

FCC TEST REPORT

(Part 15, Subpart E)

Applicant:	Mundo Reader S.L.
Address:	Calle Sofía 10, Parque Industrial y Tecnológico Európolis 28232 Las Rozas - Madrid SPAIN

Manufacturer or Supplier:	Mundo Reader S.L.
Address:	Calle Sofía 10, Parque Industrial y Tecnológico Európolis 28232 Las Rozas - Madrid SPAIN
Product:	Smartphone
Brand Name:	BQ
Model Name:	Aquaris X2
FCC ID:	2AN87AQUARISX2
Date of tests:	Aug. 10, 2018 ~ Sep. 11, 2018

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 Roger Li Engineer / Mobile Department	Approved by Sam Tung Manager / Mobile Department
	
Date: Sep. 12, 2018	Date: Sep. 12, 2018

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Test Report No.: RF180402W006-3

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF180402W006-3	Original release	Sep. 12, 2018

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 -13.18dB at 4.548000MHz.
15.407(b)(1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.23dB at 5981.78MHz.
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(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	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GMHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

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	Smartphone
MODEL NO.	Aquaris X2
POWER SUPPLY	5.0Vdc (adapter or host equipment) 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 ~ 5700MHz, 5745 ~ 5825MHz
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 ~ 5700MHz: 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
AVERAGE POWER	34.75mW for 5180 ~ 5240MHz 28.18mW for 5260 ~ 5320MHz 27.73mW for 5500 ~ 5700MHz 29.72mW for 5745 ~ 5825MHz
ANTENNA TYPE	5180 ~ 5240MHz: LDS Antenna with 0dBi gain 5260 ~ 5320MHz: LDS Antenna with -4.8dBi gain 5500 ~ 5700MHz: LDS Antenna with -4.7dBi gain 5745 ~ 5825MHz: LDS Antenna with -5.2dBi gain
HW VERSION	LLDM0893-3 VER:B3
SW VERSION	1.3.1_20180904-0601
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: 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 matched the following USB cable:

USB CABLE	
BRAND:	bq
MODEL:	HY-005015
SIGNAL LINE:	1.0 METER

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
802.11a	1TX/1RX
802.11n (20MHz)	1TX/1RX
802.11n (40MHz)	1TX/1RX
802.11ac (80MHz)	1TX/1RX

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

2.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

FOR 5260 ~ 5320MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

FOR 5500 ~ 5700MHz

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

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

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz		

FOR 5745 ~ 5825MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775 MHz		

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 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 $\geq$ 1G: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **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	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		106	106	OFDM	BPSK	V0
A	802.11a	5725-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		155	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	802.11n (40MHz)	5725-5825	151 to 159	151	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	802.11n (40MHz)	5725-5825	151 to 159	151	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	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	MCS0
A	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		106	106	OFDM	BPSK	V0
A	802.11a	5725-5825	149 to 165	149, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0
A	802.11ac (80MHz)		155	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	OFDM	BPSK	6.0
B	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	MCS0
B	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	MCS0
B	802.11ac (80MHz)		106	106	OFDM	BPSK	V0
B	802.11a	5725-5825	149 to 165	149, 165	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 165	149, 165	OFDM	BPSK	MCS0
B	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0
B	802.11ac (80MHz)		155	155	OFDM	BPSK	V0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 62%RH	DC 5V By Adapter	Rose Ma
RE≥1G	23deg. C, 62%RH	DC 5V By Adapter	Rose Ma
PLC	24deg. C, 61%RH	DC 5V By Adapter	John Wen
APCM	23.5deg. C, 60%RH	DC 3.85V By battery	Bert Ma

2.3 DUTY CYCLE OF TEST SIGNAL

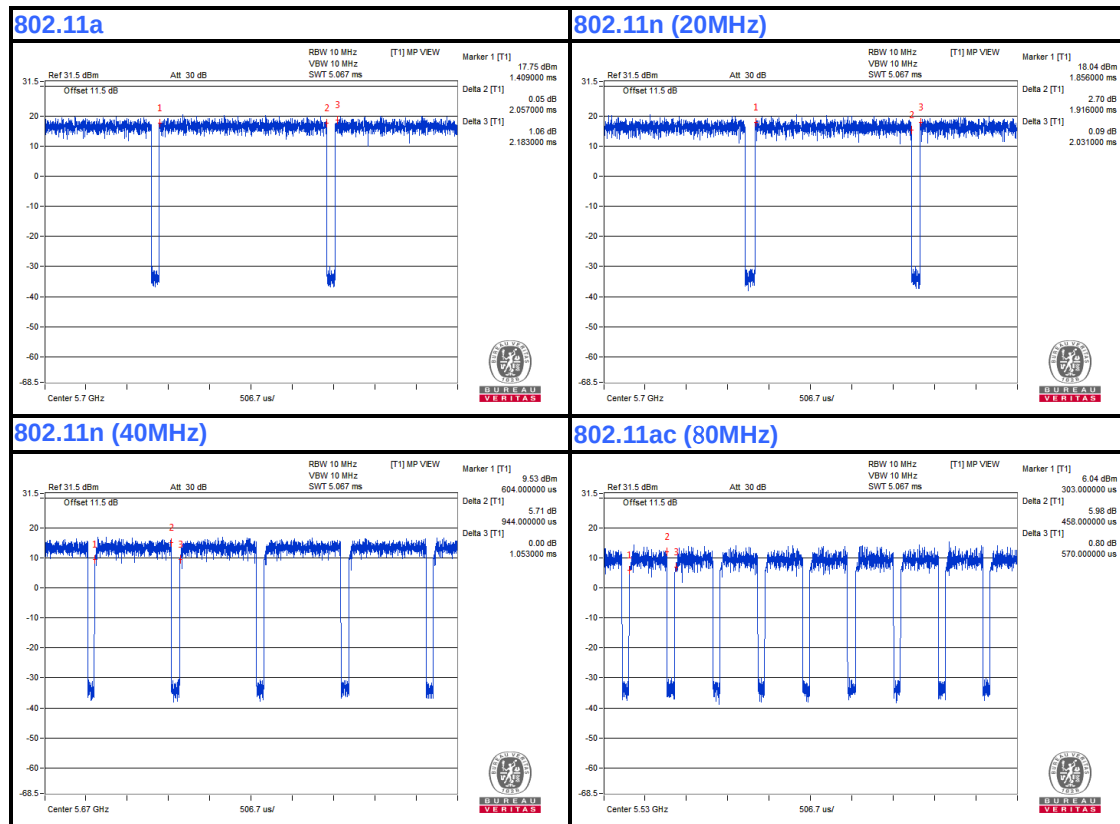
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $2.057/2.183 = 0.942$, Duty factor = $10 * \log(1/0.942) = 0.258$

802.11n (20MHz): Duty cycle = $1.916/2.031 = 0.943$, Duty factor = $10 * \log(1/0.943) = 0.253$

802.11n (40MHz): Duty cycle = $0.944/1.053 = 0.896$, Duty factor = $10 * \log(1/0.896) = 0.475$

802.11ac (80MHz): Duty cycle = $0.458/0.570 = 0.804$, Duty factor = $10 * \log(1/0.804) = 0.950$



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.

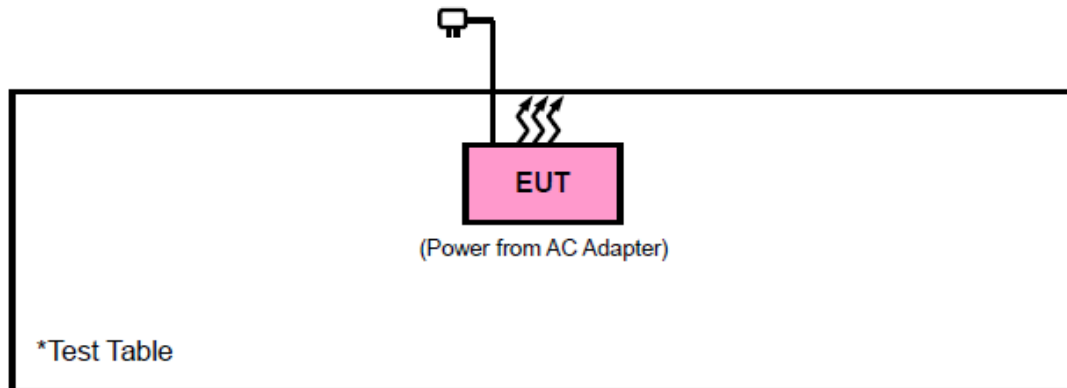
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PC	HP	A6608CN	3CR83825X3	N/A

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

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 v01r04

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

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

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

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

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	Apr. 21,18	Apr. 20,19
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Nov. 26,16	Nov. 25,18
Horn Antenna	ETS-LINDGREN	3117	00168728	Nov. 26,16	Nov. 25,18
Loop antenna	Daze	ZN30900A	0708	Nov. 20,17	Nov. 19,18
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Dec. 16,16	Dec. 15,18
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	Mar. 16,18	Mar. 15,19
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 09,18	Jul. 08,19
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 09,18	Jul. 08,19

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.

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:

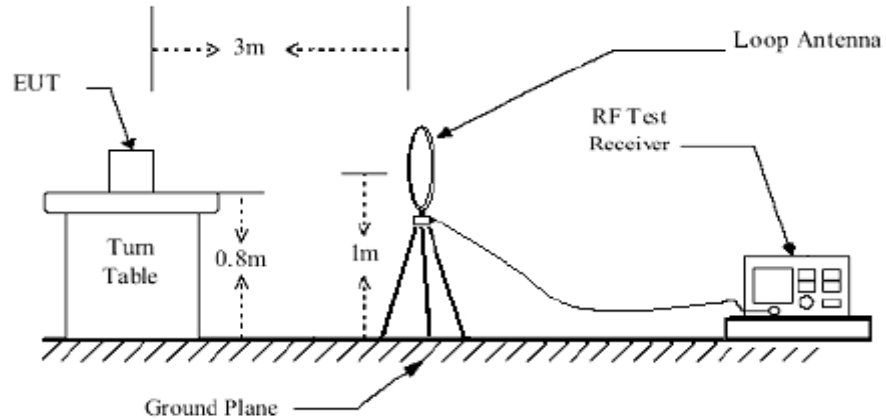
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

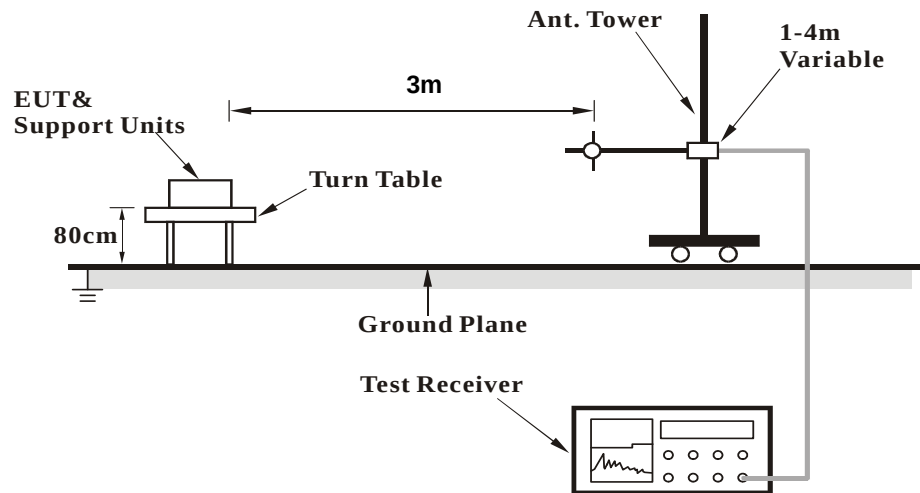
No deviation.

3.1.6 TEST SETUP

< Frequency Range below 30MHz >

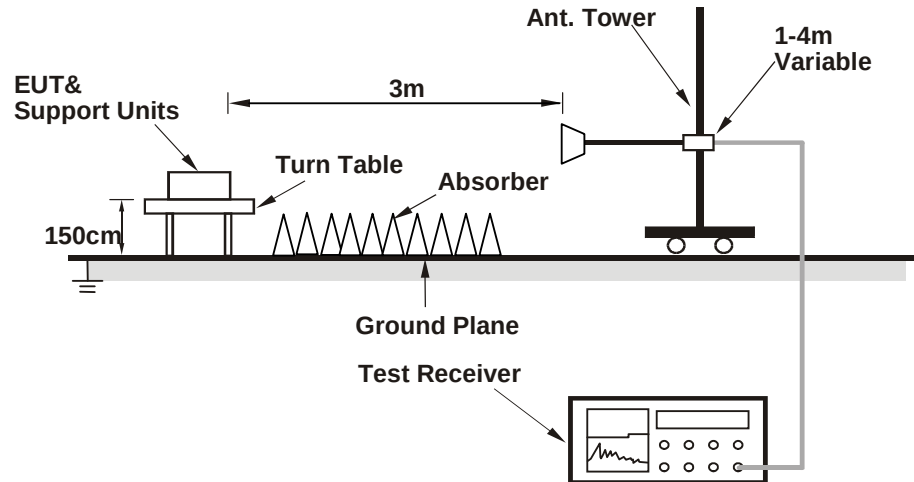


< Frequency Range 30MHz~1GHz >





<Frequency Range above 1GHz>



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

3.1.7 EUT OPERATING CONDITION

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



3.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

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

30 MHz – 1GHz data:

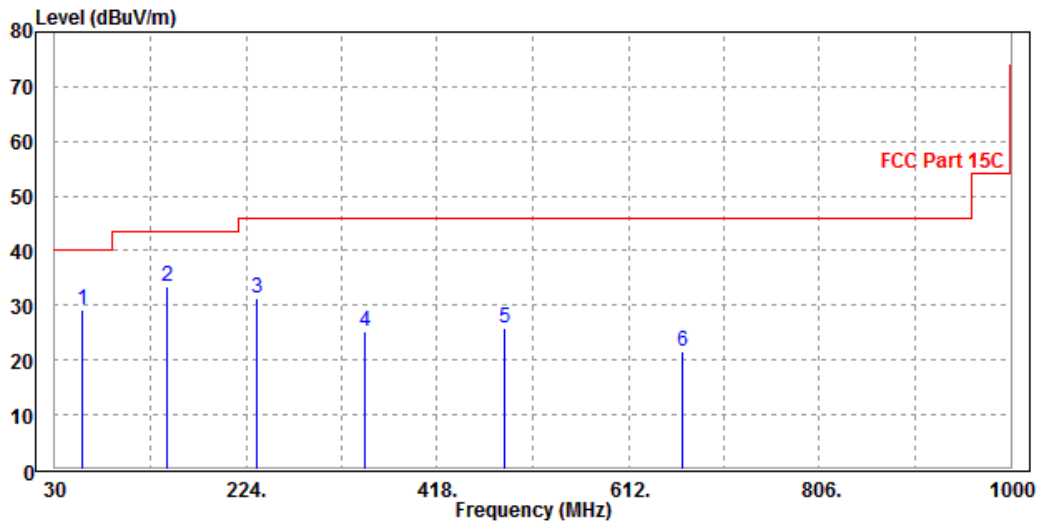
802.11n (40MHz)

CHANNEL	TX Channel 151	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
58.13	29.06	58.81	40	-10.94	6.42	1.16	37.33	100	248	QP
144.46	33.48	59.91	43.5	-10.02	8.54	1.85	36.82	100	15	QP
235.64	31.19	53.61	46	-14.81	11.74	2.37	36.53	100	31	QP
344.28	25.31	44.14	46	-20.69	14.86	2.91	36.6	100	222	QP
485.9	25.77	41.05	46	-20.23	18.23	3.42	36.93	100	289	QP
666.32	21.69	32.66	46	-24.31	22.16	4.19	37.32	100	321	QP

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.

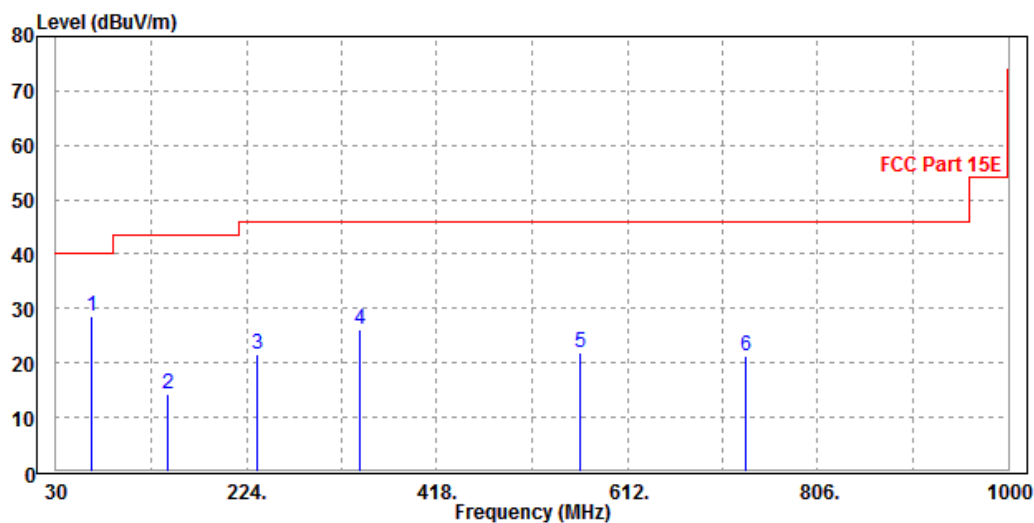


CHANNEL	Channel 151	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
66.86	28.49	57.78	40	-11.51	6.74	1.25	37.28	100	124	QP
144.46	14.3	40.73	43.5	-29.2	8.54	1.85	36.82	100	302	QP
235.64	21.7	44.12	46	-24.3	11.74	2.37	36.53	100	196	QP
340.4	26.1	45.1	46	-19.9	14.7	2.89	36.59	100	269	QP
564.47	21.83	35.55	46	-24.17	19.62	3.81	37.15	100	33	QP
733.25	21.24	31.21	46	-24.76	23.07	4.41	37.45	100	114	QP

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.





Test Report No.: RF180402W006-3

ABOVE 1GHz WORST-CASE DATA:

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

Band 1

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	46.62	44.64	54	-7.38	34.48	13.71	46.21	100	8	Average
5150	62.92	60.94	74	-11.08	34.48	13.71	46.21	100	8	Peak
5180	86.66	84.57			34.52	13.79	46.22	100	8	Average
5180	97.1	95.01			34.52	13.79	46.22	100	8	Peak
5350	45.1	42.35	54	-8.9	34.72	14.28	46.25	100	8	Average
5350	62.28	59.53	74	-11.72	34.72	14.28	46.25	100	8	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.54	43.56	54	-8.46	34.48	13.71	46.21	100	290	Average
5150	59.53	57.55	74	-14.47	34.48	13.71	46.21	100	290	Peak
5180	93.33	91.24			34.52	13.79	46.22	100	290	Average
5180	103.52	101.43			34.52	13.79	46.22	100	290	Peak
5350	44.29	41.54	54	-9.71	34.72	14.28	46.25	130	255	Average
5350	60.26	57.51	74	-13.74	34.72	14.28	46.25	100	290	Peak

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.79	42.81	54	-9.21	34.48	13.71	46.21	100	18	Average
5150	60.17	58.19	74	-13.83	34.48	13.71	46.21	100	18	Peak
5200	84.75	82.58			34.54	13.85	46.22	100	18	Average
5200	97.38	95.21			34.54	13.85	46.22	100	18	Peak
5350	44.22	41.47	54	-9.78	34.72	14.28	46.25	100	18	Average
5350	60.38	57.63	74	-13.62	34.72	14.28	46.25	100	18	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.77	42.79	54	-9.23	34.48	13.71	46.21	100	295	Average
5150	59.11	57.13	74	-14.89	34.48	13.71	46.21	100	295	Peak
5200	95.35	93.18			34.54	13.85	46.22	100	295	Average
5200	104.77	102.6			34.54	13.85	46.22	100	295	Peak
5350	45.28	42.53	54	-8.72	34.72	14.28	46.25	100	295	Average
5350	60.36	57.61	74	-13.64	34.72	14.28	46.25	100	295	Peak

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)
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	45.74	43.76	54	-8.26	34.48	13.71	46.21	100	20	Average
5150	60.17	58.19	74	-13.83	34.48	13.71	46.21	100	20	Peak
5240	85.89	83.56			34.59	13.97	46.23	100	20	Average
5240	95.47	93.14			34.59	13.97	46.23	100	20	Peak
5350	45.04	42.29	54	-8.96	34.72	14.28	46.25	100	20	Average
5350	60.58	57.83	74	-13.42	34.72	14.28	46.25	100	20	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.71	43.73	54	-8.29	34.48	13.71	46.21	100	292	Average
5150	60.54	58.56	74	-13.46	34.48	13.71	46.21	100	292	Peak
5240	98.5	96.17			34.59	13.97	46.23	100	292	Average
5240	106.11	103.78			34.59	13.97	46.23	100	292	Peak
5350	45.16	42.41	54	-8.84	34.72	14.28	46.25	100	292	Average
5350	61.53	58.78	74	-12.47	34.72	14.28	46.25	100	292	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

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	43.75	41.77	54	-10.25	34.48	13.71	46.21	100	25	Average
5150	59.2	57.22	74	-14.8	34.48	13.71	46.21	100	25	Peak
5180	84.81	82.72			34.52	13.79	46.22	100	25	Average
5180	95.94	93.85			34.52	13.79	46.22	100	25	Peak
5350	43.39	40.64	54	-10.61	34.72	14.28	46.25	100	25	Average
5350	60.3	57.55	74	-13.7	34.72	14.28	46.25	100	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.8	43.82	54	-8.2	34.48	13.71	46.21	100	295	Average
5150	59.65	57.67	74	-14.35	34.48	13.71	46.21	100	295	Peak
5180	95.89	93.8			34.52	13.79	46.22	100	295	Average
5180	104.64	102.55			34.52	13.79	46.22	100	295	Peak
5350	45.28	42.53	54	-8.72	34.72	14.28	46.25	100	295	Average
5350	59.56	56.81	74	-14.44	34.72	14.28	46.25	100	295	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.83	42.85	54	-9.17	34.48	13.71	46.21	100	20	Average
5150	59.51	57.53	74	-14.49	34.48	13.71	46.21	100	20	Peak
5200	85.48	83.31			34.54	13.85	46.22	100	20	Average
5200	94.74	92.57			34.54	13.85	46.22	100	20	Peak
5350	45.33	42.58	54	-8.67	34.72	14.28	46.25	100	20	Average
5350	59.11	56.36	74	-14.89	34.72	14.28	46.25	100	20	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.86	43.88	54	-8.14	34.48	13.71	46.21	100	290	Average
5150	60.05	58.07	74	-13.95	34.48	13.71	46.21	100	290	Peak
5200	95.32	93.15			34.54	13.85	46.22	100	290	Average
5200	104.65	102.48			34.54	13.85	46.22	100	290	Peak
5350	45.41	42.66	54	-8.59	34.72	14.28	46.25	100	290	Average
5350	60.71	57.96	74	-13.29	34.72	14.28	46.25	100	290	Peak

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)
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	45.79	43.81	54	-8.21	34.48	13.71	46.21	100	26	Average
5150	59.93	57.95	74	-14.07	34.48	13.71	46.21	100	26	Peak
5240	85.49	83.16			34.59	13.97	46.23	100	26	Average
5240	95.38	93.05			34.59	13.97	46.23	100	26	Peak
5350	45.07	42.32	54	-8.93	34.72	14.28	46.25	100	26	Average
5350	59.68	56.93	74	-14.32	34.72	14.28	46.25	100	26	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.8	43.82	54	-8.2	34.48	13.71	46.21	100	300	Average
5150	59.25	57.27	74	-14.75	34.48	13.71	46.21	100	300	Peak
5240	94.5	92.17			34.59	13.97	46.23	100	300	Average
5240	104.88	102.55			34.59	13.97	46.23	100	300	Peak
5350	45.12	42.37	54	-8.88	34.72	14.28	46.25	100	300	Average
5350	60.1	57.35	74	-13.9	34.72	14.28	46.25	100	300	Peak

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)
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	45.91	43.93	54	-8.09	34.48	13.71	46.21	100	18	Average
5150	59.61	57.63	74	-14.39	34.48	13.71	46.21	100	18	Peak
5190	79.91	77.78			34.53	13.82	46.22	100	18	Average
5190	93.04	90.91			34.53	13.82	46.22	100	18	Peak
5350	45.32	42.57	54	-8.68	34.72	14.28	46.25	100	18	Average
5350	60.49	57.74	74	-13.51	34.72	14.28	46.25	100	18	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.99	44.01	54	-8.01	34.48	13.71	46.21	100	292	Average
5150	61.43	59.45	74	-12.57	34.48	13.71	46.21	100	292	Peak
5190	91.59	89.46			34.53	13.82	46.22	100	292	Average
5190	102.04	99.91			34.53	13.82	46.22	100	292	Peak
5350	45.54	42.79	54	-8.46	34.72	14.28	46.25	100	292	Average
5350	60.46	57.71	74	-13.54	34.72	14.28	46.25	100	292	Peak

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	45.69	43.71	54	-8.31	34.48	13.71	46.21	100	25	Average
5150	59.84	57.86	74	-14.16	34.48	13.71	46.21	100	25	Peak
5230	79.32	77.03			34.58	13.94	46.23	100	25	Average
5230	94.43	92.14			34.58	13.94	46.23	100	25	Peak
5350	45.77	43.02	54	-8.23	34.72	14.28	46.25	100	25	Average
5350	60.21	57.46	74	-13.79	34.72	14.28	46.25	100	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.76	43.78	54	-8.24	34.48	13.71	46.21	100	290	Average
5150	59.76	57.78	74	-14.24	34.48	13.71	46.21	100	290	Peak
5230	91.53	89.24			34.58	13.94	46.23	100	290	Average
5230	101.5	99.21			34.58	13.94	46.23	100	290	Peak
5350	44.27	41.52	54	-9.73	34.72	14.28	46.25	100	290	Average
5350	60.35	57.6	74	-13.65	34.72	14.28	46.25	100	290	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.77	43.79	54	-8.23	34.48	13.71	46.21	100	30	Average
5150	58.09	56.11	74	-15.91	34.48	13.71	46.21	100	30	Peak
5210	74.3	72.09			34.55	13.88	46.22	100	30	Average
5210	91.05	88.84			34.55	13.88	46.22	100	30	Peak
5350	44.28	41.53	54	-9.72	34.72	14.28	46.25	100	30	Average
5350	60.39	57.64	74	-13.61	34.72	14.28	46.25	100	30	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.97	43.99	54	-8.03	34.48	13.71	46.21	100	300	Average
5150	60.82	58.84	74	-13.18	34.48	13.71	46.21	100	300	Peak
5210	85.72	83.51			34.55	13.88	46.22	100	300	Average
5210	99.7	97.49			34.55	13.88	46.22	100	300	Peak
5350	45.54	42.79	54	-8.46	34.72	14.28	46.25	100	300	Average
5350	60.44	57.69	74	-13.56	34.72	14.28	46.25	100	300	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

Band 2

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.57	43.59	54	-8.43	34.48	13.71	46.21	100	25	Average
5150	60.66	58.68	74	-13.34	34.48	13.71	46.21	100	25	Peak
5260	83.61	81.21			34.61	14.02	46.23	100	25	Average
5260	93.71	91.31			34.61	14.02	46.23	100	25	Peak
5350	44.93	42.18	54	-9.07	34.72	14.28	46.25	100	25	Average
5350	60	57.25	74	-14	34.72	14.28	46.25	100	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.59	43.61	54	-8.41	34.48	13.71	46.21	100	290	Average
5150	59.09	57.11	74	-14.91	34.48	13.71	46.21	100	290	Peak
5260	95.12	92.72			34.61	14.02	46.23	100	290	Average
5260	100.22	97.82			34.61	14.02	46.23	100	290	Peak
5350	44.88	42.13	54	-9.12	34.72	14.28	46.25	100	290	Average
5350	58.83	56.08	74	-15.17	34.72	14.28	46.25	100	290	Peak

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)
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	45.32	43.34	54	-8.68	34.48	13.71	46.21	100	44	Average
5150	59.01	57.03	74	-14.99	34.48	13.71	46.21	100	44	Peak
5300	84.15	81.59			34.66	14.14	46.24	100	44	Average
5300	92.77	90.21			34.66	14.14	46.24	100	44	Peak
5350	45.58	42.83	54	-8.42	34.72	14.28	46.25	100	44	Average
5350	59.99	57.24	74	-14.01	34.72	14.28	46.25	100	44	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.43	43.45	54	-8.57	34.48	13.71	46.21	100	285	Average
5150	59.53	57.55	74	-14.47	34.48	13.71	46.21	100	285	Peak
5300	93.16	90.6			34.66	14.14	46.24	100	285	Average
5300	102.58	100.02			34.66	14.14	46.24	100	285	Peak
5350	45.66	42.91	54	-8.34	34.72	14.28	46.25	100	285	Average
5350	59.65	56.9	74	-14.35	34.72	14.28	46.25	100	285	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.25	43.27	54	-8.75	34.48	13.71	46.21	100	60	Average
5150	59.42	57.44	74	-14.58	34.48	13.71	46.21	100	60	Peak
5320	82.77	80.13			34.68	14.2	46.24	100	60	Average
5320	91.91	89.27			34.68	14.2	46.24	100	60	Peak
5350	45.53	42.78	54	-8.47	34.72	14.28	46.25	100	60	Average
5350	60	57.25	74	-14	34.72	14.28	46.25	100	60	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.24	43.26	54	-8.76	34.48	13.71	46.21	100	331	Average
5150	58.89	56.91	74	-15.11	34.48	13.71	46.21	100	331	Peak
5320	94.08	91.44			34.68	14.2	46.24	100	331	Average
5320	102.85	100.21			34.68	14.2	46.24	100	331	Peak
5350	45.54	42.79	54	-8.46	34.72	14.28	46.25	100	331	Average
5350	58.94	56.19	74	-15.06	34.72	14.28	46.25	100	331	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.59	43.61	54	-8.41	34.48	13.71	46.21	100	60	Average
5150	59.66	57.68	74	-14.34	34.48	13.71	46.21	100	60	Peak
5260	85.09	82.69			34.61	14.02	46.23	100	60	Average
5260	94.67	92.27			34.61	14.02	46.23	100	60	Peak
5350	44.87	42.12	54	-9.13	34.72	14.28	46.25	100	60	Average
5350	60.74	57.99	74	-13.26	34.72	14.28	46.25	100	60	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.57	43.59	54	-8.43	34.48	13.71	46.21	100	325	Average
5150	59.82	57.84	74	-14.18	34.48	13.71	46.21	100	325	Peak
5260	94.42	92.02			34.61	14.02	46.23	100	325	Average
5260	103.85	101.45			34.61	14.02	46.23	100	325	Peak
5350	45.1	42.35	54	-8.9	34.72	14.28	46.25	100	325	Average
5350	61.04	58.29	74	-12.96	34.72	14.28	46.25	100	325	Peak

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)
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	45.42	43.44	54	-8.58	34.48	13.71	46.21	220	60	Average
5150	59.54	57.56	74	-14.46	34.48	13.71	46.21	220	60	Peak
5300	86.07	83.51			34.66	14.14	46.24	220	60	Average
5300	93.78	91.22			34.66	14.14	46.24	220	60	Peak
5350	45.68	42.93	54	-8.32	34.72	14.28	46.25	220	60	Average
5350	59.71	56.96	74	-14.29	34.72	14.28	46.25	220	60	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.47	43.49	54	-8.53	34.48	13.71	46.21	100	320	Average
5150	59.57	57.59	74	-14.43	34.48	13.71	46.21	100	320	Peak
5300	93.68	91.12			34.66	14.14	46.24	100	320	Average
5300	104.87	102.31			34.66	14.14	46.24	100	320	Peak
5350	45.67	42.92	54	-8.33	34.72	14.28	46.25	100	320	Average
5350	60.63	57.88	74	-13.37	34.72	14.28	46.25	100	320	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.29	43.31	54	-8.71	34.48	13.71	46.21	210	60	Average
5150	58.85	56.87	74	-15.15	34.48	13.71	46.21	210	60	Peak
5320	85.97	83.33			34.68	14.2	46.24	210	60	Average
5320	93.59	90.95			34.68	14.2	46.24	210	60	Peak
5350	45.54	42.79	54	-8.46	34.72	14.28	46.25	210	60	Average
5350	60.94	58.19	74	-13.06	34.72	14.28	46.25	210	60	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.3	43.32	54	-8.7	34.48	13.71	46.21	100	320	Average
5150	59.7	57.72	74	-14.3	34.48	13.71	46.21	100	320	Peak
5320	93.68	91.04			34.68	14.2	46.24	100	320	Average
5320	102.47	99.83			34.68	14.2	46.24	100	320	Peak
5350	45.71	42.96	54	-8.29	34.72	14.28	46.25	100	320	Average
5350	59.83	57.08	74	-14.17	34.72	14.28	46.25	100	320	Peak

REMARKS:

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



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Test Report No.: RF180402W006-3

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.7	43.72	54	-8.3	34.48	13.71	46.21	220	58	Average
5150	59.75	57.77	74	-14.25	34.48	13.71	46.21	220	58	Peak
5270	82.73	80.29			34.62	14.05	46.23	220	58	Average
5270	92.07	89.63			34.62	14.05	46.23	220	58	Peak
5350	45.33	42.58	54	-8.67	34.72	14.28	46.25	220	58	Average
5350	60.48	57.73	74	-13.52	34.72	14.28	46.25	220	58	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.04	43.06	54	-8.96	34.48	13.71	46.21	100	290	Average
5150	59.3	57.32	74	-14.7	34.48	13.71	46.21	100	290	Peak
5270	91.71	89.27			34.62	14.05	46.23	100	290	Average
5270	101.51	99.07			34.62	14.05	46.23	100	290	Peak
5350	45.96	43.21	54	-8.04	34.72	14.28	46.25	100	290	Average
5350	60.63	57.88	74	-13.37	34.72	14.28	46.25	100	290	Peak

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)
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	45.69	43.71	54	-8.31	34.48	13.71	46.21	215	60	Average
5150	59.6	57.62	74	-14.4	34.48	13.71	46.21	215	60	Peak
5310	83.22	80.62			34.67	14.17	46.24	215	60	Average
5310	92.99	90.39			34.67	14.17	46.24	215	60	Peak
5350	45.56	42.81	54	-8.44	34.72	14.28	46.25	215	60	Average
5350	60.02	57.27	74	-13.98	34.72	14.28	46.25	215	60	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.84	43.86	54	-8.16	34.48	13.71	46.21	100	295	Average
5150	58.4	56.42	74	-15.6	34.48	13.71	46.21	100	295	Peak
5310	91.15	88.55			34.67	14.17	46.24	100	295	Average
5310	100.96	98.36			34.67	14.17	46.24	100	295	Peak
5350	45.83	43.08	54	-8.17	34.72	14.28	46.25	100	295	Average
5350	60.5	57.75	74	-13.5	34.72	14.28	46.25	100	295	Peak

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)
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	45.77	43.79	54	-8.23	34.48	13.71	46.21	215	58	Average
5150	59.85	57.87	74	-14.15	34.48	13.71	46.21	215	58	Peak
5290	76.75	74.23			34.65	14.11	46.24	215	58	Average
5290	90.05	87.53			34.65	14.11	46.24	215	58	Peak
5350	45.78	43.03	54	-8.22	34.72	14.28	46.25	215	58	Average
5350	58.27	55.52	74	-15.73	34.72	14.28	46.25	215	58	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.83	43.85	54	-8.17	34.48	13.71	46.21	100	285	Average
5150	59.81	57.83	74	-14.19	34.48	13.71	46.21	100	285	Peak
5290	84.01	81.49			34.65	14.11	46.24	100	285	Average
5290	97.16	94.64			34.65	14.11	46.24	100	285	Peak
5350	45.9	43.15	54	-8.1	34.72	14.28	46.25	100	285	Average
5350	60.27	57.52	74	-13.73	34.72	14.28	46.25	100	285	Peak

REMARKS:

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



Test Report No.: RF180402W006-3

Band 3

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.71	42.53	54	-8.29	34.85	14.6	46.27	100	295	Average
5460	61.03	57.85	74	-12.97	34.85	14.6	46.27	100	295	Peak
#5470	60.4	57.19	68.3	-7.9	34.86	14.62	46.27	100	295	Peak
5500	89.44	86.11			34.9	14.71	46.28	100	295	Average
5500	100.48	97.15			34.9	14.71	46.28	100	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.76	42.58	54	-8.24	34.85	14.6	46.27	100	210	Average
5460	61.17	57.99	74	-12.83	34.85	14.6	46.27	100	210	Peak
#5470	60.86	57.65	68.3	-7.44	34.86	14.62	46.27	100	210	Peak
5500	93.56	90.23			34.9	14.71	46.28	100	210	Average
5500	104.98	101.65			34.9	14.71	46.28	100	210	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.75	39.57	54	-11.25	34.85	14.6	46.27	100	353	Average
5460	53.9	50.72	74	-20.1	34.85	14.6	46.27	100	353	Peak
#5470	54.45	51.24	68.3	-13.85	34.86	14.62	46.27	100	353	Peak
5580	98.73	94.78			35	15.23	46.28	100	353	Average
5580	106.66	102.71			35	15.23	46.28	100	353	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.75	39.57	54	-11.25	34.85	14.6	46.27	122	277	Average
5460	53.63	50.45	74	-20.37	34.85	14.6	46.27	122	277	Peak
5470	54.46	51.25	68.3	-13.84	34.86	14.62	46.27	122	277	Peak
5500	98.88	94.93			35	15.23	46.28	122	277	Average
5500	107.14	103.19			35	15.23	46.28	122	277	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	92.42	87.55			35.14	16.01	46.28	100	295	Average
5700	100.58	95.71			35.14	16.01	46.28	100	295	Peak
#5725	62.65	57.58	68.3	-5.65	35.17	16.18	46.28	100	295	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	96.01	91.14			35.14	16.01	46.28	100	235	Average
5700	104.65	99.78			35.14	16.01	46.28	100	235	Peak
#5725	62.89	57.82	68.3	-5.41	35.17	16.18	46.28	100	235	Peak

REMARKS:

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



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.95	42.77	54	-8.05	34.85	14.6	46.27	120	170	Average
5460	60.27	57.09	74	-13.73	34.85	14.6	46.27	120	170	Peak
#5470	60.18	56.97	68.3	-8.12	34.86	14.62	46.27	120	170	Peak
5500	88.34	85.01			34.9	14.71	46.28	120	170	Average
5500	97.27	93.94			34.9	14.71	46.28	120	170	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	45.92	42.74	54	-8.08	34.85	14.6	46.27	100	35	Average
5460	60.13	56.95	74	-13.87	34.85	14.6	46.27	100	35	Peak
#5470	60.56	57.35	68.3	-7.74	34.86	14.62	46.27	100	35	Peak
5500	93.07	89.74			34.9	14.71	46.28	100	35	Average
5500	100.96	97.63			34.9	14.71	46.28	100	35	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.42	39.24	54	-11.58	34.85	14.6	46.27	105	45	Average
5460	54.53	51.35	74	-19.47	34.85	14.6	46.27	105	45	Peak
5470	56.43	53.22	68.3	-11.87	34.86	14.62	46.27	105	45	Peak
5580	95.81	91.86			35	15.23	46.28	105	45	Average
5580	104.35	100.4			35	15.23	46.28	105	45	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.42	39.24	54	-11.58	34.85	14.6	46.27	151	273	Average
5460	55.5	52.32	74	-18.5	34.85	14.6	46.27	151	273	Peak
5470	57.27	54.06	68.3	-11.03	34.86	14.62	46.27	151	273	Peak
5580	98.19	94.24			35	15.23	46.28	151	273	Average
5580	107.1	103.15			35	15.23	46.28	151	273	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	92.98	88.11			35.14	16.01	46.28	170	120	Average
5700	100.95	96.08			35.14	16.01	46.28	170	120	Peak
#5725	62.7	57.63	68.3	-5.6	35.17	16.18	46.28	170	120	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	94.98	90.11			35.14	16.01	46.28	100	35	Average
5700	102.76	97.89			35.14	16.01	46.28	100	35	Peak
#5725	62.8	57.73	68.3	-5.5	35.17	16.18	46.28	100	35	Peak

REMARKS:

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



802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	46	42.82	54	-8	34.85	14.6	46.27	170	115	Average
5460	60.09	56.91	74	-13.91	34.85	14.6	46.27	170	115	Peak
#5470	60.6	57.39	68.3	-7.7	34.86	14.62	46.27	170	115	Peak
5510	85.39	81.98			34.91	14.78	46.28	170	115	Average
5510	94.47	91.06			34.91	14.78	46.28	170	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
5460	45.84	42.66	54	-8.16	34.85	14.6	46.27	100	40	Average
5460	61.02	57.84	74	-12.98	34.85	14.6	46.27	100	40	Peak
#5470	62.79	59.58	68.3	-5.51	34.86	14.62	46.27	100	40	Peak
5510	89.05	85.64			34.91	14.78	46.28	100	40	Average
5510	99.72	96.31			34.91	14.78	46.28	100	40	Peak

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.74	40.56	54	-10.26	34.85	14.6	46.27	179	318	Average
5460	56.85	53.67	74	-17.15	34.85	14.6	46.27	179	318	Peak
#5470	59.88	56.67	68.3	-8.42	34.86	14.62	46.27	179	318	Peak
5550	93.55	89.83			34.96	15.04	46.28	179	318	Average
5550	102.58	98.86			34.96	15.04	46.28	179	318	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	44.04	40.86	54	-9.96	34.85	14.6	46.27	227	318	Average
5460	55.94	52.76	74	-18.06	34.85	14.6	46.27	227	318	Peak
#5470	58.63	55.42	68.3	-9.67	34.86	14.62	46.27	227	318	Peak
5550	99.77	96.05			34.96	15.04	46.28	227	318	Average
5550	108.11	104.39			34.96	15.04	46.28	227	318	Peak

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)
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
5670	89.73	85.09			35.1	15.82	46.28	170	120	Average
5670	100.28	95.64			35.1	15.82	46.28	170	120	Peak
#5725	61.61	56.54	68.3	-6.69	35.17	16.18	46.28	170	120	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	92.07	87.43			35.1	15.82	46.28	100	35	Average
5670	102.33	97.69			35.1	15.82	46.28	100	35	Peak
#5725	62.1	57.03	68.3	-6.2	35.17	16.18	46.28	100	35	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.



Test Report No.: RF180402W006-3

802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	48.39	45.21	54	-5.61	34.85	14.6	46.27	100	30	Average
5460	63.59	60.41	74	-10.41	34.85	14.6	46.27	100	30	Peak
#5470	63.8	60.59	68.3	-4.5	34.86	14.62	46.27	100	30	Peak
5530	87.43	83.86			34.94	14.91	46.28	100	30	Average
5530	91.7	88.13			34.94	14.91	46.28	100	30	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	49.76	46.58	54	-4.24	34.85	14.6	46.27	100	300	Average
5460	64.92	61.74	74	-9.08	34.85	14.6	46.27	100	300	Peak
#5470	65.66	62.45	68.3	-2.64	34.86	14.62	46.27	100	300	Peak
5530	85.99	82.42			34.94	14.91	46.28	100	300	Average
5530	100.24	96.67			34.94	14.91	46.28	100	300	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.



Test Report No.: RF180402W006-3

Band 4

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	95.23	90.01			35.19	16.31	46.28	170	120	Average
5745	103.02	97.8			35.19	16.31	46.28	170	120	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	95.33	90.11			35.19	16.31	46.28	100	35	Average
5745	105.13	99.91			35.19	16.31	46.28	100	35	Peak

REMARKS:

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



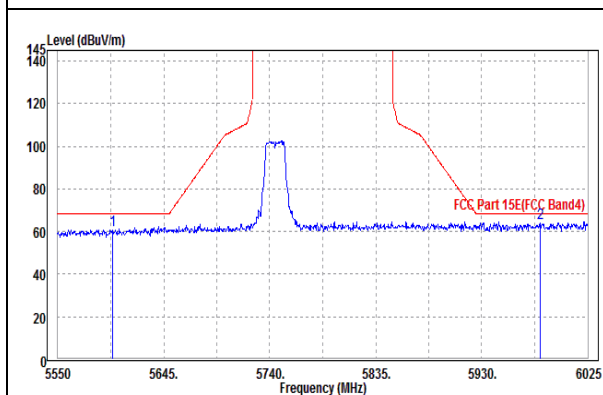
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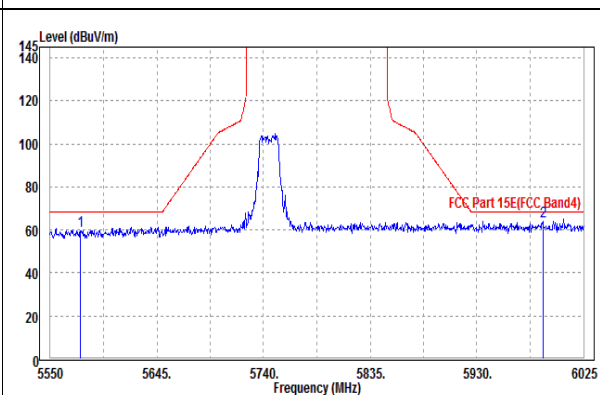
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FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5598.93	60.76	56.67	68.3	-7.54	35.02	15.35	46.28	170	120	Peak
5982.25	63.75	56.7	68.3	-4.55	35.48	17.85	46.28	170	120	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
5576.6	59.76	55.84	68.3	-8.54	34.99	15.21	46.28	101	35	Peak
5988.9	64.17	57.06	68.3	-4.13	35.48	17.9	46.28	101	35	Peak

CH 149

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	94.42	88.89			35.24	16.57	46.28	170	115	Average
5785	102.59	97.06			35.24	16.57	46.28	170	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
5785	99.22	91.36			37.57	16.57	46.28	170	125	Average
5785	106.38	98.52			37.57	16.57	46.28	170	125	Peak

REMARKS:

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



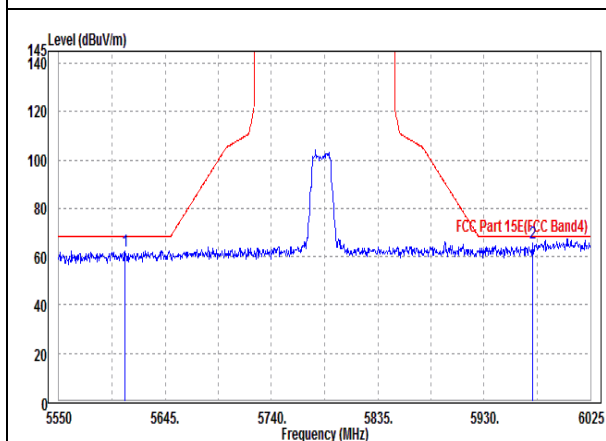
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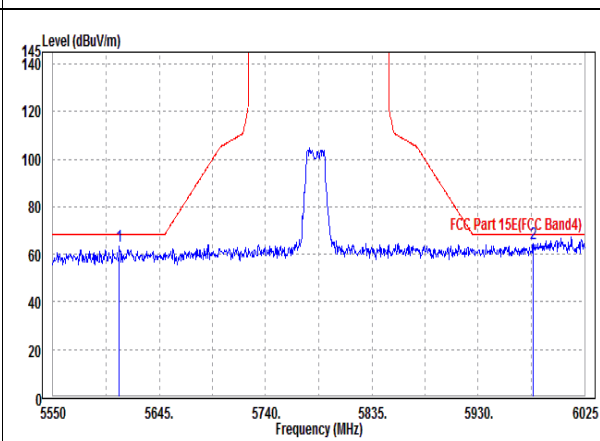
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5609.38	62.34	58.17	68.3	-5.96	35.03	15.42	46.28	170	120	Peak
5973.23	65.85	58.86	68.3	-2.45	35.47	17.8	46.28	170	120	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
5609.38	63.23	59.06	68.3	-5.07	35.03	15.42	46.28	101	35	Peak
5978.93	64.31	57.29	68.3	-3.99	35.47	17.83	46.28	101	35	Peak

CH 157

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	101.97	96.13			35.29	16.83	46.28	168	124	Average
5825	102.51	96.67			35.29	16.83	46.28	168	124	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	92.98	87.14			35.29	16.83	46.28	100	32	Average
5825	101.68	95.84			35.29	16.83	46.28	100	32	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5825MHz: Fundamental frequency.



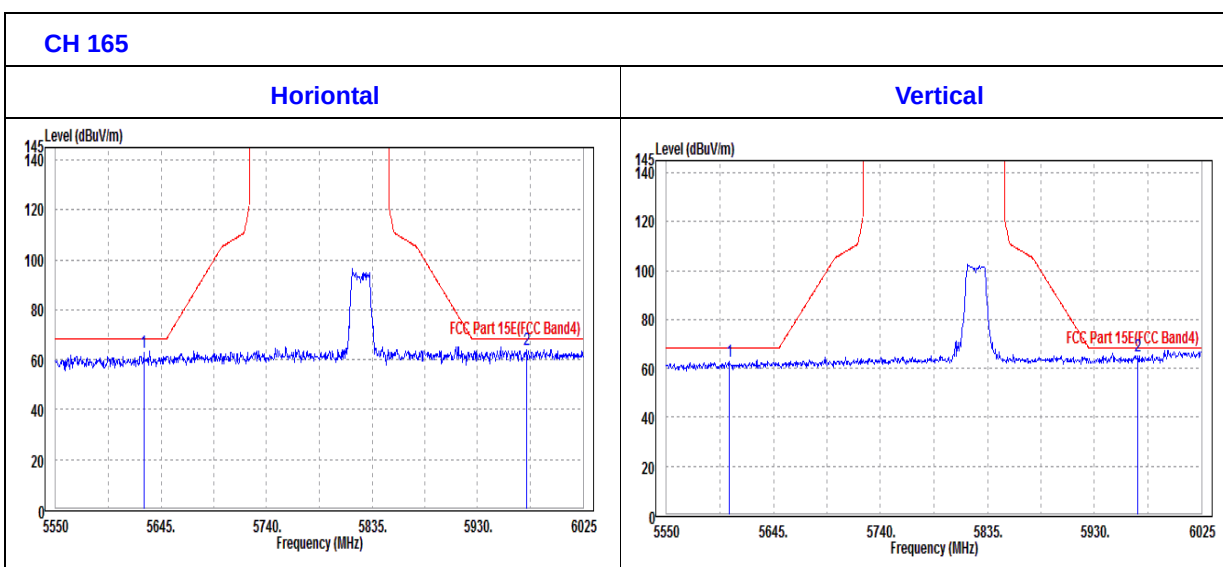
**BUREAU
VERITAS**

Test Report No.: RF180402W006-3

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
5629.33	62.91	58.58	68.3	-5.39	35.06	15.55	46.28	100	32	Peak
5974.18	63.88	56.89	68.3	-4.42	35.47	17.8	46.28	100	32	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
5605.58	62.7	58.55	68.3	-5.6	35.03	15.4	46.28	100	32	Peak
5968.48	65.05	58.11	68.3	-3.25	35.46	17.76	46.28	100	32	Peak





802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	93.08	87.86			35.19	16.31	46.28	170	130	Average
5745	101.47	96.25			35.19	16.31	46.28	170	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
5745	94.99	89.77			35.19	16.31	46.28	100	35	Average
5745	104.34	99.12			35.19	16.31	46.28	100	35	Peak

REMARKS:

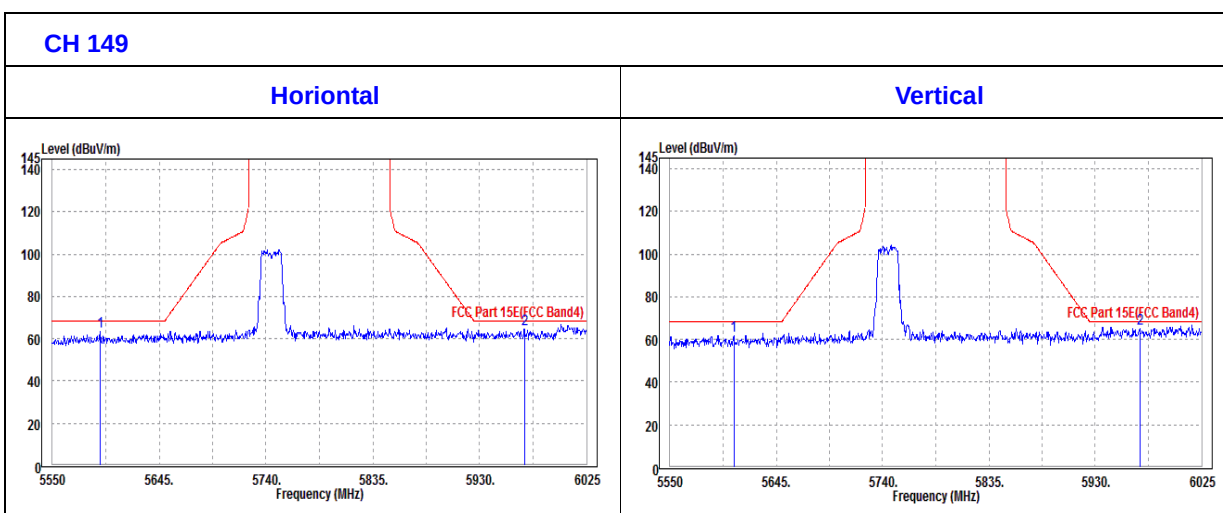
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5745MHz: Fundamental frequency.



OUBE 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
5592.28	63.57	59.53	68.3	-4.73	35.01	15.31	46.28	100	125	Peak
5969.9	64.33	57.38	68.3	-3.97	35.46	17.77	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5607	61.75	57.59	68.3	-6.55	35.03	15.41	46.28	100	35	Peak
5969.9	64.95	58	68.3	-3.35	35.46	17.77	46.28	100	35	Peak





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	92.4	86.87			35.24	16.57	46.28	135	120	Average
5785	102.41	96.88			35.24	16.57	46.28	135	120	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	93.89	88.36			35.24	16.57	46.28	100	40	Average
5785	104.76	99.23			35.24	16.57	46.28	100	40	Peak

REMARKS:

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



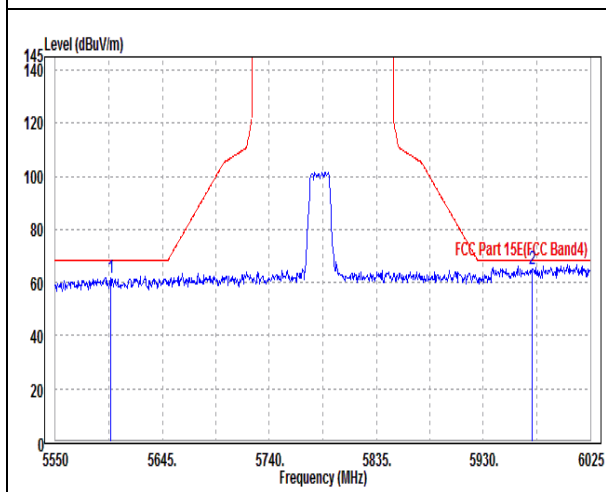
OOBE DATA

802.11n (20MHZ)

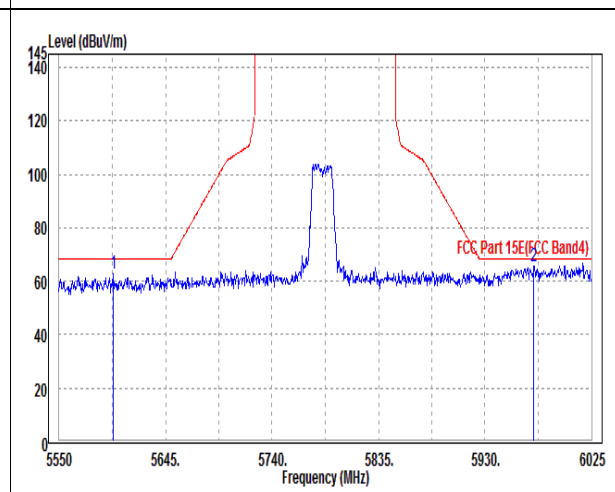
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5599.4	61.83	57.73	68.3	-6.47	35.02	15.36	46.28	100	125	Peak
5973.7	65.09	58.1	68.3	-3.21	35.47	17.8	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5597.98	62.75	58.66	68.3	-5.55	35.02	15.35	46.28	100	35	Peak
5973.7	65.85	58.86	68.3	-2.45	35.47	17.8	46.28	100	35	Peak

CH 157

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	92.07	86.23			35.29	16.83	46.28	135	125	Average
5825	100.7	94.86			35.29	16.83	46.28	135	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	94.31	88.47			35.29	16.83	46.28	100	36	Average
5825	103.46	97.62			35.29	16.83	46.28	100	36	Peak

REMARKS:

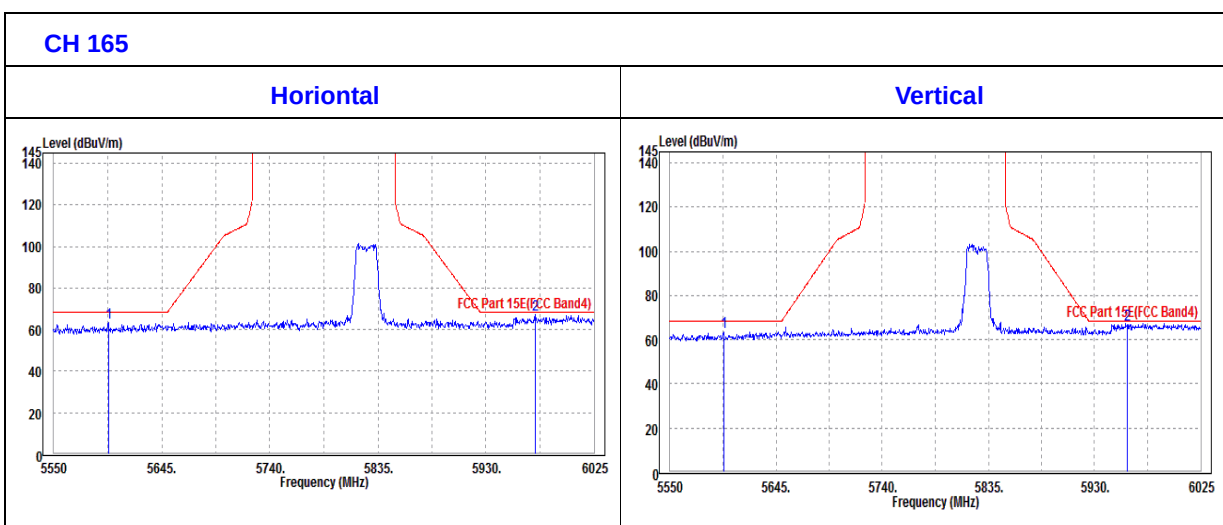
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5825MHz: Fundamental frequency.



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
5619.35	58.36	59.49	68.3	-9.94	37.47	7.62	46.22	200	77	Peak
5957.55	57.71	58.19	68.3	-10.59	37.67	7.97	46.12	200	77	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
5620.78	58.35	59.48	68.3	-9.95	37.47	7.62	46.22	200	77	Peak
5960.88	58.19	58.66	68.3	-10.11	37.68	7.97	46.12	200	77	Peak





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Test Report No.: RF180402W006-3

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	83.3	78			35.21	16.37	46.28	100	135	Average
5755	93.67	88.37			35.21	16.37	46.28	100	135	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	85.18	79.88			35.21	16.37	46.28	100	30	Average
5755	95.2	89.9			35.21	16.37	46.28	100	30	Peak

REMARKS:

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



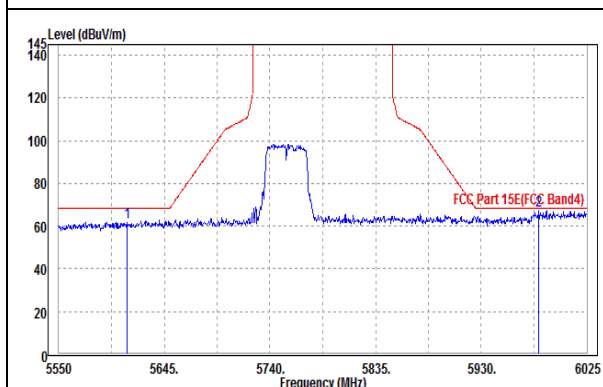
OOBE DATA

802.11n (40MHZ)

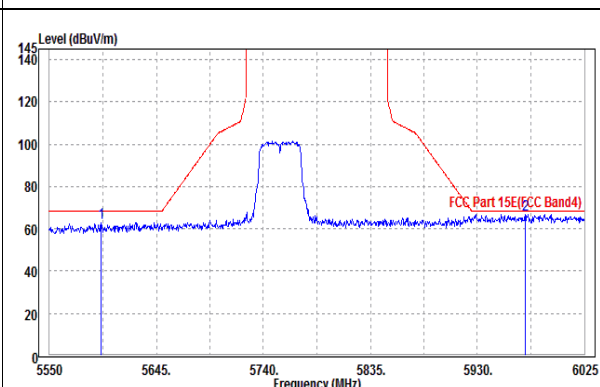
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5611.28	61.97	57.78	68.3	-6.33	35.03	15.44	46.28	100	125	Peak
5981.78	67.07	60.02	68.3	-1.23	35.48	17.85	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5596.08	63.08	59	68.3	-5.22	35.02	15.34	46.28	100	35	Peak
5972.28	66.9	59.92	68.3	-1.4	35.47	17.79	46.28	100	35	Peak

CH 151

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	84.84	79.24			35.25	16.63	46.28	100	140	Average
5795	93.19	87.59			35.25	16.63	46.28	100	140	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	86.87	81.27			35.25	16.63	46.28	100	40	Average
5795	96.16	90.56			35.25	16.63	46.28	100	40	Peak

REMARKS:

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



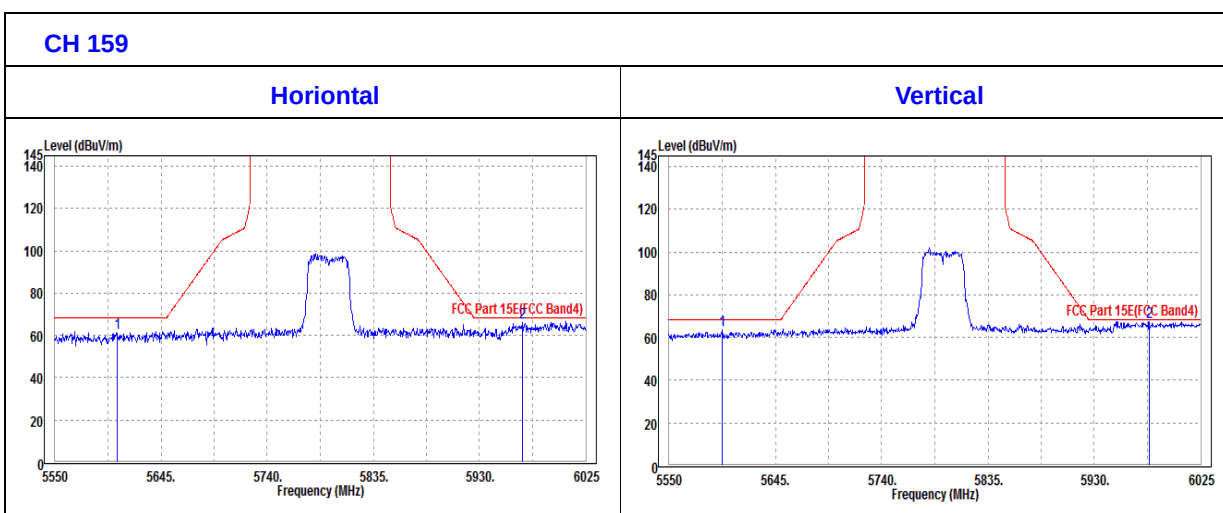
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Test Report No.: RF180402W006-3

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
5605.58	61.3	57.15	68.3	-7	35.03	15.4	46.28	100	125	Peak
5968.48	66.19	59.25	68.3	-2.11	35.46	17.76	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5597.5	63.34	59.25	68.3	-4.96	35.02	15.35	46.28	100	30	Peak
5978.93	67.05	60.03	68.3	-1.25	35.47	17.83	46.28	100	30	Peak





802.11ac (80MHz)

CHANNEL	TX Channel 155	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
5775	83.27	77.82			35.23	16.5	46.28	100	125	Average
5775	92.38	86.93			35.23	16.5	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5775	84.47	79.02			35.23	16.5	46.28	100	35	Average
5775	95.59	90.14			35.23	16.5	46.28	100	35	Peak

REMARKS:

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



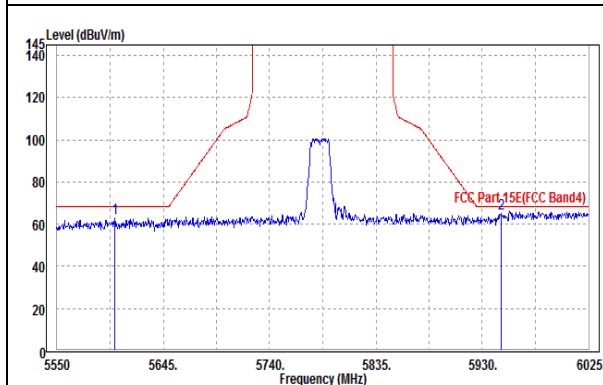
OOBE DATA

802.11ac (80MHZ)

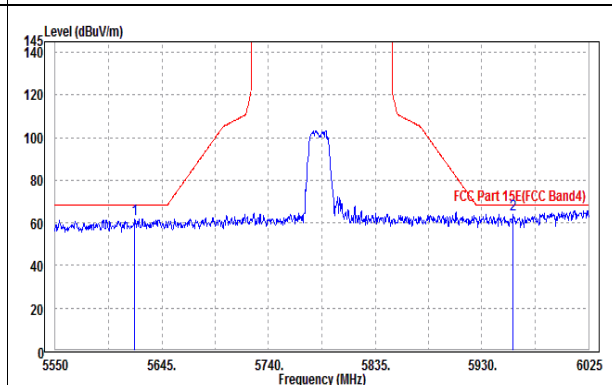
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5601.3	62.58	58.47	68.3	-5.72	35.02	15.37	46.28	100	125	Peak
5947.1	64.79	58	68.3	-3.51	35.44	17.63	46.28	100	125	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5620.78	61.56	57.3	68.3	-6.74	35.04	15.5	46.28	100	35	Peak
5958.03	64.08	57.21	68.3	-4.22	35.45	17.7	46.28	100	35	Peak

CH 155

Horizontal



Vertical



3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Mar. 15,18	Mar. 14,19
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Sep. 18,17	Sep. 17,18

- 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

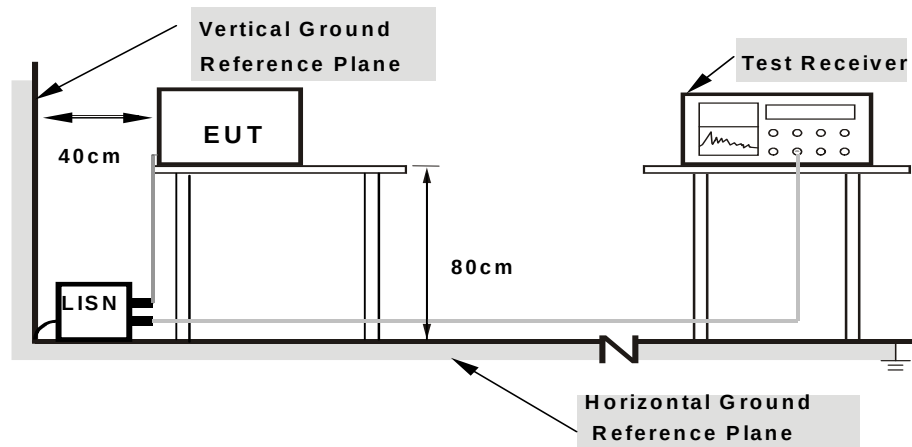
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

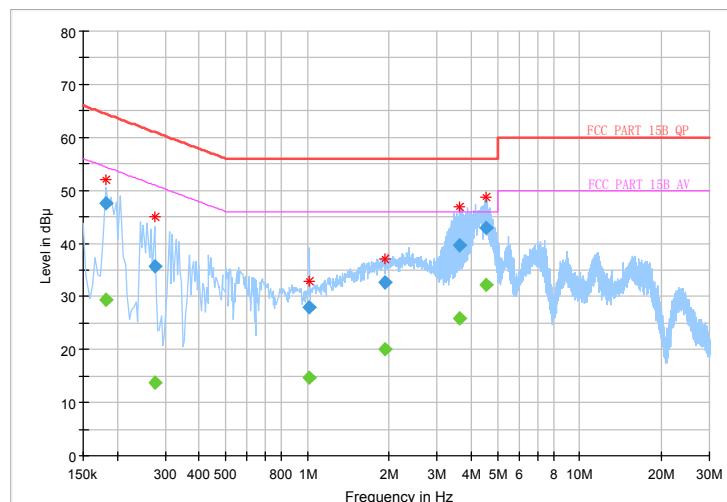
CONDUCTED WORST-CASE DATA :

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	John Wen	TEST DATE	2018/08/20

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.182000	---	29.31	54.39	-25.08	L1	ON	9.7
0.182000	47.51	---	64.39	-16.88	L1	ON	9.7
0.276000	---	13.70	50.94	-37.24	L1	ON	9.7
0.276000	35.75	---	60.94	-25.19	L1	ON	9.7
1.016000	---	14.73	46.00	-31.27	L1	ON	9.7
1.016000	28.10	---	56.00	-27.90	L1	ON	9.7
1.920000	---	20.08	46.00	-25.92	L1	ON	9.7
1.920000	32.69	---	56.00	-23.31	L1	ON	9.7
3.616000	---	25.83	46.00	-20.17	L1	ON	9.7
3.616000	39.66	---	56.00	-16.34	L1	ON	9.7
4.548000	---	32.26	46.00	-13.74	L1	ON	9.7
4.548000	42.82	---	56.00	-13.18	L1	ON	9.7

- 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.

Full Spectrum

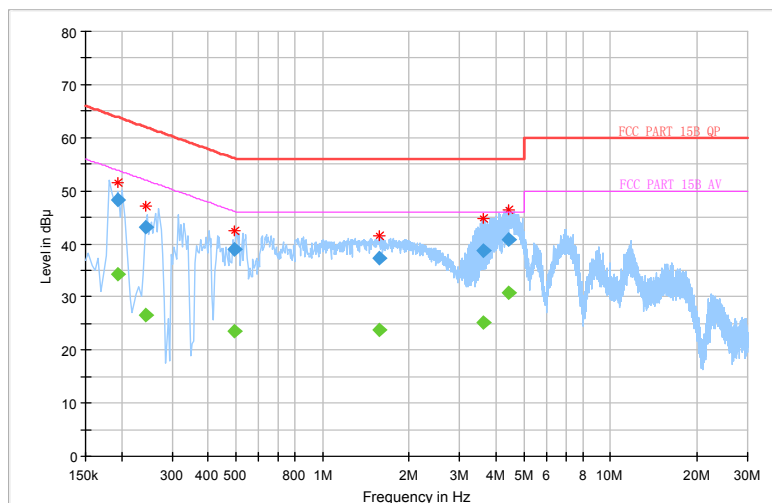


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	John Wen	TEST DATE	2018/08/20

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.194000	---	34.32	53.86	-19.54	N	ON	10.0
0.194000	48.31	---	63.86	-15.55	N	ON	10.0
0.244000	---	26.49	51.96	-25.47	N	ON	9.9
0.244000	43.10	---	61.96	-18.86	N	ON	9.9
0.496000	---	23.65	46.07	-22.42	N	ON	10.1
0.496000	38.93	---	56.07	-17.14	N	ON	10.1
1.580000	---	23.68	46.00	-22.32	N	ON	9.9
1.580000	37.26	---	56.00	-18.74	N	ON	9.9
3.636000	---	25.22	46.00	-20.78	N	ON	9.8
3.636000	38.79	---	56.00	-17.21	N	ON	9.8
4.416000	---	30.80	46.00	-15.20	N	ON	9.8
4.416000	40.87	---	56.00	-15.13	N	ON	9.8

- 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.

Full Spectrum



3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

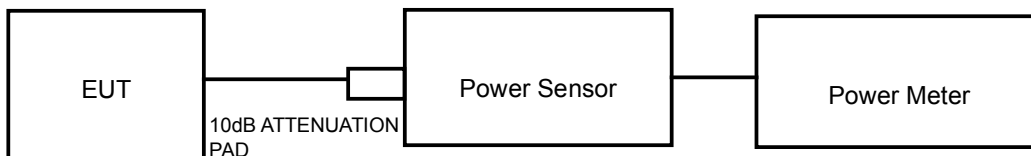
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24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

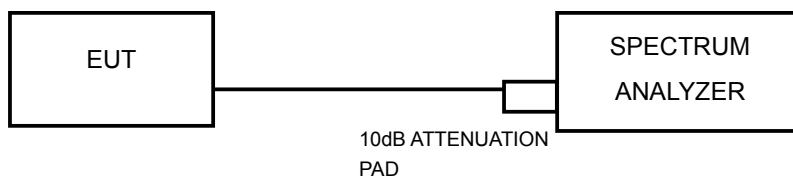
3.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

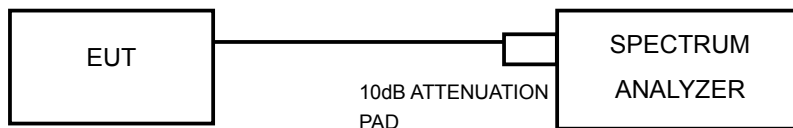
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



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	Mar. 02,18	Mar. 01,19
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Mar. 16,18	Mar. 15,19
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510332	Mar. 16,18	Mar. 15,19
Power Sensor	ANRITSU	MA2411B	1339352	Mar. 16,18	Mar. 15,19

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 $\geq$ 3 MHz.
5. Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$. (This ensures that bin-to-bin spacing is $\leq \text{RBW}/2$, 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 $10 \log (1/0.25) = 6 \text{ dB}$ 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 $\geq 3 \cdot$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

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

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 (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.16	26.06	24	PASS
40	5200	14.03	25.29	24	PASS
48	5240	14.07	25.53	24	PASS
52	5260	14.06	25.47	24	PASS
60	5300	13.92	24.66	24	PASS
64	5320	13.94	24.77	24	PASS
100	5500	14.43	27.73	24	PASS
116	5580	14.04	25.35	24	PASS
140	5700	14.25	26.61	24	PASS
149	5745	14.32	27.04	30	PASS
157	5785	14.25	26.61	30	PASS
165	5825	14.73	29.72	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.04	25.35	24	PASS
40	5200	14.29	26.85	24	PASS
48	5240	14.19	26.24	24	PASS
52	5260	14.09	25.64	24	PASS
60	5300	14.07	25.53	24	PASS
64	5320	13.73	23.60	24	PASS
100	5500	14.31	26.98	24	PASS
116	5580	14.11	25.76	24	PASS
140	5700	14.18	26.18	24	PASS
149	5745	14.06	25.47	30	PASS
157	5785	14.04	25.35	30	PASS
165	5825	14.07	25.53	30	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	15.41	34.75	24	PASS
46	5230	14.32	27.04	24	PASS
54	5270	14.50	28.18	24	PASS
62	5310	14.23	26.49	24	PASS
102	5510	14.03	25.29	24	PASS
110	5550	14.18	26.18	24	PASS
134	5670	14.25	26.61	24	PASS
151	5755	14.29	26.85	30	PASS
165	5825	14.41	27.61	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER w/o Duty Factor (dBm)	Duty Factor	AVERAGE POWER with Duty Factor (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	12.32	0.950	13.27	21.23	24	PASS
58	5290	12.59	0.950	13.54	22.59	24	PASS
106	5530	12.16	0.950	13.11	20.46	24	PASS
155	5775	12.33	0.950	13.28	21.28	30	PASS

**99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH:****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.62	22.78	PASS
40	5200	16.62	22.72	PASS
48	5240	16.62	22.16	PASS
52	5260	16.68	23.73	PASS
60	5300	16.68	21.87	PASS
64	5320	16.68	22.21	PASS
100	5500	16.68	22.47	PASS
116	5580	16.68	22.08	PASS
140	5700	16.62	21.94	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	16.68	15.30	PASS
157	5785	16.68	16.29	PASS
165	5825	16.74	15.61	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.82	22.68	PASS
40	5200	17.88	22.79	PASS
48	5240	17.88	23.17	PASS
52	5260	17.88	22.82	PASS
60	5300	17.88	24.13	PASS
64	5320	17.88	22.86	PASS
100	5500	17.82	24.06	PASS
116	5580	17.82	22.70	PASS
140	5700	17.82	23.43	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	17.88	16.01	PASS
157	5785	17.88	16.75	PASS
165	5825	17.88	16.78	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.48	41.70	PASS
46	5230	36.48	41.59	PASS
54	5270	36.54	41.42	PASS
62	5310	36.48	41.57	PASS
102	5510	36.48	41.35	PASS
110	5550	36.42	41.73	PASS
134	5670	36.42	41.58	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.54	35.13	PASS
159	5795	36.48	35.65	PASS

802.11ac (80MHz)

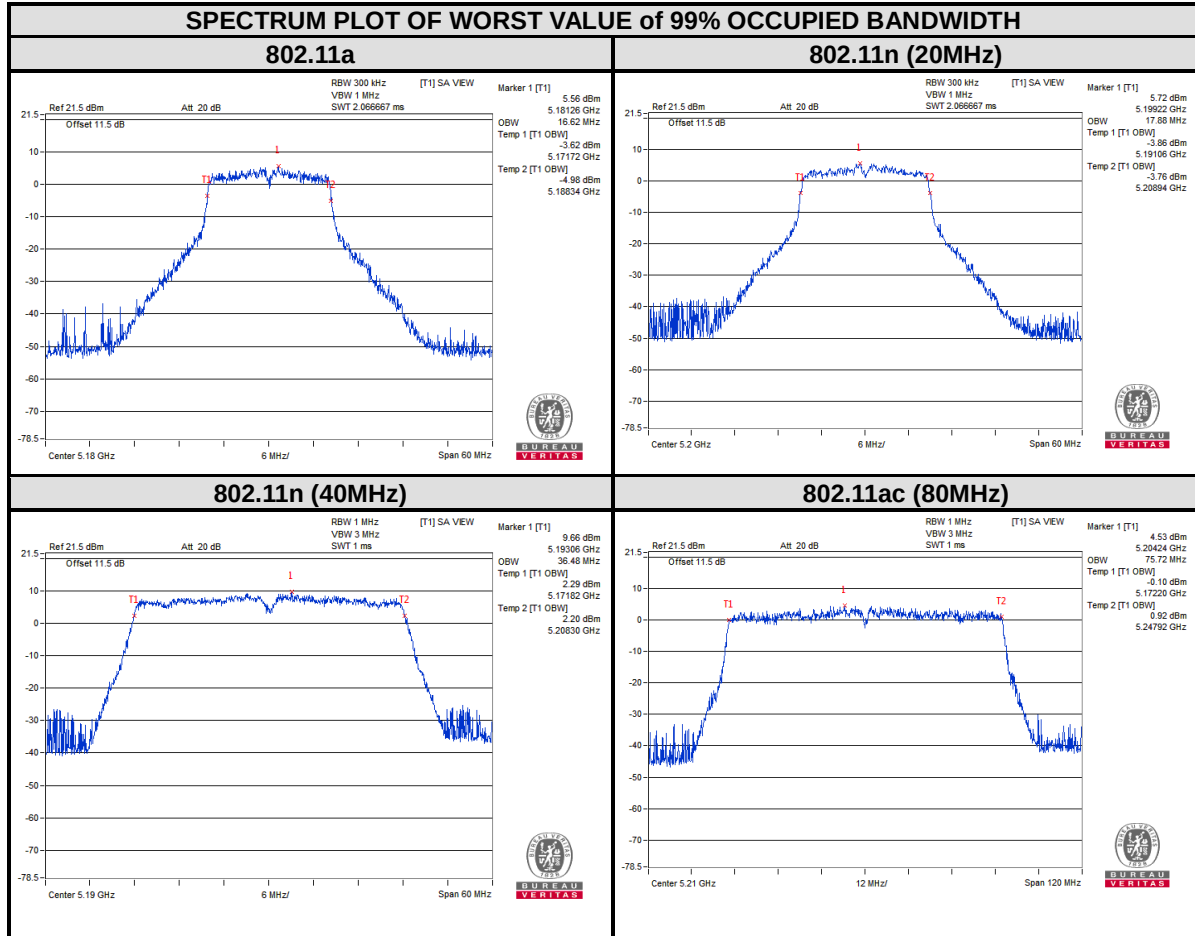
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.72	84.42	PASS
58	5290	75.72	83.37	PASS
106	5530	75.84	83.43	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
155	5775	75.72	73.81	PASS



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Test Report No.: RF180402W006-3

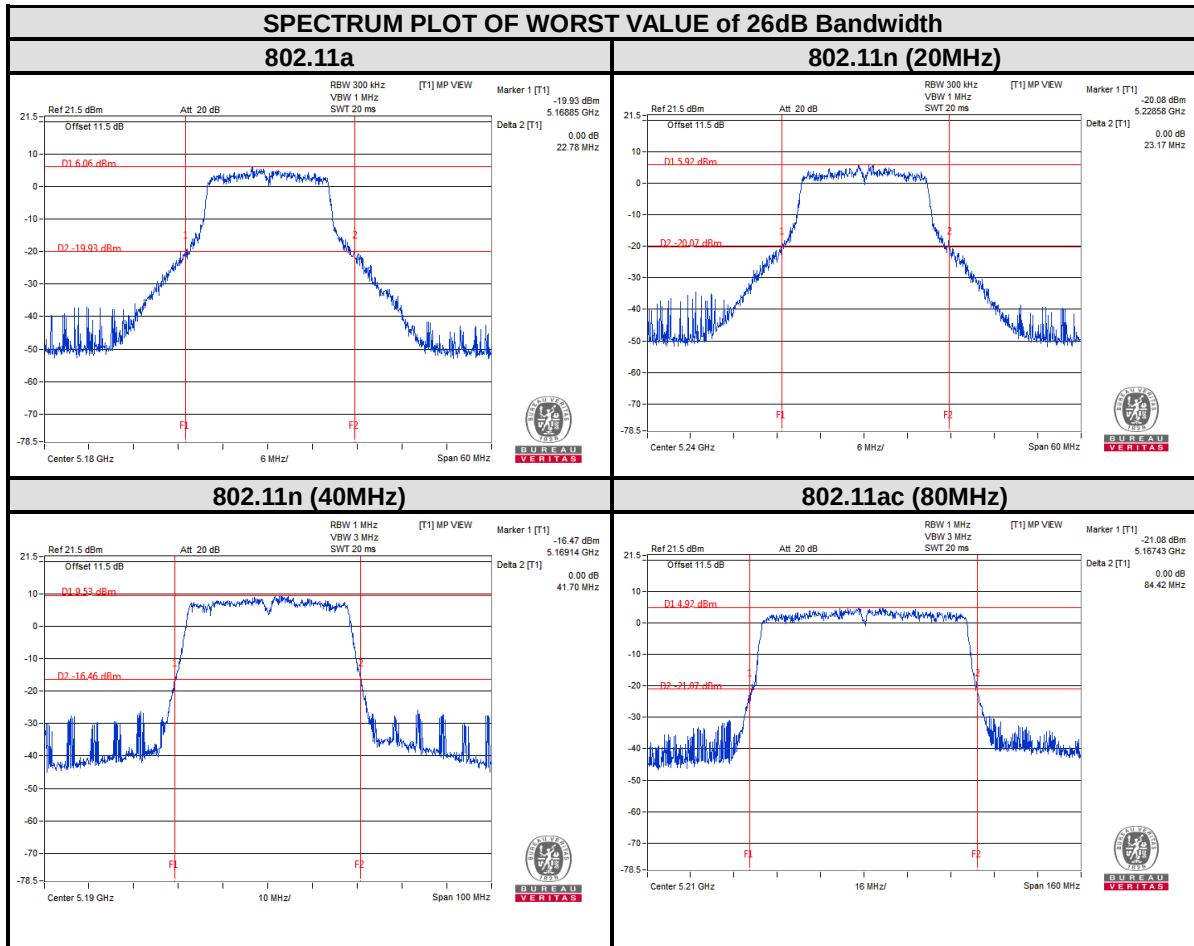
For U-NII-1:





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Test Report No.: RF180402W006-3

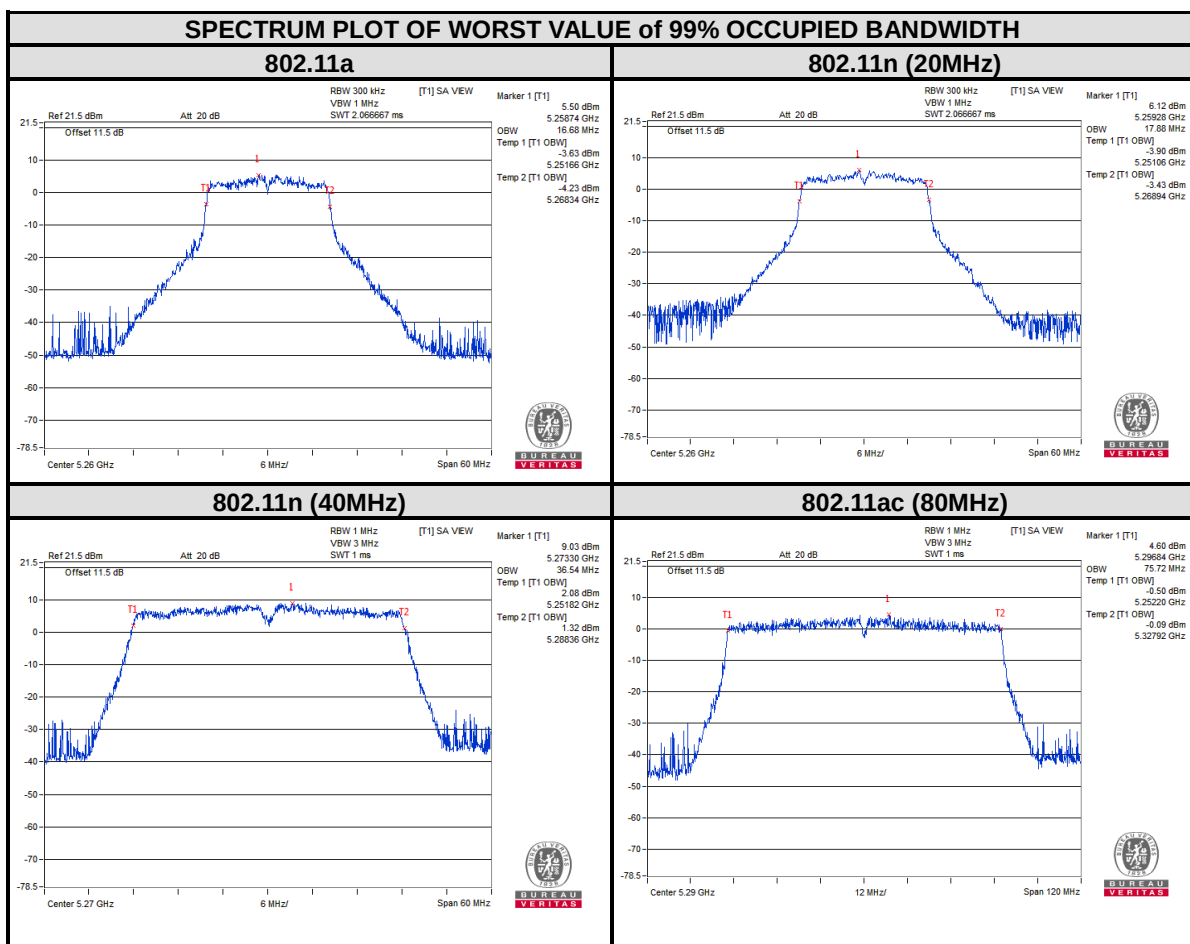




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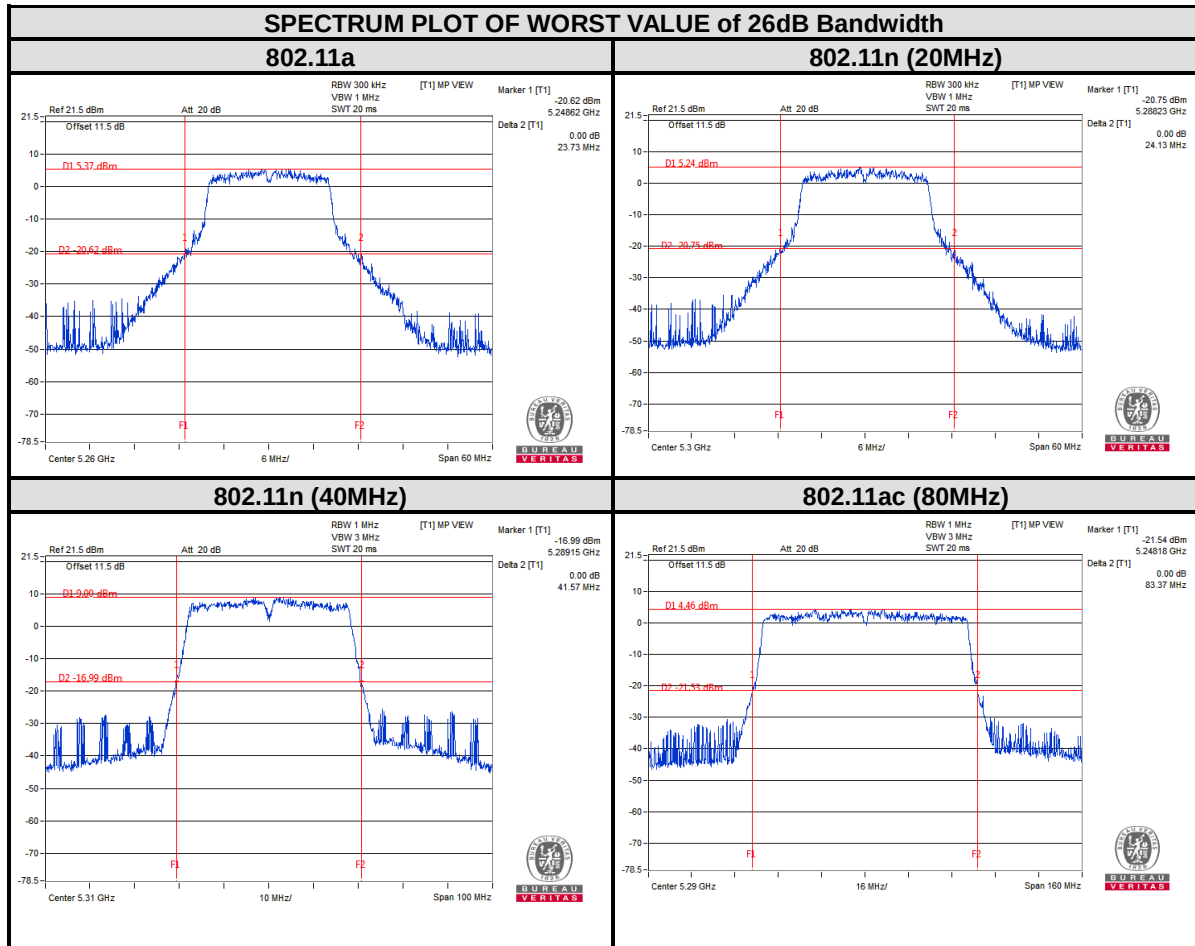
For U-NII-2A:





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Test Report No.: RF180402W006-3

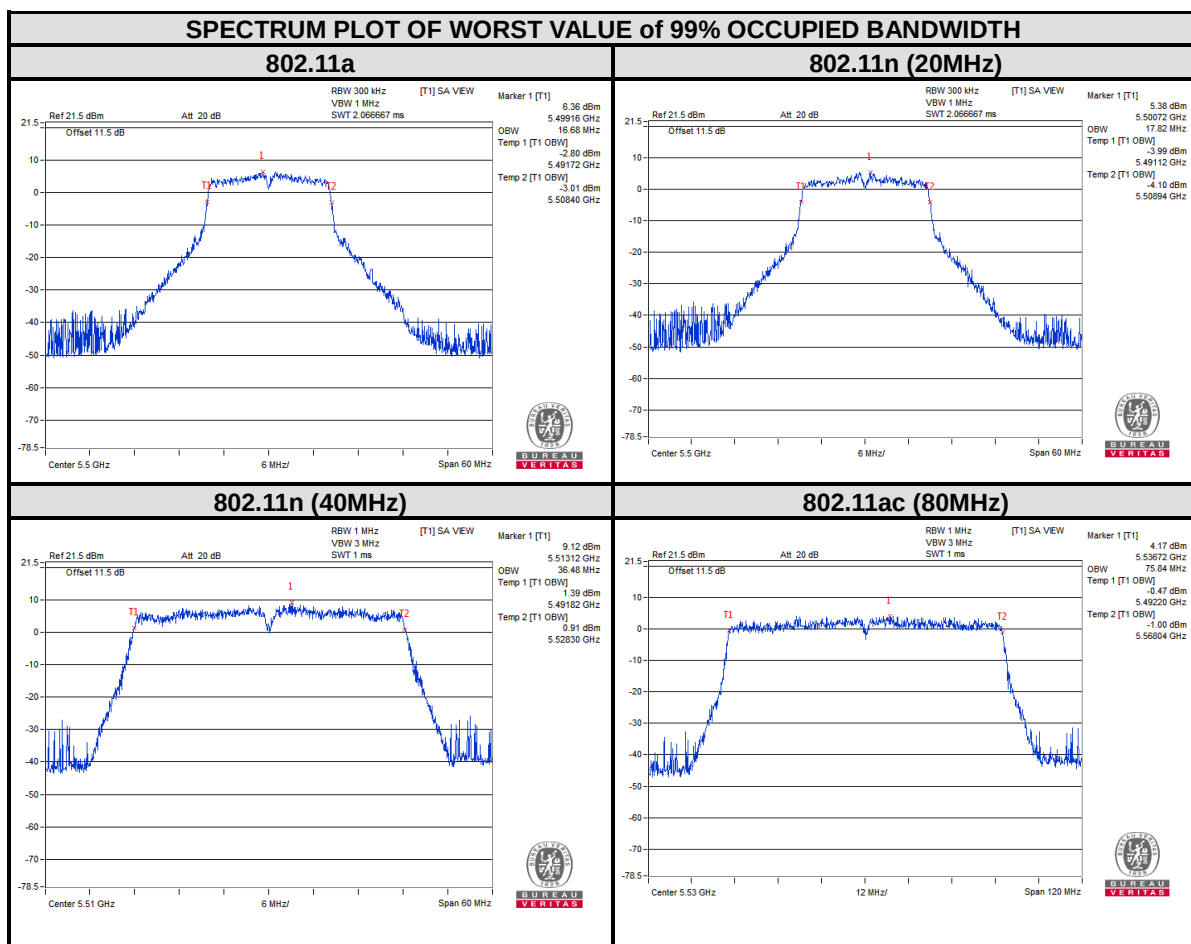




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Test Report No.: RF180402W006-3

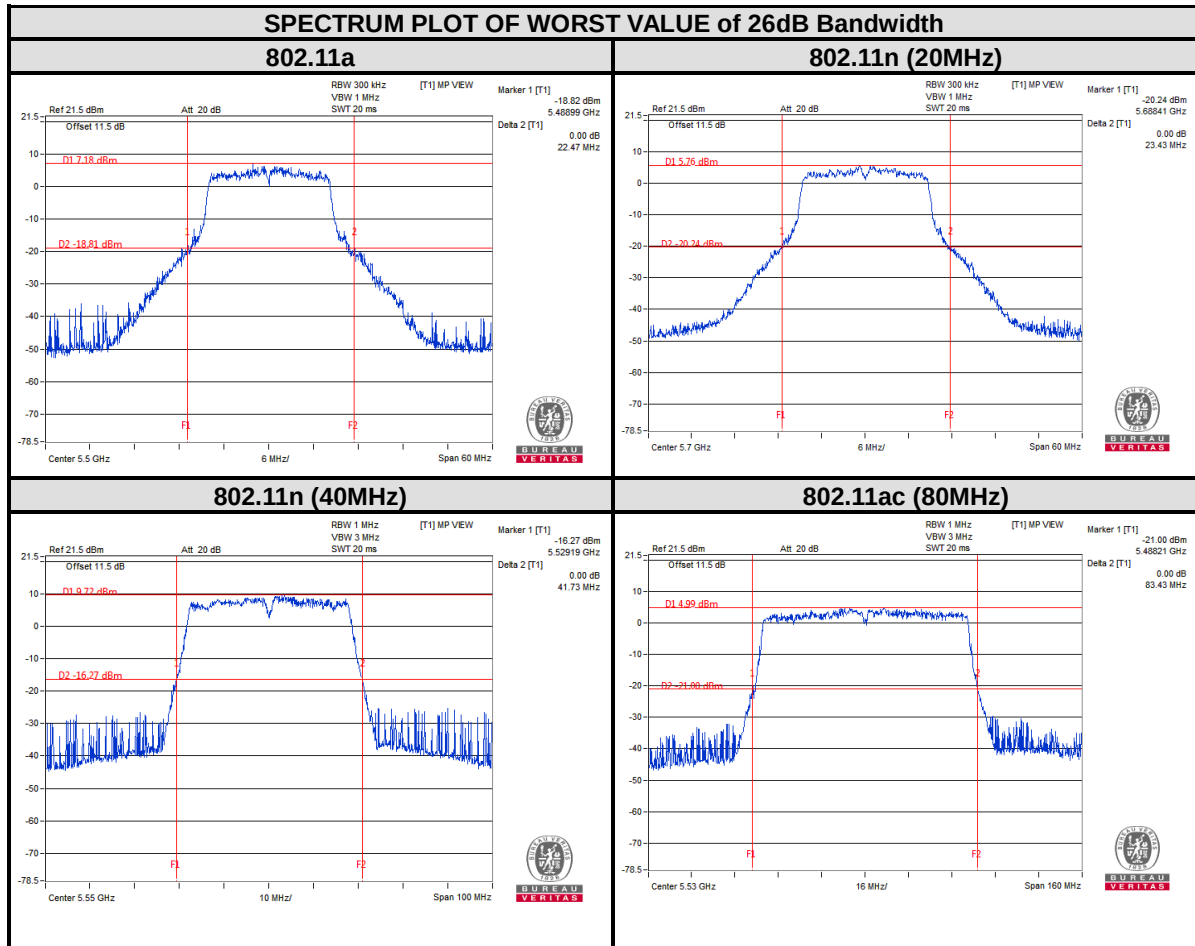
For U-NII-2C:





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Test Report No.: RF180402W006-3

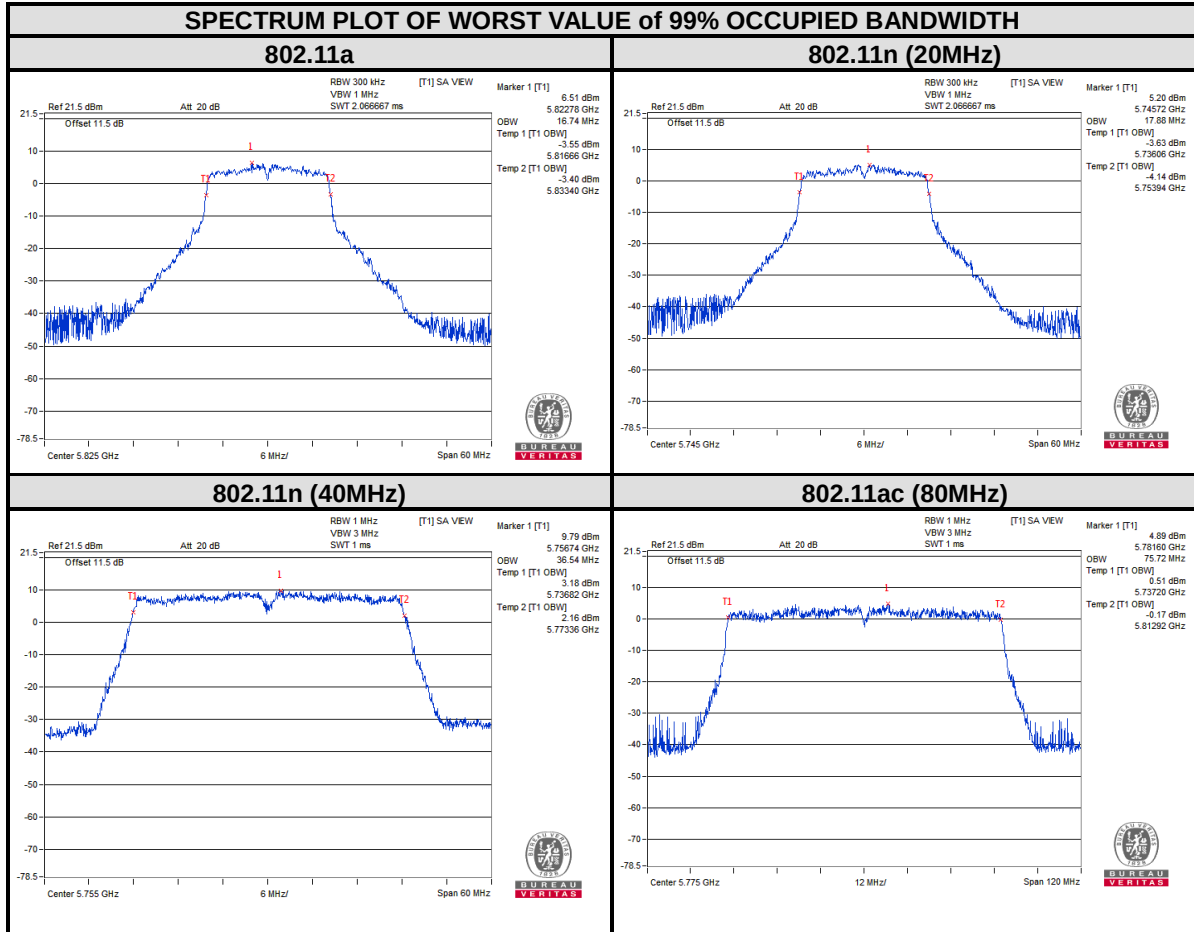




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Test Report No.: RF180402W006-3

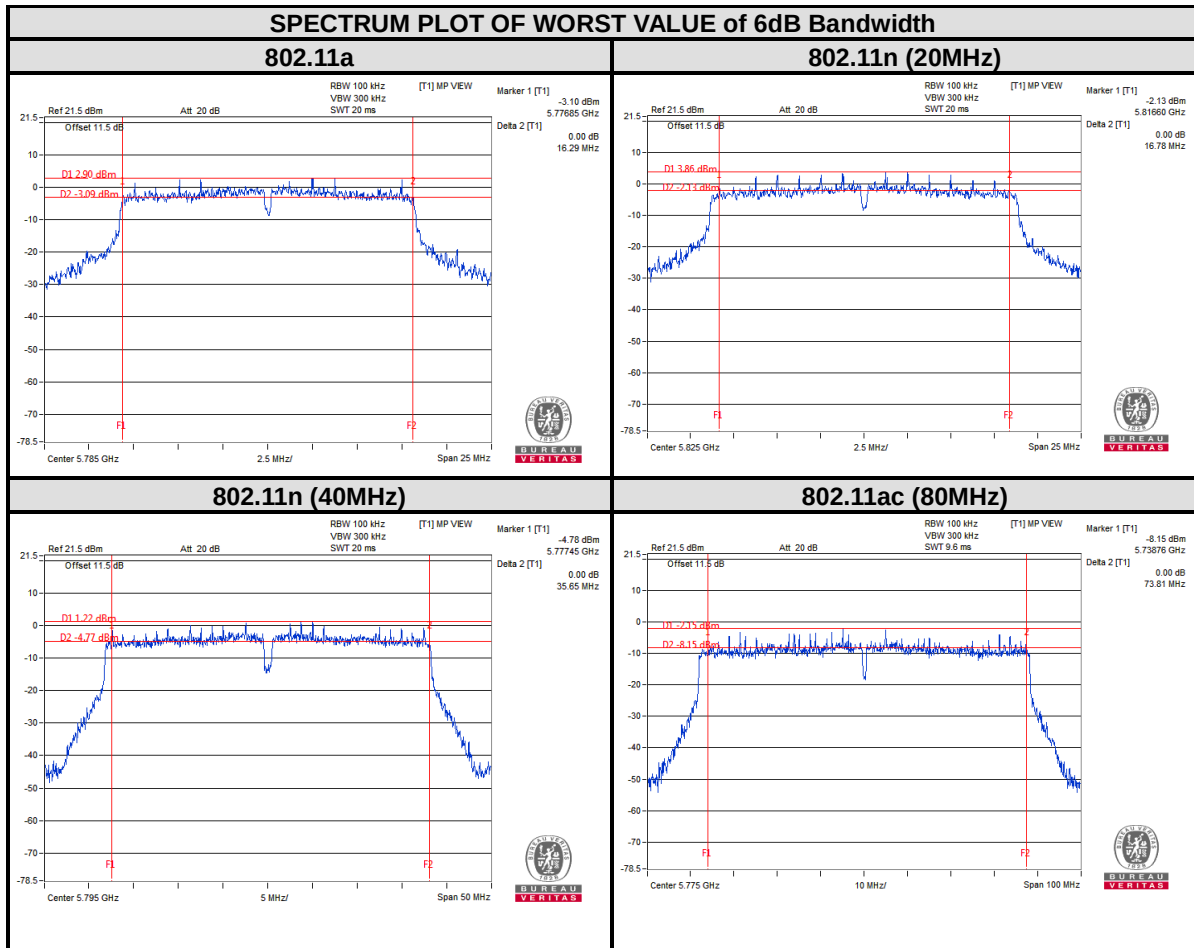
For U-NII-3:





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Test Report No.: RF180402W006-3

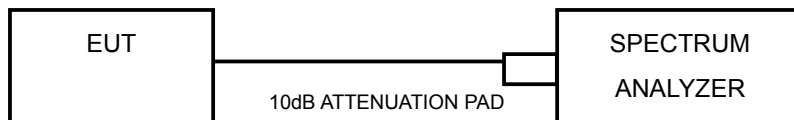


3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

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 $\geq$ 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:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	8.48	0.258	8.738	11	PASS
40	5200	8.54	0.258	8.798	11	PASS
48	5240	8.12	0.258	8.378	11	PASS
52	5260	8.47	0.258	8.728	11	PASS
60	5300	7.67	0.258	7.928	11	PASS
64	5320	7.53	0.258	7.788	11	PASS
100	5500	8.73	0.258	8.988	11	PASS
116	5580	9.05	0.258	9.308	11	PASS
140	5700	8.89	0.258	9.148	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	7.87	0.253	8.123	11	PASS
40	5200	7.91	0.253	8.163	11	PASS
48	5240	8.26	0.253	8.513	11	PASS
52	5260	8.42	0.253	8.673	11	PASS
60	5300	7.79	0.253	8.043	11	PASS
64	5320	7.87	0.253	8.123	11	PASS
100	5500	8.13	0.253	8.383	11	PASS
116	5580	8.94	0.253	9.193	11	PASS
140	5700	8.81	0.253	9.063	11	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	5.65	0.475	6.125	11	PASS
46	5230	5.51	0.475	5.985	11	PASS
54	5270	5.22	0.475	5.695	11	PASS
62	5310	5.22	0.475	5.695	11	PASS
102	5510	4.87	0.475	5.345	11	PASS
110	5550	5.08	0.475	5.555	11	PASS
134	5670	5.21	0.475	5.685	11	PASS

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
42	5210	1.61	0.950	2.560	11	PASS
58	5290	1.29	0.950	2.240	11	PASS
106	5530	1.80	0.950	2.750	11	PASS



For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	11.41	8.40	0.258	8.66	30	PASS
157	5785	11.40	8.39	0.258	8.65	30	PASS
165	5825	11.78	8.77	0.258	9.03	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	11.67	8.66	0.253	8.91	30	PASS
157	5785	11.45	8.44	0.253	8.69	30	PASS
165	5825	11.61	8.60	0.253	8.85	30	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	9.31	6.30	0.475	6.77	30	PASS
159	5795	9.74	6.73	0.475	7.20	30	PASS

802.11ac (80MHz)

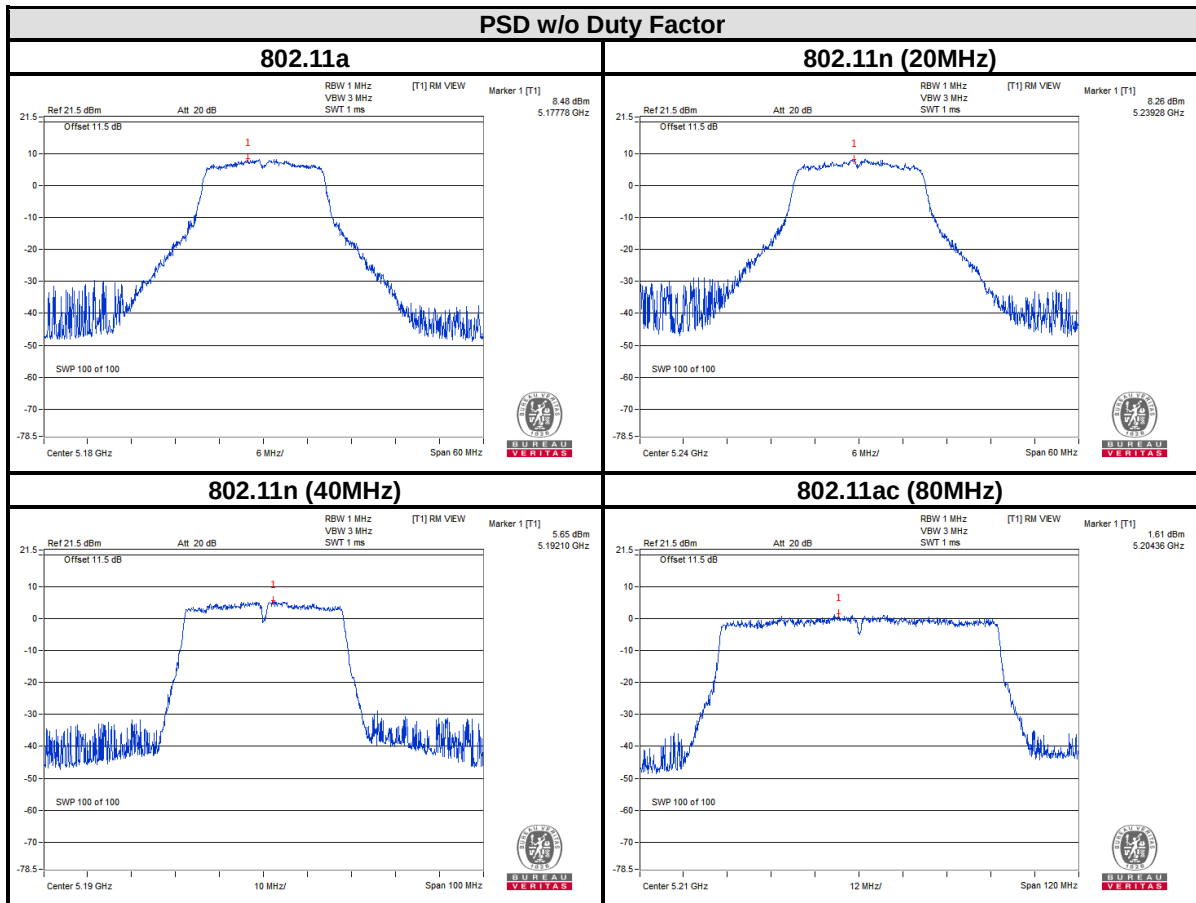
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
155	5775	5.09	2.08	0.950	3.03	30	PASS



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For 5180~5240MHz

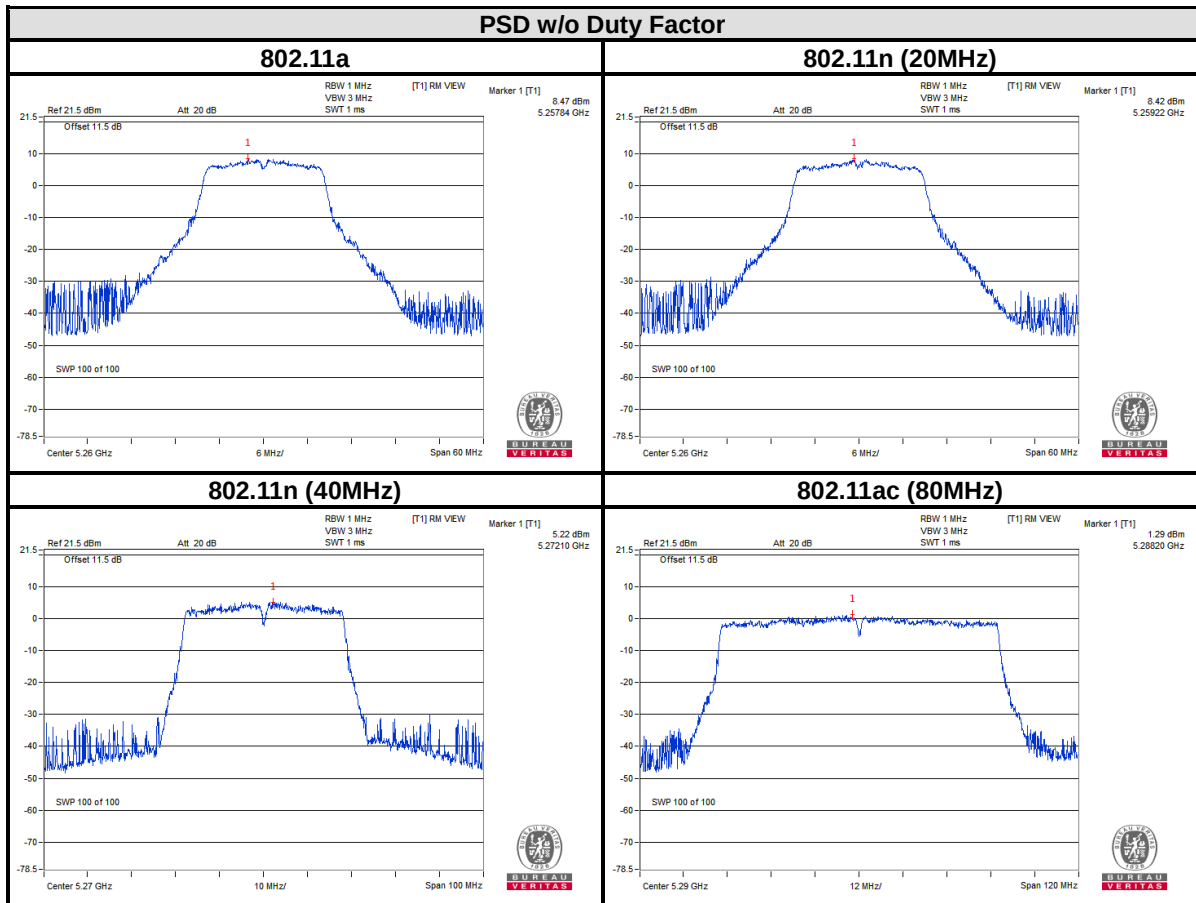




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Test Report No.: RF180402W006-3

For 5260~5320MHz

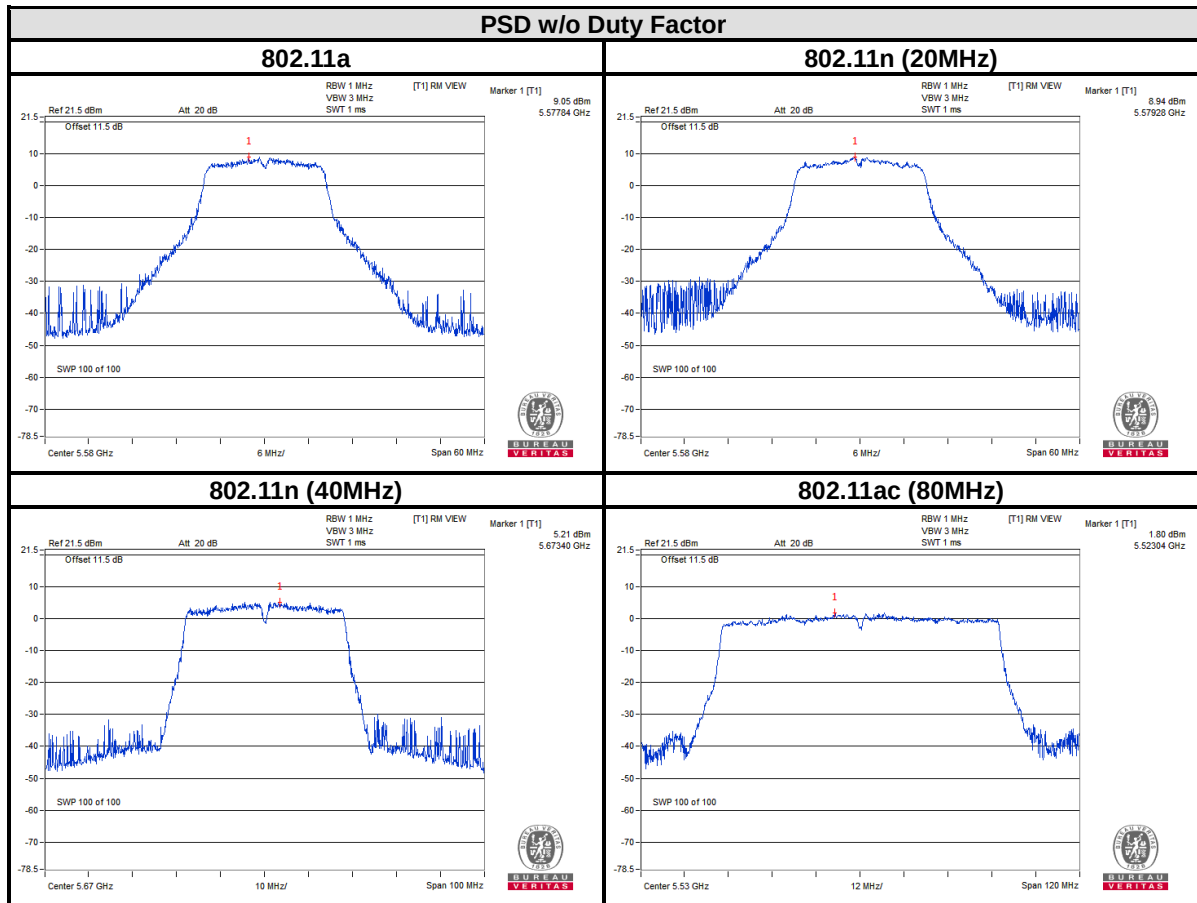




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Test Report No.: RF180402W006-3

For 5500~5700MHz

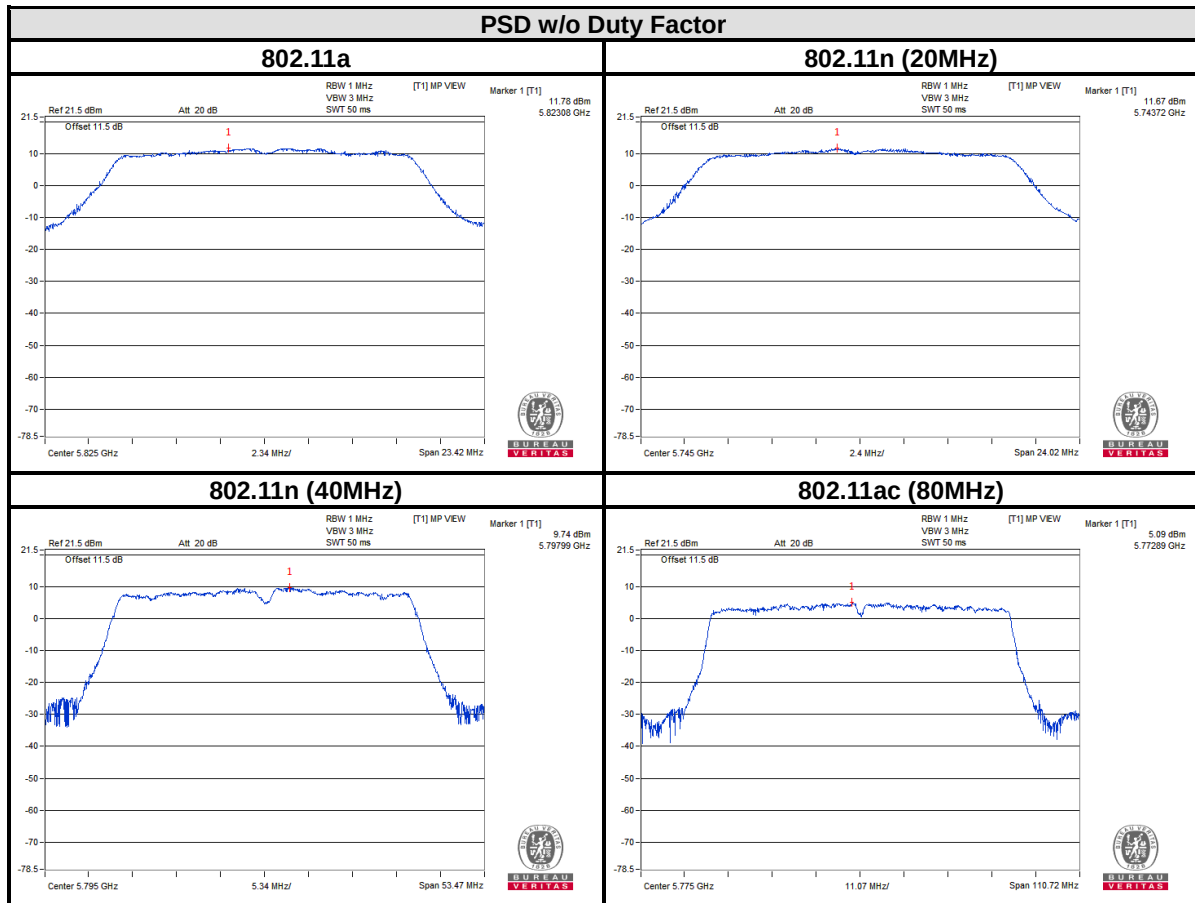




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VERITAS

Test Report No.: RF180402W006-3

For 5745~5825MHz

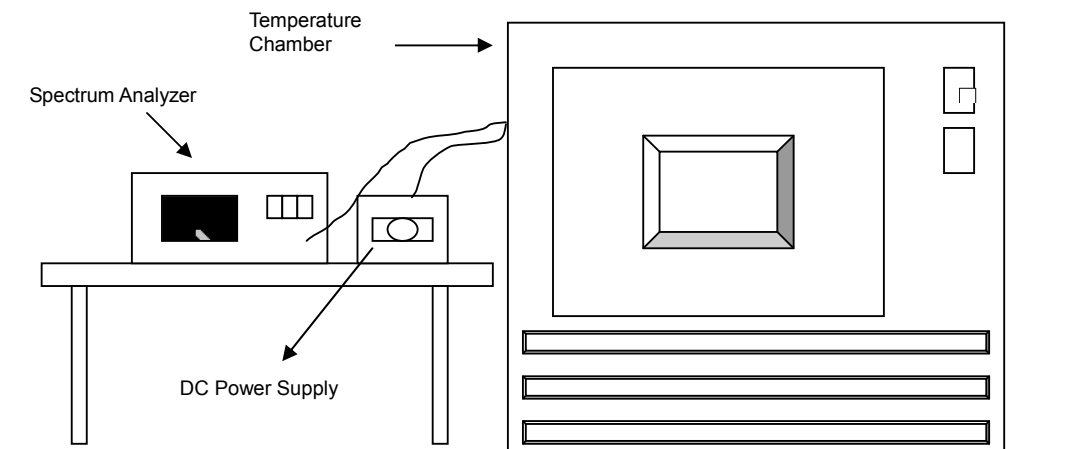


3.5 FREQUENCY STABILITY

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

FREQUENCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	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	5179.9803	-3.803	5179.9747	-4.884	5179.9736	-5.097	5179.9755	-4.730	PASS
40	120	5180.022	4.247	5180.025	4.826	5180.0201	3.880	5180.0249	4.807	PASS
30	120	5180.0127	2.452	5180.0107	2.066	5180.0116	2.239	5180.0046	0.888	PASS
20	120	5180.026	5.019	5180.02	3.861	5180.0211	4.073	5180.0252	4.865	PASS
10	120	5180.0186	3.591	5180.017	3.282	5180.0114	2.201	5180.0159	3.069	PASS
0	120	5180.0278	5.367	5180.0217	4.189	5180.0299	5.772	5180.0261	5.039	PASS
-10	120	5180.0172	3.320	5180.0157	3.031	5180.0072	1.390	5180.0106	2.046	PASS
-20	120	5180.0224	4.324	5180.0216	4.170	5180.0266	5.135	5180.0221	4.266	PASS
-30	120	5179.9723	-5.347	5179.974	-5.019	5179.9742	-4.981	5179.9798	-3.900	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	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	5180.0249	4.807	5180.0216	4.170	5180.0213	4.112	5180.0246	4.749	PASS
	120	5180.026	5.019	5180.02	3.861	5180.0211	4.073	5180.0252	4.865	PASS
	102	5180.0257	4.961	5180.0215	4.151	5180.0206	3.977	5180.0239	4.614	PASS



FREQUENCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5825MHz										
TEMP. (°C)	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	5825.0205	3.519	5825.0284	4.876	5825.0295	5.064	5825.0253	4.343	PASS
40	120	5824.9881	-2.043	5824.9933	-1.150	5824.997	-0.515	5824.9915	-1.459	PASS
30	120	5824.9735	-4.549	5824.9747	-4.343	5824.9687	-5.373	5824.972	-4.807	PASS
20	120	5825.0286	4.910	5825.032	5.494	5825.0252	4.326	5825.0301	5.167	PASS
10	120	5824.9763	-4.069	5824.9822	-3.056	5824.9724	-4.738	5824.975	-4.292	PASS
0	120	5824.9708	-5.013	5824.9714	-4.910	5824.9681	-5.476	5824.9688	-5.356	PASS
-10	120	5824.9705	-5.064	5824.9764	-4.052	5824.9716	-4.876	5824.9758	-4.155	PASS
-20	120	5824.9718	-4.841	5824.9798	-3.468	5824.9794	-3.536	5824.9769	-3.966	PASS
-30	120	5825.0034	0.584	5825.0071	1.219	5825.0101	1.734	5825.0023	0.395	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	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	5825.0268	4.601	5825.0304	5.219	5825.027	4.635	5825.0286	4.910	PASS
	120	5825.0286	4.910	5825.032	5.494	5825.0252	4.326	5825.0301	5.167	PASS
	102	5825.028	4.807	5825.0319	5.476	5825.0261	4.481	5825.0299	5.133	PASS

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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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.

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