

FCC TEST REPORT

(Part 15, Subpart E)

Applicant:	TomTom International BV
Address:	De Ruijterkade 154, 1011 AC Amsterdam, The Netherlands

Manufacturer or Supplier:	Shenzhen Kertong Technology Co.,Ltd
Address:	405, FuYuan Industrial park, Baoan 45 District, Shenzhen City, 518101 China
Product:	WIFI/BT Module
Brand Name:	TomTom
Model Name:	K019-CW43-DW
FCC ID:	S4LFF50
Date of tests:	Jan.17, 2020 ~ May. 18, 2020

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 15, Subpart E, Section 15.407**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: May. 22, 2020	 Date: May. 22, 2020

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute you unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS	5
1.1 MEASUREMENT UNCERTAINTY	5
2 GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST MODES	8
2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	10
2.3 DUTY CYCLE OF TEST SIGNAL	16
2.4 DESCRIPTION OF SUPPORT UNITS	18
2.4.1 CONFIGURATION OF SYSTEM UNDER TEST	19
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	20
3 TEST TYPES AND RESULTS	21
3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	21
3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	21
3.1.2 LIMITS OF UNWANTED EMISSION	21
3.1.3 TEST INSTRUMENTS	22
3.1.4 TEST PROCEDURES	23
3.1.5 DEVIATION FROM TEST STANDARD	23
3.1.6 TEST SETUP	24
3.1.7 EUT OPERATING CONDITION	25
3.1.8 TEST RESULTS	26
3.2 OUT OF BAND EMISSION MEASUREMENT	101
3.2.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT	101
3.2.2 TEST INSTRUMENTS	102
3.2.3 TEST PROCEDURES	102
3.2.4 DEVIATION FROM TEST STANDARD	102
3.2.5 TEST SETUP	102
3.2.6 EUT OPERATING CONDITION	102
3.2.7 TEST RESULTS	103
3.3 CONDUCTED EMISSION MEASUREMENT	115
3.3.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	115
3.3.2 TEST INSTRUMENTS	115
3.3.3 TEST PROCEDURES	115



3.3.4	DEVIATION FROM TEST STANDARD	116
3.3.5	TEST SETUP	116
3.3.6	EUT OPERATING CONDITIONS	116
3.3.7	TEST RESULTS	117
3.4	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	119
3.4.1	LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	119
3.4.2	TEST SETUP	120
3.4.3	TEST INSTRUMENTS	120
3.4.4	TEST PROCEDURE	121
3.4.5	DEVIATION FROM TEST STANDARD	123
3.4.6	EUT OPERATING CONDITIONS	123
3.4.7	TEST RESULTS	124
3.5	MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT	142
3.5.1	LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT	142
3.5.2	TEST SETUP	142
3.5.3	TEST INSTRUMENTS	142
3.5.4	TEST PROCEDURES	143
3.5.5	DEVIATION FROM TEST STANDARD	143
3.5.6	EUT OPERATING CONDITIONS	143
3.5.7	TEST RESULTS	144
4	PHOTOGRAPHS OF THE TEST CONFIGURATION	153
5	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	154

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF200116W006-3	Original release	May. 22, 2020

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
15.407(b)(6)	AC Power Conducted Emission	Compliance
15.407(b) (1/2/3/4/5)	Radiated Emission & Band Edge Measurement	Compliance
15.407(b) (1/2/3/4/5)	Out of Band Emission Measurement	Compliance
15.407(a/1/2/3)	Maximum conducted output Power	Compliance
15.407(a/1/2/3)	Peak Power Spectral Density	Compliance
15.403(i)	26 dB Bandwidth	Compliance
15.407(e)	6 dB Bandwidth	Compliance
15.203	Antenna Requirement	Compliance

1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (30MHz~1GMHz)	±4.98dB
Radiated emissions (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

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



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	WIFI/BT Module
BRAND NAME	TomTom
MODEL NAME	K019-CW43-DW
NOMINAL VOLTAGE	DC 5V
MODULATION	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 433.3Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5805MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n/11ac (20MHz) 2 for 802.11n/11ac (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n/11ac (20MHz) 2 for 802.11n/11ac (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n/11ac (20MHz) 5 for 802.11n/11ac (40MHz) 2 for 802.11ac (80MHz) 5745 ~ 5805MHz: 4 for 802.11a, 802.11n/11ac (20MHz) 2 for 802.11n/11ac (40MHz) 1 for 802.11ac (80MHz)
AVERAGE POWER	24.15mW for 5180 ~ 5240MHz 24.66mW for 5260 ~ 5320MHz 25.59mW for 5500 ~ 5700MHz 21.63mW for 5745 ~ 5805MHz
ANTENNA TYPE	5180 ~ 5240MHz: Dipole Antenna with 5dBi gain 5260 ~ 5320MHz: Dipole Antenna with 5dBi gain 5500 ~ 5700MHz: Dipole Antenna with 5dBi gain 5745 ~ 5805MHz: Dipole Antenna with 2dBi gain
HW VERSION	K019-CW43-DW-A4
SW VERSION	version 7.45.203 (r724662 CY)
I/O PORTS	Refer to user's manual

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/802.11ac (20MHz)	1TX/1RX
802.11n/802.11ac (40MHz)	1TX/1RX
802.11ac (80MHz)	1TX/1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. The device will automatically discontinue transmission in case of either absence of information to transmit or operational failure.

2.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

2 channels are provided for 802.11n, 802.11ac (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, 802.11ac (20MHz):

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

2 channels are provided for 802.11n, 802.11ac (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

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

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

5 channels are provided for 802.11n, 802.11ac (40MHz):

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610 MHz

FOR 5745 ~ 5805MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775 MHz		

2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Powered by Adapter with wifi(5G) link
B	-	-	-	-	Powered by Battery with wifi(5G) link
C	-	-	-	-	Powered by USB with wifi(5G) link

Where

RE $\geq$ 1G: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11ac (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (80MHz)		42	42	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11ac (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (80MHz)		58	58	OFDM	MCS0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (80MHz)		106 to 122	106, 122	OFDM	MCS0
A	802.11a	5745-5805	149 to 161	149, 157,161	OFDM	6.0
A	802.11n (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11ac (40MHz)		151 to 159	1151, 159	OFDM	MCS0
A	802.11ac (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11n (40MHz)		151 to 159	1151, 159	OFDM	MCS0



A	802.11ac (80MHz)		155	155	OFDM	MCS0
---	------------------	--	-----	-----	------	------

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11n40	5180-5240	38 to 46	38	OFDM	MCS0

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11n40	5180-5240	38 to 46	38	OFDM	MCS0

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11ac (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (80MHz)		42	42	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11ac (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (80MHz)		58	58	OFDM	MCS0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (80MHz)		106 to 122	106, 122	OFDM	MCS0
A	802.11a	5745-5805	149 to 161	149, 157,161	OFDM	6.0
A	802.11n (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11n (40MHz)		151 to 159	1151, 159	OFDM	MCS0
A	802.11ac (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11ac (40MHz)		151 to 159	1151, 159	OFDM	MCS0

A	802.11ac (80MHz)		155	155	OFDM	MCS0
---	------------------	--	-----	-----	------	------

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11ac (40MHz)		38 to 46	38, 46	OFDM	MCS0
A	802.11ac (80MHz)		42	42	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11ac (40MHz)		54 to 62	54, 62	OFDM	MCS0
A	802.11ac (80MHz)		58	58	OFDM	MCS0
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (20MHz)		100 to 140	100, 116, 140	OFDM	MCS0
A	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	MCS0
A	802.11ac (80MHz)		106 to 122	106, 122	OFDM	MCS0
A	802.11a	5745-5805	149 to 161	149, 157,161	OFDM	6.0
A	802.11n (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11n (40MHz)		151 to 159	1151, 159	OFDM	MCS0



A	802.11ac (20MHz)		149 to 161	149, 157,161	OFDM	MCS0
A	802.11ac (40MHz)		151 to 159	1151, 159	OFDM	MCS0
A	802.11ac (80MHz)		155	155	OFDM	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5V	Jacky Liu
RE≥1G	23deg. C, 70%RH	DC 5V	Jacky Liu
PLC	25deg. C, 52%RH	DC 5V	Chase Zhou
APCM	25deg. C, 60%RH	DC 5V	Harris Wang

2.3 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = 1.396/1.500 = 0.931, Duty factor = $10 * \log(1/0.931) = 0.31$.

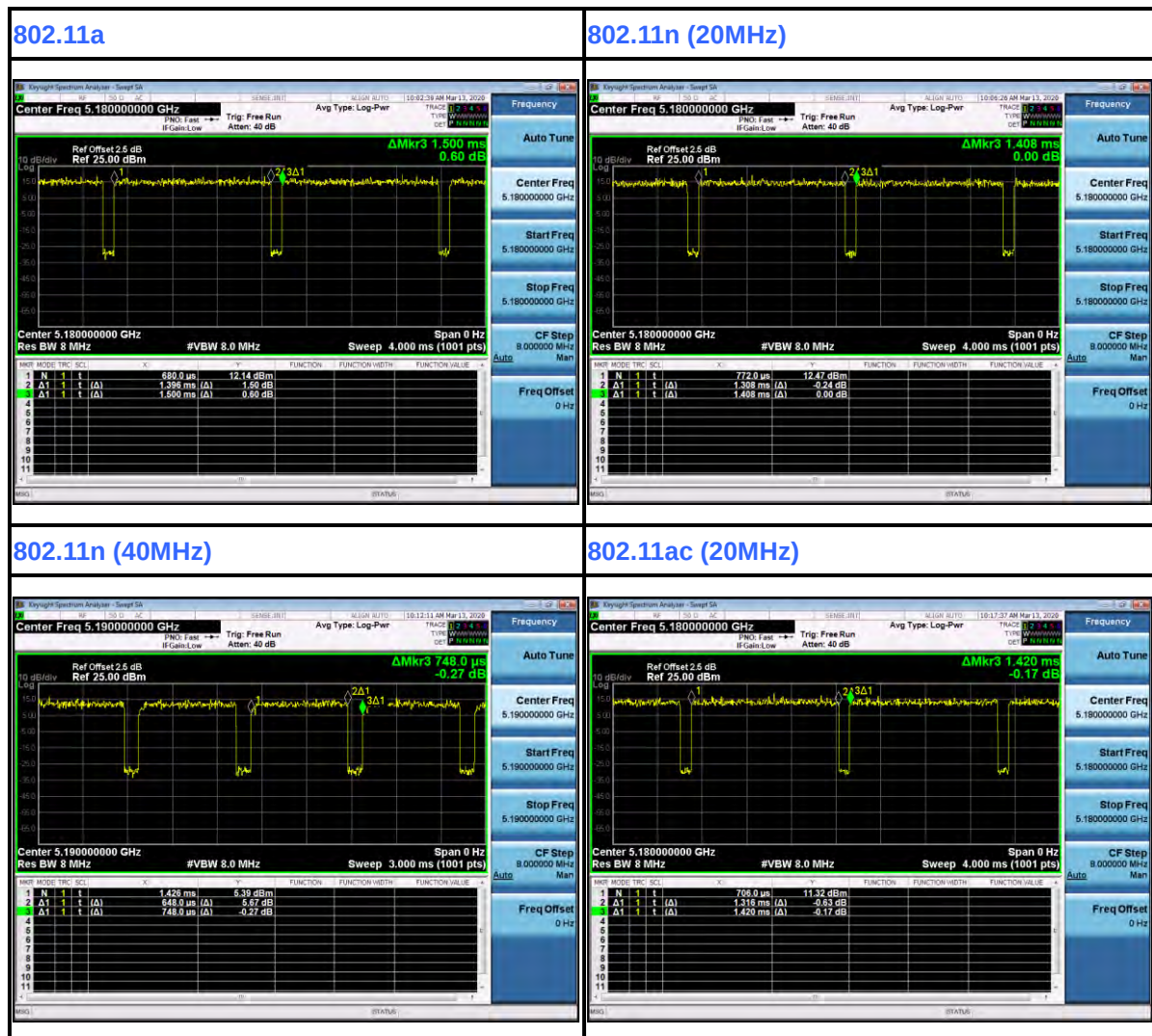
802.11n (20MHz): Duty cycle = 1.308/1.408 = 0.929, Duty factor = $10 * \log(1/0.929) = 0.27$.

802.11n (40MHz): Duty cycle = 648.0/748.0 = 0.866, Duty factor = $10 * \log(1/0.866) = 0.62$.

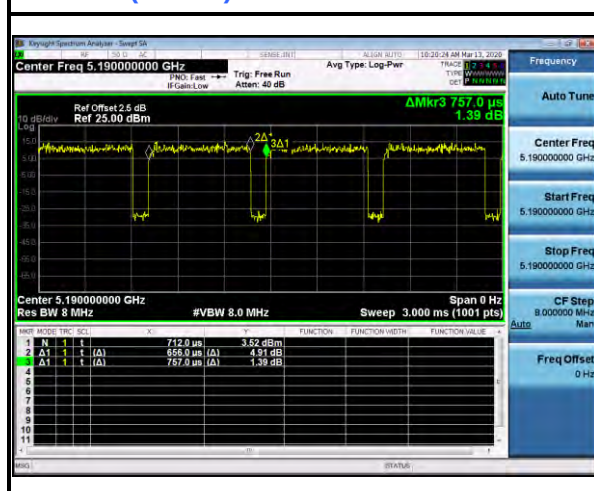
802.11ac (20MHz): Duty cycle = 1.316/1.420 = 0.927, Duty factor = $10 * \log(1/0.927) = 0.33$.

802.11ac (40MHz): Duty cycle = 656.0/757.0 = 0.867, Duty factor = $10 * \log(1/0.867) = 0.62$

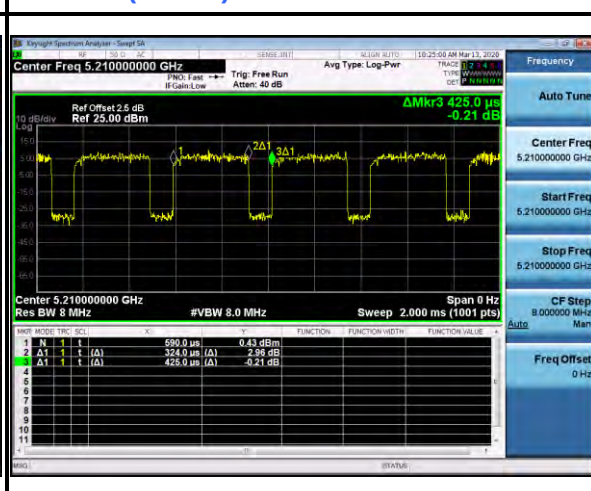
802.11ac (80MHz): Duty cycle = 324.0/425.0 = 0.762, Duty factor = $10 * \log(1/0.762) = 1.18$.



802.11ac (40MHz)



802.11ac (80MHz)



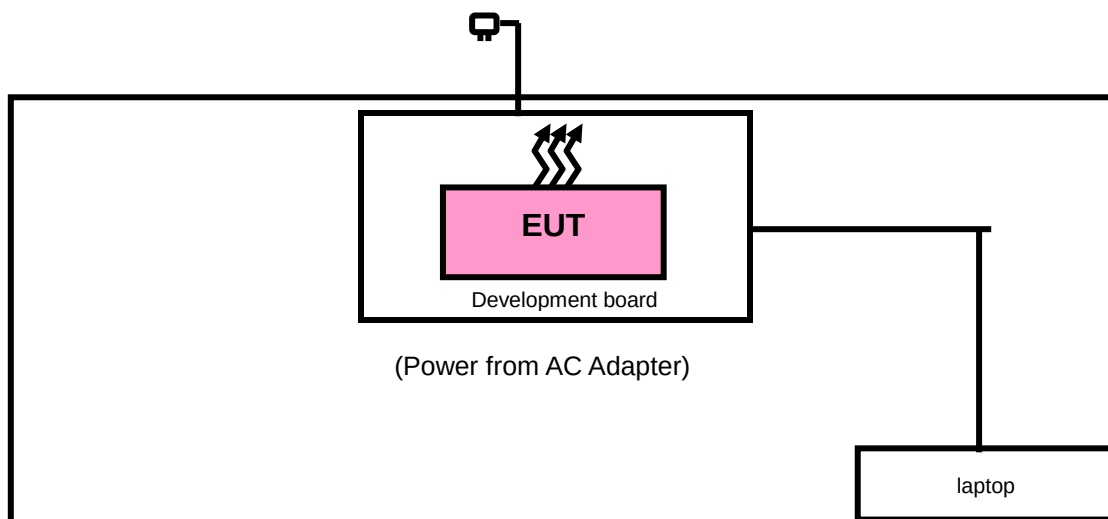
2.4 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thnikpad L440	R90FTFKN	N/A
4	DC source	LONG WEI	PS-6403D	010934269	N/A

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

2.4.1 CONFIGURATION OF SYSTEM UNDER TEST



2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

ANSI C63.10-2013

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

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

3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

3.1.2 LIMITS OF UNWANTED EMISSION

RESTRICTED BANDS	APPLICABLE TO	LIMIT	
	789033 D02 General UNII Test Procedures New Rules v02r01	FIELD STRENGTH AT 3m (dBµV/m)	
		PK : 74	AV : 54
OUT OF THE RESTRICTED BANDS	APPLICABLE TO	EIRP LIMIT (dBm/MHz)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	15.407(b)(1)	PK : -27	PK : 68.3
	15.407(b)(2)		
	15.407(b)(3)		
	15.407(b)(4)	See note 2 (FCC 16-24)	

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

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

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

3.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Feb. 28,20	Feb. 27,21
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 28,20	Feb. 27,21
Horn Antenna	ETS-LINDGREN	3117	00168728	Mar. 03,20	Mar. 02,21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 22, 19	Nov. 21, 20
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 24,19	Jun. 23,20
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 28,20	Feb. 27,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jun. 24,19	Jun. 23,20

NOTE:

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

3.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

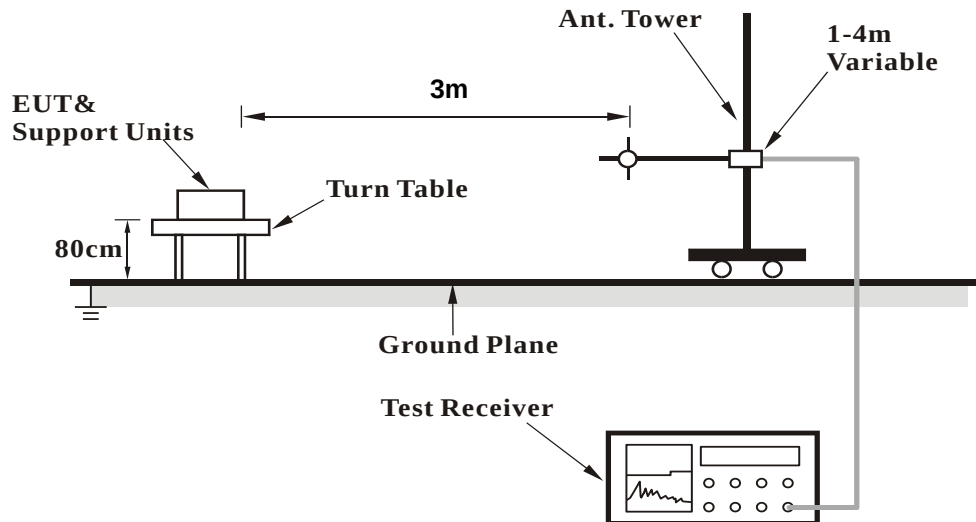
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

3.1.5 DEVIATION FROM TEST STANDARD

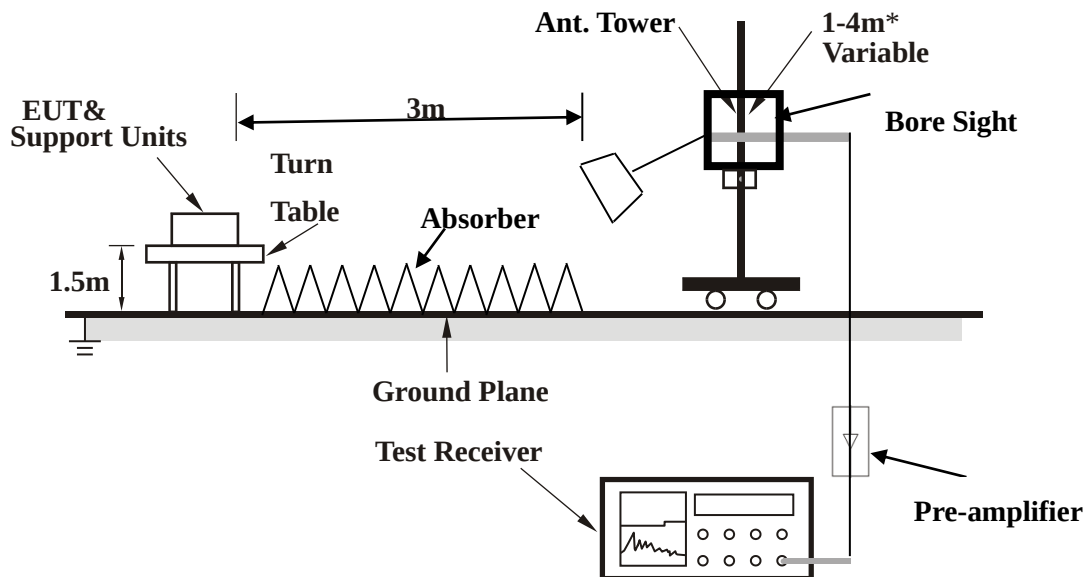
No deviation.

3.1.6 TEST SETUP

< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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



Test Report No.: RF200116W006-3

3.1.7 EUT OPERATING CONDITION

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

3.1.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

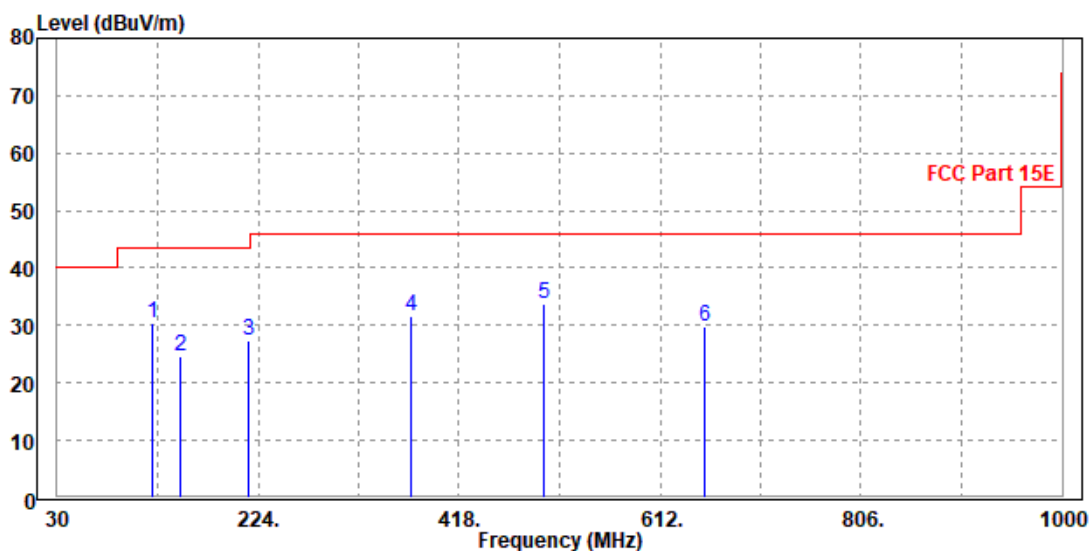
802.11n (40MHz)

CHANNEL	TX Channel 38	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
122.25	30.48	57.51	43.5	-13.02	8.57	1.46	37.06	200	360	Peak
148.55	24.62	50.32	43.5	-18.88	9.57	1.56	36.83	200	360	Peak
214.35	27.36	50.65	43.5	-16.14	11.43	1.86	36.58	200	360	Peak
371.25	31.65	49.65	46	-14.35	16.31	2.5	36.81	200	360	Peak
500.12	33.72	49.23	46	-12.28	18.5	2.99	37	200	360	Peak
655.2	29.73	42.13	46	-16.27	21.7	3.36	37.46	200	360	Peak

REMARKS:

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

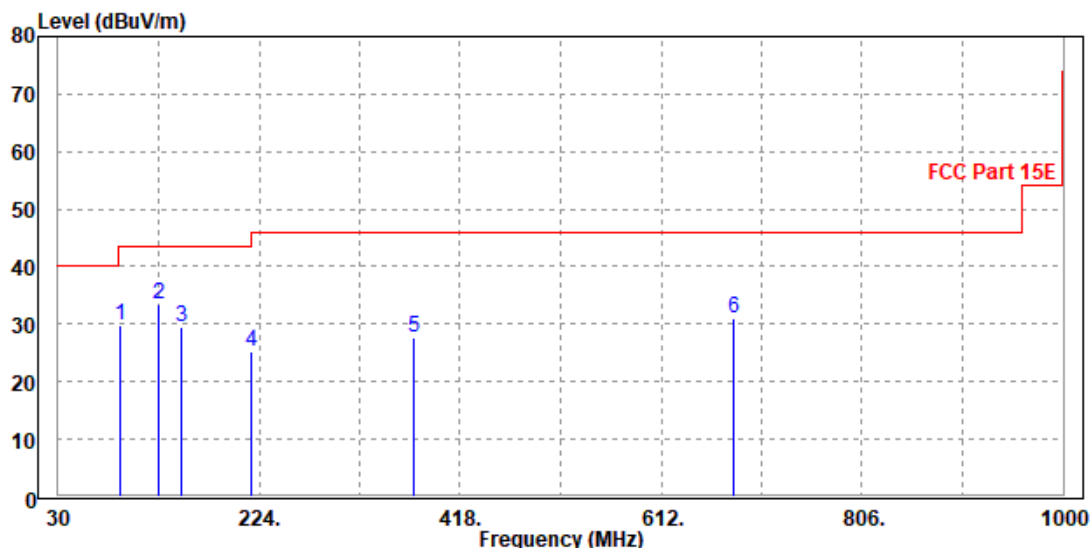


CHANNEL	Channel 38	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
89.12	29.7	57.12	43.5	-13.8	8.57	1.27	37.26	100	0	Peak
127.22	33.47	60.32	43.5	-10.03	8.7	1.47	37.02	100	0	Peak
149.66	29.64	55.23	43.5	-13.86	9.67	1.56	36.82	100	0	Peak
216.52	25.2	48.32	46	-20.8	11.59	1.87	36.58	100	0	Peak
373.55	27.81	45.63	46	-18.19	16.48	2.51	36.81	100	0	Peak
682.12	30.97	42.53	46	-15.03	22.48	3.46	37.5	100	0	Peak

REMARKS:

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





ABOVE 1GHz WORST-CASE DATA:

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

Band 1

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.09	63.32	74	-15.91	33.7	7.42	46.35	132	306	Peak
5150	42.89	48.12	54	-11.11	33.7	7.42	46.35	132	306	Average
5180	103.61	108.83			33.7	7.43	46.35	132	306	Peak
5180	93.85	99.07			33.7	7.43	46.35	132	306	Average
5350	52.08	57.21	74	-21.92	33.7	7.47	46.3	132	306	Peak
5350	40	45.13	54	-14	33.7	7.47	46.3	132	306	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.64	60.28	74	-16.36	36.29	7.42	46.35	100	325	Peak
5150	43.77	46.41	54	-10.23	36.29	7.42	46.35	100	325	Average
5180	99.31	101.92			36.31	7.43	46.35	100	325	Peak
5180	90.48	93.09			36.31	7.43	46.35	100	325	Average
5350	56.43	58.85	74	-17.57	36.41	7.47	46.3	100	325	Peak
5350	42.48	44.9	54	-11.52	36.41	7.47	46.3	100	325	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.67	59.9	74	-19.33	33.7	7.42	46.35	135	308	Peak
5150	41.8	47.03	54	-12.2	33.7	7.42	46.35	135	308	Average
5200	103.72	108.93			33.7	7.43	46.34	135	308	Peak
5200	94.55	99.76			33.7	7.43	46.34	135	308	Average
5350	53.07	58.2	74	-20.93	33.7	7.47	46.3	135	308	Peak
5350	40.69	45.82	54	-13.31	33.7	7.47	46.3	135	308	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.33	60.97	74	-15.67	36.29	7.42	46.35	100	327	Peak
5150	44.54	47.18	54	-9.46	36.29	7.42	46.35	100	327	Average
5200	99.2	101.79			36.32	7.43	46.34	100	327	Peak
5200	90.05	92.64			36.32	7.43	46.34	100	327	Average
5350	55.66	58.08	74	-18.34	36.41	7.47	46.3	100	327	Peak
5350	43.41	45.83	54	-10.59	36.41	7.47	46.3	100	327	Average

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
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	53.62	58.85	74	-20.38	33.7	7.42	46.35	155	306	Peak
5150	40.87	46.1	54	-13.13	33.7	7.42	46.35	155	306	Average
5240	103.17	108.36			33.7	7.44	46.33	155	306	Peak
5240	93.86	99.05			33.7	7.44	46.33	155	306	Average
5350	52.36	57.49	74	-21.64	33.7	7.47	46.3	155	306	Peak
5350	39.77	44.9	54	-14.23	33.7	7.47	46.3	155	306	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.57	59.21	74	-17.43	36.29	7.42	46.35	100	332	Peak
5150	43.3	45.94	54	-10.7	36.29	7.42	46.35	100	332	Average
5240	98.89	101.44			36.34	7.44	46.33	100	332	Peak
5240	89.48	92.03			36.34	7.44	46.33	100	332	Average
5350	55	57.42	74	-19	36.41	7.47	46.3	100	332	Peak
5350	42.41	44.83	54	-11.59	36.41	7.47	46.3	100	332	Average

REMARKS:

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



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.32	59.55	74	-19.68	33.7	7.42	46.35	132	304	Peak
5150	41.95	47.18	54	-12.05	33.7	7.42	46.35	132	304	Average
5180	102.41	107.63			33.7	7.43	46.35	132	304	Peak
5180	91.96	97.18			33.7	7.43	46.35	132	304	Average
5350	52.44	57.57	74	-21.56	33.7	7.47	46.3	132	304	Peak
5350	40.76	45.89	54	-13.24	33.7	7.47	46.3	132	304	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.18	59.82	74	-16.82	36.29	7.42	46.35	100	323	Peak
5150	43.98	46.62	54	-10.02	36.29	7.42	46.35	100	323	Average
5180	97.82	100.43			36.31	7.43	46.35	100	323	Peak
5180	87.75	90.36			36.31	7.43	46.35	100	323	Average
5350	54.74	57.16	74	-19.26	36.41	7.47	46.3	100	323	Peak
5350	43.37	45.79	54	-10.63	36.41	7.47	46.3	100	323	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.21	61.44	74	-17.79	33.7	7.42	46.35	137	313	Peak
5150	42.54	47.77	54	-11.46	33.7	7.42	46.35	137	313	Average
5200	103.15	108.36			33.7	7.43	46.34	137	313	Peak
5200	92.71	97.92			33.7	7.43	46.34	137	313	Average
5350	53.32	58.45	74	-20.68	33.7	7.47	46.3	137	313	Peak
5350	40.66	45.79	54	-13.34	33.7	7.47	46.3	137	313	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	44.33	46.97	54	-9.67	36.29	7.42	46.35	100	329	Average
5150	44.33	46.97	54	-9.67	36.29	7.42	46.35	100	329	Average
5200	99.47	102.06			36.32	7.43	46.34	100	329	Peak
5200	88.73	91.32			36.32	7.43	46.34	100	329	Average
5350	53.71	56.13	74	-20.29	36.41	7.47	46.3	100	329	Peak
5350	45.49	47.91	54	-8.51	36.41	7.47	46.3	100	329	Average

REMARKS:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
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	56.71	59.35	74	-17.29	36.29	7.42	46.35	100	328	Peak
5150	43.8	46.44	54	-10.2	36.29	7.42	46.35	100	328	Average
5240	100.09	102.64			36.34	7.44	46.33	100	328	Peak
5240	89.95	92.5			36.34	7.44	46.33	100	328	Average
5350	55.49	57.91	74	-18.51	36.41	7.47	46.3	100	328	Peak
5350	42.8	45.22	54	-11.2	36.41	7.47	46.3	100	328	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.69	58.92	74	-20.31	33.7	7.42	46.35	132	313	Peak
5150	42.4	47.63	54	-11.6	33.7	7.42	46.35	132	313	Average
5240	104.74	109.93			33.7	7.44	46.33	132	313	Peak
5240	93.25	98.44			33.7	7.44	46.33	132	313	Average
5350	53.17	58.3	74	-20.83	33.7	7.47	46.3	132	313	Peak
5350	40.78	45.91	54	-13.22	33.7	7.47	46.3	132	313	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF200116W006-3

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	64.33	67.31	74	-9.67	35.95	7.42	46.35	110	340	Peak
5150	51.56	54.54	54	-2.44	35.95	7.42	46.35	110	340	Average
5190	100.75	103.67			35.99	7.43	46.34	110	340	Peak
5190	92.89	95.81			35.99	7.43	46.34	110	340	Average
5350	57.67	60.35	74	-16.33	36.15	7.47	46.3	110	340	Peak
5350	44.13	46.81	54	-9.87	36.15	7.47	46.3	110	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.99	61.63	74	-15.01	36.29	7.42	46.35	100	250	Peak
5150	45.45	48.09	54	-8.55	36.29	7.42	46.35	100	250	Average
5190	92.18	94.78			36.31	7.43	46.34	100	250	Peak
5190	81.41	84.01			36.31	7.43	46.34	100	250	Average
5350	56.91	59.33	74	-17.09	36.41	7.47	46.3	100	250	Peak
5350	44.45	46.87	54	-9.55	36.41	7.47	46.3	100	250	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.52	61.5	74	-15.48	35.95	7.42	46.35	110	340	Peak
5150	45.41	48.39	54	-8.59	35.95	7.42	46.35	110	340	Average
5230	99.75	102.61			36.03	7.44	46.33	110	340	Peak
5230	91.56	94.42			36.03	7.44	46.33	110	340	Average
5350	57.48	60.16	74	-16.52	36.15	7.47	46.3	110	340	Peak
5350	44.21	46.89	54	-9.79	36.15	7.47	46.3	110	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.05	60.69	74	-15.95	36.29	7.42	46.35	100	245	Peak
5150	44.9	47.54	54	-9.1	36.29	7.42	46.35	100	245	Average
5230	91.65	94.2			36.34	7.44	46.33	100	245	Peak
5230	82.27	84.82			36.34	7.44	46.33	100	245	Average
5350	57.69	60.11	74	-16.31	36.41	7.47	46.3	100	245	Peak
5350	44.5	46.92	54	-9.5	36.41	7.47	46.3	100	245	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF200116W006-3

802.11ac (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	53.60	58.83	74	-20.4	33.7	7.42	46.35	137	304	Peak
5150	40.22	45.45	54	-13.78	33.7	7.42	46.35	137	304	Average
5180	98.14	103.36			33.7	7.43	46.35	137	304	Peak
5180	88.69	93.91			33.7	7.43	46.35	137	304	Average
5350	50.3	55.43	74	-23.7	33.7	7.47	46.3	137	304	Peak
5350	37.78	42.91	54	-16.22	33.7	7.47	46.3	137	304	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.53	58.17	74	-18.47	36.29	7.42	46.35	100	324	Peak
5150	42.77	45.41	54	-11.23	36.29	7.42	46.35	100	324	Average
5180	96.77	99.38			36.31	7.43	46.35	100	324	Peak
5180	86.74	89.35			36.31	7.43	46.35	100	324	Average
5350	53.39	55.81	74	-20.61	36.41	7.47	46.3	100	324	Peak
5350	39.96	42.38	54	-14.04	36.41	7.47	46.3	100	324	Average

REMARKS:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK)
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	53.82	59.05	74	-20.18	33.7	7.42	46.35	137	304	Peak
5150	40.94	46.17	54	-13.06	33.7	7.42	46.35	137	304	Average
5200	100.72	105.93			33.7	7.43	46.34	137	304	Peak
5200	90.23	95.44			33.7	7.43	46.34	137	304	Average
5350	52.56	57.69	74	-21.44	33.7	7.47	46.3	137	304	Peak
5350	39.98	45.11	54	-14.02	33.7	7.47	46.3	137	304	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.52	58.16	74	-18.48	36.29	7.42	46.35	100	328	Average
5150	42.98	45.62	54	-11.02	36.29	7.42	46.35	100	328	Average
5200	96.71	99.3			36.32	7.43	46.34	100	328	Peak
5200	86.43	89.02			36.32	7.43	46.34	100	328	Average
5350	54.94	57.36	74	-19.06	36.41	7.47	46.3	100	328	Peak
5350	41.59	44.01	54	-12.41	36.41	7.47	46.3	100	328	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.66	59.89	74	-19.34	33.7	7.42	46.35	110	304	Peak
5150	40.82	46.05	54	-13.18	33.7	7.42	46.35	110	304	Average
5240	103.31	108.5			33.7	7.44	46.33	110	304	Peak
5240	92.57	97.76			33.7	7.44	46.33	110	304	Average
5350	54.66	59.79	74	-19.34	33.7	7.47	46.3	110	304	Peak
5350	41.71	46.84	54	-12.29	33.7	7.47	46.3	110	304	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.2	59.84	74	-16.8	36.29	7.42	46.35	100	334	Peak
5150	43.61	46.25	54	-10.39	36.29	7.42	46.35	100	334	Average
5240	96.69	99.24			36.34	7.44	46.33	100	334	Peak
5240	86.29	88.84			36.34	7.44	46.33	100	334	Average
5350	55.43	57.85	74	-18.57	36.41	7.47	46.3	100	334	Peak
5350	42.6	45.02	54	-11.4	36.41	7.47	46.3	100	334	Average

REMARKS:

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



802.11ac (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	64.61	67.59	74	-9.39	35.95	7.42	46.35	100	340	Peak
5150	48.67	51.65	54	-5.33	35.95	7.42	46.35	100	340	Average
5190	100.57	103.49			35.99	7.43	46.34	100	340	Peak
5190	91.54	94.46			35.99	7.43	46.34	100	340	Average
5350	57.03	59.71	74	-16.97	36.15	7.47	46.3	100	340	Peak
5350	44.39	47.07	54	-9.61	36.15	7.47	46.3	100	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	59.95	62.59	74	-14.05	36.29	7.42	46.35	100	245	Peak
5150	45.82	48.46	54	-8.18	36.29	7.42	46.35	100	245	Average
5190	92.87	95.47			36.31	7.43	46.34	100	245	Peak
5190	82.88	85.48			36.31	7.43	46.34	100	245	Average
5350	57.32	59.74	74	-16.68	36.41	7.47	46.3	100	245	Peak
5350	44.59	47.01	54	-9.41	36.41	7.47	46.3	100	245	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.24	61.22	74	-15.76	35.95	7.42	46.35	100	340	Peak
5150	45.17	48.15	54	-8.83	35.95	7.42	46.35	100	340	Average
5230	99.82	102.68			36.03	7.44	46.33	100	340	Peak
5230	84.02	86.88			36.03	7.44	46.33	100	340	Average
5350	57.87	60.55	74	-16.13	36.15	7.47	46.3	100	340	Peak
5350	44.51	47.19	54	-9.49	36.15	7.47	46.3	100	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.57	60.21	74	-16.43	36.29	7.42	46.35	100	245	Peak
5150	44.95	47.59	54	-9.05	36.29	7.42	46.35	100	245	Average
5230	91.42	93.97			36.34	7.44	46.33	100	245	Peak
5230	82.75	85.3			36.34	7.44	46.33	100	245	Average
5350	58.02	60.44	74	-15.98	36.41	7.47	46.3	100	245	Peak
5350	44.7	47.12	54	-9.3	36.41	7.47	46.3	100	245	Average

REMARKS:

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



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	61.6	64.58	74	-12.4	35.95	7.42	46.35	100	340	Peak
5150	47.61	50.59	54	-6.39	35.95	7.42	46.35	100	340	Average
5210	97.23	100.12			36.01	7.44	46.34	100	340	Peak
5210	86.28	89.17			36.01	7.44	46.34	100	340	Average
5350	57.31	59.99	74	-16.69	36.15	7.47	46.3	100	340	Peak
5350	44.5	47.18	54	-9.5	36.15	7.47	46.3	100	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.64	61.28	74	-15.36	36.29	7.42	46.35	100	245	Peak
5150	45.26	47.9	54	-8.74	36.29	7.42	46.35	100	245	Average
5210	87.86	90.43			36.33	7.44	46.34	100	245	Peak
5210	78.77	81.34			36.33	7.44	46.34	100	245	Average
5350	58.12	60.54	74	-15.88	36.41	7.47	46.3	100	245	Peak
5350	44.65	47.07	54	-9.35	36.41	7.47	46.3	100	245	Average

REMARKS:

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



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	53.55	58.78	74	-20.45	33.7	7.42	46.35	110	305	Peak
5150	40.73	45.96	54	-13.27	33.7	7.42	46.35	110	305	Average
5260	102.96	108.13			33.7	7.45	46.32	110	305	Peak
5260	93.26	98.43			33.7	7.45	46.32	110	305	Average
5350	52.79	57.92	74	-21.21	33.7	7.47	46.3	110	305	Peak
5350	40.02	45.15	54	-13.98	33.7	7.47	46.3	110	305	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57	59.64	74	-17	36.29	7.42	46.35	100	337	Peak
5150	43.8	46.44	54	-10.2	36.29	7.42	46.35	100	337	Average
5260	95.67	98.18			36.36	7.45	46.32	100	337	Peak
5260	86.65	89.16			36.36	7.45	46.32	100	337	Average
5350	53.95	56.37	74	-20.05	36.41	7.47	46.3	100	337	Peak
5350	41.67	44.09	54	-12.33	36.41	7.47	46.3	100	337	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.2	59.43	74	-19.8	33.7	7.42	46.35	134	307	Peak
5150	41.09	46.32	54	-12.91	33.7	7.42	46.35	134	307	Average
5300	101.26	106.41			33.7	7.46	46.31	134	307	Peak
5300	92.09	97.24			33.7	7.46	46.31	134	307	Average
5350	53.21	58.34	74	-20.79	33.7	7.47	46.3	134	307	Peak
5350	40.23	45.36	54	-13.77	33.7	7.47	46.3	134	307	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.72	58.36	74	-18.28	36.29	7.42	46.35	100	16	Peak
5150	42.88	45.52	54	-11.12	36.29	7.42	46.35	100	16	Average
5300	97.76	100.23			36.38	7.46	46.31	100	16	Peak
5300	88.73	91.2			36.38	7.46	46.31	100	16	Average
5350	54.64	57.06	74	-19.36	36.41	7.47	46.3	100	16	Peak
5350	41.91	44.33	54	-12.09	36.41	7.47	46.3	100	16	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.87	60.1	74	-19.13	33.7	7.42	46.35	130	313	Peak
5150	41.39	46.62	54	-12.61	33.7	7.42	46.35	130	313	Average
5320	100.79	105.93			33.7	7.46	46.3	130	313	Peak
5320	91.47	96.61			33.7	7.46	46.3	130	313	Average
5350	54.97	60.1	74	-19.03	33.7	7.47	46.3	130	313	Peak
5350	41.51	46.64	54	-12.49	33.7	7.47	46.3	130	313	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.9	59.54	74	-17.1	36.29	7.42	46.35	100	16	Peak
5150	44.02	46.66	54	-9.98	36.29	7.42	46.35	100	16	Average
5320	97.91	100.36			36.39	7.46	46.3	100	16	Peak
5320	88.62	91.07			36.39	7.46	46.3	100	16	Average
5350	55.91	58.33	74	-18.09	36.41	7.47	46.3	100	16	Peak
5350	43.38	45.8	54	-10.62	36.41	7.47	46.3	100	16	Average

REMARKS:

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



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.53	57.76	74	-21.47	33.7	7.42	46.35	119	303	Peak
5150	39.87	45.1	54	-14.13	33.7	7.42	46.35	119	303	Average
5260	99.46	104.63			33.7	7.45	46.32	119	303	Peak
5260	89.07	94.24			33.7	7.45	46.32	119	303	Average
5350	50.42	55.55	74	-23.58	33.7	7.47	46.3	119	303	Peak
5350	37.57	42.7	54	-16.43	33.7	7.47	46.3	119	303	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.55	58.19	74	-18.45	36.29	7.42	46.35	100	18	Peak
5150	42.51	45.15	54	-11.49	36.29	7.42	46.35	100	18	Average
5260	95.81	98.32			36.36	7.45	46.32	100	18	Peak
5260	85.42	87.93			36.36	7.45	46.32	100	18	Average
5350	52.17	54.59	74	-21.83	36.41	7.47	46.3	100	18	Peak
5350	39.61	42.03	54	-14.39	36.41	7.47	46.3	100	18	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.3	57.53	74	-21.7	33.7	7.42	46.35	119	303	Peak
5150	39.6	44.83	54	-14.4	33.7	7.42	46.35	119	303	Average
5300	99.48	104.63			33.7	7.46	46.31	119	303	Peak
5300	89.51	94.66			33.7	7.46	46.31	119	303	Average
5350	51.07	56.2	74	-22.93	33.7	7.47	46.3	119	303	Peak
5350	38.4	43.53	54	-15.6	33.7	7.47	46.3	119	303	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.64	58.28	74	-18.36	36.29	7.42	46.35	100	18	Peak
5150	42.73	45.37	54	-11.27	36.29	7.42	46.35	100	18	Average
5300	97.54	100.01			36.38	7.46	46.31	100	18	Peak
5300	87.41	89.88			36.38	7.46	46.31	100	18	Average
5350	54.53	56.95	74	-19.47	36.41	7.47	46.3	100	18	Peak
5350	41.47	43.89	54	-12.53	36.41	7.47	46.3	100	18	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.42	58.65	74	-20.58	33.7	7.42	46.35	130	304	Peak
5150	40.53	45.76	54	-13.47	33.7	7.42	46.35	130	304	Average
5320	101.89	107.03			33.7	7.46	46.3	130	304	Peak
5320	91.36	96.5			33.7	7.46	46.3	130	304	Average
5350	58.67	63.8	74	-15.33	33.7	7.47	46.3	130	304	Peak
5350	41.61	46.74	54	-12.39	33.7	7.47	46.3	130	304	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.12	59.76	74	-16.88	36.29	7.42	46.35	113	20	Peak
5150	43.89	46.53	54	-10.11	36.29	7.42	46.35	113	20	Average
5320	99.11	101.56			36.39	7.46	46.3	113	20	Peak
5320	88.74	91.19			36.39	7.46	46.3	113	20	Average
5350	57.57	59.99	74	-16.43	36.41	7.47	46.3	113	20	Peak
5350	43.63	46.05	54	-10.37	36.41	7.47	46.3	113	20	Average

REMARKS:

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



802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.06	61.04	74	-15.94	35.95	7.42	46.35	100	340	Peak
5150	44.43	47.41	54	-9.57	35.95	7.42	46.35	100	340	Average
5270	100.23	103.03			36.07	7.45	46.32	100	340	Peak
5270	89.93	92.73			36.07	7.45	46.32	100	340	Average
5350	56.34	59.02	74	-17.66	36.15	7.47	46.3	100	340	Peak
5350	43.45	46.13	54	-10.55	36.15	7.47	46.3	100	340	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	58.02	60.66	74	-15.98	36.29	7.42	46.35	100	245	Peak
5150	44.63	47.27	54	-9.37	36.29	7.42	46.35	100	245	Average
5270	92.41	94.92			36.36	7.45	46.32	100	245	Peak
5270	83.23	85.74			36.36	7.45	46.32	100	245	Average
5350	57.02	59.44	74	-16.98	36.41	7.47	46.3	100	245	Peak
5350	43.63	46.05	54	-10.37	36.41	7.47	46.3	100	245	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.42	59.4	74	-17.58	35.95	7.42	46.35	100	200	Peak
5150	43.9	46.88	54	-10.1	35.95	7.42	46.35	100	200	Average
5310	96.42	99.16			36.11	7.46	46.31	100	200	Peak
5310	88.04	90.78			36.11	7.46	46.31	100	200	Average
5350	62.21	64.89	74	-11.79	36.15	7.47	46.3	100	200	Peak
5350	45.04	47.72	54	-8.96	36.15	7.47	46.3	100	200	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.21	59.85	74	-16.79	36.29	7.42	46.35	100	290	Peak
5150	44.15	46.79	54	-9.85	36.29	7.42	46.35	100	290	Average
5310	92.92	95.38			36.39	7.46	46.31	100	290	Peak
5310	84.73	87.19			36.39	7.46	46.31	100	290	Average
5350	59.51	61.93	74	-14.49	36.41	7.47	46.3	100	290	Peak
5350	44.45	46.87	54	-9.55	36.41	7.47	46.3	100	290	Average

REMARKS:

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



802.11ac (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	54.65	59.88	74	-19.35	33.7	7.42	46.35	125	306	Peak
5150	41.3	46.53	54	-12.7	33.7	7.42	46.35	125	306	Average
5260	101.26	106.43			33.7	7.45	46.32	125	306	Peak
5260	89.72	94.89			33.7	7.45	46.32	125	306	Average
5350	52.48	57.61	74	-21.52	33.7	7.47	46.3	125	306	Peak
5350	39.88	45.01	54	-14.12	33.7	7.47	46.3	125	306	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.73	59.37	74	-17.27	36.29	7.42	46.35	100	23	Peak
5150	43.88	46.52	54	-10.12	36.29	7.42	46.35	100	23	Average
5260	99.74	102.25			36.36	7.45	46.32	100	23	Peak
5260	89.33	91.84			36.36	7.45	46.32	100	23	Average
5350	55.69	58.11	74	-18.31	36.41	7.47	46.3	100	23	Peak
5350	43.09	45.51	54	-10.91	36.41	7.47	46.3	100	23	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.65	58.88	74	-20.35	33.7	7.42	46.35	100	305	Peak
5150	40.64	45.87	54	-13.36	33.7	7.42	46.35	100	305	Average
5300	101.31	106.46			33.7	7.46	46.31	100	305	Peak
5300	90.89	96.04			33.7	7.46	46.31	100	305	Average
5350	51.98	57.11	74	-22.02	33.7	7.47	46.3	100	305	Peak
5350	39.96	45.09	54	-14.04	33.7	7.47	46.3	100	305	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.62	59.26	74	-17.38	36.29	7.42	46.35	100	16	Average
5150	43.68	46.32	54	-10.32	36.29	7.42	46.35	100	16	Average
5300	99.79	102.26			36.38	7.46	46.31	100	16	Peak
5300	88.7	91.17			36.38	7.46	46.31	100	16	Average
5350	55.13	57.55	74	-18.87	36.41	7.47	46.3	100	16	Peak
5350	42.83	45.25	54	-11.17	36.41	7.47	46.3	100	16	Average

REMARKS:

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

CHANNEL	TX Channel 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	53.53	58.76	74	-20.47	33.7	7.42	46.35	100	301	Peak
5150	40.98	46.21	54	-13.02	33.7	7.42	46.35	100	301	Average
5320	100.62	105.76			33.7	7.46	46.3	100	301	Peak
5320	90.88	96.02			33.7	7.46	46.3	100	301	Average
5350	55.88	61.01	74	-18.12	33.7	7.47	46.3	100	301	Peak
5350	41.94	47.07	54	-12.06	33.7	7.47	46.3	100	301	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.59	59.23	74	-17.41	36.29	7.42	46.35	104	21	Peak
5150	44.03	46.67	54	-9.97	36.29	7.42	46.35	104	21	Average
5320	99.18	101.63			36.39	7.46	46.3	104	21	Peak
5320	89.24	91.69			36.39	7.46	46.3	104	21	Average
5350	56.03	58.45	74	-17.97	36.41	7.47	46.3	104	21	Peak
5350	43.25	45.67	54	-10.75	36.41	7.47	46.3	104	21	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: RF200116W006-3

802.11ac (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	56.83	59.81	74	-17.17	35.95	7.42	46.35	100	135	Peak
5150	43.86	46.84	54	-10.14	35.95	7.42	46.35	100	135	Average
5270	95.14	97.94			36.07	7.45	46.32	100	135	Peak
5270	85.37	88.17			36.07	7.45	46.32	100	135	Average
5350	56.41	59.09	74	-17.59	36.15	7.47	46.3	100	135	Peak
5350	43.63	46.31	54	-10.37	36.15	7.47	46.3	100	135	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.27	59.91	74	-16.73	36.29	7.42	46.35	100	280	Peak
5150	44.26	46.9	54	-9.74	36.29	7.42	46.35	100	280	Average
5270	93.15	95.66			36.36	7.45	46.32	100	280	Peak
5270	82.2	84.71			36.36	7.45	46.32	100	280	Average
5350	56.59	59.01	74	-17.41	36.41	7.47	46.3	100	280	Peak
5350	44.07	46.49	54	-9.93	36.41	7.47	46.3	100	280	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.03	60.01	74	-16.97	35.95	7.42	46.35	100	135	Peak
5150	44.08	47.06	54	-9.92	35.95	7.42	46.35	100	135	Average
5310	95.99	98.73			36.11	7.46	46.31	100	135	Peak
5310	86.31	89.05			36.11	7.46	46.31	100	135	Average
5350	56.94	59.62	74	-17.06	36.15	7.47	46.3	100	135	Peak
5350	44.32	47	54	-9.68	36.15	7.47	46.3	100	135	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.35	59.99	74	-16.65	36.29	7.42	46.35	100	280	Peak
5150	44.36	47	54	-9.64	36.29	7.42	46.35	100	280	Average
5310	92.26	94.72			36.39	7.46	46.31	100	280	Peak
5310	83.76	86.22			36.39	7.46	46.31	100	280	Average
5350	57.01	59.43	74	-16.99	36.41	7.47	46.3	100	280	Peak
5350	44.37	46.79	54	-9.63	36.41	7.47	46.3	100	280	Average

REMARKS:

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



802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	56.81	59.79	74	-17.19	35.95	7.42	46.35	100	135	Peak
5150	43.98	46.96	54	-10.02	35.95	7.42	46.35	100	135	Average
5290	91.38	94.15			36.09	7.45	46.31	100	135	Peak
5290	79.92	82.69			36.09	7.45	46.31	100	135	Average
5350	56.95	59.63	74	-17.05	36.15	7.47	46.3	100	135	Peak
5350	43.96	46.64	54	-10.04	36.15	7.47	46.3	100	135	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	57.2	59.84	74	-16.8	36.29	7.42	46.35	100	280	Peak
5150	44.37	47.01	54	-9.63	36.29	7.42	46.35	100	280	Average
5290	88.7	91.19			36.37	7.45	46.31	100	280	Peak
5290	79.15	81.64			36.37	7.45	46.31	100	280	Average
5350	56.8	59.22	74	-17.2	36.41	7.47	46.3	100	280	Peak
5350	44.25	46.67	54	-9.75	36.41	7.47	46.3	100	280	Average

REMARKS:

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

Band 3

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	51.09	56.16	74	-22.91	33.7	7.49	46.26	100	310	Peak
5460	40.85	45.92	54	-13.15	33.7	7.49	46.26	100	310	Average
#5470	54.37	59.44	68.3	-13.93	33.7	7.49	46.26	100	310	Peak
5500	98.56	103.61			33.7	7.5	46.25	100	310	Peak
5500	88.9	93.95			33.7	7.5	46.25	100	310	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	54.6	56.89	74	-19.4	36.48	7.49	46.26	100	18	Peak
5460	41.3	43.59	54	-12.7	36.48	7.49	46.26	100	18	Average
#5470	53.73	56.02	68.3	-14.57	36.48	7.49	46.26	100	18	Peak
5500	95.68	97.93			36.5	7.5	46.25	100	18	Peak
5500	86.68	88.93			36.5	7.5	46.25	100	18	Average

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK)
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	51.16	56.23	74	-22.84	33.7	7.49	46.26	100	303	Peak
5460	41.05	46.12	54	-12.95	33.7	7.49	46.26	100	303	Average
#5470	51.58	56.65	68.3	-16.72	33.7	7.49	46.26	100	303	Peak
5580	96.97	101.82			33.8	7.58	46.23	100	303	Peak
5580	87.22	92.07			33.8	7.58	46.23	100	303	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.83	56.12	74	-20.17	36.48	7.49	46.26	100	16	Peak
5460	45.19	47.48	54	-8.81	36.48	7.49	46.26	100	16	Average
#5470	54.1	56.39	68.3	-14.2	36.48	7.49	46.26	100	16	Peak
5580	97.3	99.4			36.55	7.58	46.23	100	16	Peak
5580	88.35	90.45			36.55	7.58	46.23	100	16	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	100.01	104.56			33.94	7.7	46.19	100	30	Peak
5700	90.47	95.02			33.94	7.7	46.19	100	30	Average
#5725	52.7	57.19	68.3	-15.6	33.97	7.73	46.19	100	30	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	96.46	98.33			36.62	7.7	46.19	111	28	Peak
5700	86.59	88.46			36.62	7.7	46.19	111	28	Average
#5725	55.43	57.26	68.3	-12.87	36.63	7.73	46.19	111	28	Peak

REMARKS:

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



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	50.65	55.72	74	-23.35	33.7	7.49	46.26	131	31	Peak
5460	40.94	46.01	54	-13.06	33.7	7.49	46.26	131	31	Average
#5470	52	57.07	68.3	-16.3	33.7	7.49	46.26	131	31	Peak
5500	98.58	103.63			33.7	7.5	46.25	131	31	Peak
5500	88.28	93.33			33.7	7.5	46.25	131	31	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.78	56.07	74	-20.22	36.48	7.49	46.26	100	200	Peak
5460	44.73	47.02	54	-9.27	36.48	7.49	46.26	100	200	Average
#5470	54.52	56.81	68.3	-13.78	36.48	7.49	46.26	100	200	Peak
5500	97.6	99.85			36.5	7.5	46.25	100	200	Peak
5500	87.48	89.73			36.5	7.5	46.25	100	200	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	51.28	56.35	74	-22.72	33.7	7.49	46.26	110	29	Peak
5460	39.91	44.98	54	-14.09	33.7	7.49	46.26	110	29	Average
#5470	51.47	56.54	68.3	-16.83	33.7	7.49	46.26	110	29	Peak
5580	99.78	104.63			33.8	7.58	46.23	110	29	Peak
5580	87.63	92.48			33.8	7.58	46.23	110	29	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	54.17	56.46	74	-19.83	36.48	7.49	46.26	100	198	Peak
5460	42.9	45.19	54	-11.1	36.48	7.49	46.26	100	198	Average
#5470	55.03	57.32	68.3	-13.27	36.48	7.49	46.26	100	198	Peak
5580	98.83	100.93			36.55	7.58	46.23	100	198	Peak
5580	88.63	90.73			36.55	7.58	46.23	100	198	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	99.08	103.63			33.94	7.7	46.19	110	29	Peak
5700	89.17	93.72			33.94	7.7	46.19	110	29	Average
#5725	54.99	59.48	68.3	-13.31	33.97	7.73	46.19	110	29	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	98.09	99.96			36.62	7.7	46.19	118	79	Peak
5700	87.08	88.95			36.62	7.7	46.19	118	79	Average
#5725	57.01	58.84	68.3	-11.29	36.63	7.73	46.19	118	79	Peak

REMARKS:

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	60.12	62.63	74	-13.88	36.26	7.49	46.26	100	50	Peak
5460	44.86	47.37	54	-9.14	36.26	7.49	46.26	100	50	Average
#5470	65.2	67.7	68.3	-3.1	36.27	7.49	46.26	100	50	Peak
5510	96.78	99.22			36.3	7.51	46.25	100	50	Peak
5510	87.85	90.29			36.3	7.51	46.25	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	56.8	59.09	74	-17.2	36.48	7.49	46.26	100	290	Peak
5460	43.98	46.27	54	-10.02	36.48	7.49	46.26	100	290	Average
#5470	58.44	60.73	68.3	-9.86	36.48	7.49	46.26	100	290	Peak
5510	92.43	94.66			36.51	7.51	46.25	100	290	Peak
5510	85.11	87.34			36.51	7.51	46.25	100	290	Average

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK)
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	56.54	59.05	74	-17.46	36.26	7.49	46.26	100	50	Peak
5460	43.77	46.28	54	-10.23	36.26	7.49	46.26	100	50	Average
#5470	56.29	58.79	68.3	-12.01	36.27	7.49	46.26	100	50	Peak
5550	95.49	97.86			36.32	7.55	46.24	100	50	Peak
5550	87.07	89.44			36.32	7.55	46.24	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	56.62	58.91	74	-17.38	36.48	7.49	46.26	100	290	Peak
5460	43.69	45.98	54	-10.31	36.48	7.49	46.26	100	290	Average
#5470	56.67	58.96	68.3	-11.63	36.48	7.49	46.26	100	290	Peak
5550	92.82	94.98			36.53	7.55	46.24	100	290	Peak
5550	85.25	87.41			36.53	7.55	46.24	100	290	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	95.7	97.86			36.37	7.67	46.2	100	50	Peak
5670	87.16	89.32			36.37	7.67	46.2	100	50	Average
#5725	58.12	60.19	68.3	-10.18	36.39	7.73	46.19	100	50	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	92.63	94.56			36.6	7.67	46.2	100	290	Peak
5670	83.97	85.9			36.6	7.67	46.2	100	290	Average
#5725	58.55	60.38	68.3	-9.75	36.63	7.73	46.19	100	290	Peak

REMARKS:

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



802.11ac (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.91	58.98	74	-20.09	33.7	7.49	46.26	100	30	Peak
5460	42.85	47.92	54	-11.15	33.7	7.49	46.26	100	30	Average
#5470	54.94	60.01	68.3	-13.36	33.7	7.49	46.26	100	30	Peak
5500	99.71	104.76			33.7	7.5	46.25	100	30	Peak
5500	88.94	93.99			33.7	7.5	46.25	100	30	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	55.05	57.34	74	-18.95	36.48	7.49	46.26	122	17	Peak
5460	43.83	46.12	54	-10.17	36.48	7.49	46.26	122	17	Average
#5470	56.25	58.54	68.3	-12.05	36.48	7.49	46.26	122	17	Peak
5500	99.55	101.8			36.5	7.5	46.25	122	17	Peak
5500	89.12	91.37			36.5	7.5	46.25	122	17	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	52.16	57.23	74	-21.84	33.7	7.49	46.26	110	33	Peak
5460	41.18	46.25	54	-12.82	33.7	7.49	46.26	110	33	Average
#5470	52.52	57.59	68.3	-15.78	33.7	7.49	46.26	110	33	Peak
5580	99.18	104.03			33.8	7.58	46.23	110	33	Peak
5580	88.9	93.75			33.8	7.58	46.23	110	33	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	54.77	57.06	74	-19.23	36.48	7.49	46.26	100	19	Peak
5460	44.72	47.01	54	-9.28	36.48	7.49	46.26	100	19	Average
#5470	55.74	58.03	68.3	-12.56	36.48	7.49	46.26	100	19	Peak
5580	97.93	100.03			36.55	7.58	46.23	100	19	Peak
5580	87.71	89.81			36.55	7.58	46.23	100	19	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	99.61	104.16			33.94	7.7	46.19	100	70	Peak
5700	89.26	93.81			33.94	7.7	46.19	100	70	Average
#5725	54.6	59.09	68.3	-13.7	33.97	7.73	46.19	100	70	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	99.85	101.72			36.62	7.7	46.19	104	183	Peak
5700	89.39	91.26			36.62	7.7	46.19	104	183	Average
#5725	56.1	57.93	68.3	-12.2	36.63	7.73	46.19	104	183	Peak

REMARKS:

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

802.11ac (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	60.91	63.42	74	-13.09	36.26	7.49	46.26	100	50	Peak
5460	44.93	47.44	54	-9.07	36.26	7.49	46.26	100	50	Average
#5470	63.75	66.25	68.3	-4.55	36.27	7.49	46.26	100	50	Peak
5510	97.26	99.7			36.3	7.51	46.25	100	50	Peak
5510	88.02	90.46			36.3	7.51	46.25	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	56.72	59.01	74	-17.28	36.48	7.49	46.26	100	290	Peak
5460	43.91	46.2	54	-10.09	36.48	7.49	46.26	100	290	Average
#5470	58.6	60.89	68.3	-9.7	36.48	7.49	46.26	100	290	Peak
5510	92.56	94.79			36.51	7.51	46.25	100	290	Peak
5510	84.95	87.18			36.51	7.51	46.25	100	290	Average

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK)
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	57.5	60.01	74	-16.5	36.26	7.49	46.26	100	50	Peak
5460	43.71	46.22	54	-10.29	36.26	7.49	46.26	100	50	Average
#5470	56.85	59.35	68.3	-11.45	36.27	7.49	46.26	100	50	Peak
5550	94.83	97.2			36.32	7.55	46.24	100	50	Peak
5550	87.21	89.58			36.32	7.55	46.24	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	56.93	59.22	74	-17.07	36.48	7.49	46.26	100	290	Peak
5460	43.59	45.88	54	-10.41	36.48	7.49	46.26	100	290	Average
#5470	56.04	58.33	68.3	-12.26	36.48	7.49	46.26	100	290	Peak
5550	94.14	96.3			36.53	7.55	46.24	100	290	Peak
5550	85.62	87.78			36.53	7.55	46.24	100	290	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	95.83	97.84			36.4	7.77	46.18	100	50	Peak
5670	86.16	88.17			36.4	7.77	46.18	100	50	Average
#5725	58.67	60.68	68.3	-9.63	36.4	7.77	46.18	100	50	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	92.15	94.08			36.6	7.67	46.2	100	290	Peak
5670	83.68	85.61			36.6	7.67	46.2	100	290	Average
#5725	58.52	60.35	68.3	-9.78	36.63	7.73	46.19	100	290	Peak

REMARKS:

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



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	62.2	64.71	74	-11.8	36.26	7.49	46.26	100	50	Peak
5460	45.34	47.85	54	-8.66	36.26	7.49	46.26	100	50	Average
#5470	61.38	63.88	68.3	-6.92	36.27	7.49	46.26	100	50	Peak
5530	91.23	93.63			36.31	7.53	46.24	100	50	Peak
5530	81.74	84.14			36.31	7.53	46.24	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	56.54	58.83	74	-17.46	36.48	7.49	46.26	100	290	Peak
5460	43.29	45.58	54	-10.71	36.48	7.49	46.26	100	290	Average
#5470	56.9	59.19	68.3	-11.4	36.48	7.49	46.26	100	290	Peak
5530	88.98	91.17			36.52	7.53	46.24	100	290	Peak
5530	78.67	80.86			36.52	7.53	46.24	100	290	Average

REMARKS:

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



CHANNEL	TX Channel 122	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
5610	92.79	95.06			36.34	7.61	46.22	100	50	Peak
5610	82.56	84.83			36.34	7.61	46.22	100	50	Average
#5725	58.08	60.15	68.3	-10.22	36.39	7.73	46.19	100	50	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5610	88.74	90.78			36.57	7.61	46.22	100	290	Peak
5610	80.02	82.06			36.57	7.61	46.22	100	290	Average
#5725	57.94	59.77	68.3	-10.36	36.63	7.73	46.19	100	290	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5610MHz: Fundamental frequency.
3. #: Out of restricted band.



Band 4:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	98.88	103.32			33.99	7.75	46.18	100	72	Peak
5745	89.78	94.22			33.99	7.75	46.18	100	72	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	98.58	100.36			36.65	7.75	46.18	138	200	Peak
5745	89.51	91.29			36.65	7.75	46.18	138	200	Average

REMARKS:

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

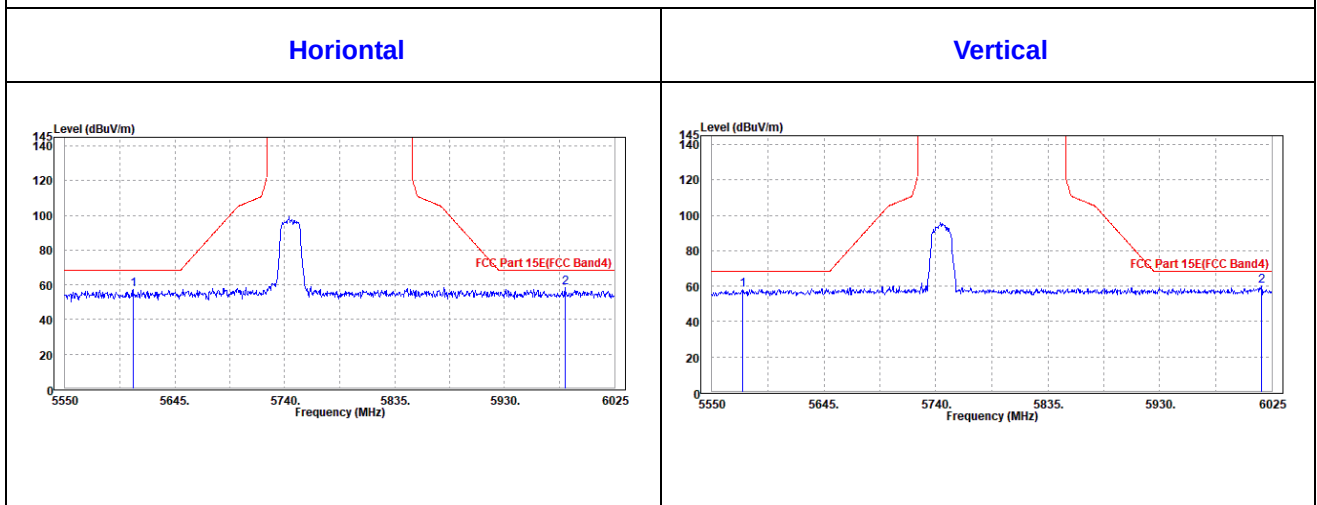


Oobe Data

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5608.9	57.47	59.74	68.3	-10.83	36.34	7.61	46.22	100	72	Peak
5982.25	58.35	59.98	68.3	-9.95	36.49	7.99	46.11	100	72	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
5575.65	58.04	60.14	68.3	-10.26	36.55	7.58	46.23	138	200	Peak
6015.975	59.91	61.22	68.3	-8.39	36.81	7.99	46.11	138	200	Peak

CH 149



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	101.69	106.03			34.04	7.79	46.17	100	32	Peak
5785	92.7	97.04			34.04	7.79	46.17	100	32	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	97.85	99.56			36.67	7.79	46.17	130	202	Peak
5785	89.24	90.95			36.67	7.79	46.17	130	202	Average

REMARKS:

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

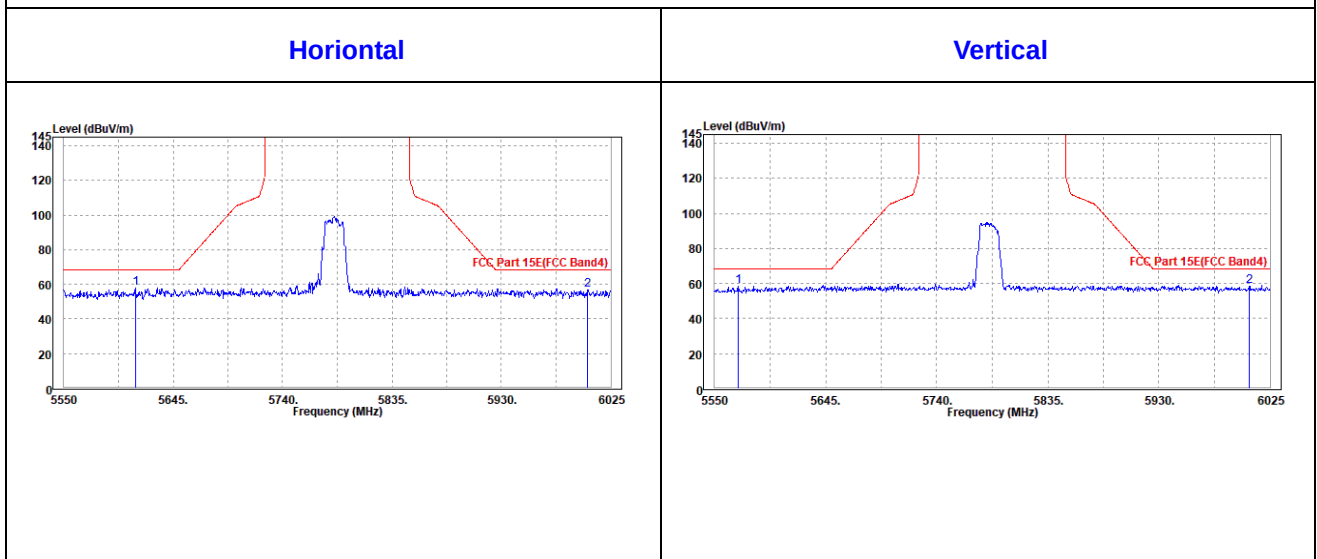


OOBE DATA

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5612.225	58.13	60.4	68.3	-10.17	36.34	7.61	46.22	100	32	Peak
6005.05	56.99	58.6	68.3	-11.31	36.5	8	46.11	100	32	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5569.95	58.26	60.38	68.3	-10.04	36.54	7.57	46.23	130	202	Peak
6007.425	58.38	59.68	68.3	-9.92	36.81	8	46.11	130	202	Peak

CH 157



CHANNEL	TX Channel 161	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
5805	101.84	106.12			34.07	7.81	46.16	100	28	Peak
5805	92.75	97.03			34.07	7.81	46.16	100	28	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5805	100.73	102.4			36.68	7.81	46.16	110	193	Peak
5805	91.08	92.75			36.68	7.81	46.16	110	193	Average

REMARKS:

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

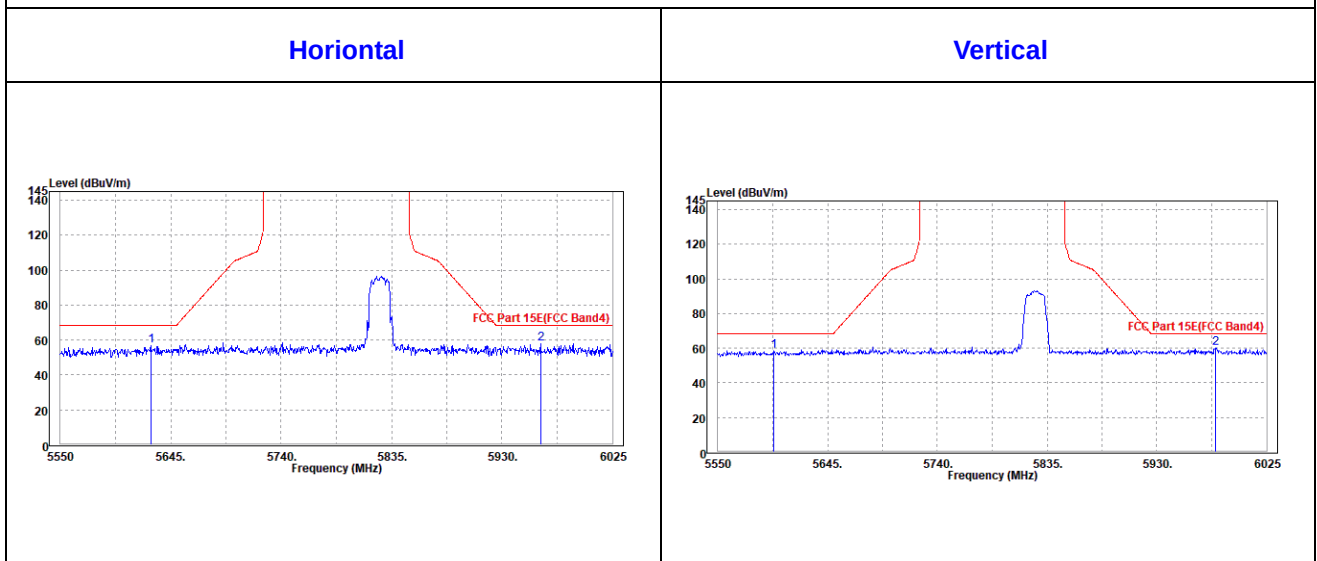


Oobe Data

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5627.9	57.03	59.26	68.3	-11.27	36.35	7.63	46.21	100	28	Peak
5963.25	57.63	59.29	68.3	-10.67	36.49	7.97	46.12	100	28	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5597.975	58.46	60.52	68.3	-9.84	36.56	7.6	46.22	110	193	Peak
5980.825	60.27	61.61	68.3	-8.03	36.79	7.99	46.12	110	193	Peak

CH 161





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	102.97	107.41			33.99	7.75	46.18	113	28	Peak
5745	92.64	97.08			33.99	7.75	46.18	113	28	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	100.68	102.46			36.65	7.75	46.18	110	193	Peak
5745	90.25	92.03			36.65	7.75	46.18	110	193	Average

REMARKS:

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



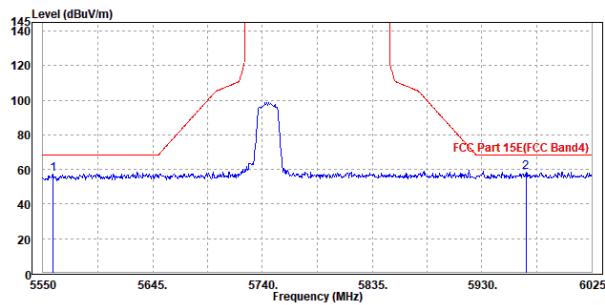
OOBE DATA

802.11n (20MHZ)

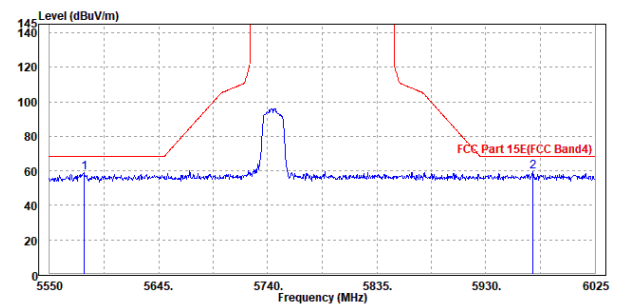
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5558.55	57.1	59.45	68.3	-11.2	36.32	7.56	46.23	113	28	Peak
5968	58.26	59.91	68.3	-10.04	36.49	7.98	46.12	113	28	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
5579.925	59.2	61.3	68.3	-9.1	36.55	7.58	46.23	110	193	Peak
5970.85	59.82	61.18	68.3	-8.48	36.78	7.98	46.12	110	193	Peak

CH 149

Horizontal



Vertical



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	102.97	107.31			34.04	7.79	46.17	113	35	Peak
5785	92.8	97.14			34.04	7.79	46.17	113	35	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	101.02	102.73			36.67	7.79	46.17	192	110	Peak
5785	90.64	92.35			36.67	7.79	46.17	192	110	Average

REMARKS:

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

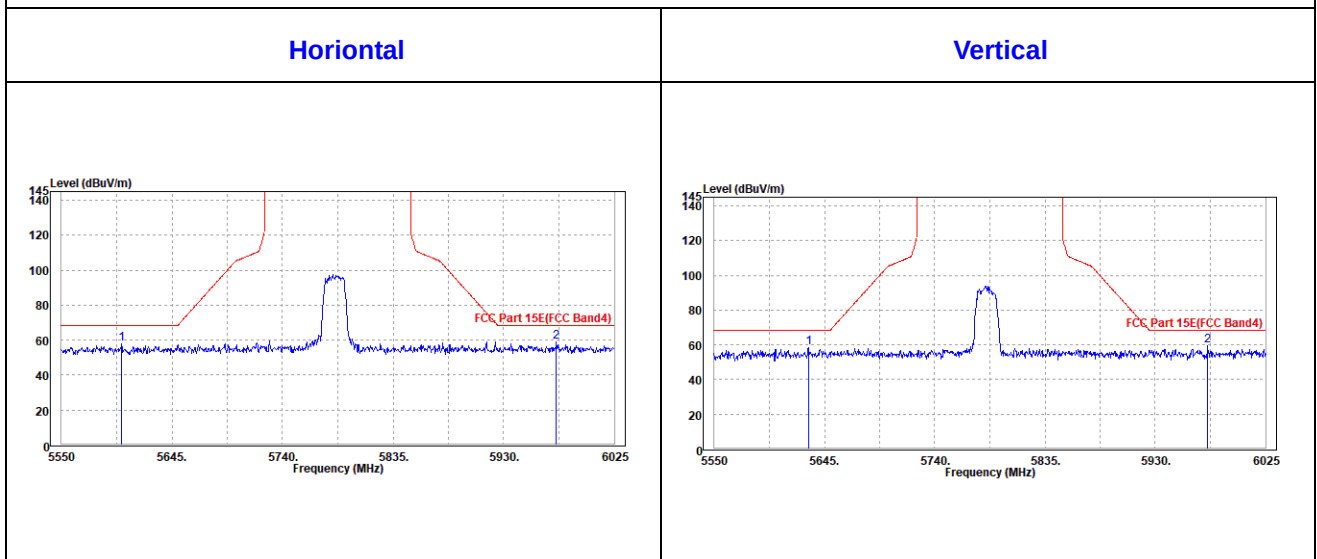


Oobe Data

802.11n (20MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV /m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5601.775	57.68	59.96	68.3	-10.62	36.34	7.6	46.22	113	35	Peak
5975.125	58.85	60.5	68.3	-9.45	36.49	7.98	46.12	113	35	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	58.19	60.19	68.3	-10.11	36.58	7.63	46.21	192	110	Peak
5975.125	59.55	60.9	68.3	-8.75	36.79	7.98	46.12	192	110	Peak

CH 157



CHANNEL	TX Channel 161	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
5805	101.87	106.15			34.07	7.81	46.16	100	25	Peak
5805	90.33	94.61			34.07	7.81	46.16	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5805	100.76	102.43			36.68	7.81	46.16	110	195	Peak
5805	90.75	92.42			36.68	7.81	46.16	110	195	Average

REMARKS:

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



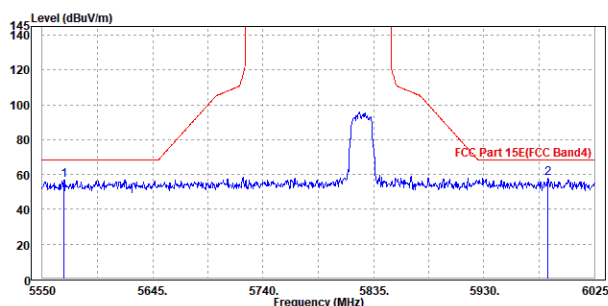
OOBE DATA

802.11n (20MHZ)

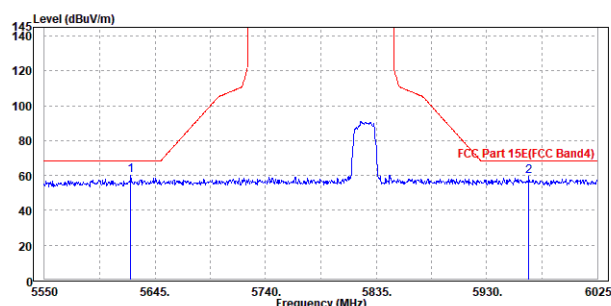
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5568.525	56.98	59.31	68.3	-11.32	36.33	7.57	46.23	100	25	Peak
5984.625	57.95	59.58	68.3	-10.35	36.49	7.99	46.11	100	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5624.1	60.08	62.1	68.3	-8.22	36.57	7.63	46.22	192	110	Peak
5966.1	59.33	60.69	68.3	-8.97	36.78	7.98	46.12	192	110	Peak

CH 161

Horizontal



Vertical





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	96.16	98.18			36.4	7.76	46.18	100	50	Peak
5755	87.88	89.9			36.4	7.76	46.18	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	89.62	91.39			36.65	7.76	46.18	100	185	Peak
5755	81.92	83.69			36.65	7.76	46.18	100	185	Average

REMARKS:

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

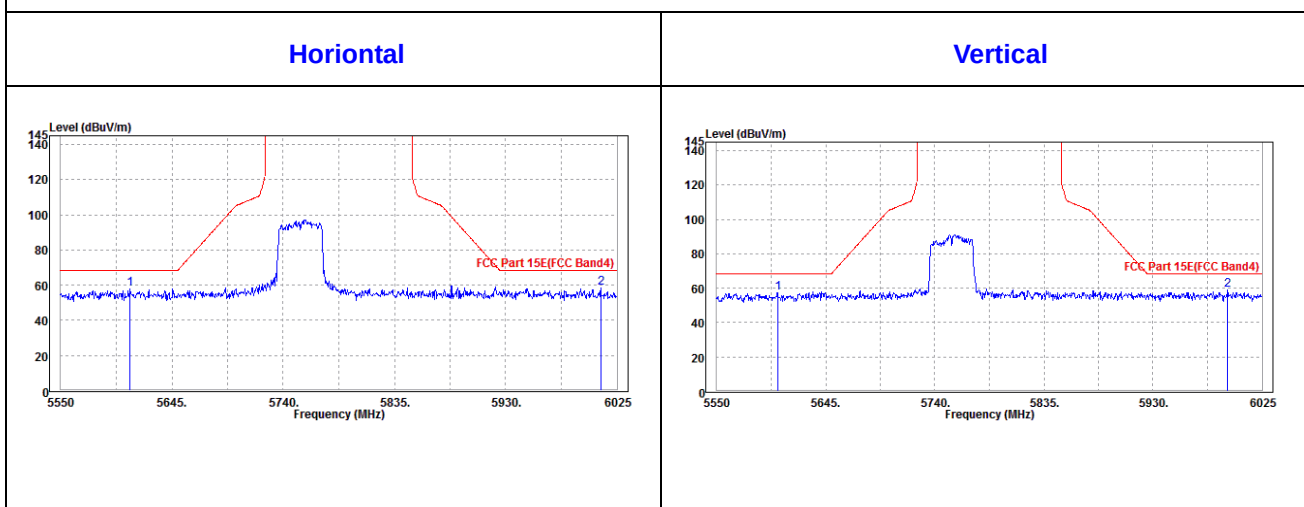


Oobe Data

802.11n (40MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5609.375	58.04	60.31	68.3	-10.26	36.34	7.61	46.22	100	50	Peak
6011.225	58.47	60.08	68.3	-9.83	36.51	7.99	46.11	100	50	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
5603.2	57.43	59.48	68.3	-10.87	36.56	7.61	46.22	100	185	Peak
5995.075	58.96	60.27	68.3	-9.34	36.8	8	46.11	100	185	Peak

CH 151



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	96.69	98.64			36.42	7.8	46.17	100	50	Peak
5795	87.98	89.93			36.42	7.8	46.17	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	90.1	91.79			36.68	7.8	46.17	100	185	Peak
5795	82.96	84.65			36.68	7.8	46.17	100	185	Average

REMARKS:

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

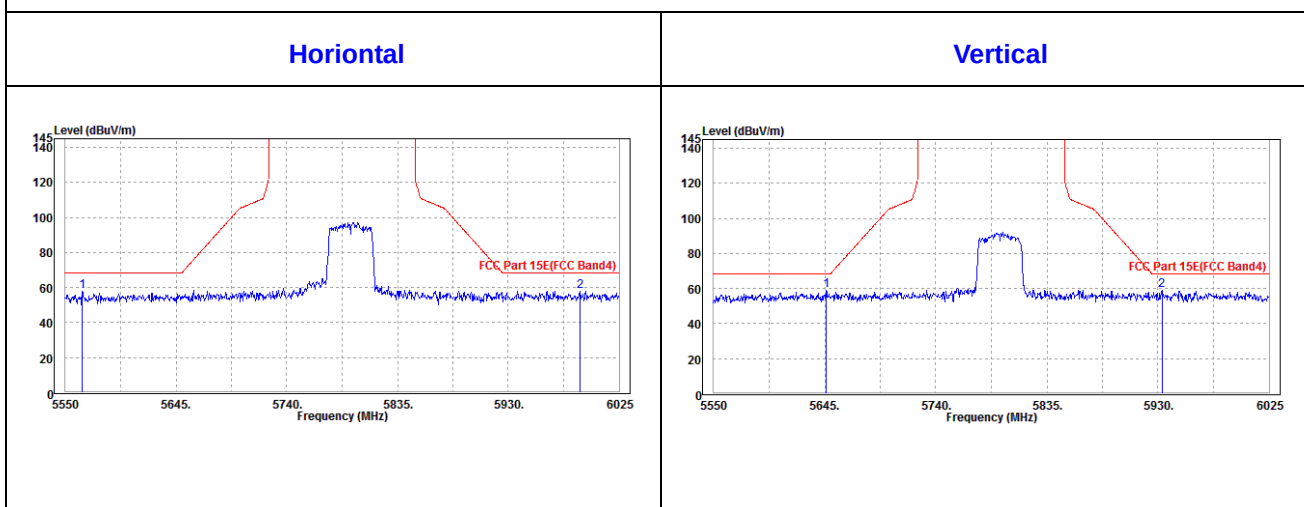


OOBE DATA

802.11n (40MHZ)

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
5564.725	57.72	60.05	68.3	-10.58	36.33	7.57	46.23	100	50	Peak
5991.75	57.91	59.52	68.3	-10.39	36.5	8	46.11	100	50	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
5646.425	59.1	61.07	68.3	-9.2	36.59	7.65	46.21	100	185	Peak
5933.325	58.84	60.27	68.3	-9.46	36.76	7.94	46.13	100	185	Peak

CH 159





802.11ac (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	102.12	106.56			33.99	7.75	46.18	100	25	Peak
5745	90.09	94.53			33.99	7.75	46.18	100	25	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	99.68	101.46			36.65	7.75	46.18	110	183	Peak
5745	89.48	91.26			36.65	7.75	46.18	110	183	Average

REMARKS:

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

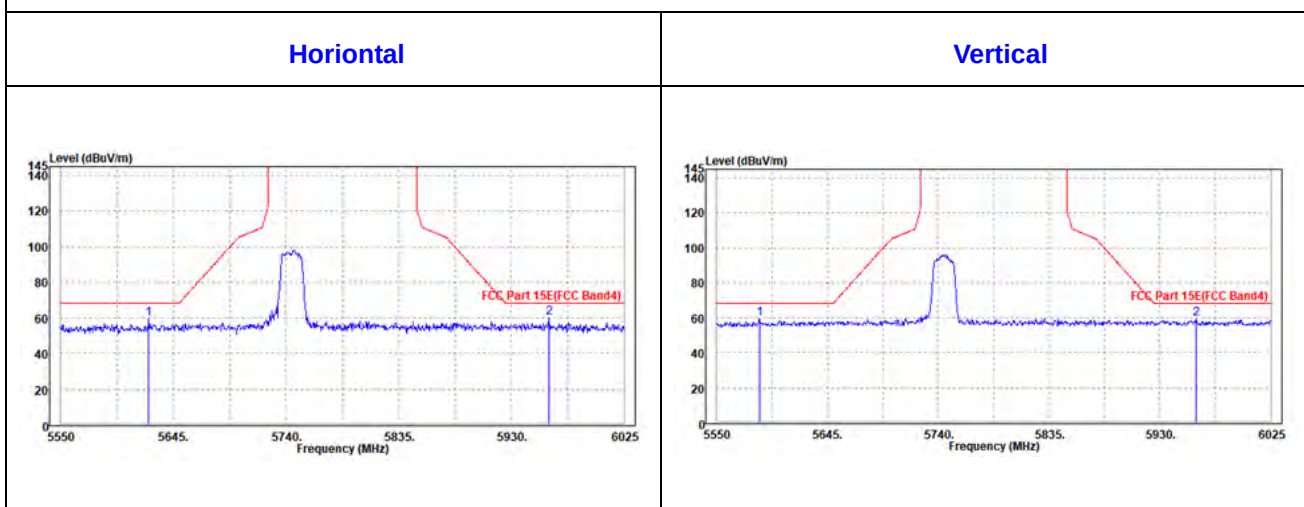


OOBE DATA

802.11ac (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
5624.1	59.27	61.51	68.3	-9.03	36.35	7.63	46.22	100	25	Peak
5961.825	59.86	61.53	68.3	-8.44	36.48	7.97	46.12	100	25	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5586.575	59.31	61.4	68.3	-8.99	36.55	7.59	46.23	110	183	Peak
5960.875	59.46	60.83	68.3	-8.84	36.78	7.97	46.12	110	183	Peak

CH 149



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	101.22	105.56			34.04	7.79	46.17	100	35	Peak
5785	90.84	95.18			34.04	7.79	46.17	100	35	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	101	102.71			36.67	7.79	46.17	110	185	Peak
5785	90.5	92.21			36.67	7.79	46.17	110	185	Average

REMARKS:

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

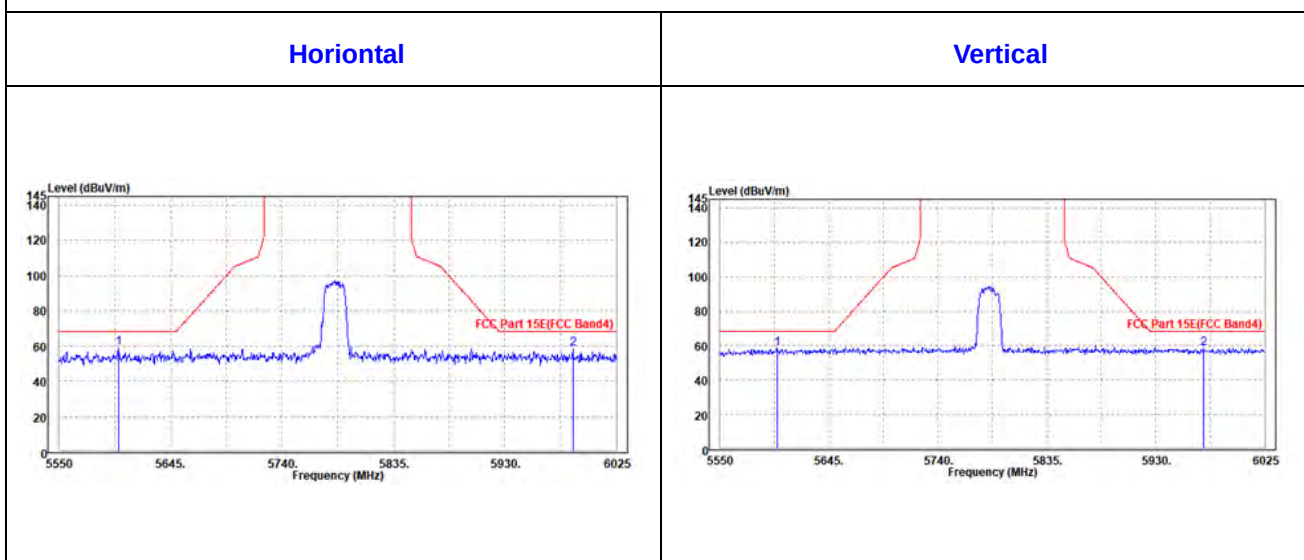


OOBE DATA

802.11ac (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
5600.825	59.01	61.29	68.3	-9.29	36.34	7.6	46.22	100	35	Peak
5987.95	58.57	60.18	68.3	-9.73	36.5	8	46.11	100	35	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
5599.875	58.58	60.64	68.3	-9.72	36.56	7.6	46.22	110	185	Peak
5971.8	58.45	59.81	68.3	-9.85	36.78	7.98	46.12	110	185	Peak

CH 157



CHANNEL	TX Channel 161	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
5805	100.84	105.12			34.07	7.81	46.16	100	36	Peak
5805	90.91	95.19			34.07	7.81	46.16	100	36	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5805	101.16	102.83			36.68	7.81	46.16	110	186	Peak
5805	89.29	90.96			36.68	7.81	46.16	110	186	Average

REMARKS:

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



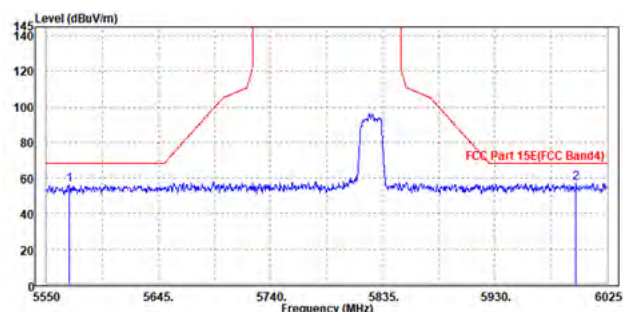
OOBE DATA

802.11ac (20MHZ)

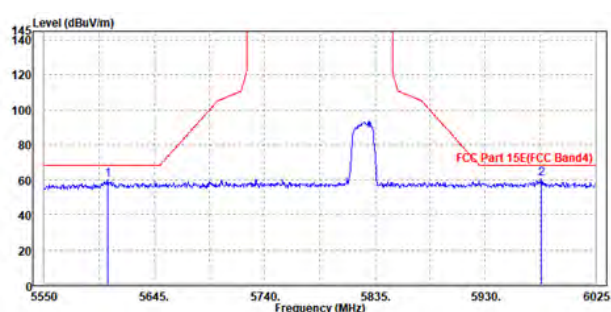
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5569.475	56.21	58.54	68.3	-12.09	36.33	7.57	46.23	100	36	Peak
5998.4	57.31	58.91	68.3	-10.99	36.5	8.01	46.11	100	36	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
5604.625	59.82	61.87	68.3	-8.48	36.56	7.61	46.22	110	186	Peak
5977.975	60.84	62.18	68.3	-7.46	36.79	7.99	46.12	110	186	Peak

CH 161

Horizontal



Vertical





802.11ac (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
5775	95.22	97.2			36.41	7.78	46.17	100	50	Peak
5775	87.05	89.03			36.41	7.78	46.17	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	92.57	94.34			36.65	7.76	46.18	100	115	Peak
5755	85.51	87.28			36.65	7.76	46.18	100	115	Average

REMARKS:

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

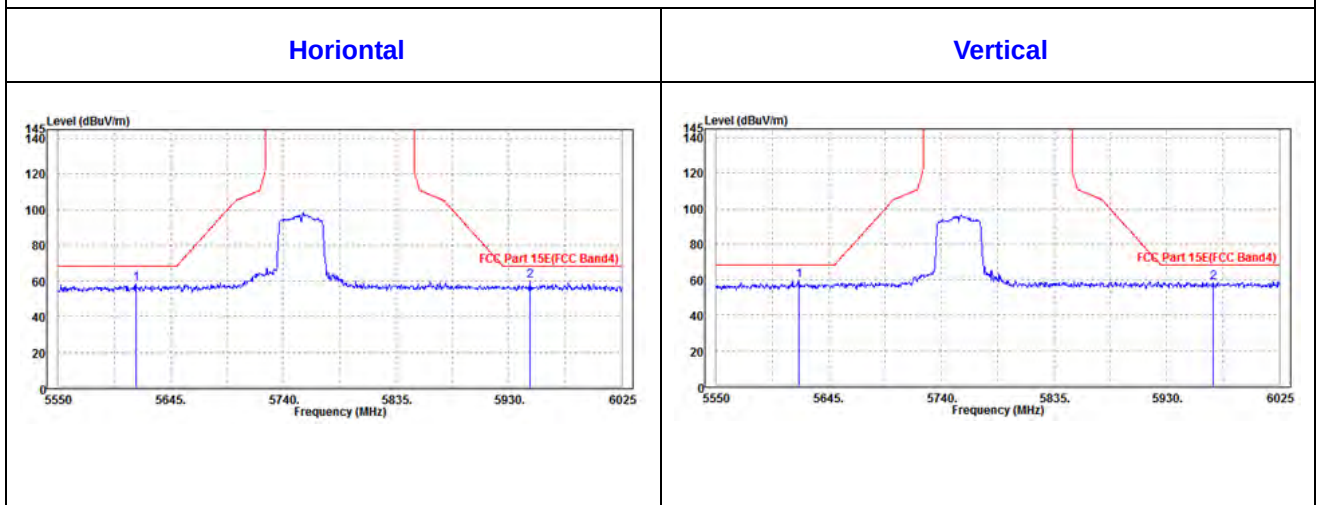


OOBE DATA

802.11ac (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
5615.55	58.34	60.59	68.3	-9.96	36.35	7.62	46.22	100	50	Peak
5947.575	59.96	61.64	68.3	-8.34	36.48	7.96	46.12	100	50	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
5619.825	59.29	61.32	68.3	-9.01	36.57	7.62	46.22	100	115	Peak
5968.95	58.49	59.85	68.3	-9.81	36.78	7.98	46.12	100	115	Peak

CH 151



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	95.08	97.03			36.42	7.8	46.17	100	50	Peak
5795	87.69	89.64			36.42	7.8	46.17	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	95.54	97.23			36.68	7.8	46.17	100	115	Peak
5795	86.01	87.7			36.68	7.8	46.17	100	115	Average

REMARKS:

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

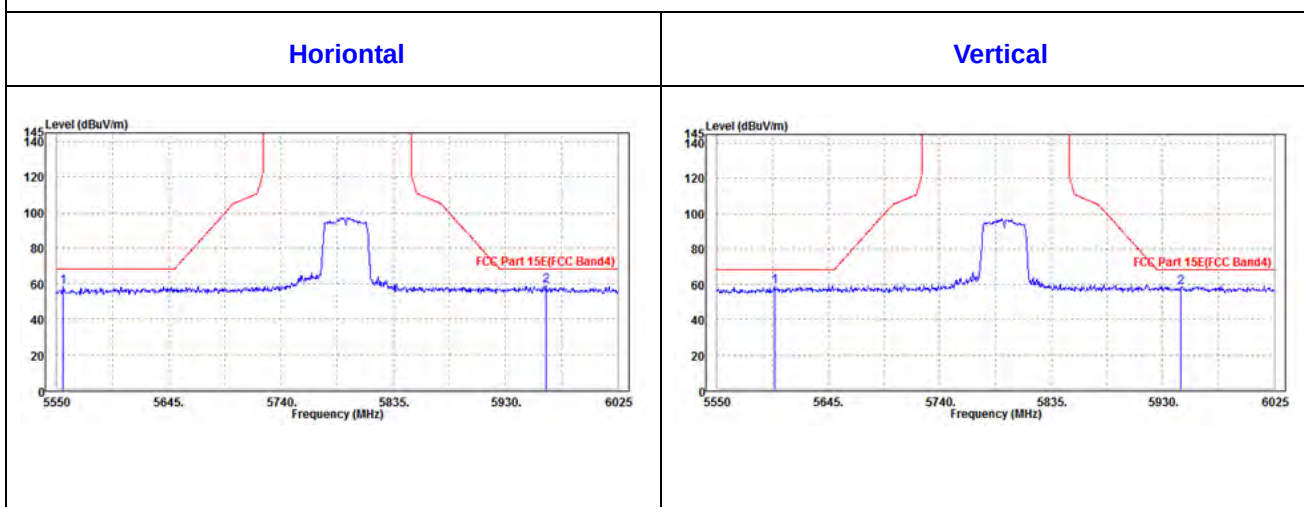


OOBE DATA

802.11ac (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
5555.7	58.21	60.56	68.3	-10.09	36.32	7.56	46.23	100	50	Peak
5964.675	59.05	60.71	68.3	-9.25	36.49	7.97	46.12	100	50	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
5599.4	58.84	60.9	68.3	-9.46	36.56	7.6	46.22	100	115	Peak
5945.675	58.66	60.07	68.3	-9.64	36.77	7.95	46.13	100	115	Peak

CH 159





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	91.82	93.8			36.41	7.78	46.17	100	50	Peak
5775	92.68	94.66			36.41	7.78	46.17	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5775	91.06	92.78			36.67	7.78	46.17	100	115	Peak
5775	82.09	83.81			36.67	7.78	46.17	100	115	Average

REMARKS:

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

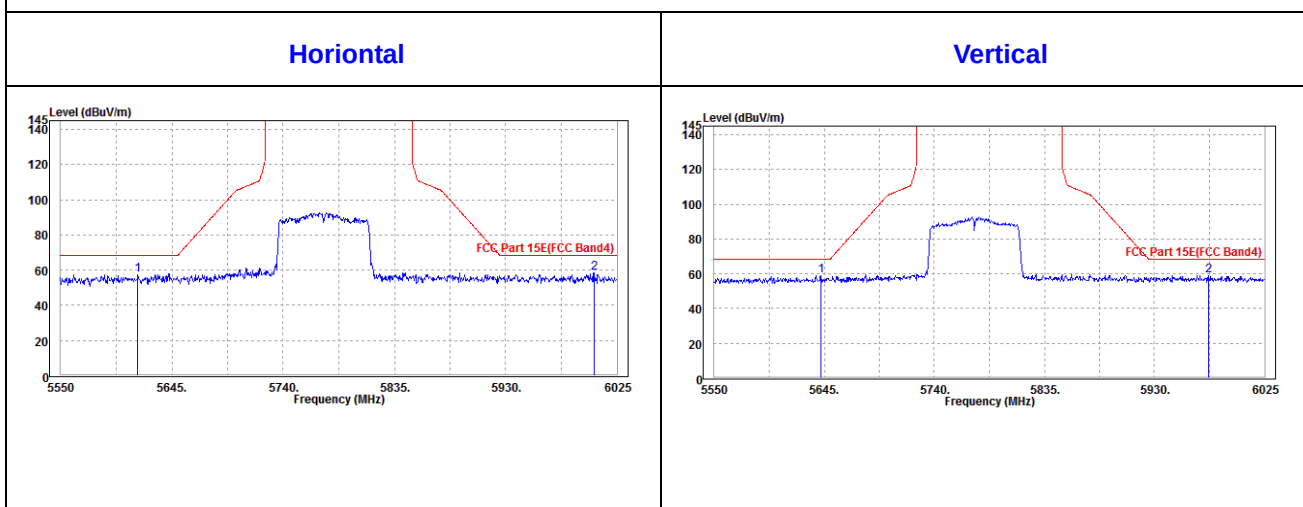


Oobe Data

802.11ac (80MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB / m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5616.025	57.39	59.64	68.3	-10.91	36.35	7.62	46.22	100	50	Peak
6005.525	58.52	60.13	68.3	-9.78	36.5	8	46.11	100	50	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
5642.15	58.92	60.9	68.3	-9.38	36.59	7.64	46.21	100	115	Peak
5976.55	59.02	60.36	68.3	-9.28	36.79	7.99	46.12	100	115	Peak

CH 155





3.2 OUT OF BAND EMISSION MEASUREMENT

3.2.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

OUT OF THE RESTRICTED BANDS	APPLICABLE TO	EIRP LIMIT (dBm/MHz)
	15.407(b)(1)	-27
	15.407(b)(2)	
	15.407(b)(3)	
	15.407(b)(4)	See note

NOTE:

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

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

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 24,19	Jun. 23,20
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 24,19	Jun. 23,20

NOTE:

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

3.2.3 TEST PROCEDURES

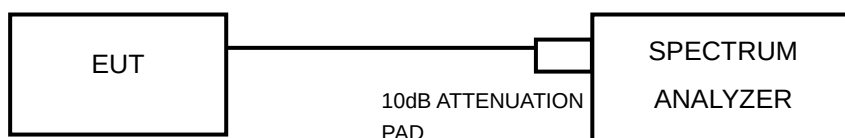
- a. Check the calibration of the measurement instrument using either an internal calibrator or a known signal from an external generator.
- b. The resolution bandwidth is set to 1MHzThe Video bandwidth is set to ≥ 1 MHz, report the peak value out of operating band.
- c. Repeat above procedures until all frequencies measured were complete.

NOTE: All modes of operation were investigated and the worst-case emissions are reported, antenna gain was added into the test result.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

3.2.5 TEST SETUP



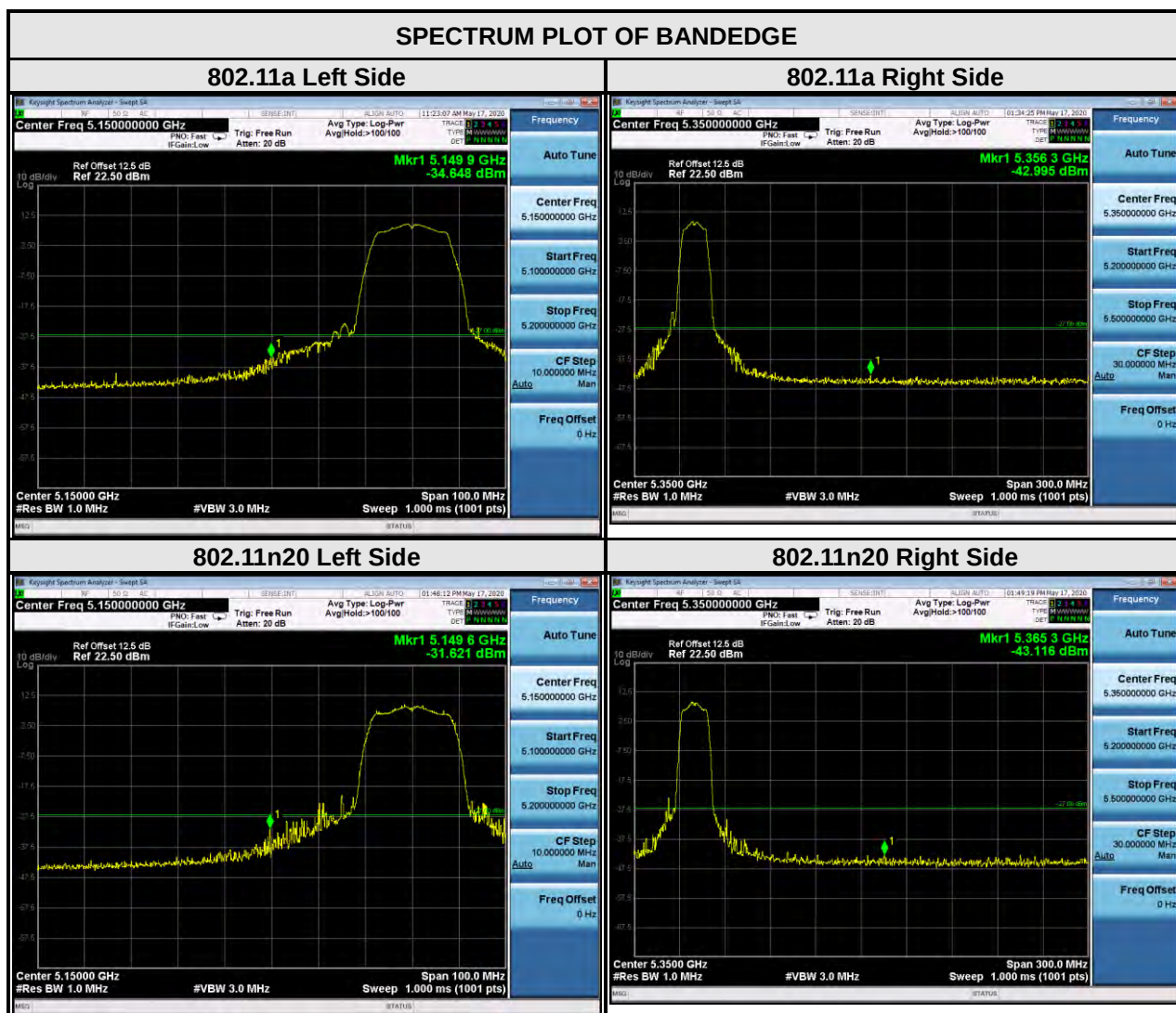
3.2.6 EUT OPERATING CONDITION

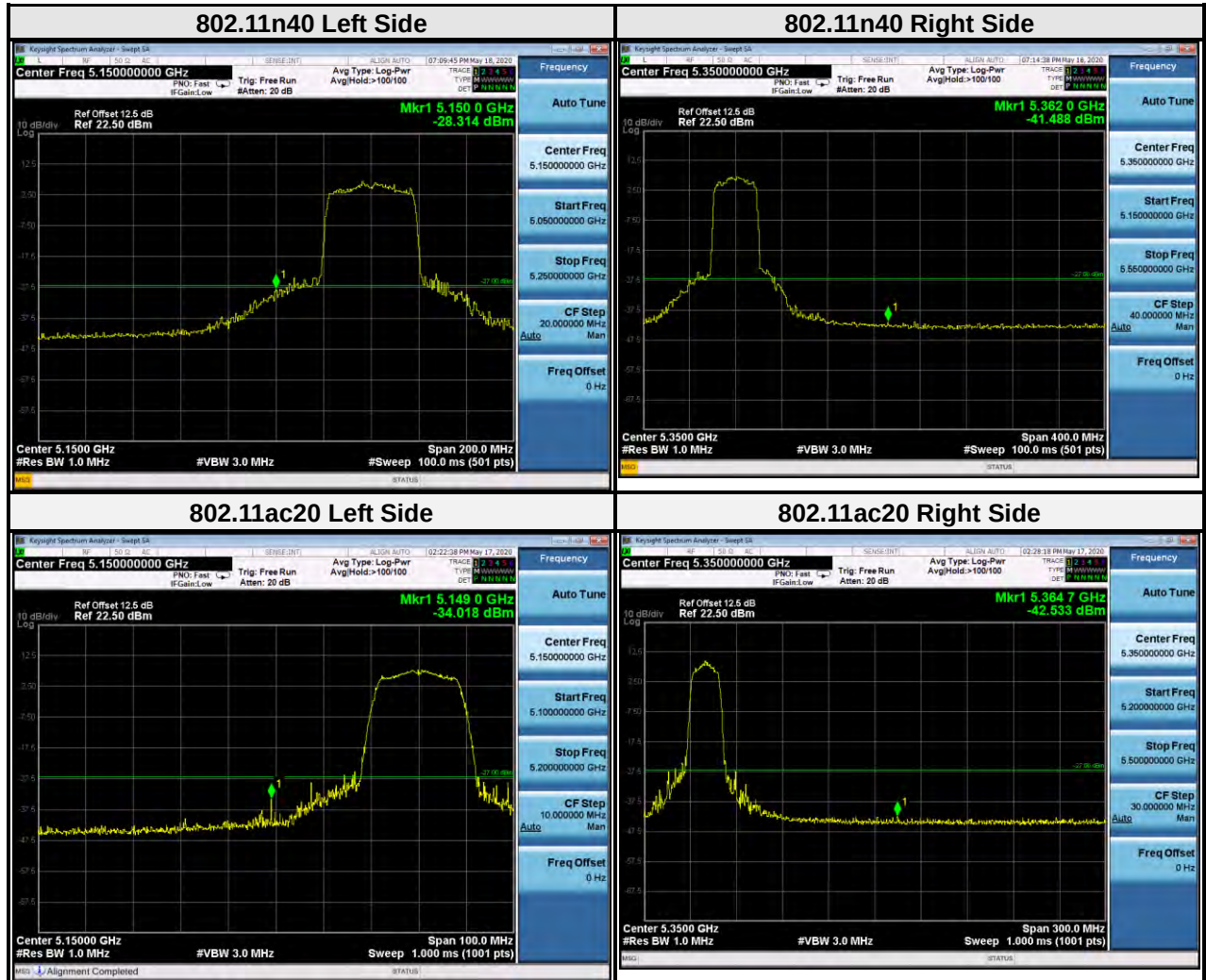
- a. Set the EUT under full load condition and placed them on a testing table.
- b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.
- c. The necessary accessories enable the EUT in full functions.

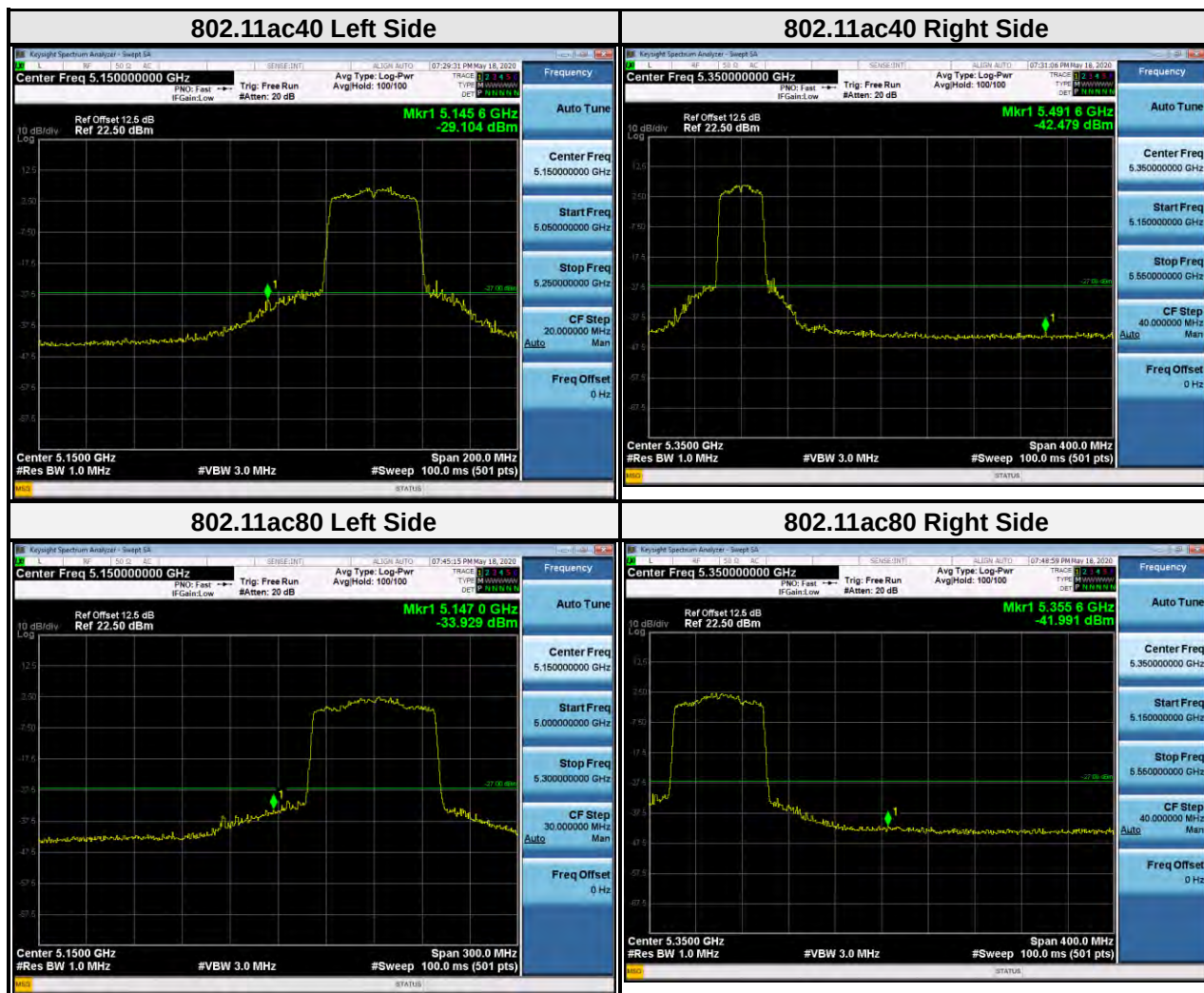


3.2.7 TEST RESULTS

For U-NII-1:









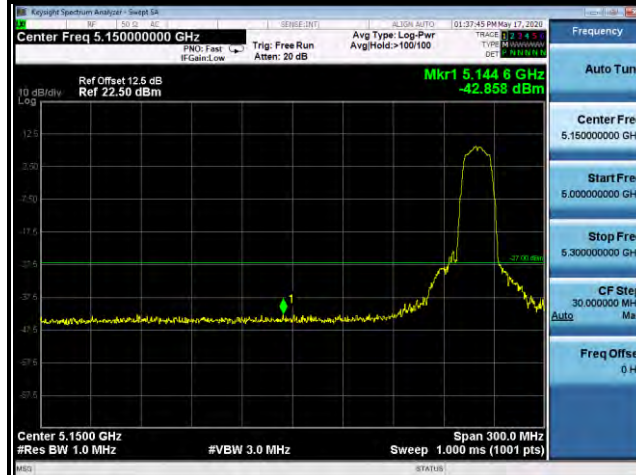
BUREAU
VERITAS

Test Report No.: RF200116W006-3

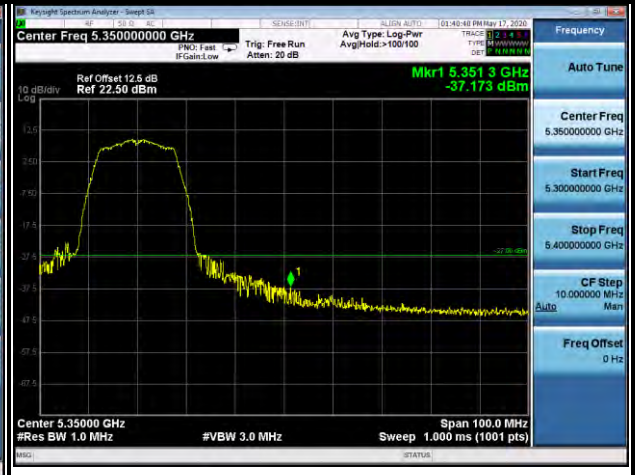
For U-NII-2A:

SPECTRUM PLOT OF BANDEDGE

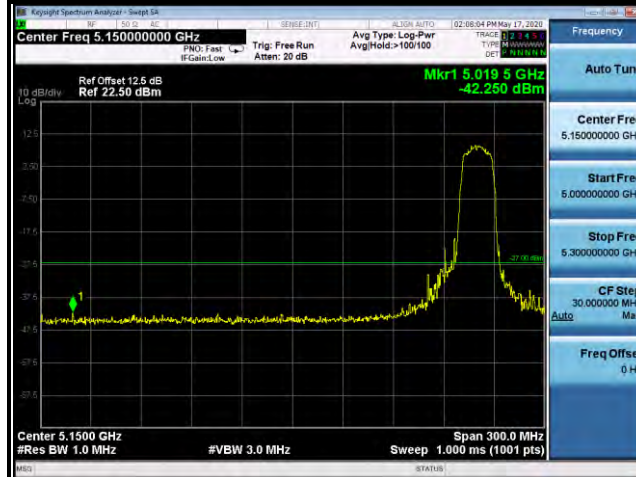
802.11a Left Side



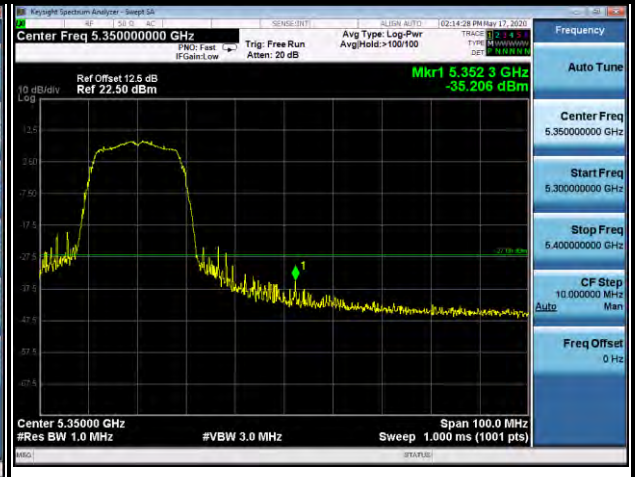
802.11a Right Side

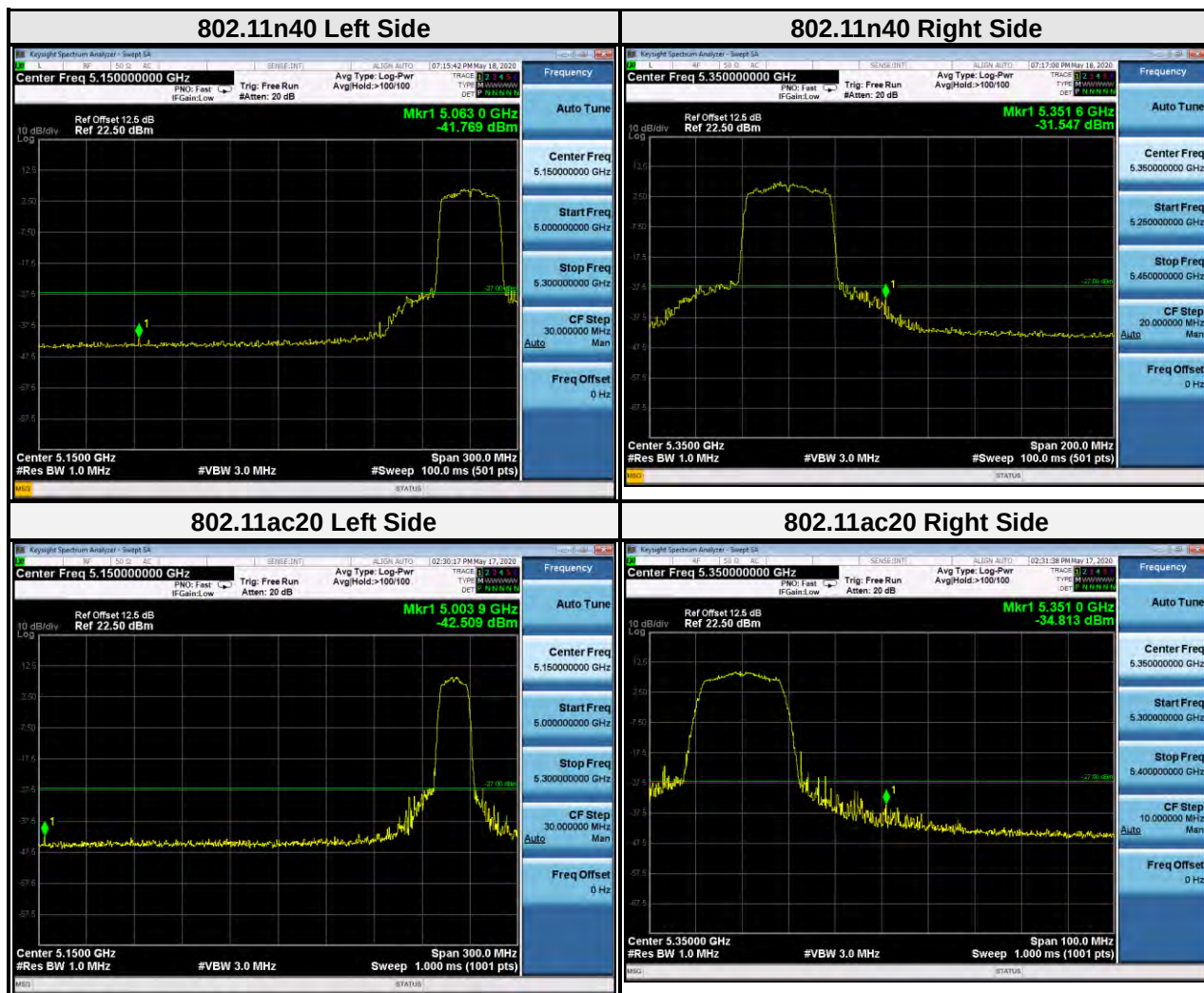


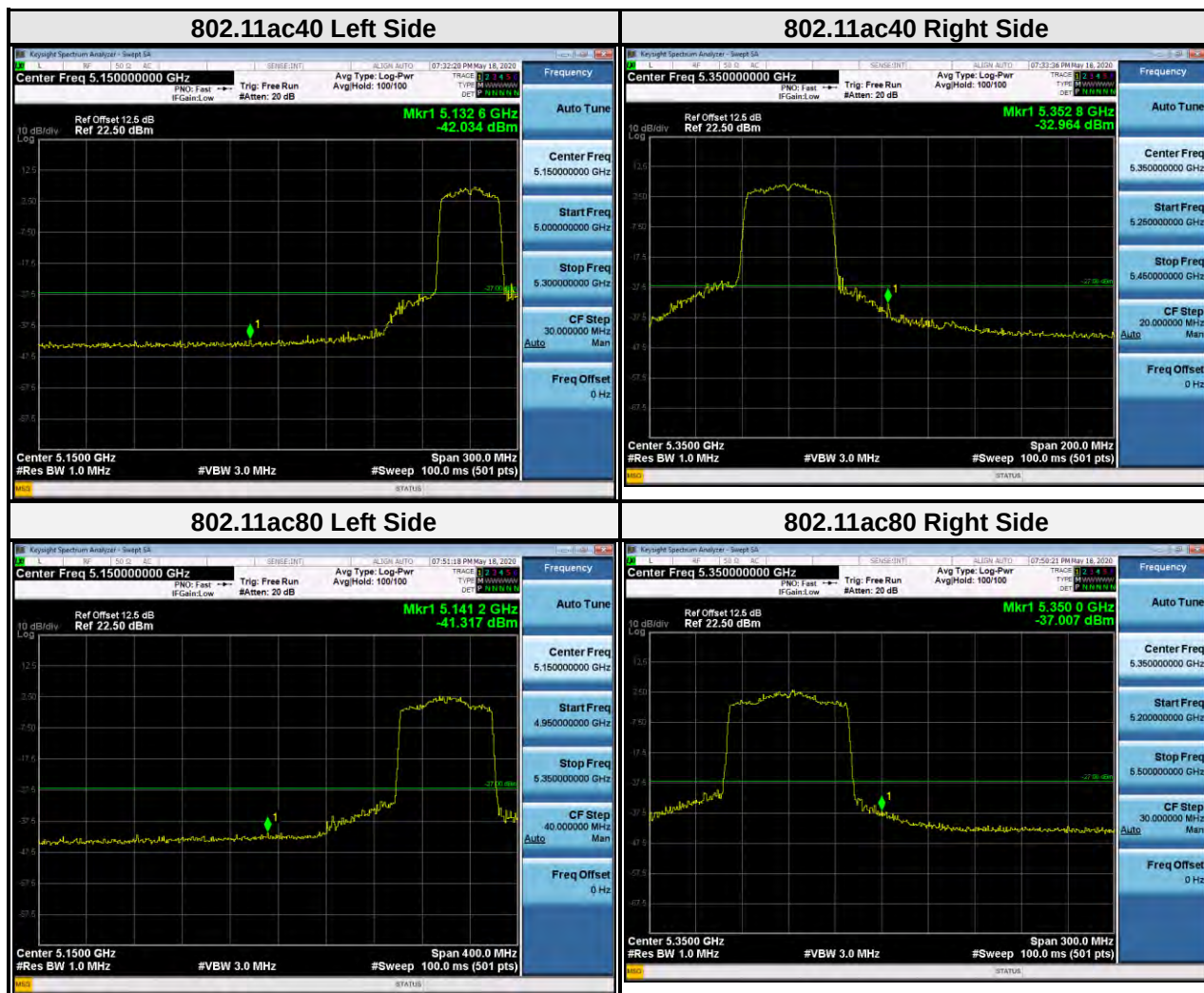
802.11n20 Left Side



802.11n20 Right Side





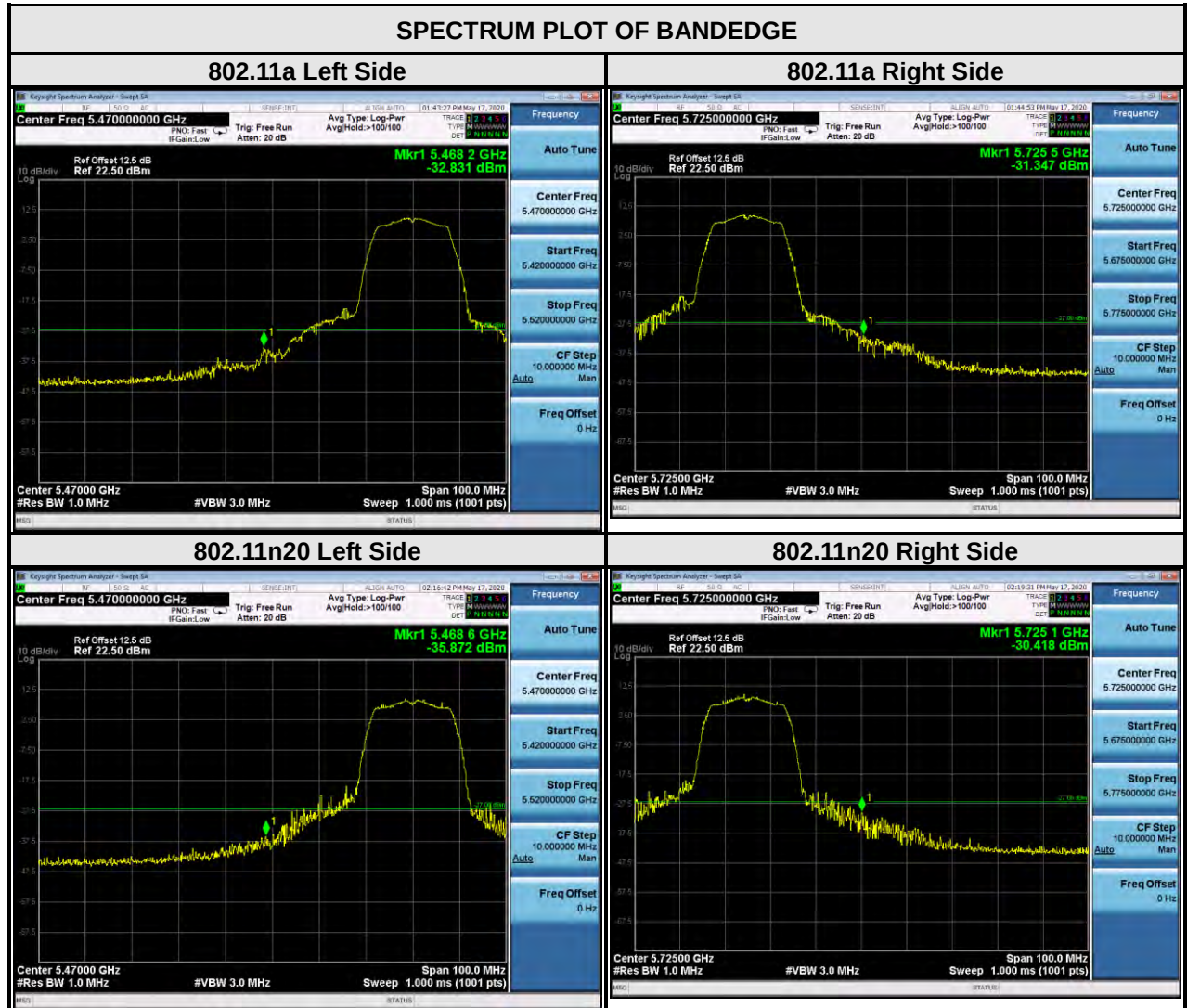


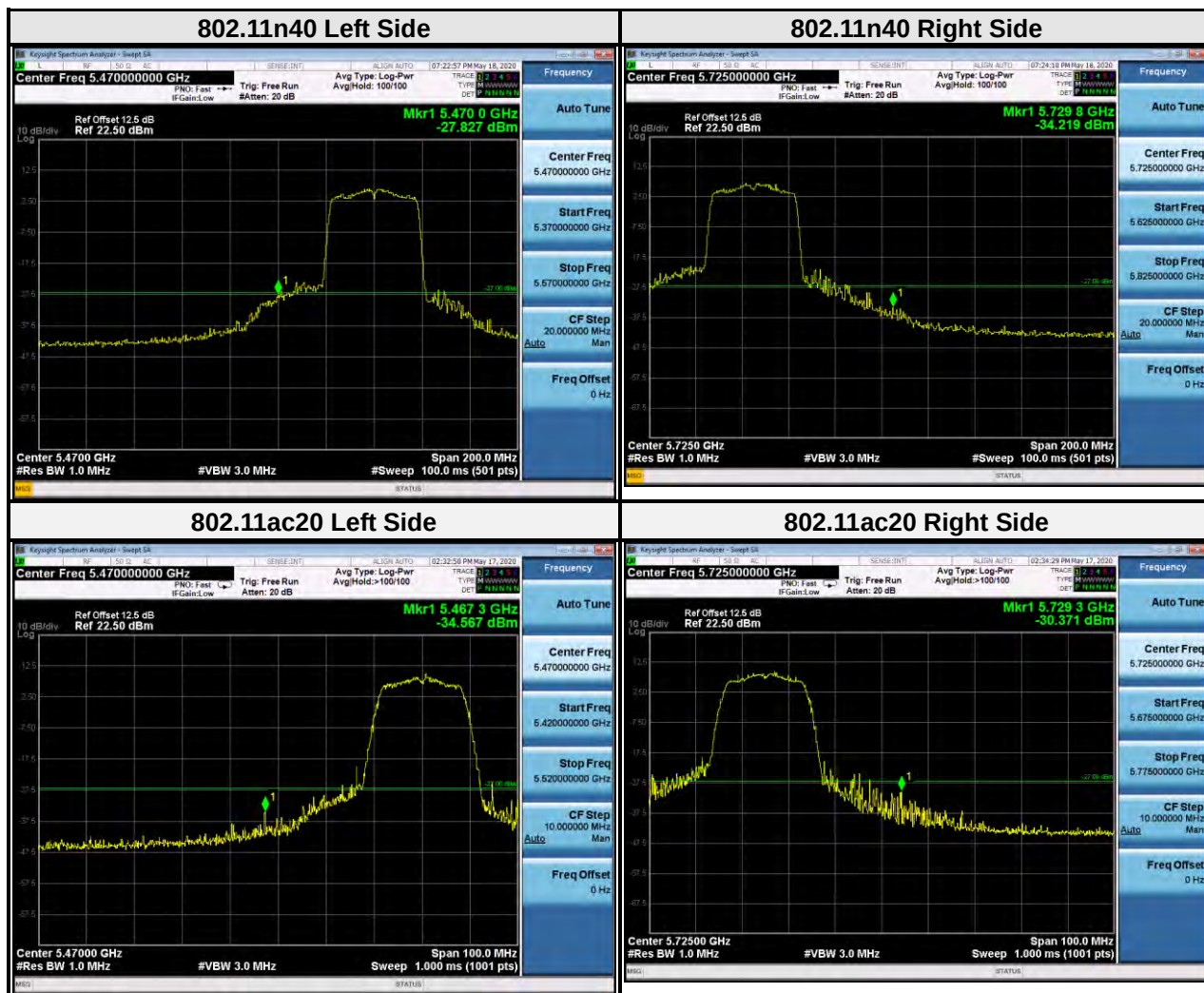


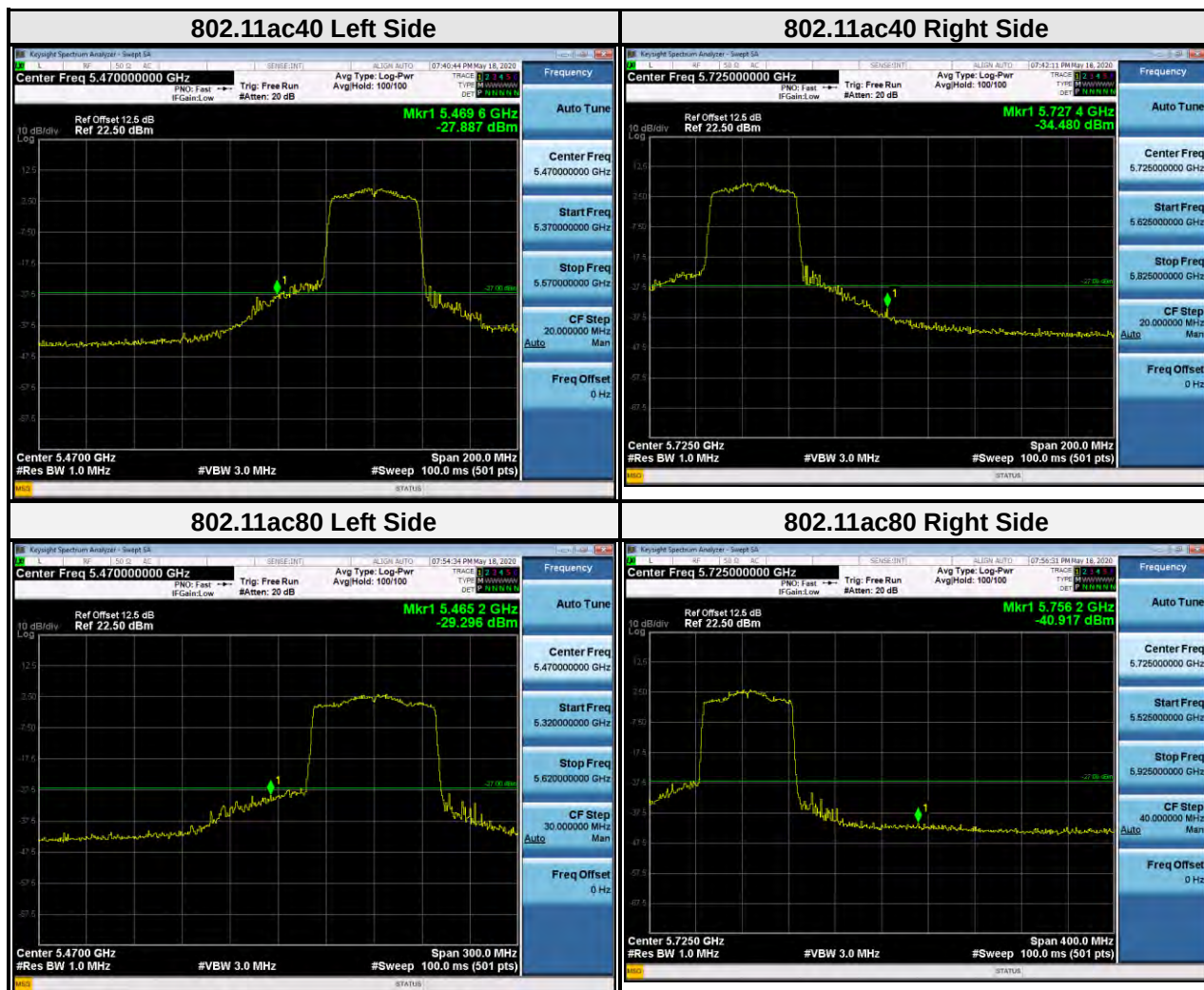
BUREAU
VERITAS

Test Report No.: RF200116W006-3

For U-NII-2C:





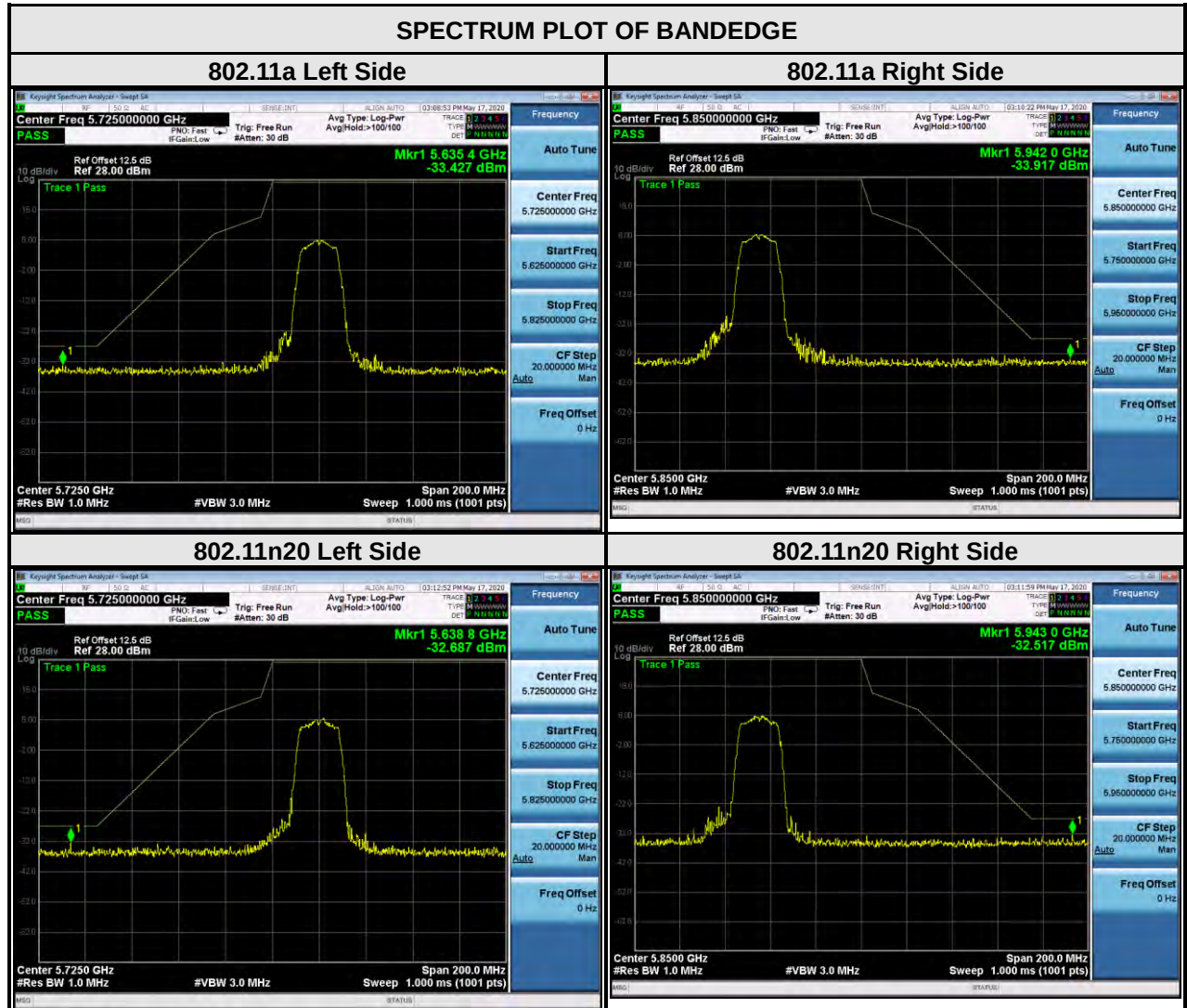


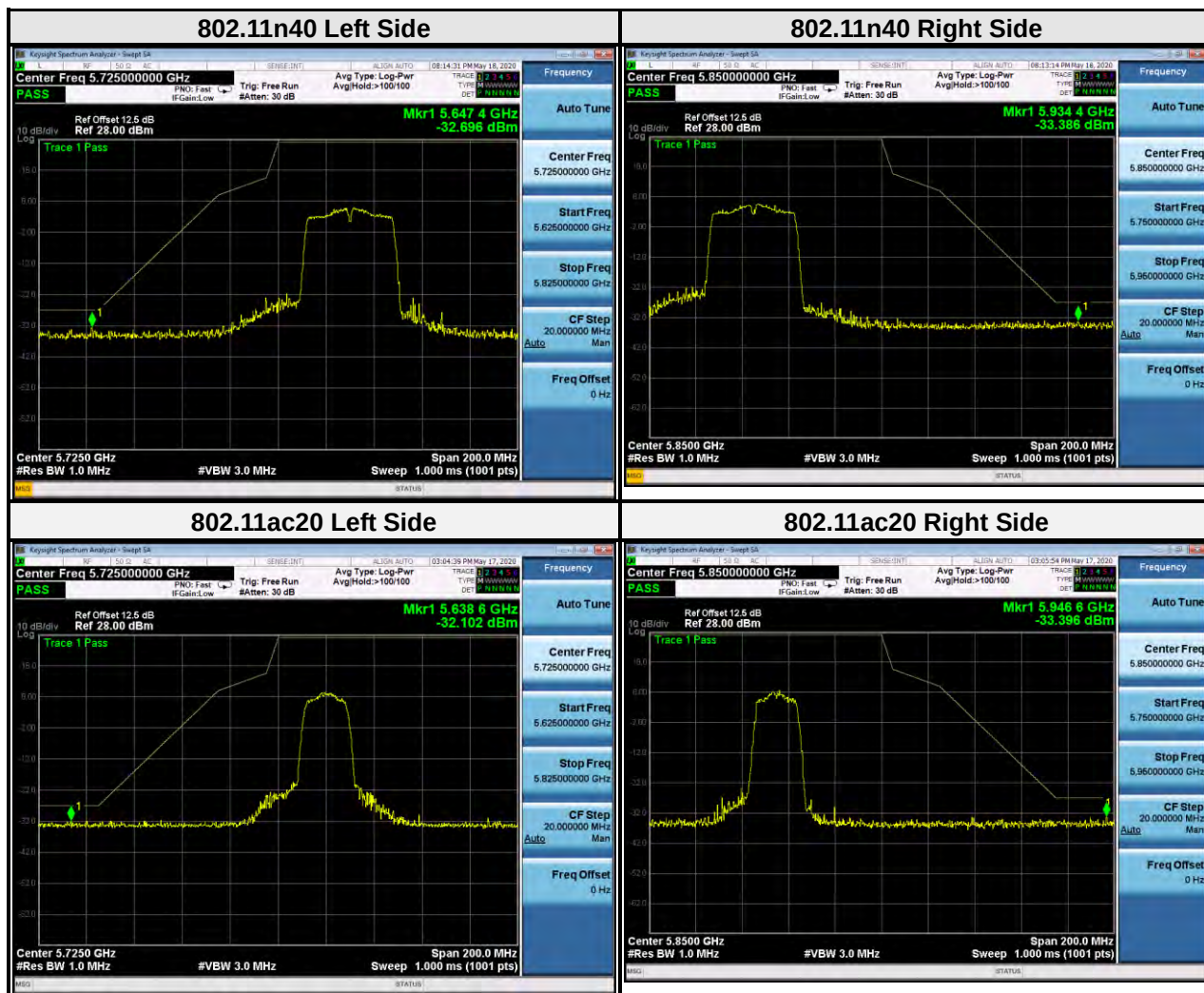


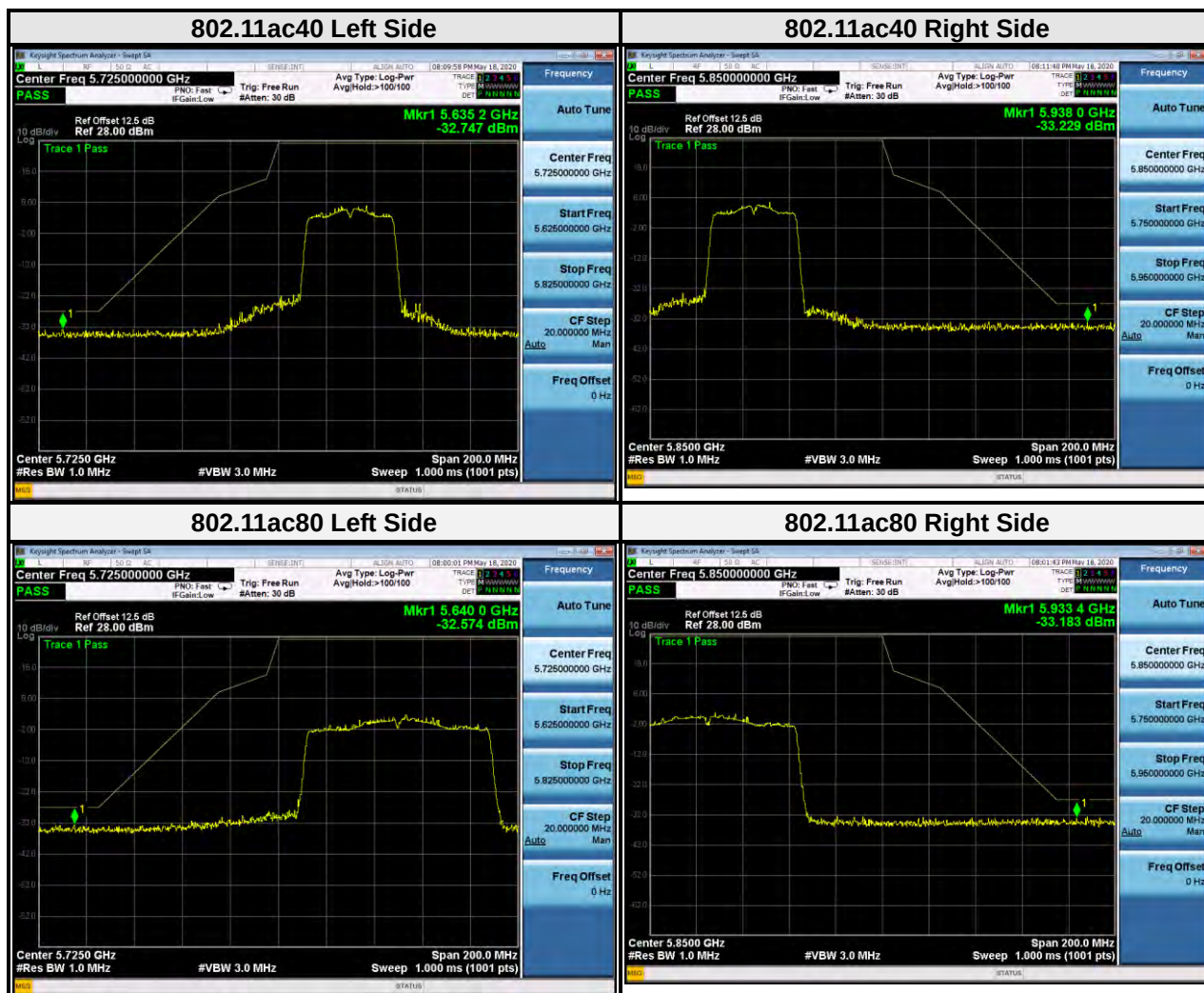
BUREAU
VERITAS

Test Report No.: RF200116W006-3

For U-NII-3:







3.3 CONDUCTED EMISSION MEASUREMENT

3.3.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 28,20	Feb. 27,21
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 28,20	Feb. 27,21

NOTE:

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

3.3.3 TEST PROCEDURES

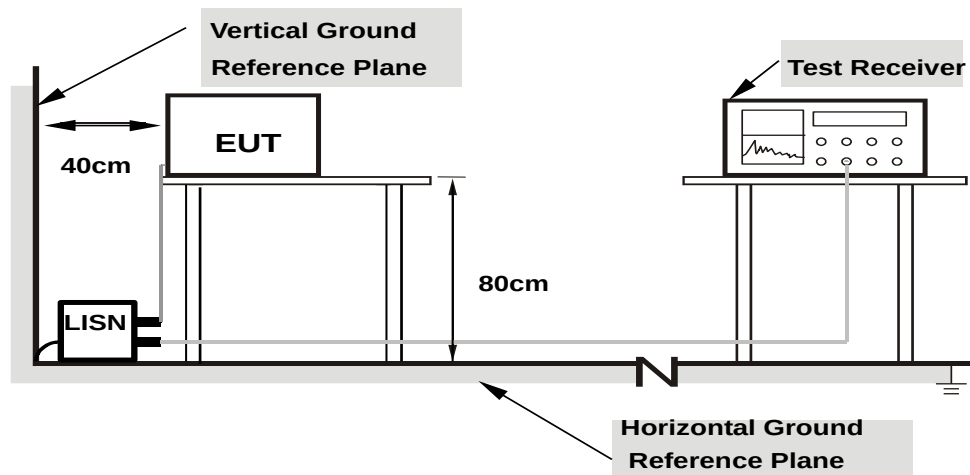
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



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

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

3.3.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

3.3.7 TEST RESULTS

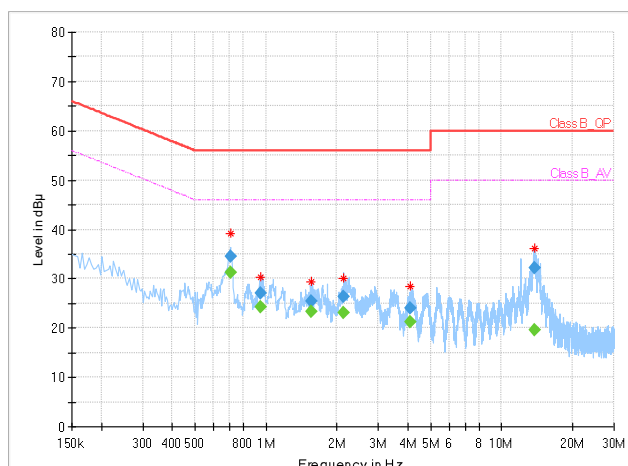
CONDUCTED WORST-CASE DATA :

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23deg. C, 52RH
Tested By	Chase Zhou		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.708000	---	31.17	46.00	-14.83	L	ON	10.0
0.708000	34.48	---	56.00	-21.52	L	ON	10.0
0.944000	---	24.23	46.00	-21.77	L	ON	10.1
0.944000	27.14	---	56.00	-28.86	L	ON	10.1
1.556000	---	23.23	46.00	-22.77	L	ON	10.1
1.556000	25.44	---	56.00	-30.56	L	ON	10.1
2.140000	---	23.16	46.00	-22.84	L	ON	10.1
2.140000	26.38	---	56.00	-29.62	L	ON	10.1
4.084000	---	21.27	46.00	-24.73	L	ON	10.2
4.084000	24.02	---	56.00	-31.98	L	ON	10.2
13.828000	---	19.53	50.00	-30.47	L	ON	10.5
13.828000	32.24	---	60.00	-27.76	L	ON	10.5

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

Full Spectrum



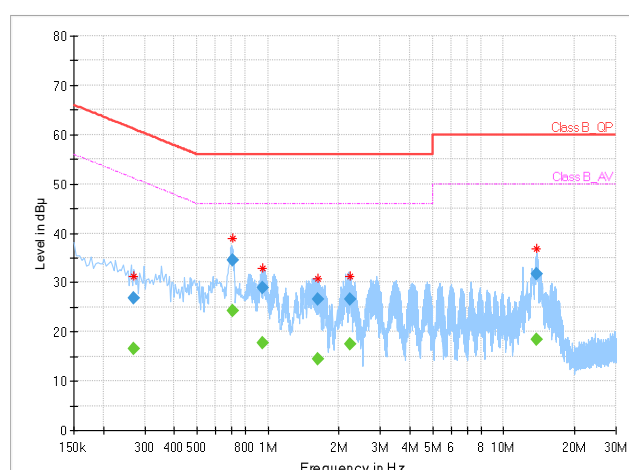


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23deg. C, 52RH
Tested By	Chase Zhou		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.268000	---	16.54	51.18	-34.64	N	ON	9.9
0.268000	26.92	---	61.18	-34.26	N	ON	9.9
0.708000	---	24.27	46.00	-21.73	N	ON	9.9
0.708000	34.44	---	56.00	-21.56	N	ON	9.9
0.948000	---	17.69	46.00	-28.31	N	ON	10.0
0.948000	28.82	---	56.00	-27.18	N	ON	10.0
1.620000	---	14.39	46.00	-31.61	N	ON	10.0
1.620000	26.53	---	56.00	-29.47	N	ON	10.0
2.228000	---	17.40	46.00	-28.60	N	ON	10.0
2.228000	26.55	---	56.00	-29.45	N	ON	10.0
13.824000	---	18.36	50.00	-31.64	N	ON	10.4
13.824000	31.80	---	60.00	-28.20	N	ON	10.4

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

Full Spectrum



3.4 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.4.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

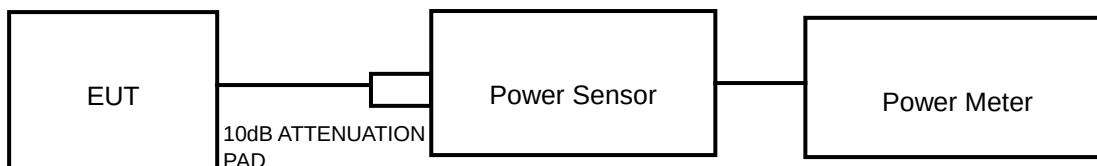
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24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

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

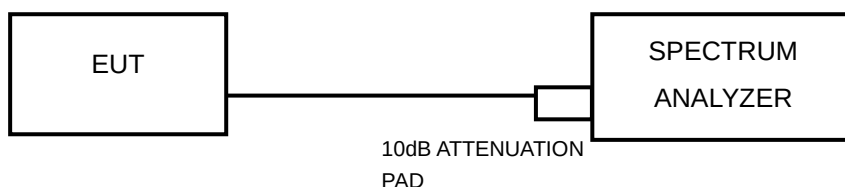
3.4.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

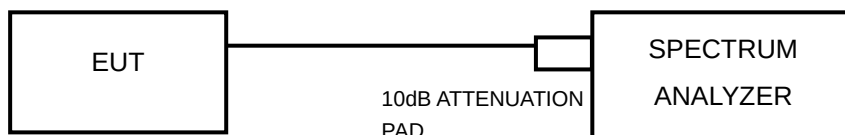
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



11ac TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 28,20	Feb. 27,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 28,20	Feb. 27,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Feb. 28,20	Feb. 27,21
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 28,20	Feb. 27,21

NOTE:

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

3.4.4 TEST PROCEDURE

FOR POWER MEASUREMENT

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

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

For 802.11ac (80MHz)

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

FOR 99 PERCENT OCCUPIED BANDWIDTH

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

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

FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

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

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

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

**3.4.7 TEST RESULTS****OUTPUT POWER:****802.11a**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	13.51	0.31	13.82	24.10	24	PASS
40	5200	13.45	0.31	13.76	23.77	24	PASS
48	5240	13.52	0.31	13.83	24.15	24	PASS
52	5260	13.49	0.31	13.80	23.99	24	PASS
60	5300	13.61	0.31	13.92	24.66	24	PASS
64	5320	13.51	0.31	13.82	24.10	24	PASS
100	5500	13.69	0.31	14.00	25.12	24	PASS
116	5580	13.45	0.31	13.96	24.89	24	PASS
140	5700	13.52	0.31	13.92	24.66	24	PASS
149	5745	12.32	0.31	12.63	18.32	30	PASS
157	5785	12.22	0.31	12.53	17.91	30	PASS
161	5805	13.04	0.31	13.35	21.63	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	12.95	0.27	13.22	20.99	24	PASS
40	5200	12.99	0.27	13.26	21.18	24	PASS
48	5240	13.06	0.27	13.33	21.53	24	PASS
52	5260	12.93	0.27	13.2	20.89	24	PASS
60	5300	12.95	0.27	13.22	20.99	24	PASS
64	5320	13.04	0.27	13.31	21.43	24	PASS
100	5500	12.61	0.27	12.88	19.41	24	PASS
116	5580	12.66	0.27	12.93	19.63	24	PASS
140	5700	12.52	0.27	12.79	19.01	24	PASS
149	5745	12.58	0.27	12.85	19.28	30	PASS
157	5785	12.74	0.27	13.01	20.00	30	PASS
161	5805	12.95	0.27	13.22	20.99	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.74	0.62	13.36	21.68	24	PASS
46	5230	12.65	0.62	13.27	21.23	24	PASS
54	5270	12.61	0.62	13.23	21.04	24	PASS
62	5310	12.63	0.62	13.25	21.13	24	PASS
102	5510	13.42	0.62	14.04	25.35	24	PASS
110	5550	13.35	0.62	13.97	24.95	24	PASS
134	5670	13.30	0.62	13.92	24.66	24	PASS
151	5755	12.68	0.62	13.3	21.38	30	PASS
159	5795	12.66	0.62	13.28	21.28	30	PASS

**802.11ac (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	12.45	0.33	12.78	18.97	24	PASS
40	5200	12.55	0.33	12.88	19.41	24	PASS
48	5240	12.59	0.33	12.92	19.59	24	PASS
52	5260	13.05	0.33	13.38	21.78	24	PASS
60	5300	13.06	0.33	13.39	21.83	24	PASS
64	5320	13.10	0.33	13.43	22.03	24	PASS
100	5500	12.80	0.33	13.13	20.56	24	PASS
116	5580	12.82	0.33	13.15	20.65	24	PASS
140	5700	12.61	0.33	12.94	19.68	24	PASS
149	5745	12.70	0.33	13.03	20.09	30	PASS
157	5785	12.63	0.33	12.96	19.77	30	PASS
161	5805	12.61	0.33	12.94	19.68	30	PASS

802.11ac (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.75	0.61	13.36	21.68	24	PASS
46	5230	12.74	0.61	13.35	21.63	24	PASS
54	5270	12.61	0.61	13.22	20.99	24	PASS
62	5310	12.69	0.61	13.30	21.38	24	PASS
102	5510	13.43	0.61	14.04	25.35	24	PASS
110	5550	13.47	0.61	14.08	25.59	24	PASS
134	5670	13.20	0.61	13.81	24.04	24	PASS
151	5755	12.63	0.61	13.24	21.09	30	PASS
159	5795	12.65	0.61	13.26	21.18	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	10.56	1.18	11.74	14.93	24	PASS
58	5290	10.59	1.18	11.77	15.03	24	PASS
106	5530	11.05	1.18	12.23	16.71	24	PASS
122	5610	10.95	1.18	12.13	16.33	24	PASS
155	5775	10.62	1.18	11.8	15.14	30	PASS

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

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.80	21.49	PASS
40	5200	16.92	21.03	PASS
48	5240	16.86	21.49	PASS
52	5260	16.92	21.05	PASS
60	5300	16.86	21.30	PASS
64	5320	16.80	21.12	PASS
100	5500	16.80	21.13	PASS
116	5580	16.86	21.06	PASS
140	5700	16.80	21.52	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
149	5745	16.86	16.33	PASS
157	5785	16.86	16.31	PASS
161	5805	16.92	16.30	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.94	21.55	PASS
40	5200	17.88	21.52	PASS
48	5240	17.88	21.64	PASS
52	5260	17.82	21.58	PASS
60	5300	17.94	21.40	PASS
64	5320	17.88	21.46	PASS
100	5500	17.88	21.60	PASS
116	5580	17.94	21.35	PASS
140	5700	17.94	21.48	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
149	5745	18.00	17.56	PASS
157	5785	18.00	17.54	PASS
161	5805	18.00	17.55	PASS

**802.11n (40MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.30	40.60	PASS
46	5230	36.42	40.81	PASS
54	5270	36.36	40.85	PASS
62	5310	36.30	40.60	PASS
102	5510	36.30	40.76	PASS
110	5550	36.30	40.68	PASS
134	5670	36.42	40.57	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
151	5755	36.36	35.37	PASS
159	5795	36.36	36.32	PASS

**802.11ac (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.88	21.65	PASS
40	5200	17.94	21.55	PASS
48	5240	17.94	21.70	PASS
52	5260	17.94	21.58	PASS
60	5300	18.00	21.52	PASS
64	5320	18.00	21.59	PASS
100	5500	18.00	21.77	PASS
116	5580	17.94	21.55	PASS
140	5700	17.94	21.64	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
149	5745	17.88	17.56	PASS
157	5785	18.00	17.55	PASS
161	5805	18.00	17.54	PASS

802.11ac (40MHz)

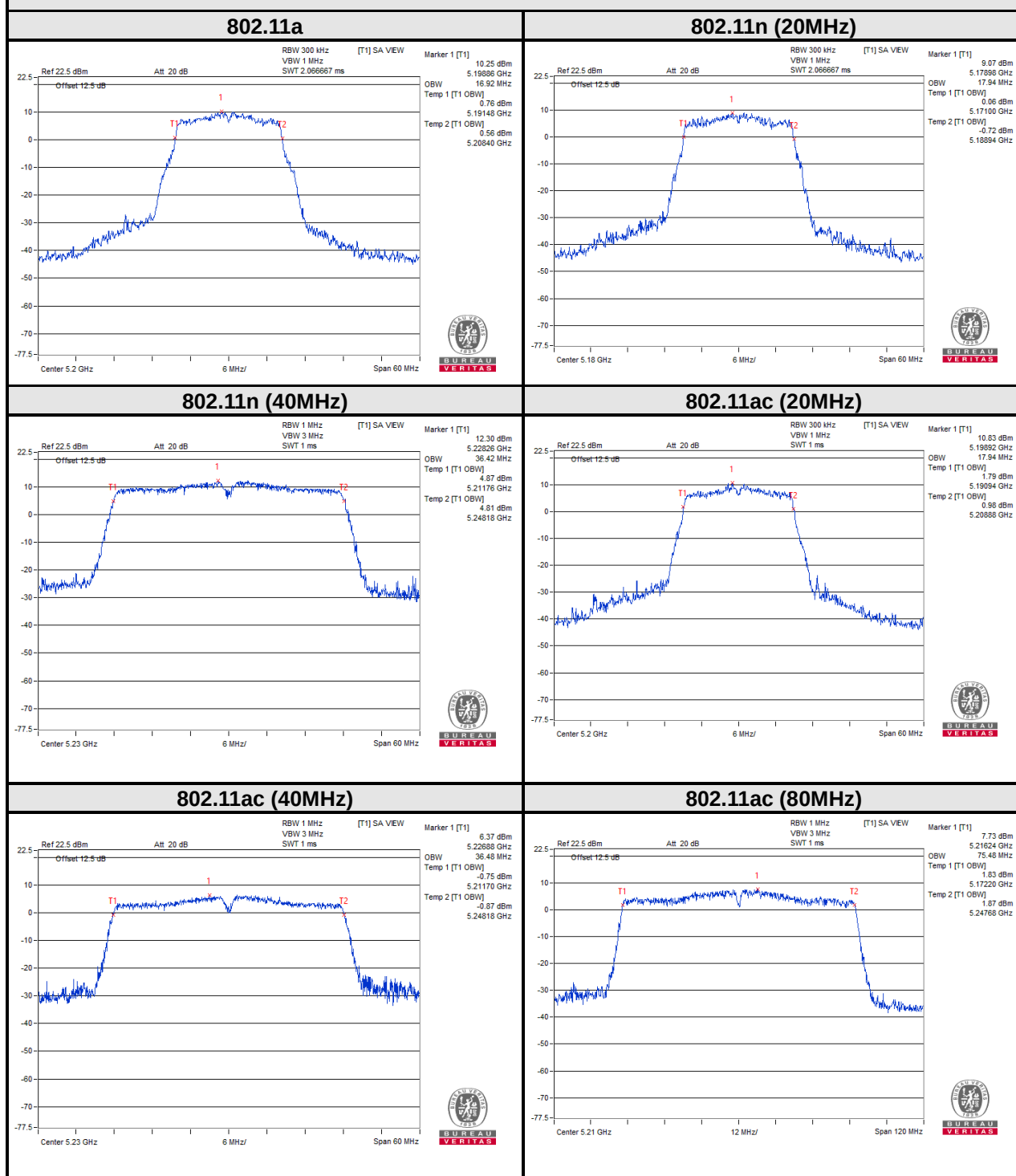
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.48	40.84	PASS
46	5230	36.48	40.79	PASS
54	5270	36.42	40.88	PASS
62	5310	36.36	40.69	PASS
102	5510	36.48	40.94	PASS
110	5550	36.42	41.32	PASS
134	5670	36.42	40.89	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
151	5755	36.36	36.26	PASS
159	5795	36.48	35.93	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.48	81.15	PASS
58	5290	75.48	81.26	PASS
106	5530	75.48	81.55	PASS
122	5610	75.48	81.07	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
155	5775	75.60	75.26	PASS

For U-NII-1:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH



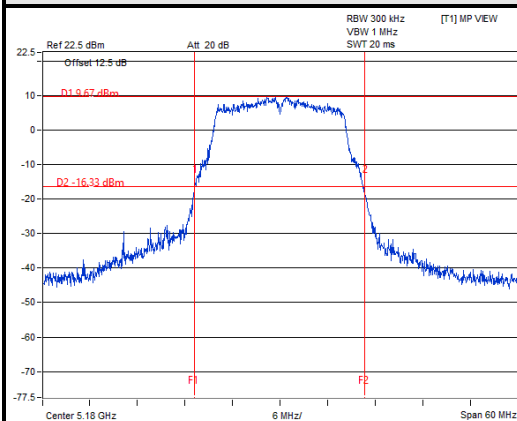


BUREAU
VERITAS

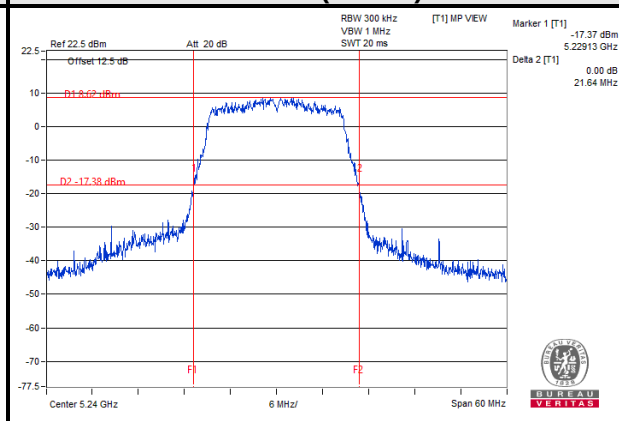
Test Report No.: RF200116W006-3

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

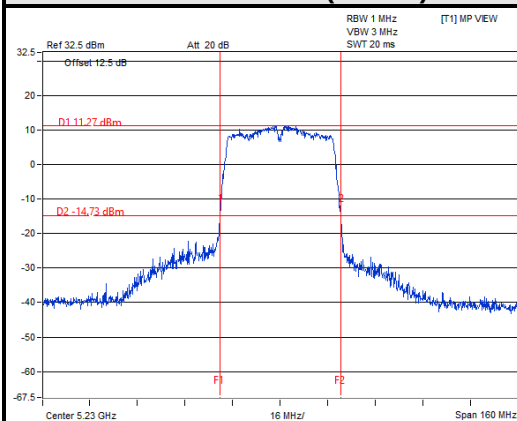
802.11a



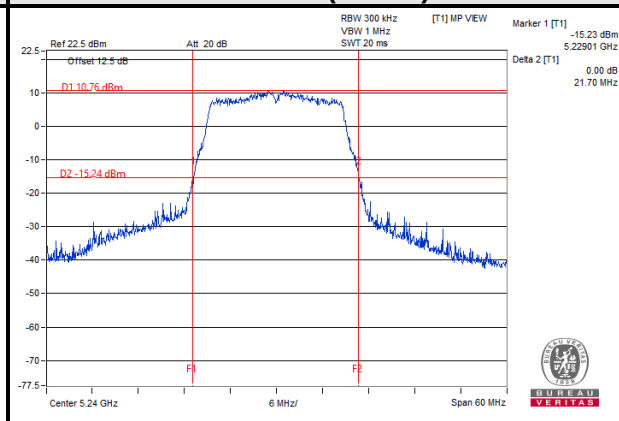
802.11n (20MHz)



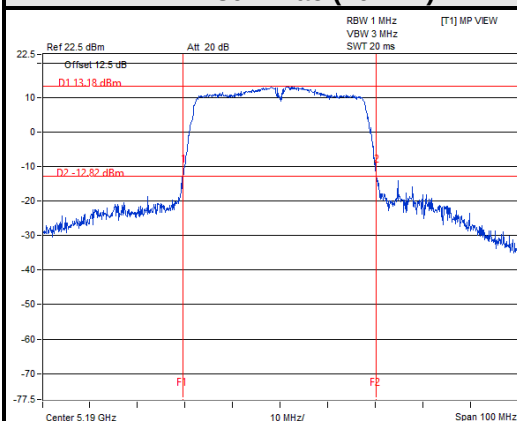
802.11n (40MHz)



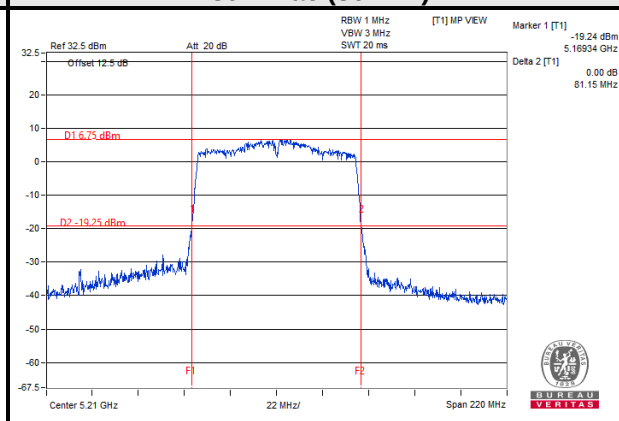
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)





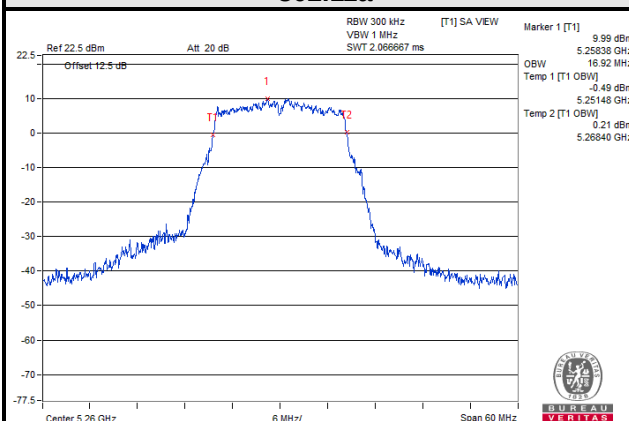
BUREAU
VERITAS

Test Report No.: RF200116W006-3

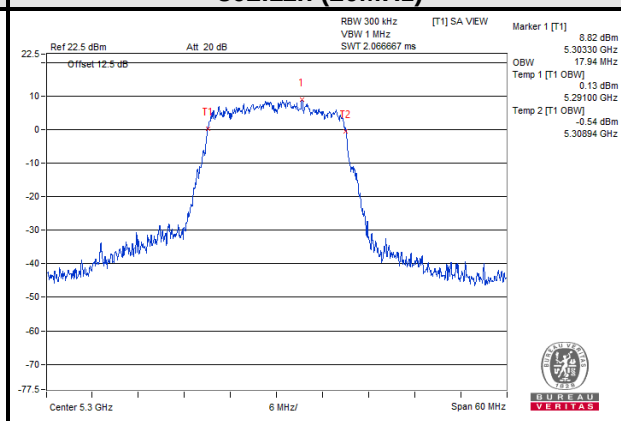
For U-NII-2A:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

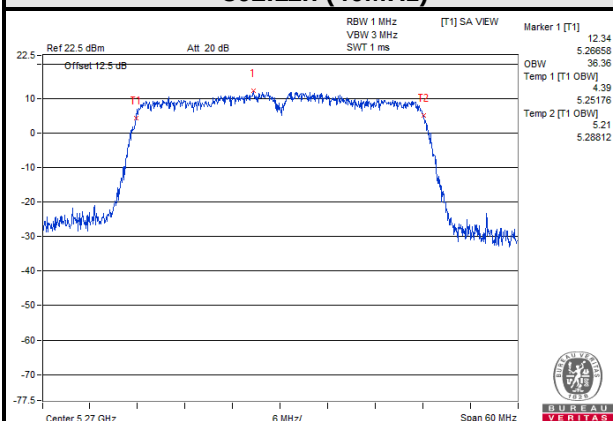
802.11a



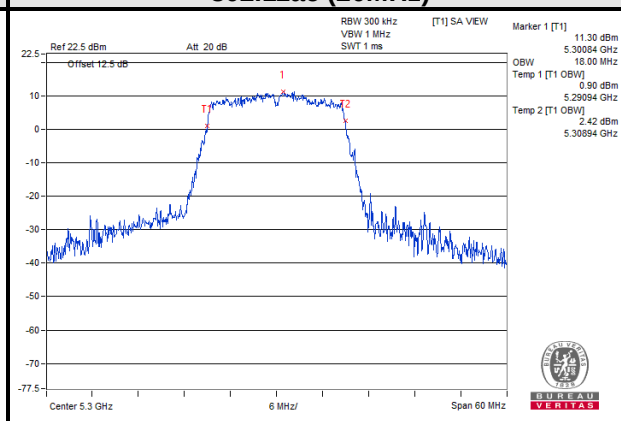
802.11n (20MHz)



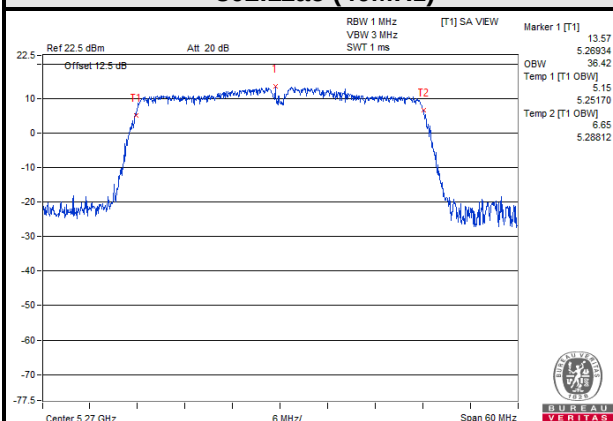
802.11n (40MHz)



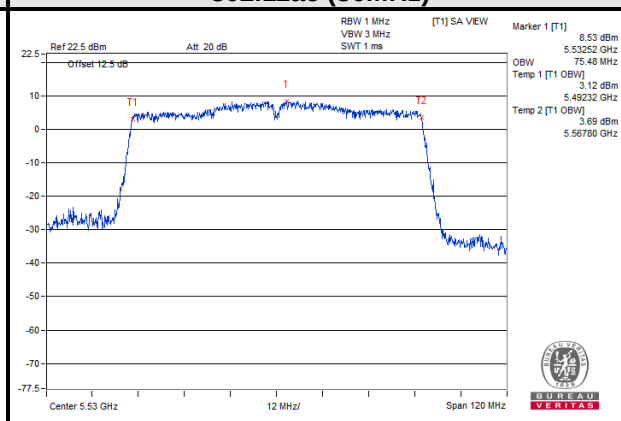
802.11ac (20MHz)

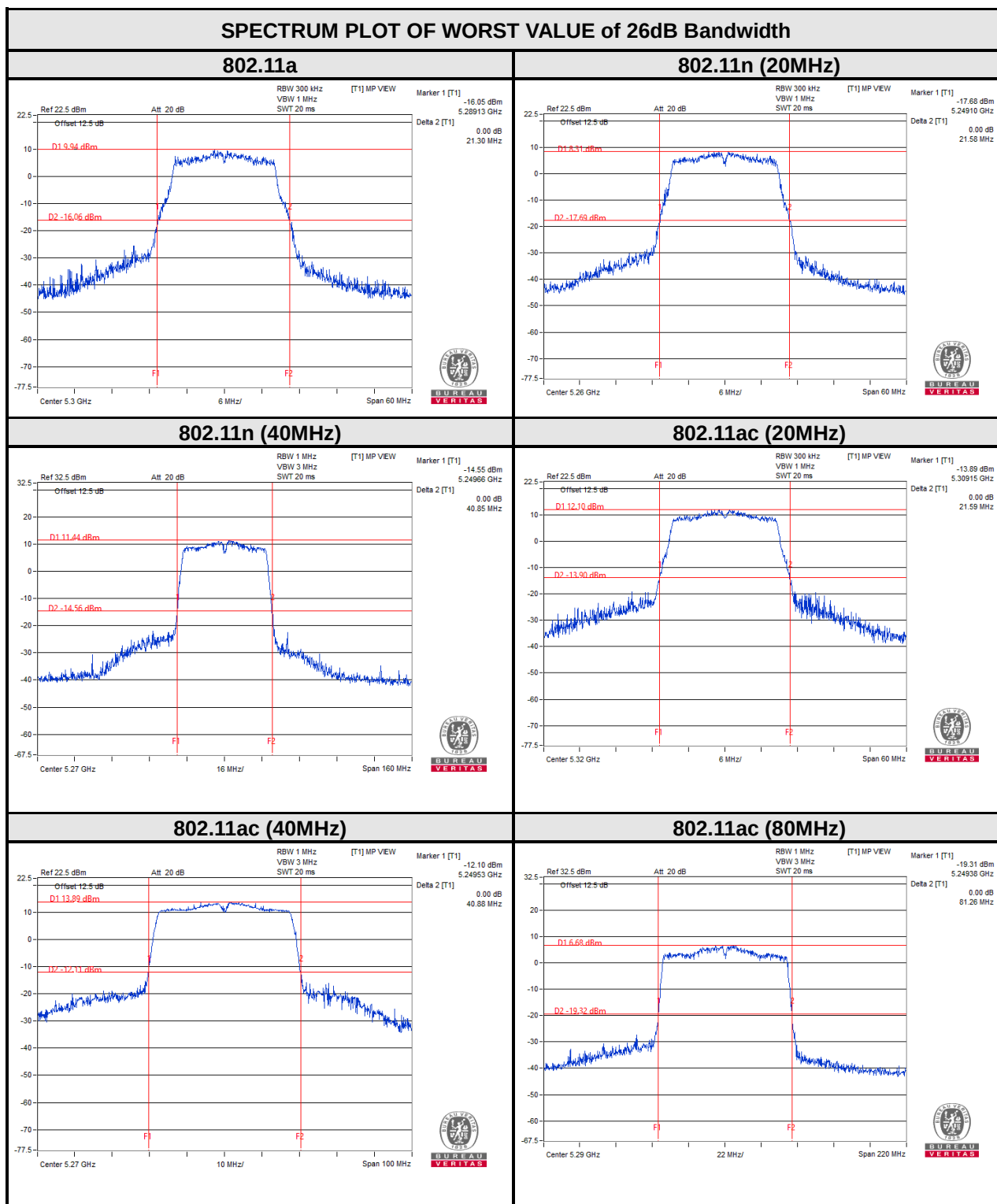


802.11ac (40MHz)



802.11ac (80MHz)







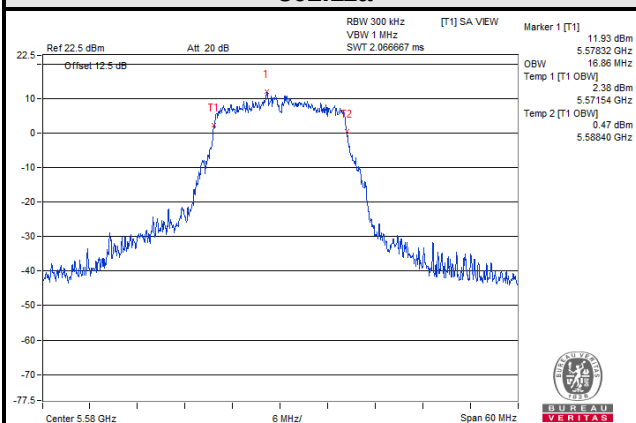
BUREAU
VERITAS

Test Report No.: RF200116W006-3

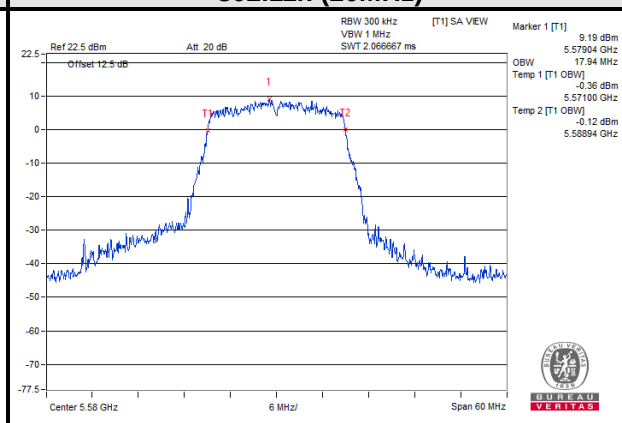
For U-NII-2C:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

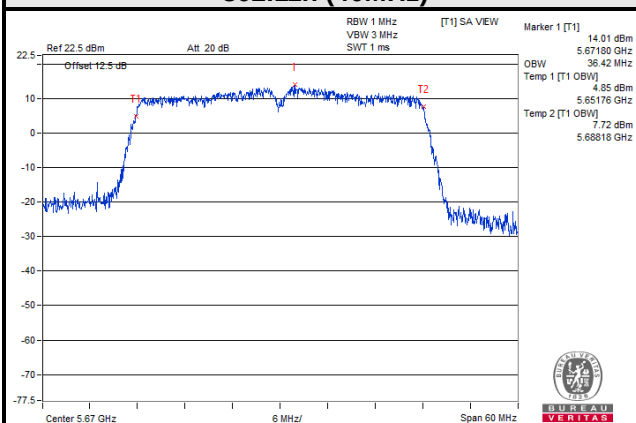
802.11a



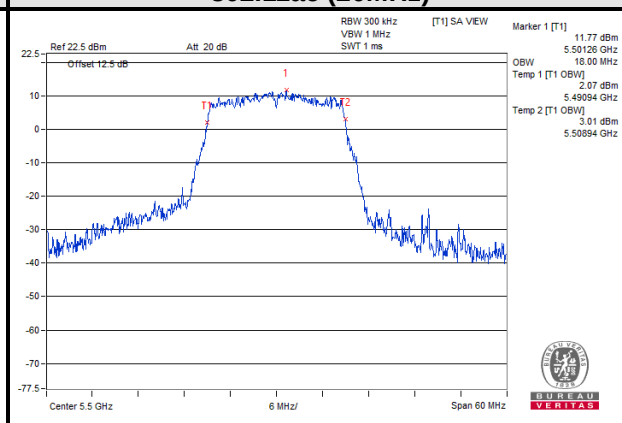
802.11n (20MHz)



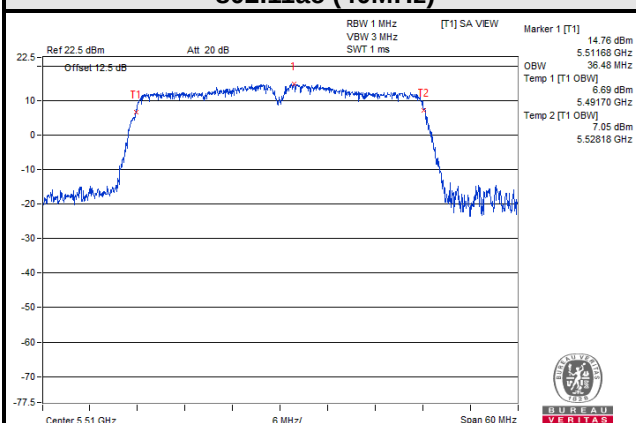
802.11n (40MHz)



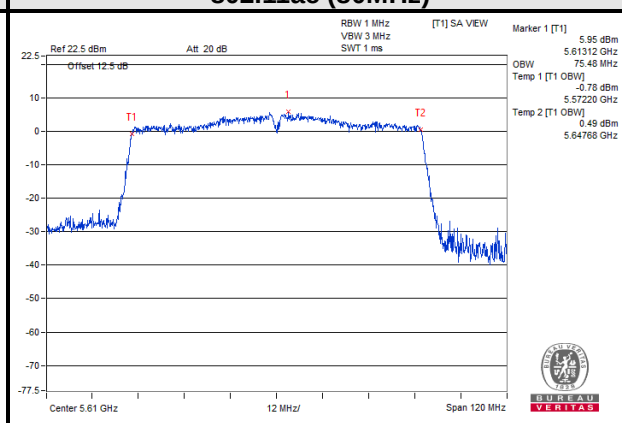
802.11ac (20MHz)

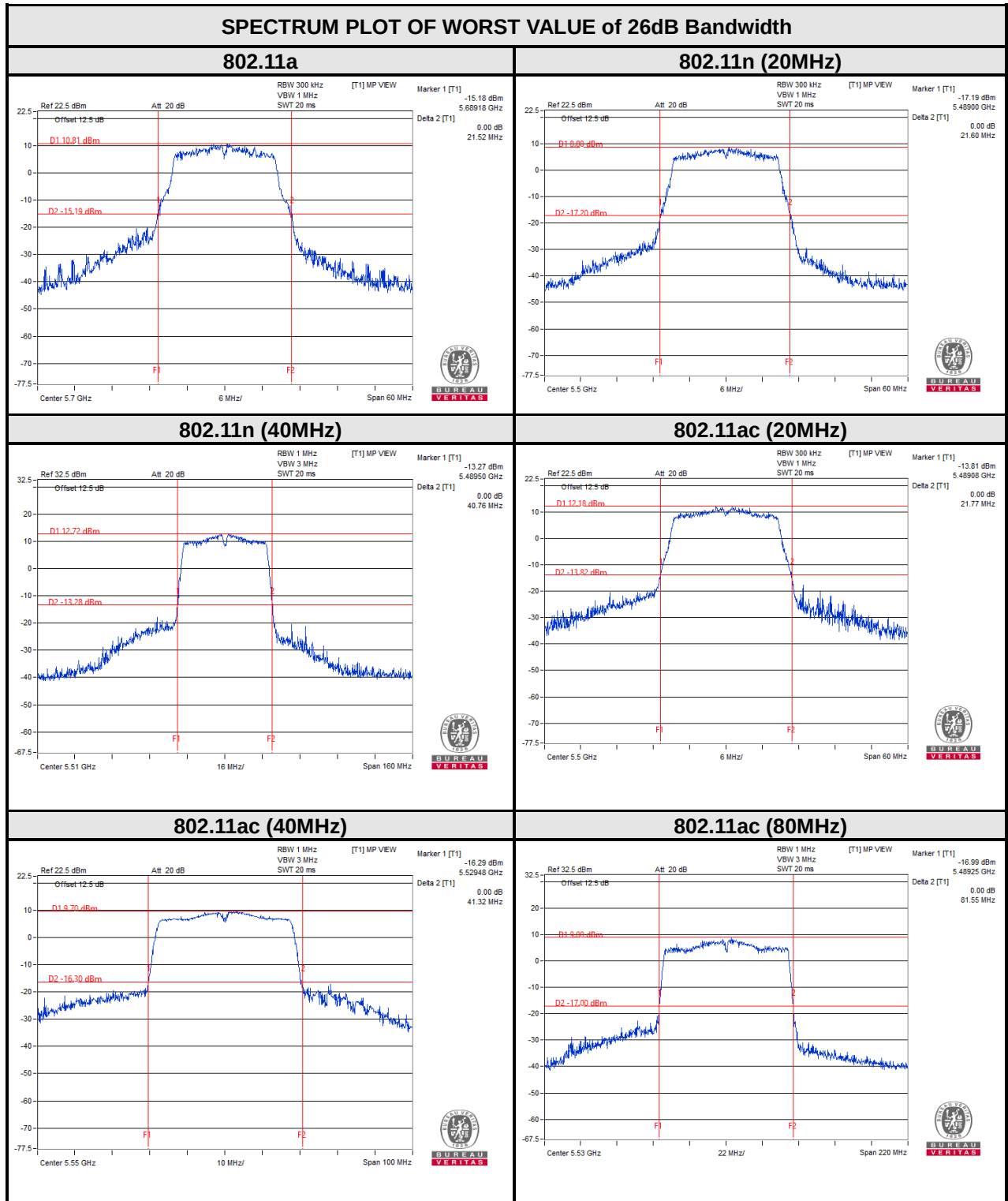


802.11ac (40MHz)

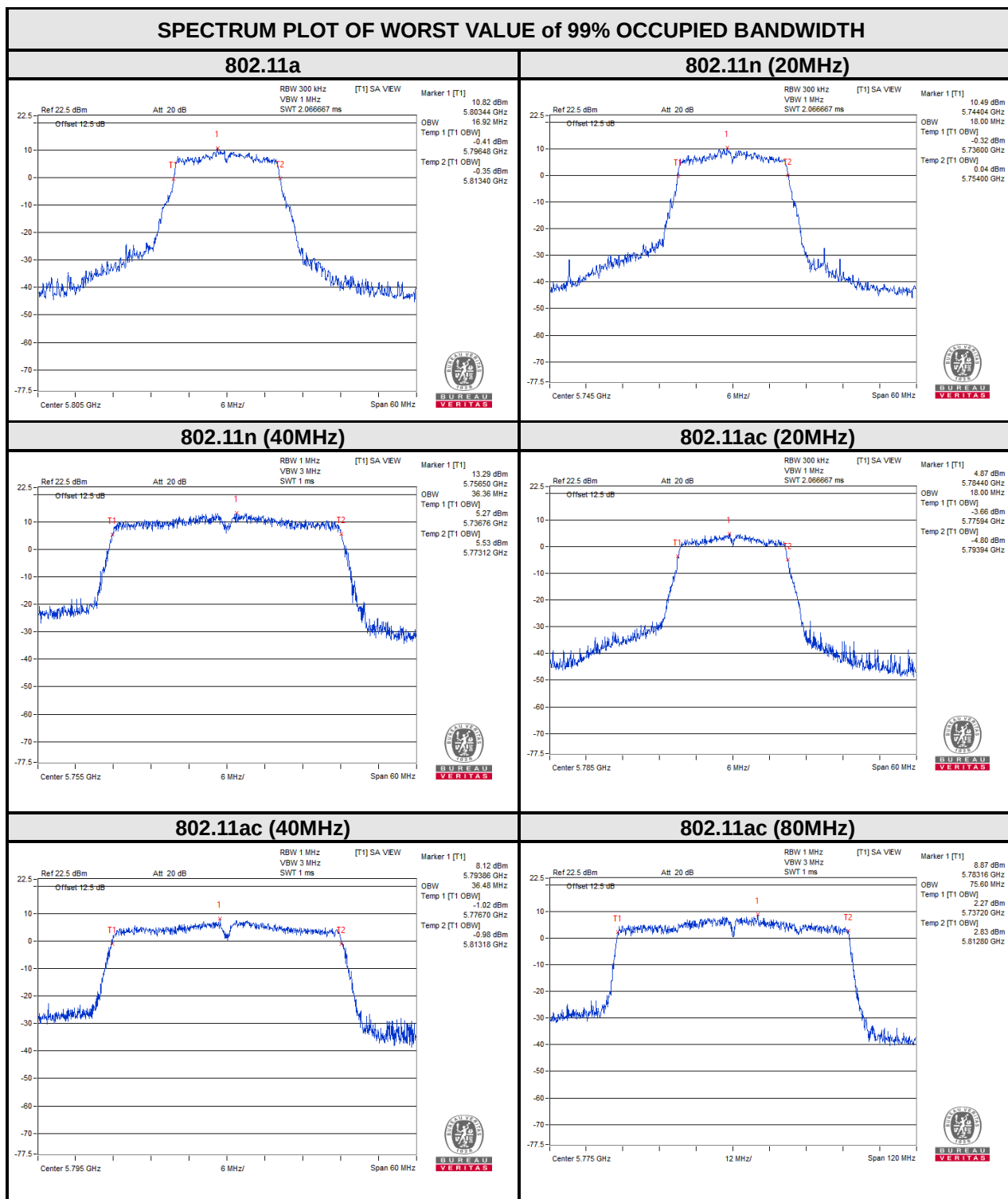


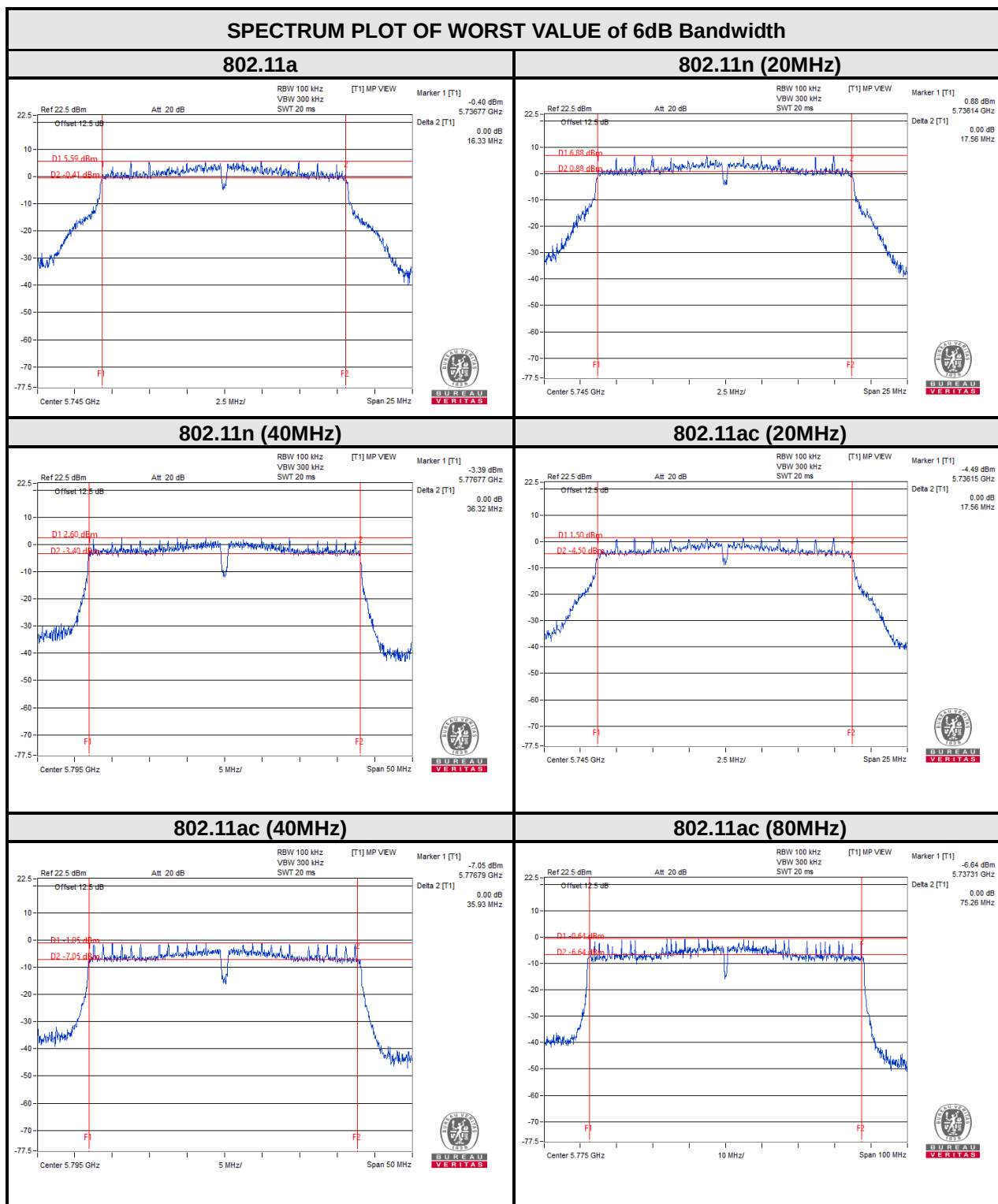
802.11ac (80MHz)





For U-NII-3:



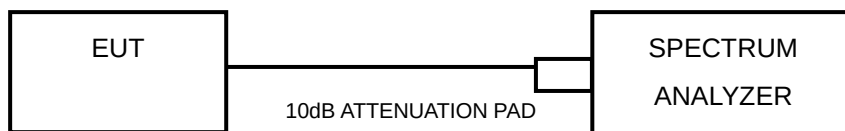


3.5 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

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

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURES

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW $\geq$ 3 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
- 7) Record the max value

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.5.7 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	8.09	0.31	8.40	11	PASS
40	5200	8.11	0.31	8.42	11	PASS
48	5240	7.59	0.31	7.90	11	PASS
52	5260	7.40	0.31	7.71	11	PASS
60	5300	7.99	0.31	8.30	11	PASS
64	5320	7.95	0.31	8.26	11	PASS
100	5500	8.93	0.31	9.24	11	PASS
116	5580	8.69	0.31	9.00	11	PASS
140	5700	9.10	0.31	9.41	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	6.94	0.27	7.21	11	PASS
40	5200	7.12	0.27	7.39	11	PASS
48	5240	7.36	0.27	7.63	11	PASS
52	5260	7.22	0.27	7.49	11	PASS
60	5300	6.99	0.27	7.26	11	PASS
64	5320	7.84	0.27	8.11	11	PASS
100	5500	7.15	0.27	7.42	11	PASS
116	5580	7.51	0.27	7.78	11	PASS
140	5700	7.89	0.27	8.16	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	3.63	0.62	4.25	11	PASS
46	5230	4.24	0.62	4.86	11	PASS
54	5270	3.39	0.62	4.01	11	PASS
62	5310	3.63	0.62	4.25	11	PASS
102	5510	4.43	0.62	5.05	11	PASS
110	5550	5.15	0.62	5.77	11	PASS
134	5670	5.32	0.62	5.94	11	PASS

802.11ac (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	6.70	0.33	7.03	11	PASS
40	5200	6.73	0.33	7.06	11	PASS
48	5240	7.31	0.33	7.64	11	PASS
52	5260	8.27	0.33	8.60	11	PASS
60	5300	8.41	0.33	8.74	11	PASS
64	5320	8.60	0.33	8.93	11	PASS
100	5500	8.50	0.33	8.83	11	PASS
116	5580	8.53	0.33	8.86	11	PASS
140	5700	7.98	0.33	8.31	11	PASS



802.11ac (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	4.17	4.17	0.62	11	PASS
46	5230	4.35	4.35	0.62	11	PASS
54	5270	4.69	4.69	0.62	11	PASS
62	5310	5.04	5.04	0.62	11	PASS
102	5510	5.90	5.90	0.62	11	PASS
110	5550	6.33	6.33	0.62	11	PASS
134	5670	7.40	7.40	0.62	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	-0.78	1.18	0.40	11	PASS
58	5290	-0.15	1.18	1.03	11	PASS
106	5530	0.13	1.18	1.31	11	PASS
122	5610	0.71	1.18	1.89	11	PASS

For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	2.69	4.91	0.31	5.22	30	PASS
157	5785	3.53	5.75	0.31	6.06	30	PASS
161	5805	3.23	5.45	0.31	5.76	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	2.80	5.02	0.27	5.29	30	PASS
157	5785	2.53	4.75	0.27	5.02	30	PASS
161	5805	2.72	4.94	0.27	5.21	30	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	0.71	2.93	0.62	3.55	30	PASS
159	5795	-0.07	2.15	0.62	2.77	30	PASS

802.11ac (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-4.31	-2.09	0.33	-1.76	30	PASS
157	5785	-4.20	-1.98	0.33	-1.65	30	PASS
161	5805	-4.55	-2.33	0.33	-2.00	30	PASS

**802.11ac (40MHz)**

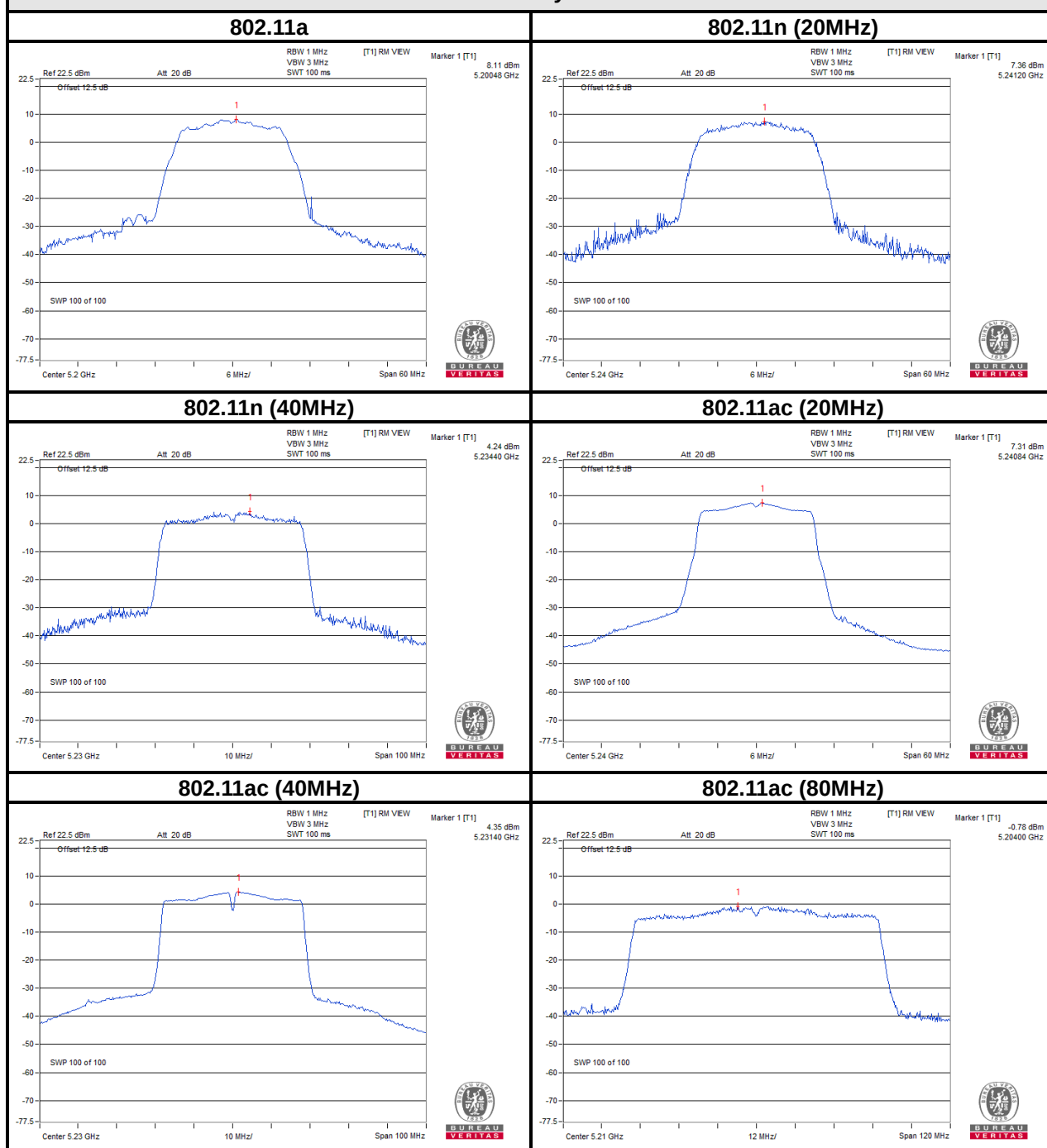
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	2.93	5.15	0.62	5.77	30	PASS
159	5795	2.15	4.37	0.62	4.99	30	PASS

802.11ac (80MHz)

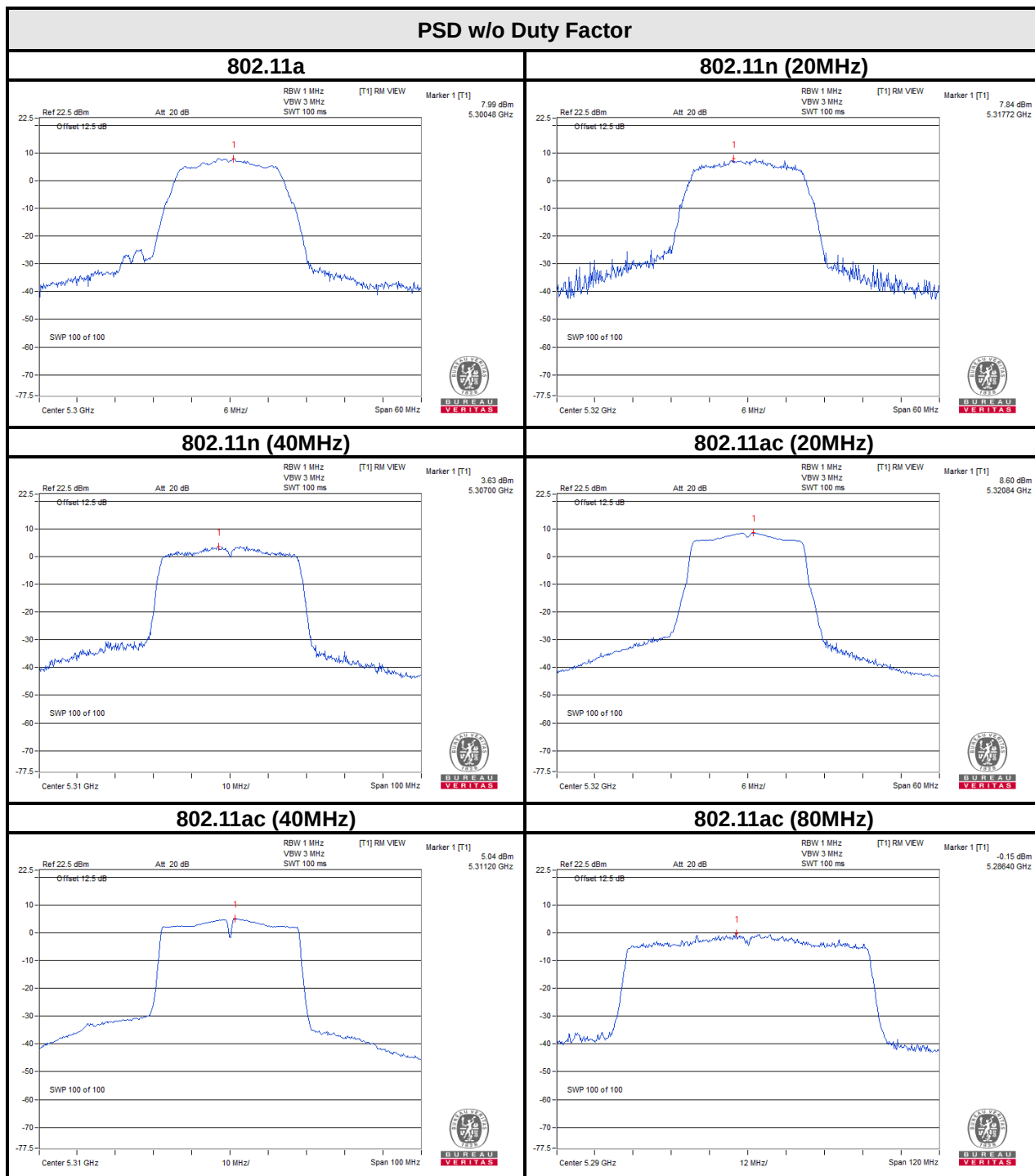
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
155	5775	-4.61	-2.39	1.18	-1.21	30	PASS

For 5180~5240MHz

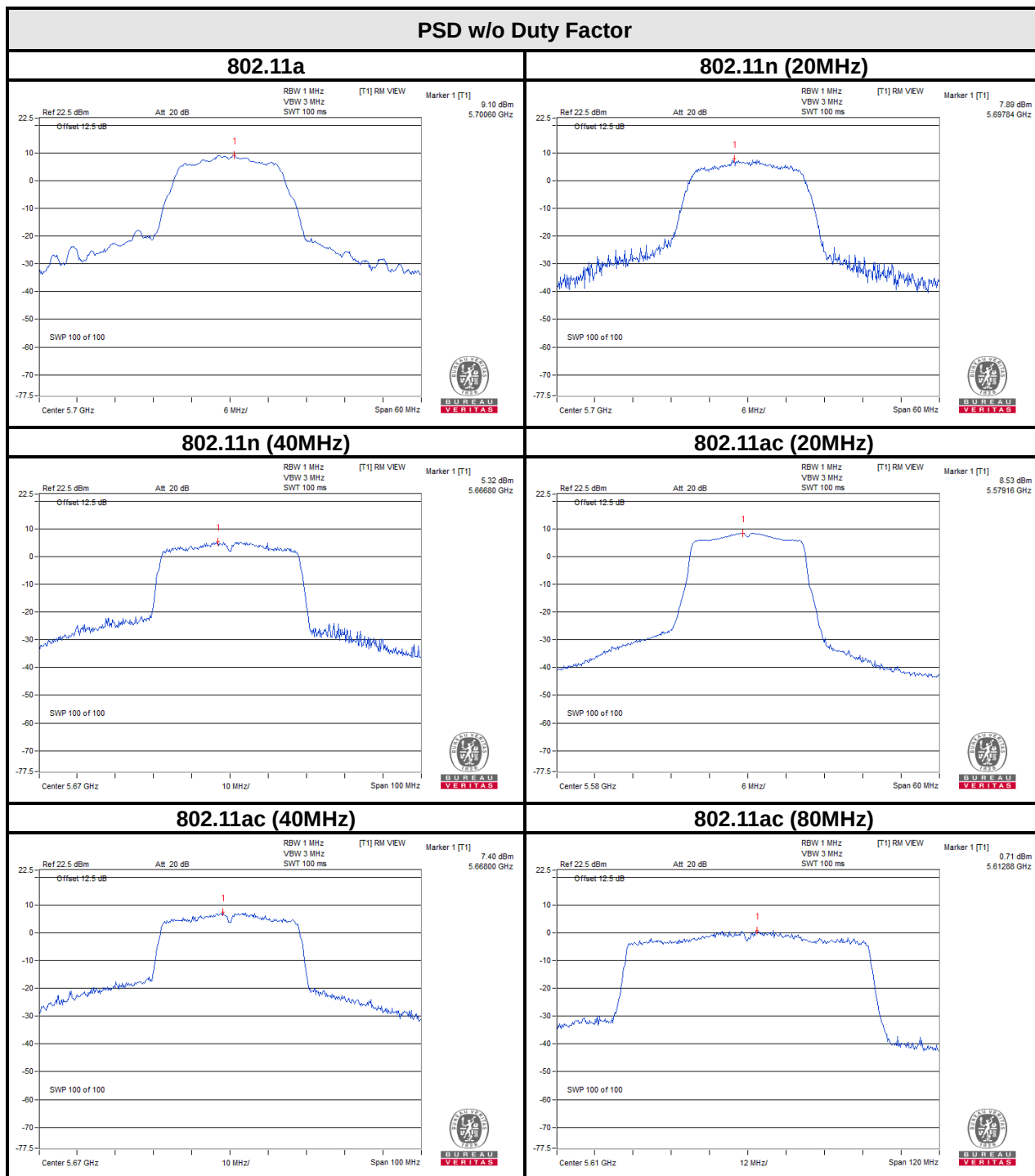
PSD w/o Duty Factor



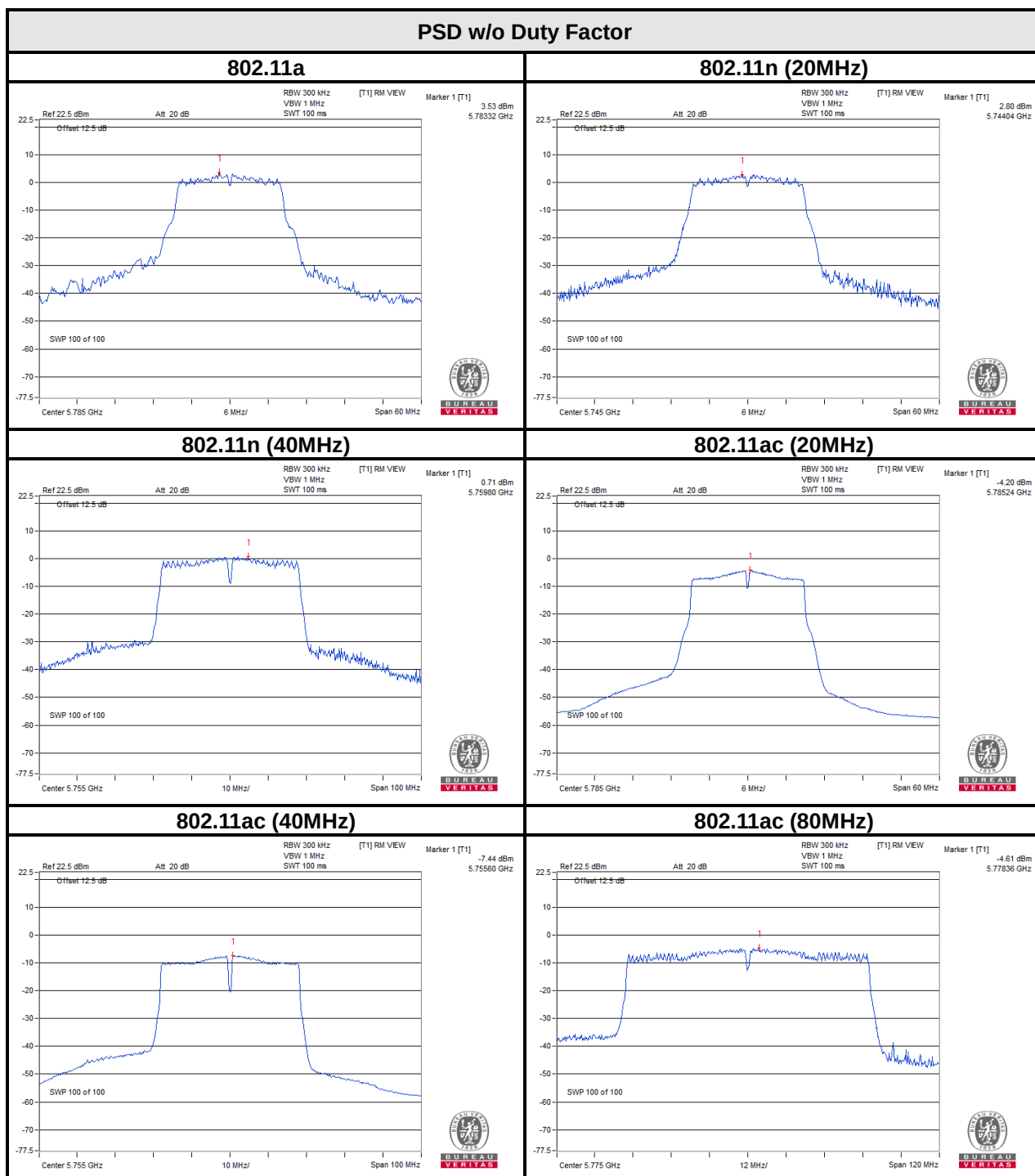
For 5260~5320MHz



For 5470 ~ 5725MHz



For 5745~5805MHz





Test Report No.: RF200116W006-3

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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

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

---END---