150	185	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.

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

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	54.15	51.36	74	-19.85	37.26	7.42	41.89	100	166	Peak
5150	44.43	41.64	54	-9.57	37.26	7.42	41.89	100	215	Average
5240	111.06	108.21			37.3	7.44	41.89	100	215	Peak
5240	102.44	99.59			37.3	7.44	41.89	100	215	Average
5350	55.27	52.35	74	-18.73	37.34	7.47	41.89	100	215	Peak
5350	45.43	42.51	54	-8.57	37.34	7.47	41.89	100	215	Average
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	53.06	51.24	74	-20.94	36.29	7.42	41.89	100	215	Peak
5150	42.69	40.87	54	-11.31	36.29	7.42	41.89	100	215	Average
5240	102.85	100.96			36.34	7.44	41.89	100	215	Peak
5240	94.77	92.88			36.34	7.44	41.89	100	215	Average
5350	53.22	51.23	74	-20.78	36.41	7.47	41.89	100	215	Peak
5350	43.67	41.68	54	-10.33	36.41	7.47	41.89	100	215	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 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	54.32	52.84	74	-19.68	35.95	7.42	41.89	100	211	Peak
5150	44.11	42.63	54	-9.89	35.95	7.42	41.89	100	211	Average
5180	108.1	106.58			35.98	7.43	41.89	100	211	Peak
5180	98.94	97.42			35.98	7.43	41.89	100	211	Average
5350	52.97	51.24	74	-21.03	36.15	7.47	41.89	100	211	Peak
5350	42.98	41.25	54	-11.02	36.15	7.47	41.89	100	211	Average
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	54.5	52.68	74	-19.5	36.29	7.42	41.89	155	339	Peak
5150	44.38	42.56	54	-9.62	36.29	7.42	41.89	155	339	Average
5180	101.96	100.11			36.31	7.43	41.89	155	339	Peak
5180	94.15	92.3			36.31	7.43	41.89	155	339	Average
5350	53.33	51.34	74	-20.67	36.41	7.47	41.89	155	339	Peak
5350	43.24	41.25	54	-10.76	36.41	7.47	41.89	155	339	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5180MHz: Fundamental frequency.

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

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	52.63	51.15	74	-21.37	35.95	7.42	41.89	100	321	Peak
5150	42.34	40.86	54	-11.66	35.95	7.42	41.89	100	321	Average
5200	108.78	107.24			36	7.43	41.89	100	321	Peak
5200	100.29	98.75			36	7.43	41.89	100	321	Average
5350	52.96	51.23	74	-21.04	36.15	7.47	41.89	100	321	Peak
5350	42.94	41.21	54	-11.06	36.15	7.47	41.89	100	321	Average
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	54.14	52.32	74	-19.86	36.29	7.42	41.89	145	345	Peak
5150	43.97	42.15	54	-10.03	36.29	7.42	41.89	145	345	Average
5200	103.14	101.28			36.32	7.43	41.89	145	345	Peak
5200	95.51	93.65			36.32	7.43	41.89	145	345	Average
5350	54.33	52.34	74	-19.67	36.41	7.47	41.89	145	345	Peak
5350	44.15	42.16	54	-9.85	36.41	7.47	41.89	145	345	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5200MHz: Fundamental frequency.

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

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	52.94	51.46	74	-21.06	35.95	7.42	41.89	100	155	Peak
5150	42.24	40.76	54	-11.76	35.95	7.42	41.89	100	155	Average
5240	110.04	108.45			36.04	7.44	41.89	100	155	Peak
5240	101.21	99.62			36.04	7.44	41.89	100	155	Average
5350	54.07	52.34	74	-19.93	36.15	7.47	41.89	100	155	Peak
5350	44.29	42.56	54	-9.71	36.15	7.47	41.89	100	155	Average
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	54.23	52.41	74	-19.77	36.29	7.42	41.89	100	235	Peak
5150	44.13	42.31	54	-9.87	36.29	7.42	41.89	100	235	Average
5240	104.26	102.37			36.34	7.44	41.89	100	235	Peak
5240	95.38	93.49			36.34	7.44	41.89	100	235	Average
5350	53.11	51.12	74	-20.89	36.41	7.47	41.89	100	235	Peak
5350	43.31	41.32	54	-10.69	36.41	7.47	41.89	100	235	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5240MHz: Fundamental frequency.

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
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	59.97	58.49	74	-14.03	35.95	7.42	41.89	100	165	Peak
5150	50.79	49.31	54	-3.21	35.95	7.42	41.89	100	165	Average
5190	104.98	103.45			35.99	7.43	41.89	100	165	Peak
5190	95.76	94.23			35.99	7.43	41.89	100	165	Average
5350	53.09	51.36	74	-20.91	36.15	7.47	41.89	100	165	Peak
5350	42.98	41.25	54	-11.02	36.15	7.47	41.89	100	165	Average
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	56.03	54.21	74	-17.97	36.29	7.42	41.89	165	336	Peak
5150	47.23	45.41	54	-6.77	36.29	7.42	41.89	165	336	Average
5190	102.17	100.32			36.31	7.43	41.89	165	336	Peak
5190	93.1	91.25			36.31	7.43	41.89	165	336	Average
5350	53.25	51.26	74	-20.75	36.41	7.47	41.89	165	336	Peak
5350	43.35	41.36	54	-10.65	36.41	7.47	41.89	165	336	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 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	54.96	53.48	74	-19.04	35.95	7.42	41.89	105	320	Peak
5150	43.64	42.16	54	-10.36	35.95	7.42	41.89	105	320	Average
5230	106.15	104.57			36.03	7.44	41.89	105	320	Peak
5230	96.86	95.28			36.03	7.44	41.89	105	320	Average
5350	54.19	52.46	74	-19.81	36.15	7.47	41.89	105	320	Peak
5350	43.07	41.34	54	-10.93	36.15	7.47	41.89	105	320	Average
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	55.06	53.24	74	-18.94	36.29	7.42	41.89	100	127	Peak
5150	45.03	43.21	54	-8.97	36.29	7.42	41.89	100	127	Average
5230	103.34	101.45			36.34	7.44	41.89	100	127	Peak
5230	95.51	93.62			36.34	7.44	41.89	100	127	Average
5350	54.3	52.31	74	-19.7	36.41	7.47	41.89	100	127	Peak
5350	44.24	42.25	54	-9.76	36.41	7.47	41.89	100	127	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5230MHz: Fundamental frequency.

802.11ac (80MHz)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	57.23	55.75	74	-16.77	35.95	7.42	41.89	155	312	Peak
5150	50.37	48.89	54	-3.63	35.95	7.42	41.89	155	312	Average
5210	107.8	106.24			36.01	7.44	41.89	155	312	Peak
5210	96.23	94.67			36.01	7.44	41.89	155	312	Average
5350	54.24	52.51	74	-19.76	36.15	7.47	41.89	155	312	Peak
5350	42.96	41.23	54	-11.04	36.15	7.47	41.89	155	312	Average
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	57.16	55.34	74	-16.84	36.29	7.42	41.89	100	135	Peak
5150	47.58	45.76	54	-6.42	36.29	7.42	41.89	100	135	Average
5210	104.25	102.37			36.33	7.44	41.89	100	135	Peak
5210	95.43	93.55			36.33	7.44	41.89	100	135	Average
5350	53.36	51.37	74	-20.64	36.41	7.47	41.89	100	135	Peak
5350	44.15	42.16	54	-9.85	36.41	7.47	41.89	100	135	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5210MHz: Fundamental frequency.

Band 2

802.11a

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

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	53.93	52.45	74	-20.07	35.95	7.42	41.89	100	130	Peak
5150	44.74	43.26	54	-9.26	35.95	7.42	41.89	100	130	Average
5260	108.64	107.02			36.06	7.45	41.89	100	130	Peak
5260	98.83	97.21			36.06	7.45	41.89	100	130	Average
5350	53.01	51.28	74	-20.99	36.15	7.47	41.89	100	130	Peak
5350	43.32	41.59	54	-10.68	36.15	7.47	41.89	100	130	Average
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	53.06	51.24	74	-20.94	36.29	7.42	41.89	100	5	Peak
5150	43.97	42.15	54	-10.03	36.29	7.42	41.89	100	5	Average
5260	103.13	101.21			36.36	7.45	41.89	100	5	Peak
5260	92.67	90.75			36.36	7.45	41.89	100	5	Average
5350	52.35	50.36	74	-21.65	36.41	7.47	41.89	100	5	Peak
5350	42.56	40.57	54	-11.44	36.41	7.47	41.89	100	5	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5260MHz: Fundamental frequency.

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

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	53.93	52.45	74	-20.07	35.95	7.42	41.89	100	125	Peak
5150	42.71	41.23	54	-11.29	35.95	7.42	41.89	100	125	Average
5300	108.56	106.89			36.1	7.46	41.89	100	125	Peak
5300	97.45	95.78			36.1	7.46	41.89	100	125	Average
5350	53.62	51.89	74	-20.38	36.15	7.47	41.89	100	125	Peak
5350	43.02	41.29	54	-10.98	36.15	7.47	41.89	100	125	Average
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	54.16	52.34	74	-19.84	36.29	7.42	41.89	100	26	Peak
5150	44.4	42.58	54	-9.6	36.29	7.42	41.89	100	26	Average
5300	104.3	102.35			36.38	7.46	41.89	100	26	Peak
5300	92.97	91.02			36.38	7.46	41.89	100	26	Average
5350	53.88	51.89	74	-20.12	36.41	7.47	41.89	100	26	Peak
5350	43.24	41.25	54	-10.76	36.41	7.47	41.89	100	26	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	55.12	53.64	74	-18.88	35.95	7.42	41.89	100	135	Peak
5150	43.76	42.28	54	-10.24	35.95	7.42	41.89	100	135	Average
5320	109.23	107.54			36.12	7.46	41.89	100	135	Peak
5320	97.37	95.68			36.12	7.46	41.89	100	135	Average
5350	55.11	53.38	74	-18.89	36.15	7.47	41.89	100	135	Peak
5350	44.24	42.51	54	-9.76	36.15	7.47	41.89	100	135	Average
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	55.11	53.29	74	-18.89	36.29	7.42	41.89	100	28	Peak
5150	44.51	42.69	54	-9.49	36.29	7.42	41.89	100	28	Average
5320	104.59	102.63			36.39	7.46	41.89	100	28	Peak
5320	92.98	91.02			36.39	7.46	41.89	100	28	Average
5350	53.23	51.24	74	-20.77	36.41	7.47	41.89	100	28	Peak
5350	44.86	42.87	54	-9.14	36.41	7.47	41.89	100	28	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5320MHz: Fundamental frequency.

802.11n (20MHz)

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

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	53.93	52.45	74	-20.07	35.95	7.42	41.89	100	135	Peak
5150	43.06	41.58	54	-10.94	35.95	7.42	41.89	100	135	Average
5260	108.15	106.53			36.06	7.45	41.89	100	135	Peak
5260	97.83	96.21			36.06	7.45	41.89	100	135	Average
5350	53.01	51.28	74	-20.99	36.15	7.47	41.89	100	135	Peak
5350	42.4	40.67	54	-11.6	36.15	7.47	41.89	100	135	Average
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	53.24	51.42	74	-20.76	36.29	7.42	41.89	100	23	Peak
5150	44.1	42.28	54	-9.9	36.29	7.42	41.89	100	23	Average
5260	103.14	101.22			36.36	7.45	41.89	100	23	Peak
5260	92.16	90.24			36.36	7.45	41.89	100	23	Average
5350	54.33	52.34	74	-19.67	36.41	7.47	41.89	100	23	Peak
5350	43.17	41.18	54	-10.83	36.41	7.47	41.89	100	23	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5260MHz: Fundamental frequency.

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

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	52.74	51.26	74	-21.26	35.95	7.42	41.89	100	132	Peak
5150	43.99	42.51	54	-10.01	35.95	7.42	41.89	100	132	Average
5300	109.23	107.56			36.1	7.46	41.89	100	132	Peak
5300	98.54	96.87			36.1	7.46	41.89	100	132	Average
5350	54.07	52.34	74	-19.93	36.15	7.47	41.89	100	132	Peak
5350	42.9	41.17	54	-11.1	36.15	7.47	41.89	100	132	Average
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	52.71	50.89	74	-21.29	36.29	7.42	41.89	100	36	Peak
5150	42.09	40.27	54	-11.91	36.29	7.42	41.89	100	36	Average
5300	102.64	100.69			36.38	7.46	41.89	100	36	Peak
5300	92.27	90.32			36.38	7.46	41.89	100	36	Average
5350	53.28	51.29	74	-20.72	36.41	7.47	41.89	100	36	Peak
5350	43.04	41.05	54	-10.96	36.41	7.47	41.89	100	36	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	53.8	52.32	74	-20.2	35.95	7.42	41.89	100	145	Peak
5150	42.49	41.01	54	-11.51	35.95	7.42	41.89	100	145	Average
5320	109.93	108.24			36.12	7.46	41.89	100	145	Peak
5320	98.9	97.21			36.12	7.46	41.89	100	145	Average
5350	55.01	53.28	74	-18.99	36.15	7.47	41.89	100	145	Peak
5350	44.3	42.57	54	-9.7	36.15	7.47	41.89	100	145	Average
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	53.11	51.29	74	-20.89	36.29	7.42	41.89	100	35	Peak
5150	43.43	41.61	54	-10.57	36.29	7.42	41.89	100	35	Average
5320	104.33	102.37			36.39	7.46	41.89	100	35	Peak
5320	93.23	91.27			36.39	7.46	41.89	100	35	Average
5350	56.11	54.12	74	-17.89	36.41	7.47	41.89	100	35	Peak
5350	45.64	43.65	54	-8.36	36.41	7.47	41.89	100	35	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5320MHz: Fundamental frequency.

802.11n (40MHz)

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

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	52.96	51.48	74	-21.04	35.95	7.42	41.89	100	138	Peak
5150	42.54	41.06	54	-11.46	35.95	7.42	41.89	100	138	Average
5270	109.21	107.58			36.07	7.45	41.89	100	138	Peak
5270	97.49	95.86			36.07	7.45	41.89	100	138	Average
5350	54.19	52.46	74	-19.81	36.15	7.47	41.89	100	138	Peak
5350	42.98	41.25	54	-11.02	36.15	7.47	41.89	100	138	Average
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	53.6	51.78	74	-20.4	36.29	7.42	41.89	100	38	Peak
5150	43.34	41.52	54	-10.66	36.29	7.42	41.89	100	38	Average
5270	104.27	102.35			36.36	7.45	41.89	100	38	Peak
5270	92.94	91.02			36.36	7.45	41.89	100	38	Average
5350	54.4	52.41	74	-19.6	36.41	7.47	41.89	100	38	Peak
5350	43.55	41.56	54	-10.45	36.41	7.47	41.89	100	38	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5270MHz: Fundamental frequency.

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

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	52.83	51.35	74	-21.17	35.95	7.42	41.89	100	132	Peak
5150	43.77	42.29	54	-10.23	35.95	7.42	41.89	100	132	Average
5310	101.26	99.58			36.11	7.46	41.89	100	132	Peak
5310	89.54	87.86			36.11	7.46	41.89	100	132	Average
5350	61.99	60.26	74	-12.01	36.15	7.47	41.89	100	132	Peak
5350	50.88	49.15	54	**-3.12**	36.15	7.47	41.89	100	132	Average
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	53.1	51.28	74	-20.9	36.29	7.42	41.89	100	35	Peak
5150	43.97	42.15	54	-10.03	36.29	7.42	41.89	100	35	Average
5310	100.48	98.52			36.39	7.46	41.89	100	35	Peak
5310	90.71	88.75			36.39	7.46	41.89	100	35	Average
5350	58.37	56.38	74	-15.63	36.41	7.47	41.89	100	35	Peak
5350	48.84	46.85	54	-5.16	36.41	7.47	41.89	100	35	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5310MHz: Fundamental frequency.

802.11ac (80MHz)

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	52.33	50.85	74	-21.67	35.95	7.42	41.89	100	132	Peak
5150	42.74	41.26	54	-11.26	35.95	7.42	41.89	100	132	Average
5290	101.87	100.22			36.09	7.45	41.89	100	132	Peak
5290	91.3	89.65			36.09	7.45	41.89	100	132	Average
5350	61.25	59.52	74	-12.75	36.15	7.47	41.89	100	132	Peak
5350	50.86	49.13	54	-3.14	36.15	7.47	41.89	100	132	Average
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	53.06	51.24	74	-20.94	36.29	7.42	41.89	100	45	Peak
5150	42.41	40.59	54	-11.59	36.29	7.42	41.89	100	45	Average
5290	100.72	98.79			36.37	7.45	41.89	100	45	Peak
5290	90.45	88.52			36.37	7.45	41.89	100	45	Average
5350	57.3	55.31	74	-16.7	36.41	7.47	41.89	100	45	Peak
5350	47.25	45.26	54	-6.75	36.41	7.47	41.89	100	45	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5290MHz: Fundamental frequency.

Band 3

802.11a

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

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	52.11	50.24	74	-21.89	36.26	7.49	41.88	100	135	Peak
5460	42.02	40.15	54	-11.98	36.26	7.49	41.88	100	135	Average
#5470	54.74	52.86	68.3	-13.56	36.27	7.49	41.88	100	135	Peak
5500	105.48	103.56			36.3	7.5	41.88	100	135	Peak
5500	94.7	92.78			36.3	7.5	41.88	100	135	Average
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	52.21	50.12	74	-21.79	36.48	7.49	41.88	100	15	Peak
5460	43.35	41.26	54	-10.65	36.48	7.49	41.88	100	15	Average
#5470	55.34	53.25	68.3	-12.96	36.48	7.49	41.88	100	15	Peak
5500	101.75	99.63			36.5	7.5	41.88	100	15	Peak
5500	91.33	89.21			36.5	7.5	41.88	100	15	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	52.58	50.71	74	-21.42	36.26	7.49	41.88	100	136	Peak
5460	42.32	40.45	54	-11.68	36.26	7.49	41.88	100	136	Average
#5470	54.55	52.67	68.3	-13.75	36.27	7.49	41.88	100	136	Peak
5580	106.23	104.25			36.33	7.58	41.93	100	136	Peak
5580	95.49	93.51			36.33	7.58	41.93	100	136	Average
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	52.21	50.12	74	-21.79	36.48	7.49	41.88	100	25	Peak
5460	41.97	39.88	54	-12.03	36.48	7.49	41.88	100	25	Average
#5470	53.68	51.59	68.3	-14.62	36.48	7.49	41.88	100	25	Peak
5580	102.52	100.32			36.55	7.58	41.93	100	25	Peak
5580	92.35	90.15			36.55	7.58	41.93	100	25	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5700	106.66	104.59			36.38	7.7	42.01	100	148	Peak
5700	96.29	94.22			36.38	7.7	42.01	100	148	Average
#5725	55.74	53.64	68.3	-12.56	36.39	7.73	42.02	100	148	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
5700	103.17	100.86			36.62	7.7	42.01	100	45	Peak
5700	92.67	90.36			36.62	7.7	42.01	100	45	Average
#5725	54.23	51.89	68.3	-14.07	36.63	7.73	42.02	100	45	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.

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
#5470	48.72	46.84	68.3	-19.58	36.27	7.49	41.88	100	112	Peak
5720	105.84	103.75			36.39	7.72	42.02	100	112	Peak
5720	95.67	93.58			36.39	7.72	42.02	100	112	Average
#5850	50.85	48.65	68.3	-17.45	36.44	7.86	42.10	100	112	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
#5470	49.51	47.42	68.3	-18.79	36.48	7.49	41.88	100	305	Peak
5720	102.5	100.17			36.63	7.72	42.02	100	305	Peak
5720	94.04	91.71			36.63	7.72	42.02	100	305	Average
#5850	51.98	49.51	68.3	-16.32	36.71	7.86	42.10	100	305	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	51.88	50.01	74	-22.12	36.26	7.49	41.88	100	124	Peak
5460	43.44	41.57	54	-10.56	36.26	7.49	41.88	100	124	Average
#5470	55.11	53.23	68.3	-13.19	36.27	7.49	41.88	100	124	Peak
5500	106.08	104.16			36.3	7.5	41.88	100	124	Peak
5500	95.77	93.85			36.3	7.5	41.88	100	124	Average
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	51.71	49.62	74	-22.29	36.48	7.49	41.88	100	36	Peak
5460	41.93	39.84	54	-12.07	36.48	7.49	41.88	100	36	Average
#5470	53.37	51.28	68.3	-14.93	36.48	7.49	41.88	100	36	Peak
5500	102.17	100.05			36.5	7.5	41.88	100	36	Peak
5500	92.24	90.12			36.5	7.5	41.88	100	36	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	51.73	49.86	74	-22.27	36.26	7.49	41.88	100	126	Peak
5460	41.52	39.65	54	-12.48	36.26	7.49	41.88	100	126	Average
#5470	52.26	50.38	68.3	-16.04	36.27	7.49	41.88	100	126	Peak
5580	107.19	105.21			36.33	7.58	41.93	100	126	Peak
5580	96.5	94.52			36.33	7.58	41.93	100	126	Average
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	51.72	49.63	74	-22.28	36.48	7.49	41.88	100	28	Peak
5460	42.24	40.15	54	-11.76	36.48	7.49	41.88	100	28	Average
#5470	54.43	52.34	68.3	-13.87	36.48	7.49	41.88	100	28	Peak
5580	101.98	99.78			36.55	7.58	41.93	100	28	Peak
5580	90.89	88.69			36.55	7.58	41.93	100	28	Average

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5700	107.9	105.83			36.38	7.7	42.01	100	142	Peak
5700	96.65	94.58			36.38	7.7	42.01	100	142	Average
#5725	56.34	54.24	68.3	-11.96	36.39	7.73	42.02	100	142	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
5700	102.57	100.26			36.62	7.7	42.01	100	31	Peak
5700	92.55	90.24			36.62	7.7	42.01	100	31	Average
#5725	54.82	52.48	68.3	-14.38	36.63	7.73	42.02	100	31	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
#5470	49.33	47.45	68.3	-18.97	36.27	7.49	41.88	100	115	Peak
5720	103.88	101.79			36.39	7.72	42.02	100	115	Peak
5720	94.5	92.41			36.39	7.72	42.02	100	115	Average
#5850	52.54	50.34	68.3	-15.76	36.44	7.86	42.1	100	115	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
#5470	48.98	46.89	68.3	-19.32	36.48	7.49	41.88	100	315	Peak
5720	102.7	100.37			36.63	7.72	42.02	100	315	Peak
5720	93.55	91.22			36.63	7.72	42.02	100	315	Average
#5850	52.33	49.86	68.3	-15.97	36.71	7.86	42.1	100	315	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.

802.11n (40MHz)

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

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	55.73	53.86	74	-18.27	36.26	7.49	41.88	100	135	Peak
5460	46.18	44.31	54	-7.82	36.26	7.49	41.88	100	135	Average
#5470	60.64	58.76	68.3	-7.66	36.27	7.49	41.88	100	135	Peak
5510	105.57	103.65			36.3	7.51	41.89	100	135	Peak
5510	95.18	93.26			36.3	7.51	41.89	100	135	Average
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	54.45	52.36	74	-19.55	36.48	7.49	41.88	100	21	Peak
5460	44.34	42.25	54	-9.66	36.48	7.49	41.88	100	21	Average
#5470	57.32	55.23	68.3	-10.98	36.48	7.49	41.88	100	21	Peak
5510	101.99	99.86			36.51	7.51	41.89	100	21	Peak
5510	92.54	90.41			36.51	7.51	41.89	100	21	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5510MHz: Fundamental frequency.
3. #: Out of restricted band.

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

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	52.35	50.48	74	-21.65	36.26	7.49	41.88	100	142	Peak
5460	42.02	40.15	54	-11.98	36.26	7.49	41.88	100	142	Average
#5470	54.55	52.67	68.3	-13.75	36.27	7.49	41.88	100	142	Peak
5550	105.22	103.26			36.32	7.55	41.91	100	142	Peak
5550	94.64	92.68			36.32	7.55	41.91	100	142	Average
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	51.61	49.52	74	-22.39	36.48	7.49	41.88	100	12	Peak
5460	41.54	39.45	54	-12.46	36.48	7.49	41.88	100	12	Average
#5470	54.22	52.13	68.3	-14.08	36.48	7.49	41.88	100	12	Peak
5550	101.62	99.45			36.53	7.55	41.91	100	12	Peak
5550	91.42	89.25			36.53	7.55	41.91	100	12	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5550MHz: Fundamental frequency.
3. #: Out of restricted band.

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

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
5670	105.17	103.12			36.37	7.67	41.99	100	128	Peak
5670	94.73	92.68			36.37	7.67	41.99	100	128	Average
#5725	59.26	57.16	68.3	-9.04	36.39	7.73	42.02	100	128	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
5670	102.5	100.22			36.6	7.67	41.99	100	25	Peak
5670	92.7	90.42			36.6	7.67	41.99	100	25	Average
#5725	58.58	56.24	68.3	-9.72	36.63	7.73	42.02	100	25	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.

CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
#5470	48.79	46.91	68.3	-19.51	36.27	7.49	41.88	100	116	Peak
5710	104.54	102.46			36.38	7.71	42.01	100	116	Peak
5710	94.43	92.35			36.38	7.71	42.01	100	116	Average
#5850	51.64	49.44	68.3	-16.66	36.44	7.86	42.10	100	116	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
#5470	49.68	47.59	68.3	-18.62	36.48	7.49	41.88	100	312	Peak
5710	103.56	101.23			36.63	7.71	42.01	100	312	Peak
5710	93.01	90.68			36.63	7.71	42.01	100	312	Average
#5850	52.08	49.61	68.3	-16.22	36.71	7.86	42.10	100	312	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5710MHz: Fundamental frequency.
3. #: Out of restricted band.

802.11ac (80MHz)

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	55.11	53.24	74	-18.89	36.26	7.49	41.88	100	132	Peak
5460	45.57	43.7	54	-8.43	36.26	7.49	41.88	100	132	Average
#5470	59.33	57.45	68.3	-8.97	36.27	7.49	41.88	100	132	Peak
5530	104.25	102.31			36.31	7.53	41.9	100	132	Peak
5530	94.09	92.15			36.31	7.53	41.9	100	132	Average
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	54.43	52.34	74	-19.57	36.48	7.49	41.88	100	16	Peak
5460	44.6	42.51	54	-9.4	36.48	7.49	41.88	100	16	Average
#5470	57.57	55.48	68.3	-10.73	36.48	7.49	41.88	100	16	Peak
5530	102.17	100.02			36.52	7.53	41.9	100	16	Peak
5530	92.39	90.24			36.52	7.53	41.9	100	16	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5530MHz: Fundamental frequency.
3. #: Out of restricted band.

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5610	97.69	95.69			36.34	7.61	41.95	100	325	Peak
5610	89.87	87.87			36.34	7.61	41.95	100	325	Average
#5725	61.46	59.36	68.3	-6.84	36.39	7.73	42.02	100	325	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
5610	89.88	87.65			36.57	7.61	41.95	100	186	Peak
5610	81.81	79.58			36.57	7.61	41.95	100	186	Average
#5725	59.58	57.24	68.3	-8.72	36.63	7.73	42.02	100	186	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5530MHz: Fundamental frequency.
3. #: Out of restricted band.

CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
#5470	50.51	48.63	68.3	-17.79	36.27	7.49	41.88	100	112	Peak
5690	100.71	98.64			36.38	7.69	42.0	100	112	Peak
5690	90.82	88.75			36.38	7.69	42.0	100	112	Average
#5850	51.73	49.53	68.3	-16.57	36.44	7.86	42.1	100	112	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
#5470	48.87	46.78	68.3	-19.43	36.48	7.49	41.88	100	315	Peak
5690	97.62	95.32			36.61	7.69	42	100	315	Peak
5690	88.73	86.43			36.61	7.69	42	100	315	Average
#5850	51.08	48.61	68.3	-17.22	36.71	7.86	42.1	100	315	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5690MHz: Fundamental frequency.
3. #: Out of restricted band.

Band 4 DATA FROM ANT 0+ANT 1:

802.11a

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

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	104.71	105.59			37.55	7.75	46.18	100	135	Peak
5745	95.01	95.89			37.55	7.75	46.18	100	135	Average
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	100.27	101.15			37.55	7.75	46.18	100	21	Peak
5745	90.38	91.26			37.55	7.75	46.18	100	21	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5745MHz: Fundamental frequency.

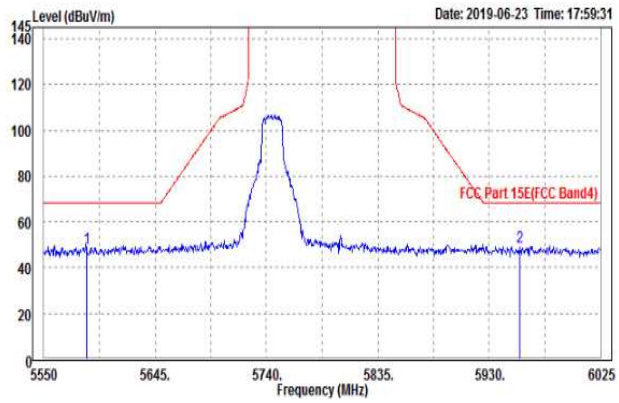
OOBE DATA

802.11a

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
5586.575	48.69	46.71	68.3	-19.61	36.33	7.59	41.94	100	130	Peak
5955.65	48.92	46.65	68.3	-19.38	36.48	7.96	42.17	100	130	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
5600.35	54	51.78	68.3	-14.3	36.56	7.6	41.94	100	130	Peak
5986.05	53.28	50.68	68.3	-15.02	36.79	8	42.19	100	130	Peak

CH 149

Horiontal



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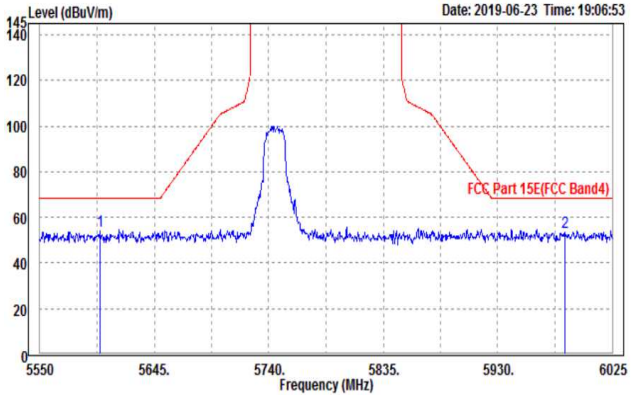


CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	103.82	104.63			37.57	7.79	46.17	100	65	Peak
5785	93.71	94.52			37.57	7.79	46.17	100	63	Average
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	99.57	101.28			36.67	7.79	46.17	100	45	Peak
5785	88.93	90.64			36.67	7.79	46.17	100	45	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5785MHz: Fundamental frequency.

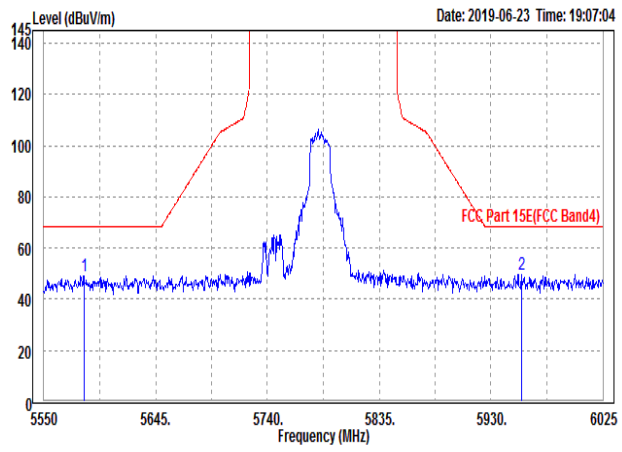
OOBE DATA

802.11a

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
5584.2	49	47.01	68.3	-19.3	36.33	7.59	41.93	100	130	Peak
5955.65	49.61	47.34	68.3	-18.69	36.48	7.96	42.17	100	130	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
5598.925	55.48	53.26	68.3	-12.82	36.56	7.6	41.94	100	130	Peak
5969.425	55.03	52.45	68.3	-13.27	36.78	7.98	42.18	100	130	Peak

CH 157

Horiontal



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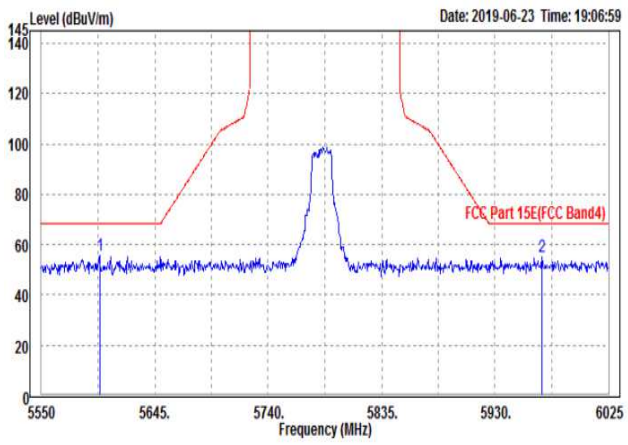


CHANNEL	TX Channel 161	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5805	104.44	105.21			37.58	7.81	46.16	100	135	Peak
5805	94.49	95.26			37.58	7.81	46.16	100	135	Average
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
5805	100.35	101.23			37.55	7.75	46.18	100	75	Peak
5805	90.26	91.14			37.55	7.75	46.18	100	75	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5805MHz: Fundamental frequency.

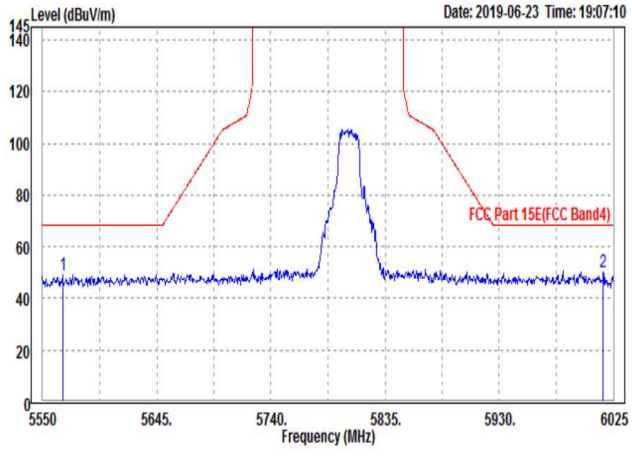
OOBE DATA

802.11a

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
5566.625	48.85	46.87	68.3	-19.45	36.33	7.57	41.92	100	130	Peak
6016.45	50.15	47.88	68.3	-18.15	36.51	7.98	42.22	100	130	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
5571.85	53.33	51.15	68.3	-14.97	36.54	7.57	41.93	100	130	Peak
5968.475	54.46	51.88	68.3	-13.84	36.78	7.98	42.18	100	130	Peak

CH 161

Horiontal



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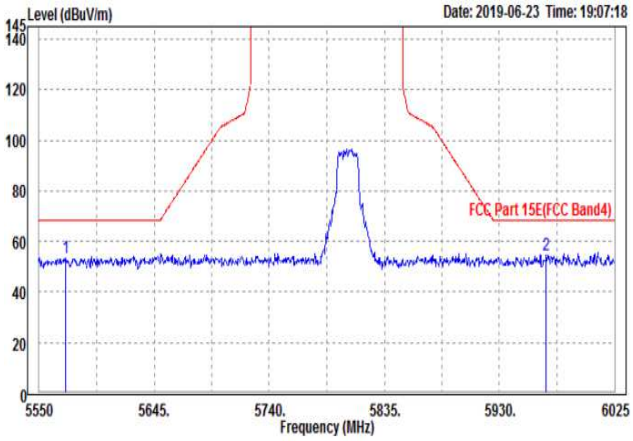


802.11n (20MHz)

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

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	104.18	105.06			37.55	7.75	46.18	100	136	Peak
5745	93.64	94.52			37.55	7.75	46.18	100	136	Average
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	100.35	101.23			37.55	7.75	46.18	100	75	Peak
5745	90.26	91.14			37.55	7.75	46.18	100	75	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5745MHz: Fundamental frequency.

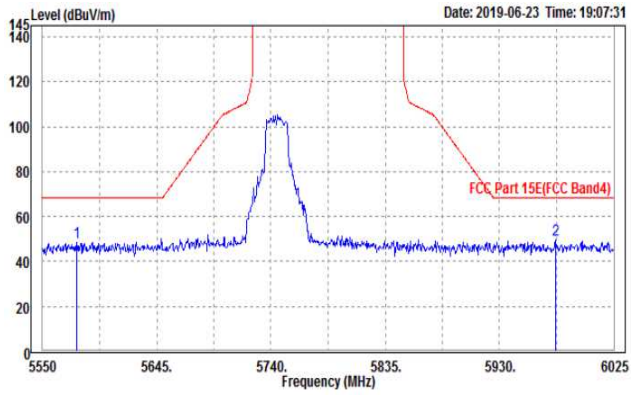
OOBE DATA

802.11n (20MHZ)

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
5578.5	48.62	46.64	68.3	-19.68	36.33	7.58	41.93	100	130	Peak
5976.55	49.44	47.14	68.3	-18.86	36.49	7.99	42.18	100	130	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
5590.375	53.6	51.4	68.3	-14.7	36.55	7.59	41.94	100	130	Peak
5979.875	53.59	51	68.3	-14.71	36.79	7.99	42.19	100	130	Peak

CH 149

Horiontal



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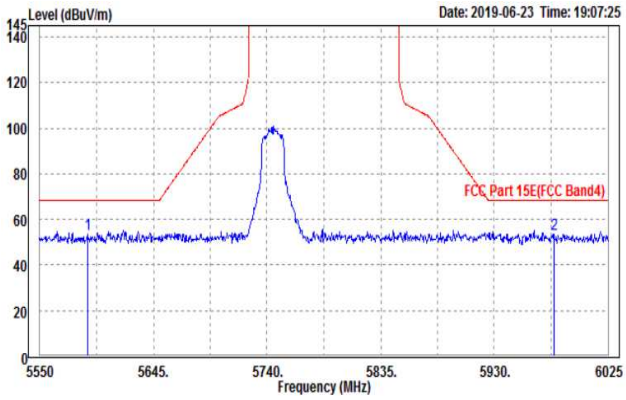


CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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	104.43	105.24			37.57	7.79	46.17	100	145	Peak
5785	94.42	95.23			37.57	7.79	46.17	100	145	Average
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	100	101.71			36.67	7.79	46.17	100	25	Peak
5785	88.31	90.02			36.67	7.79	46.17	100	25	Average

REMARKS:

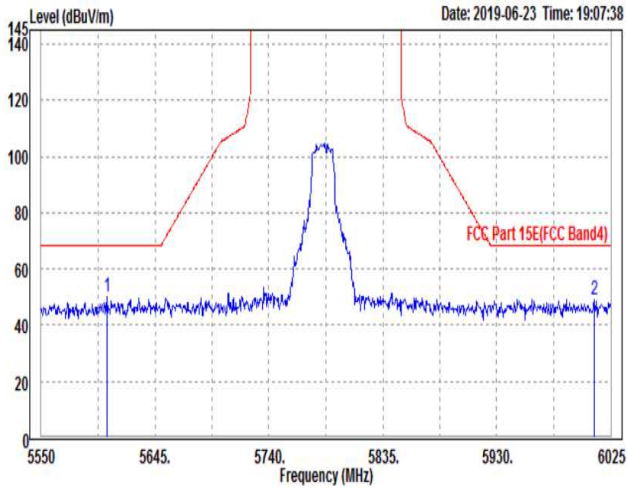
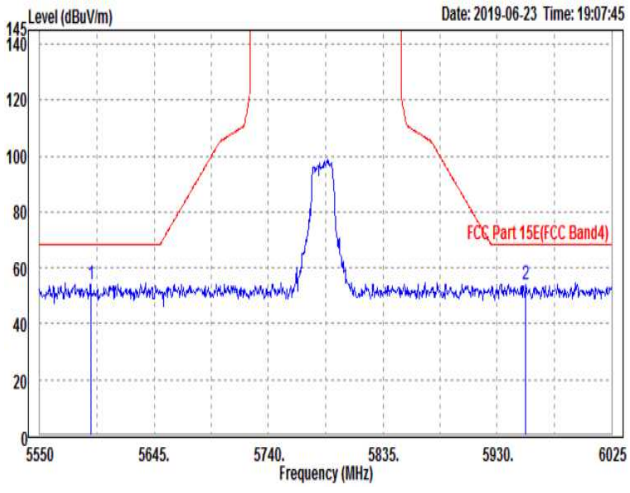
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5785MHz: Fundamental frequency.

OOBE DATA

802.11n (20MHZ)

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
5605.1	49.98	47.98	68.3	-18.32	36.34	7.61	41.95	100	130	Peak
6011.7	48.83	46.54	68.3	-19.47	36.51	7.99	42.21	100	130	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
5592.275	54.13	51.92	68.3	-14.17	36.56	7.59	41.94	100	130	Peak
5953.75	53.99	51.43	68.3	-14.31	36.77	7.96	42.17	100	130	Peak

CH 157

Horiontal	Vertical
	

CHANNEL	TX Channel 161	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5805	103.49	104.26			37.58	7.81	46.16	100	0	Peak
5805	92.51	93.28			37.58	7.81	46.16	100	0	Average
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
5805	99.08	99.85			37.58	7.81	46.16	100	35	Peak
5805	88.9	89.67			37.58	7.81	46.16	100	35	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5805MHz: Fundamental frequency.

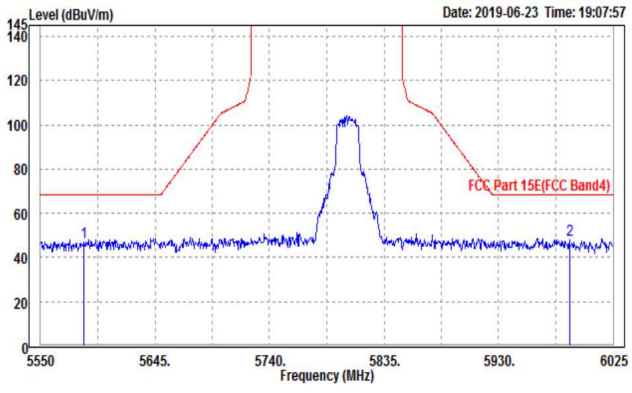
OOBE DATA

802.11n (20MHZ)

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
5586.1	46.69	44.71	68.3	-21.61	36.33	7.59	41.94	100	130	Peak
5988.9	47.78	45.47	68.3	-20.52	36.5	8	42.19	100	130	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
5596.55	53.26	51.04	68.3	-15.04	36.56	7.6	41.94	100	130	Peak
5980.825	54.4	51.81	68.3	-13.9	36.79	7.99	42.19	100	130	Peak

CH 161

Horiontal



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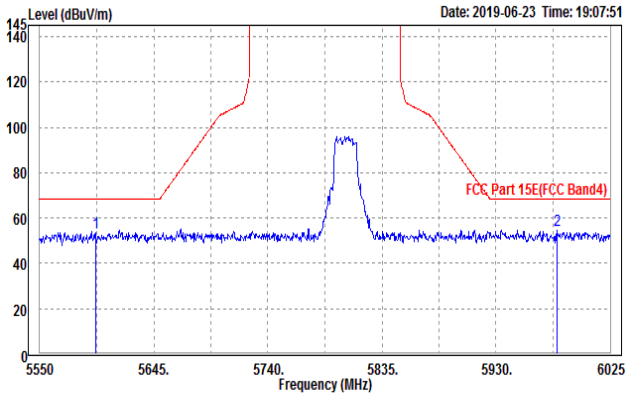


802.11n (40MHz)

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

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	104.55	105.42			37.55	7.76	46.18	100	138	Peak
5755	94.41	95.28			37.55	7.76	46.18	100	138	Average
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	98.74	100.51			36.65	7.76	46.18	100	62	Peak
5755	88.69	90.46			36.65	7.76	46.18	100	62	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5755MHz: Fundamental frequency.

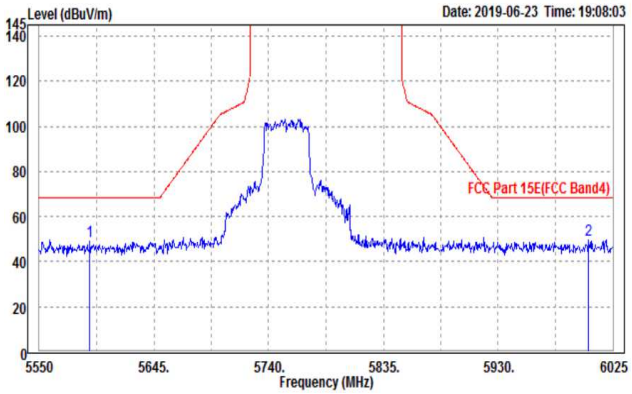
OOBE DATA

802.11n (40MHZ)

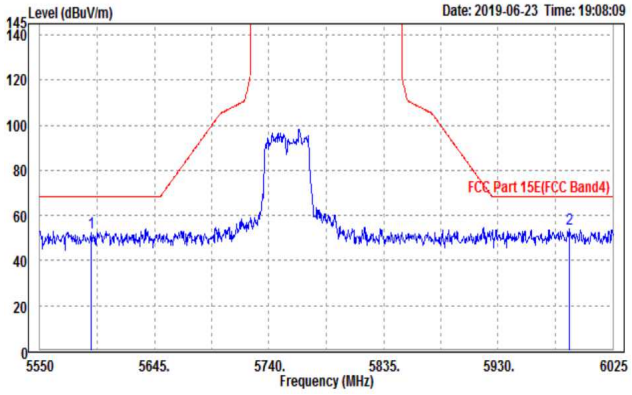
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5591.8	49.14	47.15	68.3	-19.16	36.34	7.59	41.94	100	130	Peak
6005.05	49.39	47.1	68.3	-18.91	36.5	8	42.21	100	130	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
5592.275	52.59	50.38	68.3	-15.71	36.56	7.59	41.94	100	130	Peak
5988.9	54.16	51.56	68.3	-14.14	36.79	8	42.19	100	130	Peak

CH 151

Horiontal



Vertical



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

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	103.5	104.29			37.58	7.8	46.17	100	126	Peak
5795	93.46	94.25			37.58	7.8	46.17	100	126	Average
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	99.66	100.45			37.58	7.8	46.17	100	325	Peak
5795	89.34	90.13			37.58	7.8	46.17	100	325	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5795MHz: Fundamental frequency.

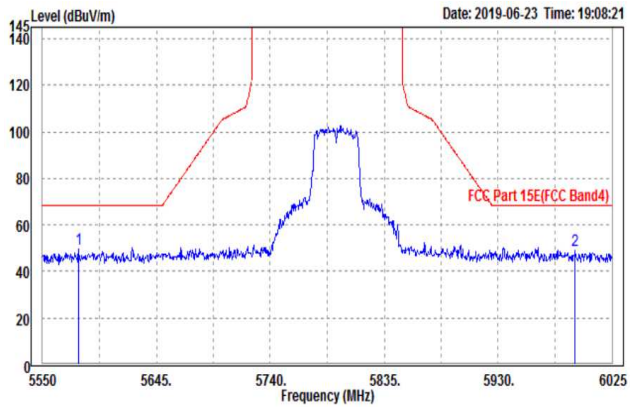
OOBE DATA

802.11n (40MHZ)

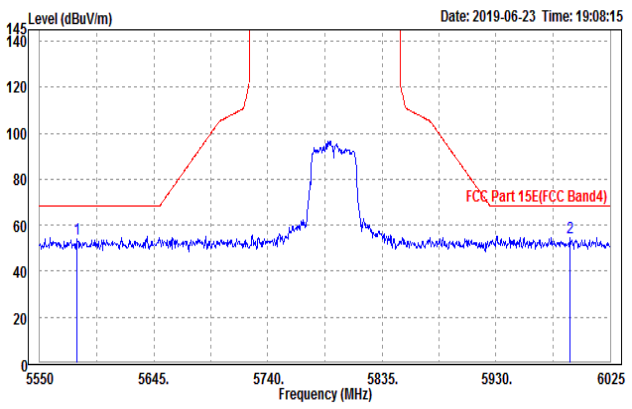
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5580.4	49.49	47.51	68.3	-18.81	36.33	7.58	41.93	100	130	Peak
5994.125	48.97	46.67	68.3	-19.33	36.5	8	42.2	100	130	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
5581.35	53.98	51.78	68.3	-14.32	36.55	7.58	41.93	100	130	Peak
5991.75	54.47	51.86	68.3	-13.83	36.8	8	42.19	100	130	Peak

CH 159

Horiontal



Vertical



802.11ac (80MHz)

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

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
5775	104.42	105.24			37.57	7.78	46.17	100	148	Peak
5775	94.38	95.2			37.57	7.78	46.17	100	148	Average
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
5775	98.14	99.86			36.67	7.78	46.17	100	12	Peak
5775	87.92	89.64			36.67	7.78	46.17	100	12	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Emission level – Limit value.
2. 5775MHz: Fundamental frequency.

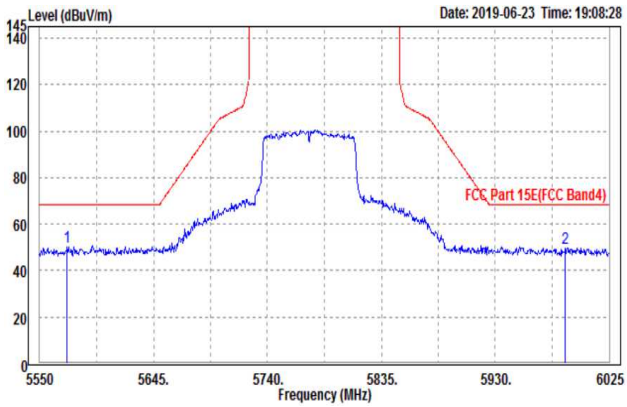
OOBE DATA

802.11ac (80MHZ)

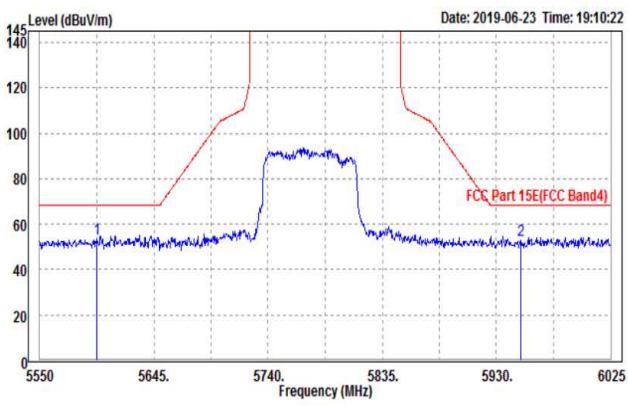
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5572.8	50.41	48.44	68.3	-17.89	36.33	7.57	41.93	100	130	Peak
5988.425	49.53	47.22	68.3	-18.77	36.5	8	42.19	100	130	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
5597.5	53.59	51.37	68.3	-14.71	36.56	7.6	41.94	100	130	Peak
5950.425	52.69	50.13	68.3	-15.61	36.77	7.96	42.17	100	130	Peak

CH 155

Horiontal



Vertical



3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

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

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 26,19	Feb. 25,20
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 26,19	Feb. 25,20

NOTE:

1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.2.3 TEST PROCEDURES

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

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

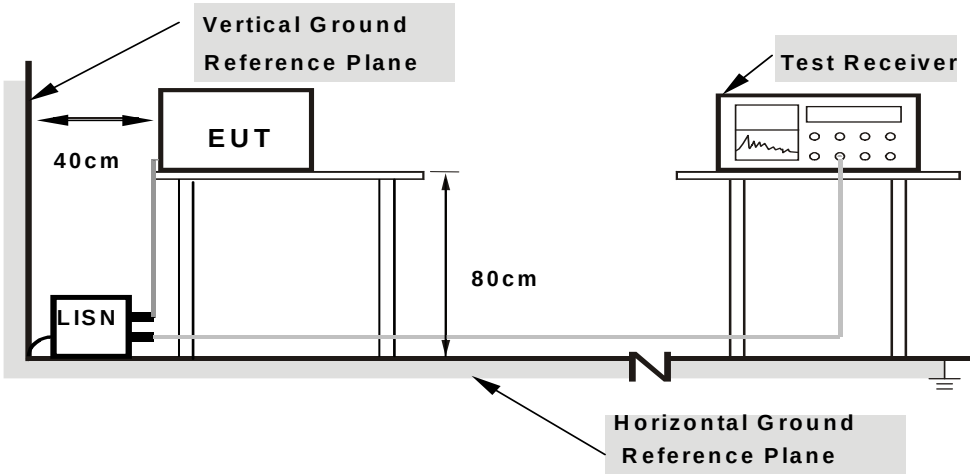
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

3.2.5 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).

3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

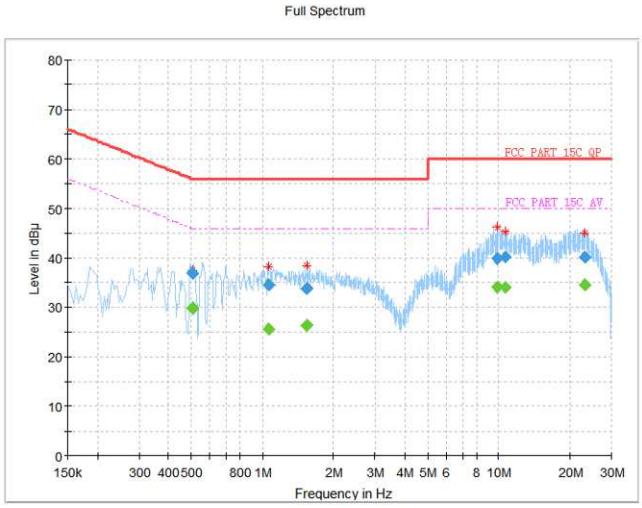
3.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA FROM ANT 0+ANT 1：

Frequency Range	150KHz ~ 30MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	**Environmental Conditions**	25deg. C, 52RH
Tested By	John Wen		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.508000	---	29.94	46.00	-16.06	L1	ON	10.1
0.508000	36.81	---	56.00	-19.19	L1	ON	10.1
1.060000	---	25.65	46.00	-20.35	L1	ON	10.3
1.060000	34.62	---	56.00	-21.38	L1	ON	10.3
1.532000	---	26.45	46.00	-19.55	L1	ON	10.3
1.532000	33.77	---	56.00	-22.23	L1	ON	10.3
9.872000	---	33.98	50.00	-16.02	L1	ON	10.6
9.872000	39.95	---	60.00	-20.05	L1	ON	10.6
10.696000	---	34.09	50.00	-15.91	L1	ON	10.6
10.696000	40.02	---	60.00	-19.98	L1	ON	10.6
23.184000	**---**	**34.53**	**50.00**	**-15.47**	**L1**	**ON**	**11.3**
23.184000	40.20	---	60.00	-19.80	L1	ON	11.3

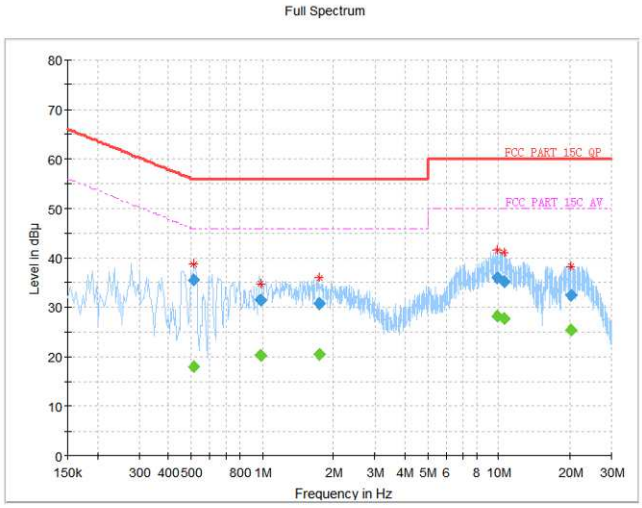
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25deg. C, 52RH
Tested By	John Wen		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.512000	---	18.04	46.00	-27.96	N	ON	9.9
0.512000	35.48	---	56.00	-20.52	N	ON	9.9
0.984000	---	20.23	46.00	-25.77	N	ON	10.0
0.984000	31.38	---	56.00	-24.62	N	ON	10.0
1.740000	---	20.46	46.00	-25.54	N	ON	10.0
1.740000	30.71	---	56.00	-25.29	N	ON	10.0
9.900000	---	28.19	50.00	-21.81	N	ON	10.3
9.900000	35.80	---	60.00	-24.20	N	ON	10.3
10.486000	---	27.86	50.00	-22.14	N	ON	10.3
10.486000	35.13	---	60.00	-24.87	N	ON	10.3
20.204000	---	25.34	50.00	-24.66	N	ON	10.5
20.204000	32.34	---	60.00	-27.66	N	ON	10.5

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

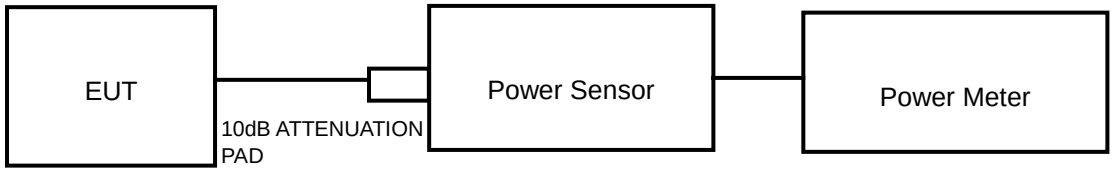
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24 dBm)
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)

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

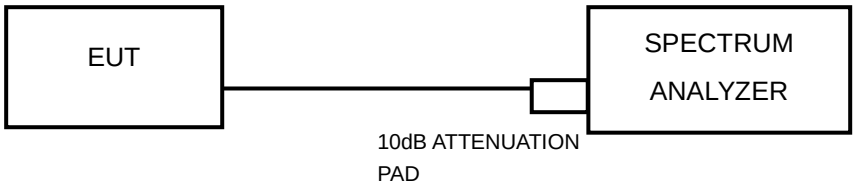
3.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

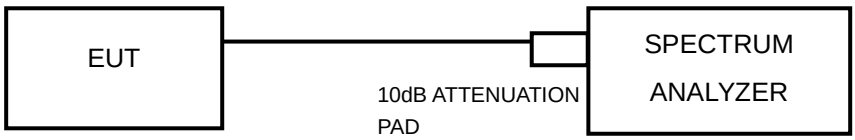
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



11ac TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 26,19	Feb. 25,20
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,19	Feb. 25,20
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Feb. 26,19	Feb. 25,20
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 26,19	Feb. 25,20

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

3.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

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

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

For 802.11ac (80MHz)

1. Measure the duty cycle, x, of the transmitter output signal as described in II.B.
2. Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW ≥ 3 MHz.
5. Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Add 10 log (1/x), where x is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is 25%.

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 ≥ 3 · 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.

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 EUT OPERATING CONDITIONS

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

3.3.7 TEST RESULTS

OUTPUT POWER:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER				POWER LIMIT (dBm)	PASS/FAIL
		ANT 0 (dBm)	ANT 1 (dBm)	Total (mW)	Total (dBm)		
36	5180	13.61	13.19	43.81	16.42	24	PASS
40	5200	13.76	13.60	46.68	16.69	24	PASS
48	5240	13.92	13.59	47.52	16.77	24	PASS
52	5260	13.92	13.77	48.48	16.86	24	PASS
60	5300	13.85	13.94	49.04	16.91	24	PASS
64	5320	14.14	14.08	51.53	17.12	24	PASS
100	5500	13.11	13.55	43.11	16.35	24	PASS
116	5580	13.95	14.12	50.65	17.05	24	PASS
140	5700	14.56	14.35	55.80	17.47	24	PASS
144	5720	14.44	14.12	53.62	17.29	24	PASS
144	5720	14.44	14.12	53.62	17.29	30	PASS
149	5745	15.31	14.88	64.72	18.11	30	PASS
157	5785	15.19	14.53	61.42	17.88	30	PASS
165	5825	15.11	14.48	60.49	17.82	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER				POWER LIMIT (dBm)	PASS/FAIL
		ANT 0 (dBm)	ANT 1 (dBm)	Total (mW)	Total (dBm)		
36	5180	13.53	13.14	43.15	16.35	24	PASS
40	5200	13.57	13.32	44.23	16.46	24	PASS
48	5240	13.74	13.51	46.10	16.64	24	PASS
52	5260	13.80	13.65	47.16	16.74	24	PASS
60	5300	13.99	13.74	48.72	16.88	24	PASS
64	5320	14.03	13.89	49.78	16.97	24	PASS
100	5500	13.01	13.61	42.96	16.33	24	PASS
116	5580	13.67	13.88	47.72	16.79	24	PASS
140	5700	14.25	14.33	53.71	17.30	24	PASS
144	5720	14.15	14.31	52.98	17.24	24	PASS
144	5720	14.15	14.31	52.98	17.24	30	PASS

149	5745	15.24	14.72	63.07	18.00	30	PASS
157	5785	15.01	14.41	59.30	17.73	30	PASS
165	5825	14.91	14.35	58.20	17.65	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER				POWER LIMIT (dBm)	PASS/FAIL
		ANT 0 (dBm)	ANT 1 (dBm)	Total (mW)	Total (dBm)		
38	5190	13.95	13.53	47.37	16.76	24	PASS
46	5230	14.13	13.73	49.49	16.94	24	PASS
54	5270	14.34	13.91	51.77	17.14	24	PASS
62	5310	12.16	12.24	33.19	15.21	24	PASS
102	5510	13.51	13.78	46.32	16.66	24	PASS
110	5550	13.88	13.97	49.38	16.94	24	PASS
134	5670	14.25	14.64	55.71	17.46	24	PASS
142	5710	14.36	14.45	55.15	17.42	24	PASS
142	5710	14.36	14.45	55.15	17.42	30	PASS
151	5755	15.35	14.73	63.99	18.06	30	PASS
165	5825	15.24	14.74	63.20	18.01	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER				POWER LIMIT (dBm)	PASS/FAIL
		ANT 0 (dBm)	ANT 1 (dBm)	Total (mW)	Total (dBm)		
42	5210	13.55	13.83	47.37	16.76	24	PASS
58	5290	12.48	12.81	49.49	16.94	24	PASS
106	5530	14.33	13.68	51.77	17.14	24	PASS
138	5690	14.12	14.12	33.19	15.21	24	PASS
138	5690	14.12	14.12	46.32	16.66	30	PASS
155	5775	15.01	14.42	49.38	16.94	30	PASS

99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH DATA FROM ANT 0:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.62	22.83	PASS
40	5200	16.62	23.76	PASS
48	5240	16.68	23.61	PASS
52	5260	16.68	22.14	PASS
60	5300	16.68	23.85	PASS
64	5320	16.62	23.11	PASS
100	5500	16.68	24.74	PASS
116	5580	16.80	24.66	PASS
140	5700	16.86	25.46	PASS
144	5720	16.64	23.58	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
144	5720	16.64	16.30	PASS
149	5745	16.86	16.28	PASS
157	5785	16.80	16.02	PASS
161	5805	18.00	16.90	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.82	24.42	PASS
40	5200	17.88	24.33	PASS
48	5240	17.82	24.36	PASS
52	5260	17.82	25.06	PASS
60	5300	17.82	24.24	PASS
64	5320	17.88	24.90	PASS
100	5500	17.94	25.14	PASS
116	5580	17.94	26.14	PASS
140	5700	17.94	26.48	PASS
144	5720	17.84	24.78	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
144	5720	17.84	16.53	PASS
149	5745	18.00	16.54	PASS
157	5785	18.00	16.51	PASS
161	5805	17.88	16.65	PASS

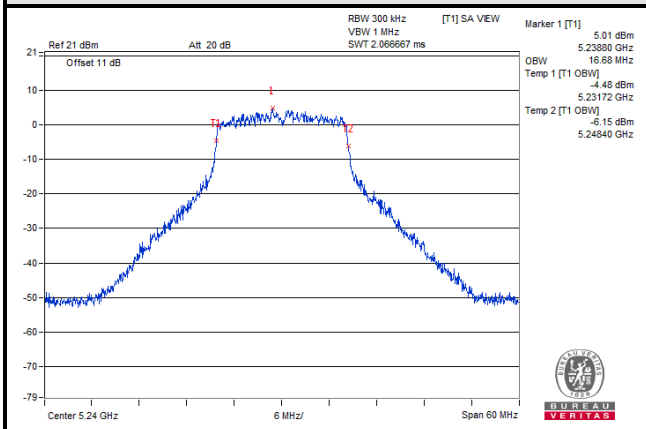
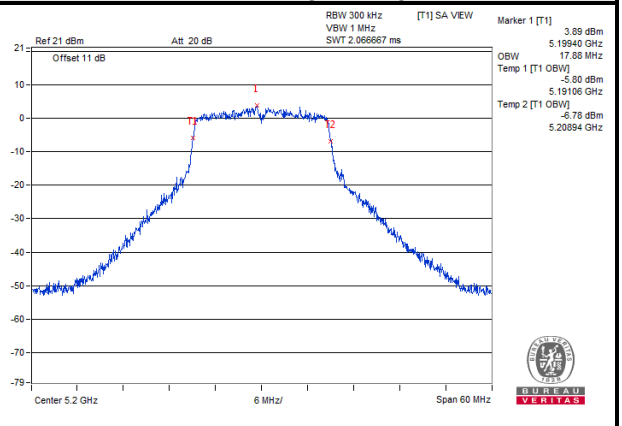
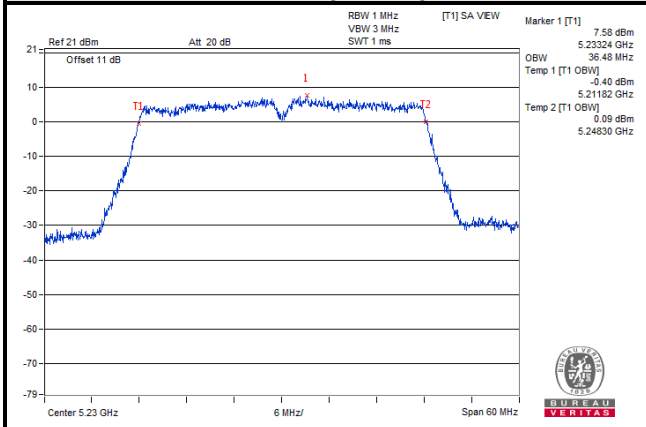
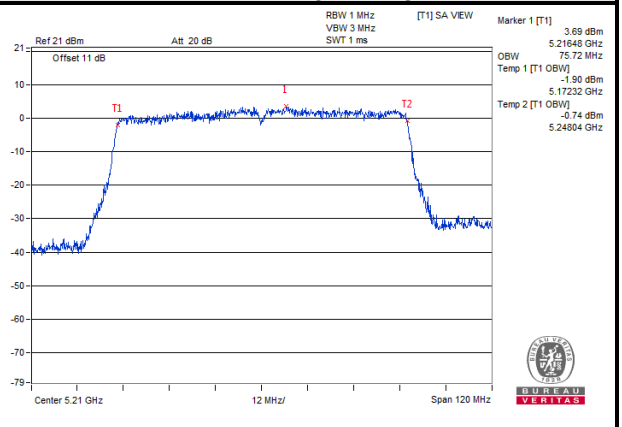
802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.42	42.06	PASS
46	5230	36.48	42.20	PASS
54	5270	36.48	42.05	PASS
62	5310	36.54	42.11	PASS
102	5510	36.54	42.31	PASS
110	5550	36.54	42.20	PASS
134	5670	36.54	42.29	PASS
142	5710	36.47	42.10	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
142	5710	36.47	36.30	PASS
151	5755	36.54	35.16	PASS
159	5795	36.54	36.26	PASS

802.11ac (80MHz)

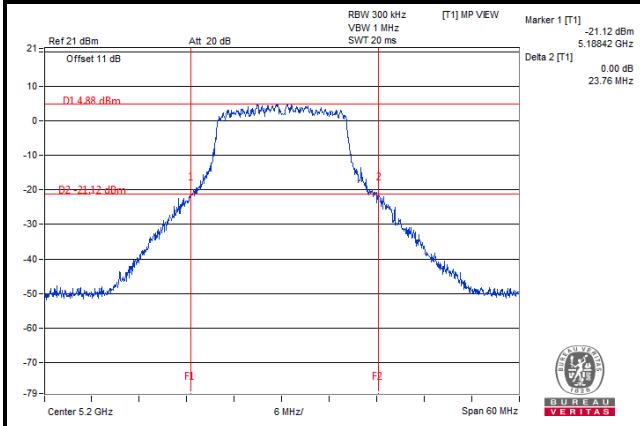
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.72	83.74	PASS
58	5290	75.72	83.73	PASS
106	5530	75.72	84.44	PASS
138	5690	75.66	84.16	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
138	5690	75.66	75.10	PASS
155	5775	75.72	75.18	PASS

For U-NII-1:

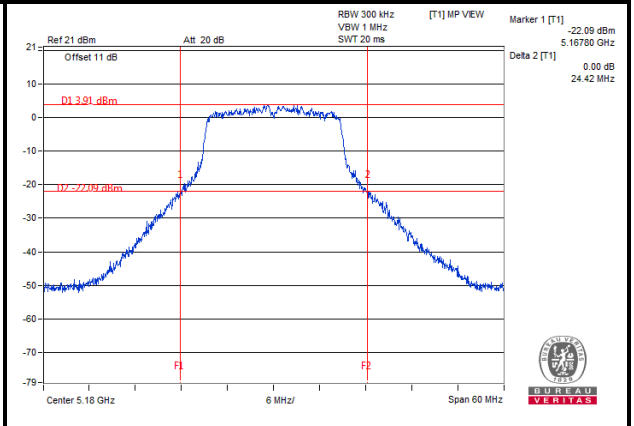
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

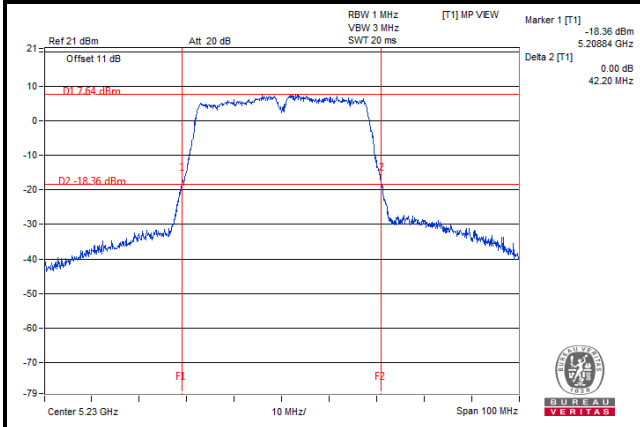
802.11a



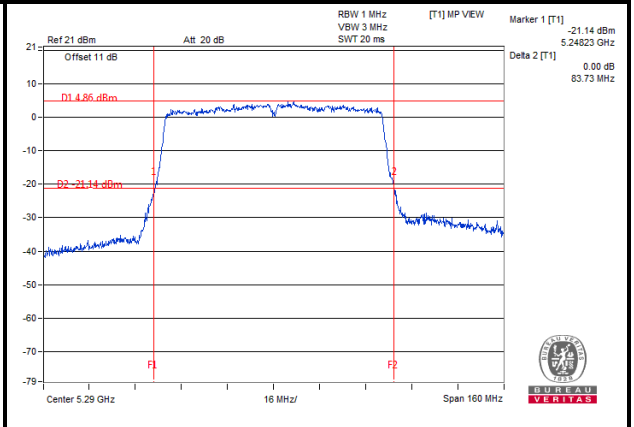
802.11n (20MHz)



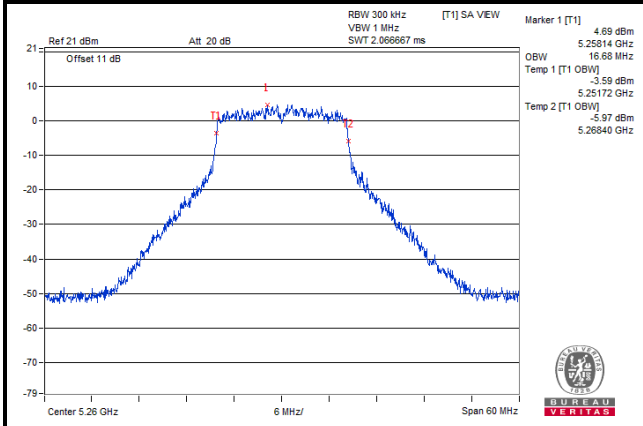
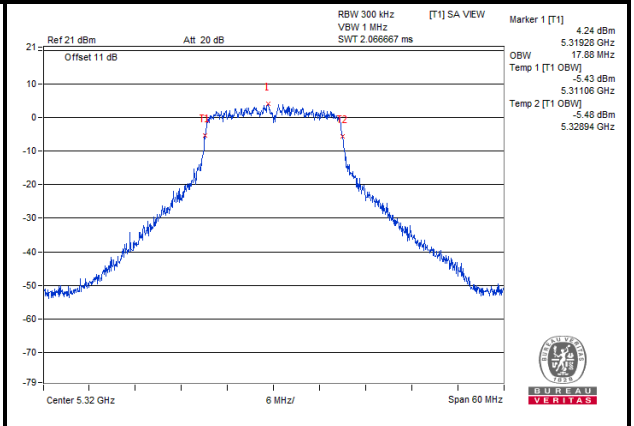
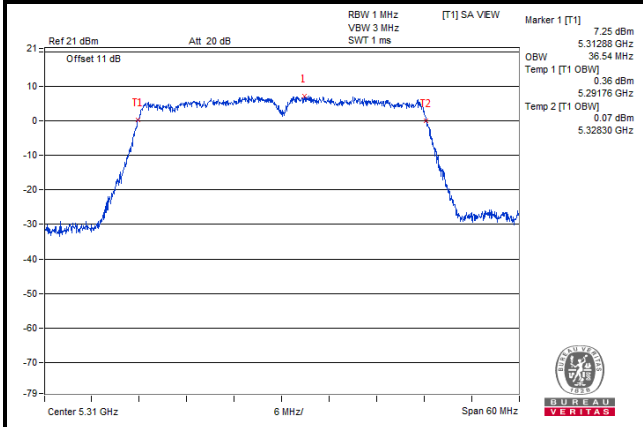
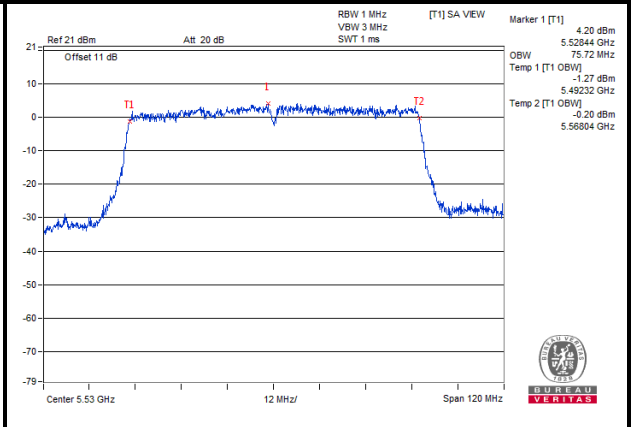
802.11n (40MHz)



802.11ac (80MHz)

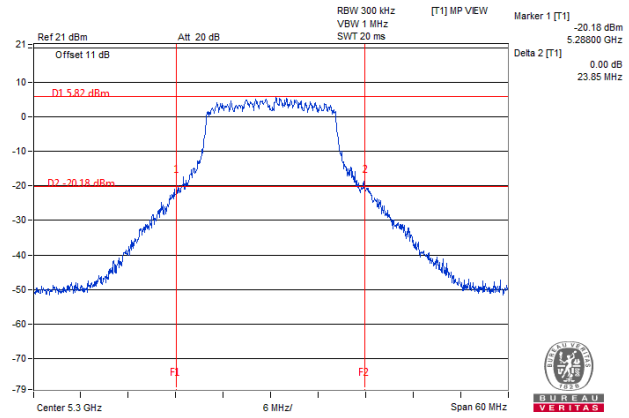


For U-NII-2A:

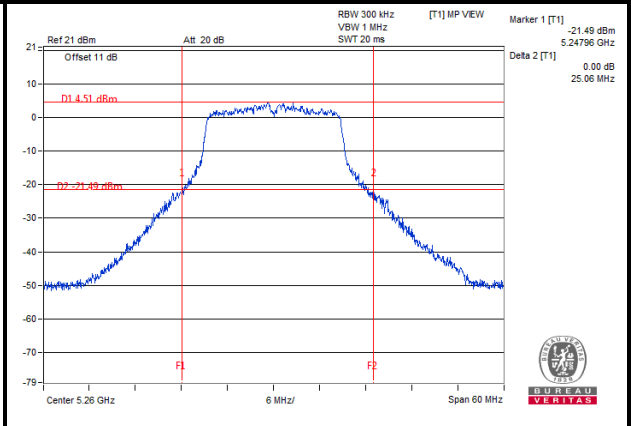
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

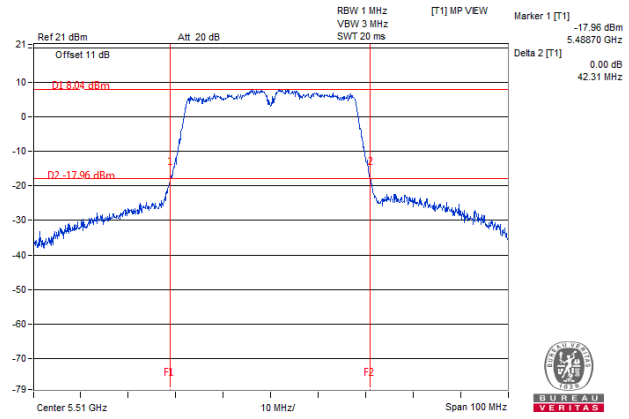
802.11a



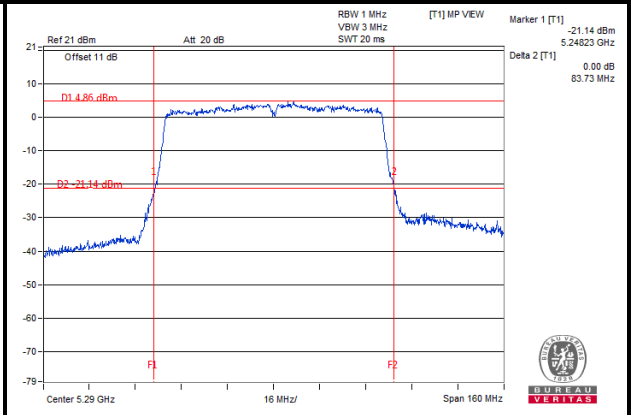
802.11n (20MHz)



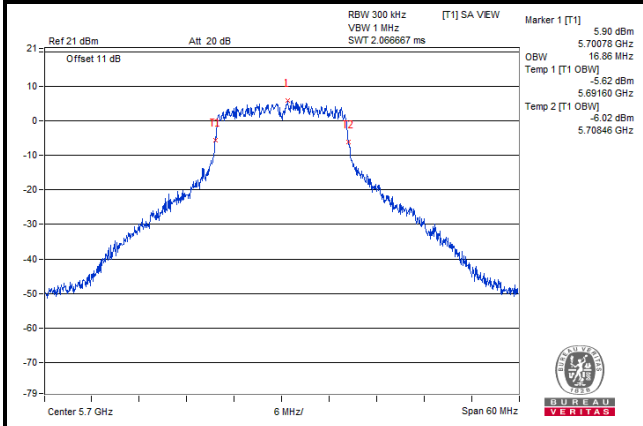
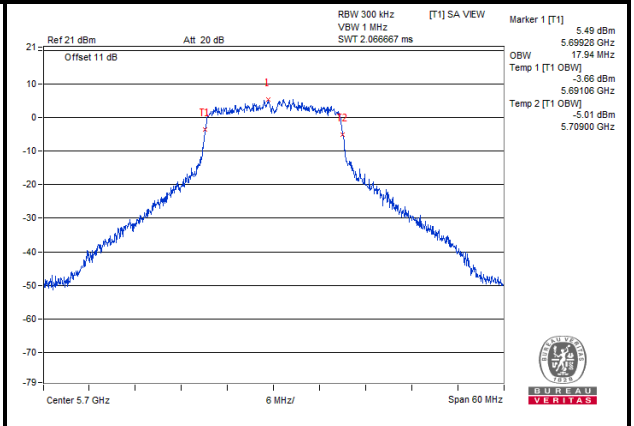
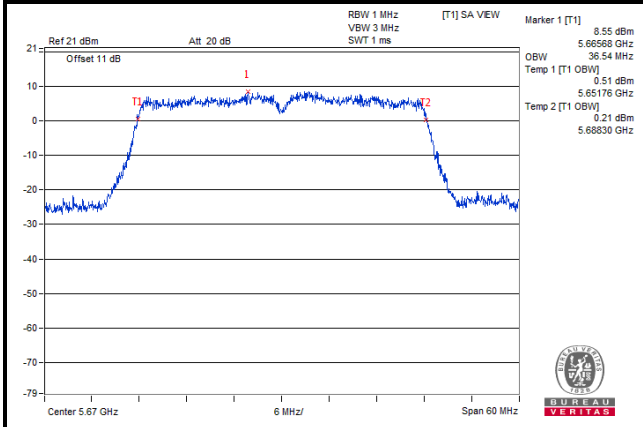
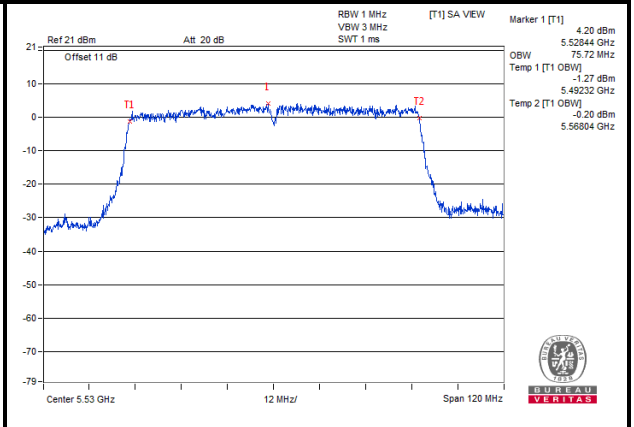
802.11n (40MHz)



802.11ac (80MHz)

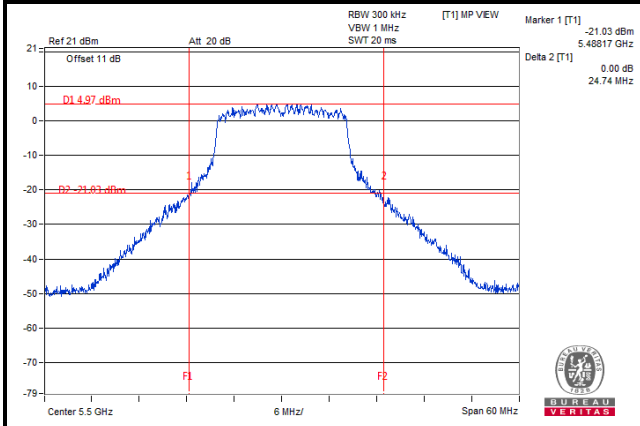


For U-NII-2C:

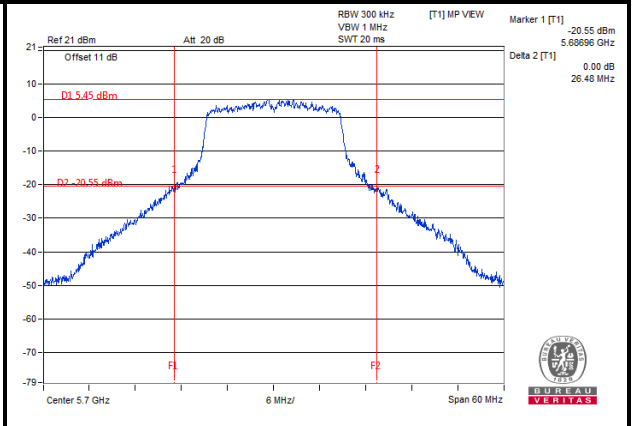
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

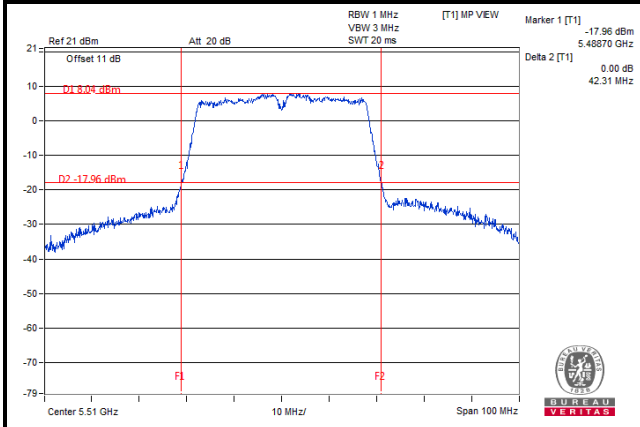
802.11a



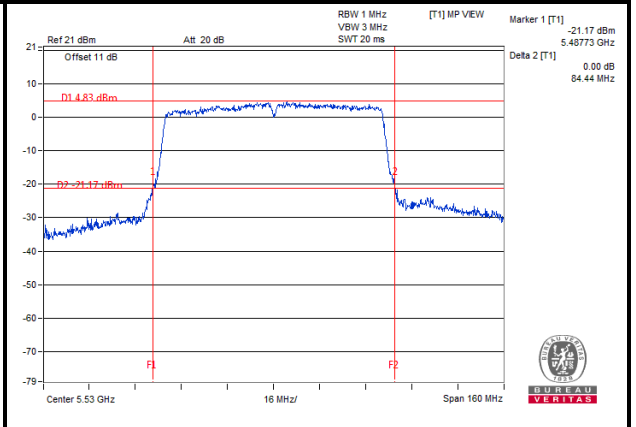
802.11n (20MHz)



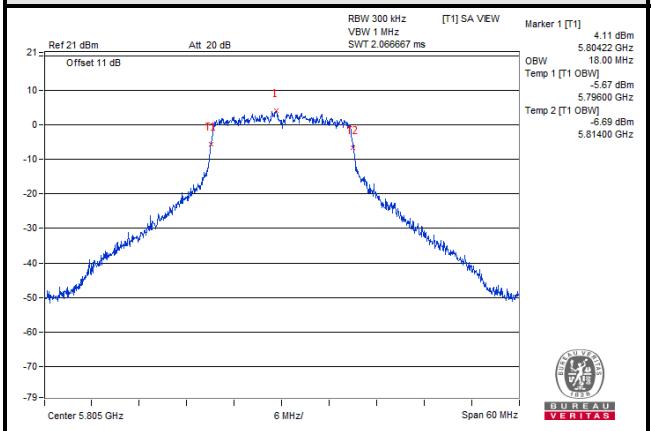
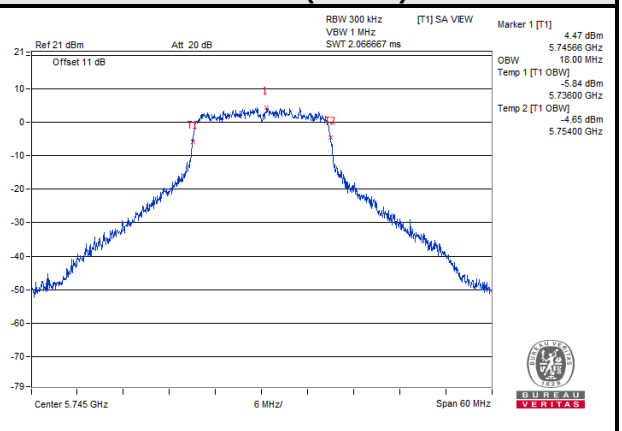
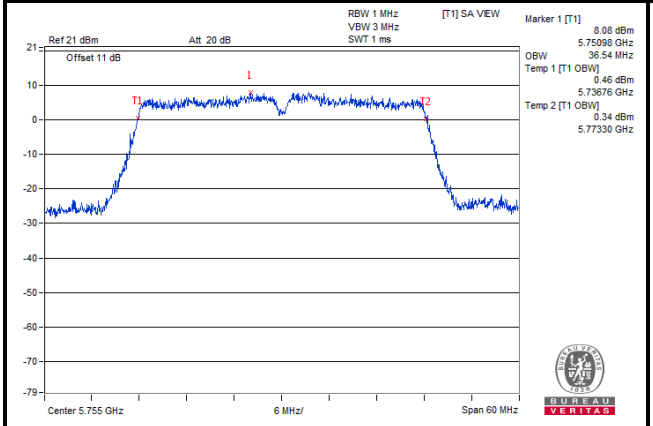
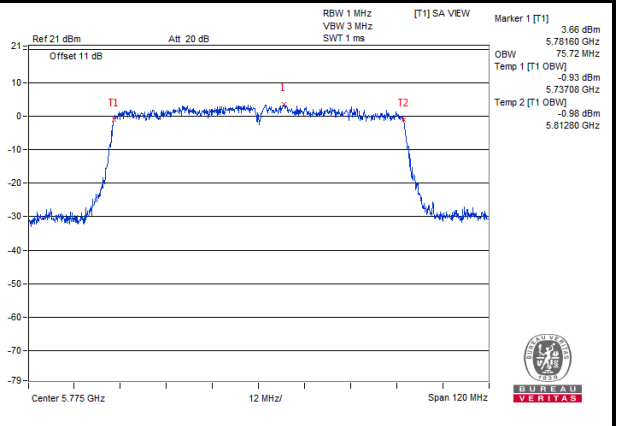
802.11n (40MHz)



802.11ac (80MHz)

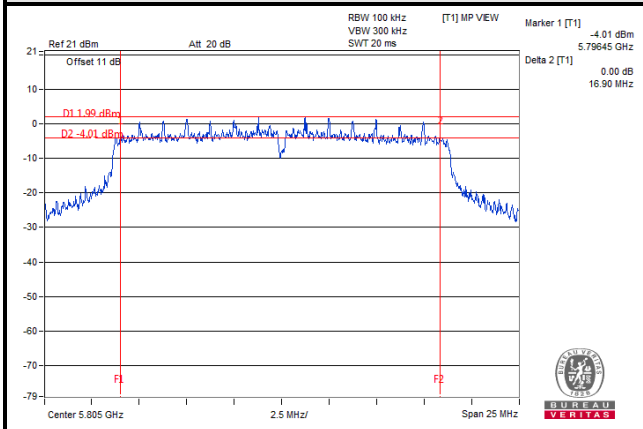


For U-NII-3:

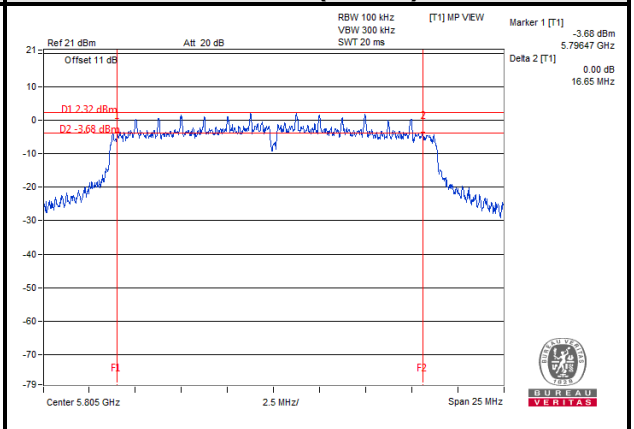
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

SPECTRUM PLOT OF WORST VALUE of 6dB Bandwidth

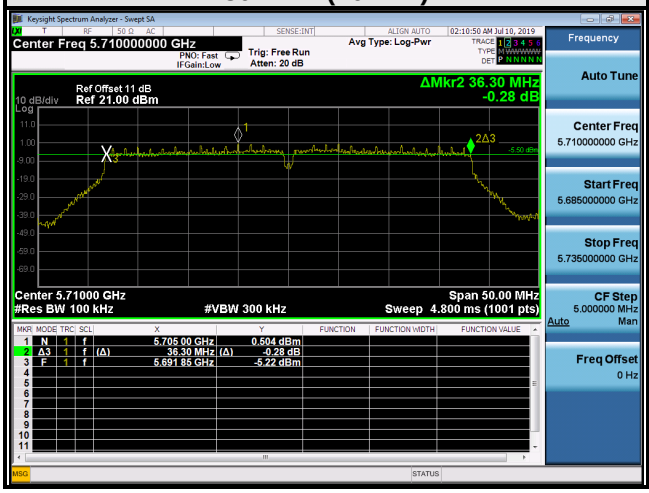
802.11a



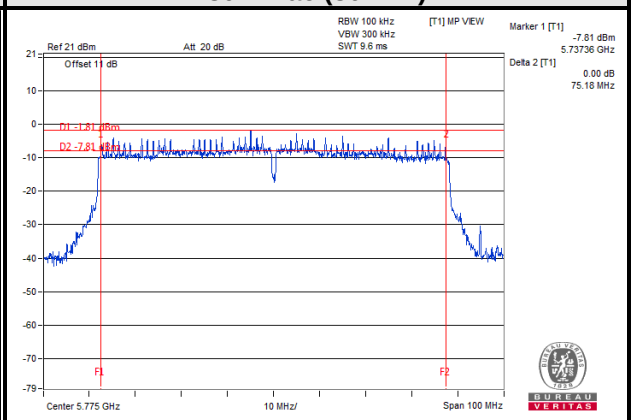
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

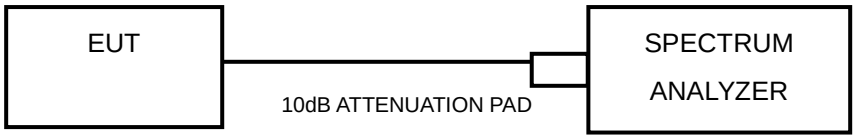


3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.4.1 LIMITS OF MAXIMUM 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	
	√	Client devices	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.4.4 TEST PROCEDURES

Using method SA-2

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 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) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
7) Record the max value

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.4.7 TEST RESULTS

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

802.11a

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Duty Factor	Total PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	6.42	7.23	0.09	9.94	11	PASS
40	5200	6.06	7.10	0.09	9.71	11	PASS
48	5240	6.72	6.73	0.09	9.83	11	PASS
52	5260	5.91	7.63	0.09	9.95	11	PASS
60	5300	6.42	7.03	0.09	9.84	11	PASS
64	5320	7.50	7.30	0.09	10.50	11	PASS
100	5500	7.32	6.84	0.09	10.19	11	PASS
116	5580	8.41	7.25	0.09	10.97	11	PASS
140	5700	6.86	8.15	0.09	10.65	11	PASS
144	5720	7.85	7.65	0.09	10.85	11	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Duty Factor	Total PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	6.30	6.54	0.10	9.53	11	PASS
40	5200	6.07	6.58	0.10	9.44	11	PASS
48	5240	6.78	6.25	0.10	9.62	11	PASS
52	5260	7.52	7.25	0.10	10.50	11	PASS
60	5300	6.78	7.13	0.10	10.07	11	PASS
64	5320	7.04	7.27	0.10	10.27	11	PASS
100	5500	7.35	6.53	0.10	10.07	11	PASS
116	5580	7.53	7.69	0.10	10.72	11	PASS
140	5700	6.31	8.12	0.10	10.42	11	PASS
144	5720	7.73	7.17	0.10	10.57	11	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Duty Factor	Total PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	3.78	3.94	0.23	7.10	11	PASS
46	5230	3.86	4.37	0.23	7.36	11	PASS
54	5270	4.04	4.80	0.23	7.68	11	PASS
62	5310	4.67	4.55	0.23	7.85	11	PASS
102	5510	3.99	3.91	0.23	7.19	11	PASS
110	5550	4.86	3.98	0.23	7.68	11	PASS
134	5670	5.23	4.67	0.23	8.20	11	PASS
142	5710	5.79	6.55	0.23	9.43	11	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Duty Factor	Total PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
42	5210	0.61	0.79	0.36	4.07	11	PASS
58	5290	1.44	1.51	0.36	4.85	11	PASS
106	5530	0.90	0.44	0.36	4.05	11	PASS
138	5690	1.24	1.69	0.36	4.84	11	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Total PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	Total PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
144	5720	-0.27	0.64	0.21	0.09	0.30	30	PASS
149	5745	2.43	3.27	2.88	0.09	2.96	30	PASS
157	5785	1.78	3.23	2.58	0.09	2.66	30	PASS
161	5805	0.69	2.64	1.78	0.09	1.86	30	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 2.79dBi < 6dBi, density limit shall not be reduced.

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Total PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	Total PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
144	5720	-2.02	-1.12	-1.55	0.10	-1.45	30	PASS
149	5745	1.89	2.80	2.38	0.10	2.47	30	PASS
157	5785	1.28	2.73	2.08	0.10	2.17	30	PASS
161	5805	0.93	2.73	1.93	0.10	2.02	30	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Total PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	Total PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
142	5710	-5.09	-3.87	-4.44	0.23	-4.21	30	PASS
151	5755	-0.86	0.36	-0.20	0.23	0.02	30	PASS
159	5795	-1.64	0.06	-0.70	0.23	-0.48	30	PASS

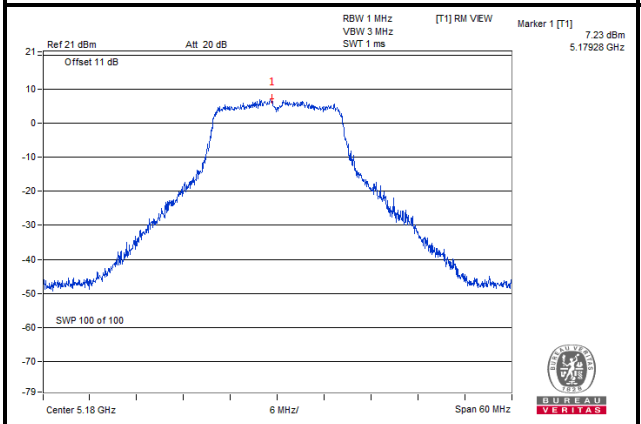
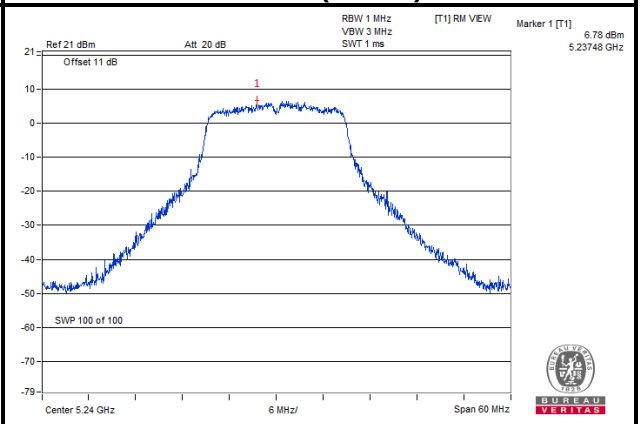
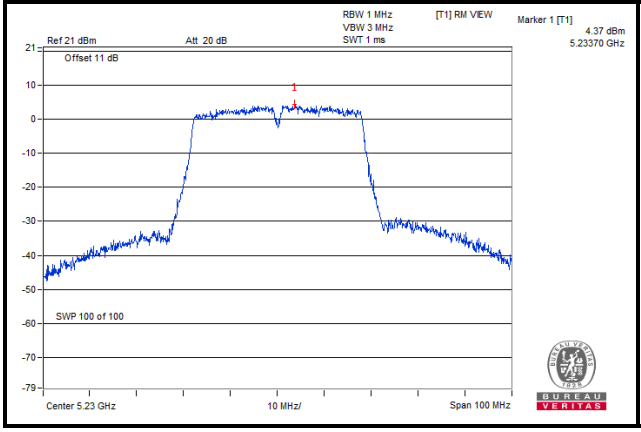
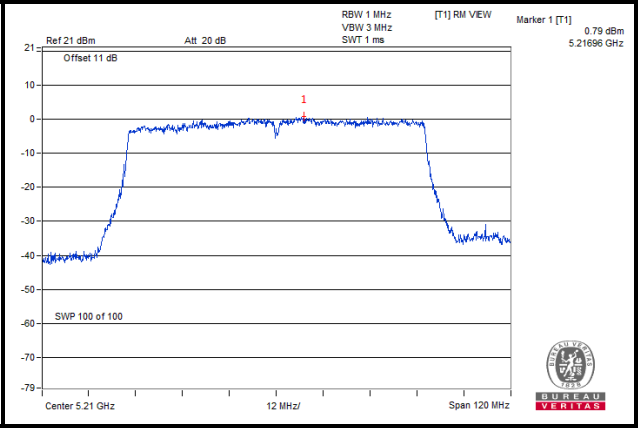
Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

802.11ac (80MHz)

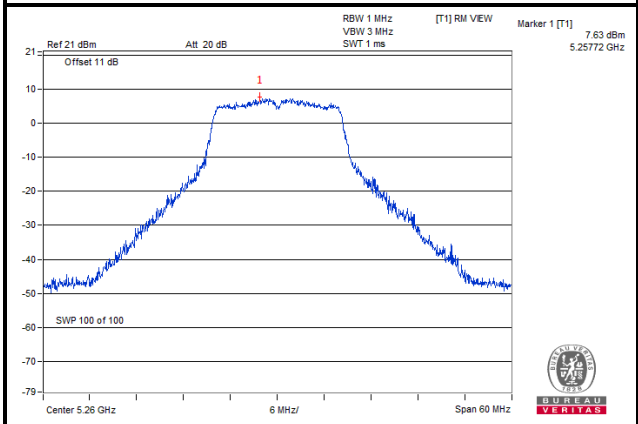
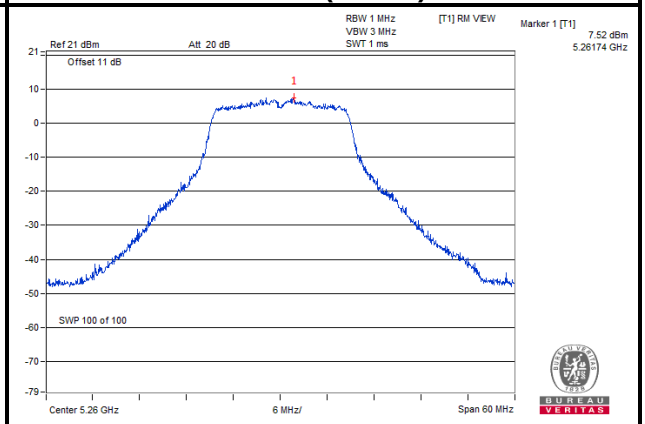
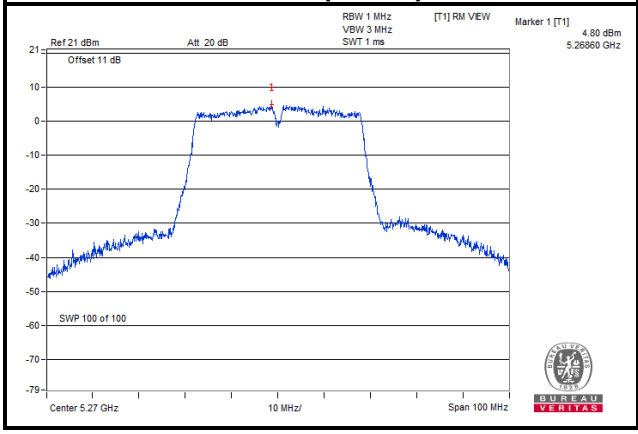
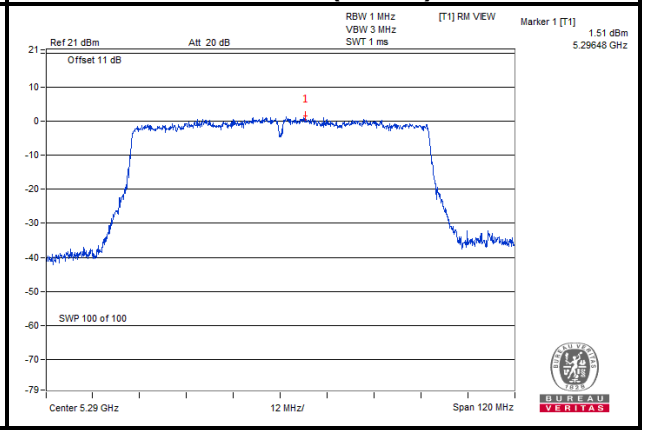
CHANNEL	FREQUENCY (MHz)	ANT 0 PSD w/o Duty Factor (dBm/MHz)	ANT 1 PSD w/o Duty Factor (dBm/MHz)	Total PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	Total PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
138	5690	-9.28	-7.45	-8.27	0.36	-7.91	30	PASS
155	5775	-4.94	-3.28	-4.02	0.36	-3.67	30	PASS

Note: N_{ANT} = 2, N_{SS}=2, Directional gain = G_{ANT} + 10 log(N_{ANT}/ N_{SS}) dBi = 3.75dBi < 6dBi, density limit shall not be reduced.

For 5180~5240MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

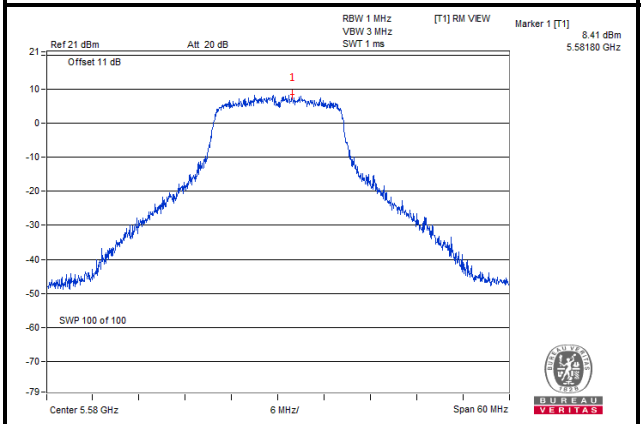
For 5260~5320MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

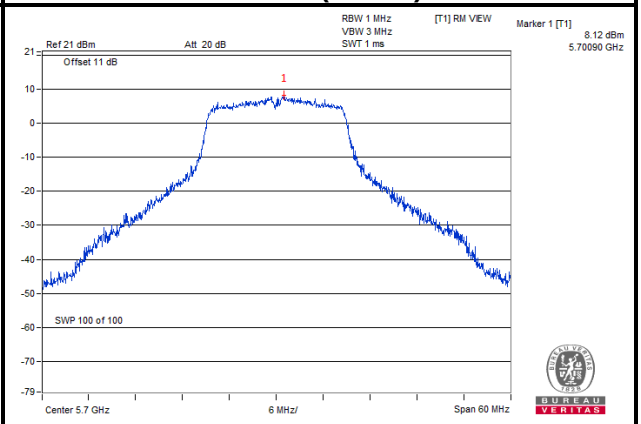
For 5500~5700MHz

PSD w/o Duty Factor

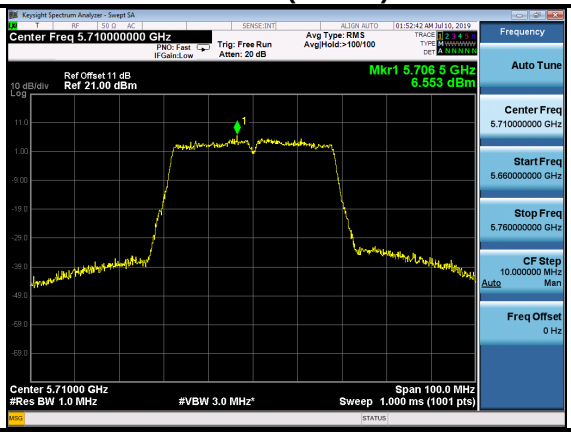
802.11a



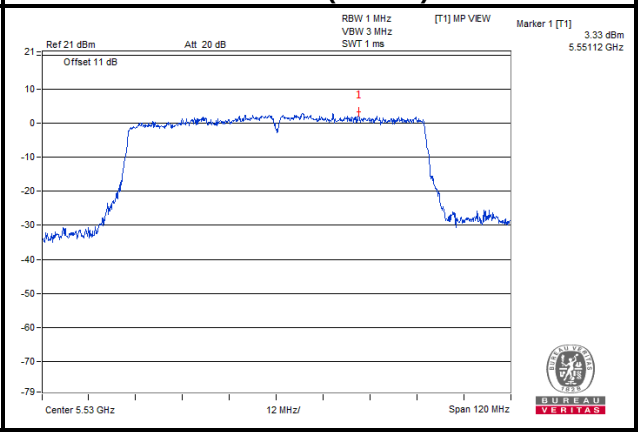
802.11n (20MHz)



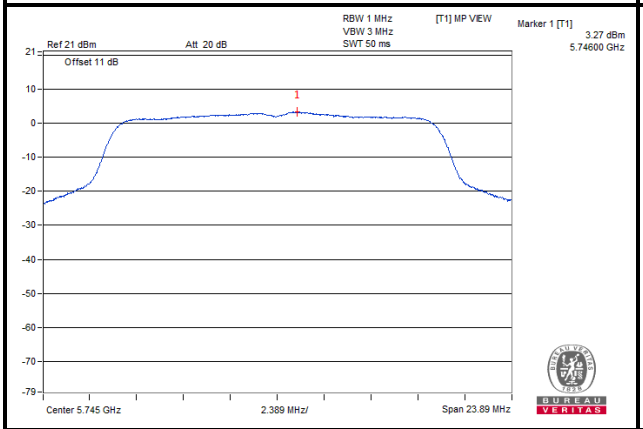
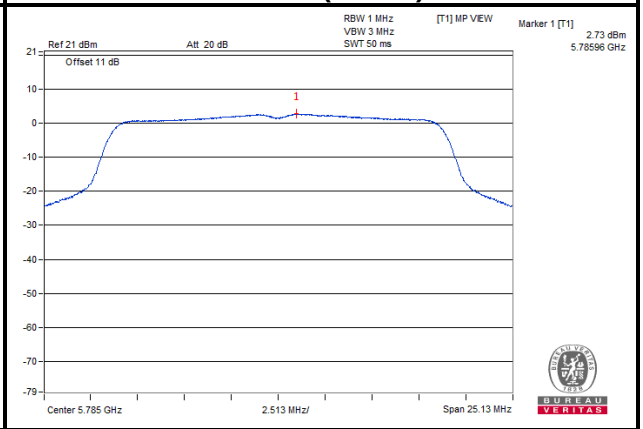
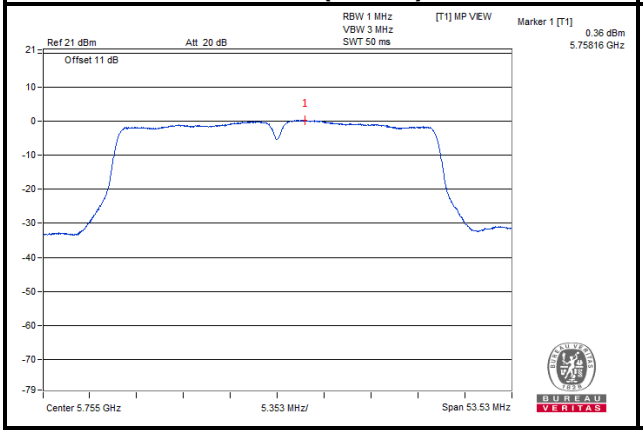
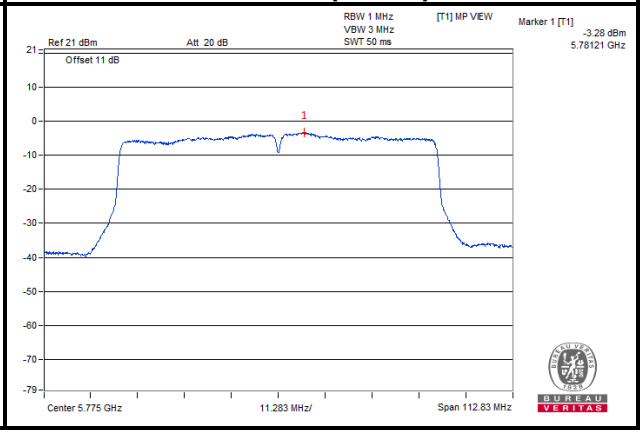
802.11n (40MHz)



802.11ac (80MHz)



For 5745~5825MHz

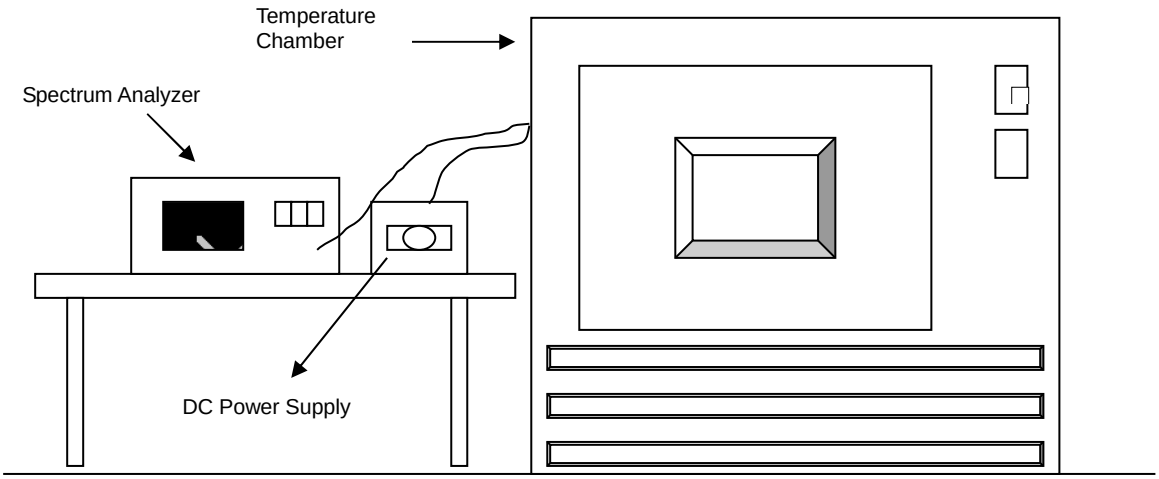
PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

3.5 FREQUENCY STABILITY

3.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURE

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

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

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

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

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

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

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

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

3.5.7 TEST RESULTS

TEST DATA FROM ANT 0:

FREQUEMCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (℃)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
50	120	5179.9911	-1.718	5179.9859	-2.722	5179.9917	-1.602	5179.9951	-0.946	PASS
40	120	5180.0276	5.328	5180.0204	3.938	5180.0216	4.170	5180.0229	4.421	PASS
30	120	5179.973	-5.212	5179.9777	-4.305	5179.979	-4.054	5179.979	-4.054	PASS
20	120	5179.9928	-1.390	5179.9957	-0.830	5179.9958	-0.811	5179.9908	-1.776	PASS
10	120	5179.9763	-4.575	5179.9727	-5.270	5179.9802	-3.822	5179.9822	-3.436	PASS
0	120	5180.0214	4.131	5180.0235	4.537	5180.0244	4.710	5180.0216	4.170	PASS
-10	120	5179.986	-2.703	5179.9799	-3.880	5179.9881	-2.297	5179.9838	-3.127	PASS
-20	120	5180.0117	2.259	5180.0041	0.792	5180.0065	1.255	5180.009	1.737	PASS
-30	120	5179.9879	-2.336	5179.9937	-1.216	5179.9928	-1.390	5179.9882	-2.278	PASS

FREQUEMCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (℃)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
20	138	5179.9927	-1.409	5179.9938	-1.197	5179.996	-0.772	5179.9901	-1.911	PASS
	120	5179.9928	-1.390	5179.9957	-0.830	5179.9958	-0.811	5179.9908	-1.776	PASS
	102	5179.9928	-1.390	5179.9948	-1.004	5179.9967	-0.637	5179.991	-1.737	PASS

FREQUEMCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5805MHz										
TEMP. (℃)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
50	120	5804.9745	-4.393	5804.9771	-3.945	5804.9765	-4.048	5804.9803	-3.394	PASS
40	120	5804.9821	-3.084	5804.9778	-3.824	5804.9765	-4.048	5804.9755	-4.220	PASS
30	120	5805.0143	2.463	5805.0127	2.188	5805.0148	2.550	5805.0172	2.963	PASS
20	120	5804.9868	-2.274	5804.9852	-2.550	5804.982	-3.101	5804.9835	-2.842	PASS
10	120	5804.9686	-5.409	5804.9731	-4.634	5804.9715	-4.910	5804.9771	-3.945	PASS
0	120	5804.9662	-5.823	5804.9656	-5.926	5804.9682	-5.478	5804.9686	-5.409	PASS
-10	120	5805.0001	0.017	5804.9979	-0.362	5804.9973	-0.465	5804.9934	-1.137	PASS
-20	120	5805.0006	0.103	5805.0069	1.189	5805.0021	0.362	5804.9999	-0.017	PASS
-30	120	5804.9825	-3.015	5804.9808	-3.307	5804.9755	-4.220	5804.9856	-2.481	PASS

FREQUEMCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5805MHz										
TEMP. (℃)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
20	138	5804.9876	-2.136	5804.9838	-2.791	5804.9832	-2.894	5804.9836	-2.825	PASS
	120	5804.9868	-2.274	5804.9852	-2.550	5804.982	-3.101	5804.9835	-2.842	PASS
	102	5804.9874	-2.171	5804.9838	-2.791	5804.9836	-2.825	5804.9837	-2.808	PASS

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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

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

---END---