

FCC TEST REPORT (WIFI 5G)

Product: Head Mounted Tablet

Model No.: T1100G

FCC ID: 2AJOR1100G00AA

Applicant: RealWear, Inc.

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Test Report No.: RF161205W004-3

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF161205W004-3	Original release	Mar. 07, 2017

1 CERTIFICATION

PRODUCT: Head Mounted Tablet
BRAND NAME: realwear
MODEL NAME: T1100G
APPLICANT: RealWear, Inc.
TESTED: Dec. 07, 2016 ~ Mar. 03, 2017
TEST SAMPLE: Identical Prototype
STANDARDS: **FCC Part 15, Subpart E (15.407), Section 15.407**
ANSI C63.10-2013

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

PREPARED BY : Harry , **DATE:** Mar. 07, 2017
(Harry Li/ Engineer)

APPROVED BY : Sam Tung , **DATE:** Mar. 07, 2017
(Sam Tung / Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -6.99dB at 0.696000MHz.
15.407(b)(1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -4.47dB at 11550MHz.
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.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.74dB
	30MHz ~ 1GMHz	3.55dB
	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	1.94dB

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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Head Mounted Tablet
BRAND NAME	realwear
MODEL NAME	T1100G
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.8Vdc (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	27.164mW for 5180 ~ 5240MHz 25.061mW for 5260 ~ 5320MHz 26.303mW for 5500 ~ 5700MHz 22.439mW for 5745 ~ 5825MHz
ANTENNA TYPE	5180 ~ 5240MHz: PCB Antenna with 1dBi gain 5260 ~ 5320MHz: PCB Antenna with 1.5dBi gain 5500 ~ 5700MHz: PCB Antenna with 2.5dBi gain 5745 ~ 5825MHz: PCB Antenna with 0dBi gain
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: non-shielded, detachable, 2.0m



NOTE:

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

3. The EUT matched the following USB cable:

USB CABLE	
BRAND:	KELI
MODEL:	KLC-2551
SIGNAL LINE:	2.0 METER

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

3.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

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

4 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		



3.2.1 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, 44, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11ac (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	802.11ac	5180-5240	42	42	OFDM	BPSK	V0

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	802.11ac	5180-5240	42	42	OFDM	BPSK	V0

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	Tony
RE≥1G	23deg. C, 62%RH	DC 5V By Adapter	Tony
PLC	24deg. C, 61%RH	DC 5V By Adapter	Yuqiang Yin
APCM	23.5deg. C, 60%RH	DC 3.85V By battery	Yuqiang Yin



3.3 DUTY CYCLE OF TEST SIGNAL

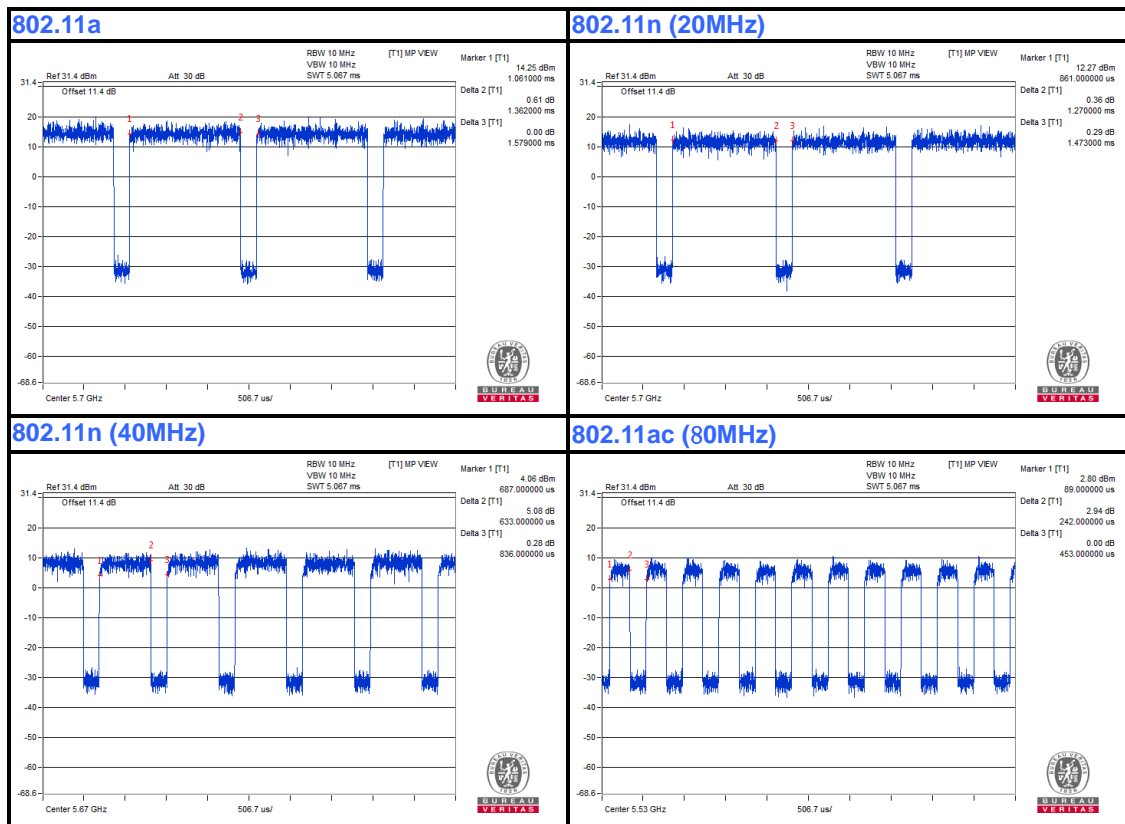
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $1.362/1.579 = 0.863$, Duty factor = $10 * \log(1/0.863) = 0.64$

802.11n (20MHz): Duty cycle = $1.270/1.473 = 0.862$, Duty factor = $10 * \log(1/0.862) = 0.64$

802.11n (40MHz): Duty cycle = $0.633/0.836 = 0.757$, Duty factor = $10 * \log(1/0.757) = 1.21$

802.11ac (80MHz): Duty cycle = $0.242/0.453 = 0.534$, Duty factor = $10 * \log(1/0.534) = 2.72$





3.4 DESCRIPTION OF SUPPORT UNITS

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

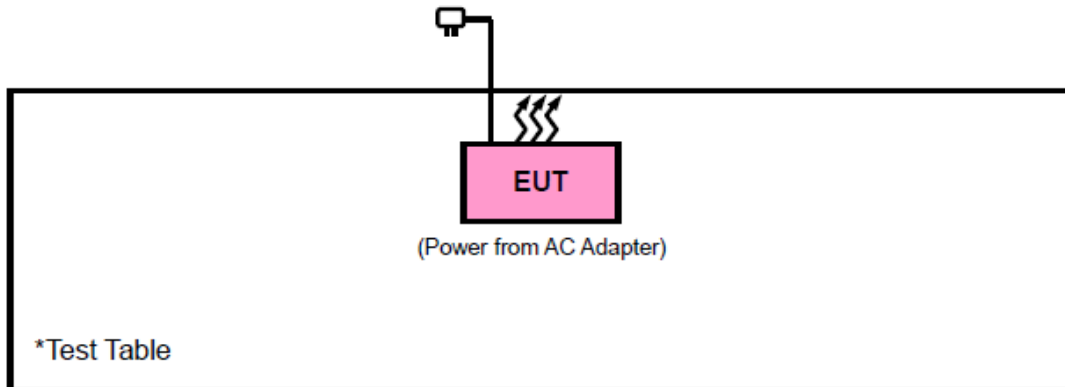
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A

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

NOTE:

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED 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 v01r02

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.

4 TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01r02	FIELD STRENGTH AT 3m (dBμV/m)	
	PK : 74	AV : 54
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.

4.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 05,16	Apr. 04,17
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 09,16	Nov. 08,17
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 14, 16	Jul. 13, 17
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 18,16	May 17,17
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 12,16	Mar. 11,18
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 12,16	Mar. 11,17
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 03, 17	Mar. 02, 18
Pre-Amplifier(1-18G)	HP	8449B	3008A00409	Apr. 25,16	Apr. 24,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,16	Nov. 03,17
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 08,16	Aug. 07,17

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.
2. The test was performed in 10m Chamber.
3. The FCC Site Registration No. is 502831.

4.1.4 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:

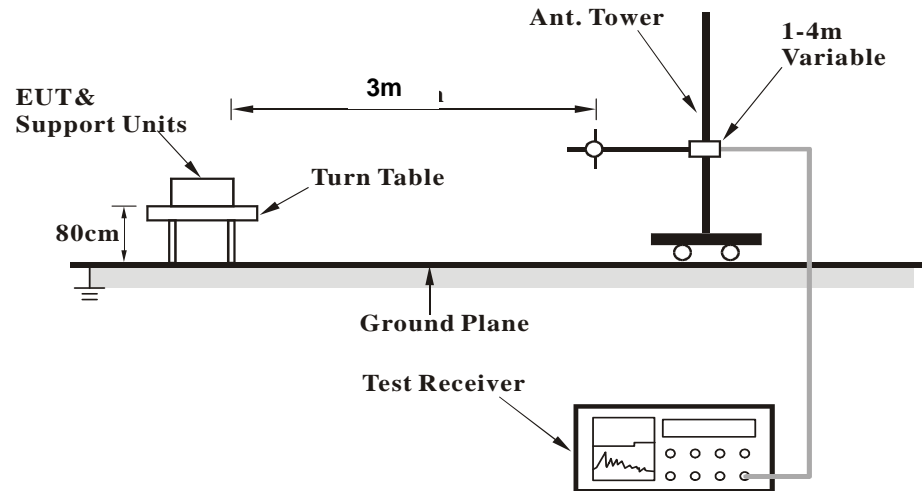
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

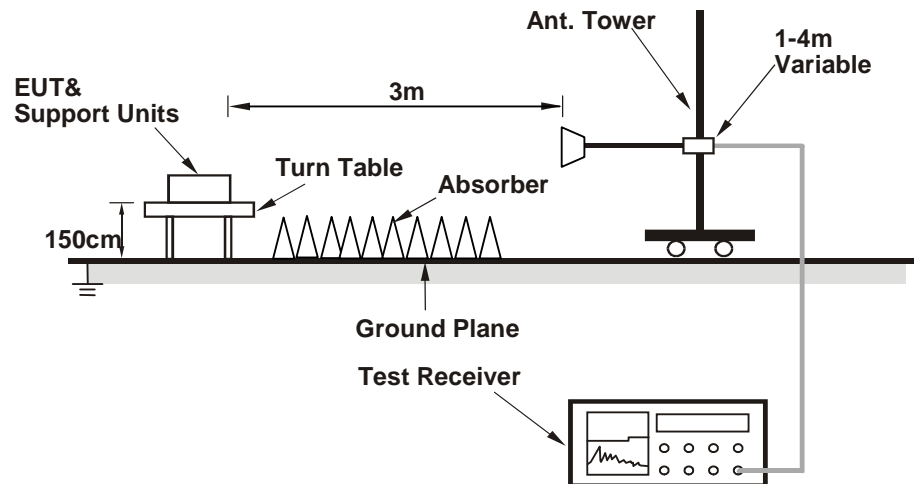
No deviation.

4.1.6 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.7 EUT OPERATING CONDITION

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



4.1.8 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:

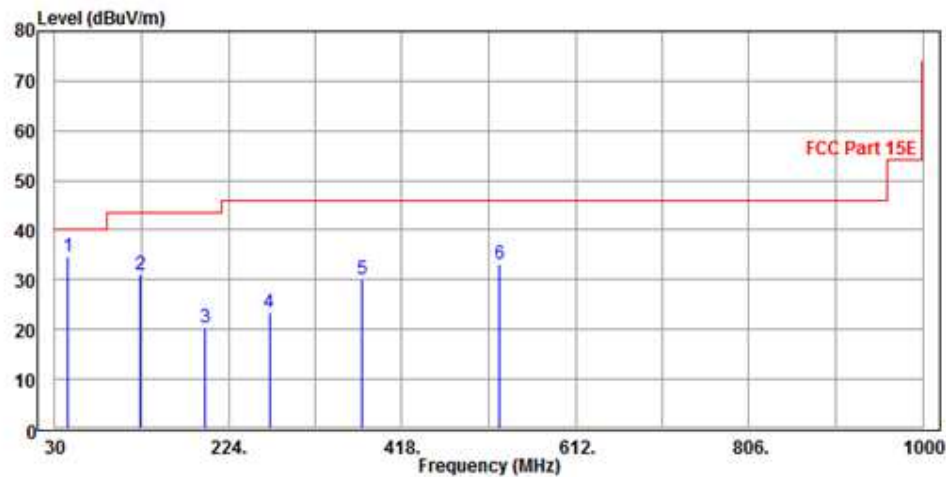
802.11ac 80MHz

CHANNEL	TX Channel 42	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
44.55	22.22	50.13	40	-17.78	8.52	1.01	37.44	200	35	QP
125.06	33.78	61.52	43.5	-9.72	7.45	1.72	36.91	200	84	QP
272.5	29.13	50.4	46	-16.87	12.67	2.57	36.51	200	125	QP
375.32	30.8	48.27	46	-15.2	16.16	3.04	36.67	200	186	QP
430.61	30.46	46.44	46	-15.54	17.57	3.24	36.79	200	276	QP
525.67	30.13	44.67	46	-15.87	18.89	3.6	37.03	200	97	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.





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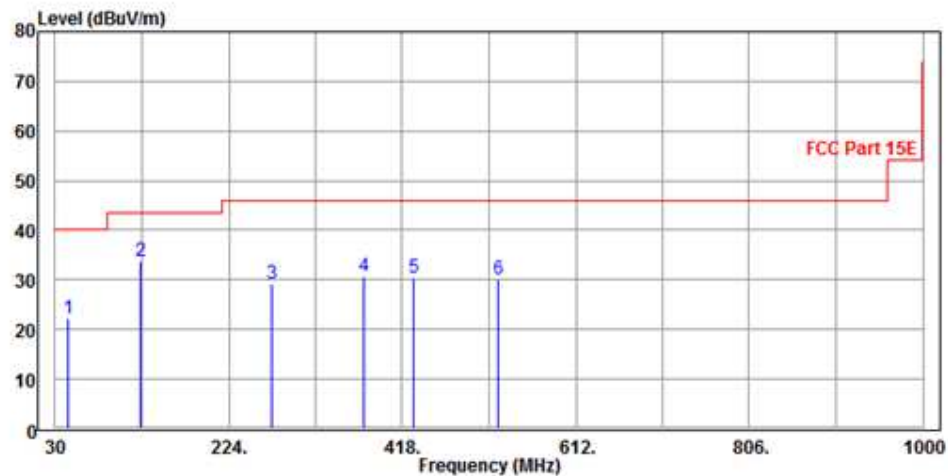
Test Report No.: RF161205W004-3

CHANNEL	Channel 42	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
44.55	34.67	62.58	40	-5.33	8.52	1.01	37.44	100	24	QP
125.06	31.03	58.77	43.5	-12.47	7.45	1.72	36.91	100	60	QP
197.81	20.38	44.7	43.5	-23.12	10.08	2.16	36.56	100	115	QP
269.59	23.57	44.88	46	-22.43	12.64	2.56	36.51	100	178	QP
373.38	30.21	47.75	46	-15.79	16.08	3.04	36.66	100	256	QP
527.61	33.14	47.65	46	-12.86	18.92	3.61	37.04	100	90	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.





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Test Report No.: RF161205W004-3

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.73	42.55	54	-12.27	34.48	13.71	49.01	100	100	Average
5150	52.75	53.57	74	-21.25	34.48	13.71	49.01	100	100	Peak
5180	91.02	91.73			34.52	13.79	49.02	100	100	Average
5180	100.31	101.02			34.52	13.79	49.02	100	100	Peak
5350	41.46	41.54	54	-12.54	34.72	14.28	49.08	100	100	Average
5350	52.01	52.09	74	-21.99	34.72	14.28	49.08	100	100	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.41	44.23	54	-10.59	34.48	13.71	49.01	180	70	Average
5150	52.32	53.14	74	-21.68	34.48	13.71	49.01	180	70	Peak
5180	94.2	94.91			34.52	13.79	49.02	180	70	Average
5180	103.6	104.31			34.52	13.79	49.02	180	70	Peak
5350	41.67	41.75	54	-12.33	34.72	14.28	49.08	180	70	Average
5350	52.21	52.29	74	-21.79	34.72	14.28	49.08	180	70	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.: RF161205W004-3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.68	41.5	54	-13.32	34.48	13.71	49.01	100	120	Average
5150	51.13	51.95	74	-22.87	34.48	13.71	49.01	100	120	Peak
5220	91.16	91.73			34.56	13.91	49.04	100	120	Average
5220	100.8	101.37			34.56	13.91	49.04	100	120	Peak
5350	40.78	40.86	54	-13.22	34.72	14.28	49.08	100	120	Average
5350	51.92	52	74	-22.08	34.72	14.28	49.08	100	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
5150	40.65	41.47	54	-13.35	34.48	13.71	49.01	180	80	Average
5150	51.08	51.9	74	-22.92	34.48	13.71	49.01	180	80	Peak
5220	96.14	96.71			34.56	13.91	49.04	180	80	Average
5220	104.88	105.45			34.56	13.91	49.04	180	80	Peak
5350	40.69	40.77	54	-13.31	34.72	14.28	49.08	180	80	Average
5350	52.23	52.31	74	-21.77	34.72	14.28	49.08	180	80	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.93	41.75	54	-13.07	34.48	13.71	49.01	100	150	Average
5150	51.31	52.13	74	-22.69	34.48	13.71	49.01	100	150	Peak
5240	90.62	91.1			34.59	13.97	49.04	100	150	Average
5240	100.9	101.38			34.59	13.97	49.04	100	150	Peak
5350	40.97	41.05	54	-13.03	34.72	14.28	49.08	100	150	Average
5350	52.13	52.21	74	-21.87	34.72	14.28	49.08	100	150	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	40.29	41.11	54	-13.71	34.48	13.71	49.01	178	80	Average
5150	51.53	52.35	74	-22.47	34.48	13.71	49.01	178	80	Peak
5240	96.23	96.71			34.59	13.97	49.04	178	80	Average
5240	105.31	105.79			34.59	13.97	49.04	178	80	Peak
5350	40.45	40.53	54	-13.55	34.72	14.28	49.08	178	80	Average
5350	50.95	51.03	74	-23.05	34.72	14.28	49.08	178	80	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.: RF161205W004-3

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	41.36	42.18	54	-12.64	34.48	13.71	49.01	100	100	Average
5150	52.47	53.29	74	-21.53	34.48	13.71	49.01	100	100	Peak
5180	87.37	88.08			34.52	13.79	49.02	100	100	Average
5180	97.2	97.91			34.52	13.79	49.02	100	100	Peak
5350	40.99	41.07	54	-13.01	34.72	14.28	49.08	100	100	Average
5350	51.49	51.57	74	-22.51	34.72	14.28	49.08	100	100	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	41.03	41.85	54	-12.97	34.48	13.71	49.01	175	70	Average
5150	51.6	52.42	74	-22.4	34.48	13.71	49.01	175	70	Peak
5180	91.41	92.12			34.52	13.79	49.02	175	70	Average
5180	101.85	102.56			34.52	13.79	49.02	175	70	Peak
5350	40.89	40.97	54	-13.11	34.72	14.28	49.08	175	70	Average
5350	53.3	53.38	74	-20.7	34.72	14.28	49.08	175	70	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.: RF161205W004-3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.93	41.75	54	-13.07	34.48	13.71	49.01	100	130	Average
5150	51.68	52.5	74	-22.32	34.48	13.71	49.01	100	130	Peak
5220	87.1	87.67			34.56	13.91	49.04	100	130	Average
5220	96.43	97			34.56	13.91	49.04	100	130	Peak
5350	40.95	41.03	54	-13.05	34.72	14.28	49.08	100	130	Average
5350	50.9	50.98	74	-23.1	34.72	14.28	49.08	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.91	41.73	54	-13.09	34.48	13.71	49.01	182	80	Average
5150	51.53	52.35	74	-22.47	34.48	13.71	49.01	182	80	Peak
5220	92.01	92.58			34.56	13.91	49.04	182	80	Average
5220	101.76	102.33			34.56	13.91	49.04	182	80	Peak
5350	40.92	41	54	-13.08	34.72	14.28	49.08	182	80	Average
5350	50.32	50.4	74	-23.68	34.72	14.28	49.08	182	80	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.92	41.74	54	-13.08	34.48	13.71	49.01	100	120	Average
5150	51.08	51.9	74	-22.92	34.48	13.71	49.01	100	120	Peak
5240	87.52	88			34.59	13.97	49.04	100	120	Average
5240	97.35	97.83			34.59	13.97	49.04	100	120	Peak
5350	40.92	41	54	-13.08	34.72	14.28	49.08	100	120	Average
5350	51.03	51.11	74	-22.97	34.72	14.28	49.08	100	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
5150	40.85	41.67	54	-13.15	34.48	13.71	49.01	180	80	Average
5150	51.55	52.37	74	-22.45	34.48	13.71	49.01	180	80	Peak
5240	93.07	93.55			34.59	13.97	49.04	180	80	Average
5240	102.85	103.33			34.59	13.97	49.04	180	80	Peak
5350	40.84	40.92	54	-13.16	34.72	14.28	49.08	180	80	Average
5350	52.07	52.15	74	-21.93	34.72	14.28	49.08	180	80	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.: RF161205W004-3

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	41.21	42.03	54	-12.79	34.48	13.71	49.01	100	120	Average
5150	51.24	52.06	74	-22.76	34.48	13.71	49.01	100	120	Peak
5190	83.98	84.66			34.53	13.82	49.03	100	120	Average
5190	94.74	95.42			34.53	13.82	49.03	100	120	Peak
5350	40.89	40.97	54	-13.11	34.72	14.28	49.08	100	120	Average
5350	52.21	52.29	74	-21.79	34.72	14.28	49.08	100	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
5150	42.46	43.28	54	-11.54	34.48	13.71	49.01	182	80	Average
5150	52.09	52.91	74	-21.91	34.48	13.71	49.01	182	80	Peak
5190	88.43	89.11			34.53	13.82	49.03	182	80	Average
5190	99.34	100.02			34.53	13.82	49.03	182	80	Peak
5350	40.86	40.94	54	-13.14	34.72	14.28	49.08	182	80	Average
5350	51.35	51.43	74	-22.65	34.72	14.28	49.08	182	80	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	40.72	41.54	54	-13.28	34.48	13.71	49.01	100	120	Average
5150	51.34	52.16	74	-22.66	34.48	13.71	49.01	100	120	Peak
5230	83.8	84.32			34.58	13.94	49.04	100	120	Average
5230	94.27	94.79			34.58	13.94	49.04	100	120	Peak
5350	40.73	40.81	54	-13.27	34.72	14.28	49.08	100	120	Average
5350	50.62	50.7	74	-23.38	34.72	14.28	49.08	100	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
5150	41.11	41.93	54	-12.89	34.48	13.71	49.01	180	70	Average
5150	51.56	52.38	74	-22.44	34.48	13.71	49.01	180	70	Peak
5230	88.33	88.85			34.58	13.94	49.04	180	70	Average
5230	98.85	99.37			34.58	13.94	49.04	180	70	Peak
5350	40.79	40.87	54	-13.21	34.72	14.28	49.08	180	70	Average
5350	51.78	51.86	74	-22.22	34.72	14.28	49.08	180	70	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	39.52	40.34	54	-14.48	34.48	13.71	49.01	100	160	Average
5150	51.13	51.95	74	-22.87	34.48	13.71	49.01	100	160	Peak
5210	84.86	85.46			34.55	13.88	49.03	100	160	Average
5210	95.08	95.68			34.55	13.88	49.03	100	160	Peak
5350	40.61	40.69	54	-13.39	34.72	14.28	49.08	100	160	Average
5350	52.97	53.05	74	-21.03	34.72	14.28	49.08	100	160	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	40.53	41.35	54	-13.47	34.48	13.71	49.01	170	80	Average
5150	51.51	52.33	74	-22.49	34.48	13.71	49.01	170	80	Peak
5210	89.09	89.69			34.55	13.88	49.03	170	80	Average
5210	99.56	100.16			34.55	13.88	49.03	170	80	Peak
5350	40.98	41.06	54	-13.02	34.72	14.28	49.08	170	80	Average
5350	52.41	52.49	74	-21.59	34.72	14.28	49.08	170	80	Peak

REMARKS:

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



ABOVE 1GHz WORST-CASE DATA: Band 2

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.76	41.58	54	-13.24	34.48	13.71	49.01	100	150	Average
5150	51.46	52.28	74	-22.54	34.48	13.71	49.01	100	150	Peak
5260	91.32	91.74			34.61	14.02	49.05	100	150	Average
5260	100.67	101.09			34.61	14.02	49.05	100	150	Peak
5350	40.87	40.95	54	-13.13	34.72	14.28	49.08	100	150	Average
5350	51.57	51.65	74	-22.43	34.72	14.28	49.08	100	150	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	40.71	41.53	54	-13.29	34.48	13.71	49.01	180	80	Average
5150	50.62	51.44	74	-23.38	34.48	13.71	49.01	180	80	Peak
5260	94.99	95.41			34.61	14.02	49.05	180	80	Average
5260	104.57	104.99			34.61	14.02	49.05	180	80	Peak
5350	40.76	40.84	54	-13.24	34.72	14.28	49.08	180	80	Average
5350	51.46	51.54	74	-22.54	34.72	14.28	49.08	180	80	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.73	41.55	54	-13.27	34.48	13.71	49.01	180	80	Average
5150	51.28	52.1	74	-22.72	34.48	13.71	49.01	180	80	Peak
5300	93.6	93.86			34.66	14.14	49.06	180	80	Average
5300	103.54	103.8			34.66	14.14	49.06	180	80	Peak
5350	42.71	42.79	54	-11.29	34.72	14.28	49.08	180	80	Average
5350	52.27	52.35	74	-21.73	34.72	14.28	49.08	180	80	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	41.66	42.48	54.00	-12.34	34.48	13.71	49.01	180	100	Average
5150	52.21	53.03	74.00	-21.79	34.48	13.71	49.01	180	100	Peak
5300	94.78	95.04			34.66	14.14	49.06	180	100	Average
5300	104.71	104.97			34.66	14.14	49.06	180	100	Peak
5352	45.28	45.35	54.00	-8.72	34.72	14.29	49.08	180	100	Average
5352	54.50	54.57	74.00	-19.50	34.72	14.29	49.08	180	100	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.77	41.59	54	-13.23	34.48	13.71	49.01	100	158	Average
5150	51.5	52.32	74	-22.5	34.48	13.71	49.01	100	158	Peak
5320	91.74	91.93			34.68	14.2	49.07	100	158	Average
5320	101.18	101.37			34.68	14.2	49.07	100	158	Peak
5350	42.61	42.69	54	-11.39	34.72	14.28	49.08	100	158	Average
5350	51.54	51.62	74	-22.46	34.72	14.28	49.08	100	158	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	40.81	41.63	54	-13.19	34.48	13.71	49.01	176	80	Average
5150	51.41	52.23	74	-22.59	34.48	13.71	49.01	176	80	Peak
5320	95.55	95.74			34.68	14.2	49.07	176	80	Average
5320	103.84	104.03			34.68	14.2	49.07	176	80	Peak
5350	43.8	43.88	54	-10.2	34.72	14.28	49.08	176	80	Average
5350	52.19	52.27	74	-21.81	34.72	14.28	49.08	176	80	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.71	41.53	54	-13.29	34.48	13.71	49.01	100	130	Average
5150	50.81	51.63	74	-23.19	34.48	13.71	49.01	100	130	Peak
5260	87.12	87.54			34.61	14.02	49.05	100	130	Average
5260	97.08	97.5			34.61	14.02	49.05	100	130	Peak
5350	40.79	40.87	54	-13.21	34.72	14.28	49.08	100	130	Average
5350	52.24	52.32	74	-21.76	34.72	14.28	49.08	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	40.72	41.54	54	-13.28	34.48	13.71	49.01	180	80	Average
5150	52.45	53.27	74	-21.55	34.48	13.71	49.01	180	80	Peak
5260	92.18	92.6			34.61	14.02	49.05	180	80	Average
5260	102.04	102.46			34.61	14.02	49.05	180	80	Peak
5350	40.79	40.87	54	-13.21	34.72	14.28	49.08	180	80	Average
5350	52.35	52.43	74	-21.65	34.72	14.28	49.08	180	80	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.74	41.56	54	-13.26	34.48	13.71	49.01	100	156	Average
5150	51.25	52.07	74	-22.75	34.48	13.71	49.01	100	156	Peak
5300	90.07	90.33			34.66	14.14	49.06	100	156	Average
5300	99.98	100.24			34.66	14.14	49.06	100	156	Peak
5350	42.9	42.98	54	-11.1	34.72	14.28	49.08	100	156	Average
5350	52.18	52.26	74	-21.82	34.72	14.28	49.08	100	156	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	40.74	41.56	54	-13.26	34.48	13.71	49.01	180	70	Average
5150	51.38	52.2	74	-22.62	34.48	13.71	49.01	180	70	Peak
5300	90.82	91.08			34.66	14.14	49.06	180	70	Average
5300	99.87	100.13			34.66	14.14	49.06	180	70	Peak
5350	42.19	42.27	54	-11.81	34.72	14.28	49.08	180	70	Average
5350	52.97	53.05	74	-21.03	34.72	14.28	49.08	180	70	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.75	41.57	54	-13.25	34.48	13.71	49.01	100	156	Average
5150	50.98	51.8	74	-23.02	34.48	13.71	49.01	100	156	Peak
5320	90.23	90.42			34.68	14.2	49.07	100	156	Average
5320	98.88	99.07			34.68	14.2	49.07	100	156	Peak
5350	42.29	42.37	54	-11.71	34.72	14.28	49.08	100	156	Average
5350	52.36	52.44	74	-21.64	34.72	14.28	49.08	100	156	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	40.84	41.66	54	-13.16	34.48	13.71	49.01	176	80	Average
5150	51.86	52.68	74	-22.14	34.48	13.71	49.01	176	80	Peak
5320	93.1	93.29			34.68	14.2	49.07	176	80	Average
5320	102.47	102.66			34.68	14.2	49.07	176	80	Peak
5350	43.11	43.19	54	-10.89	34.72	14.28	49.08	176	80	Average
5350	52.12	52.2	74	-21.88	34.72	14.28	49.08	176	80	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.85	41.67	54	-13.15	34.48	13.71	49.01	100	150	Average
5150	51.83	52.65	74	-22.17	34.48	13.71	49.01	100	150	Peak
5270	84.85	85.23			34.62	14.05	49.05	100	150	Average
5270	95.23	95.61			34.62	14.05	49.05	100	150	Peak
5350	41	41.08	54	-13	34.72	14.28	49.08	100	150	Average
5350	51.79	51.87	74	-22.21	34.72	14.28	49.08	100	150	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	40.85	41.67	54	-13.15	34.48	13.71	49.01	170	75	Average
5150	51.63	52.45	74	-22.37	34.48	13.71	49.01	170	75	Peak
5270	88.49	88.87			34.62	14.05	49.05	170	75	Average
5270	99.25	99.63			34.62	14.05	49.05	170	75	Peak
5350	41.18	41.26	54	-12.82	34.72	14.28	49.08	170	75	Average
5350	51.2	51.28	74	-22.8	34.72	14.28	49.08	170	75	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.73	41.55	54	-13.27	34.48	13.71	49.01	100	150	Average
5150	50.59	51.41	74	-23.41	34.48	13.71	49.01	100	150	Peak
5310	84.8	85.02			34.67	14.17	49.06	100	150	Average
5310	95.81	96.03			34.67	14.17	49.06	100	150	Peak
5350	41.41	41.49	54	-12.59	34.72	14.28	49.08	100	150	Average
5350	52.04	52.12	74	-21.96	34.72	14.28	49.08	100	150	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	40.71	41.53	54	-13.29	34.48	13.71	49.01	176	80	Average
5150	50.77	51.59	74	-23.23	34.48	13.71	49.01	176	80	Peak
5310	88.77	88.99			34.67	14.17	49.06	176	80	Average
5310	99.31	99.53			34.67	14.17	49.06	176	80	Peak
5350	43.36	43.44	54	-10.64	34.72	14.28	49.08	176	80	Average
5350	54.22	54.3	74	-19.78	34.72	14.28	49.08	176	80	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	40.58	41.4	54	-13.42	34.48	13.71	49.01	100	160	Average
5150	50.24	51.06	74	-23.76	34.48	13.71	49.01	100	160	Peak
5290	84.45	84.75			34.65	14.11	49.06	100	160	Average
5290	95.78	96.08			34.65	14.11	49.06	100	160	Peak
5350	41.25	41.33	54	-12.75	34.72	14.28	49.08	100	160	Average
5350	51.87	51.95	74	-22.13	34.72	14.28	49.08	100	160	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	40.63	41.45	54	-13.37	34.48	13.71	49.01	176	70	Average
5150	50.78	51.6	74	-23.22	34.48	13.71	49.01	176	70	Peak
5290	88.63	88.93			34.65	14.11	49.06	176	70	Average
5290	99.12	99.42			34.65	14.11	49.06	176	70	Peak
5350	42.96	43.04	54	-11.04	34.72	14.28	49.08	176	70	Average
5350	54.02	54.1	74	-19.98	34.72	14.28	49.08	176	70	Peak

REMARKS:

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



ABOVE 1GHz WORST-CASE DATA: Band 3

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5447	42.13	41.79	54	-11.87	34.85	14.6	49.11	100	130	Average
5447	51.11	50.77	74	-22.89	34.85	14.6	49.11	100	130	Peak
#5470	51.63	51.26	68.3	-16.67	34.86	14.62	49.11	100	130	Peak
5500	89.87	89.38			34.9	14.71	49.12	100	130	Average
5500	99.35	98.86			34.9	14.71	49.12	100	130	Peak
#5725	54.56	52.35	68.3	-13.74	35.17	16.18	49.14	100	130	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5447	43.73	43.39	54	-10.27	34.85	14.6	49.11	176	75	Average
5447	50.86	50.52	74	-23.14	34.85	14.6	49.11	176	75	Peak
#5470	51.51	51.14	68.3	-16.79	34.86	14.62	49.11	176	75	Peak
5500	94.51	94.02			34.9	14.71	49.12	176	75	Average
5500	103.14	102.65			34.9	14.71	49.12	176	75	Peak
#5725	54.52	52.31	68.3	-13.78	35.17	16.18	49.14	176	75	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	41.03	40.69	54	-12.97	34.85	14.6	49.11	100	140	Average
5460	50.79	50.45	74	-23.21	34.85	14.6	49.11	100	140	Peak
#5470	51.8	51.43	68.3	-16.5	34.86	14.62	49.11	100	140	Peak
5580	91.91	90.81			35	15.23	49.13	100	140	Average
5580	100.66	99.56			35	15.23	49.13	100	140	Peak
#5725	55.56	53.35	68.3	-12.74	35.17	16.18	49.14	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
5460	40.98	40.64	54	-13.02	34.85	14.6	49.11	160	80	Average
5460	51.24	50.9	74	-22.76	34.85	14.6	49.11	160	80	Peak
#5470	51.61	51.24	68.3	-16.69	34.86	14.62	49.11	160	80	Peak
5580	94.77	93.67			35	15.23	49.13	160	80	Average
5580	102.72	101.62			35	15.23	49.13	160	80	Peak
#5725	54.65	52.44	68.3	-13.65	35.17	16.18	49.14	160	80	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	41.05	40.71	54	-12.95	34.85	14.6	49.11	100	150	Average
5460	50.61	50.27	74	-23.39	34.85	14.6	49.11	100	150	Peak
#5470	51.62	51.25	68.3	-16.68	34.86	14.62	49.11	100	150	Peak
5700	89.75	87.74			35.14	16.01	49.14	100	150	Average
5700	98.07	96.06			35.14	16.01	49.14	100	150	Peak
#5725	55.89	53.68	68.3	-12.41	35.17	16.18	49.14	100	150	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	40.9	40.56	54	-13.1	34.85	14.6	49.11	160	70	Average
5460	50.66	50.32	74	-23.34	34.85	14.6	49.11	160	70	Peak
#5470	51.82	51.45	68.3	-16.85	34.86	14.62	49.11	160	70	Peak
5700	93.42	91.41			35.14	16.01	49.14	160	70	Average
5700	102.26	100.25			35.14	16.01	49.14	160	70	Peak
#5725	55.81	53.6	68.3	-14.7	35.17	16.18	49.14	160	70	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.



**BUREAU
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Test Report No.: RF161205W004-3

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
5448	41.76	41.42	54	-12.24	34.85	14.6	49.11	100	150	Average
5448	51.4	51.06	74	-22.6	34.85	14.6	49.11	100	150	Peak
#5470	52.5	52.13	68.3	-15.8	34.86	14.62	49.11	100	150	Peak
5500	85.94	85.45			34.9	14.71	49.12	100	150	Average
5500	93.79	93.3			34.9	14.71	49.12	100	150	Peak
#5725	55.05	52.84	68.3	-13.25	35.17	16.18	49.14	100	150	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
5448	42.24	41.9	54	-11.76	34.85	14.6	49.11	176	90	Average
5448	50.64	50.3	74	-23.36	34.85	14.6	49.11	176	90	Peak
#5470	52.03	51.66	68.3	-16.27	34.86	14.62	49.11	176	90	Peak
5500	90.24	89.75			34.9	14.71	49.12	176	90	Average
5500	98.82	98.33			34.9	14.71	49.12	176	90	Peak
#5725	54.94	52.73	68.3	-13.36	35.17	16.18	49.14	176	90	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	41.12	40.78	54	-12.88	34.85	14.6	49.11	100	140	Average
5460	52.98	52.64	74	-21.02	34.85	14.6	49.11	100	140	Peak
#5470	53.4	53.03	68.3	-14.9	34.86	14.62	49.11	100	140	Peak
5580	88.32	87.22			35	15.23	49.13	100	140	Average
5580	96.81	95.71			35	15.23	49.13	100	140	Peak
#5725	55.45	53.24	68.3	-12.85	35.17	16.18	49.14	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
5450	41.02	40.68	54	-12.98	34.85	14.6	49.11	168	90	Average
5450	52.3	51.96	74	-21.7	34.85	14.6	49.11	168	90	Peak
#5470	52.7	52.33	68.3	-15.6	34.86	14.62	49.11	168	90	Peak
5580	89.96	88.86			35	15.23	49.13	168	90	Average
5580	98.61	97.51			35	15.23	49.13	168	90	Peak
#5725	55.22	53.01	68.3	-13.08	35.17	16.18	49.14	168	90	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
5408	40.69	40.35	54	-13.31	34.85	14.6	49.11	100	175	Average
5408	51.37	51.03	74	-22.63	34.85	14.6	49.11	100	175	Peak
#5470	52.86	52.49	68.3	-15.44	34.86	14.62	49.11	100	175	Peak
5700	86.89	84.88			35.14	16.01	49.14	100	175	Average
5700	95.76	93.75			35.14	16.01	49.14	100	175	Peak
#5725	56.56	54.35	68.3	-11.74	35.17	16.18	49.14	100	175	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
5418	41.11	40.77	54	-12.89	34.85	14.6	49.11	185	80	Average
5418	51.16	50.82	74	-22.84	34.85	14.6	49.11	185	80	Peak
#5470	51.8	51.43	68.3	-16.5	34.86	14.62	49.11	185	80	Peak
5700	91.02	89.01			35.14	16.01	49.14	185	80	Average
5700	99.1	97.09			35.14	16.01	49.14	185	80	Peak
#5725	57.32	55.11	68.3	-10.98	35.17	16.18	49.14	185	80	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.



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Test Report No.: RF161205W004-3

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	41.31	40.97	54	-12.69	34.85	14.6	49.11	100	140	Peak
#5470	51.6	51.26	74	-22.4	34.85	14.6	49.11	100	140	Average
#5470	52.73	52.36	68.3	-15.57	34.86	14.62	49.11	100	140	Peak
5510	82.78	82.21			34.91	14.78	49.12	100	140	Average
5510	92.6	92.03			34.91	14.78	49.12	100	140	Peak
#5725	55.84	53.63	68.3	-12.46	35.17	16.18	49.14	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
5460	41.33	40.99	54	-12.67	34.85	14.6	49.11	176	80	Average
5460	51.66	51.32	74	-22.34	34.85	14.6	49.11	176	80	Peak
#5470	52.71	52.34	68.3	-15.59	34.86	14.62	49.11	176	80	Peak
5510	86.62	86.05			34.91	14.78	49.12	176	80	Average
5510	96.26	95.69			34.91	14.78	49.12	176	80	Peak
#5725	55.7	53.49	68.3	-12.6	35.17	16.18	49.14	176	80	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
5447	40.97	40.63	54	-13.03	34.85	14.6	49.11	100	140	Average
5447	51.92	51.58	74	-22.08	34.85	14.6	49.11	100	140	Peak
#5470	52.5	52.13	68.3	-15.8	34.86	14.62	49.11	100	140	Peak
5550	83.53	82.65			34.96	15.04	49.12	100	140	Average
5550	93.65	92.77			34.96	15.04	49.12	100	140	Peak
#5725	55.65	53.44	68.3	-12.65	35.17	16.18	49.14	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
5447	41.09	40.75	54	-12.91	34.85	14.6	49.11	176	90	Average
5447	52.23	51.89	74	-21.77	34.85	14.6	49.11	176	90	Peak
#5470	52.71	52.34	68.3	-15.59	34.86	14.62	49.11	176	90	Peak
5550	86.4	85.52			34.96	15.04	49.12	176	90	Average
5550	97.25	96.37			34.96	15.04	49.12	176	90	Peak
#5725	55.34	53.13	68.3	-12.96	35.17	16.18	49.14	176	90	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
5450	41.02	40.68	54	-12.98	34.85	14.6	49.11	100	175	Average
5450	51.68	51.34	74	-22.32	34.85	14.6	49.11	100	175	Peak
#5470	52.61	52.24	68.3	-15.69	34.86	14.62	49.11	100	175	Peak
5670	83.32	81.54			35.1	15.82	49.14	100	175	Average
5670	94.44	92.66			35.1	15.82	49.14	100	175	Peak
#5725	55.66	53.45	68.3	-12.64	35.17	16.18	49.14	100	175	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
5451	41.36	41.02	54	-12.64	34.85	14.6	49.11	170	70	Average
5451	52.66	52.32	74	-21.34	34.85	14.6	49.11	170	70	Peak
#5470	53.16	52.79	68.3	-15.14	34.86	14.62	49.11	170	70	Peak
5670	87.5	85.72			35.1	15.82	49.14	170	70	Average
5670	97.35	95.57			35.1	15.82	49.14	170	70	Peak
#5725	55.67	53.46	68.3	-12.63	35.17	16.18	49.14	170	70	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.



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Test Report No.: RF161205W004-3

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	41.22	40.88	54	-12.78	34.85	14.6	49.11	100	165	Average
5460	51.69	51.35	74	-22.31	34.85	14.6	49.11	100	165	Peak
#5470	52.78	52.41	68.3	-15.52	34.86	14.62	49.11	100	165	Peak
5530	83.45	82.72			34.94	14.91	49.12	100	165	Average
5530	94.78	94.05			34.94	14.91	49.12	100	165	Peak
#5725	55.73	53.52	68.3	-12.57	35.17	16.18	49.14	100	165	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	41.56	41.22	54	-12.44	34.85	14.6	49.11	170	80	Average
5460	52.74	52.4	74	-21.26	34.85	14.6	49.11	170	80	Peak
#5470	53.33	52.96	68.3	-14.97	34.86	14.62	49.11	170	80	Peak
5530	87.62	86.89			34.94	14.91	49.12	170	80	Average
5530	97.48	96.75			34.94	14.91	49.12	170	80	Peak
#5725	55.89	53.68	68.3	-12.41	35.17	16.18	49.14	170	80	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.



ABOVE 1GHz WORST-CASE DATA: Band 4

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	91.46	89.1			35.19	16.31	49.14	100	176	Average
5745	100.02	97.66			35.19	16.31	49.14	100	176	Peak
11490	48.04	38.02	54	-5.96	39.1	19.08	48.16	100	120	Average
11490	60.23	50.21	74	-13.77	39.1	19.08	48.16	100	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	94.14	91.78			35.19	16.31	49.14	170	70	Average
5745	103.23	100.87			35.19	16.31	49.14	170	70	Peak
11490	48.34	38.32	54	-5.66	39.1	19.08	48.16	100	85	Average
11490	60.38	50.36	74	-13.62	39.1	19.08	48.16	100	85	Peak

REMARKS:

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



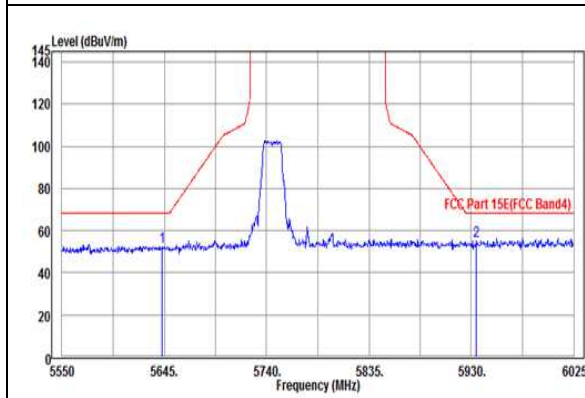
OOBE DATA

802.11a

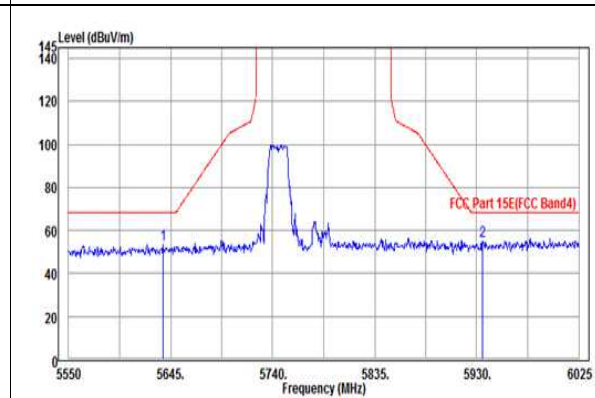
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5638.35	53.7	52.15	68.3	-14.6	35.07	15.61	49.13	100	176	Peak
5935.7	54.86	51.05	68.3	-13.44	35.42	17.55	49.16	100	176	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
5643.1	52.42	50.84	68.3	-15.88	35.07	15.64	49.13	170	70	Peak
5934.275	55.14	51.34	68.3	-13.16	35.42	17.54	49.16	170	70	Peak

CH 149

Horizontal



Vertical





**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	90.59	87.93			35.24	16.57	49.15	100	160	Average
5785	99.84	97.18			35.24	16.57	49.15	100	160	Peak
11570	48.37	38.26	54	-5.63	39.16	19.12	48.17	100	100	Average
11570	60.46	50.35	74	-13.54	39.16	19.12	48.17	100	100	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	93.77	91.11			35.24	16.57	49.15	176	60	Average
5785	103.17	100.51			35.24	16.57	49.15	176	60	Peak
11570	48.54	38.43	54	-5.46	39.16	19.12	48.17	100	75	Average
11570	61.16	51.05	74	-12.84	39.16	19.12	48.17	100	75	Peak

REMARKS:

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



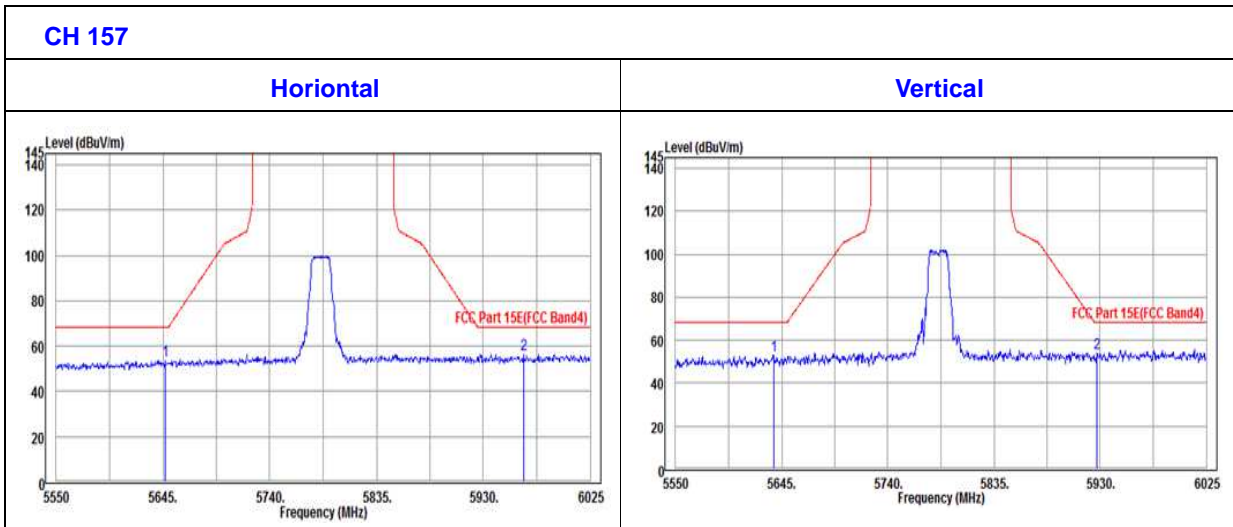
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5646.9	53.62	52	68.3	-14.68	35.08	15.67	49.13	100	160	Peak
5965.625	56.24	52.2	68.3	-12.06	35.46	17.75	49.17	100	160	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
5637.875	53.2	51.65	68.3	-15.1	35.07	15.61	49.13	176	60	Peak
5927.15	54.13	50.38	68.3	-14.17	35.41	17.5	49.16	176	60	Peak





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	91.55	88.58			35.29	16.83	49.15	100	172	Average
5825	101.44	98.47			35.29	16.83	49.15	100	172	Peak
11650	48.31	38.11	54	-5.69	39.22	19.16	48.18	100	145	Average
11650	61.47	51.27	74	-12.53	39.22	19.16	48.18	100	145	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	93.78	90.81			35.29	16.83	49.15	160	60	Average
5825	102.7	99.73			35.29	16.83	49.15	160	60	Peak
11650	48.72	38.52	54	-5.28	39.22	19.16	48.18	100	80	Average
11650	61.56	51.36	74	-12.44	39.22	19.16	48.18	100	80	Peak

REMARKS:

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



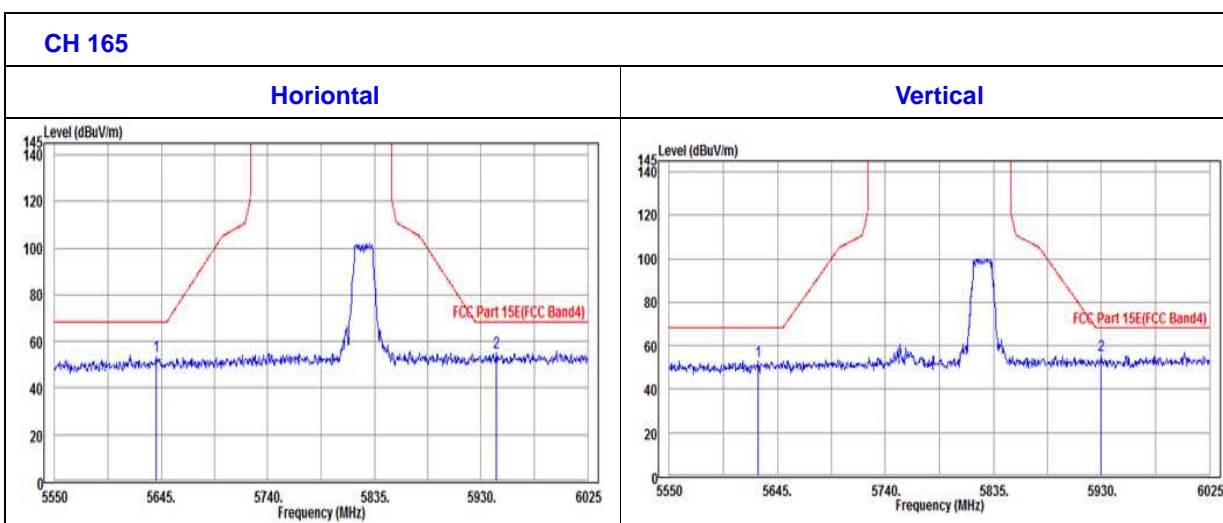
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5628.375	53.03	51.56	68.3	-15.27	35.05	15.55	49.13	100	172	Peak
5930	55.64	51.87	68.3	-12.66	35.42	17.51	49.16	100	172	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
5640.725	53.42	51.85	68.3	-14.88	35.07	15.63	49.13	160	60	Peak
5943.3	55.25	51.38	68.3	-13.05	35.43	17.6	49.16	160	60	Peak





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Test Report No.: RF161205W004-3

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	88.16	85.8			35.19	16.31	49.14	100	176	Average
5745	97.73	95.37			35.19	16.31	49.14	100	176	Peak
11490	47.98	37.96	54	-6.02	39.1	19.08	48.16	100	132	Average
11490	60.26	50.24	74	-13.74	39.1	19.08	48.16	100	132	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	90.45	88.09			35.19	16.31	49.14	150	60	Average
5745	100.74	98.38			35.19	16.31	49.14	150	60	Peak
11490	48.15	38.13	54	-5.85	39.1	19.08	48.16	100	50	Average
11490	61.22	51.2	74	-12.78	39.1	19.08	48.16	100	50	Peak

REMARKS:

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



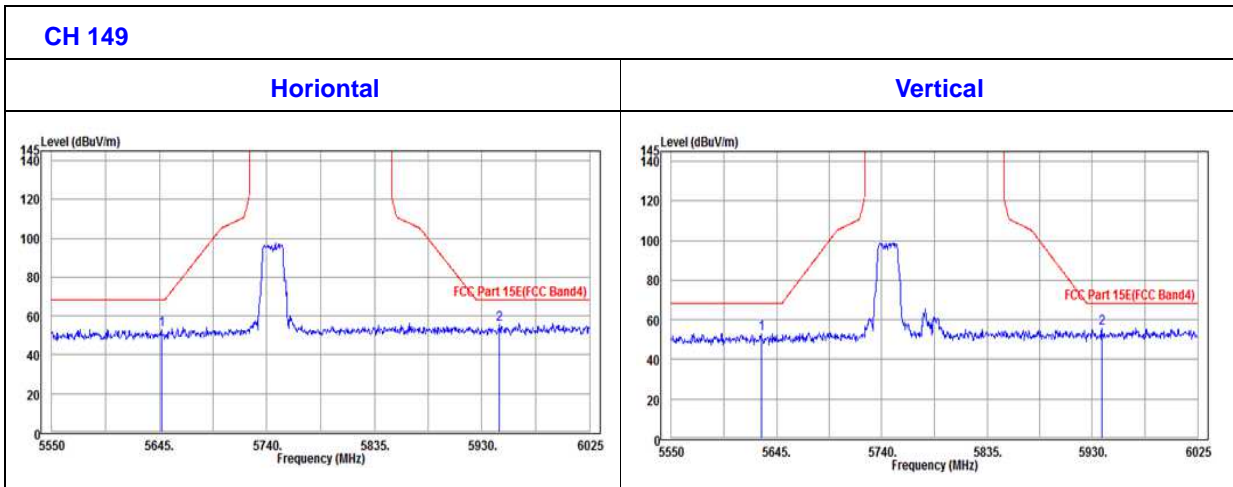
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5646.9	52.75	51.13	68.3	-15.55	35.08	15.67	49.13	100	176	Peak
5945.675	55.69	51.8	68.3	-12.61	35.43	17.62	49.16	100	176	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
5631.225	52.91	51.41	68.3	-15.39	35.06	15.57	49.13	150	60	Peak
5938.55	55.68	51.84	68.3	-12.62	35.43	17.57	49.16	150	60	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	86.94	84.28			35.24	16.57	49.15	100	170	Average
5785	96.78	94.12			35.24	16.57	49.15	100	170	Peak
11570	47.97	37.86	54	-6.03	39.16	19.12	48.17	100	110	Average
11570	60.07	49.96	74	-13.93	39.16	19.12	48.17	100	110	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	90.21	87.55			35.24	16.57	49.15	180	50	Average
5785	101.25	98.59			35.24	16.57	49.15	180	50	Peak
11570	48.57	38.46	54	-5.43	39.16	19.12	48.17	100	75	Average
11570	60.89	50.78	74	-13.11	39.16	19.12	48.17	100	75	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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Test Report No.: RF161205W004-3

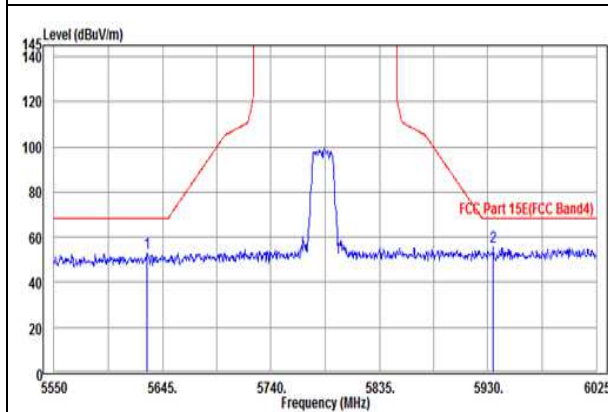
OUBE DATA

802.11n (20MHZ)

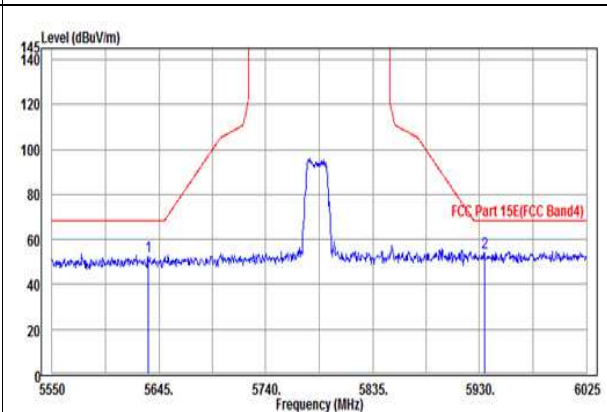
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5635.5	52.18	50.66	68.3	-16.12	35.06	15.59	49.13	100	170	Peak
5934.275	54.21	50.41	68.3	-14.09	35.42	17.54	49.16	100	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
5631.225	53.01	51.51	68.3	-15.29	35.06	15.57	49.13	180	50	Peak
5934.75	55.74	51.94	68.3	-12.56	35.42	17.54	49.16	180	50	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	88.09	85.12			35.29	16.83	49.15	100	180	Average
5825	97.65	94.68			35.29	16.83	49.15	100	180	Peak
11650	48.33	38.13	54	-5.67	39.22	19.16	48.18	100	96	Average
11650	61.93	51.73	74	-12.07	39.22	19.16	48.18	100	96	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	90.7	87.73			35.29	16.83	49.15	176	50	Average
5825	100.33	97.36			35.29	16.83	49.15	176	50	Peak
11650	48.47	38.27	54	-5.53	39.22	19.16	48.18	100	45	Average
11650	61.83	51.63	74	-12.17	39.22	19.16	48.18	100	45	Peak

REMARKS:

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



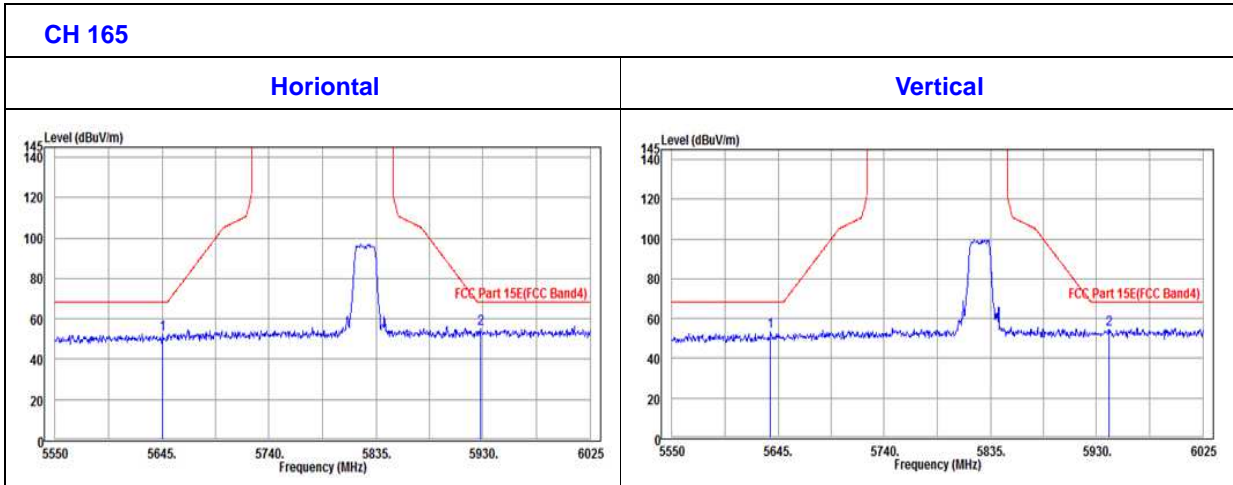
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5645.475	52.23	50.63	68.3	-16.07	35.07	15.66	49.13	100	180	Peak
5927.625	54.93	51.18	68.3	-13.37	35.41	17.5	49.16	100	180	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
5638.35	53.28	51.73	68.3	-15.02	35.07	15.61	49.13	176	50	Peak
5941.4	54.57	50.71	68.3	-13.73	35.43	17.59	49.16	176	50	Peak





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VERITAS**

Test Report No.: RF161205W004-3

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	84.13	81.7			35.21	16.37	49.15	100	170	Average
5755	95.11	92.68			35.21	16.37	49.15	100	170	Peak
11510	47.9	37.86	54	-6.1	39.11	19.09	48.16	100	120	Average
11510	60.32	50.28	74	-13.68	39.11	19.09	48.16	100	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
5755	88.06	85.63			35.21	16.37	49.15	170	60	Average
5755	98.73	96.3			35.21	16.37	49.15	170	60	Peak
11510	48.2	38.16	54	-5.8	39.11	19.09	48.16	100	95	Average
11510	60.51	50.47	74	-13.49	39.11	19.09	48.16	100	95	Peak

REMARKS:

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



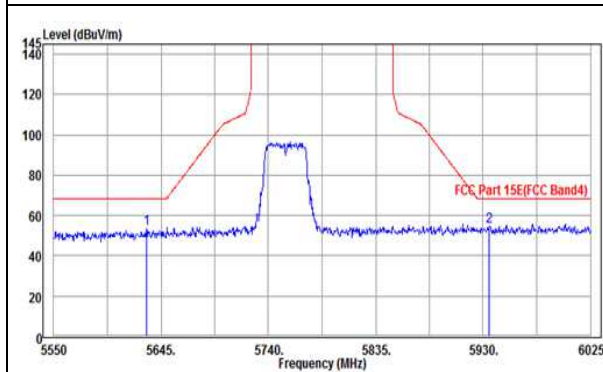
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802.11n (40MHZ)

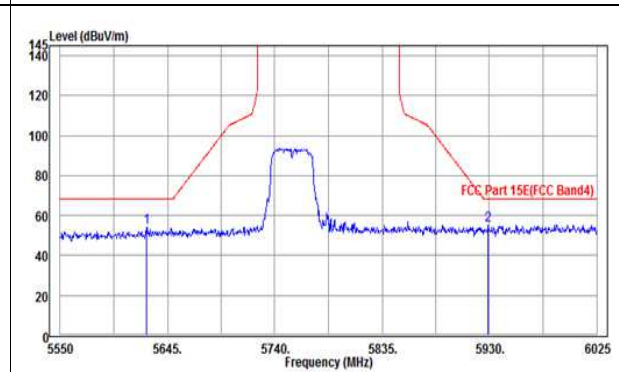
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5626.475	54.13	52.68	68.3	-14.17	35.05	15.53	49.13	100	170	Peak
5929.05	55.18	51.42	68.3	-13.12	35.41	17.51	49.16	100	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
5632.175	53.29	51.79	68.3	-15.01	35.06	15.57	49.13	170	60	Peak
5935.7	54.83	51.02	68.3	-13.47	35.42	17.55	49.16	170	60	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	83.73	81			35.25	16.63	49.15	100	178	Average
5795	94.17	91.44			35.25	16.63	49.15	100	178	Peak
11590	47.98	37.85	54	-6.02	39.17	19.13	48.17	100	96	Average
11590	59.91	49.78	74	-14.09	39.17	19.13	48.17	100	96	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	87.09	84.36			35.25	16.63	49.15	200	55	Average
5795	98.67	95.94			35.25	16.63	49.15	200	55	Peak
11590	48.59	38.46	54	-5.41	39.17	19.13	48.17	100	80	Average
11590	61.5	51.37	74	-12.5	39.17	19.13	48.17	100	80	Peak

REMARKS:

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



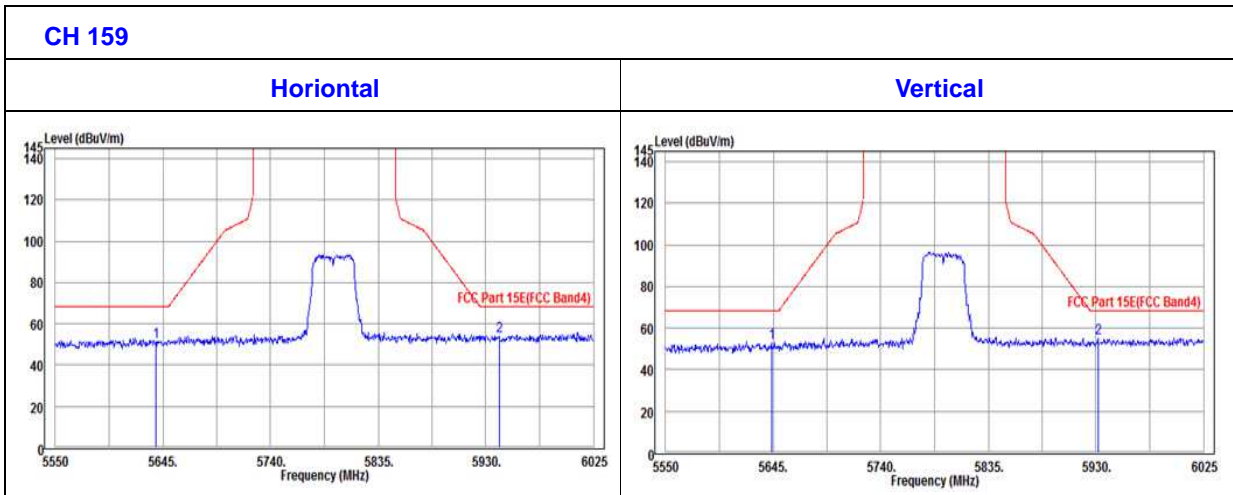
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5638.825	51.43	49.87	68.3	-16.87	35.07	15.62	49.13	100	178	Peak
5941.875	53.9	50.04	68.3	-14.4	35.43	17.59	49.16	100	178	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
5643.575	52.81	51.22	68.3	-15.49	35.07	15.65	49.13	200	55	Peak
5931.9	55.28	51.49	68.3	-13.02	35.42	17.53	49.16	200	55	Peak





**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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	78.93	76.35			35.23	16.5	49.15	100	176	Average
5775	92.29	89.71			35.23	16.5	49.15	100	176	Peak
11550	49.53	39.45	54	-4.47	39.14	19.11	48.17	100	96	Average
11550	60.15	50.07	74	-13.85	39.14	19.11	48.17	100	96	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	80.96	78.38			35.23	16.5	49.15	200	60	Average
5775	94.46	91.88			35.23	16.5	49.15	200	60	Peak
11550	48.36	38.28	54	-5.64	39.14	19.11	48.17	100	80	Average
11550	61.77	51.69	74	-12.23	39.14	19.11	48.17	100	80	Peak

REMARKS:

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



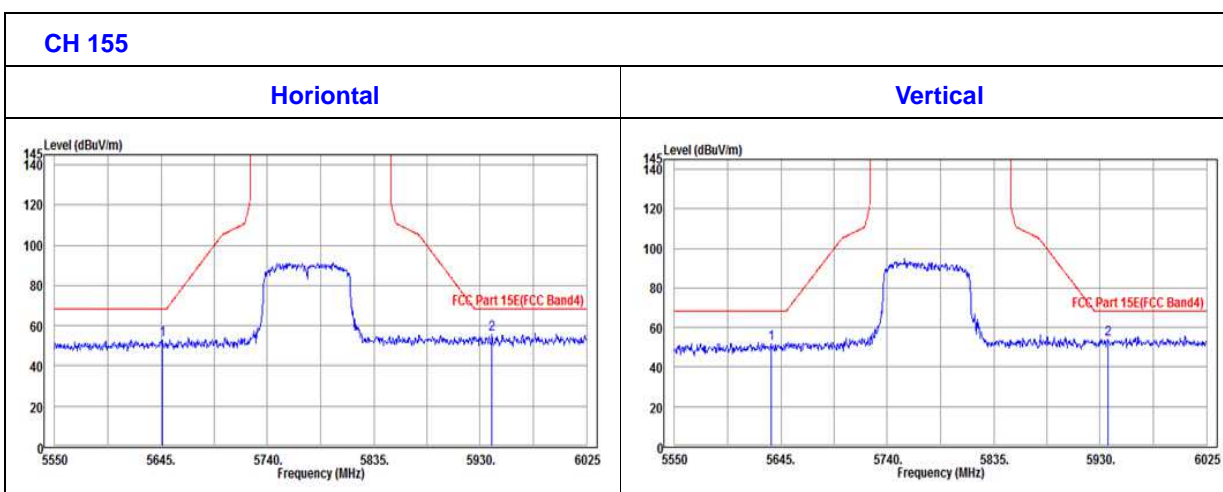
**BUREAU
VERITAS**

Test Report No.: RF161205W004-3

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
5645.95	53.04	51.43	68.3	-15.26	35.08	15.66	49.13	100	176	Peak
5940.45	55.45	51.6	68.3	-12.85	35.43	17.58	49.16	100	176	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
5635.975	51.69	50.16	68.3	-16.61	35.06	15.60	49.13	200	60	Peak
5936.65	54.10	50.28	68.30	-14.20	35.42	17.56	49.16	200	60	Peak



4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESCS30	100340	Apr. 05,16	Apr. 04,17
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Mar. 03,17	Mar. 02,18
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 05,16	Apr. 04,17
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Nov. 25,16	Nov. 24,17
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

- NOTE:**
1. The test was performed in shielded room 553.
 2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GREGT/CHINA and NIM/CHINA.

4.2.3 TEST PROCEDURES

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

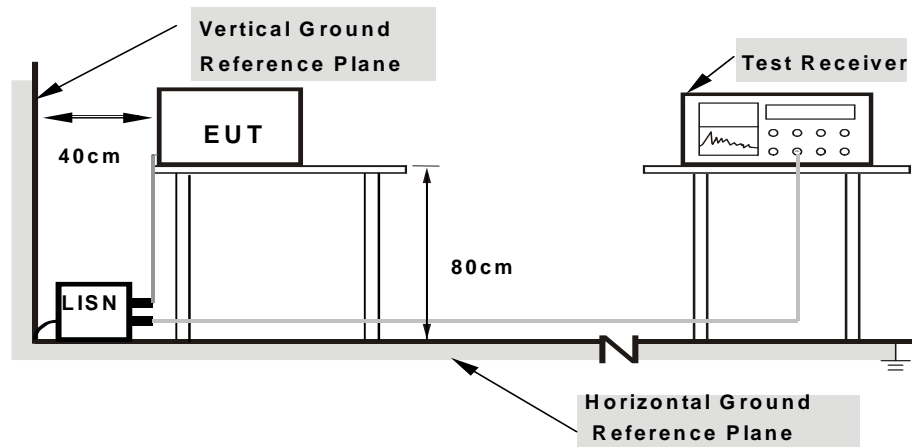
NOTE: All modes of operation were investigated and the worst-case emissions are reported.



4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



4.2.7 TEST RESULTS

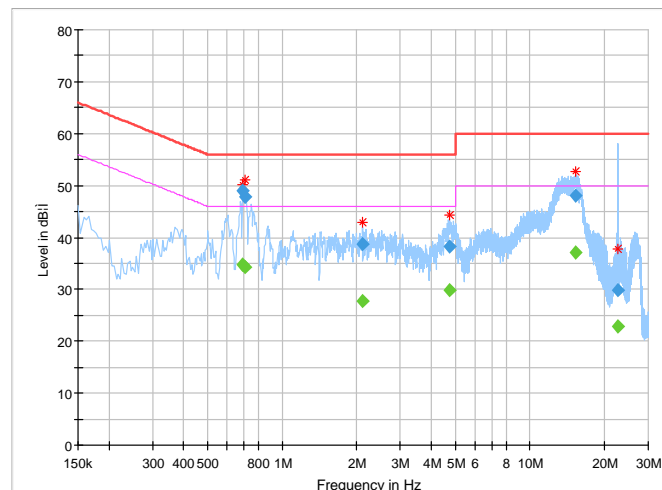
CONDUCTED WORST-CASE DATA :

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	Alex Chen	TEST DATE	2017/02/27

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.696000	---	34.85	46.00	-11.15	L1	ON	9.6
0.696000	49.01	---	56.00	-6.99	L1	ON	9.6
0.708000	---	34.24	46.00	-11.76	L1	ON	9.6
0.708000	47.86	---	56.00	-8.14	L1	ON	9.6
2.104000	---	27.67	46.00	-18.33	L1	ON	9.7
2.104000	38.75	---	56.00	-17.25	L1	ON	9.7
4.742000	---	29.86	46.00	-16.14	L1	ON	9.7
4.742000	38.31	---	56.00	-17.69	L1	ON	9.7
15.332000	---	37.10	50.00	-12.90	L1	ON	9.9
15.332000	48.04	---	60.00	-11.96	L1	ON	9.9
22.596000	---	22.83	50.00	-27.17	L1	ON	9.9
22.596000	29.97	---	60.00	-30.03	L1	ON	9.9

- 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



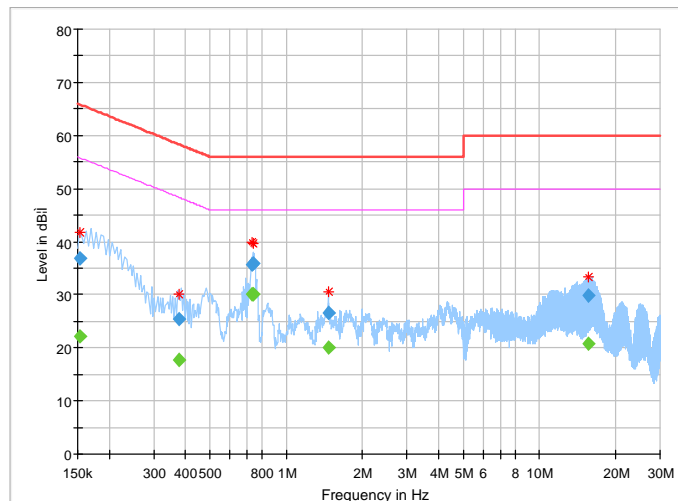


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	Alex Chen	TEST DATE	2017/02/09

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	22.17	55.78	-33.61	N	ON	9.9
0.154000	36.88	---	65.78	-28.90	N	ON	9.9
0.376000	---	17.68	48.37	-30.69	N	ON	10.1
0.376000	25.44	---	58.37	-32.93	N	ON	10.1
0.736000	---	30.01	46.00	-15.99	N	ON	10.0
0.736000	35.62	---	56.00	-20.38	N	ON	10.0
0.740000	---	30.14	46.00	-15.86	N	ON	10.0
0.740000	35.98	---	56.00	-20.02	N	ON	10.0
1.468000	---	20.16	46.00	-25.84	N	ON	9.9
1.468000	26.52	---	56.00	-29.48	N	ON	9.9
15.672000	---	20.76	50.00	-29.24	N	ON	9.9
15.672000	29.75	---	60.00	-30.25	N	ON	9.9

- 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





4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

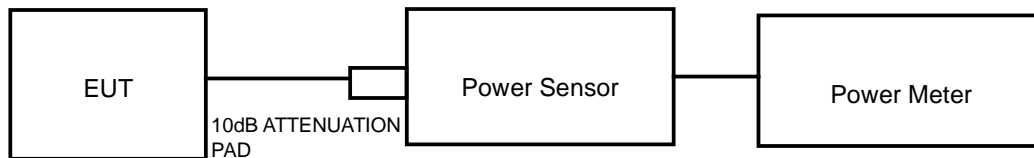
4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq 125\text{mW}$ (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)

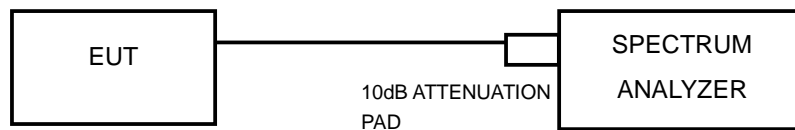
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH





4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 04,16	May 03,17
Power Sensor	Keysight	U2021XA	MY55060018	May 04,16	May 03,17
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 27, 16	Jul. 26, 17
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 13, 16	Oct.12, 17
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,16	Sep. 04,17
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 04,16	Nov. 03,17
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04,16	Nov. 03,17
Signal Generator	Agilent	N5183A	MY50140980	Nov. 04,16	Nov. 03,17
Agile Signal Generator	Agilent	8645A	Agilent	Aug.08, 16	Aug.07, 17
ESG Vector Signal Generator	Agilent	E4438C	MY49072505	Apr. 22, 16	Apr. 21, 17
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug.08, 16	Aug. 07, 17

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.

4.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

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

FOR 99 PERCENT OCCUPIED BANDWIDTH

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

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



FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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



4.3.7 TEST RESULTS

OUTPUT POWER:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER ((mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.34	27.164	24	PASS
40	5200	14.31	26.977	24	PASS
48	5240	14.16	26.062	24	PASS
52	5260	13.93	24.717	24	PASS
60	5300	13.99	25.061	24	PASS
64	5320	13.91	24.604	24	PASS
100	5500	14.15	26.002	24	PASS
116	5580	14.20	26.303	24	PASS
132	5660	14.13	25.882	24	PASS
140	5700	13.91	24.604	24	PASS
149	5745	13.37	21.727	30	PASS
157	5785	13.51	22.439	30	PASS
165	5825	13.36	21.677	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER ((mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	11.13	12.972	24	PASS
40	5200	10.84	12.134	24	PASS
48	5240	11.18	13.122	24	PASS
52	5260	11.01	12.618	24	PASS
60	5300	11.22	13.243	24	PASS
64	5320	11.20	13.183	24	PASS
100	5500	11.08	12.823	24	PASS
116	5580	11.10	12.882	24	PASS
132	5660	10.97	12.503	24	PASS
140	5700	10.90	12.303	24	PASS
149	5745	11.11	12.912	30	PASS
157	5785	11.13	12.972	30	PASS
165	5825	11.08	12.823	30	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER ((mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	10.95	12.445	24	PASS
46	5230	10.96	12.474	24	PASS
54	5270	10.95	12.445	24	PASS
62	5310	10.87	12.218	24	PASS
102	5510	10.77	11.940	24	PASS
110	5550	10.85	12.162	24	PASS
134	5670	11.01	12.618	24	PASS
151	5755	11.17	13.092	30	PASS
165	5825	10.83	12.106	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER ((mW)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	12.26	16.827	24	PASS
58	5290	11.09	12.853	24	PASS
106	5530	11.42	13.868	24	PASS
155	5775	11.17	13.092	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	16.98	22.22	PASS
40	5200	16.98	22.03	PASS
48	5240	16.92	22.17	PASS
52	5260	16.98	22.06	PASS
60	5300	16.92	22.15	PASS
64	5320	16.98	22.11	PASS
100	5500	16.98	21.88	PASS
116	5580	17.04	22.42	PASS
132	5660	16.92	22.10	PASS
140	5700	16.98	22.11	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	16.86	16.36	PASS
157	5785	16.98	16.38	PASS
165	5825	16.98	16.36	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	18.06	22.34	PASS
40	5200	18.00	22.49	PASS
48	5240	18.12	22.71	PASS
52	5260	17.94	22.79	PASS
60	5300	18.00	22.56	PASS
64	5320	17.94	22.37	PASS
100	5500	17.94	22.38	PASS
116	5580	18.06	22.35	PASS
132	5660	17.94	22.42	PASS
140	5700	18.00	22.44	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	18.00	16.36	PASS
157	5785	18.06	16.37	PASS
165	5825	18.06	17.58	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.42	45.75	PASS
46	5230	36.60	45.46	PASS
54	5270	36.48	44.85	PASS
62	5310	36.66	45.62	PASS
102	5510	36.42	45.00	PASS
110	5550	36.54	45.28	PASS
134	5670	36.42	45.11	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.48	35.48	PASS
159	5795	36.48	35.38	PASS

802.11ac (80MHz)

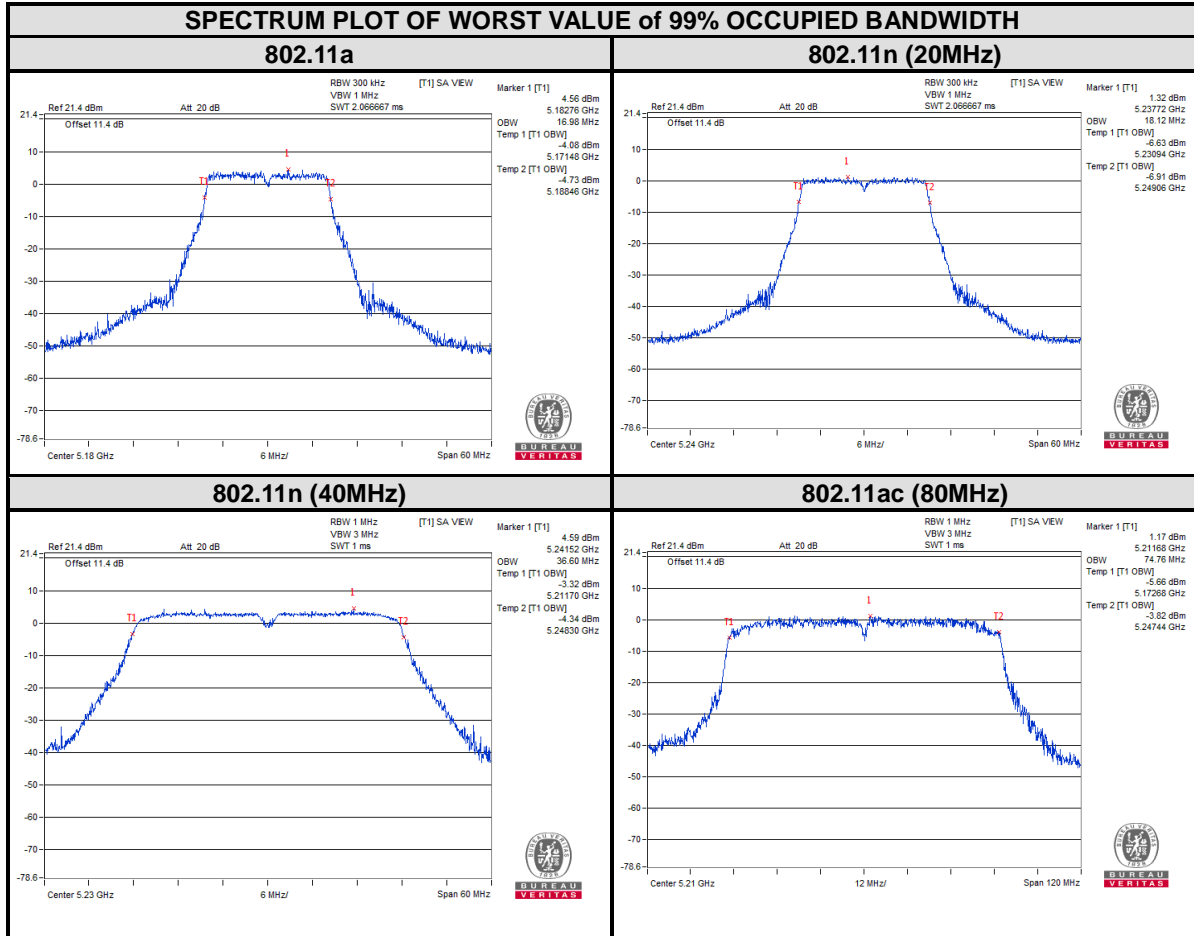
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	74.76	84.88	PASS
58	5290	74.64	84.76	PASS
106	5530	74.76	84.64	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
155	5775	74.64	75.13	PASS



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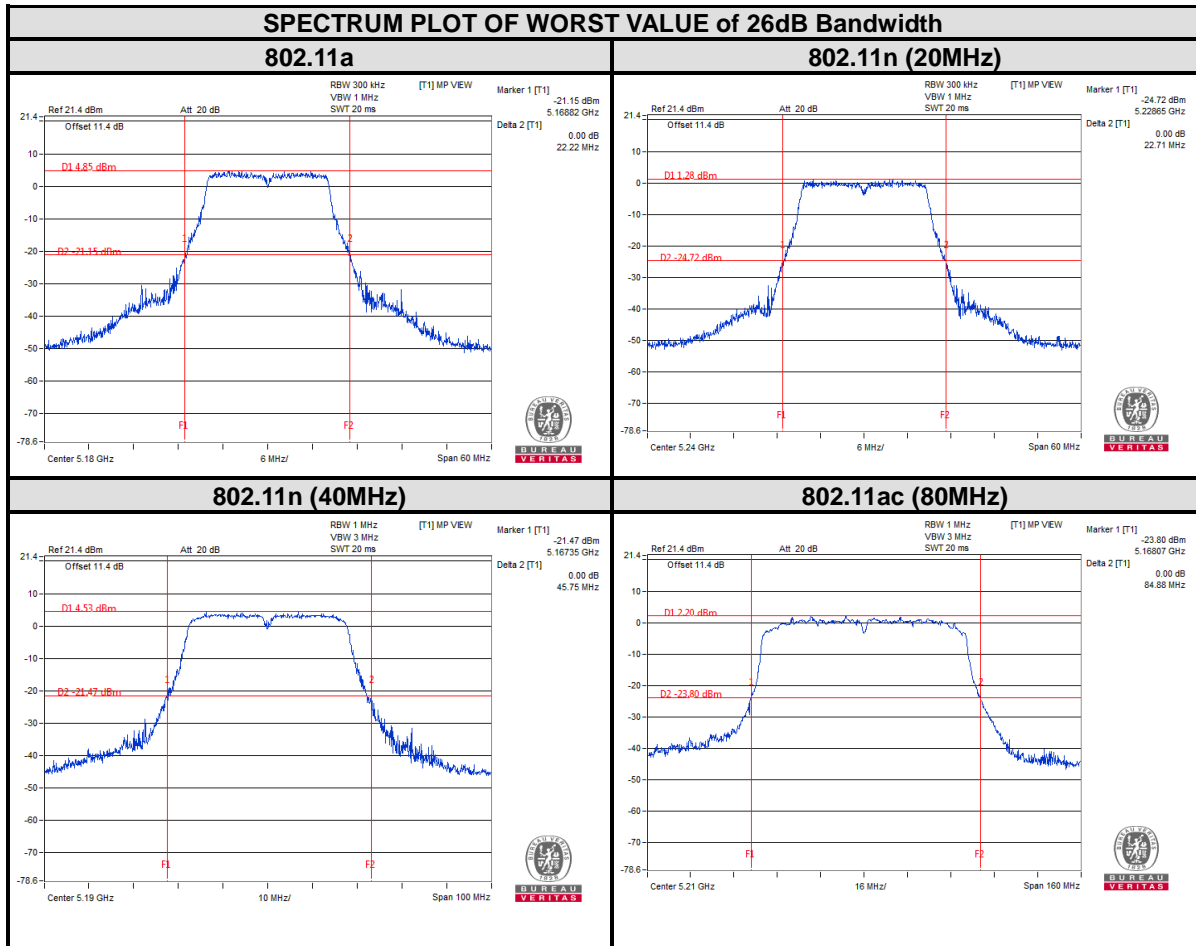
For U-NII-1:





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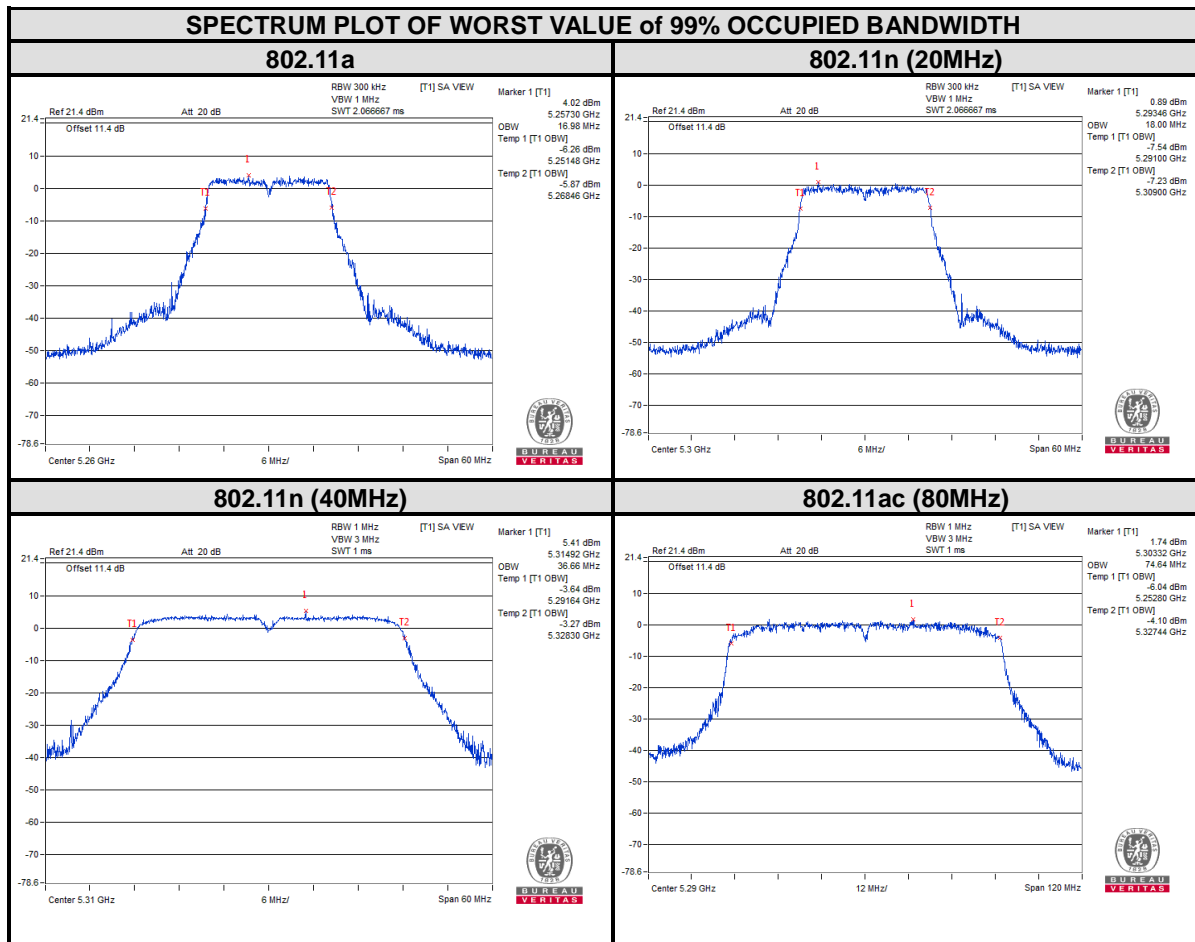




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VERITAS

Test Report No.: RF161205W004-3

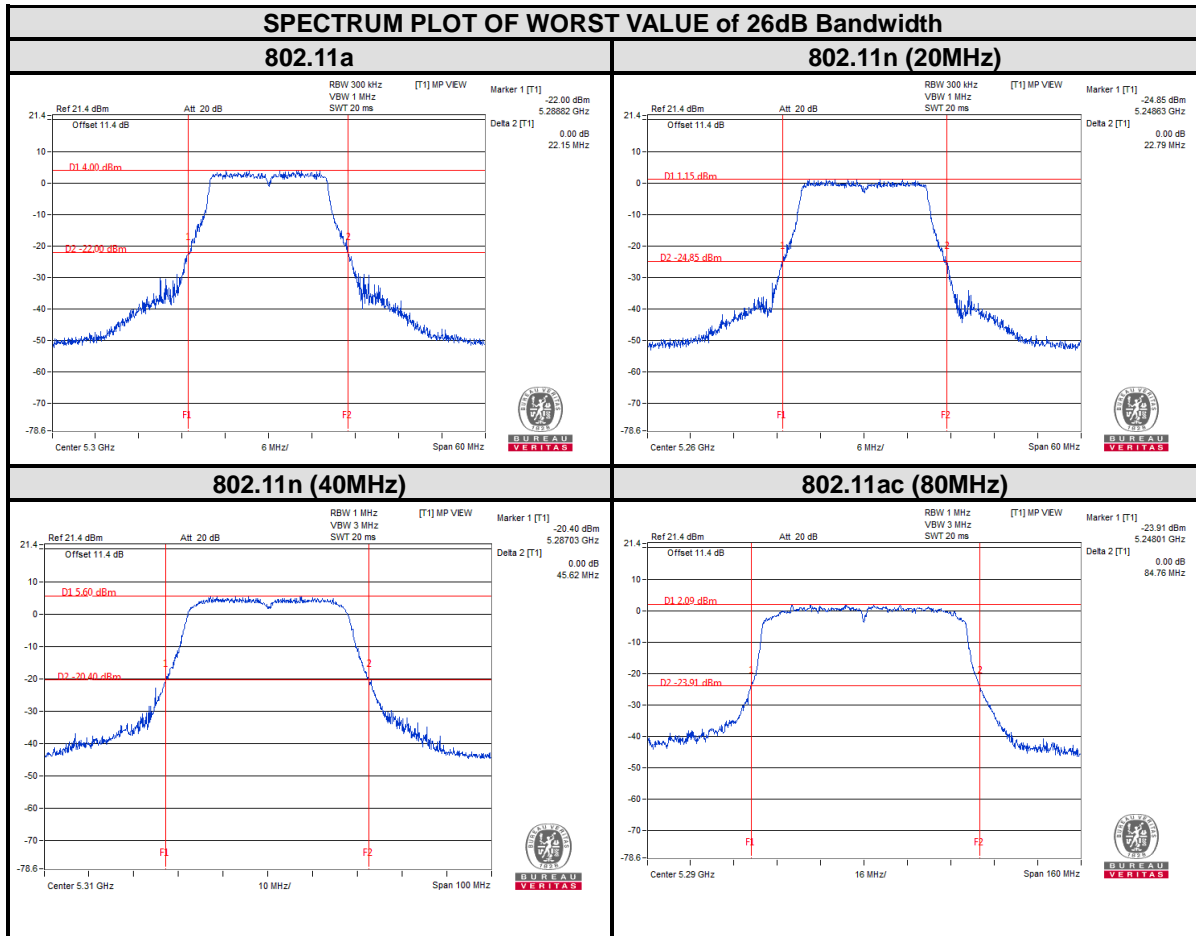
For U-NII-2A:





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Test Report No.: RF161205W004-3

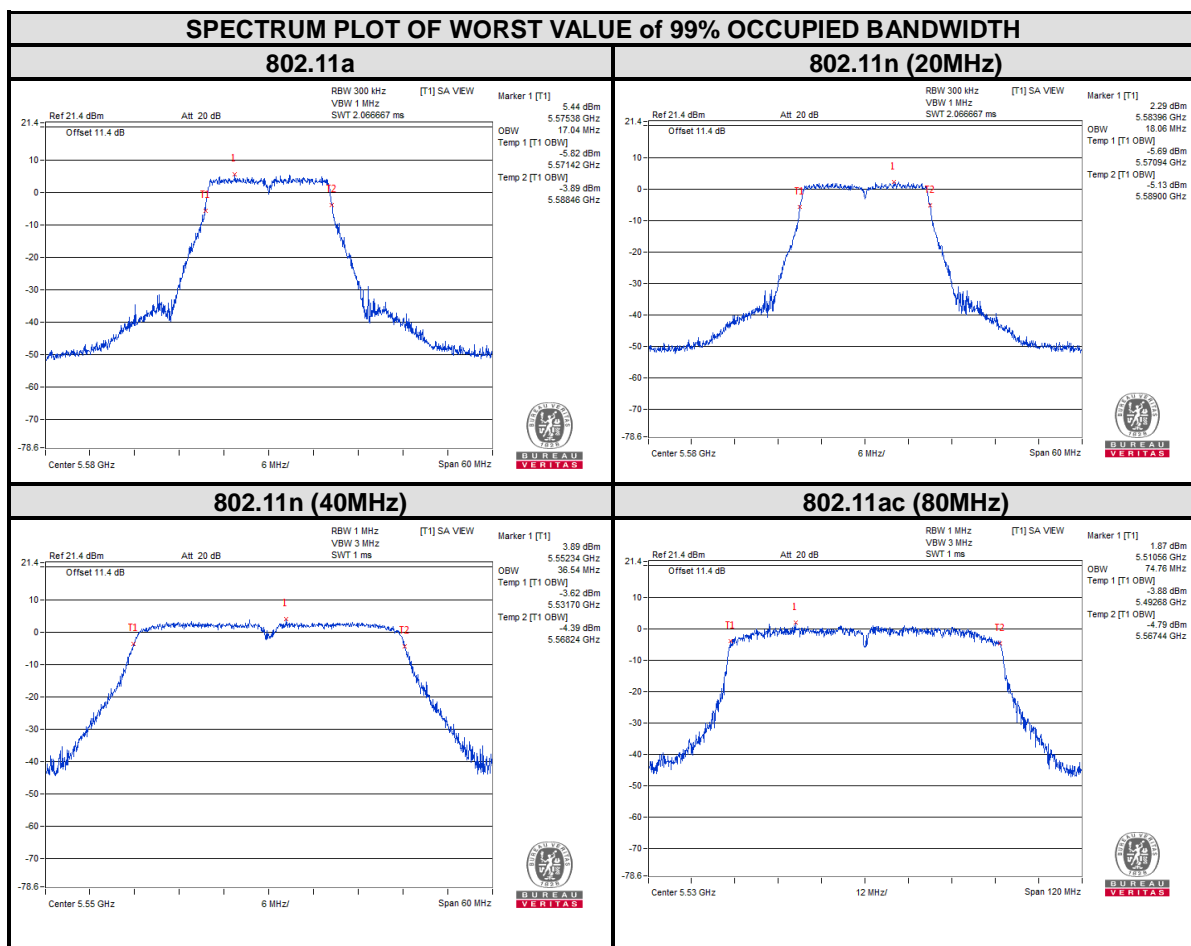




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Test Report No.: RF161205W004-3

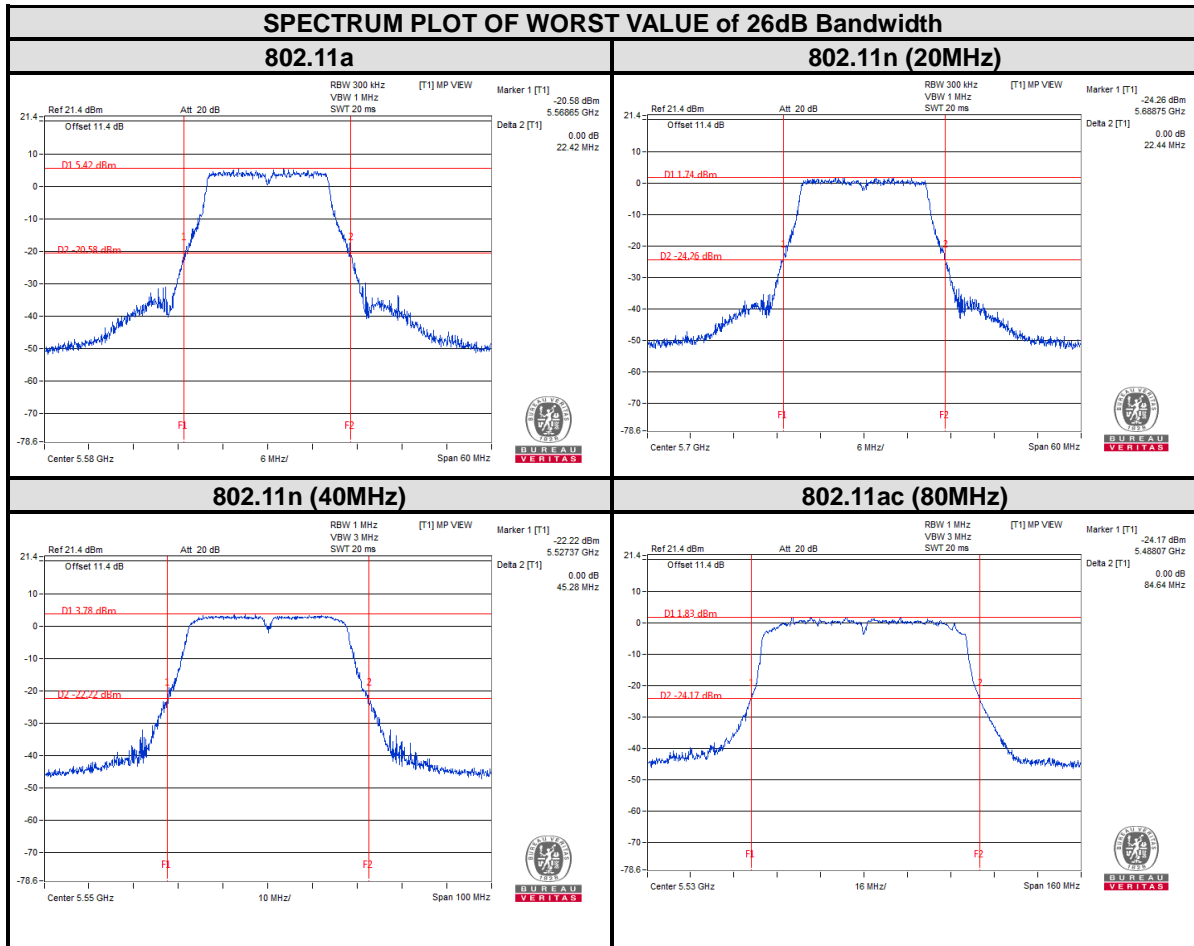
For U-NII-2C:





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Test Report No.: RF161205W004-3

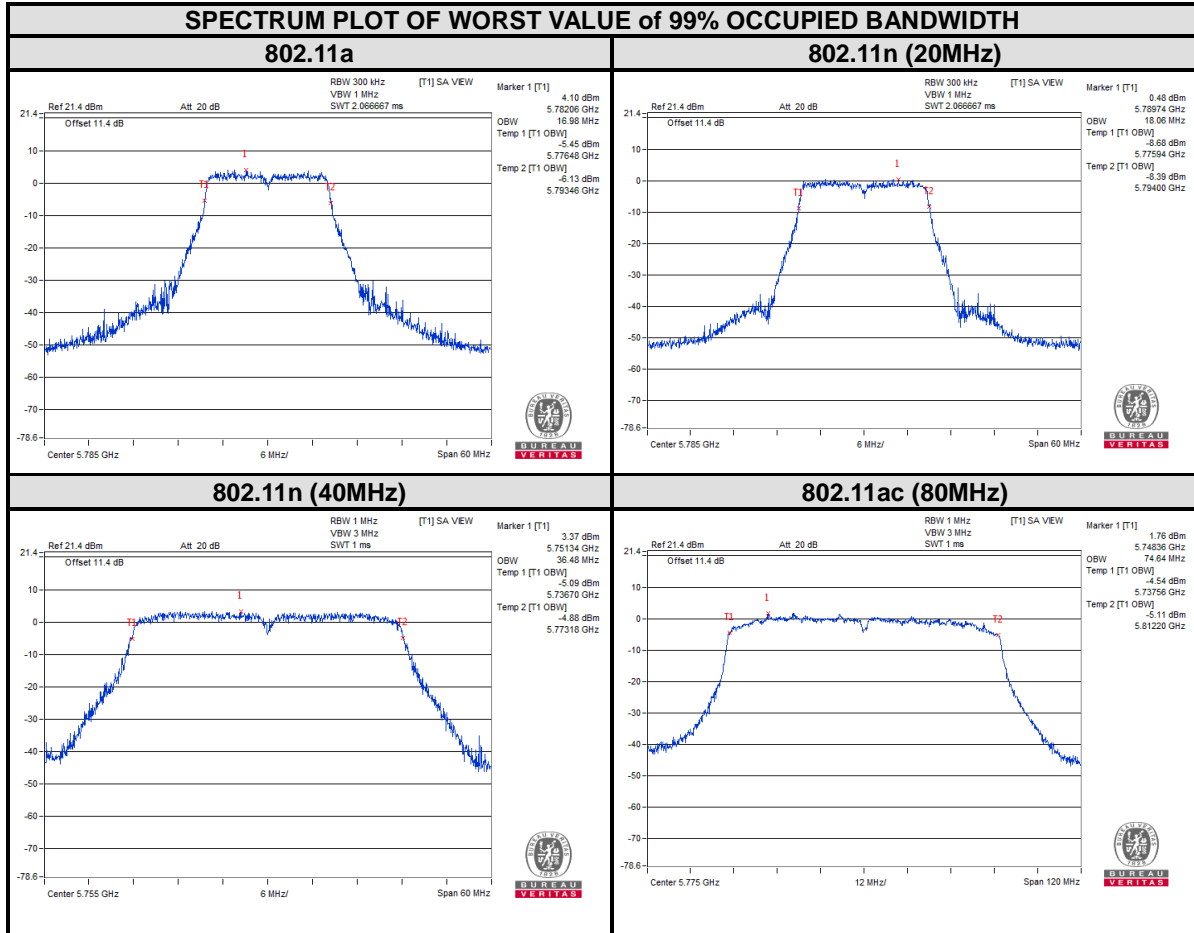




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Test Report No.: RF161205W004-3

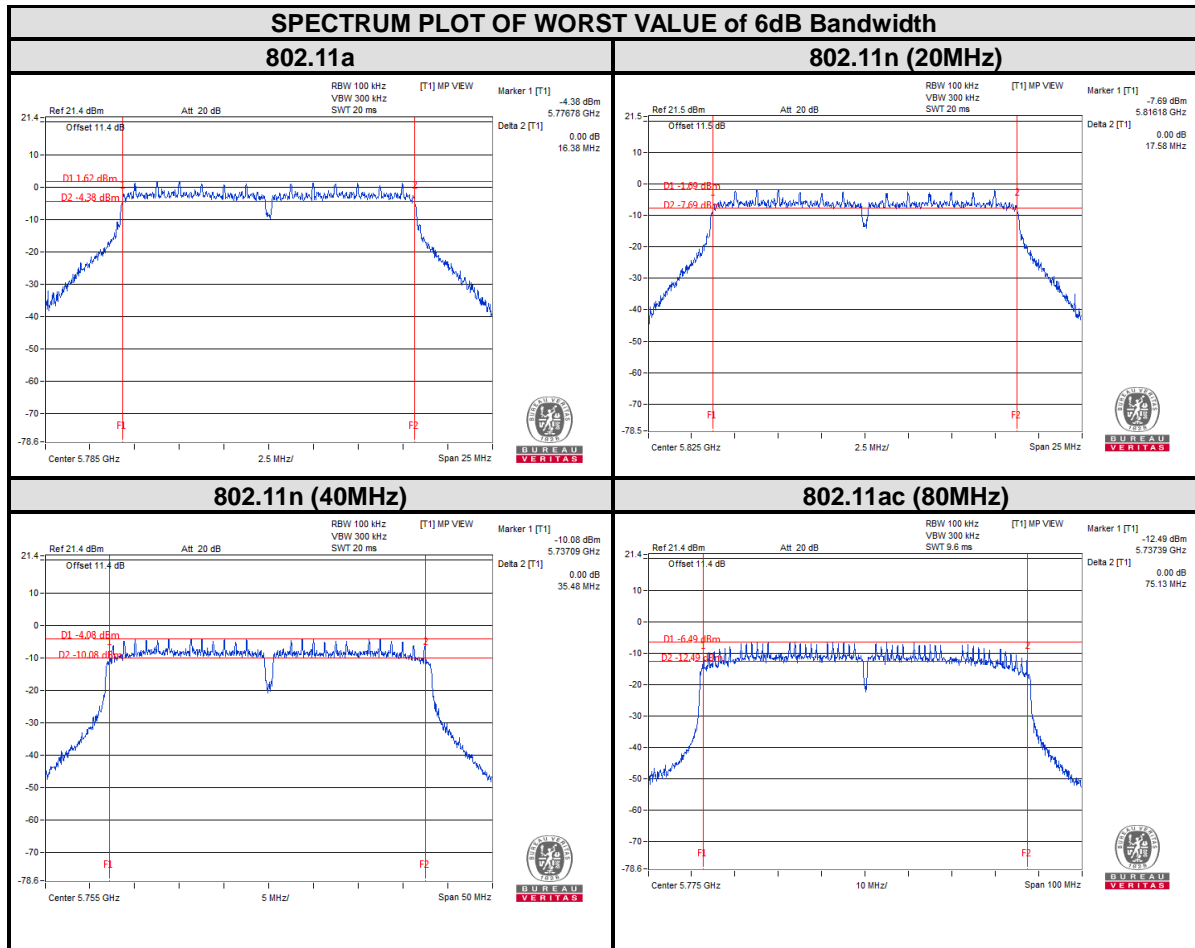
For U-NII-3:





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Test Report No.: RF161205W004-3

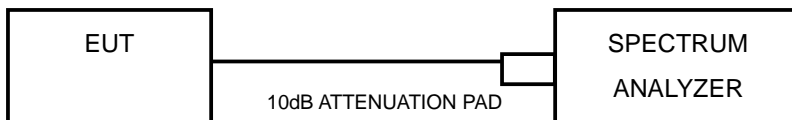


4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.4.4 TEST PROCEDURES

Using method SA-1

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.4.7 TEST RESULTS

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

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	7.30	0.64	7.94	11	PASS
40	5200	7.23	0.64	7.87	11	PASS
48	5240	7.22	0.64	7.86	11	PASS
52	5260	6.91	0.64	7.55	11	PASS
60	5300	7.39	0.64	8.03	11	PASS
64	5320	5.97	0.64	6.61	11	PASS
100	5500	7.52	0.64	8.16	11	PASS
116	5580	7.86	0.64	8.50	11	PASS
132	5660	7.39	0.64	8.03	11	PASS
140	5700	7.30	0.64	7.94	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	3.30	0.64	3.94	11	PASS
40	5200	3.46	0.64	4.10	11	PASS
48	5240	3.96	0.64	4.60	11	PASS
52	5260	3.08	0.64	3.72	11	PASS
60	5300	3.64	0.64	4.28	11	PASS
64	5320	4.20	0.64	4.84	11	PASS
100	5500	4.43	0.64	5.07	11	PASS
116	5580	4.50	0.64	5.14	11	PASS
132	5660	4.43	0.64	5.07	11	PASS
140	5700	4.50	0.64	5.14	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	0.71	1.21	1.92	11	PASS
46	5230	0.97	1.21	2.18	11	PASS
54	5270	1.38	1.21	2.59	11	PASS
62	5310	1.67	1.21	2.88	11	PASS
102	5510	1.67	1.21	2.88	11	PASS
110	5550	0.65	1.21	1.86	11	PASS
134	5670	0.90	1.21	2.11	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	-1.31	2.72	1.41	11	PASS
58	5290	-1.23	2.72	1.49	11	PASS
106	5530	-1.28	2.72	1.44	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	11.53	8.52	0.64	9.16	30	PASS
157	5785	10.66	7.65	0.64	8.29	30	PASS
165	5825	10.42	7.41	0.64	8.05	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	7.88	4.87	0.64	5.51	30	PASS
157	5785	7.91	4.90	0.64	5.54	30	PASS
165	5825	7.82	4.81	0.64	5.45	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	5.67	2.66	1.21	3.87	30	PASS
159	5795	4.91	1.90	1.21	3.11	30	PASS

802.11ac (80MHz)

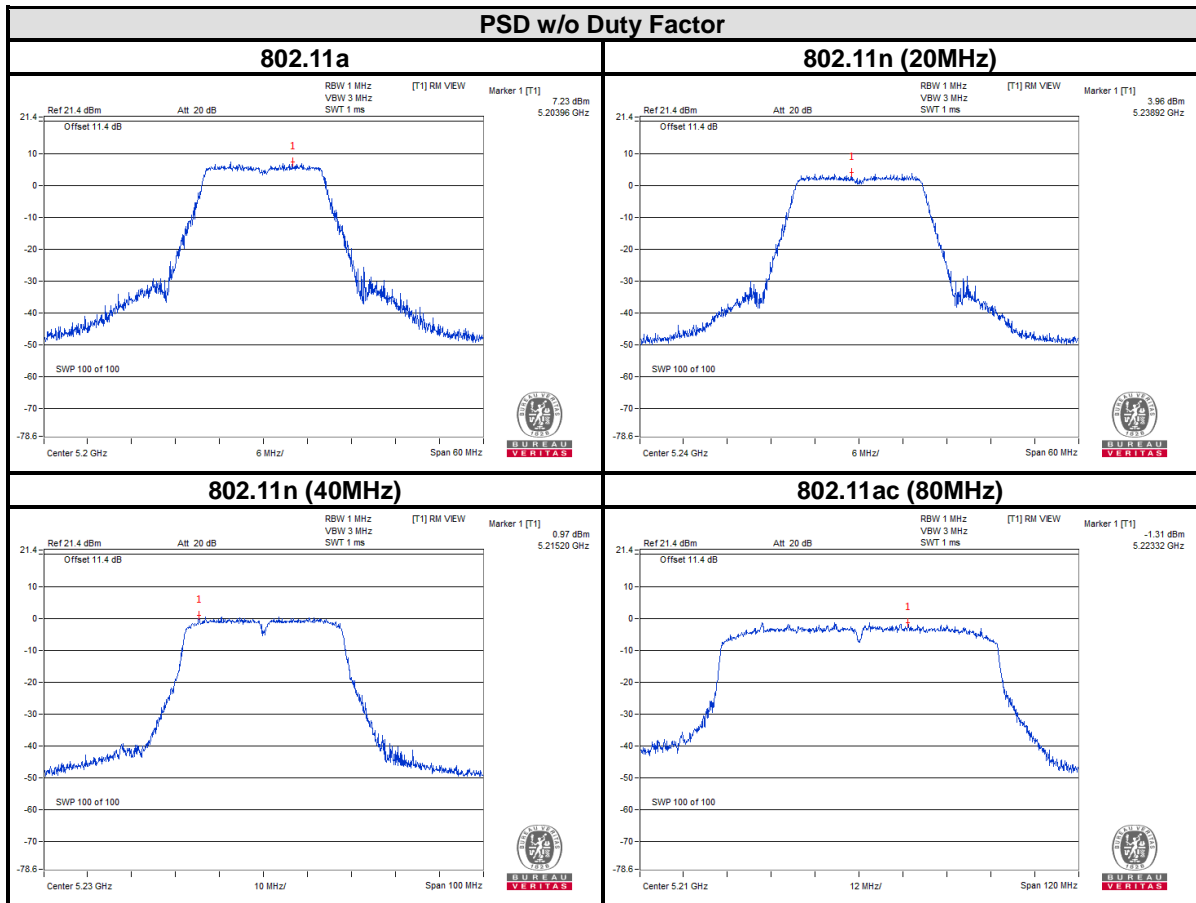
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
155	5775	2.23	-0.78	2.72	1.94	30	PASS



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For 5180~5240MHz

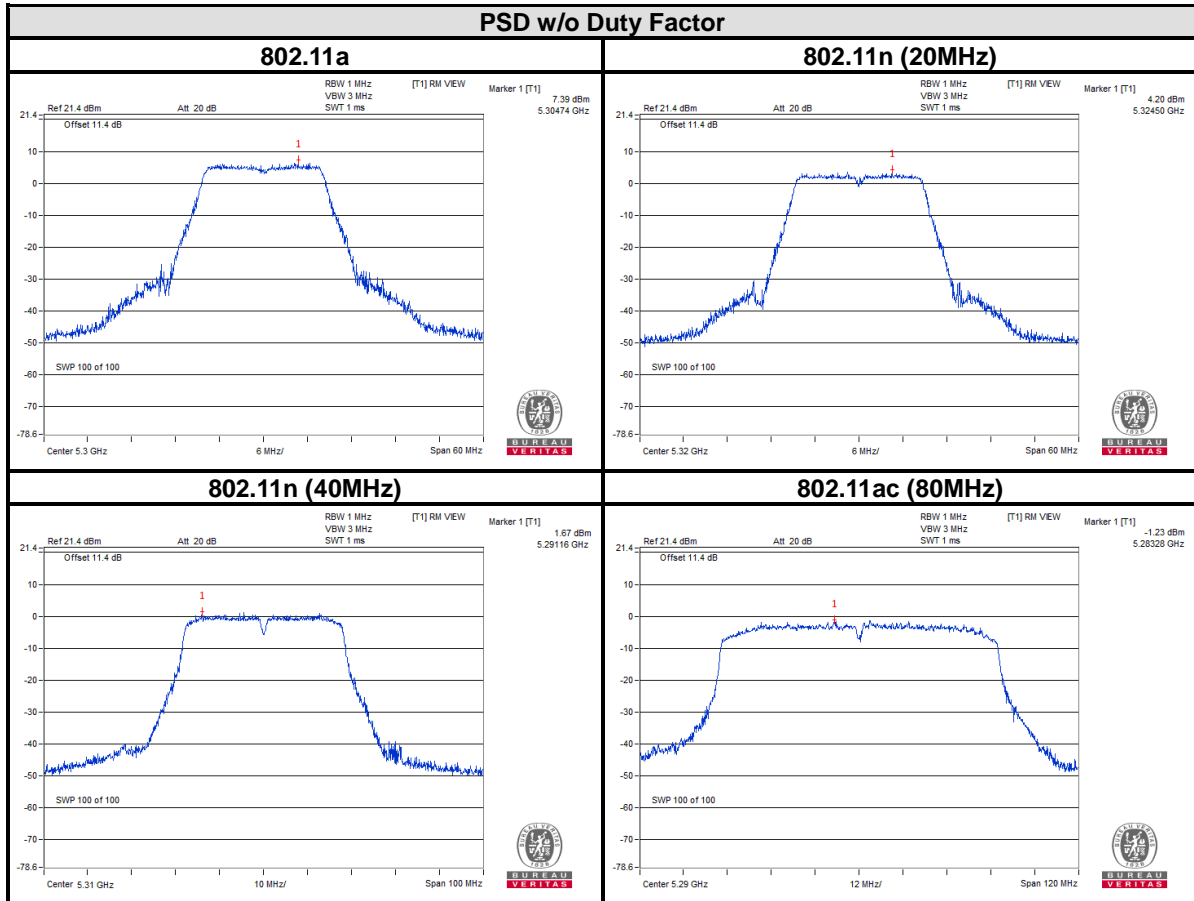




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VERITAS

Test Report No.: RF161205W004-3

For 5260~5320MHz

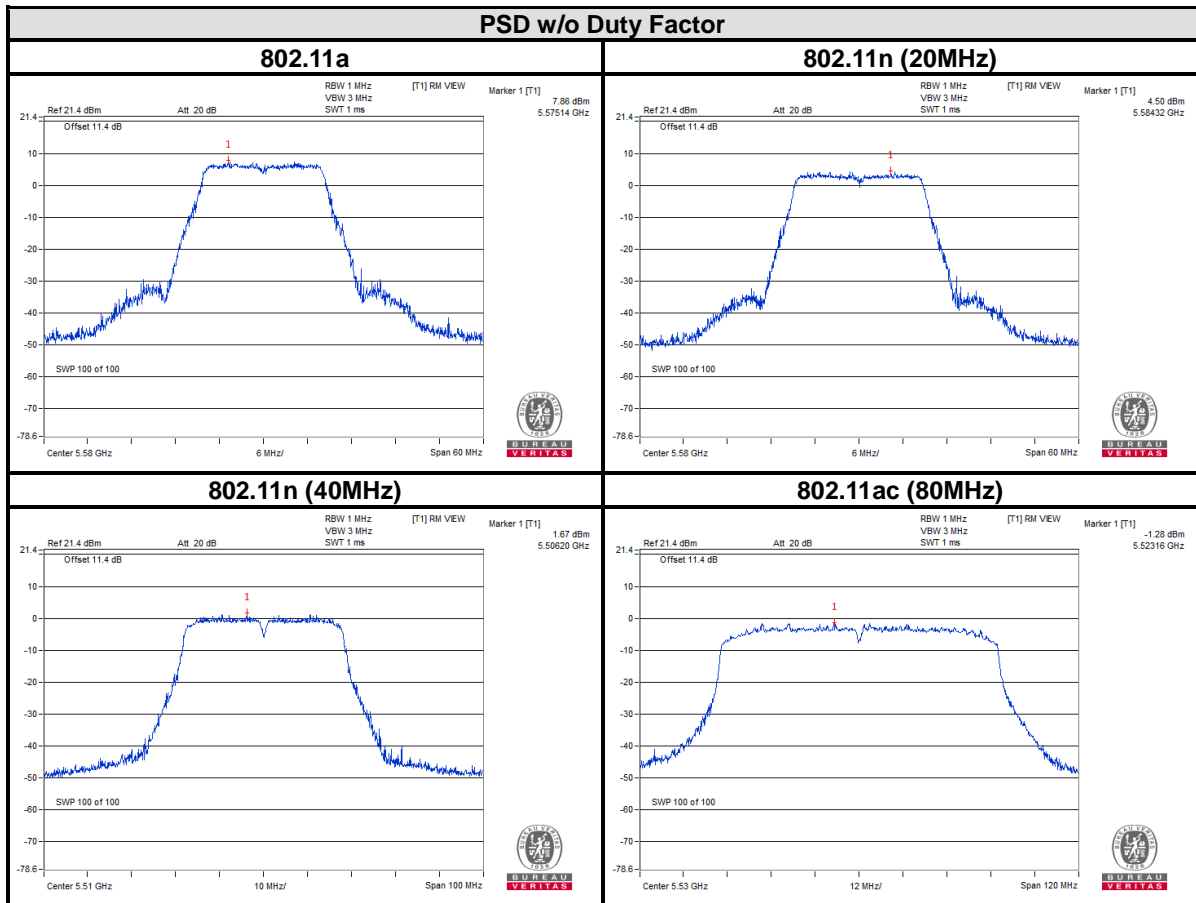




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VERITAS

Test Report No.: RF161205W004-3

For 5500~5700MHz

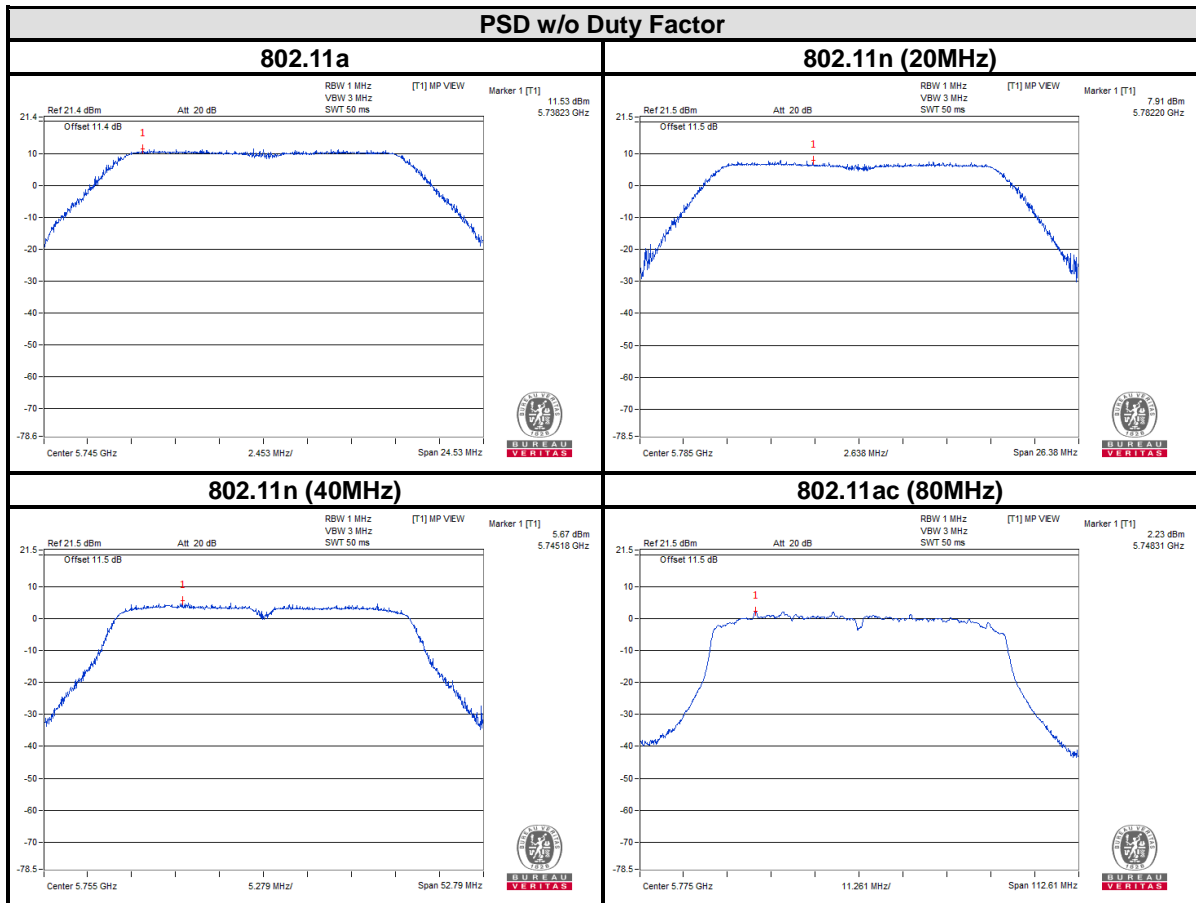




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VERITAS

Test Report No.: RF161205W004-3

For 5745~5825MHz

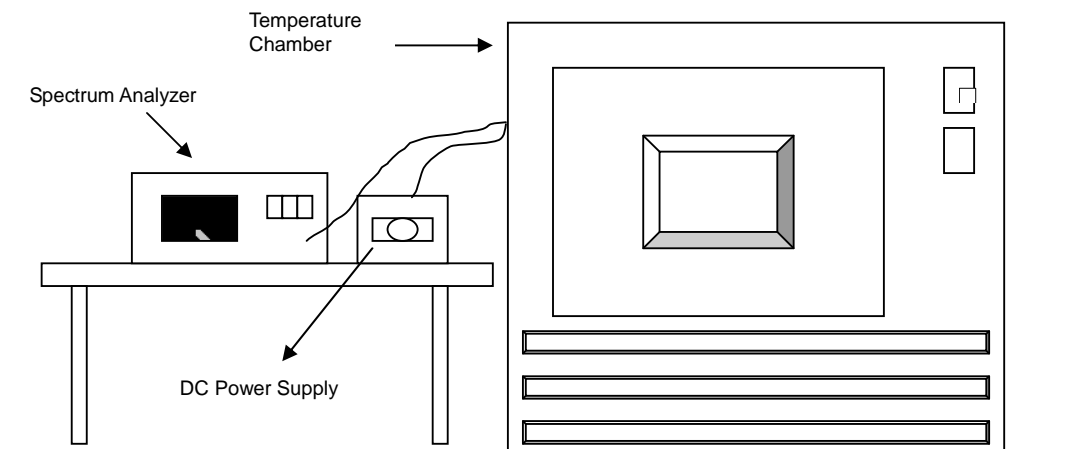


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.3.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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



4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 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	3.8	5179.9736	-5.097	5179.9742	-4.981	5179.9775	-4.344	5179.9791	-4.035
40	3.8	5179.9782	-4.208	5179.9794	-3.977	5179.9717	-5.463	5179.9716	-5.483
30	3.8	5179.9966	-0.656	5179.9973	-0.521	5179.9976	-0.463	5179.9917	-1.602
20	3.8	5180.011	2.124	5180.0017	0.328	5180.0091	1.757	5180.0078	1.506
10	3.8	5180.0141	2.722	5180.018	3.475	5180.0172	3.320	5180.0144	2.780
0	3.8	5179.9923	-1.486	5179.9907	-1.795	5179.9931	-1.332	5179.9989	-0.212
-10	3.8	5179.9867	-2.568	5179.9938	-1.197	5179.9959	-0.792	5179.992	-1.544
-20	3.8	5179.9867	-2.568	5179.9809	-3.687	5179.9878	-2.355	5179.9784	-4.170
-30	3.8	5180.0251	4.846	5180.0201	3.880	5180.0224	4.324	5180.0231	4.459

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)
20	4.2	5180.011	2.124	5180.0025	0.483	5180.0093	1.795	5180.0083	1.602
	3.8	5180.011	2.124	5180.0017	0.328	5180.0091	1.757	5180.0078	1.506
	3.5	5180.0103	1.988	5180.0015	0.290	5180.0092	1.776	5180.0083	1.602



FREQUENCY STABILITY VERSUS TEMP.									
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	3.8	5824.9716	-4.876	5824.9753	-4.240	5824.9704	-5.082	5824.9755	-4.206
40	3.8	5825.0175	3.004	5825.0155	2.661	5825.0188	3.227	5825.0171	2.936
30	3.8	5824.9751	-4.275	5824.973	-4.635	5824.9744	-4.395	5824.9806	-3.330
20	3.8	5825.0031	0.532	5825.0077	1.322	5825.0062	1.064	5825.0011	0.189
10	3.8	5824.9889	-1.906	5824.9838	-2.781	5824.9923	-1.322	5824.9944	-0.961
0	3.8	5825.0036	0.618	5824.9953	-0.807	5824.9991	-0.155	5825.0039	0.670
-10	3.8	5824.9974	-0.446	5825.0011	0.189	5825.0013	0.223	5825.0065	1.116
-20	3.8	5825.0062	1.064	5825.004	0.687	5825.0038	0.652	5825.0071	1.219
-30	3.8	5825.0007	0.120	5824.9921	-1.356	5824.999	-0.172	5824.9956	-0.755

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5825MHz									
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	4.2	5825.0032	0.549	5825.0073	1.253	5825.0063	1.082	5825.0001	0.017
	3.8	5825.0031	0.532	5825.0077	1.322	5825.0062	1.064	5825.0011	0.189
	3.5	5825.0047	0.807	5825.0077	1.322	5825.0075	1.288	5825.0012	0.206



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5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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

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

---END---