

FCC TEST REPORT

(Part 15, Subpart E)

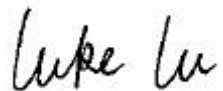
Applicant:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States

Manufacturer or Supplier:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States
Product:	Mobile Computer
Brand Name:	Honeywell
Model Name:	CT45-L1N-G
FCC ID:	HD5-CT45L1NG
Date of tests:	May. 16, 2021 ~ Aug. 31, 2021

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 Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Sep. 01, 2021	 Date: Sep. 01, 2021

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 your 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	15
2.4 DESCRIPTION OF SUPPORT UNITS	17
2.4.1 CONFIGURATION OF SYSTEM UNDER TEST	18
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	18
3 TEST TYPES AND RESULTS	19
3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	19
3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	19
3.1.2 LIMITS OF UNWANTED EMISSION	19
3.1.3 TEST INSTRUMENTS	20
3.1.4 TEST PROCEDURES	21
3.1.5 DEVIATION FROM TEST STANDARD	21
3.1.6 TEST SETUP	22
3.1.7 EUT OPERATING CONDITION	23
3.1.8 TEST RESULTS	24
3.2 OUT OF BAND EMISSION MEASUREMENT	105
3.2.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT	105
3.2.2 TEST INSTRUMENTS	106
3.2.3 TEST PROCEDURES	106
3.2.4 DEVIATION FROM TEST STANDARD	106
3.2.5 TEST SETUP	106
3.2.6 EUT OPERATING CONDITION	106
3.2.7 TEST RESULTS	107
3.3 AUTOMATICALLY DISCONTINUE TRANSMISSION	119
3.3.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	119
3.3.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION	119
3.4 CONDUCTED EMISSION MEASUREMENT	120

3.4.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	120
3.4.2	TEST INSTRUMENTS.....	120
3.4.3	TEST PROCEDURES	120
3.4.4	DEVIATION FROM TEST STANDARD	121
3.4.5	TEST SETUP	121
3.4.6	EUT OPERATING CONDITIONS	121
3.4.7	TEST RESULTS	122
3.5	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	124
3.5.1	LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	124
3.5.2	TEST SETUP	125
3.5.3	TEST INSTRUMENTS.....	125
3.5.4	TEST PROCEDURE.....	126
3.5.5	DEVIATION FROM TEST STANDARD	128
3.5.6	EUT OPERATING CONDITIONS	128
3.5.7	TEST RESULTS	129
3.6	MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT.....	147
3.6.1	LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT	147
3.6.2	TEST SETUP	147
3.6.3	TEST INSTRUMENTS.....	147
3.6.4	TEST PROCEDURES	148
3.6.5	DEVIATION FROM TEST STANDARD	148
3.6.6	EUT OPERATING CONDITIONS	148
3.6.7	TEST RESULTS	149
4	PHOTOGRAPHS OF THE TEST CONFIGURATION	158
5	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	159

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21080006RF14	Original release	Sep. 01, 2021
W7L-P21040030RF14	Based on the original report W7L-P21080006RF14 Changed LCM to screen HD(1280*720), removing a 2nd BLE and Supercap, Increase the RTC battery, Detail refer to Product Equality Declaration	Sep. 09, 2021

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(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
15.407(c)	Automatically Discontinue Transmission	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	$\pm 2.70\text{dB}$
Radiated emissions (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Power Spectral Density	$\pm 0.85\text{ dB}$

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	Mobile Computer
BRAND NAME	Honeywell
MODEL NAME	CT45-L1N-G
NOMINAL VOLTAGE	3.85Vdc (Lithium-ion cell, battery)
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 390.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n, 802.11ac (20MHz) 2 for 802.11n, 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n, 802.11ac (20MHz) 2 for 802.11n, 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5720MHz: 12 for 802.11a, 802.11n, 802.11ac(20MHz) 6 for 802.11n, 802.11ac (40MHz) 3 for 802.11ac (80MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n, 802.11ac (20MHz) 3 for 802.11n, 802.11ac (40MHz) 2 for 802.11ac (80MHz)
AVERAGE POWER	40.18mW for 5180 ~ 5240MHz 39.99mW for 5260 ~ 5320MHz 48.98mW for 5500 ~ 5720MHz 56.49mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA Antenna
ANTENNA GAIN	0.72 dBi for 5180 ~ 5240MHz 0.62 dBi for 5260 ~ 5320MHz 0.52 dBi for 5500 ~ 5720MHz 0.78 dBi for 5745 ~ 5825MHz
HW VERSION	V1.0
SW VERSION	OS.11.002-HON.11.002
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: unshielded without ferrite, 1.25 meter Earphone cable: unshielded without ferrite, 1.27 meter

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- This product includes the following six SKU which hardware is exactly same, the difference is described as following, Sample 1 was full test, sample 2 verify the worst case, check worst case Radiated emission:

SAMPLE	EUT CONFIGURATION INFORMATION
1	SKU ID:CT45-L1N-27D120G ,Assembled Scanner Imager: 7-S0703
2	SKU ID:CT45-L1N-28D120G ,Assembled Scanner Imager: 8 - N6803/S0803
3	SKU ID: CT45-L1N-28D120T, Assembled with Scanner: 8 - N6803/S0803 for Turkey Only
4	SKU ID: CT45-L1N-27D120T, Assembled with Scanner: 7-S0703 for Turkey Only
5	SKU ID:CT45-L1N-28D220C, Assembled with Scanner: 8 - N6803/S0803 for China Only with Android non-GMS
6	SKU ID:CT45-L1N-27D220C, Assembled with Scanner: 7-S0703 for China Only with Android non-GMS

- 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

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

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Honeywell	CT50-BTSC	Capacity: 3.85vdc 4020mAh
AC Adapter	HONOR	ADS-12B-06 05010E	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable	Honeywell	CT40-SN	Shielded, 1.25meter
Earphone	VIVO	N/A	Shielded, 1.27meter
LCD Panel	TZD	TS5099	5.0" HD(1280*720)

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 ~ 5720MHz**

12 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	144	5720 MHz

6 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	142	5710 MHz

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

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

FOR 5745 ~ 5825MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
144	5720MHz	157	5785 MHz
149	5745 MHz	165	5825 MHz
153	5765 MHz		

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
138	5690MHz	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 (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	802.11n (20MHz)	5180-5240	36 to 48	48	OFDM	MCS0

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 (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 (80MHz)		58	58	OFDM	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140, 144	OFDM	MCS0
A	802.11n (40MHz)		102 to 142	102, 110, 134, 142	OFDM	MCS0
A	802.11ac (80MHz)		106 to 138	106, 138	OFDM	MCS0
A	802.11a	5745-5825	144 to 165	144, 149, 157,165	OFDM	6.0
A	802.11n (20MHz)		144 to 165	144, 149, 157,165	OFDM	MCS0
A	802.11ac (40MHz)		142 to 159	142, 151, 159	OFDM	MCS0
A	802.11ac (80MHz)		138,155	138, 155	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	802.11n (40MHz)	5180-5240	36 to 48	48	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, 48	36 to 48	6.0
A	802.11n (20MHz)		36 to 48	36, 48	36 to 48	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	38 to 46	MCS0
A	802.11ac (20MHz)		36 to 48	36, 48	36 to 48	MCS0
A	802.11ac (40MHz)		38 to 46	38, 46	38 to 46	MCS0
A	802.11ac (80MHz)		42	42	42	MCS0
A	802.11a	5260-5320	52 to 64	52, 64	52 to 64	6.0
A	802.11n (20MHz)		52 to 64	52, 64	52 to 64	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	54 to 62	MCS0
A	802.11ac (20MHz)		52 to 64	52, 64	52 to 64	MCS0
A	802.11ac (40MHz)		54 to 62	54, 62	54 to 62	MCS0
A	802.11ac (80MHz)		58	58	58	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140, 144	100 to 144	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140, 144	100 to 144	MCS0
A	802.11n (40MHz)		102 to 142	102, 110, 134, 142	102 to 142	MCS0
A	802.11ac (20MHz)		100 to 144	100, 116, 140, 144	100 to 144	MCS0
A	802.11ac (40MHz)		102 to 142	102, 110, 134, 142	102 to 142	MCS0
A	802.11ac (80MHz)		106 to 138	106, 138	106 to 138	MCS0
EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5745-5825	144 to 165	144, 149, 157,165	OFDM	6.0
A	802.11n (20MHz)		144 to 165	144, 149, 157,165	OFDM	MCS0
A	802.11n (40MHz)		142 to 159	142, 151, 159	OFDM	MCS0
A	802.11ac (20MHz)		144 to 165	144, 149, 157,165	OFDM	MCS0



A	802.11ac (40MHz)		142 to 159	142, 151, 159	OFDM	MCS0
A	802.11ac (80MHz)		138,155	138, 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	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140, 144	OFDM	MCS0
A	802.11n (40MHz)		102 to 142	102, 110, 134, 142	OFDM	MCS0
A	802.11ac (20MHz)		100 to 144	100, 116, 140, 144	OFDM	MCS0
A	802.11ac (40MHz)		102 to 142	102, 110, 134, 142	OFDM	MCS0
A	802.11ac (80MHz)		106 to 138	106, 138	OFDM	MCS0
A	802.11a	5745-5825	144 to 165	144, 149, 157,165	OFDM	6.0
A	802.11n (20MHz)		144 to 165	144, 149, 157,165	OFDM	MCS0
A	802.11n (40MHz)		142 to 159	142, 151, 159	OFDM	MCS0
A	802.11ac (20MHz)		144 to 165	144, 149, 157,165	OFDM	MCS0
A	802.11ac (40MHz)		142 to 159	142, 151, 159	OFDM	MCS0
A	802.11ac (80MHz)		138,155	138, 155	OFDM	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 3.85V By Battery	Star Le
RE≥1G	23deg. C, 70%RH	DC 3.85V By Battery	Star Le
PLC	25deg. C, 52%RH	DC 3.85V By Battery	Jimmy Liu
APCM	25deg. C, 60%RH	DC 3.85V By Battery	Kevin Zhang

2.3 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = $2.060/2.119=0.972$, Duty factor = $10 * \log(1/ 0.972) = 0.123$

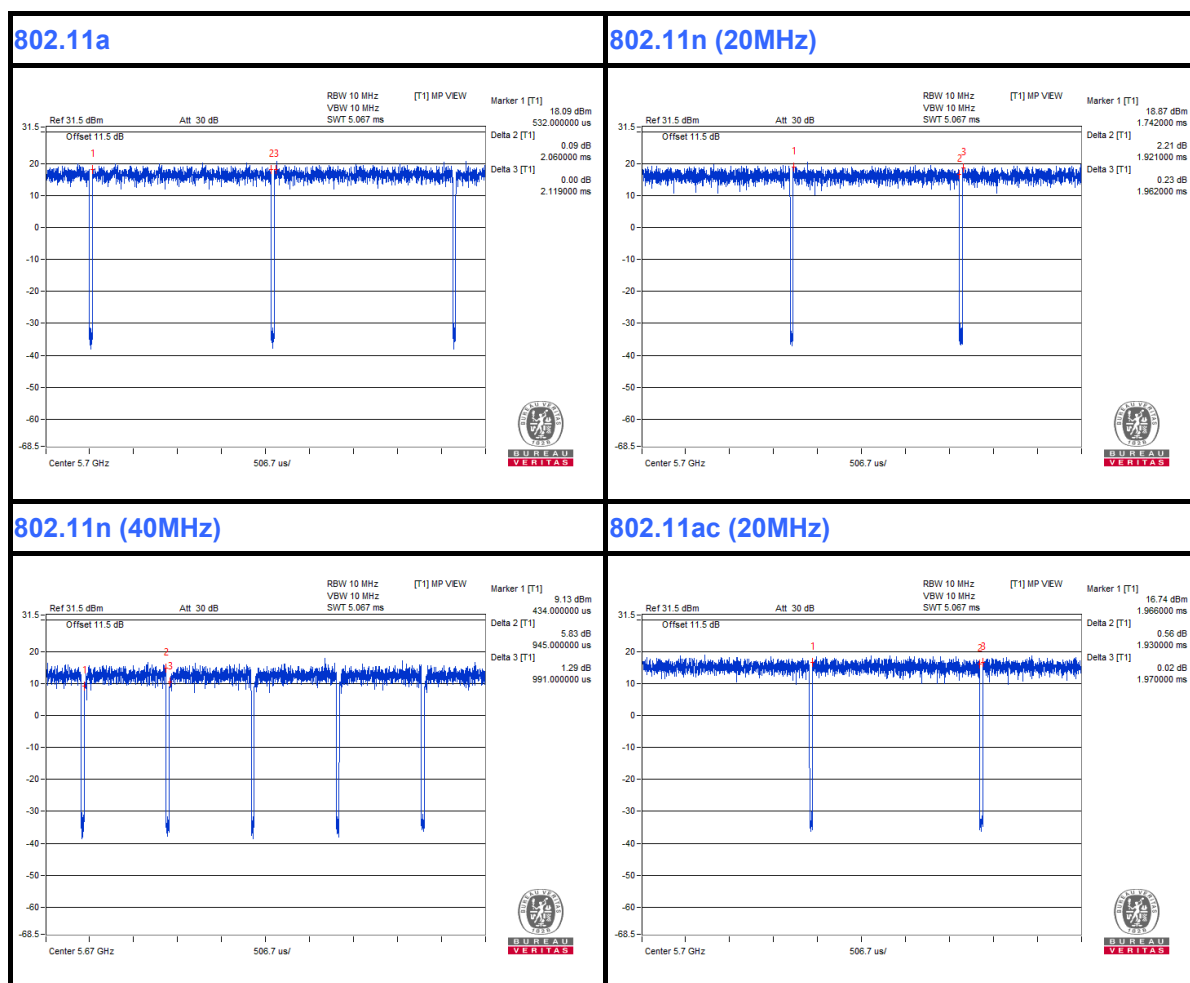
802.11n (20MHz): Duty cycle = $1.921/1.962=0.979$, Duty factor = $10 * \log(1/ 0.979)= 0.092$

802.11n (40MHz): Duty cycle = $0.945/0.991=0.954$ Duty factor = $10 * \log(1/ 0.954)=0.205$

802.11ac (20MHz): Duty cycle = $1.930/1.970 =0.980=98\%$, Duty factor shall be not considered

802.11ac (40MHz): Duty cycle = $0.949/0.993=0.956$, Duty factor = $10 * \log(1/ 0.956)=0.195$

802.11ac (80MHz): Duty cycle = $0.459/0.502=0.914$, Duty factor = $10 * \log(1/ 0.914)=.0391$



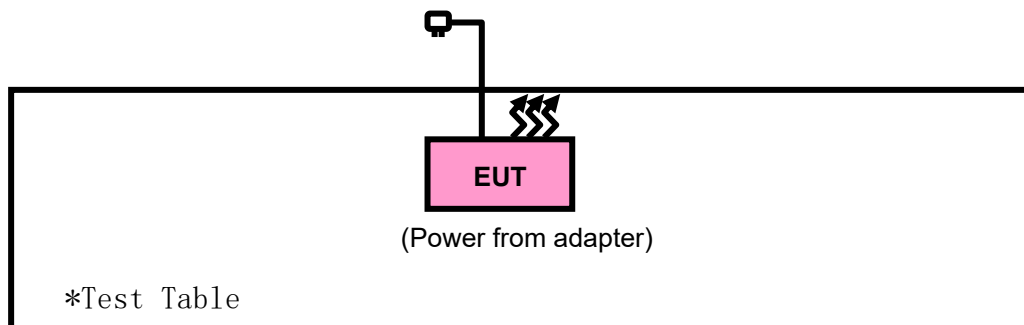
2.4 DESCRIPTION OF SUPPORT UNITS

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	Kikusui/JP	PMX18-5A	0000001	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 : 68.2
	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	May. 19,20	May. 18,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna	ETS-LINDGREN	3117	00168728	Apr. 02,21	Apr. 01,22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 27, 19	Aug. 26, 20
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 26, 20	Aug. 25, 21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
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. 04,20	Jun. 03,21
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 23,20	Apr. 22,21
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 22,21	Apr. 21,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 03,20	Jun. 02,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 04,20	Jun. 03,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 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:

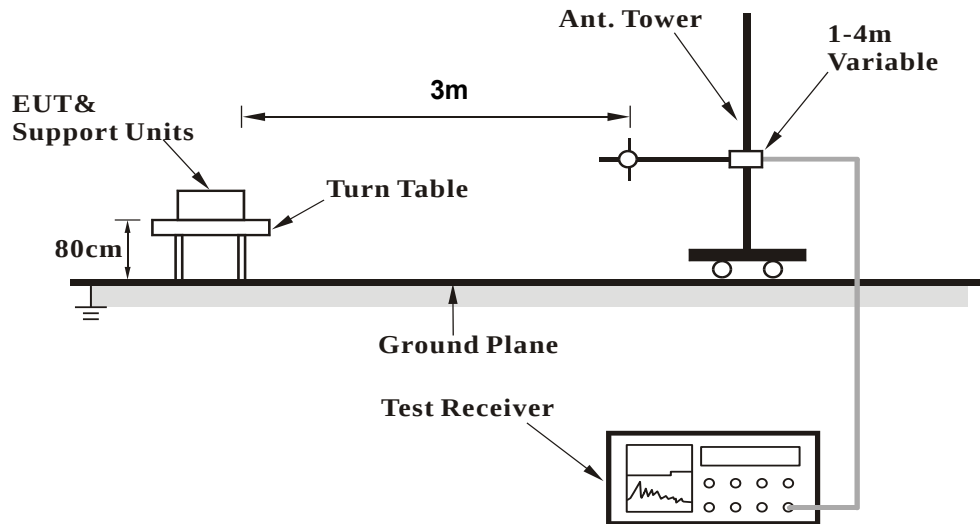
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

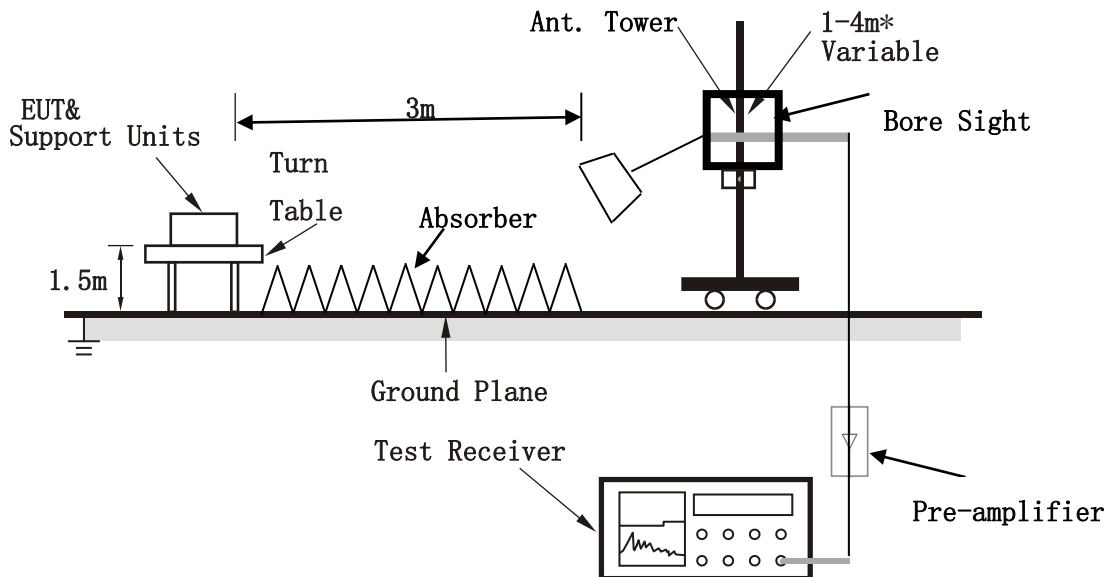
No deviation.

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.: W7L- P21040030RF14

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:

Band 2

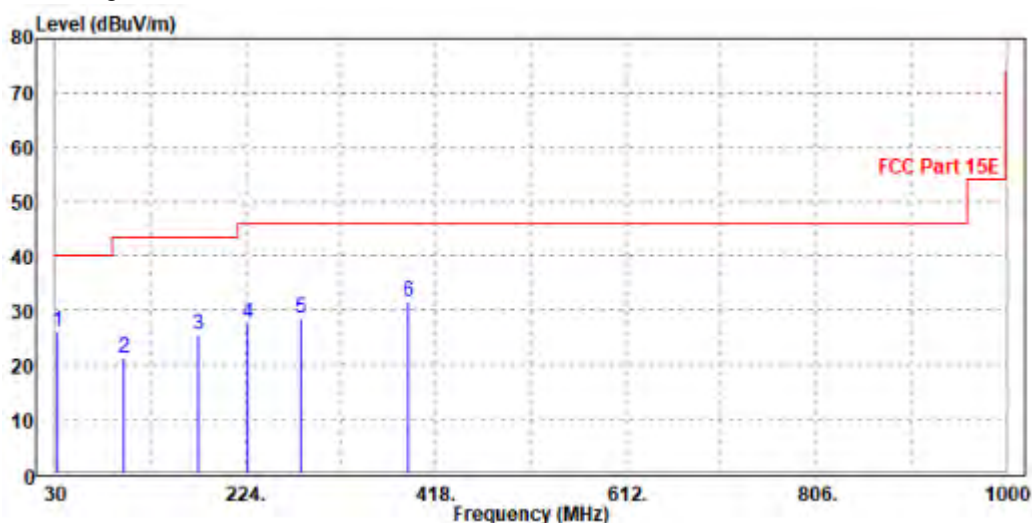
802.11n (20MHz)

CHANNEL	TX Channel 52	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
31.94	26.05	42.74	40	-13.95	19.93	0.8	37.42	100	0	QP
100.81	21.19	47.99	43.5	-22.31	9.04	1.32	37.16	100	0	QP
176.47	25.64	50.57	43.5	-17.86	10.04	1.69	36.66	100	0	QP
225.94	27.53	50.39	46	-18.47	11.82	1.92	36.6	100	0	QP
281.23	28.58	49.58	46	-17.42	13.56	2.15	36.71	100	0	QP
389.87	31.49	49.25	46	-14.51	16.48	2.58	36.82	100	0	QP

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.

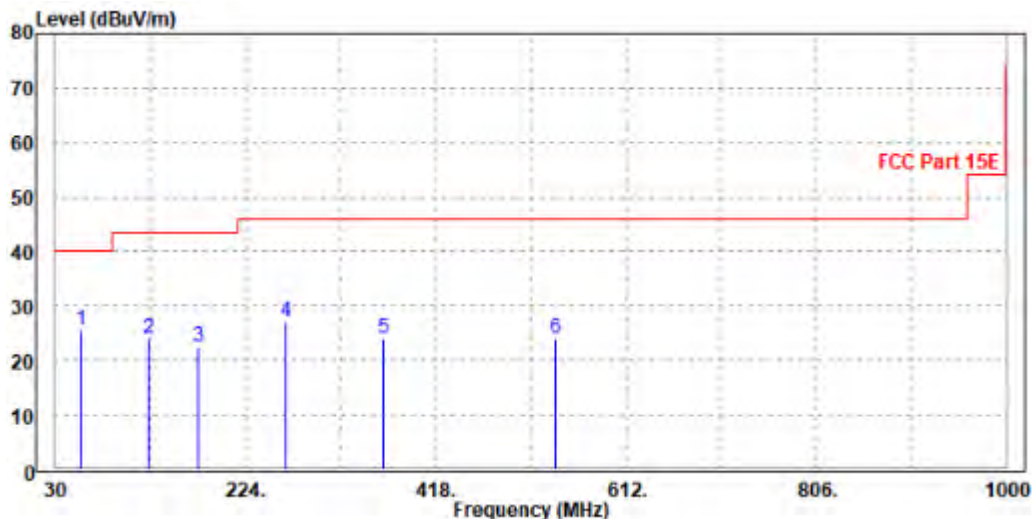


CHANNEL	Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
56.19	25.54	54.13	40	-14.46	7.7	1.04	37.33	200	0	QP
125.06	24.08	52.25	43.5	-19.42	7.4	1.47	37.04	200	0	QP
176.47	22.6	47.53	43.5	-20.9	10.04	1.69	36.66	200	0	QP
264.74	26.99	48.05	46	-19.01	13.53	2.09	36.68	200	0	QP
365.62	24.17	42.79	46	-21.83	15.7	2.48	36.8	200	0	QP
540.22	24.08	38.69	46	-21.92	19.48	3.06	37.15	200	0	QP

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	56.78	59.09	74	-17.22	34.52	9.52	46.35	140	280	Peak
5150	50.49	52.8	54	-3.51	34.52	9.52	46.35	140	280	Average
5180	103.26	105.49	-	-	34.54	9.58	46.35	140	280	Peak
5180	94.45	96.68	-	-	34.54	9.58	46.35	140	280	Average
5350	53.49	55.17	74	-20.51	34.68	9.94	46.3	140	280	Peak
5350	47.47	49.15	54	-6.53	34.68	9.94	46.3	140	280	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	56.06	58.29	74	-17.94	34.6	9.52	46.35	100	160	Peak
5150	49.76	51.99	54	-4.24	34.6	9.52	46.35	100	160	Average
5180	96.01	98.18	-	-	34.6	9.58	46.35	100	160	Peak
5180	88.86	91.03	-	-	34.6	9.58	46.35	100	160	Average
5350	53.51	55.27	74	-20.49	34.6	9.94	46.3	100	160	Peak
5350	48.01	49.77	54	-5.99	34.6	9.94	46.3	100	160	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	56.29	58.6	74	-17.71	34.52	9.52	46.35	140	280	Peak
5150	50.15	52.46	54	-3.85	34.52	9.52	46.35	140	280	Average
5200	107.35	109.51	-	-	34.56	9.62	46.34	140	280	Peak
5200	99.24	101.4	-	-	34.56	9.62	46.34	140	280	Average
5350	56.55	58.23	74	-17.45	34.68	9.94	46.3	140	280	Peak
5350	48.68	50.36	54	-5.32	34.68	9.94	46.3	140	280	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	56.2	58.43	74	-17.8	34.6	9.52	46.35	100	160	Peak
5150	49.54	51.77	54	-4.46	34.6	9.52	46.35	100	160	Average
5200	102.9	105.02	-	-	34.6	9.62	46.34	100	160	Peak
5200	93.46	95.58	-	-	34.6	9.62	46.34	100	160	Average
5350	56.67	58.43	74	-17.33	34.6	9.94	46.3	100	160	Peak
5350	48.63	50.39	54	-5.37	34.6	9.94	46.3	100	160	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	57.25	59.56	74	-16.75	34.52	9.52	46.35	160	280	Peak
5150	49.9	52.21	54	-4.1	34.52	9.52	46.35	160	280	Average
5240	109	111.03	-	-	34.59	9.71	46.33	160	280	Peak
5240	101.24	103.27	-	-	34.59	9.71	46.33	160	280	Average
5350	56.32	58	74	-17.68	34.68	9.94	46.3	160	280	Peak
5350	48.27	49.95	54	-5.73	34.68	9.94	46.3	160	280	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	55.6	57.83	74	-18.4	34.6	9.52	46.35	100	160	Peak
5150	49.29	51.52	54	-4.71	34.6	9.52	46.35	100	160	Average
5240	102.8	104.82	-	-	34.6	9.71	46.33	100	160	Peak
5240	93.85	95.87	-	-	34.6	9.71	46.33	100	160	Average
5350	56.13	57.89	74	-17.87	34.6	9.94	46.3	100	160	Peak
5350	48.46	50.22	54	-5.54	34.6	9.94	46.3	100	160	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	57.84	60.15	74	-16.16	34.52	9.52	46.35	140	280	Peak
5150	50.25	52.56	54	-3.75	34.52	9.52	46.35	140	280	Average
5180	101.07	103.3	-	-	34.54	9.58	46.35	140	280	Peak
5180	91.62	93.85	-	-	34.54	9.58	46.35	140	280	Average
5350	53.21	54.89	74	-20.79	34.68	9.94	46.3	140	280	Peak
5350	47.37	49.05	54	-6.63	34.68	9.94	46.3	140	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.88	57.11	74	-19.12	34.6	9.52	46.35	105	160	Peak
5150	49.91	52.14	54	-4.09	34.6	9.52	46.35	105	160	Average
5180	95.47	97.64	-	-	34.6	9.58	46.35	105	160	Peak
5180	88.23	90.4	-	-	34.6	9.58	46.35	105	160	Average
5350	56.49	58.25	74	-17.51	34.6	9.94	46.3	105	160	Peak
5350	46.81	48.57	54	-7.19	34.6	9.94	46.3	105	160	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	55.16	57.47	74	-18.84	34.52	9.52	46.35	160	280	Peak
5150	49.13	51.44	54	-4.87	34.52	9.52	46.35	160	280	Average
5200	106.03	108.19	-	-	34.56	9.62	46.34	160	280	Peak
5200	98.72	100.88	-	-	34.56	9.62	46.34	160	280	Average
5350	53.43	55.11	74	-20.57	34.68	9.94	46.3	160	280	Peak
5350	47.66	49.34	54	-6.34	34.68	9.94	46.3	160	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.18	56.41	74	-19.82	34.6	9.52	46.35	100	160	Peak
5150	48.53	50.76	54	-5.47	34.6	9.52	46.35	100	160	Average
5200	101.78	103.9	-	-	34.6	9.62	46.34	100	160	Peak
5200	92.98	95.1	-	-	34.6	9.62	46.34	100	160	Average
5350	53.61	55.37	74	-20.39	34.6	9.94	46.3	100	160	Peak
5350	46.85	48.61	54	-7.15	34.6	9.94	46.3	100	160	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	55.28	57.59	74	-18.72	34.52	9.52	46.35	160	280	Peak
5150	48.8	51.11	54	-5.2	34.52	9.52	46.35	160	280	Average
5240	108.81	110.84	-	-	34.59	9.71	46.33	160	280	Peak
5240	101.2	103.23	-	-	34.59	9.71	46.33	160	280	Average
5350	54.61	56.29	74	-19.39	34.68	9.94	46.3	160	280	Peak
5350	47.51	49.19	54	-6.49	34.68	9.94	46.3	160	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.77	57	74	-19.23	34.6	9.52	46.35	100	160	Peak
5150	49.19	51.42	54	-4.81	34.6	9.52	46.35	100	160	Average
5240	102.54	104.56	-	-	34.6	9.71	46.33	100	160	Peak
5240	95.2	97.22	-	-	34.6	9.71	46.33	100	160	Average
5350	55.92	57.68	74	-18.08	34.6	9.94	46.3	100	160	Peak
5350	47.71	49.47	54	-6.29	34.6	9.94	46.3	100	160	Average

REMARKS:

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



802.11n (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
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	57.17	59.48	74	-16.83	34.52	9.52	46.35	115	275	Peak
5150	50.99	53.3	54	-3.01	34.52	9.52	46.35	115	275	Average
5190	92.39	94.58	-	-	34.55	9.6	46.34	115	275	Peak
5190	85.98	88.17	-	-	34.55	9.6	46.34	115	275	Average
5350	54.96	56.64	74	-19.04	34.68	9.94	46.3	115	275	Peak
5350	48.53	50.21	54	-5.47	34.68	9.94	46.3	115	275	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	56.51	58.74	74	-17.49	34.6	9.52	46.35	100	170	Peak
5150	48.05	50.28	54	-5.95	34.6	9.52	46.35	100	170	Average
5190	91.89	94.03	-	-	34.6	9.6	46.34	100	170	Peak
5190	85.69	87.83	-	-	34.6	9.6	46.34	100	170	Average
5350	53.26	55.02	74	-20.74	34.6	9.94	46.3	100	170	Peak
5350	46.48	48.24	54	-7.52	34.6	9.94	46.3	100	170	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5190MHz: Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	55.7	58.01	74	-18.3	34.52	9.52	46.35	140	280	Peak
5150	50.8	53.11	54	-3.2	34.52	9.52	46.35	140	280	Average
5230	104.5	106.56	–	–	34.58	9.69	46.33	140	280	Peak
5230	97.67	99.73	–	–	34.58	9.69	46.33	140	280	Average
5350	53.85	55.53	74	-20.15	34.68	9.94	46.3	140	280	Peak
5350	48.36	50.04	54	-5.64	34.68	9.94	46.3	140	280	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	56.37	58.6	74	-17.63	34.6	9.52	46.35	100	160	Peak
5150	50.18	52.41	54	-3.82	34.6	9.52	46.35	100	160	Average
5230	98.81	100.85	–	–	34.6	9.69	46.33	100	160	Peak
5230	91.3	93.34	–	–	34.6	9.69	46.33	100	160	Average
5350	52.41	54.17	74	-21.59	34.6	9.94	46.3	100	160	Peak
5350	47.47	49.23	54	-6.53	34.6	9.94	46.3	100	160	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	56.04	58.35	74	-17.96	34.52	9.52	46.35	160	280	Peak
5150	50.95	53.26	54	-3.05	34.52	9.52	46.35	160	280	Average
5180	102.24	104.47	-	-	34.54	9.58	46.35	160	280	Peak
5180	93.76	95.99	-	-	34.54	9.58	46.35	160	280	Average
5350	55.44	57.12	74	-18.56	34.68	9.94	46.3	160	280	Peak
5350	48.08	49.76	54	-5.92	34.68	9.94	46.3	160	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.97	57.2	74	-19.03	34.6	9.52	46.35	110	160	Peak
5150	49.2	51.43	54	-4.8	34.6	9.52	46.35	110	160	Average
5180	96.31	98.48	-	-	34.6	9.58	46.35	110	160	Peak
5180	87.01	89.18	-	-	34.6	9.58	46.35	110	160	Average
5350	53.37	55.13	74	-20.63	34.6	9.94	46.3	110	160	Peak
5350	48.38	50.14	54	-5.62	34.6	9.94	46.3	110	160	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	54.55	56.86	74	-19.45	34.52	9.52	46.35	160	280	Peak
5150	49.52	51.83	54	-4.48	34.52	9.52	46.35	160	280	Average
5200	105.72	107.88	-	-	34.56	9.62	46.34	160	280	Peak
5200	98.55	100.71	-	-	34.56	9.62	46.34	160	280	Average
5350	54.09	55.77	74	-19.91	34.68	9.94	46.3	160	280	Peak
5350	47.96	49.64	54	-6.04	34.68	9.94	46.3	160	280	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	55.17	57.4	74	-18.83	34.6	9.52	46.35	105	160	Peak
5150	48.78	51.01	54	-5.22	34.6	9.52	46.35	105	160	Average
5200	101.51	103.63	-	-	34.6	9.62	46.34	105	160	Peak
5200	94.34	96.46	-	-	34.6	9.62	46.34	105	160	Average
5350	54.29	56.05	74	-19.71	34.6	9.94	46.3	105	160	Peak
5350	47.63	49.39	54	-6.37	34.6	9.94	46.3	105	160	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	54.36	56.67	74	-19.64	34.52	9.52	46.35	160	280	Peak
5150	48.82	51.13	54	-5.18	34.52	9.52	46.35	160	280	Average
5240	107.9	109.93	-	-	34.59	9.71	46.33	160	280	Peak
5240	100.56	102.59	-	-	34.59	9.71	46.33	160	280	Average
5350	53.81	55.49	74	-20.19	34.68	9.94	46.3	160	280	Peak
5350	47.25	48.93	54	-6.75	34.68	9.94	46.3	160	280	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	53.81	56.04	74	-20.19	34.6	9.52	46.35	105	160	Peak
5150	48.7	50.93	54	-5.3	34.6	9.52	46.35	105	160	Average
5240	103.1	105.12	-	-	34.6	9.71	46.33	105	160	Peak
5240	96.15	98.17	-	-	34.6	9.71	46.33	105	160	Average
5350	53.59	55.35	74	-20.41	34.6	9.94	46.3	105	160	Peak
5350	47.2	48.96	54	-6.8	34.6	9.94	46.3	105	160	Average

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 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	56.48	58.79	74	-17.52	34.52	9.52	46.35	160	280	Peak
5150	50.7	53.01	54	-3.3	34.52	9.52	46.35	160	280	Average
5190	93.9	96.09	-	-	34.55	9.6	46.34	160	280	Peak
5190	86.01	88.2	-	-	34.55	9.6	46.34	160	280	Average
5350	53.46	55.14	74	-20.54	34.68	9.94	46.3	160	280	Peak
5350	46.7	48.38	54	-7.3	34.68	9.94	46.3	160	280	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	53.73	55.96	74	-20.27	34.6	9.52	46.35	105	160	Peak
5150	49.82	52.05	54	-4.18	34.6	9.52	46.35	105	160	Average
5190	87.89	90.03	-	-	34.6	9.6	46.34	105	160	Peak
5190	82.29	84.43	-	-	34.6	9.6	46.34	105	160	Average
5350	54	55.76	74	-20	34.6	9.94	46.3	105	160	Peak
5350	47.9	49.66	54	-6.1	34.6	9.94	46.3	105	160	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	56.83	59.14	74	-17.17	34.52	9.52	46.35	160	280	Peak
5150	50.49	52.8	54	-3.51	34.52	9.52	46.35	160	280	Average
5230	104.36	106.42	-	-	34.58	9.69	46.33	160	280	Peak
5230	98.49	100.55	-	-	34.58	9.69	46.33	160	280	Average
5350	53.4	55.08	74	-20.6	34.68	9.94	46.3	160	280	Peak
5350	48.76	50.44	54	-5.24	34.68	9.94	46.3	160	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.85	57.08	74	-19.15	34.6	9.52	46.35	105	160	Peak
5150	49	51.23	54	-5	34.6	9.52	46.35	105	160	Average
5230	98.83	100.87	-	-	34.6	9.69	46.33	105	160	Peak
5230	92.74	94.78	-	-	34.6	9.69	46.33	105	160	Average
5350	54.05	55.81	74	-19.95	34.6	9.94	46.3	105	160	Peak
5350	47.75	49.51	54	-6.25	34.6	9.94	46.3	105	160	Average

REMARKS:

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



802.11ac (80MHz)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK)
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	55.23	57.54	74	-18.77	34.52	9.52	46.35	160	280	Peak
5150	50.98	53.29	54	-3.02	34.52	9.52	46.35	160	280	Average
5210	89.86	91.99	-	-	34.57	9.64	46.34	160	280	Peak
5210	83	85.13	-	-	34.57	9.64	46.34	160	280	Peak
5350	52.36	54.04	74	-21.64	34.68	9.94	46.3	160	280	Peak
5350	47.68	49.36	54	-6.32	34.68	9.94	46.3	160	280	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	53.14	55.37	74	-20.86	34.6	9.52	46.35	105	160	Peak
5150	49.64	51.87	54	-4.36	34.6	9.52	46.35	105	160	Average
5210	83.5	85.6	-	-	34.6	9.64	46.34	105	160	Peak
5210	77.65	79.75	-	-	34.6	9.64	46.34	105	160	Average
5350	50.4	52.16	74	-23.6	34.6	9.94	46.3	105	160	Peak
5350	46.45	48.21	54	-7.55	34.6	9.94	46.3	105	160	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	54.34	56.65	74	-19.66	34.52	9.52	46.35	155	275	Peak
5150	48.81	51.12	54	-5.19	34.52	9.52	46.35	155	275	Average
5260	107.29	109.25	-	-	34.61	9.75	46.32	155	275	Peak
5260	98.33	100.29	-	-	34.61	9.75	46.32	155	275	Average
5350	52.35	54.03	74	-21.65	34.68	9.94	46.3	155	275	Peak
5350	48.02	49.7	54	-5.98	34.68	9.94	46.3	155	275	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	53.53	55.76	74	-20.47	34.6	9.52	46.35	100	160	Peak
5150	48.39	50.62	54	-5.61	34.6	9.52	46.35	100	160	Average
5260	100.73	102.7	-	-	34.6	9.75	46.32	100	160	Peak
5260	91.21	93.18	-	-	34.6	9.75	46.32	100	160	Average
5350	52.73	54.49	74	-21.27	34.6	9.94	46.3	100	160	Peak
5350	47.61	49.37	54	-6.39	34.6	9.94	46.3	100	160	Average

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
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	55.42	57.73	74	-18.58	34.52	9.52	46.35	160	275	Peak
5150	49.44	51.75	54	-4.56	34.52	9.52	46.35	160	275	Average
5300	106.56	108.4	-	-	34.64	9.83	46.31	160	275	Peak
5300	98.9	100.74	-	-	34.64	9.83	46.31	160	275	Average
5350	54.2	55.88	74	-19.8	34.68	9.94	46.3	160	275	Peak
5350	48.22	49.9	54	-5.78	34.68	9.94	46.3	160	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.35	56.58	74	-19.65	34.6	9.52	46.35	100	160	Peak
5150	49.27	51.5	54	-4.73	34.6	9.52	46.35	100	160	Average
5300	99.19	101.07	-	-	34.6	9.83	46.31	100	160	Peak
5300	92.79	94.67	-	-	34.6	9.83	46.31	100	160	Average
5350	53.82	55.58	74	-20.18	34.6	9.94	46.3	100	160	Peak
5350	46.61	48.37	54	-7.39	34.6	9.94	46.3	100	160	Average

REMARKS:

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

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
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	56.31	74	-20	34.52	9.52	46.35	140	275	Peak
5150	48.11	50.42	54	-5.89	34.52	9.52	46.35	140	275	Average
5320	104.1	105.86	–	–	34.66	9.88	46.3	140	275	Peak
5320	96.34	98.1	–	–	34.66	9.88	46.3	140	275	Average
5350	55.57	57.25	74	-18.43	34.68	9.94	46.3	140	275	Peak
5350	48.18	49.86	54	-5.82	34.68	9.94	46.3	140	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.42	56.65	74	-19.58	34.6	9.52	46.35	100	160	Peak
5150	48.37	50.6	54	-5.63	34.6	9.52	46.35	100	160	Average
5320	96.88	98.7	–	–	34.6	9.88	46.3	100	160	Peak
5320	89.08	90.9	–	–	34.6	9.88	46.3	100	160	Average
5350	53.57	55.33	74	-20.43	34.6	9.94	46.3	100	160	Peak
5350	47.25	49.01	54	-6.75	34.6	9.94	46.3	100	160	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	53.74	56.05	74	-20.26	34.52	9.52	46.35	175	275	Peak
5150	48.61	50.92	54	-5.39	34.52	9.52	46.35	175	275	Average
5260	109	110.96	-	-	34.61	9.75	46.32	175	275	Peak
5260	102.1	104.06	-	-	34.61	9.75	46.32	175	275	Average
5350	53.75	55.43	74	-20.25	34.68	9.94	46.3	175	275	Peak
5350	47.01	48.69	54	-6.99	34.68	9.94	46.3	175	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.02	56.25	74	-19.98	34.6	9.52	46.35	100	170	Peak
5150	48.78	51.01	54	-5.22	34.6	9.52	46.35	100	170	Average
5260	102.47	104.44	-	-	34.6	9.75	46.32	100	170	Peak
5260	95.55	97.52	-	-	34.6	9.75	46.32	100	170	Average
5350	54.66	56.42	74	-19.34	34.6	9.94	46.3	100	170	Peak
5350	48.14	49.9	54	-5.86	34.6	9.94	46.3	100	170	Average

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
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	53.33	55.64	74	-20.67	34.52	9.52	46.35	175	275	Peak
5150	48.21	50.52	54	-5.79	34.52	9.52	46.35	175	275	Average
5300	108.38	110.22	–	–	34.64	9.83	46.31	175	275	Peak
5300	101.22	103.06	–	–	34.64	9.83	46.31	175	275	Average
5350	54.95	56.63	74	-19.05	34.68	9.94	46.3	175	275	Peak
5350	47.94	49.62	54	-6.06	34.68	9.94	46.3	175	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.67	56.9	74	-19.33	34.6	9.52	46.35	150	65	Peak
5150	48.2	50.43	54	-5.8	34.6	9.52	46.35	150	65	Average
5300	103.29	105.17	–	–	34.6	9.83	46.31	150	65	Peak
5300	96.73	98.61	–	–	34.6	9.83	46.31	150	65	Average
5350	54.31	56.07	74	-19.69	34.6	9.94	46.3	150	65	Peak
5350	47.21	48.97	54	-6.79	34.6	9.94	46.3	150	65	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	56.31	74	-20	34.52	9.52	46.35	170	275	Peak
5150	48.25	50.56	54	-5.75	34.52	9.52	46.35	170	275	Average
5320	105.62	107.38	–	–	34.66	9.88	46.3	170	275	Peak
5320	98.2	99.96	–	–	34.66	9.88	46.3	170	275	Average
5350	56.91	58.59	74	-17.09	34.68	9.94	46.3	170	275	Peak
5350	48.64	50.32	54	-5.36	34.68	9.94	46.3	170	275	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	53.67	55.9	74	-20.33	34.6	9.52	46.35	155	65	Peak
5150	48.06	50.29	54	-5.94	34.6	9.52	46.35	155	65	Average
5320	100.55	102.37	–	–	34.6	9.88	46.3	155	65	Peak
5320	53.84	55.66	–	–	34.6	9.88	46.3	155	65	Average
5350	55.64	57.4	74	-18.36	34.6	9.94	46.3	155	65	Peak
5350	47.49	49.25	54	-6.51	34.6	9.94	46.3	155	65	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	55.49	57.8	74	-18.51	34.52	9.52	46.35	160	275	Peak
5150	48.34	50.65	54	-5.66	34.52	9.52	46.35	160	275	Average
5270	102.73	104.66	–	–	34.62	9.77	46.32	160	275	Peak
5270	97.07	99	–	–	34.62	9.77	46.32	160	275	Average
5350	57.28	58.96	74	-16.72	34.68	9.94	46.3	160	275	Peak
5350	47.58	49.26	54	-6.42	34.68	9.94	46.3	160	275	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	55.26	57.49	74	-18.74	34.6	9.52	46.35	160	65	Peak
5150	48.00	50.23	54	-6.00	34.6	9.52	46.35	160	65	Average
5270	98.36	100.31	–	–	34.6	9.77	46.32	160	65	Peak
5270	92.43	94.38	–	–	34.6	9.77	46.32	160	65	Average
5350	53.31	55.07	74	-20.69	34.6	9.94	46.3	160	65	Peak
5350	47.87	49.63	54	-6.13	34.6	9.94	46.3	160	65	Average

REMARKS:

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

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
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	53.03	55.34	74	-20.97	34.52	9.52	46.35	170	275	Peak
5150	48.56	50.87	54	-5.44	34.52	9.52	46.35	170	275	Average
5310	97.52	99.33	-	-	34.65	9.85	46.31	170	275	Peak
5310	91.55	93.36	-	-	34.65	9.85	46.31	170	275	Average
5350	56.44	58.12	74	-17.56	34.68	9.94	46.3	170	275	Peak
5350	48.35	50.03	54	-5.65	34.68	9.94	46.3	170	275	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	53.23	55.46	74	-20.77	34.6	9.52	46.35	160	65	Peak
5150	48.86	51.09	54	-5.14	34.6	9.52	46.35	160	65	Average
5310	92.47	94.33	-	-	34.6	9.85	46.31	160	65	Peak
5310	86.24	88.1	-	-	34.6	9.85	46.31	160	65	Average
5350	53.84	55.6	74	-20.16	34.6	9.94	46.3	160	65	Peak
5350	47.48	49.24	54	-6.52	34.6	9.94	46.3	160	65	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	54.41	56.72	74	-19.59	34.52	9.52	46.35	170	275	Peak
5150	48.05	50.36	54	-5.95	34.52	9.52	46.35	170	275	Average
5260	107.88	109.84	-	-	34.61	9.75	46.32	170	275	Peak
5260	100.74	102.7	-	-	34.61	9.75	46.32	170	275	Average
5350	54.41	56.09	74	-19.59	34.68	9.94	46.3	170	275	Peak
5350	47.37	49.05	54	-6.63	34.68	9.94	46.3	170	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.97	57.2	74	-19.03	34.6	9.52	46.35	155	65	Peak
5150	48.39	50.62	54	-5.61	34.6	9.52	46.35	155	65	Average
5260	104.1	106.07	-	-	34.6	9.75	46.32	155	65	Peak
5260	97.01	98.98	-	-	34.6	9.75	46.32	155	65	Average
5350	53.87	55.63	74	-20.13	34.6	9.94	46.3	155	65	Peak
5350	47.23	48.99	54	-6.77	34.6	9.94	46.3	155	65	Average

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK)
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	54.21	56.52	74	-19.79	34.52	9.52	46.35	175	275	Peak
5150	47.44	49.75	54	-6.56	34.52	9.52	46.35	175	275	Average
5300	107.52	109.36	-	-	34.64	9.83	46.31	175	275	Peak
5300	101.29	103.13	-	-	34.64	9.83	46.31	175	275	Average
5350	54.61	56.29	74	-19.39	34.68	9.94	46.3	175	275	Peak
5350	48	49.68	54	-6	34.68	9.94	46.3	175	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.49	56.72	74	-19.51	34.6	9.52	46.35	160	65	Peak
5150	47.87	50.1	54	-6.13	34.6	9.52	46.35	160	65	Average
5300	102.68	104.56	-	-	34.6	9.83	46.31	160	65	Peak
5300	95.84	97.72	-	-	34.6	9.83	46.31	160	65	Average
5350	53.31	55.07	74	-20.69	34.6	9.94	46.3	160	65	Peak
5350	47.66	49.42	54	-6.34	34.6	9.94	46.3	160	65	Average

REMARKS:

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

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK)
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	54.9	57.21	74	-19.1	34.52	9.52	46.35	175	275	Peak
5150	48.36	50.67	54	-5.64	34.52	9.52	46.35	175	275	Average
5320	105.36	107.12	-	-	34.66	9.88	46.3	175	275	Peak
5320	98.4	100.16	-	-	34.66	9.88	46.3	175	275	Average
5350	57.75	59.43	74	-16.25	34.68	9.94	46.3	175	275	Peak
5350	49.57	51.25	54	-4.43	34.68	9.94	46.3	175	275	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	53.82	56.05	74	-20.18	34.6	9.52	46.35	170	65	Peak
5150	47.97	50.2	54	-6.03	34.6	9.52	46.35	170	65	Average
5320	100.36	102.18	-	-	34.6	9.88	46.3	170	65	Peak
5320	92.81	94.63	-	-	34.6	9.88	46.3	170	65	Average
5350	54.13	55.89	74	-19.87	34.6	9.94	46.3	170	65	Peak
5350	47.88	49.64	54	-6.12	34.6	9.94	46.3	170	65	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	53.69	56	74	-20.31	34.52	9.52	46.35	175	275	Peak
5150	48.84	51.15	54	-5.16	34.52	9.52	46.35	175	275	Average
5270	102.77	104.7	-	-	34.62	9.77	46.32	175	275	Peak
5270	97.5	99.43	-	-	34.62	9.77	46.32	175	275	Average
5350	55.22	56.9	74	-18.78	34.68	9.94	46.3	175	275	Peak
5350	48.54	50.22	54	-5.46	34.68	9.94	46.3	175	275	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	53.4	55.63	74	-20.6	34.6	9.52	46.35	175	65	Peak
5150	48.76	50.99	54	-5.24	34.6	9.52	46.35	175	65	Average
5270	98.16	100.11	-	-	34.6	9.77	46.32	175	65	Peak
5270	92.6	94.55	-	-	34.6	9.77	46.32	175	65	Average
5350	53.85	55.61	74	-20.15	34.6	9.94	46.3	175	65	Peak
5350	48.29	50.05	54	-5.71	34.6	9.94	46.3	175	65	Average

REMARKS:

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

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
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	52.94	55.25	74	-21.06	34.52	9.52	46.35	140	275	Peak
5150	47.79	50.1	54	-6.21	34.52	9.52	46.35	140	275	Average
5310	98.71	100.52	-	-	34.65	9.85	46.31	140	275	Peak
5310	93.45	95.26	-	-	34.65	9.85	46.31	140	275	Average
5350	56.78	58.46	74	-17.22	34.68	9.94	46.3	140	275	Peak
5350	50.94	52.62	54	-3.06	34.68	9.94	46.3	140	275	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.98	55.21	74	-21.02	34.6	9.52	46.35	170	65	Peak
5150	47.97	50.2	54	-6.03	34.6	9.52	46.35	170	65	Average
5310	93.5	95.36	-	-	34.6	9.85	46.31	170	65	Peak
5310	88	89.86	-	-	34.6	9.85	46.31	170	65	Average
5350	54.76	56.52	74	-19.24	34.6	9.94	46.3	170	65	Peak
5350	48.9	50.66	54	-5.1	34.6	9.94	46.3	170	65	Average

REMARKS:

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



802.11ac (80MHz)

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK)
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	53.93	56.24	74	-20.07	34.52	9.52	46.35	175	275	Peak
5150	48.83	51.14	54	-5.17	34.52	9.52	46.35	175	275	Average
5290	95.25	97.12	-	-	34.63	9.81	46.31	175	275	Peak
5290	90.4	92.27	-	-	34.63	9.81	46.31	175	275	Average
5350	57.92	59.6	74	-16.08	34.68	9.94	46.3	175	275	Peak
5350	50.6	52.28	54	-3.4	34.68	9.94	46.3	175	275	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	53.76	55.99	74	-20.24	34.6	9.52	46.35	175	65	Peak
5150	48.75	50.98	54	-5.25	34.6	9.52	46.35	175	65	Average
5290	90.19	92.09	-	-	34.6	9.81	46.31	175	65	Peak
5290	85.34	87.24	-	-	34.6	9.81	46.31	175	65	Average
5350	53.69	55.45	74	-20.31	34.6	9.94	46.3	175	65	Peak
5350	48.83	50.59	54	-5.17	34.6	9.94	46.3	175	65	Average

REMARKS:

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



Band 3

802.11a

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK)
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	55.42	56.74	74	-18.58	34.77	10.17	46.26	135	280	Peak
5460	48.41	49.73	54	-5.59	34.77	10.17	46.26	135	280	Average
5470	55.65	56.94	68.2	-12.55	34.78	10.19	46.26	135	280	Peak
5500	102.69	103.88	-	-	34.8	10.26	46.25	135	280	Peak
5500	96.29	97.48	-	-	34.8	10.26	46.25	135	280	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	55.32	74	-20.17	34.6	10.17	46.26	105	155	Peak
5460	47.99	49.48	54	-6.01	34.6	10.17	46.26	105	155	Average
5470	54.59	56.06	68.2	-13.61	34.6	10.19	46.26	105	155	Peak
5500	95.82	97.21	-	-	34.6	10.26	46.25	105	155	Peak
5500	87.95	89.34	-	-	34.6	10.26	46.25	105	155	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	55.92	57.24	74	-18.08	34.77	10.17	46.26	135	280	Peak
5460	47.97	49.29	54	-6.03	34.77	10.17	46.26	135	280	Average
5470	53.04	54.33	68.2	-15.16	34.78	10.19	46.26	135	280	Peak
5580	102.15	102.89	-	-	34.9	10.59	46.23	135	280	Peak
5580	95.25	95.99	-	-	34.9	10.59	46.23	135	280	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	54.55	56.04	74	-19.45	34.6	10.17	46.26	100	155	Peak
5460	47.34	48.83	54	-6.66	34.6	10.17	46.26	100	155	Average
5470	54.27	55.74	68.2	-13.93	34.6	10.19	46.26	100	155	Peak
5580	95.56	96.5	-	-	34.7	10.59	46.23	100	155	Peak
5580	88.4	89.34	-	-	34.7	10.59	46.23	100	155	Average

REMARKS:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
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	103.1	103.16	-	-	35.04	11.09	46.19	135	280	Peak
5700	95.76	95.82	-	-	35.04	11.09	46.19	135	280	Average
5725	59.48	59.4	68.2	-8.72	35.07	11.2	46.19	135	280	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	97.64	97.9	-	-	34.84	11.09	46.19	100	155	Peak
5700	91.27	91.53	-	-	34.84	11.09	46.19	100	155	Average
5725	56.25	56.37	68.2	-11.95	34.87	11.2	46.19	100	155	Peak

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
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
5470	53.25	54.54	74	-20.75	34.78	10.19	46.26	135	280	Peak
5720	105.45	105.4	-	-	35.06	11.18	46.19	135	280	Peak
5720	98.89	98.84	-	-	35.06	11.18	46.19	135	280	Average
5850	57.69	56.9	68.2	-10.51	35.22	11.72	46.15	135	280	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	52.91	54.38	74	-21.09	34.6	10.19	46.26	100	155	Peak
5720	101.12	101.27	-	-	34.86	11.18	46.19	100	155	Peak
5720	94.05	94.2	-	-	34.86	11.18	46.19	100	155	Average
5850	57.11	56.52	68.2	-11.09	35.02	11.72	46.15	100	155	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5720MHz: 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	53.83	55.15	74	-20.17	34.77	10.17	46.26	100	280	Peak
5460	48.34	49.66	54	-5.66	34.77	10.17	46.26	100	280	Average
5470	57.05	58.34	68.2	-11.15	34.78	10.19	46.26	100	280	Peak
5500	101.77	102.96	-	-	34.8	10.26	46.25	100	280	Peak
5500	94.68	95.87	-	-	34.8	10.26	46.25	100	280	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	55.66	74	-19.83	34.6	10.17	46.26	100	155	Peak
5460	47.66	49.15	54	-6.34	34.6	10.17	46.26	100	155	Average
5470	53.95	55.42	74	-20.05	34.6	10.19	46.26	100	155	Peak
5500	94.78	96.17	-	-	34.6	10.26	46.25	100	155	Peak
5500	87.68	89.07	-	-	34.6	10.26	46.25	100	155	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	54.52	55.84	74	-19.48	34.77	10.17	46.26	130	280	Peak
5460	47.5	48.82	54	-6.5	34.77	10.17	46.26	130	280	Average
5470	55.25	56.54	68.2	-12.95	34.78	10.19	46.26	130	280	Peak
5580	99.74	100.48	-	-	34.9	10.59	46.23	130	280	Peak
5580	92.39	93.13	-	-	34.9	10.59	46.23	130	280	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	54.45	55.94	74	-19.55	34.6	10.17	46.26	100	165	Peak
5460	47.45	48.94	54	-6.55	34.6	10.17	46.26	100	165	Average
5470	57.13	58.6	74	-16.87	34.6	10.19	46.26	100	165	Peak
5580	96.3	97.24	-	-	34.7	10.59	46.23	100	165	Peak
5580	87.6	88.54	-	-	34.7	10.59	46.23	100	165	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	101.45	101.51	-	-	35.04	11.09	46.19	115	280	Peak
5700	95.53	95.59	-	-	35.04	11.09	46.19	115	280	Average
5725	58.03	57.95	68.2	-10.17	35.07	11.2	46.19	115	280	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	97.04	97.3	-	-	34.84	11.09	46.19	110	160	Peak
5700	90.56	90.82	-	-	34.84	11.09	46.19	110	160	Average
5725	57.22	57.34	74	-16.78	34.87	11.2	46.19	110	160	Peak

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
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
5470	53.89	55.18	74	-20.11	34.78	10.19	46.26	115	280	Peak
5720	103.42	103.37	-	-	35.06	11.18	46.19	115	280	Peak
5720	97.43	97.38	-	-	35.06	11.18	46.19	115	280	Average
5850	57.41	56.62	68.2	-10.79	35.22	11.72	46.15	115	280	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.58	55.05	74	-20.42	34.6	10.19	46.26	115	160	Peak
5720	98.9	99.05	-	-	34.86	11.18	46.19	115	160	Peak
5720	91.82	91.97	-	-	34.86	11.18	46.19	115	160	Average
5850	57.09	56.5	68.2	-11.11	35.02	11.72	46.15	115	160	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	53.95	55.27	74	-20.05	34.77	10.17	46.26	100	270	Peak
5460	47.35	48.67	54	-6.65	34.77	10.17	46.26	100	270	Average
5470	55.53	56.82	68.2	-12.67	34.78	10.19	46.26	100	270	Peak
5510	95.95	97.09	-	-	34.81	10.3	46.25	100	270	Peak
5510	91.58	92.72	-	-	34.81	10.3	46.25	100	270	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	53.84	55.33	74	-20.16	34.6	10.17	46.26	175	230	Peak
5460	48.08	49.57	54	-5.92	34.6	10.17	46.26	175	230	Average
5470	56.88	58.35	68.2	-11.32	34.6	10.19	46.26	175	230	Peak
5510	90.18	91.52	-	-	34.61	10.3	46.25	175	230	Peak
5510	85.07	86.41	-	-	34.61	10.3	46.25	175	230	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	51.9	53.22	74	-22.1	34.77	10.17	46.26	100	270	Peak
5460	47.18	48.5	54	-6.82	34.77	10.17	46.26	100	270	Average
5470	54.9	56.19	68.2	-13.3	34.78	10.19	46.26	100	270	Peak
5550	95.57	96.48	-	-	34.86	10.47	46.24	100	270	Peak
5550	90.58	91.49	-	-	34.86	10.47	46.24	100	270	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	54.9	56.39	74	-19.1	34.6	10.17	46.26	170	225	Peak
5460	47.82	49.31	54	-6.18	34.6	10.17	46.26	170	225	Average
5470	55.4	56.87	68.2	-12.8	34.6	10.19	46.26	170	225	Peak
5550	91.24	92.35	-	-	34.66	10.47	46.24	170	225	Peak
5550	85.54	86.65	-	-	34.66	10.47	46.24	170	225	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 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	94.84	95.07	-	-	35	10.97	46.2	150	280	Peak
5670	91.59	91.82	-	-	35	10.97	46.2	150	280	Average
5725	56.49	56.41	68.2	-11.71	35.07	11.2	46.19	150	280	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	90.56	90.99	-	-	34.8	10.97	46.2	200	225	Peak
5670	86.12	86.55	-	-	34.8	10.97	46.2	200	225	Average
5725	57.65	57.77	68.2	-10.55	34.87	11.2	46.19	200	225	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.

CHANNEL	TX Channel 142	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
5470	52.95	54.24	74	-21.05	34.78	10.19	46.26	150	280	Peak
5710	98.1	98.1	-	-	35.05	11.14	46.19	150	280	Peak
5710	94.12	94.12	-	-	35.05	11.14	46.19	150	280	Average
5850	57.86	57.07	68.2	-10.34	35.22	11.72	46.15	150	280	Peak
ANTENNA POLARITY & test distance: Vertical at 3 m										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.41	54.88	74	-20.59	34.6	10.19	46.26	110	160	Peak
5710	94.21	94.41	-	-	34.85	11.14	46.19	110	160	Peak
5710	89.34	89.54	-	-	34.85	11.14	46.19	110	160	Average
5850	57.47	56.88	68.2	-10.73	35.02	11.72	46.15	110	160	Peak

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	53.37	54.69	74	-20.63	34.77	10.17	46.26	100	280	Peak
5460	46.97	48.29	54	-7.03	34.77	10.17	46.26	100	280	Average
5470	55.59	56.88	68.2	-12.61	34.78	10.19	46.26	100	280	Peak
5500	100.98	102.17	-	-	34.8	10.26	46.25	100	280	Peak
5500	94.45	95.64	-	-	34.8	10.26	46.25	100	280	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	54.24	55.73	74	-19.76	34.6	10.17	46.26	110	160	Peak
5460	47.28	48.77	54	-6.72	34.6	10.17	46.26	110	160	Average
5470	53.32	54.79	68.2	-14.88	34.6	10.19	46.26	110	160	Peak
5500	92.94	94.33	-	-	34.6	10.26	46.25	110	160	Peak
5500	86.94	88.33	-	-	34.6	10.26	46.25	110	160	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	53.33	54.65	74	-20.67	34.77	10.17	46.26	200	280	Peak
5460	48.95	50.27	54	-5.05	34.77	10.17	46.26	200	280	Average
5470	53.66	54.95	68.2	-14.54	34.78	10.19	46.26	200	280	Peak
5580	99.94	100.68	-	-	34.9	10.59	46.23	200	280	Peak
5580	92.76	93.5	-	-	34.9	10.59	46.23	200	280	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	53.2	54.69	74	-20.8	34.6	10.17	46.26	110	155	Peak
5460	48.09	49.58	54	-5.91	34.6	10.17	46.26	110	155	Average
5470	53.95	55.42	68.2	-14.25	34.6	10.19	46.26	110	155	Peak
5580	94.44	95.38	-	-	34.7	10.59	46.23	110	155	Peak
5580	87.53	88.47	-	-	34.7	10.59	46.23	110	155	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	101.36	101.42	-	-	35.04	11.09	46.19	195	275	Peak
5700	95.37	95.43	-	-	35.04	11.09	46.19	195	275	Average
5725	56.77	56.69	68.2	-11.43	35.07	11.2	46.19	195	275	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	95.29	95.55	-	-	34.84	11.09	46.19	110	155	Peak
5700	88.93	89.19	-	-	34.84	11.09	46.19	110	155	Average
5725	57.82	57.94	68.2	-10.38	34.87	11.2	46.19	110	155	Peak

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
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
5470	54.23	55.52	74	-19.77	34.78	10.19	46.26	195	275	Peak
5720	103.99	103.94	-	-	35.06	11.18	46.19	195	275	Peak
5720	97.53	97.48	-	-	35.06	11.18	46.19	195	275	Average
5850	58.79	58	68.2	-9.41	35.22	11.72	46.15	195	275	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	55.45	56.92	74	-18.55	34.6	10.19	46.26	100	150	Peak
5720	99.43	99.58	-	-	34.86	11.18	46.19	100	150	Peak
5720	92.26	92.41	-	-	34.86	11.18	46.19	100	150	Average
5850	57.37	56.78	68.2	-10.83	35.02	11.72	46.15	100	150	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5720MHz: 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	53.52	54.84	74	-20.48	34.77	10.17	46.26	100	275	Peak
5460	48.52	49.84	54	-5.48	34.77	10.17	46.26	100	275	Average
5470	55.59	56.88	68.2	-12.61	34.78	10.19	46.26	100	275	Peak
5510	94.49	95.63	-	-	34.81	10.3	46.25	100	275	Peak
5510	90.57	91.71	-	-	34.81	10.3	46.25	100	275	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	53.68	55.17	74	-20.32	34.6	10.17	46.26	115	70	Peak
5460	48.92	50.41	54	-5.08	34.6	10.17	46.26	115	70	Average
5470	54.63	56.1	68.2	-13.57	34.6	10.19	46.26	115	70	Peak
5510	90.75	92.09	-	-	34.61	10.3	46.25	115	70	Peak
5510	84.75	86.09	-	-	34.61	10.3	46.25	115	70	Average

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.1	54.42	74	-20.9	34.77	10.17	46.26	200	275	Peak
5460	47.87	49.19	54	-6.13	34.77	10.17	46.26	200	275	Average
5470	53.79	55.08	68.2	-14.41	34.78	10.19	46.26	200	275	Peak
5550	95.08	95.99	-	-	34.86	10.47	46.24	200	275	Peak
5550	89.4	90.31	-	-	34.86	10.47	46.24	200	275	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	54.98	56.47	74	-19.02	34.6	10.17	46.26	145	70	Peak
5460	47.57	49.06	54	-6.43	34.6	10.17	46.26	145	70	Average
5470	53.59	55.06	68.2	-14.61	34.6	10.19	46.26	145	70	Peak
5550	90.62	91.73	-	-	34.66	10.47	46.24	145	70	Peak
5550	87.28	88.39	-	-	34.66	10.47	46.24	145	70	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 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	97.75	97.98	-	-	35	10.97	46.2	150	275	Peak
5670	93.67	93.9	-	-	35	10.97	46.2	150	275	Average
5725	57.06	56.98	68.2	-11.14	35.07	11.2	46.19	150	275	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	95.46	95.89	-	-	34.8	10.97	46.2	145	70	Peak
5670	91.61	92.04	-	-	34.8	10.97	46.2	145	70	Average
5725	55.62	55.74	68.2	-12.58	34.87	11.2	46.19	145	70	Peak

REMARKS:

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

CHANNEL	TX Channel 142	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
5470	54.38	55.67	74	-19.62	34.78	10.19	46.26	150	275	Peak
5710	97.49	97.49	-	-	35.05	11.14	46.19	150	275	Peak
5710	92.8	92.8	-	-	35.05	11.14	46.19	150	275	Average
5850	56.53	55.74	68.2	-11.67	35.22	11.72	46.15	150	275	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.54	55.01	74	-20.46	34.6	10.19	46.26	100	160	Peak
5710	93.16	93.36	-	-	34.85	11.14	46.19	100	160	Peak
5710	87.78	87.98	-	-	34.85	11.14	46.19	100	160	Average
5850	57.5	56.91	68.2	-10.7	35.02	11.72	46.15	100	160	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5710MHz: 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	55.74	57.06	74	-18.26	34.77	10.17	46.26	200	280	Peak
5460	50.5	51.82	54	-3.5	34.77	10.17	46.26	200	280	Average
5470	57.02	58.31	68.2	-11.18	34.78	10.19	46.26	200	280	Peak
5530	88.65	89.67	-	-	34.84	10.38	46.24	200	280	Peak
5530	85.73	86.75	-	-	34.84	10.38	46.24	200	280	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	53.06	54.55	74	-20.94	34.6	10.17	46.26	150	80	Peak
5460	47.28	48.77	54	-6.72	34.6	10.17	46.26	150	80	Average
5470	54.9	56.37	68.2	-13.3	34.6	10.19	46.26	150	80	Peak
5530	84.42	85.64	-	-	34.64	10.38	46.24	150	80	Peak
5530	79.72	80.94	-	-	34.64	10.38	46.24	150	80	Average

REMARKS:

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

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK)
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	93.38	93.95	-	-	34.93	10.72	46.22	165	280	Peak
5610	90.36	90.93	-	-	34.93	10.72	46.22	165	280	Average
5725	55.09	55.01	68.2	-13.11	35.07	11.2	46.19	165	280	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	87.62	88.39	-	-	34.73	10.72	46.22	120	155	Peak
5610	84.78	85.55	-	-	34.73	10.72	46.22	120	155	Average
5725	54.98	55.1	68.2	-13.22	34.87	11.2	46.19	120	155	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.

CHANNEL	TX Channel 138	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
5470	52.19	53.48	74	-21.81	34.78	10.19	46.26	190	280	Peak
5690	93.11	93.23	-	-	35.03	11.05	46.2	190	280	Peak
5690	89.23	89.35	-	-	35.03	11.05	46.2	190	280	Average
5850	55.94	55.15	68.2	-12.26	35.22	11.72	46.15	190	280	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	51.24	52.71	74	-22.76	34.6	10.19	46.26	120	160	Peak
5690	88.39	88.71	-	-	34.83	11.05	46.2	120	160	Peak
5690	84.95	85.27	-	-	34.83	11.05	46.2	120	160	Average
5850	54.16	53.57	68.2	-14.04	35.02	11.72	46.15	120	160	Peak

REMARKS:

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



Band 4:

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	108.14	107.95	-	-	35.09	11.28	46.18	150	275	Peak
5745	100.96	100.77	-	-	35.09	11.28	46.18	150	275	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	103.73	103.74	-	-	34.89	11.28	46.18	100	150	Peak
5745	97	97.01	-	-	34.89	11.28	46.18	100	150	Average

REMARKS:

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

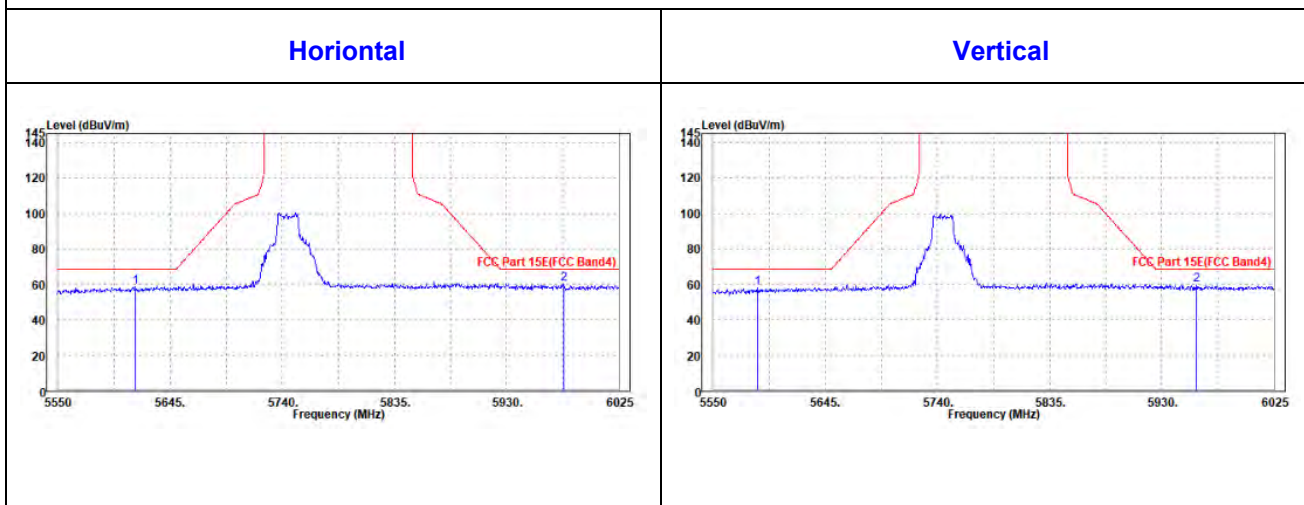


Oobe DATA

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
5616.025	58.64	59.18	68.2	-9.56	34.94	10.74	46.22	200	0	Peak
5977.975	60.09	58.58	68.2	-8.11	35.37	12.26	46.12	200	0	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
5587.525	57.83	58.73	68.2	-10.37	34.71	10.62	46.23	100	0	Peak
5959.45	59.37	58.16	68.2	-8.83	35.15	12.18	46.12	100	0	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	108.57	108.15	-	-	35.14	11.45	46.17	100	253	Peak
5785	102.01	101.59	-	-	35.14	11.45	46.17	100	253	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	104.83	104.61	-	-	34.94	11.45	46.17	100	150	Peak
5785	98.17	97.95	-	-	34.94	11.45	46.17	100	150	Average

REMARKS:

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

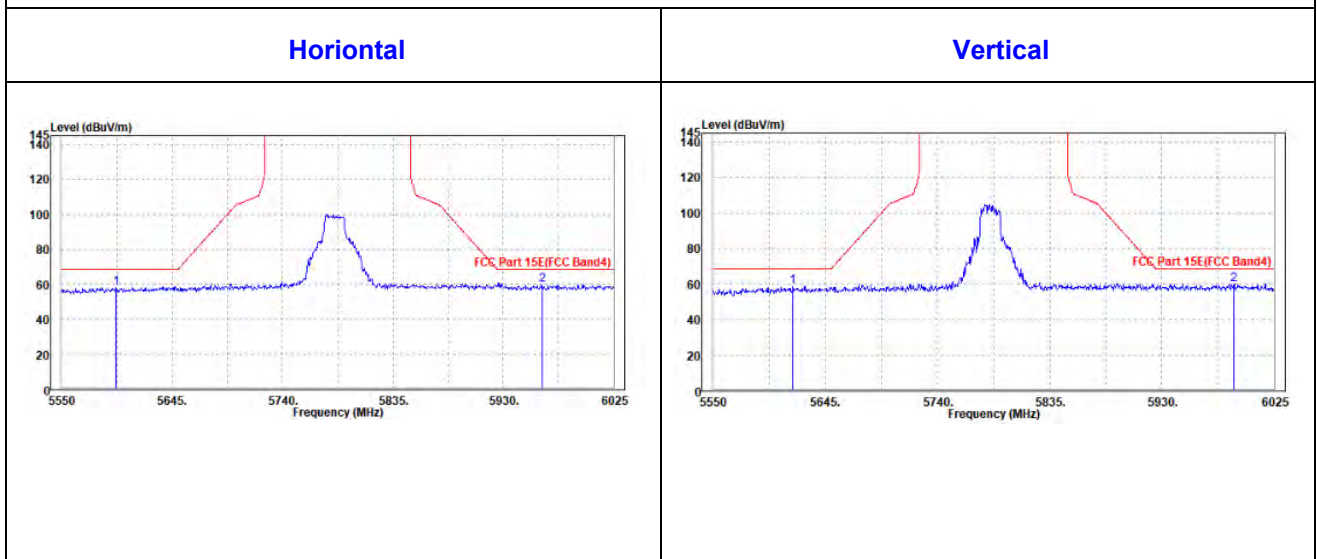


OOBE DATA

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
5596.55	58	58.64	68.2	-10.2	34.92	10.66	46.22	100	0	Peak
5963.25	59.38	57.94	68.2	-8.82	35.36	12.2	46.12	100	0	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
5617.45	58.38	59.11	68.2	-9.82	34.74	10.75	46.22	200	0	Peak
5990.8	59.66	58.27	68.2	-8.54	35.19	12.31	46.11	200	0	Peak

CH 157





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	107.3	106.65	-	-	35.19	11.62	46.16	155	275	Peak
5825	100.78	100.13	-	-	35.19	11.62	46.16	155	275	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
5825	105.26	104.81	-	-	34.99	11.62	46.16	100	145	Peak
5825	96.77	96.32	-	-	34.99	11.62	46.16	100	145	Average

REMARKS:

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

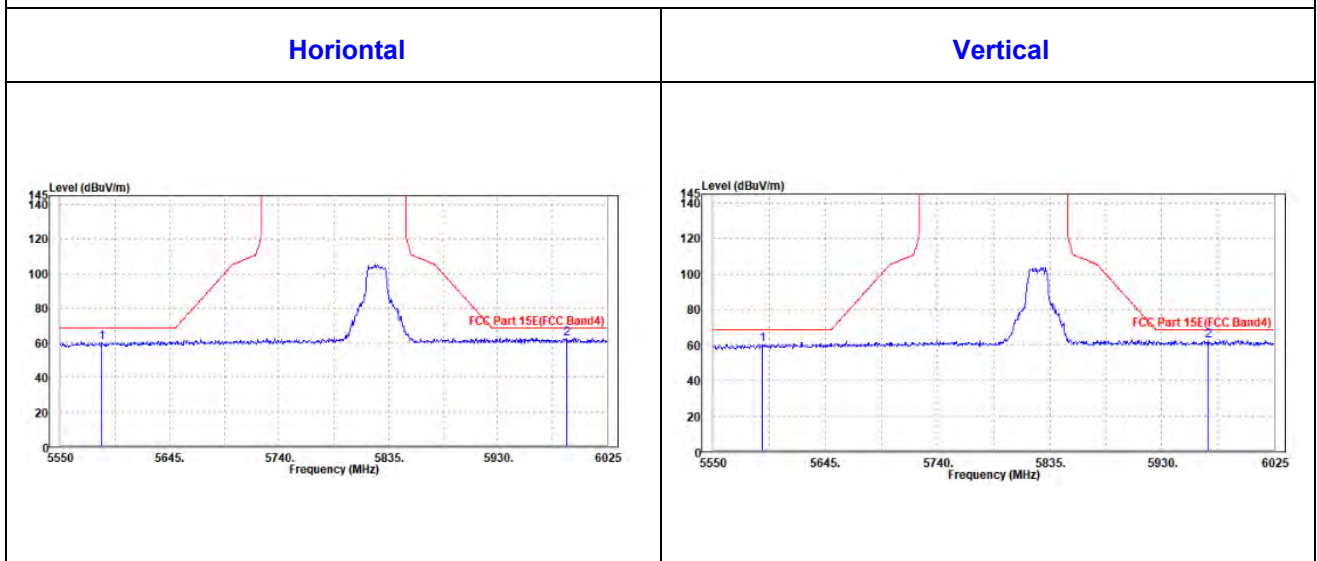


Oobe Data

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5586.1	60.3	61.01	68.2	-7.9	34.9	10.62	46.23	100	0	Peak
5989.85	62.28	60.69	68.2	-5.92	35.39	12.31	46.11	100	0	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
5591.8	60.1	60.97	68.2	-8.1	34.71	10.64	46.22	200	0	Peak
5968.95	62.51	61.25	68.2	-5.69	35.16	12.22	46.12	200	0	Peak

CH 165





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	106.9	106.71	-	-	35.09	11.28	46.18	155	255	Peak
5745	99.65	99.46	-	-	35.09	11.28	46.18	155	255	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	103.97	103.98	-	-	34.89	11.28	46.18	105	50	Peak
5745	97.42	97.43	-	-	34.89	11.28	46.18	105	50	Average

REMARKS:

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

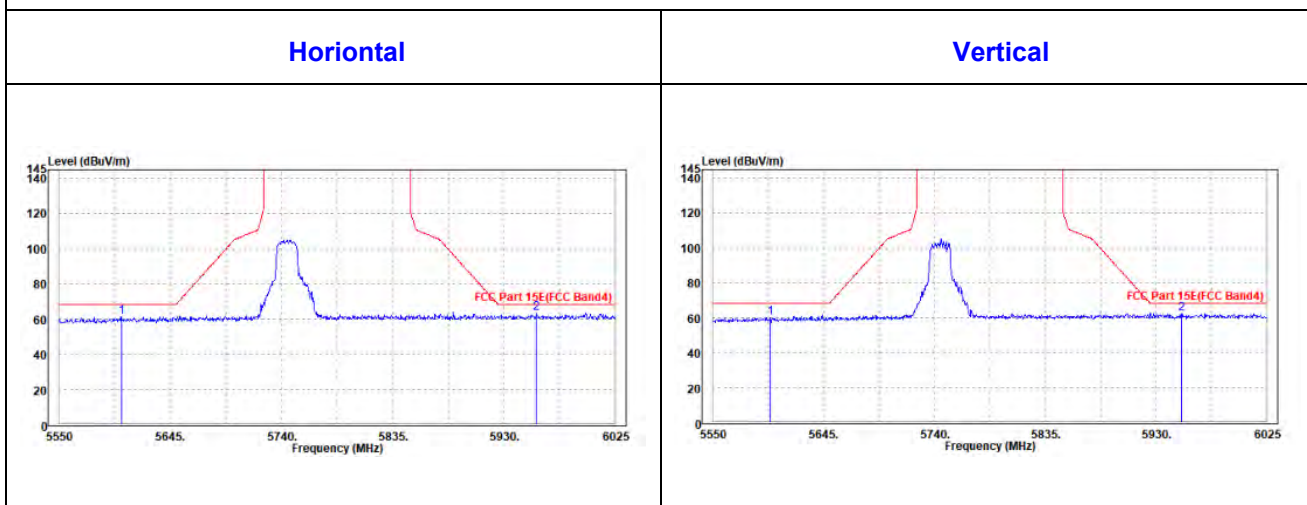


Oobe DATA

802.11n (20MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5603.2	61.26	61.87	68.2	-6.94	34.92	10.69	46.22	200	0	Peak
5958.025	63.39	61.99	68.2	-4.81	35.35	12.17	46.12	200	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5598.925	60.1	60.93	68.2	-8.1	34.72	10.67	46.22	100	0	Peak
5951.85	62.19	61.02	68.2	-6.01	35.14	12.15	46.12	100	0	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	106.38	105.96	-	-	35.14	11.45	46.17	155	255	Peak
5785	99.77	99.35	-	-	35.14	11.45	46.17	155	255	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	103.79	103.57	-	-	34.94	11.45	46.17	100	50	Peak
5785	98.19	97.97	-	-	34.94	11.45	46.17	100	50	Average

REMARKS:

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

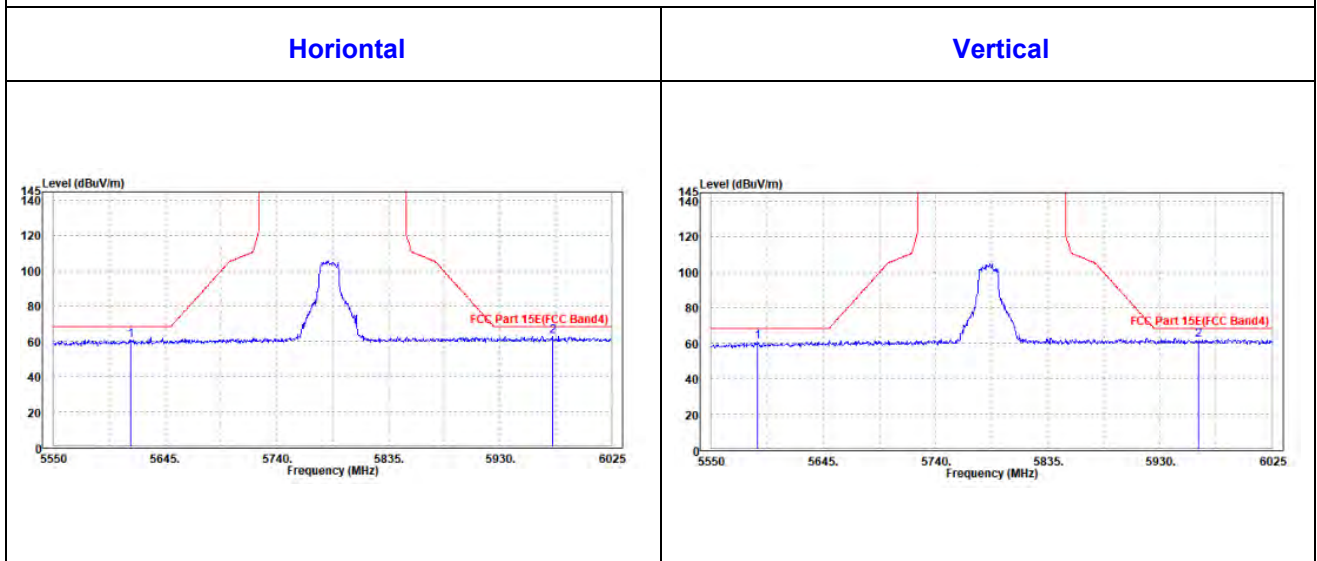


OOBE DATA

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
5615.55	60.83	61.37	68.2	-7.37	34.94	10.74	46.22	100	0	Peak
5974.65	62.98	61.49	68.2	-5.22	35.37	12.24	46.12	100	0	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
5589.425	60.47	61.35	68.2	-7.73	34.71	10.63	46.22	200	0	Peak
5962.775	61.79	60.56	68.2	-6.41	35.16	12.19	46.12	200	0	Peak

CH 157





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	106.16	105.51	-	-	35.19	11.62	46.16	100	255	Peak
5825	99.62	98.97	-	-	35.19	11.62	46.16	100	255	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
5825	103.82	103.37	-	-	34.99	11.62	46.16	100	50	Peak
5825	97.42	96.97	-	-	34.99	11.62	46.16	100	50	Average

REMARKS:

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

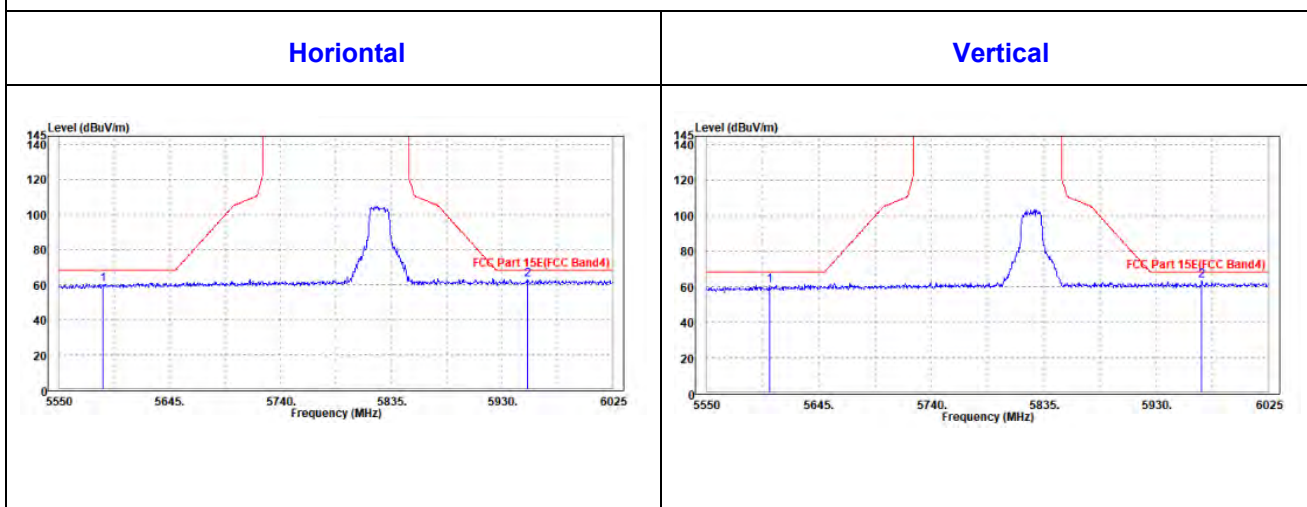


Oobe Data

802.11n (20MHz)

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
5587.525	60.25	60.95	68.2	-7.95	34.91	10.62	46.23	200	0	Peak
5951.85	62.88	61.51	68.2	-5.32	35.34	12.15	46.12	200	0	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	60.81	61.62	68.2	-7.39	34.72	10.69	46.22	100	0	Peak
5968.475	63.28	62.02	68.2	-4.92	35.16	12.22	46.12	100	0	Peak

CH 165





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	101.52	101.27	-	-	35.11	11.32	46.18	120	255	Peak
5755	97.3	97.05	-	-	35.11	11.32	46.18	120	255	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	98.82	98.77	-	-	34.91	11.32	46.18	100	50	Peak
5755	94.83	94.78	-	-	34.91	11.32	46.18	100	50	Average

REMARKS:

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



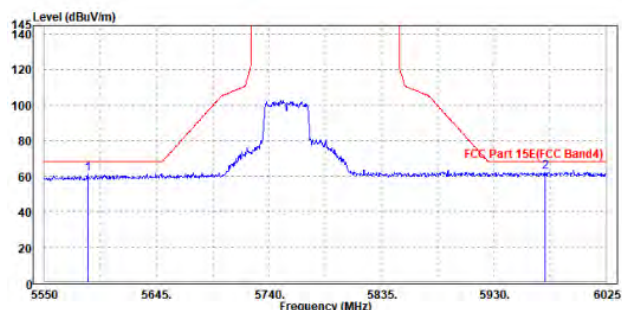
OOBE DATA

802.11n (40MHZ)

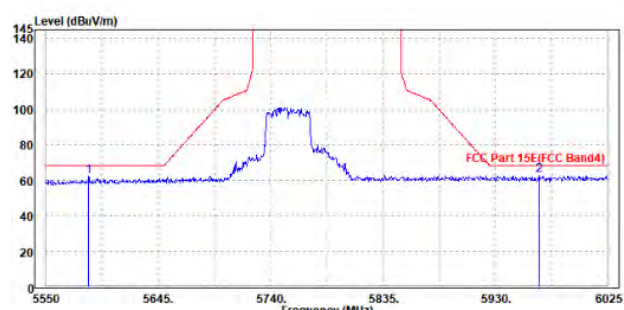
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5587.05	61.07	61.78	68.2	-7.13	34.9	10.62	46.23	100	0	Peak
5973.7	62.34	60.85	68.2	-5.86	35.37	12.24	46.12	100	0	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
5586.1	62.31	63.22	68.2	-5.89	34.7	10.62	46.23	200	0	Peak
5966.575	62.67	61.42	68.2	-5.53	35.16	12.21	46.12	200	0	Peak

CH 151

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	102.16	101.69	-	-	35.15	11.49	46.17	165	255	Peak
5795	96.95	96.48	-	-	35.15	11.49	46.17	165	255	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	102.54	102.27	-	-	34.95	11.49	46.17	100	50	Peak
5795	94.78	94.51	-	-	34.95	11.49	46.17	100	50	Average

REMARKS:

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

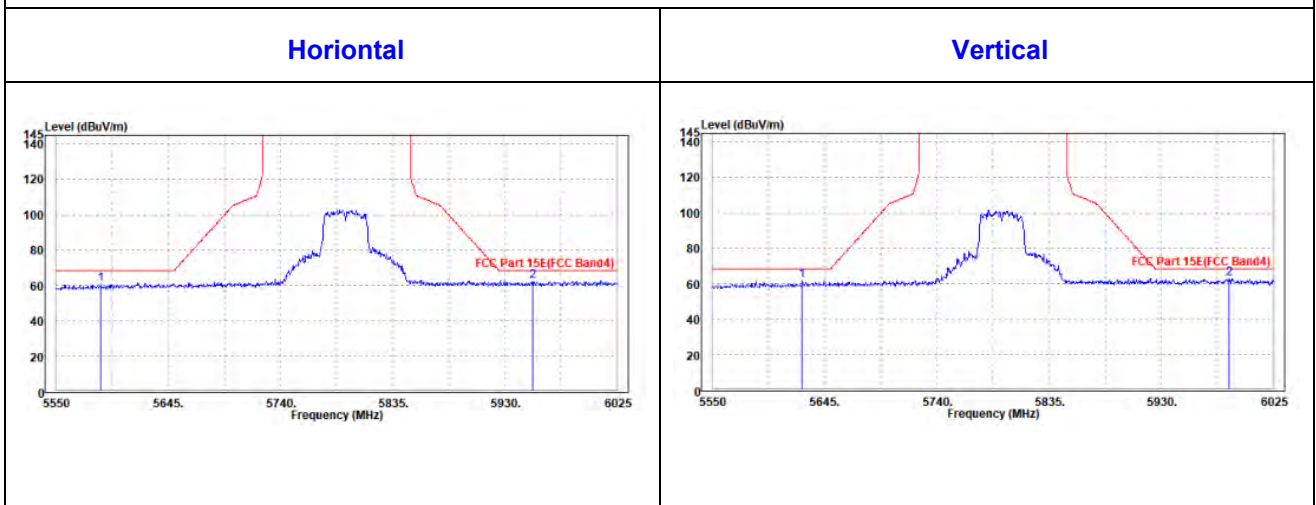


Oobe Data

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
5588	60.47	61.17	68.2	-7.73	34.91	10.62	46.23	200	0	Peak
5953.75	62.43	61.05	68.2	-5.77	35.34	12.16	46.12	200	0	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
5626	61.99	62.67	68.2	-6.21	34.75	10.78	46.21	100	0	Peak
5987.475	63.05	61.68	68.2	-5.15	35.18	12.3	46.11	100	0	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	104.85	104.66	-	-	35.09	11.28	46.18	100	255	Peak
5745	98.26	98.07	-	-	35.09	11.28	46.18	100	255	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	102.91	102.92	-	-	34.89	11.28	46.18	100	50	Peak
5745	96.79	96.8	-	-	34.89	11.28	46.18	100	50	Average

REMARKS:

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



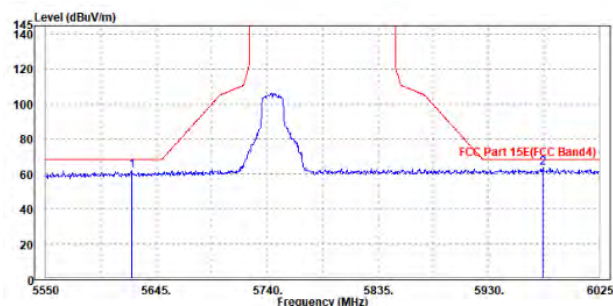
Oobe Data

802.11ac (20MHz)

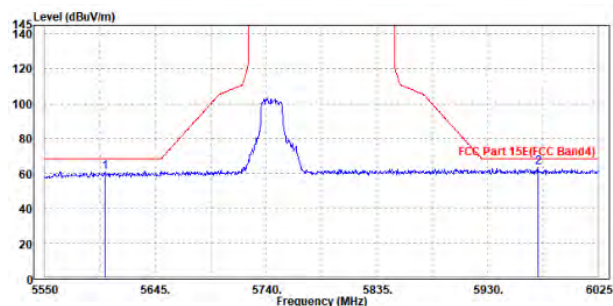
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5623.625	61.54	62.04	68.2	-6.66	34.95	10.77	46.22	100	0	Peak
5976.55	63.34	61.84	68.2	-4.86	35.37	12.25	46.12	100	0	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
5601.3	60.79	61.61	68.2	-7.41	34.72	10.68	46.22	200	0	Peak
5973.225	63.14	61.85	68.2	-5.06	35.17	12.24	46.12	200	0	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	106.26	105.84	-	-	35.14	11.45	46.17	195	255	Peak
5785	99.91	99.49	-	-	35.14	11.45	46.17	195	255	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	105.29	105.07	-	-	34.94	11.45	46.17	100	50	Peak
5785	98.63	98.41	-	-	34.94	11.45	46.17	100	50	Average

REMARKS:

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

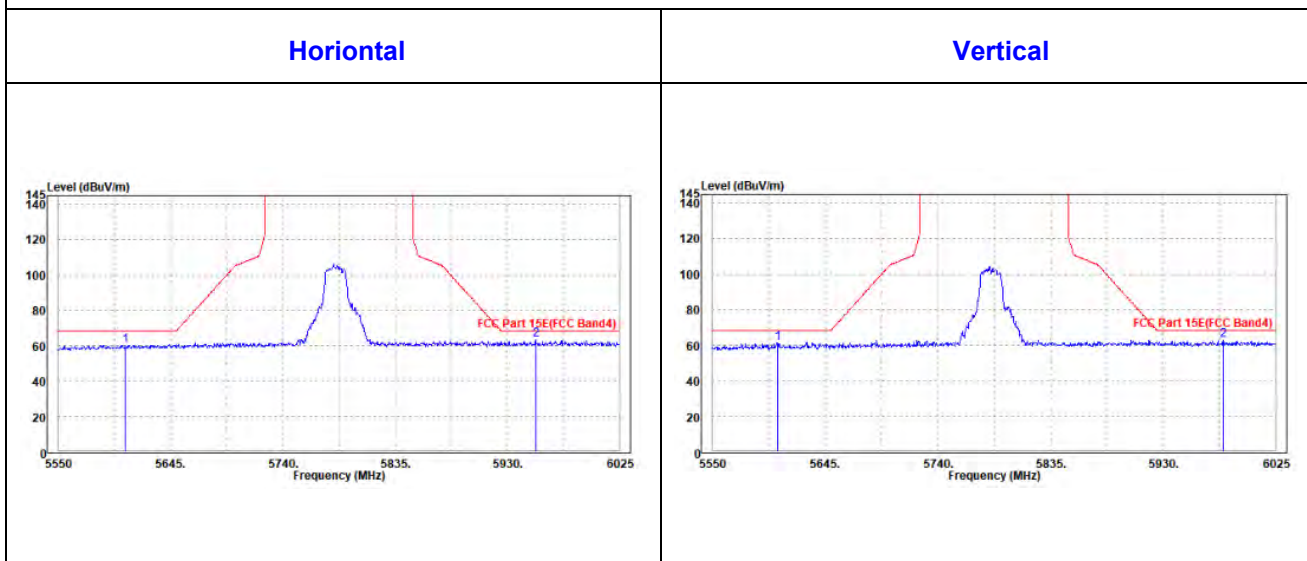


Oobe Data

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
5606.525	60.26	60.85	68.2	-7.94	34.93	10.7	46.22	200	0	Peak
5954.225	63.31	61.92	68.2	-4.89	35.35	12.16	46.12	200	0	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	61.39	62.19	68.2	-6.81	34.73	10.69	46.22	100	0	Peak
5980.825	62.69	61.36	68.2	-5.51	35.18	12.27	46.12	100	0	Peak

CH 157





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	105.54	104.89	-	-	35.19	11.62	46.16	165	255	Peak
5825	99.24	98.59	-	-	35.19	11.62	46.16	165	255	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
5825	104.41	103.96	-	-	34.99	11.62	46.16	100	50	Peak
5825	98.03	97.58	-	-	34.99	11.62	46.16	100	50	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

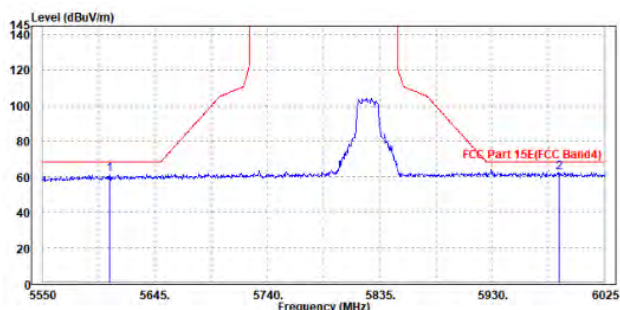
Oobe DATA

802.11ac (20MHZ)

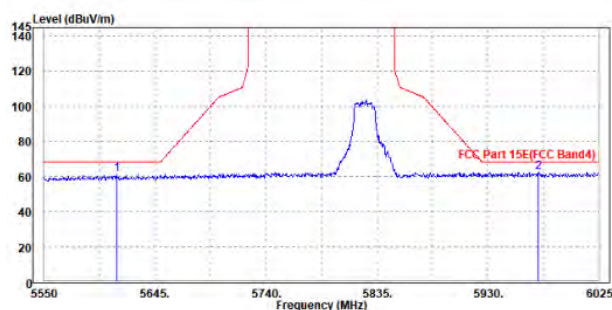
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5606.525	61.09	61.68	68.2	-7.11	34.93	10.7	46.22	100	0	Peak
5986.525	62.55	60.99	68.2	-5.65	35.38	12.29	46.11	100	0	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
5612.225	61.05	61.81	68.2	-7.15	34.73	10.73	46.22	200	0	Peak
5973.7	62.4	61.11	68.2	-5.8	35.17	12.24	46.12	200	0	Peak

CH 165

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
5755	100.46	100.21	-	-	35.11	11.32	46.18	180	255	Peak
5755	96.54	96.29	-	-	35.11	11.32	46.18	180	255	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	98.93	98.88	-	-	34.91	11.32	46.18	100	50	Peak
5755	93.58	93.53	-	-	34.91	11.32	46.18	100	50	Average

REMARKS:

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



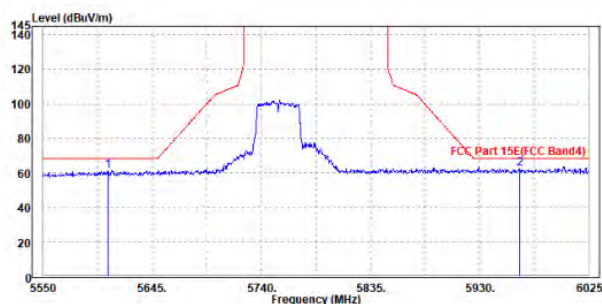
Oobe Data

802.11ac (40MHz)

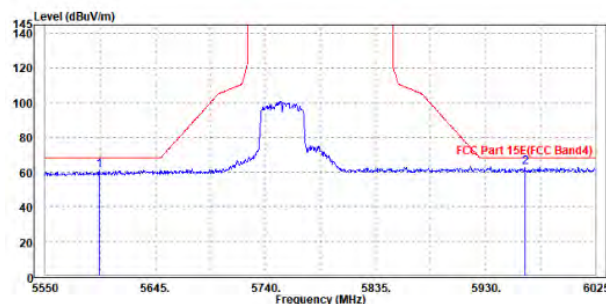
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5606.525	61.03	61.62	68.2	-7.17	34.93	10.7	46.22	200	0	Peak
5965.15	62.26	60.82	68.2	-5.94	35.36	12.2	46.12	200	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5596.55	61.18	62.02	68.2	-7.02	34.72	10.66	46.22	100	0	Peak
5964.2	62.74	61.5	68.2	-5.46	35.16	12.2	46.12	100	0	Peak

CH 151

Horizontal



Vertical





**BUREAU
VERITAS**

Test Report No.: W7L- P21040030RF14

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	101.96	101.49	-	-	35.15	11.49	46.17	180	255	Peak
5795	96.95	96.48	-	-	35.15	11.49	46.17	180	255	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	99.87	99.6	-	-	34.95	11.49	46.17	100	50	Peak
5795	95.07	94.8	-	-	34.95	11.49	46.17	100	50	Average

REMARKS:

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



**BUREAU
VERITAS**

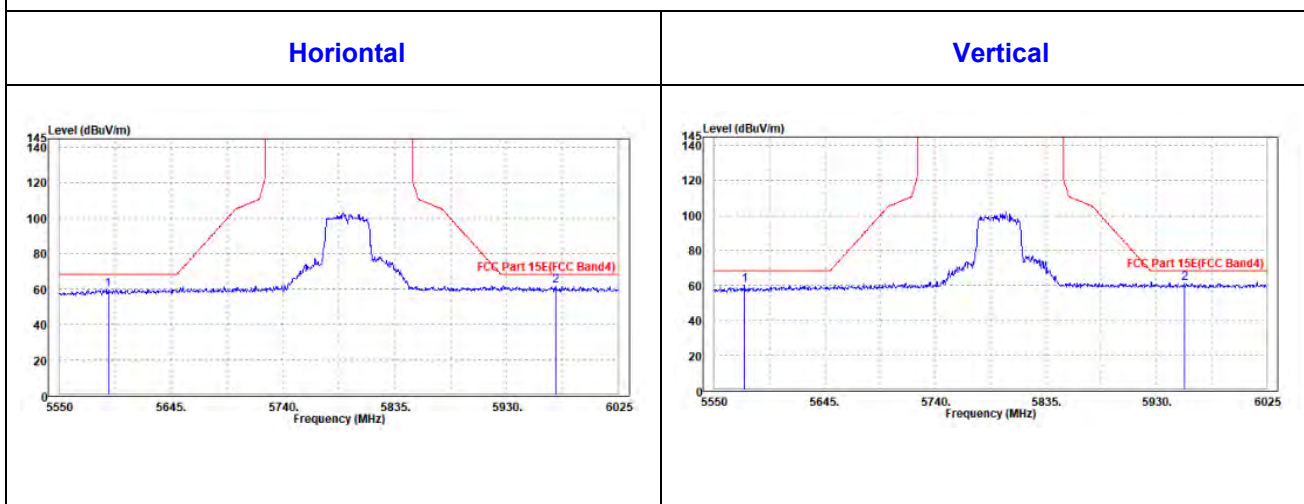
Test Report No.: W7L- P21040030RF14

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
5591.325	59.76	60.43	68.2	-8.44	34.91	10.64	46.22	100	0	Peak
5971.8	61.61	60.13	68.2	-6.59	35.37	12.23	46.12	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5576.125	59.89	60.86	68.2	-8.31	34.69	10.57	46.23	200	0	Peak
5954.7	60.95	59.76	68.2	-7.25	35.15	12.16	46.12	200	0	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	96.81	96.44	-	-	35.13	11.41	46.17	100	255	Peak
5775	93.5	93.13	-	-	35.13	11.41	46.17	100	255	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	95.35	95.18	-	-	34.93	11.41	46.17	100	50	Peak
5775	91.09	90.92	-	-	34.93	11.41	46.17	100	50	Average

REMARKS:

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



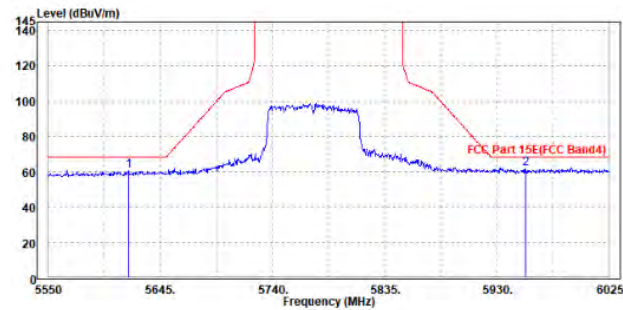
Oobe Data

802.11ac (80MHz)

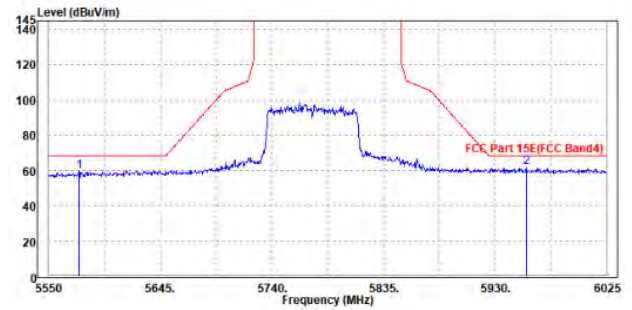
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5617.925	60.68	61.21	68.2	-7.52	34.94	10.75	46.22	200	0	Peak
5954.225	61.66	60.27	68.2	-6.54	35.35	12.16	46.12	200	0	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	59.44	60.41	68.2	-8.76	34.69	10.57	46.23	100	0	Peak
5956.6	61.5	60.3	68.2	-6.7	35.15	12.17	46.12	100	0	Peak

CH 155

Horizontal



Vertical



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. 03,21	Jun. 02,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22

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

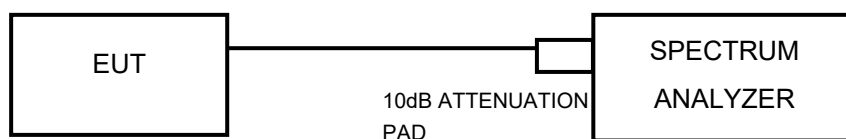
- a. Check the calibration of the measurement instrument using either an internal calibrator or a known signal from an external generator.
- b. The resolution bandwidth is set to 1MHzThe Video bandwidth is set to $\geq 1\text{MHz}$, report the peak value out of operating band.
- c. Repeat above procedures 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.

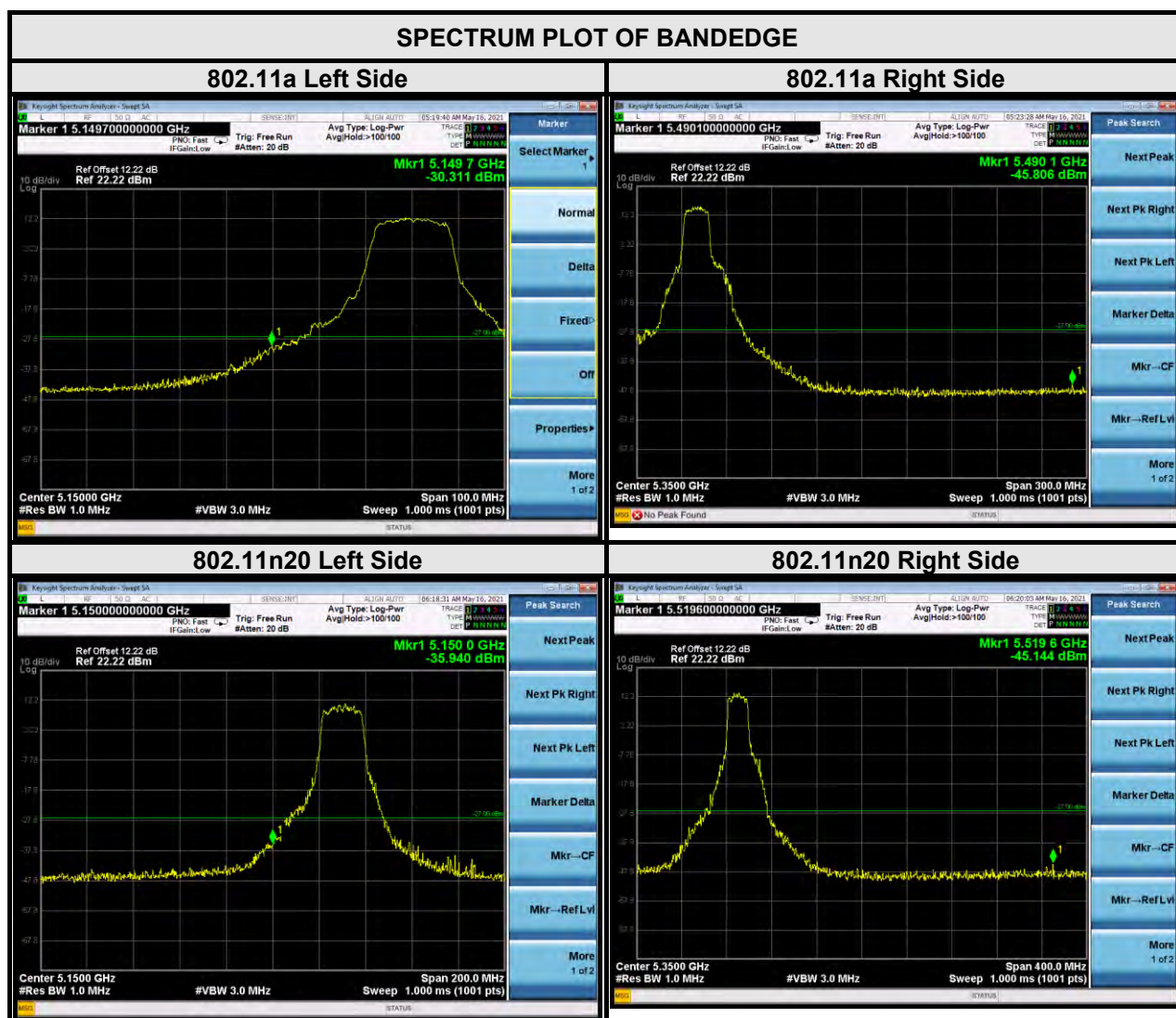


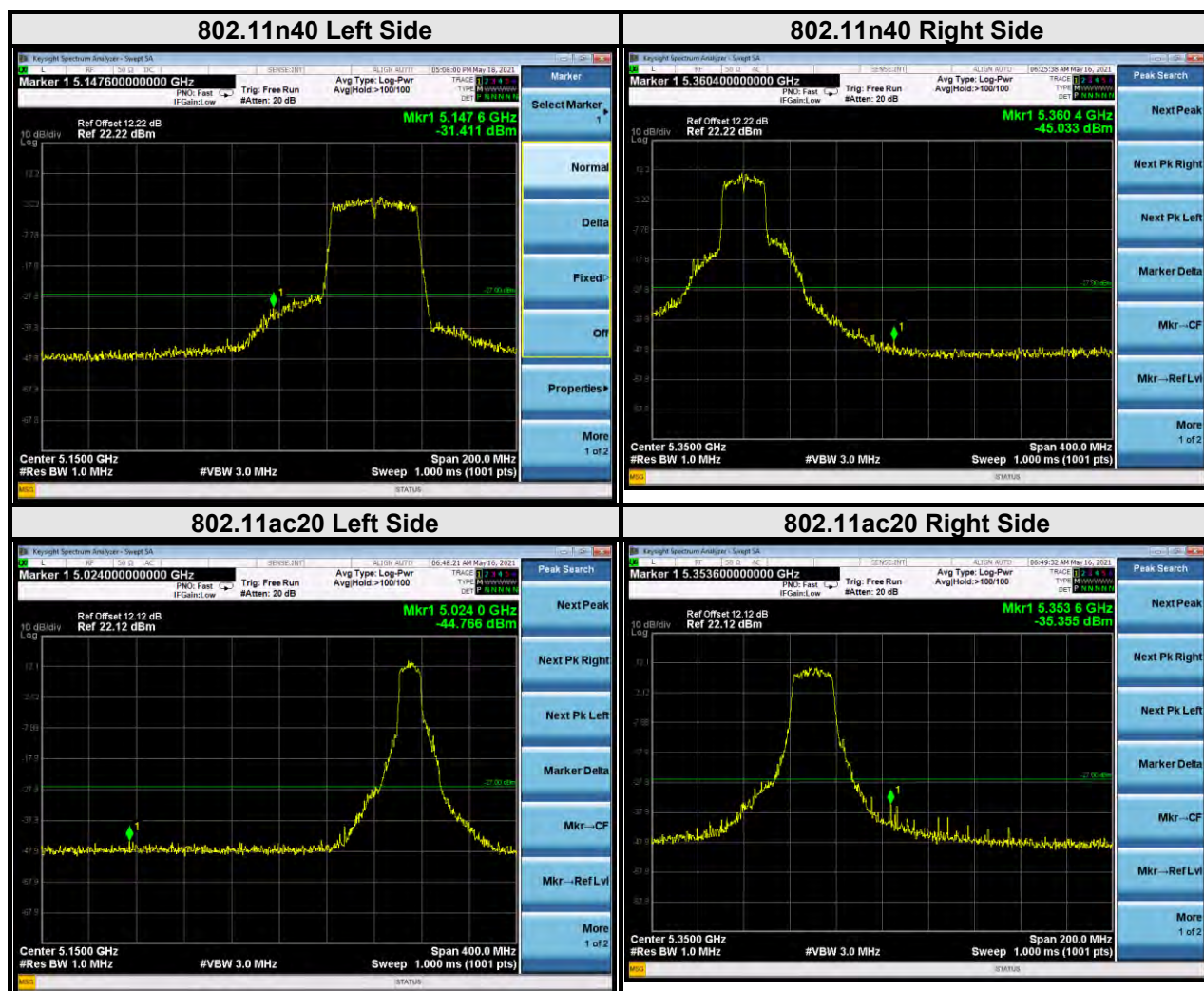
BUREAU
VERITAS

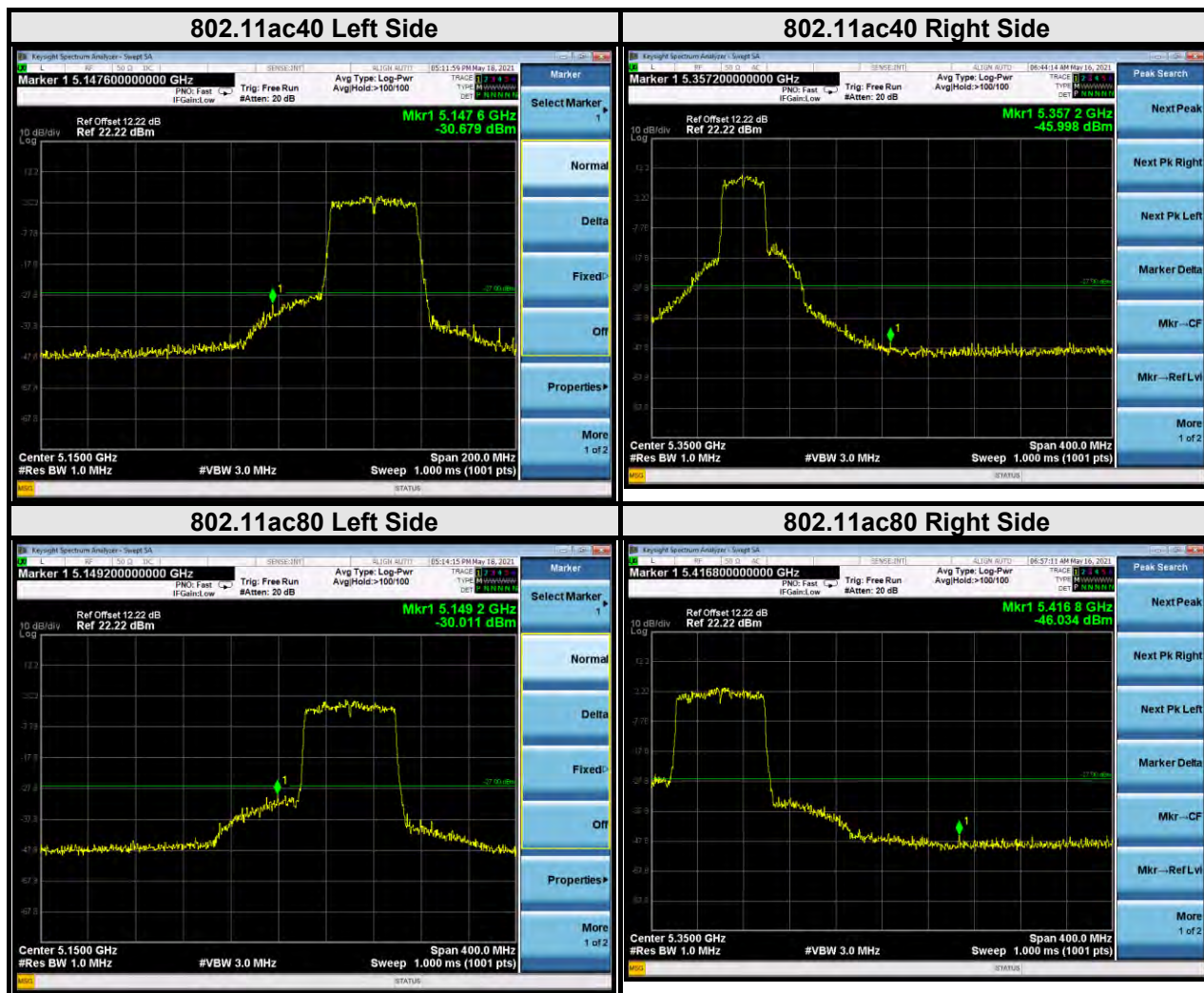
Test Report No.: W7L- P21040030RF14

3.2.7 TEST RESULTS

For U-NII-1:









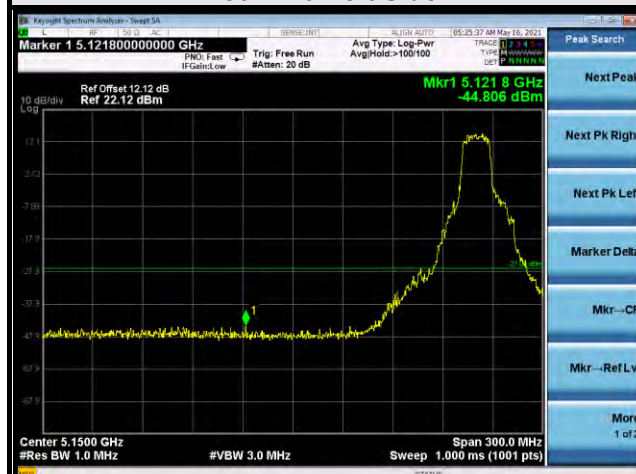
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

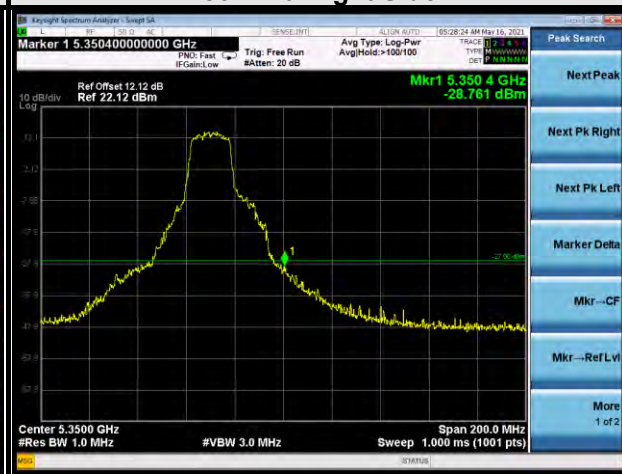
For U-NII-2A:

SPECTRUM PLOT OF BANDEDGE

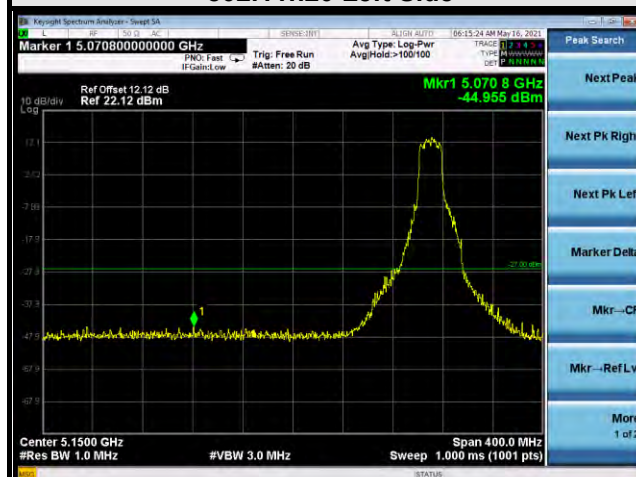
802.11a Left Side



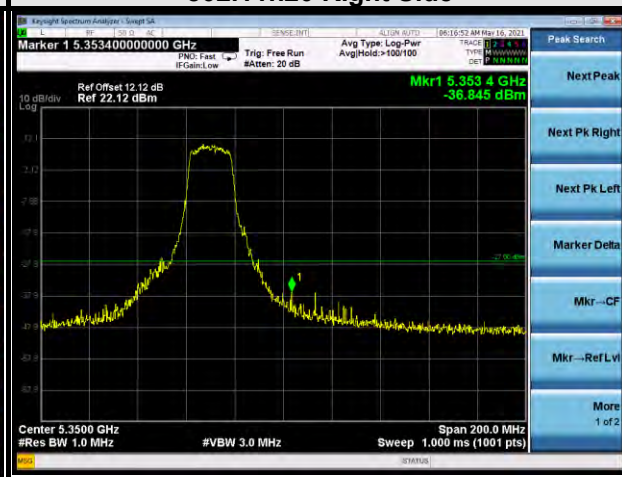
802.11a Right Side

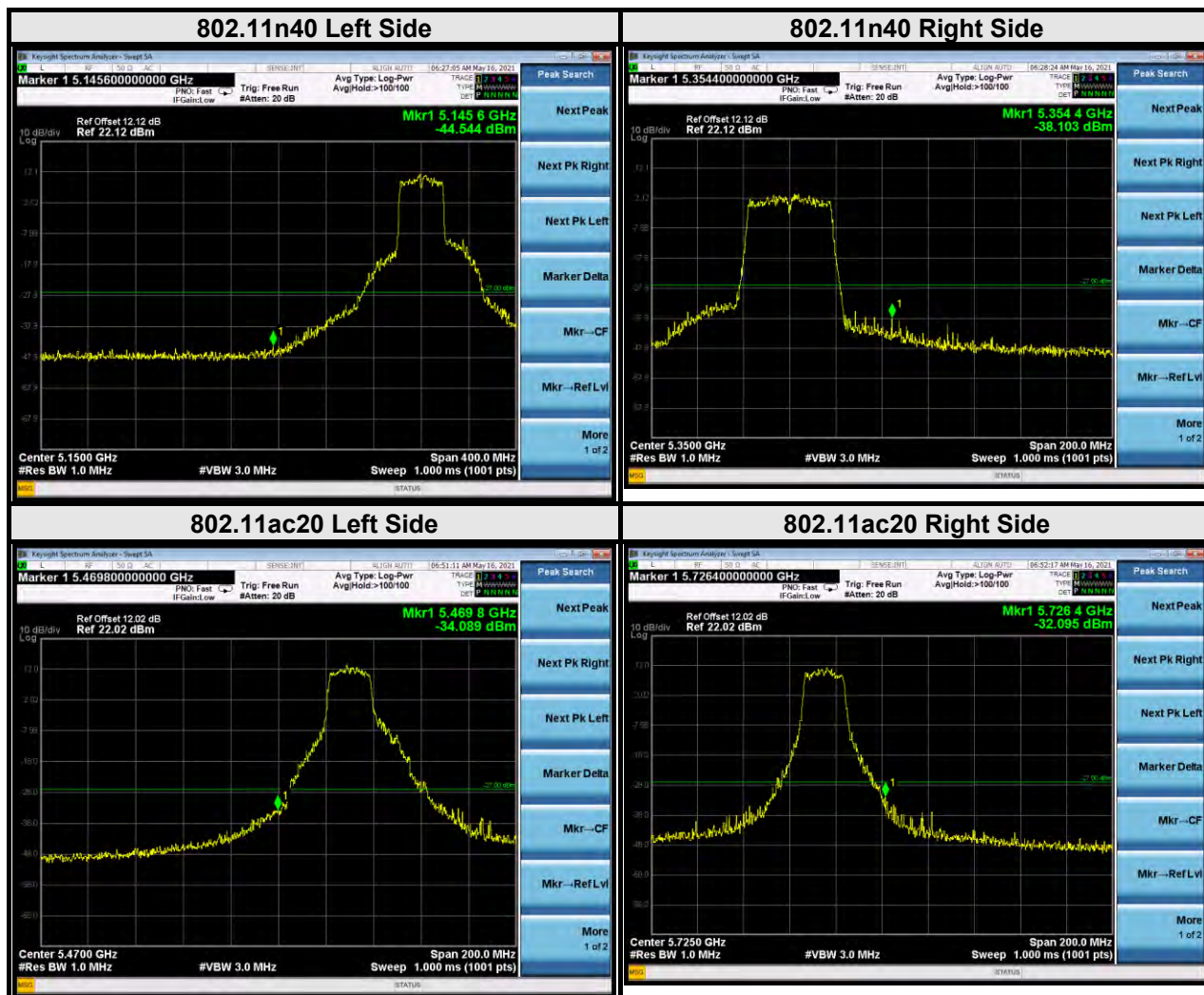


802.11n20 Left Side



802.11n20 Right Side

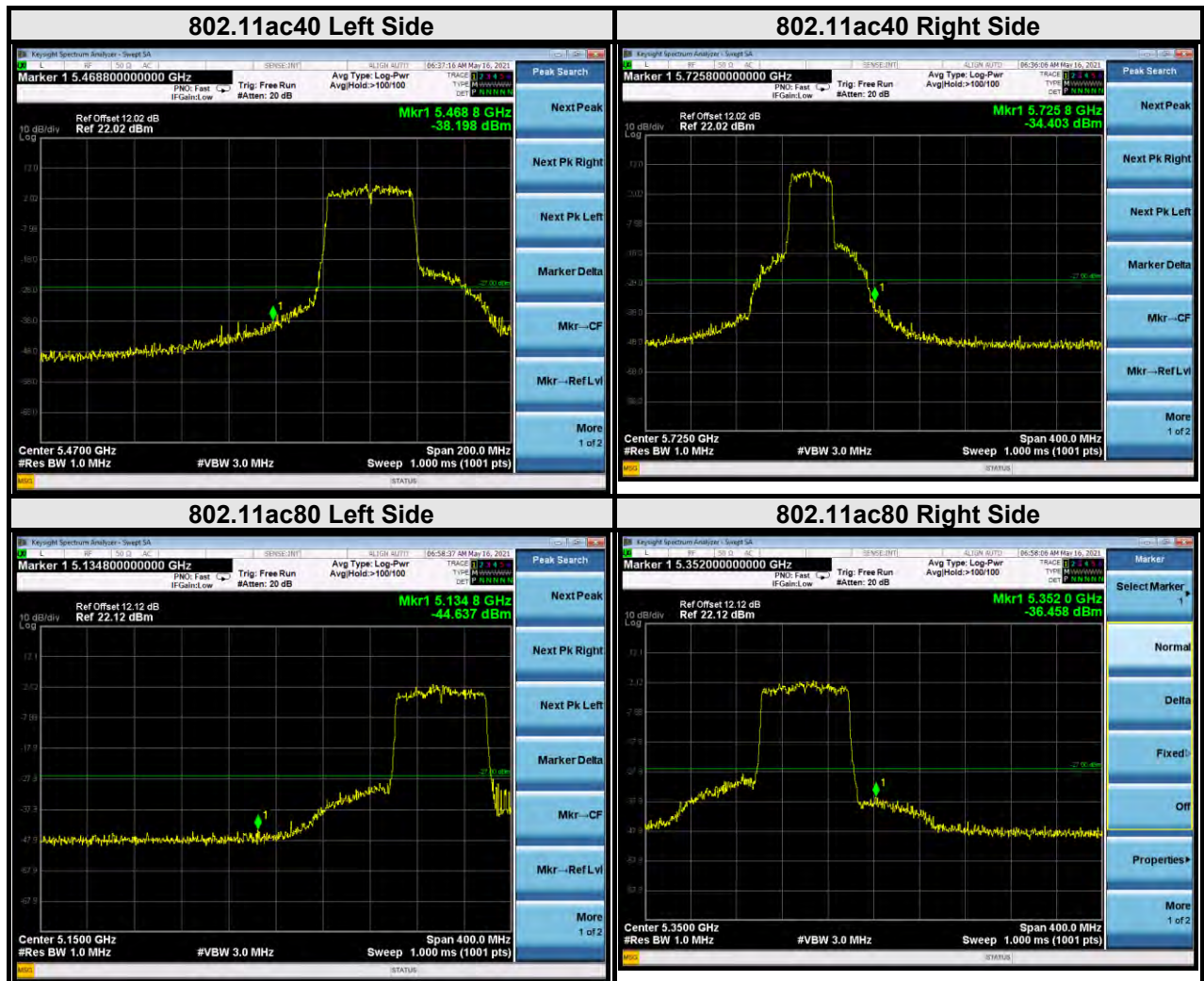






BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

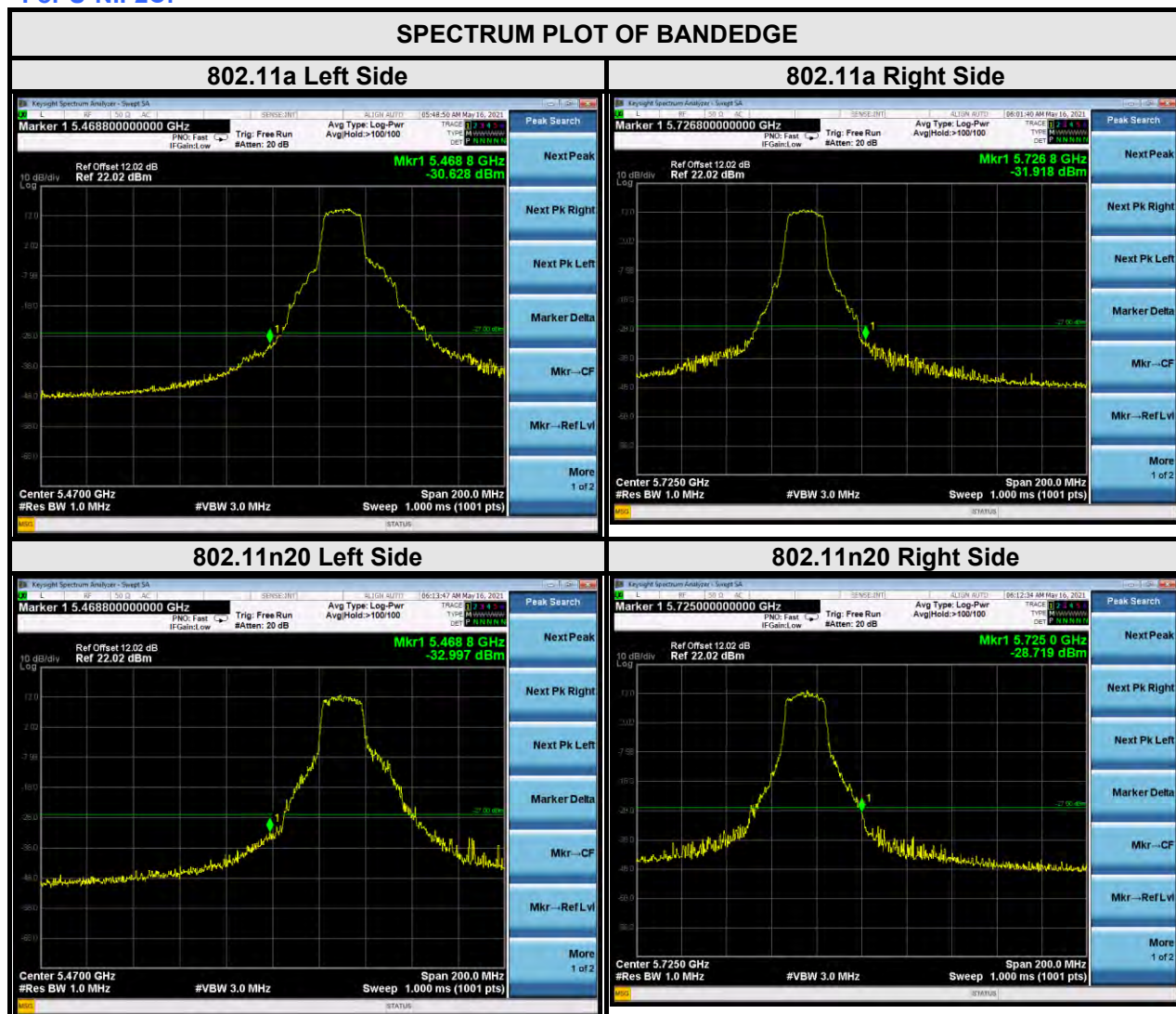


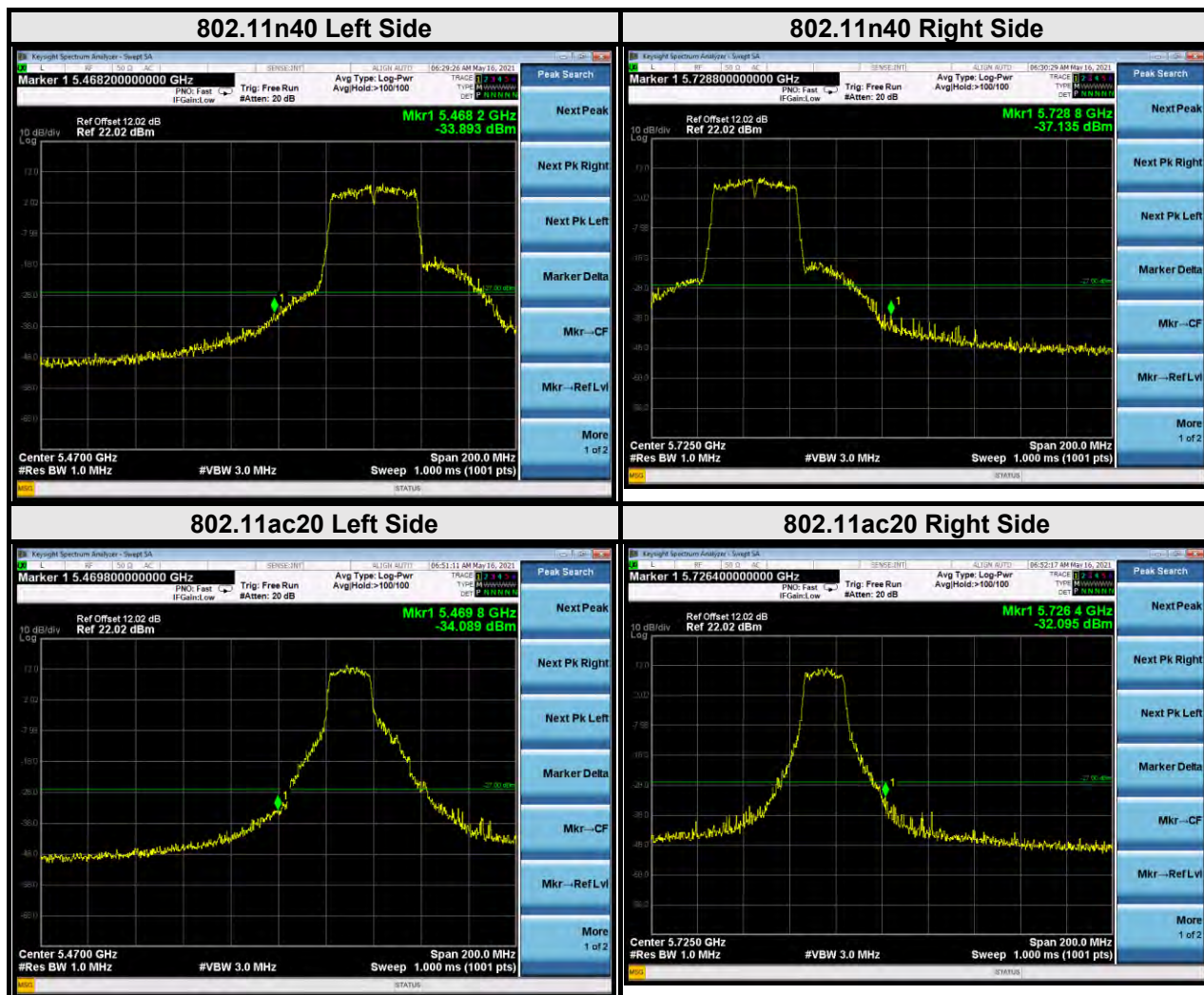


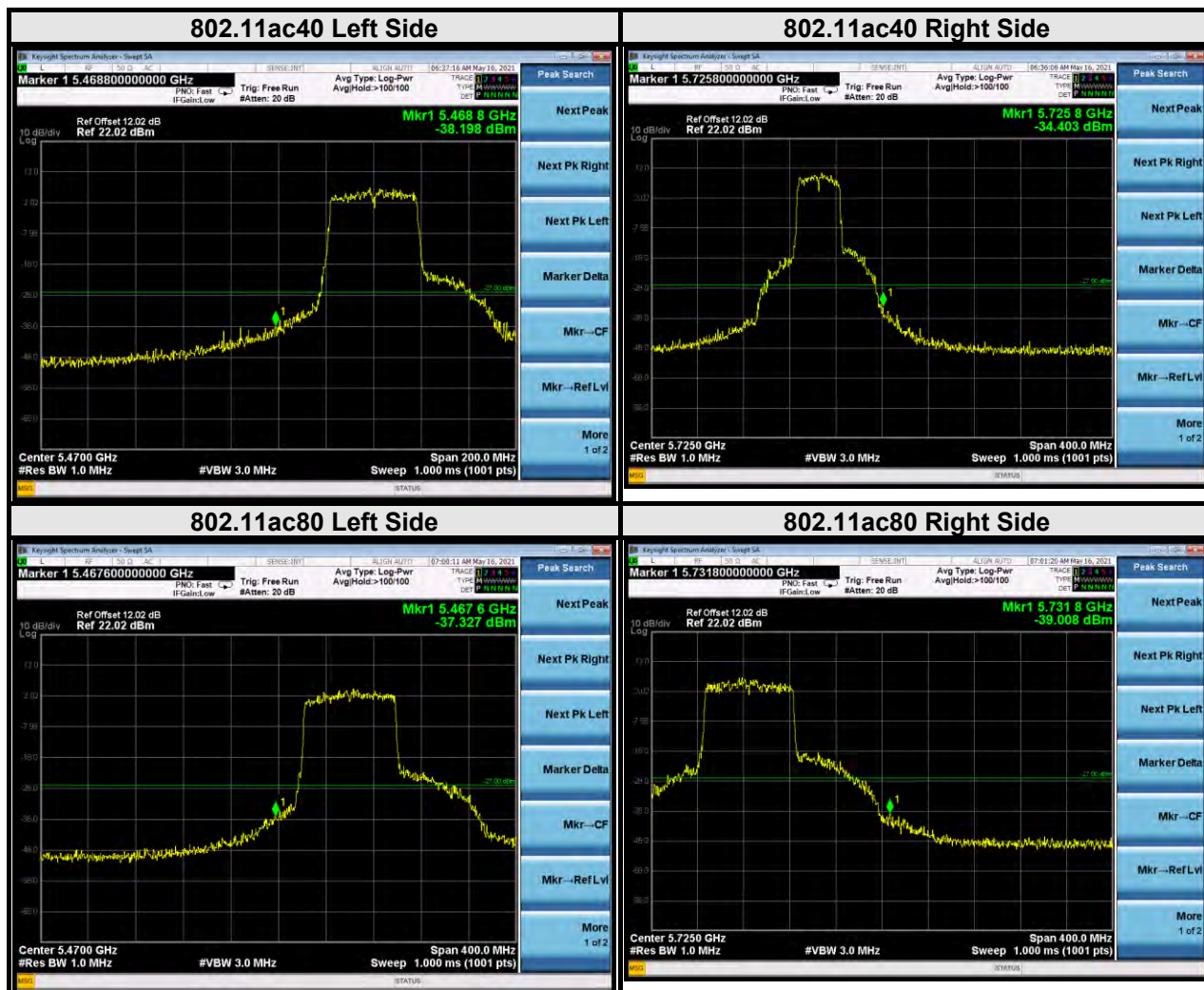
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

For U-NII-2C:





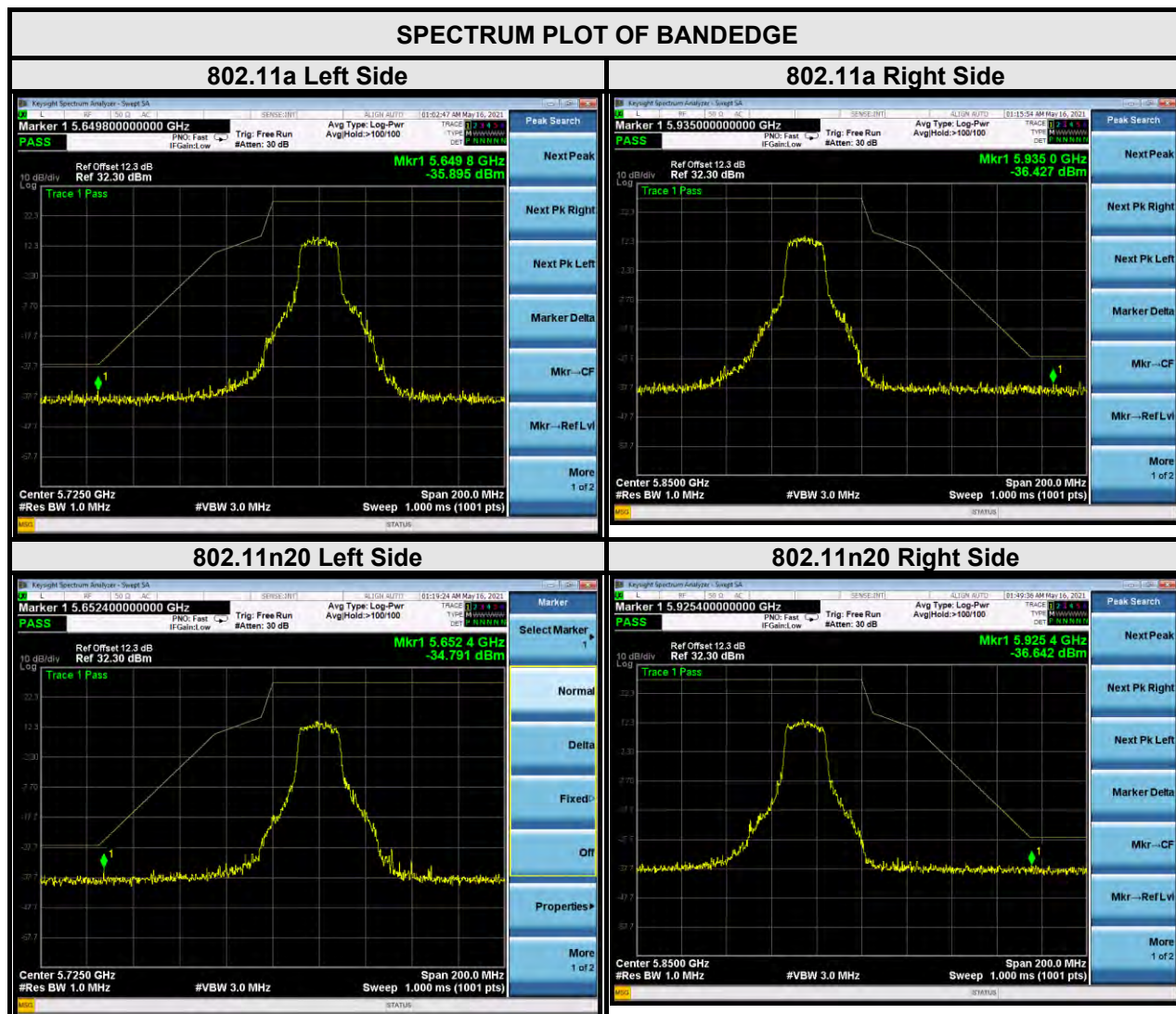


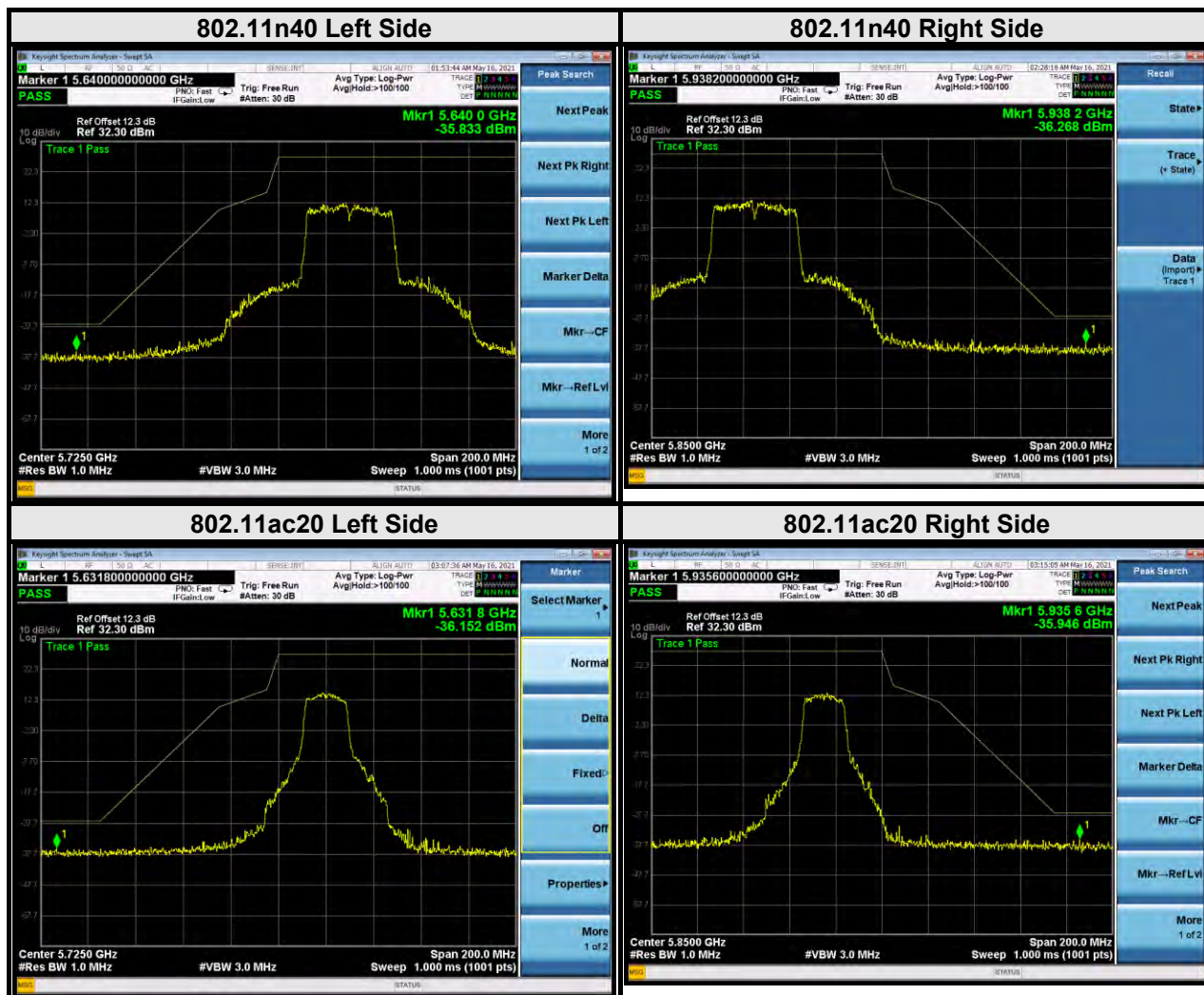


BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

For U-NII-3:

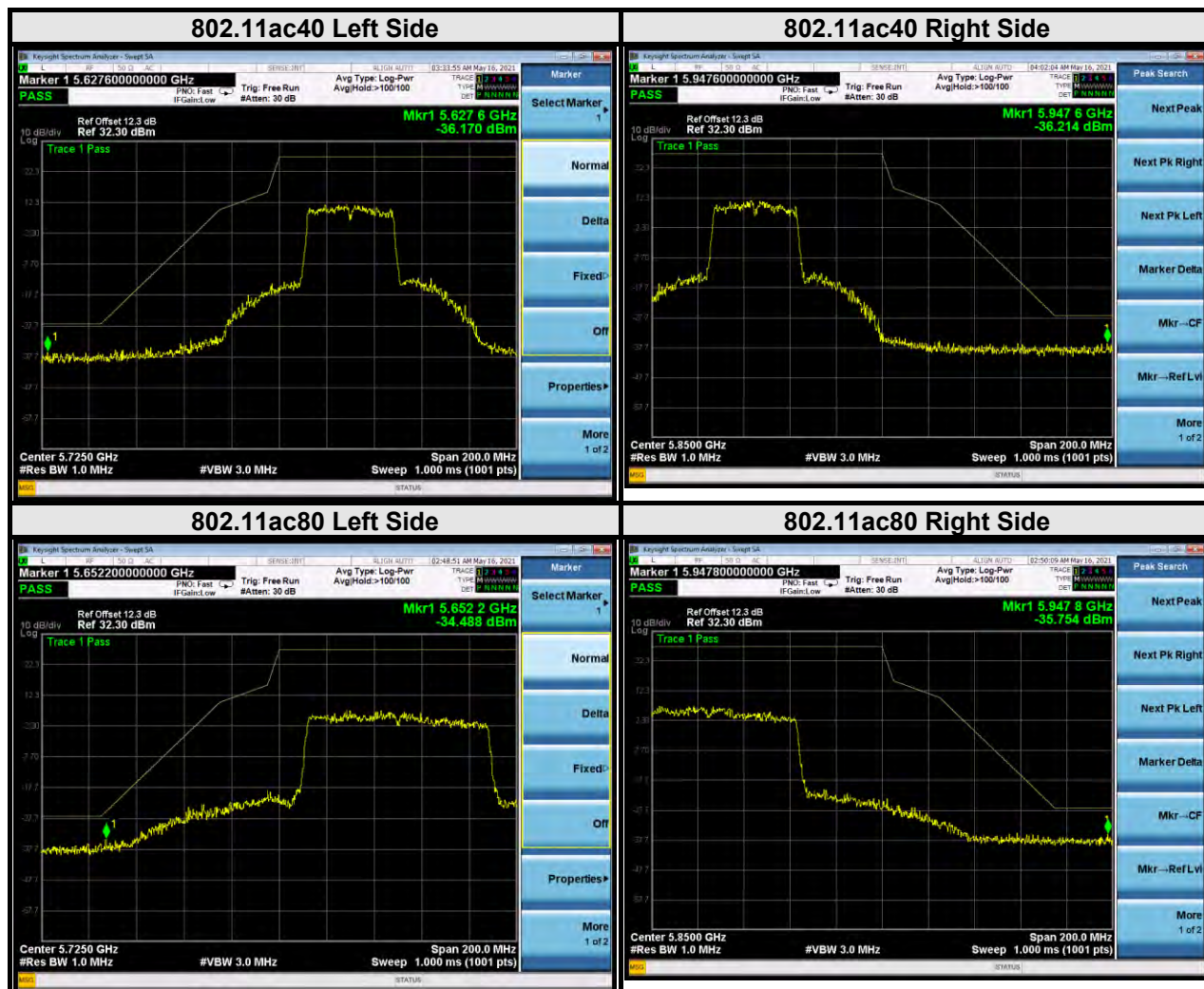






BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14



3.3 AUTOMATICALLY DISCONTINUE TRANSMISSION

3.3.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.3.2 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.4 CONDUCTED EMISSION MEASUREMENT

3.4.1 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.

3.4.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Mar. 03,21	Mar. 02,22
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 22,21	Feb. 21,22

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.

3.4.3 TEST PROCEDURES

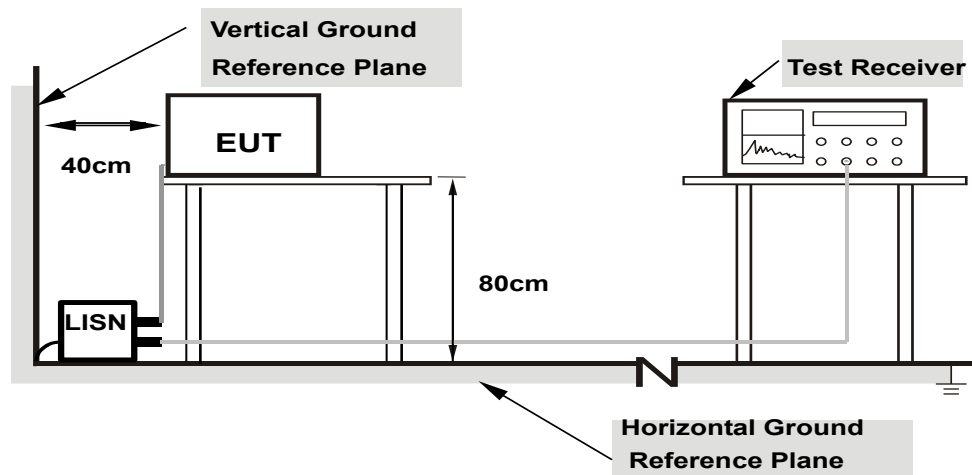
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

3.4.4 DEVIATION FROM TEST STANDARD

No deviation.

3.4.5 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).

3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.4.7 TEST RESULTS

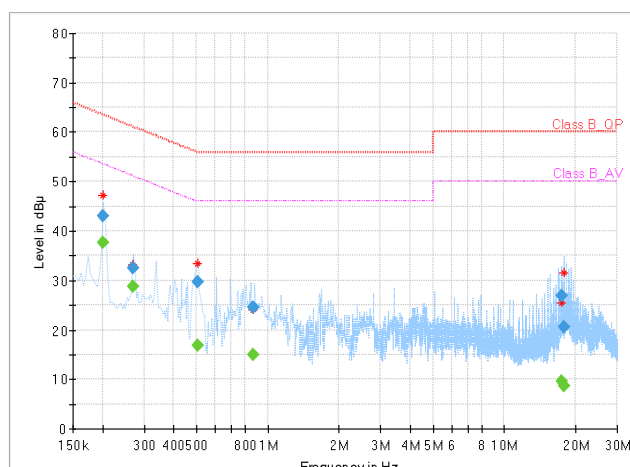
CONDUCTED WORST-CASE DATA:

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

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.202000	---	37.72	53.53	15.81	L1	ON	10.0
0.202000	43.00	---	63.53	20.52	L1	ON	10.0
0.268000	---	28.70	51.18	22.48	L1	ON	10.0
0.268000	32.48	---	61.18	28.70	L1	ON	10.0
0.508000	---	16.94	46.00	29.06	L1	ON	10.0
0.508000	29.62	---	56.00	26.38	L1	ON	10.0
0.872000	---	15.04	46.00	30.96	L1	ON	10.0
0.872000	24.67	---	56.00	31.33	L1	ON	10.0
17.540000	---	9.61	50.00	40.39	L1	ON	10.0
17.540000	26.85	---	60.00	33.15	L1	ON	10.0
17.932000	---	8.56	50.00	41.44	L1	ON	10.0
17.932000	20.56	---	60.00	39.44	L1	ON	10.0

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

Full Spectrum

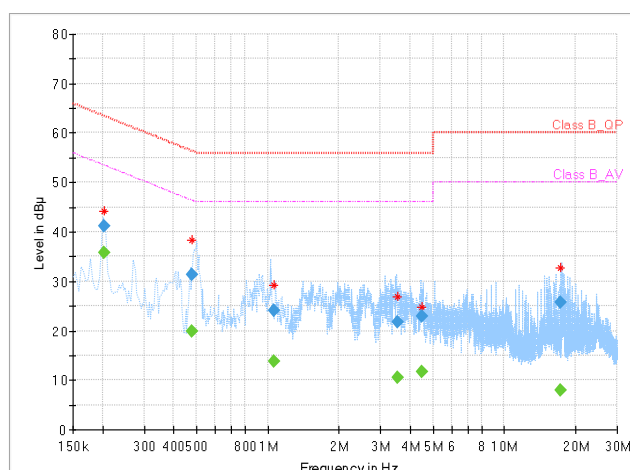


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.204000	---	35.87	53.45	17.57	N	ON	10.0
0.204000	41.21	---	63.45	22.23	N	ON	10.0
0.480000	---	19.77	46.34	26.57	N	ON	10.0
0.480000	31.33	---	56.34	25.01	N	ON	10.0
1.062000	---	13.73	46.00	32.27	N	ON	10.0
1.062000	24.12	---	56.00	31.88	N	ON	10.0
3.532000	---	10.52	46.00	35.48	N	ON	10.0
3.532000	21.65	---	56.00	34.35	N	ON	10.0
4.460000	---	11.73	46.00	34.27	N	ON	10.0
4.460000	22.90	---	56.00	33.10	N	ON	10.0
17.332000	---	7.90	50.00	42.10	N	ON	10.0
17.332000	25.71	---	60.00	34.29	N	ON	10.0

- 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



3.5 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.5.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

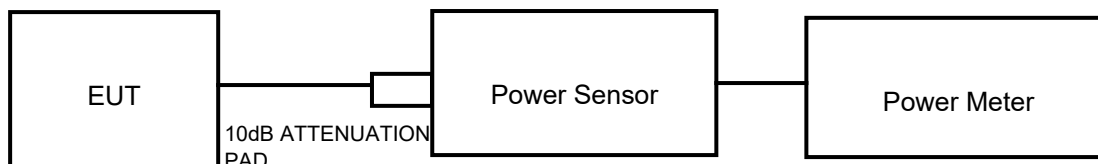
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	B	Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW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

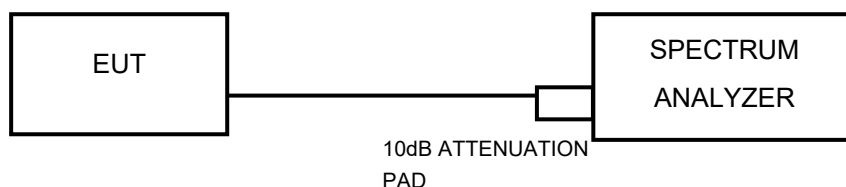
3.5.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

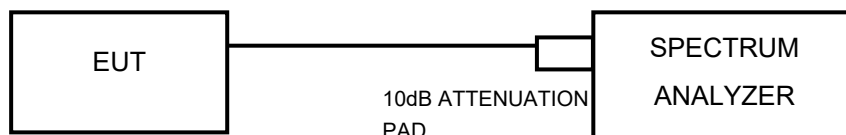
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



11ac TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.5.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 22,21	Feb. 21,22
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 25,21	Feb. 24,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Power Sensor	ANRITSU	MA2411B	1339352	May. 07,21	May. 08,22

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.

3.5.4 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.

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITIONS

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



3.5.7 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	13.45	0.12	13.57	22.75	24	PASS
40	5200	15.66	0.12	15.78	37.84	24	PASS
48	5240	15.92	0.12	16.04	40.18	24	PASS
52	5260	15.68	0.12	15.80	38.02	24	PASS
60	5300	15.90	0.12	16.02	39.99	24	PASS
64	5320	14.65	0.12	14.77	29.99	24	PASS
100	5500	14.26	0.12	14.38	27.42	24	PASS
116	5580	14.62	0.12	14.74	29.79	24	PASS
124	5620	16.78	0.12	16.90	48.98	24	PASS
140	5700	14.38	0.12	14.50	28.18	24	PASS
144	5720	16.45	0.12	16.57	45.39	24	PASS
144	5720	16.45	0.00	16.45	44.16	30	PASS
149	5745	17.45	0.00	17.45	55.59	30	PASS
157	5785	17.52	0.00	17.52	56.49	30	PASS
165	5825	16.82	0.00	16.82	48.08	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	12.80	0.09	12.89	19.45	24	PASS
40	5200	15.32	0.09	15.41	34.75	24	PASS
48	5240	15.62	0.09	15.71	37.24	24	PASS
52	5260	15.80	0.09	15.89	38.82	24	PASS
60	5300	15.65	0.09	15.74	37.50	24	PASS
64	5320	13.43	0.09	13.52	22.49	24	PASS
100	5500	14.18	0.09	14.27	26.73	24	PASS
116	5580	14.40	0.09	14.27	28.12	24	PASS
124	5620	15.83	0.09	14.49	39.08	24	PASS
140	5700	14.25	0.09	14.34	27.16	24	PASS
144	5720	15.47	0.09	15.56	35.97	24	PASS
144	5720	15.47	0.09	15.56	35.97	30	PASS
149	5745	16.48	0.09	16.57	45.39	30	PASS
157	5785	16.56	0.09	16.65	46.24	30	PASS
165	5825	15.82	0.09	15.91	38.99	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	8.92	0.21	9.13	8.18	24	PASS
46	5230	15.34	0.21	15.55	35.89	24	PASS
54	5270	14.76	0.21	14.97	31.41	24	PASS
62	5310	9.12	0.21	9.33	8.57	24	PASS
102	5510	13.71	0.21	13.92	24.66	24	PASS
110	5550	13.90	0.21	14.11	25.76	24	PASS
126	5630	16.10	0.21	16.31	42.76	24	PASS
134	5670	13.72	0.21	13.93	24.72	24	PASS
142	5710	15.53	0.21	15.74	37.50	24	PASS
142	5710	15.53	0.21	15.74	37.50	30	PASS
151	5755	16.68	0.21	16.89	48.87	30	PASS
159	5798	16.64	0.21	16.85	48.42	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	12.84	0.09	12.93	19.63	24	PASS
40	5200	15.34	0.09	15.43	34.91	24	PASS
48	5240	15.60	0.09	15.69	37.07	24	PASS
52	5260	15.74	0.09	15.83	38.28	24	PASS
60	5300	15.66	0.09	15.75	37.58	24	PASS
64	5320	13.42	0.09	13.51	22.44	24	PASS
100	5500	14.14	0.09	14.23	26.49	24	PASS
116	5580	14.42	0.09	14.23	28.25	24	PASS
124	5620	15.78	0.09	14.51	38.64	24	PASS
140	5700	13.34	0.09	13.43	22.03	24	PASS
144	5720	15.44	0.09	15.53	35.73	24	PASS
144	5720	15.44	0.09	15.53	35.73	30	PASS
149	5745	16.34	0.09	16.43	43.95	30	PASS
157	5785	16.56	0.09	16.65	46.24	30	PASS
165	5825	15.87	0.09	15.96	39.45	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	8.90	0.20	9.10	8.13	24	PASS
46	5230	15.32	0.20	15.52	35.65	24	PASS
54	5270	15.28	0.20	15.48	35.32	24	PASS
62	5310	10.40	0.20	10.60	11.48	24	PASS
102	5510	12.78	0.20	12.98	19.86	24	PASS
110	5550	13.92	0.20	14.12	25.82	24	PASS
126	5630	15.20	0.20	15.40	34.67	24	PASS
134	5670	15.48	0.20	15.68	36.98	24	PASS
142	5710	14.77	0.20	14.97	31.41	24	PASS
142	5710	14.77	0.19	14.96	31.33	30	PASS
151	5755	15.68	0.19	15.87	38.64	30	PASS
159	5798	15.82	0.19	16.01	39.90	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	7.35	0.39	7.74	5.94	24	PASS
58	5290	9.46	0.39	9.85	9.66	24	PASS
106	5530	10.54	0.39	10.93	12.39	24	PASS
122	5610	14.22	0.39	14.61	28.91	24	PASS
138	5690	13.40	0.39	13.79	23.93	24	PASS
138	5690	13.40	0.42	13.82	24.10	30	PASS
155	5775	14.64	0.42	15.06	32.06	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	23.86	PASS
40	5200	16.98	28.57	PASS
48	5240	17.04	27.38	PASS
52	5260	17.16	26.30	PASS
60	5300	17.64	30.28	PASS
64	5320	16.86	23.25	PASS
100	5500	17.16	26.24	PASS
116	5580	17.10	26.36	PASS
140	5700	17.04	26.05	PASS
144	5720	19.14	33.91	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
144	5720	19.14	15.06	PASS
149	5745	18.60	15.31	PASS
157	5785	18.48	15.09	PASS
165	5825	17.58	15.26	PASS



802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.88	25.29	PASS
40	5200	18.18	28.33	PASS
48	5240	18.24	28.56	PASS
52	5260	18.24	26.80	PASS
60	5300	18.12	26.02	PASS
64	5320	17.88	23.93	PASS
100	5500	18.24	27.62	PASS
116	5580	18.24	28.00	PASS
140	5700	18.00	26.71	PASS
144	5720	18.60	31.59	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
144	5720	18.60	15.16	PASS
149	5745	18.48	16.79	PASS
157	5785	18.60	14.14	PASS
165	5825	18.24	15.42	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.40	41.66	PASS
46	5230	36.80	56.92	PASS
54	5270	36.50	46.11	PASS
62	5310	36.40	41.90	PASS
102	5510	36.60	57.21	PASS
110	5550	36.80	56.74	PASS
134	5670	36.50	41.80	PASS
142	5710	36.90	55.16	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
142	5710	36.90	35.13	PASS
151	5755	36.90	35.69	PASS
159	5795	36.80	35.70	PASS

802.11ac (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.94	24.62	PASS
40	5200	18.12	27.68	PASS
48	5240	18.48	30.20	PASS
52	5260	18.24	27.07	PASS
60	5300	18.06	26.30	PASS
64	5320	17.88	24.52	PASS
100	5500	18.18	28.60	PASS
116	5580	18.42	28.42	PASS
140	5700	18.00	26.39	PASS
144	5720	18.60	29.79	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
144	5720	18.60	14.19	PASS
149	5745	18.60	15.07	PASS
157	5785	18.48	15.15	PASS
165	5825	18.18	15.13	PASS



802.11ac (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.20	41.92	PASS
46	5230	36.60	56.88	PASS
54	5270	36.70	57.26	PASS
62	5310	36.30	41.62	PASS
102	5510	36.40	47.03	PASS
110	5550	36.60	56.95	PASS
134	5670	36.60	54.76	PASS
142	5710	36.50	47.42	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
142	5710	36.50	35.40	PASS
151	5755	37.00	35.62	PASS
159	5795	36.90	35.65	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.60	83.27	PASS
58	5290	75.60	83.04	PASS
106	5530	75.72	90.86	PASS
122	5610	75.72	104.57	PASS
138	5690	75.72	82.78	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
138	5690	75.72	74.21	PASS
155	5775	75.72	75.17	PASS



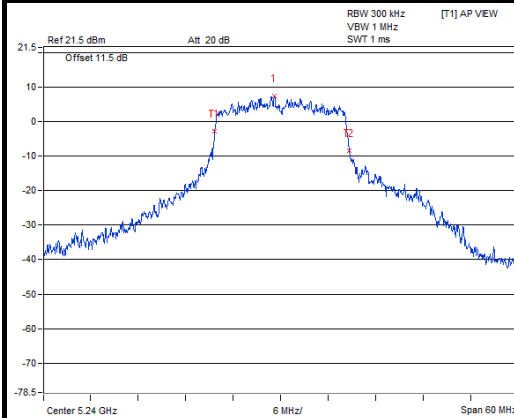
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

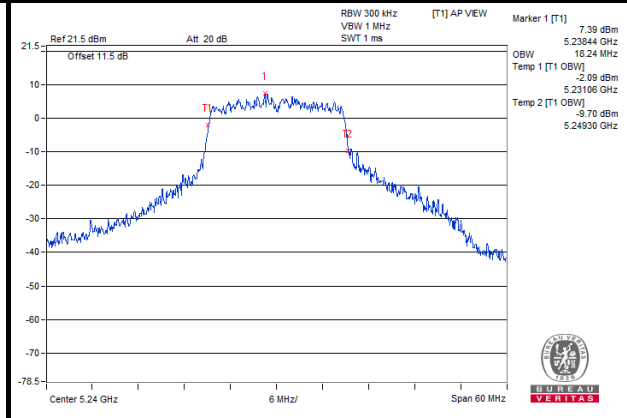
For U-NII-1:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

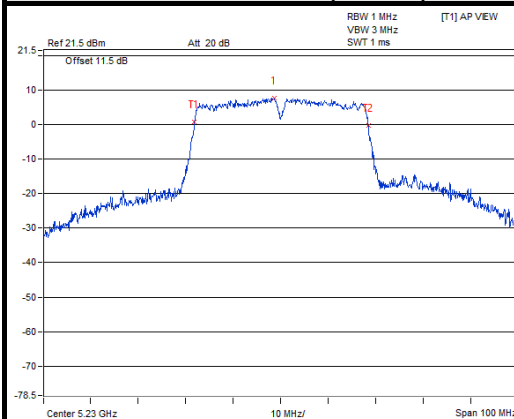
802.11a



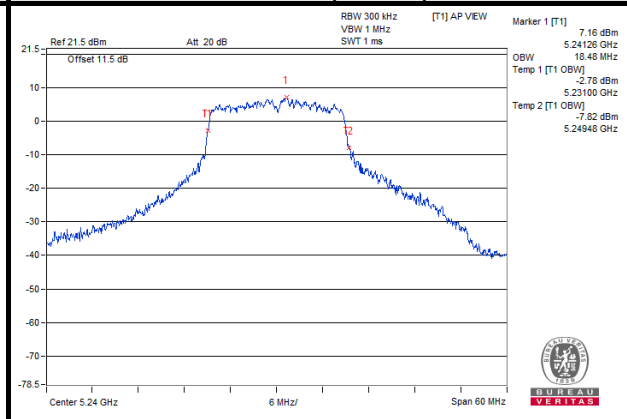
802.11n (20MHz)



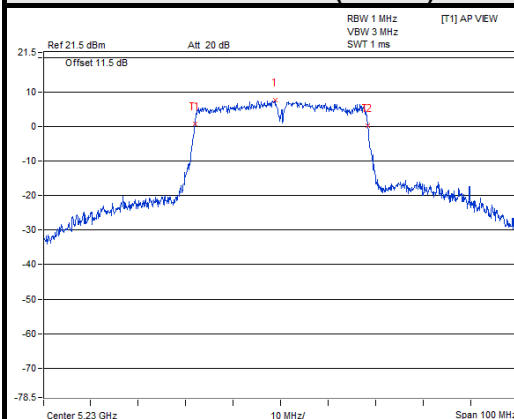
802.11n (40MHz)



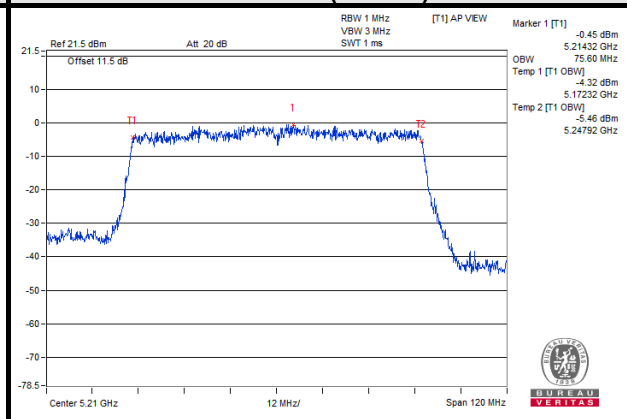
802.11ac (20MHz)



802.11ac (40MHz)

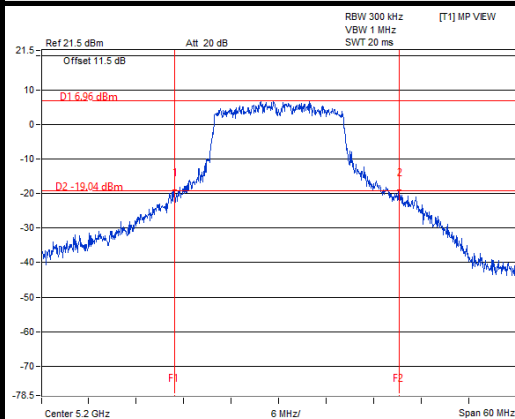


802.11ac (80MHz)

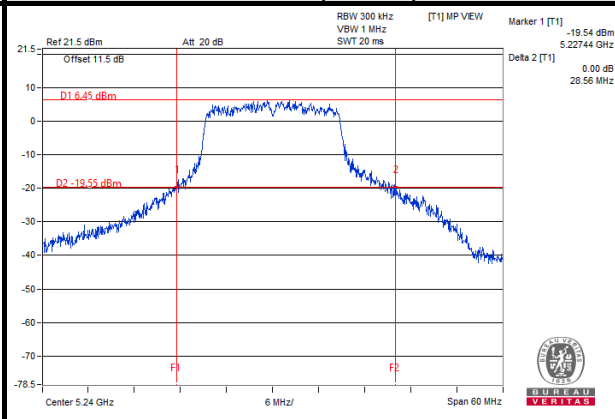


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

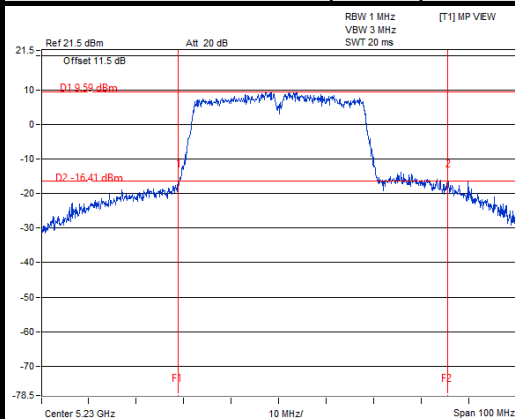
802.11a



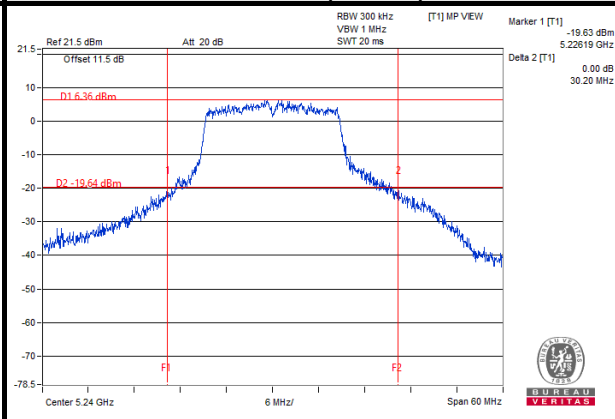
802.11n (20MHz)



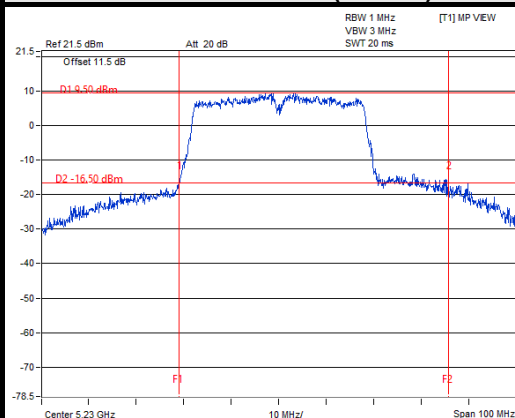
802.11n (40MHz)



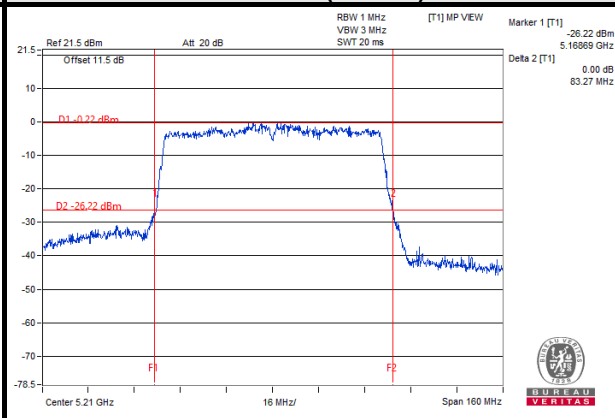
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)

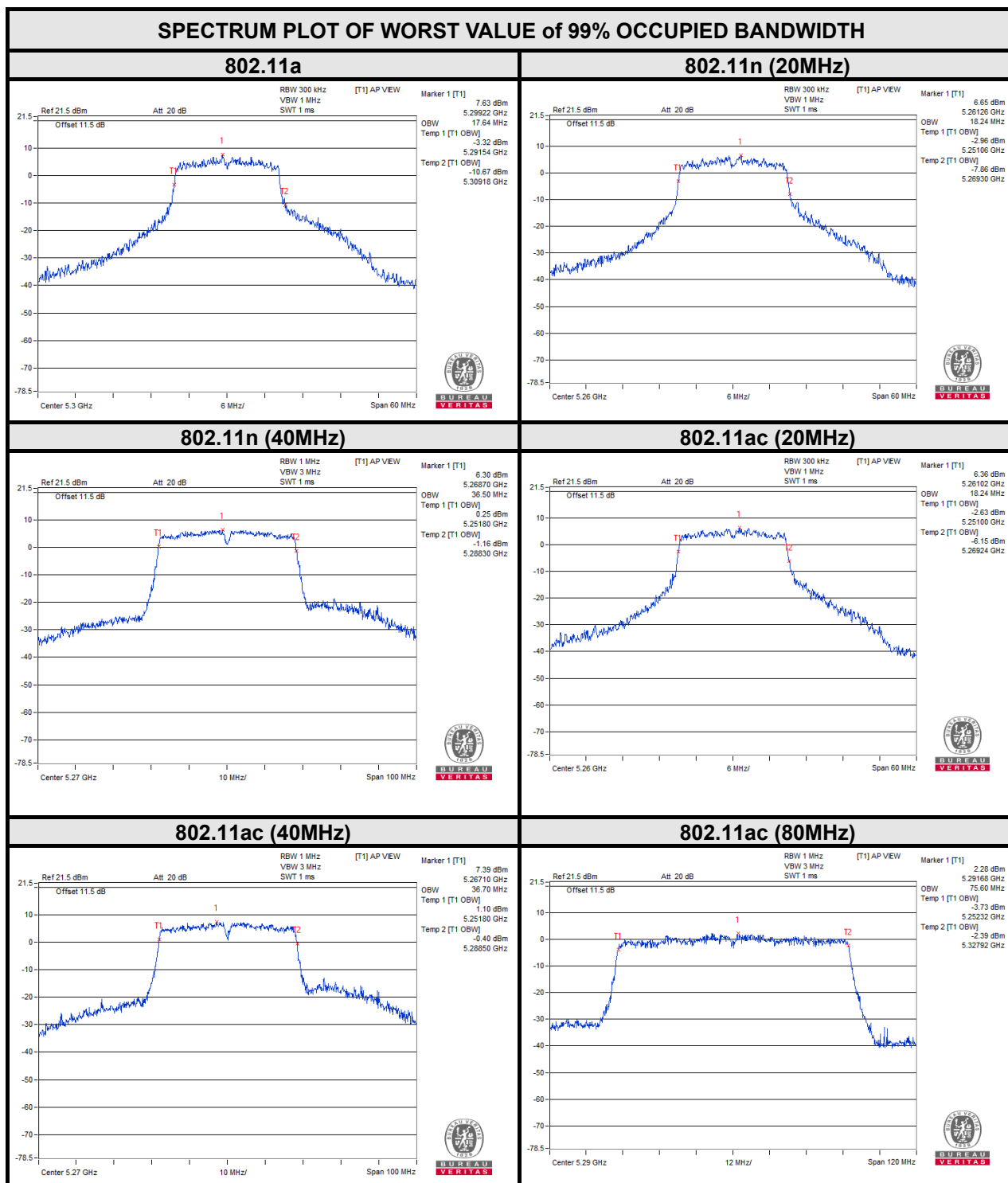




BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

For U-NII-2A:



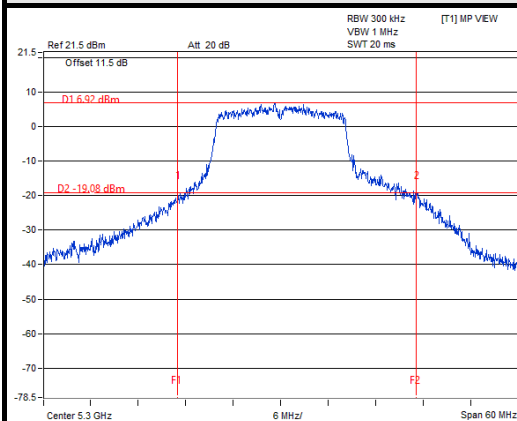


BUREAU
VERITAS

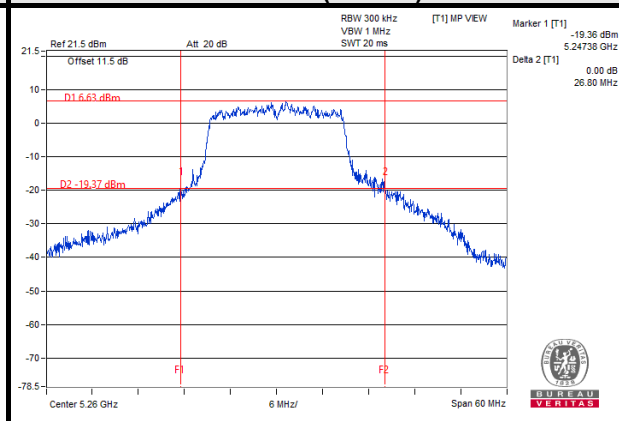
Test Report No.: W7L- P21040030RF14

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

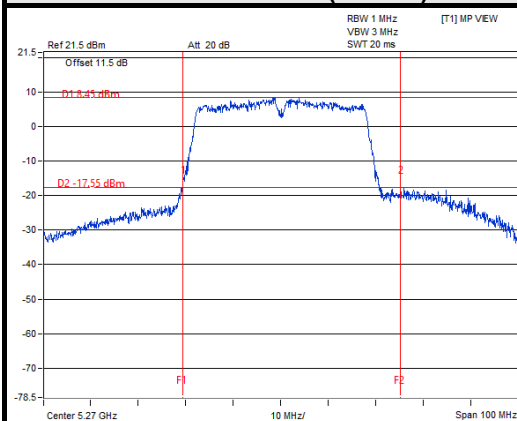
802.11a



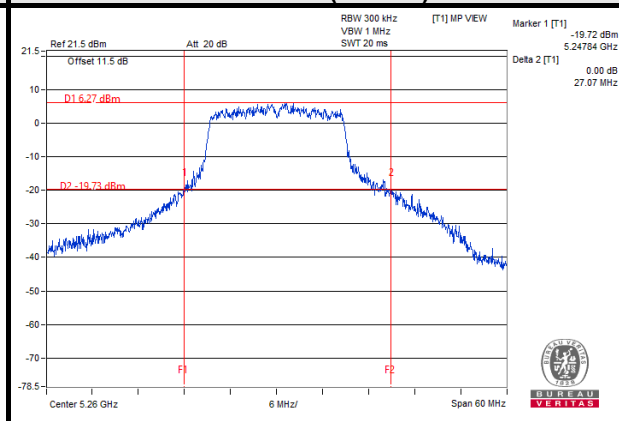
802.11n (20MHz)



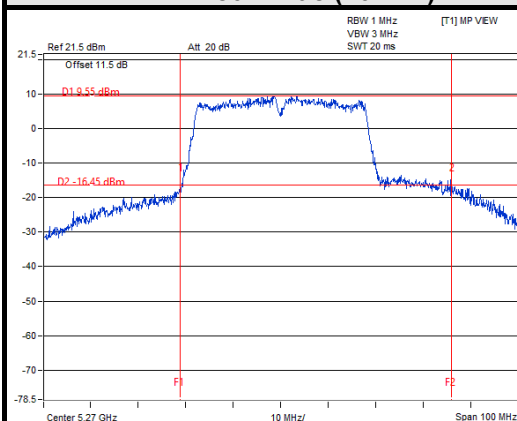
802.11n (40MHz)



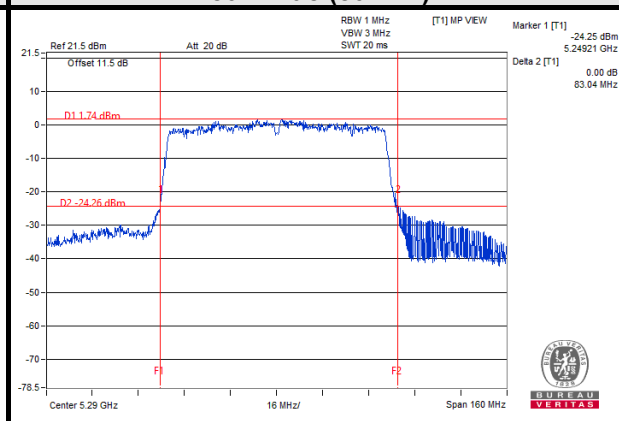
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)





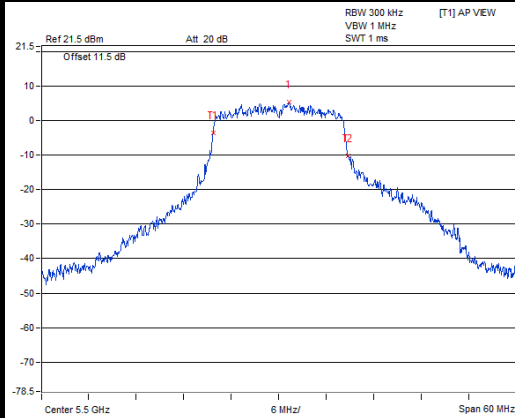
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

For U-NII-2C:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

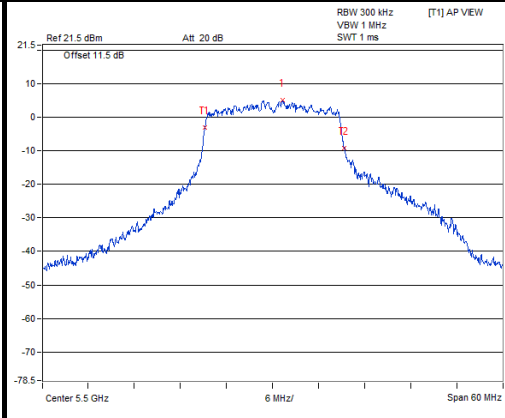
802.11a



Marker 1 [T1]
5.30 dBm
5.50126 GHz
17.16 MHz
OBW
Temp 1 [T1] OBW
-3.44 dBm
5.49168 GHz
Temp 2 [T1] OBW
-10.22 dBm
5.50882 GHz



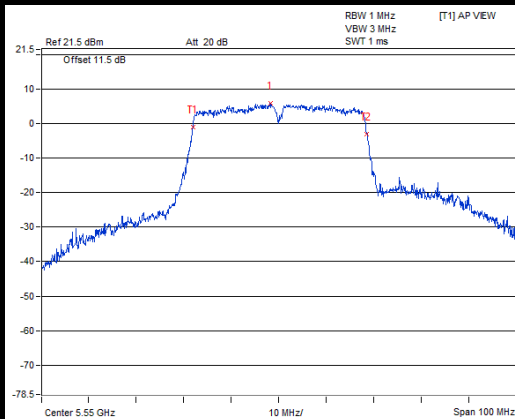
802.11n (20MHz)



Marker 1 [T1]
5.04 dBm
5.50126 GHz
18.24 MHz
OBW
Temp 1 [T1] OBW
-3.06 dBm
5.49112 GHz
Temp 2 [T1] OBW
-9.06 dBm
5.50936 GHz



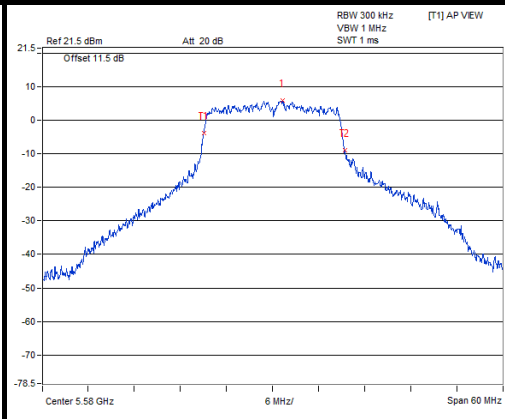
802.11n (40MHz)



Marker 1 [T1]
5.82 dBm
5.54830 GHz
36.80 MHz
OBW
Temp 1 [T1] OBW
-0.98 dBm
5.53180 GHz
Temp 2 [T1] OBW
-2.92 dBm
5.56860 GHz



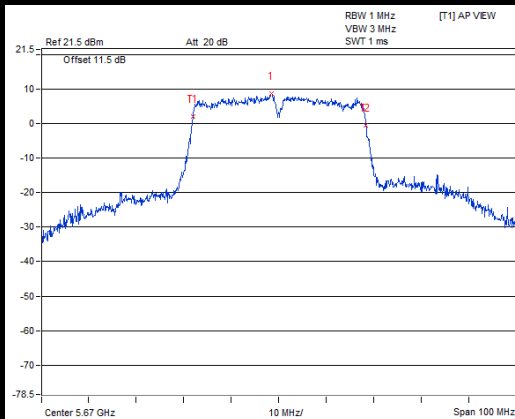
802.11ac (20MHz)



Marker 1 [T1]
5.77 dBm
5.58126 GHz
18.42 MHz
OBW
Temp 1 [T1] OBW
-3.70 dBm
5.57100 GHz
Temp 2 [T1] OBW
-8.92 dBm
5.58942 GHz



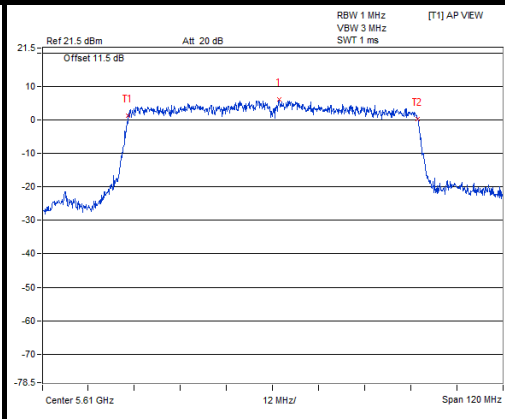
802.11ac (40MHz)



Marker 1 [T1]
8.67 dBm
5.66840 GHz
36.60 MHz
OBW
Temp 1 [T1] OBW
2.13 dBm
5.65180 GHz
Temp 2 [T1] OBW
-0.52 dBm
5.68840 GHz



802.11ac (80MHz)

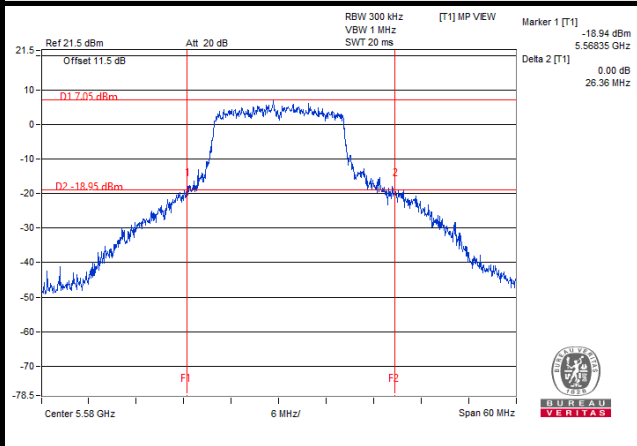


Marker 1 [T1]
6.12 dBm
5.61168 GHz
75.72 MHz
OBW
Temp 1 [T1] OBW
1.28 dBm
5.57220 GHz
Temp 2 [T1] OBW
0.21 dBm
5.64732 GHz

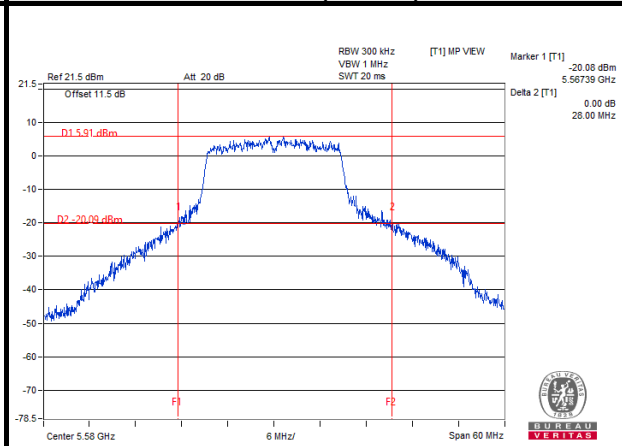


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

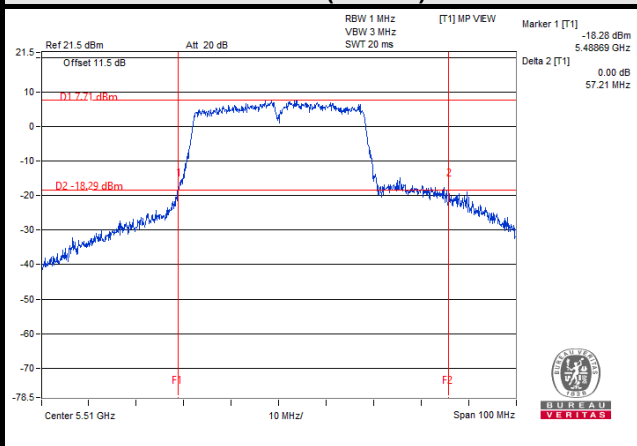
802.11a



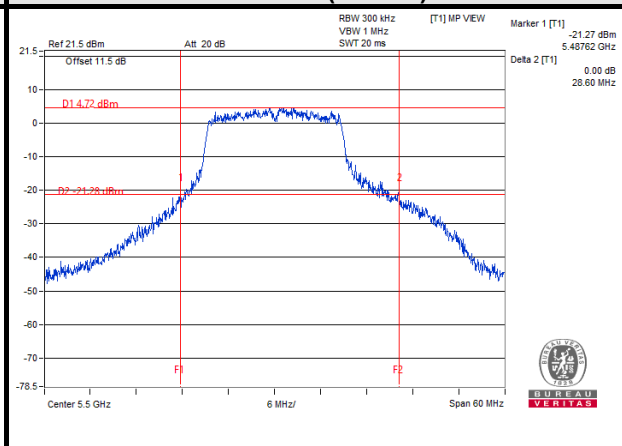
802.11n (20MHz)



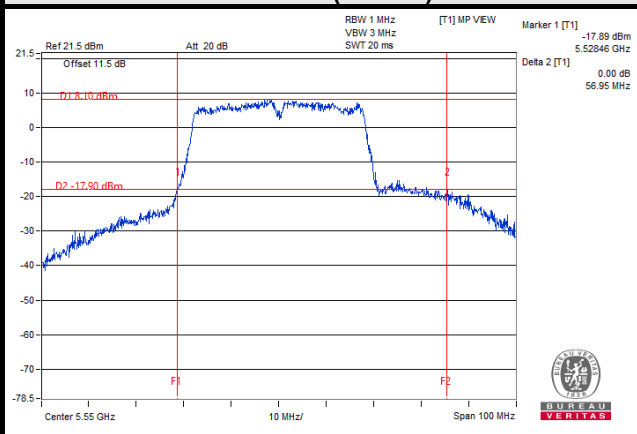
802.11n (40MHz)



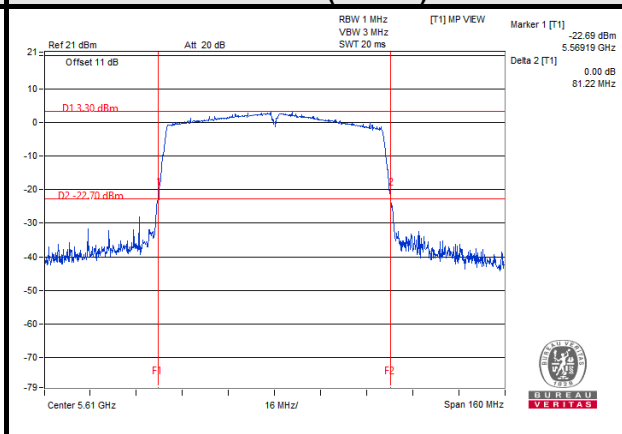
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)





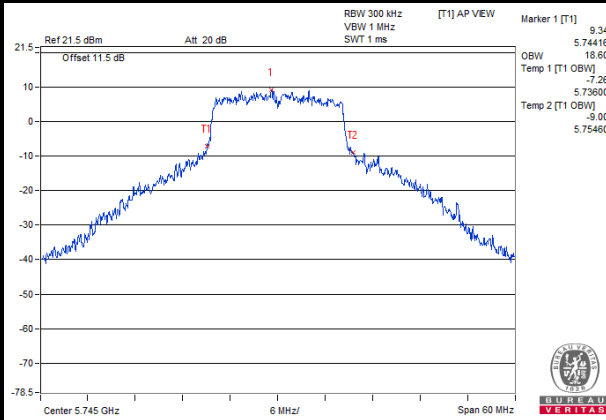
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

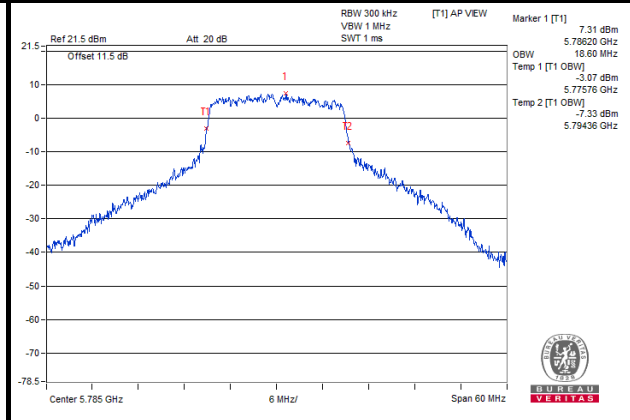
For U-NII-3:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

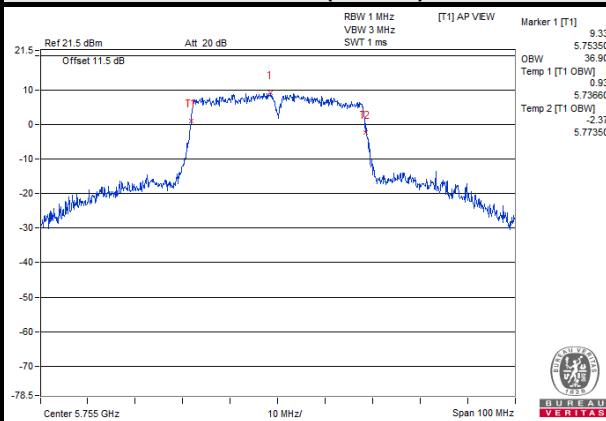
802.11a



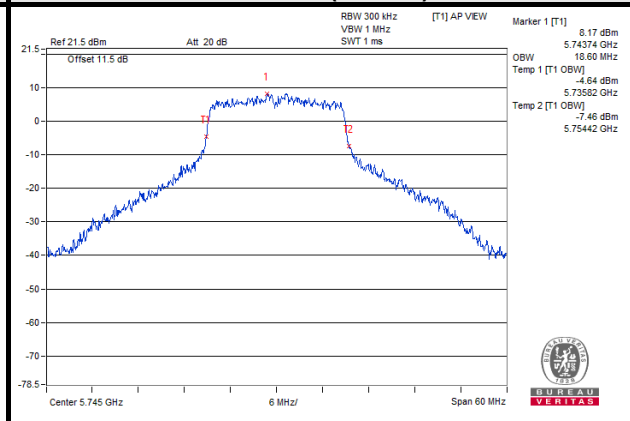
802.11n (20MHz)



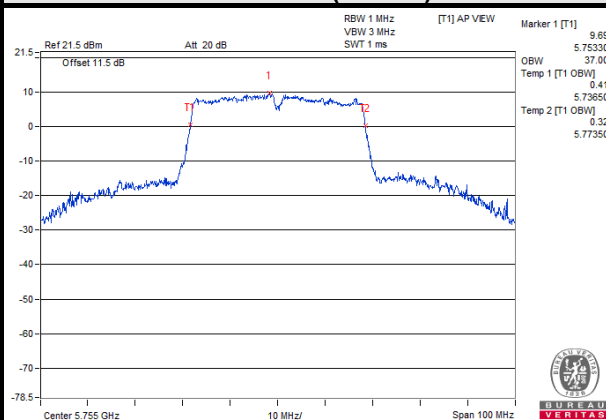
802.11n (40MHz)



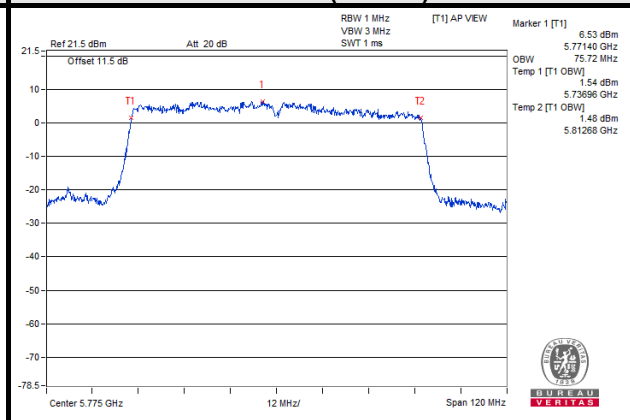
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)



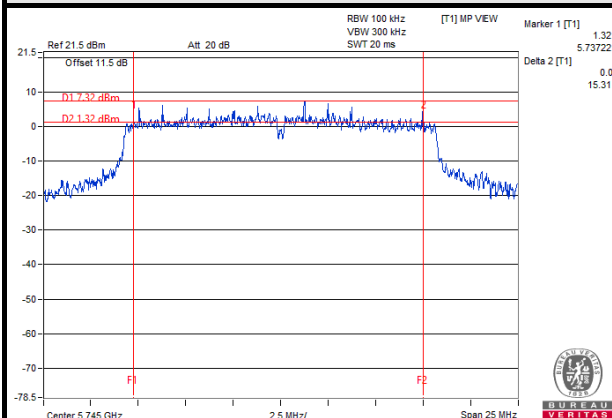


BUREAU
VERITAS

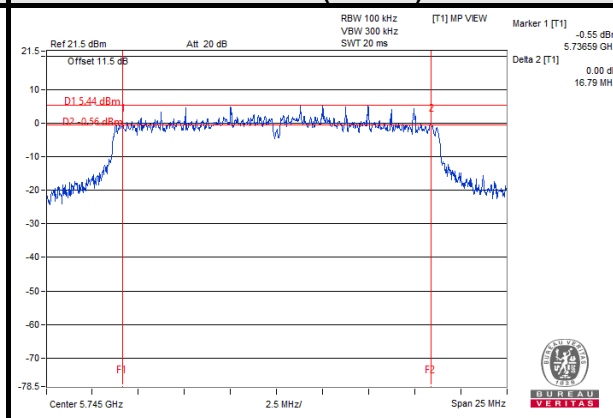
Test Report No.: W7L- P21040030RF14

SPECTRUM PLOT OF WORST VALUE of 6dB Bandwidth

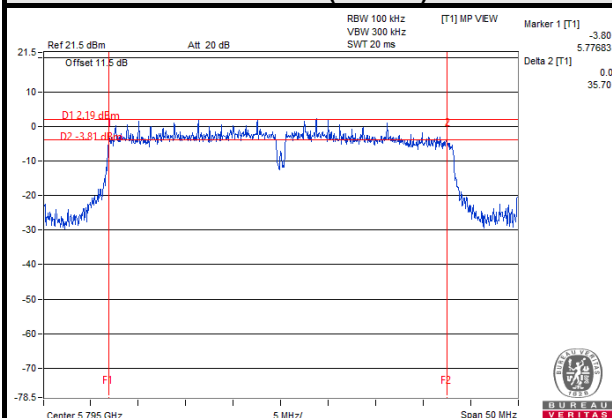
802.11a



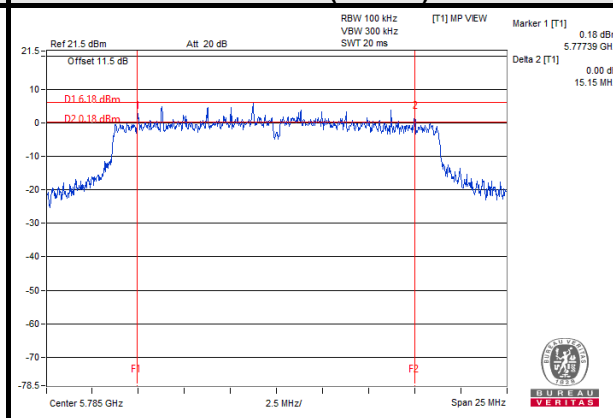
802.11n (20MHz)



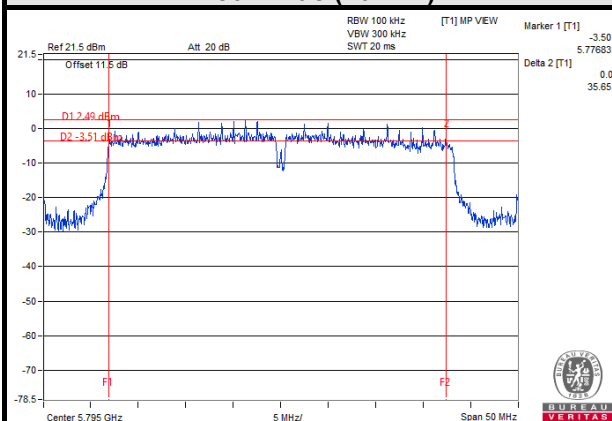
802.11n (40MHz)



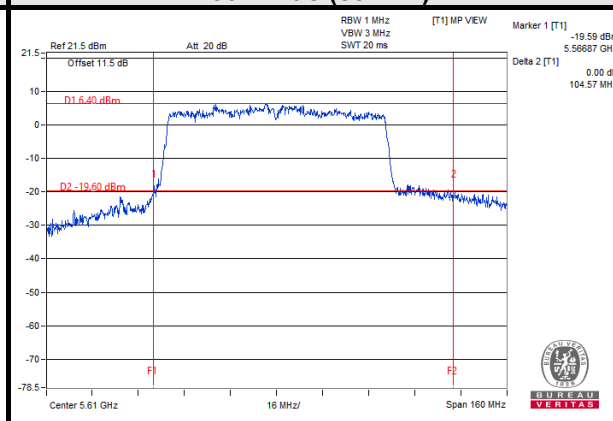
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)

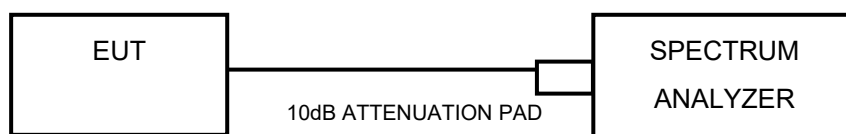


3.6 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.6.1 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

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.6.4 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

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.6.7 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	2.49	0.12	2.61	11	PASS
40	5200	4.03	0.12	4.15	11	PASS
48	5240	4.11	0.12	4.23	11	PASS
52	5260	3.58	0.12	3.70	11	PASS
60	5300	3.72	0.12	3.84	11	PASS
64	5320	2.36	0.12	2.48	11	PASS
100	5500	2.28	0.12	2.40	11	PASS
116	5580	2.89	0.12	3.01	11	PASS
140	5700	3.12	0.12	3.24	11	PASS
144	5720	5.94	0.12	6.06	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	1.15	0.09	1.24	11	PASS
40	5200	3.05	0.09	3.14	11	PASS
48	5240	3.24	0.09	3.33	11	PASS
52	5260	2.80	0.09	2.89	11	PASS
60	5300	2.05	0.09	2.14	11	PASS
64	5320	0.89	0.09	0.98	11	PASS
100	5500	1.35	0.09	1.44	11	PASS
116	5580	2.05	0.09	2.14	11	PASS
140	5700	2.89	0.09	2.98	11	PASS
144	5720	4.78	0.09	4.87	11	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	-5.63	0.21	-5.42	11	PASS
46	5230	0.14	0.21	0.35	11	PASS
54	5270	-0.81	0.21	-0.60	11	PASS
62	5310	-6.29	0.21	-6.08	11	PASS
102	5510	-1.92	0.21	-1.71	11	PASS
110	5550	-1.65	0.21	-1.44	11	PASS
134	5670	-1.27	0.21	-1.06	11	PASS
142	5710	1.72	0.21	1.93	11	PASS

802.11 ac (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	1.03	0	1.03	11	PASS
40	5200	3.19	0	3.19	11	PASS
48	5240	3.39	0	3.39	11	PASS
52	5260	2.89	0	2.89	11	PASS
60	5300	2.31	0	2.31	11	PASS
64	5320	0.82	0	0.82	11	PASS
100	5500	1.18	0	1.18	11	PASS
116	5580	2.20	0	2.20	11	PASS
140	5700	1.69	0	1.69	11	PASS
144	5720	4.50	0	4.50	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	-6.08	0.20	-5.88	11	PASS
46	5230	0.00	0.20	0.20	11	PASS
54	5270	0.04	0.20	0.24	11	PASS
62	5310	-2.42	0.20	-2.22	11	PASS
102	5510	-3.13	0.20	-2.93	11	PASS
110	5550	-1.58	0.20	-1.38	11	PASS
134	5670	0.40	0.20	0.60	11	PASS
142	5710	0.92	0.20	1.12	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	-9.52	0.39	-9.13	11	PASS
58	5290	-7.56	0.39	-7.17	11	PASS
106	5530	-5.82	0.39	-5.43	11	PASS
122	5610	-4.05	0.39	-3.66	11	PASS
138	5690	-3.68	0.39	-3.29	11	PASS

For U-NII-3:

Note: dBm/500kHz= dBm/300kHz+10*log(0.5/0.3)= dBm/300kHz+2.22

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
144	5720	0.20	2.42	0.00	2.42	30	PASS
149	5745	0.19	2.41	0.00	2.41	30	PASS
157	5785	-0.31	1.91	0.00	1.91	30	PASS
165	5825	-1.14	1.08	0.00	1.08	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
144	5720	-1.04	1.18	0.09	1.27	30	PASS
149	5745	-1.30	0.92	0.09	1.01	30	PASS
157	5785	-1.50	0.72	0.09	0.81	30	PASS
165	5825	-2.62	-0.40	0.09	-0.31	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
142	5710	-3.94	-1.72	0.21	-1.51	30	PASS
151	5755	-4.33	-2.11	0.21	-1.90	30	PASS
159	5795	-4.62	-2.40	0.21	-2.19	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
144	5720	-1.07	1.15	0.09	1.24	30	PASS
149	5745	-1.20	1.02	0.09	1.11	30	PASS
157	5785	-1.53	0.69	0.09	0.78	30	PASS
165	5825	-2.59	-0.37	0.09	-0.28	30	PASS

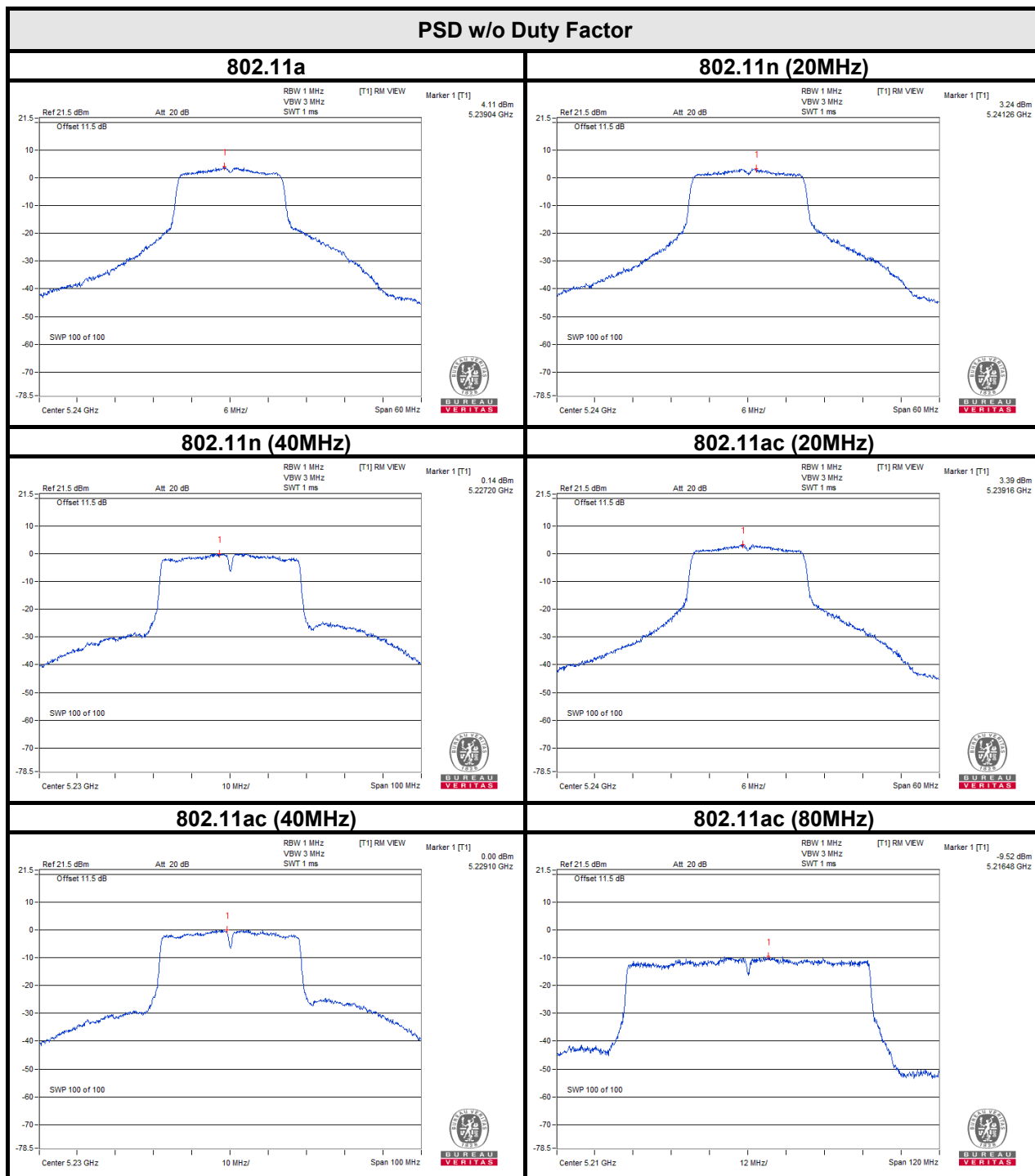
802.11ac (40MHz)

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
142	5710	-4.78	-2.56	0.19	-2.37	30	PASS
151	5755	-5.33	-3.11	0.19	-2.92	30	PASS
159	5795	-5.56	-3.34	0.19	-3.15	30	PASS

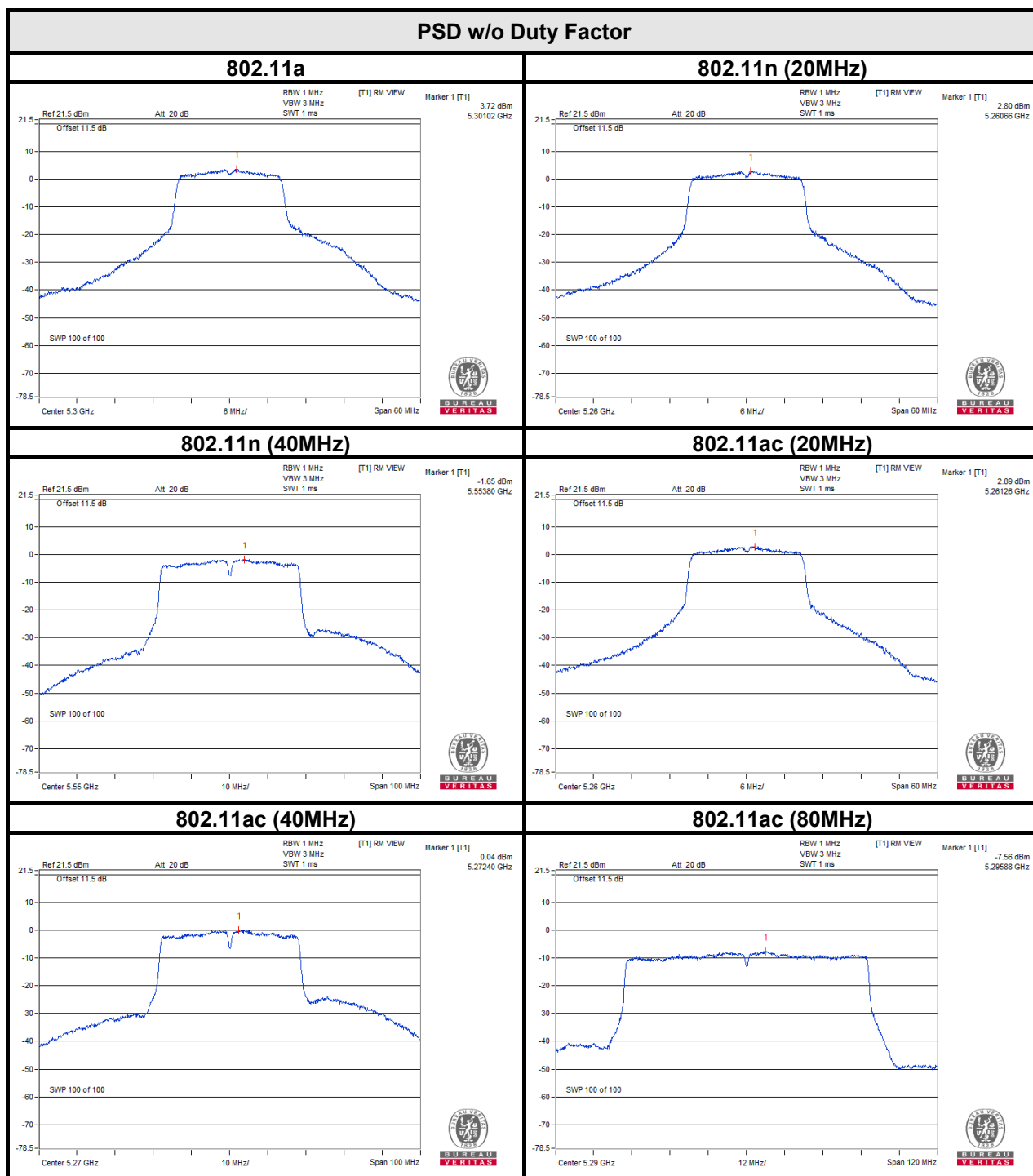
802.11ac (80MHz)

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
138	5690	-8.72	-6.50	0.42	-6.08	30	PASS
155	5775	-9.32	-7.10	0.42	-6.68	30	PASS

For 5180~5240MHz



For 5260~5320MHz

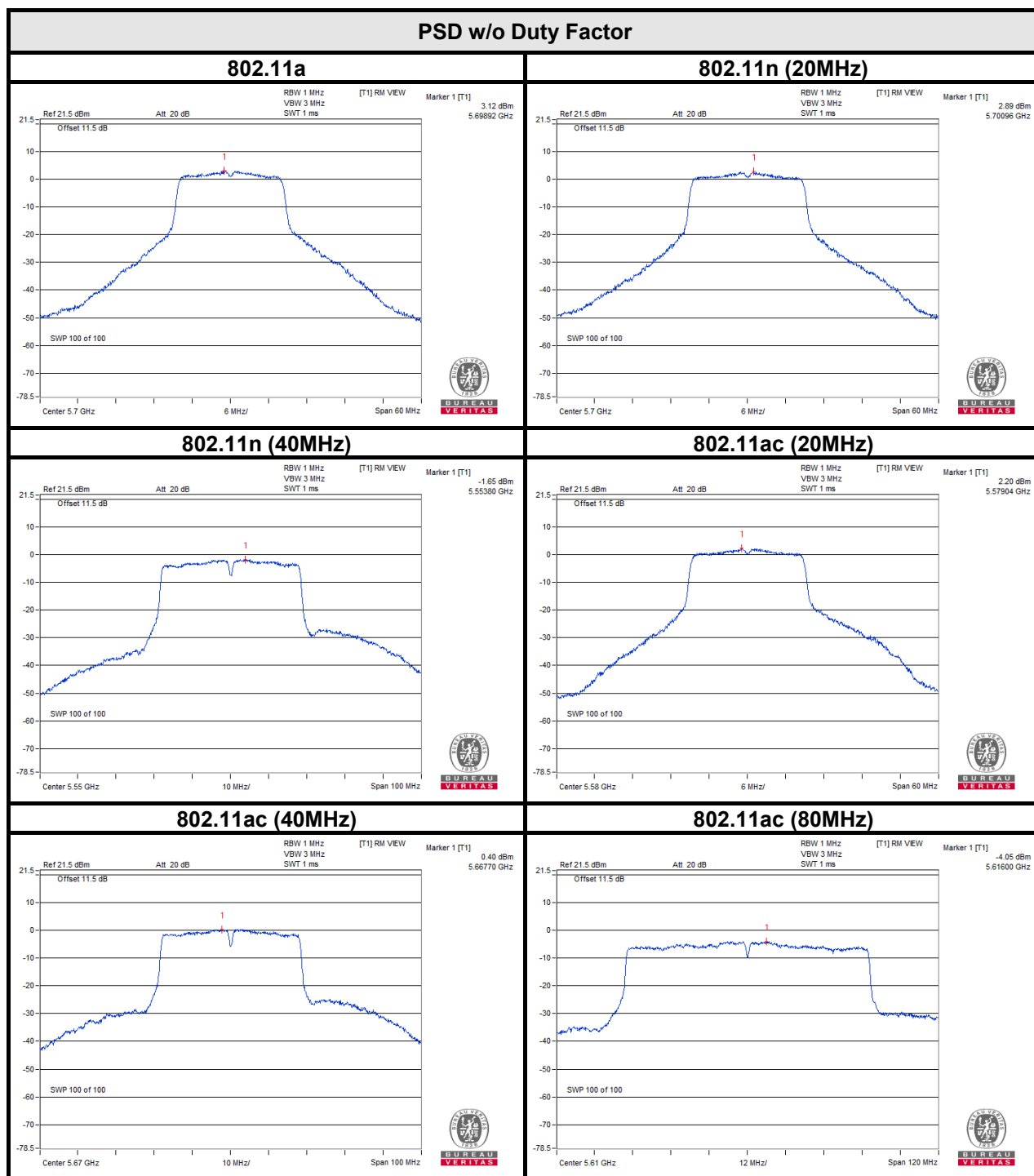




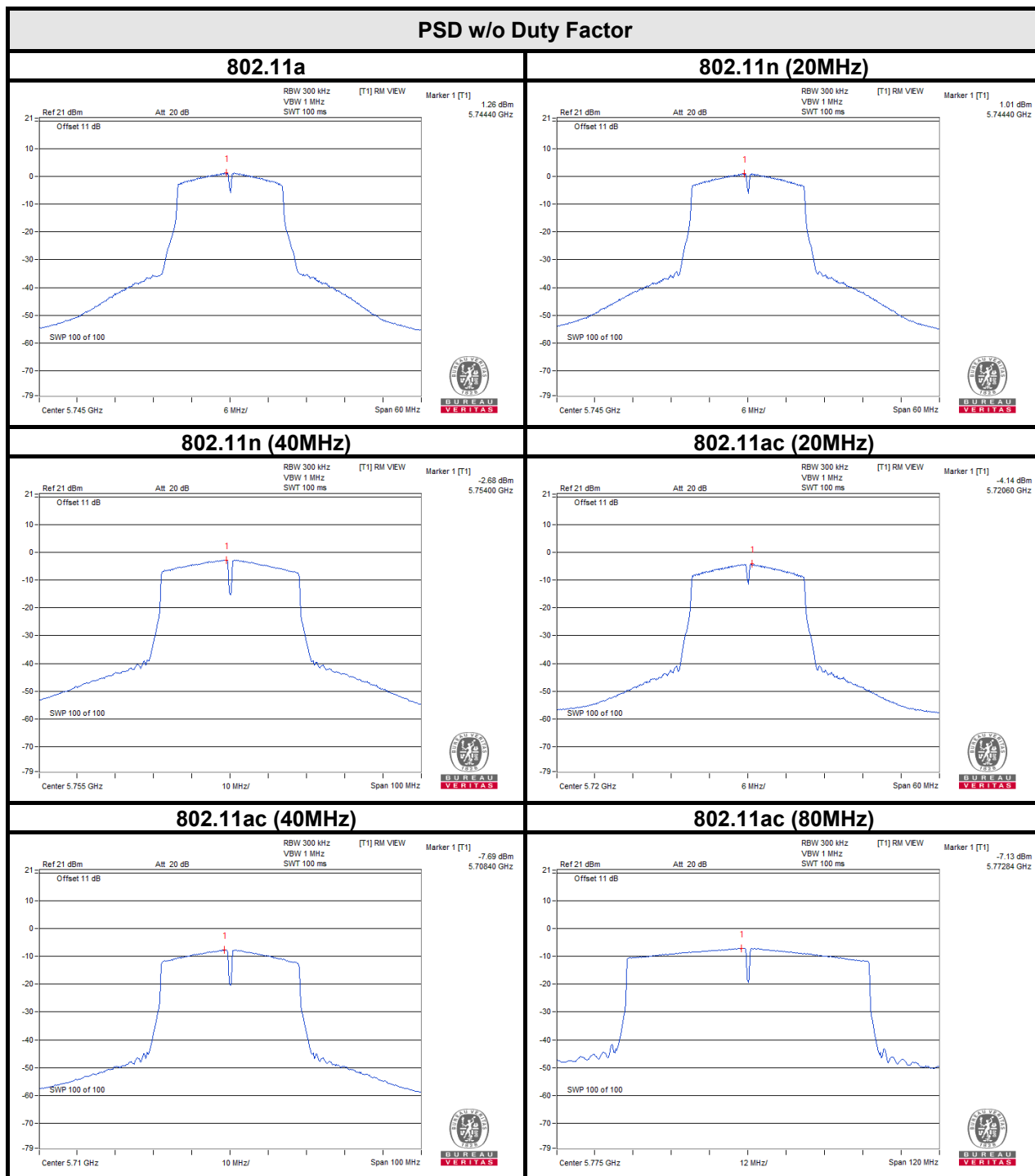
BUREAU
VERITAS

Test Report No.: W7L- P21040030RF14

For 5500~5700MHz



For 5745~5825MHz





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---