

FCC Test Report

Report No.: RF171110W004-3

FCC ID: 2AJOTTA-1016

Test Model: TA-1016

Received Date: Nov. 13, 2017

Test Date: Nov. 14, 2017 ~ Dec. 26, 2017

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Applicant: HMD Global Oy

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**FCC Registration /
Designation Number:** 788550 / TW0003



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF171110W004-3	Original release	Jan. 02, 2018

1 CERTIFICATION

Product: Smart Phone

Brand: Nokia

Test Model: TA-1016

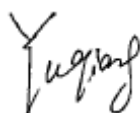
Sample Status: Identical Prototype

Applicant: HMD Global Oy

Test Date: Nov. 14, 2017 ~ Dec. 26, 2017

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)

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

Prepared by :  **Date:** Jan. 02, 2018
Yuqiang Yin / Engineer

Approved by :  **Date:** Jan. 02, 2018
Dylan Chiou / Project Engineer

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.63dB at 10.504000MHz.
15.407(b) (1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -6.01dB at 11550MHz.
15.407(a/1/2/3)	Maximum conducted output Power	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GMHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Smart Phone
MODEL NO.	TA-1016
POWER SUPPLY	5/9Vdc (adapter or host equipment) 3.85Vdc (Li-ion, battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 135Mbps 802.11ac: up to 390.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5805MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (20MHz) 5 for 802.11n (40MHz) 2 for 802.11ac (80MHz) 5745 ~ 5805MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
AVERAGE POWER	9.42mW for 5180 ~ 5240MHz 9.46mW for 5260 ~ 5320MHz 9.71mW for 5500 ~ 5700MHz 9.31mW for 5745 ~ 5805MHz
ANTENNA TYPE	PIFA Antenna
ANTENNA GAIN	0.6dBi for 5180 ~ 5250MHz 0.5dBi for 5260 ~ 5320MHz -0.2dBi for 5500 ~ 5700MHz -1.6dBi for 5745 ~ 5805MHz
HW VERSION	5
SW VERSION	00WW_1_300
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: non-shielded, detachable, 1.0meter

	Earphone cable: non-shielded, detachable, 1.4meter
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NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

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

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

List of Accessories:

ACCESSORIES	BRAND	MODEL	MANUFACTURER	SPECIFICATION
Adapter 1	Nokia	FC0302	Salcomp	I/P: 100-240Vac, 0.5A O/P: 5Vdc, 2.5A/ 9Vdc, 2.0A / 12Vdc, 1.5A
Adapter 2	Nokia	AD-18WU	DVE	I/P: 100-240Vac, 0.5A O/P: 5Vdc, 2.5A/ 9Vdc, 2.0A / 12Vdc, 1.5A
Adapter 3	Nokia	AD-18WU	Salcomp	I/P: 100-240Vac, 0.5A O/P: 5Vdc, 3.0A/ 9Vdc, 2.0A / 12Vdc, 1.5A
Battery	SCUD	HE345	SCUD	Rating: 3.85Vdc, 3000mAh
Earphone 1	Foxconn	WH-108	Foxconn	1.4m non-shielded cable w/o core
Earphone 2	Foxconn	WH-108	OBO PRO.2 INC.	1.4m non-shielded cable w/o core
USB Cable 1	FIT	CUDU01B-FA203-DH	Foxconn	1.0m non-shielded cable w/o core
USB Cable 2	Shenglan	JCT024-F001	Shenglan	1.0m non-shielded cable w/o core
USB Cable 3	Yinrun	YR680004-A	Yinrun	1.0m non-shielded cable w/o core

3.2 DESCRIPTION OF TEST MODES

FOR 5150 ~ 5250MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
42	5210 MHz		

FOR 5250 ~ 5350MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
58	5290 MHz		

FOR 5470 ~ 5725MHz

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

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

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610

FOR 5725 ~ 5825MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
155	5775 MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE:

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

NOTE: “-” means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15
A	802.11ac (80MHz)		42	42	OFDM	BPSK	32.5
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15
A	802.11ac (80MHz)		58	58	OFDM	BPSK	32.5
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
A	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15
A	802.11ac (80MHz)		106	106	OFDM	BPSK	32.5
A	802.11a	5725-5805	149 to 161	149, 157, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	149, 157, 161	OFDM	BPSK	7.2
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	15
A	802.11ac (80MHz)		155	155	OFDM	BPSK	32.5

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11ac (80MHz)	5725-5805	155	155	OFDM	BPSK	32.5

POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11ac (80MHz)	5725-5805	155	155	OFDM	BPSK	32.5

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	7.2
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15
A	802.11ac (80MHz)		42	42	OFDM	BPSK	32.5
A	802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	7.2
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15
A	802.11ac (80MHz)		58	58	OFDM	BPSK	32.5
A	802.11a	5500-5700	100 to 140	100, 140	OFDM	BPSK	6.0
A	802.11n (20MHz)		100 to 140	100, 140	OFDM	BPSK	7.2
A	802.11n (40MHz)		102 to 134	102, 134	OFDM	BPSK	15
A	802.11ac (80MHz)		106	106	OFDM	BPSK	32.5
A	802.11a	5725-5805	149 to 161	149, 161	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 161	149, 161	OFDM	BPSK	7.2
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	15
A	802.11ac (80MHz)		155	155	OFDM	BPSK	32.5

ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
B	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
B	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
B	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	15
B	802.11ac (80MHz)		42	42	OFDM	BPSK	32.5
B	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
B	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	7.2
B	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	15
B	802.11ac (80MHz)		58	58	OFDM	BPSK	32.5
B	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
B	802.11n (20MHz)		100 to 140	100, 116, 140	OFDM	BPSK	7.2
B	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	15
B	802.11ac (80MHz)		106	106	OFDM	BPSK	32.5
B	802.11a	5725-5805	149 to 161	149, 161	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 161	149, 161	OFDM	BPSK	7.2
B	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	15
B	802.11ac (80MHz)		155	155	OFDM	BPSK	32.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 62%RH	DC 5/9V from adaptor	Simon Yang
RE≥1G	23deg. C, 62%RH	DC 5/9V from adaptor	Simon Yang
PLC	24deg. C, 61%RH	DC 5/9V from adaptor	Felix Chen
APCM	23.5deg. C, 60%RH	DC 3.85V By battery	Wenliang Wu

3.3 DUTY CYCLE OF TEST SIGNAL

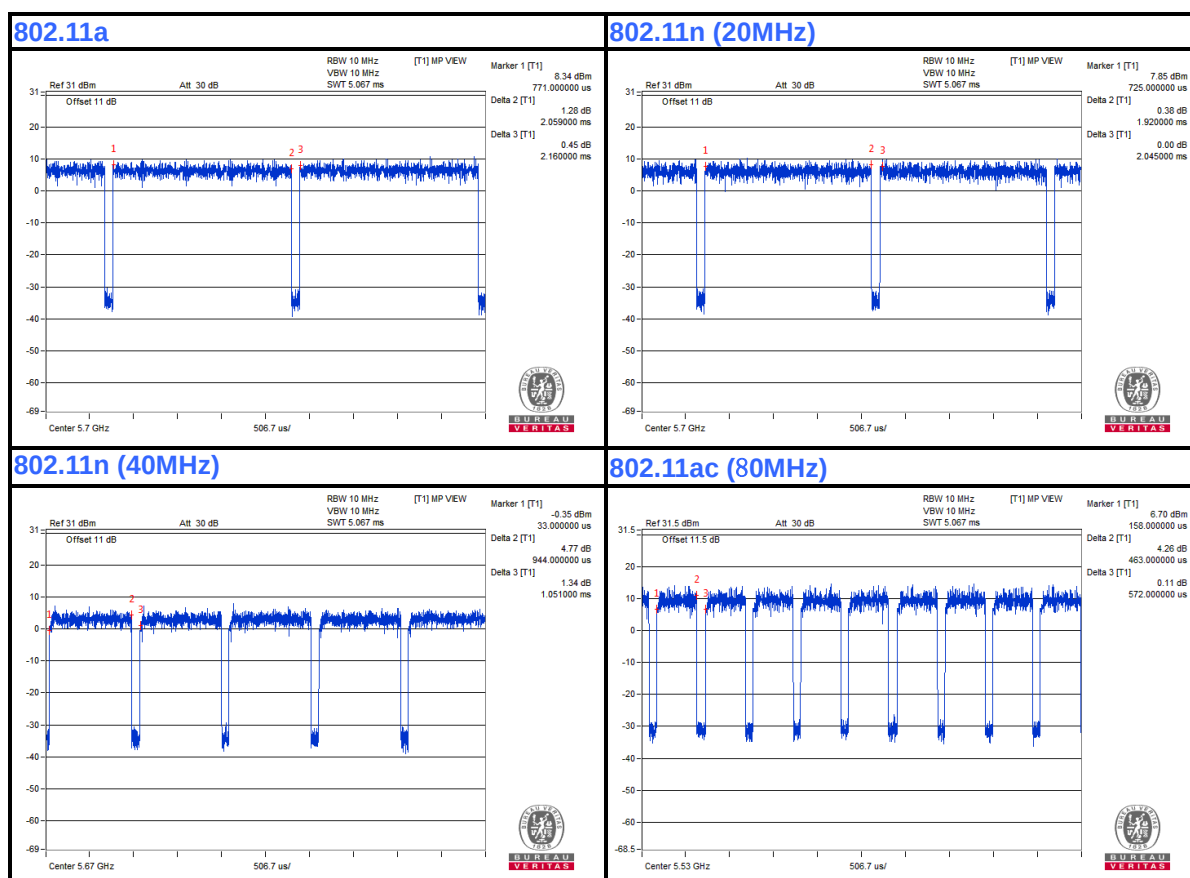
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $2.059/2.160 = 0.953$, Duty factor = $10 * \log(1/0.953) = 0.21$

802.11n (20MHz): Duty cycle = $1.920/2.045 = 0.939$, Duty factor = $10 * \log(1/0.939) = 0.27$

802.11n (40MHz): Duty cycle = $0.944/1.051 = 0.898$, Duty factor = $10 * \log(1/0.898) = 0.47$

802.11ac (80MHz): Duty cycle = $0.460/0.546 = 0.842$, Duty factor = $10 * \log(1/0.842) = 0.74$



3.4 DESCRIPTION OF SUPPORT UNITS

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

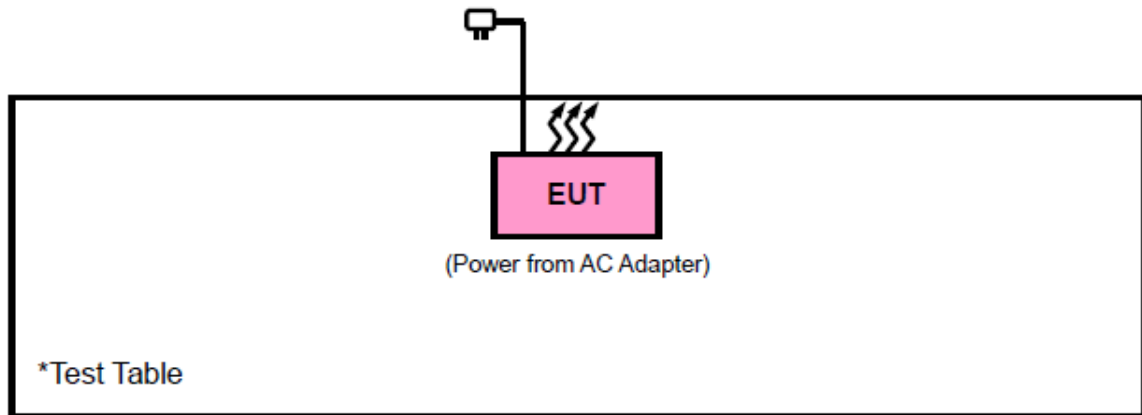
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	PC	HP	A6608CN	3CR83825X3	N/A

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

NOTE:

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General U-NII Test Procedures New Rules 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 (Doc). The test report has been issued separately.

4 TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION

RESTRICTED BANDS	APPLICABLE TO	LIMIT	
	789033 D02 General UNII Test Procedures New Rules v01r04	FIELD STRENGTH AT 3m (dBµV/m)	
		PK : 74	AV : 54
OUT OF THE RESTRICTED BANDS	APPLICABLE TO	EIRP LIMIT (dBm/MHz)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	15.407(b)(1)	PK : -27	PK : 68.3
	15.407(b)(2)		
	15.407(b)(3)		
	15.407(b)(4)	See note 2 (FCC 16-24)	

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

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

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

4.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May 06,17	May 05,18
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Nov. 26,16	Nov. 25,18
Horn Antenna	ETS-LINDGREN	3117	00168728	Nov. 26,16	Nov. 25,18
Loop antenna	Daze	ZN30900A	0708	Nov. 20,17	Nov. 19,18
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Dec. 16,16	Dec. 15,18
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 24,17	Jul. 23,18
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 10,17	Mar. 09,18
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jul. 24,17	Jul. 23,18
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jul. 24,17	Jul. 23,18
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jul. 24,17	Jul. 23,18

NOTE:

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

4.1.4 TEST PROCEDURES

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

NOTE:

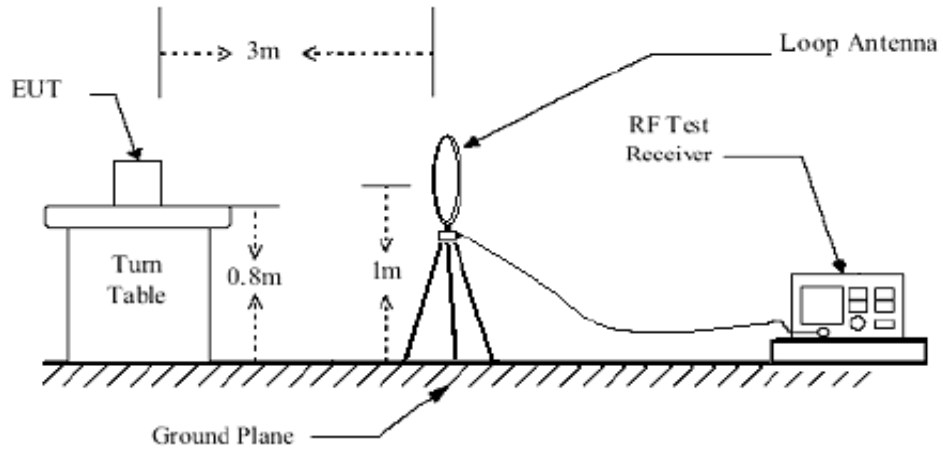
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.1.5 DEVIATION FROM TEST STANDARD

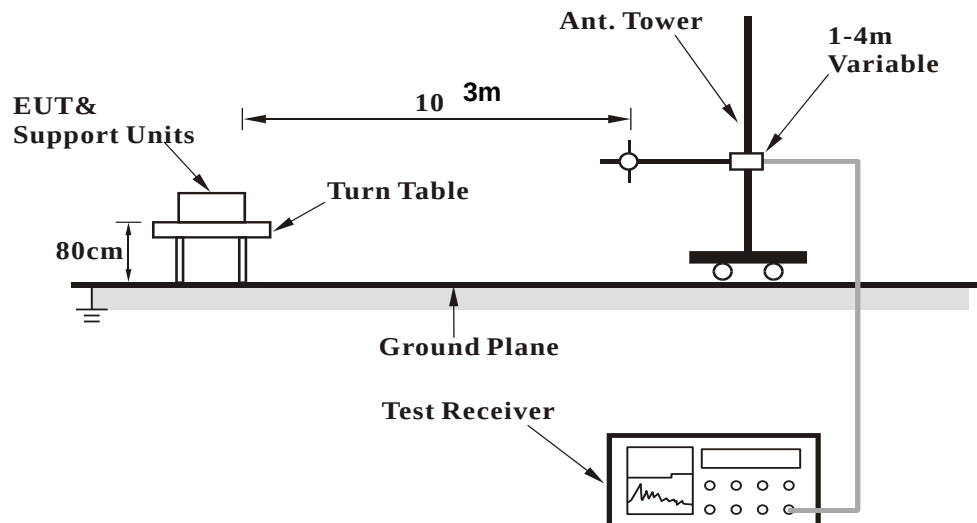
No deviation.

4.1.6 TEST SETUP

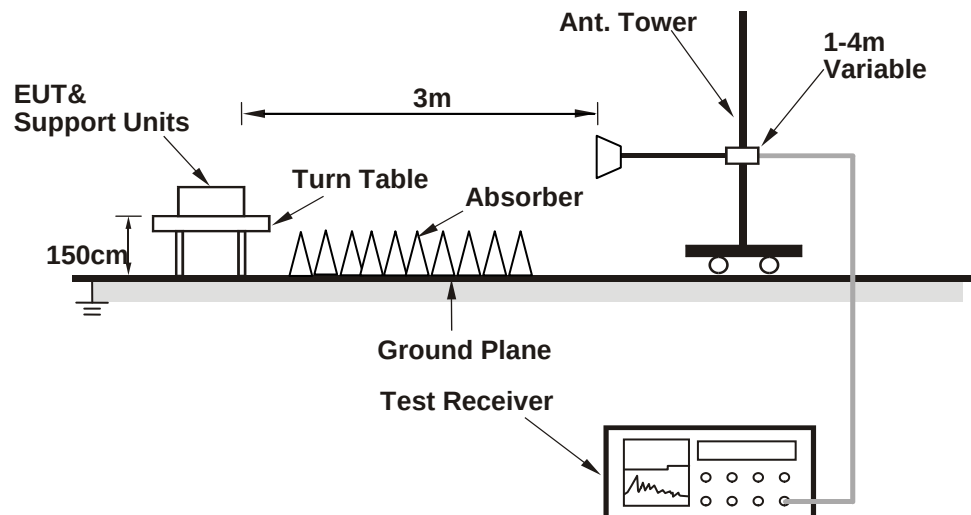
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



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

4.1.7 EUT OPERATING CONDITION

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

4.1.8 Test RESULTS

BELOW 1GHz WORST-CASE DATA:

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

30 MHz – 1GHz data:

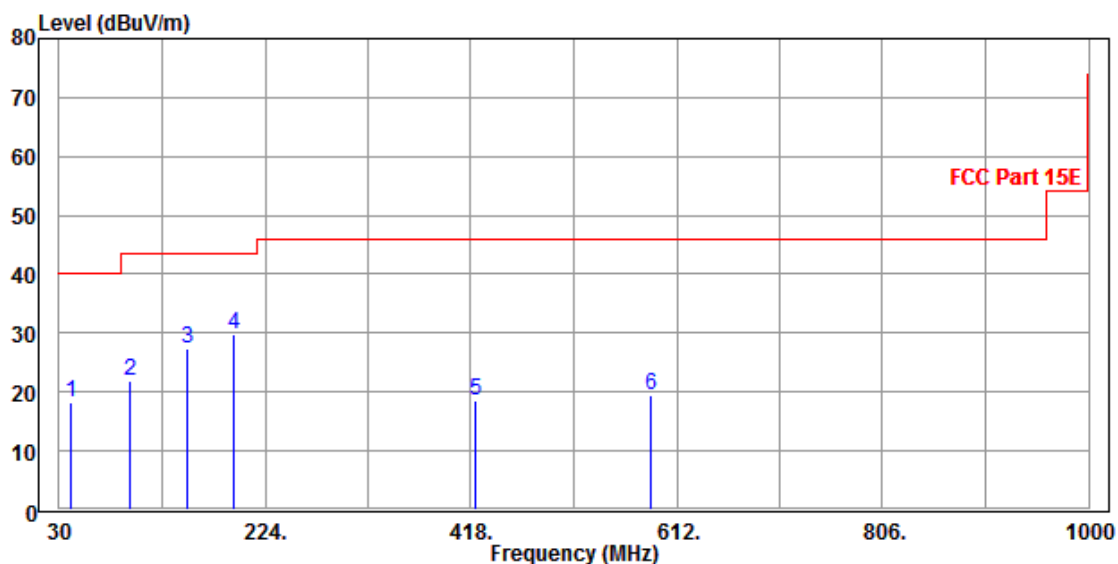
802.11ac (80MHz)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
41.64	18.11	45.03	40	-21.89	9.59	0.96	37.47	100	322	QP
95.96	21.81	49.75	43.5	-21.69	7.56	1.51	37.01	100	268	QP
150.28	27.43	53.11	43.5	-16.07	9.23	1.88	36.79	100	214	QP
194.9	29.82	54.21	43.5	-13.68	10.05	2.14	36.58	100	85	QP
422.85	18.58	34.66	46	-27.42	17.47	3.22	36.77	100	87	QP
587.75	19.51	32.71	46	-26.49	20.07	3.94	37.21	100	123	QP

REMARKS:

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

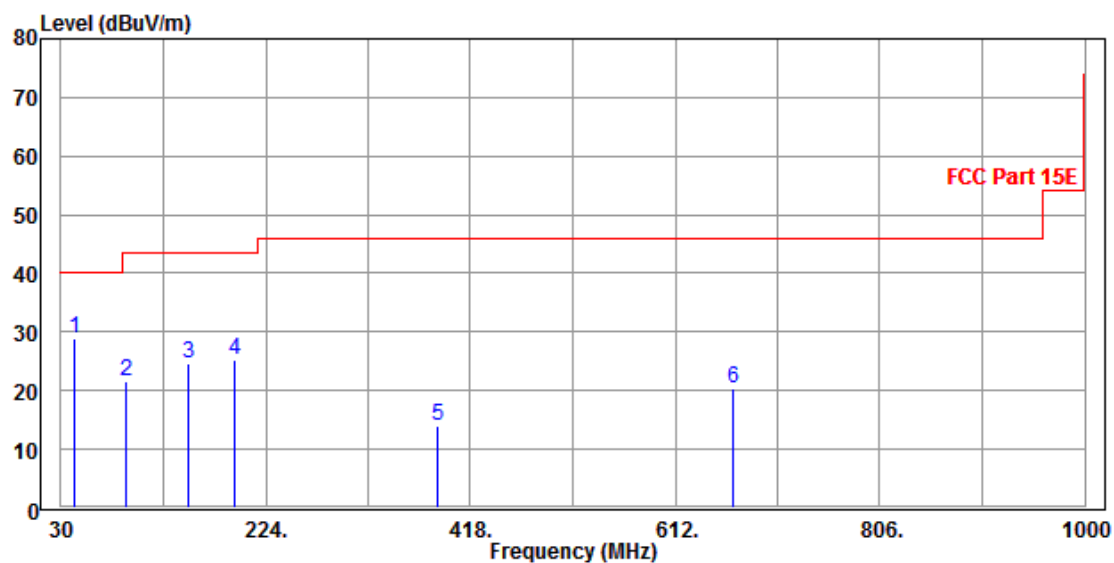


CHANNEL	Channel 42	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
42.61	28.98	56.23	40	-11.02	9.23	0.98	37.46	100	162	QP
91.11	21.61	50.15	43.5	-21.89	7.02	1.47	37.03	100	5	QP
150.28	24.5	50.18	43.5	-19	9.23	1.88	36.79	100	114	QP
193.93	25.37	49.78	43.5	-18.13	10.04	2.14	36.59	100	48	QP
386.96	14.05	31	46	-31.95	16.65	3.09	36.69	100	235	QP
667.29	20.35	31.3	46	-25.65	22.18	4.19	37.32	100	308	QP

REMARKS:

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



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	43.21	41.23	54	-10.79	34.48	13.71	46.21	130	20	Average
5150	51.57	49.59	74	-22.43	34.48	13.71	46.21	130	20	Peak
5180	93.11	91.02			34.52	13.79	46.22	130	20	Average
5180	102.3	100.21			34.52	13.79	46.22	130	20	Peak
5350	43.77	41.02	54	-10.23	34.72	14.28	46.25	130	20	Average
5350	52.41	49.66	74	-21.59	34.72	14.28	46.25	130	20	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.84	40.86	54	-11.16	34.48	13.71	46.21	100	295	5150
5150	52.53	50.55	74	-21.47	34.48	13.71	46.21	100	295	5150
5180	91.83	89.74			34.52	13.79	46.22	100	295	5180
5180	99.58	97.49			34.52	13.79	46.22	100	295	5180
5350	43.59	40.84	54	-10.41	34.72	14.28	46.25	100	295	5350
5350	52.74	49.99	74	-21.26	34.72	14.28	46.25	100	295	5350

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.42	41.44	54	-10.58	34.48	13.71	46.21	130	230	Average
5150	52.26	50.28	74	-21.74	34.48	13.71	46.21	130	230	Peak
5200	94.42	92.25			34.54	13.85	46.22	130	230	Average
5200	103.74	101.57			34.54	13.85	46.22	130	230	Peak
5350	43.33	40.58	54	-10.67	34.72	14.28	46.25	130	230	Average
5350	53.15	50.4	74	-20.85	34.72	14.28	46.25	130	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.75	40.77	54	-11.25	34.48	13.71	46.21	100	305	Average
5150	51.96	49.98	74	-22.04	34.48	13.71	46.21	100	305	Peak
5200	88.58	86.41			34.54	13.85	46.22	100	305	Average
5200	97.74	95.57			34.54	13.85	46.22	100	305	Peak
5350	43.47	40.72	54	-10.53	34.72	14.28	46.25	100	305	Average
5350	52.81	50.06	74	-21.19	34.72	14.28	46.25	100	305	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.69	40.71	54	-11.31	34.48	13.71	46.21	125	235	Average
5150	51.94	49.96	74	-22.06	34.48	13.71	46.21	125	235	Peak
5240	93.5	91.17			34.59	13.97	46.23	125	235	Average
5240	101.17	98.84			34.59	13.97	46.23	125	235	Peak
5350	43.77	41.02	54	-10.23	34.72	14.28	46.25	125	235	Average
5350	52.88	50.13	74	-21.12	34.72	14.28	46.25	125	235	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.56	40.58	54	-11.44	34.48	13.71	46.21	100	130	Average
5150	52.84	50.86	74	-21.16	34.48	13.71	46.21	100	130	Peak
5240	92.67	90.34			34.59	13.97	46.23	100	130	Average
5240	99.25	96.92			34.59	13.97	46.23	100	130	Peak
5350	43.53	40.78	54	-10.47	34.72	14.28	46.25	100	130	Average
5350	52.18	49.43	74	-21.82	34.72	14.28	46.25	100	130	Peak

REMARKS:

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

802.11n (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	44.05	42.07	54	-9.95	34.48	13.71	46.21	100	230	Average
5150	52.14	50.16	74	-21.86	34.48	13.71	46.21	100	230	Peak
5180	94.68	92.59			34.52	13.79	46.22	100	230	Average
5180	102.06	99.97			34.52	13.79	46.22	100	230	Peak
5350	44.3	41.55	54	-9.7	34.72	14.28	46.25	100	230	Average
5350	52.17	49.42	74	-21.83	34.72	14.28	46.25	100	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.65	40.67	54	-11.35	34.48	13.71	46.21	100	270	Average
5150	52.6	50.62	74	-21.4	34.48	13.71	46.21	100	270	Peak
5180	89.65	87.56			34.52	13.79	46.22	100	270	Average
5180	99.47	97.38			34.52	13.79	46.22	100	270	Peak
5350	43.49	40.74	54	-10.51	34.72	14.28	46.25	100	270	Average
5350	52.49	49.74	74	-21.51	34.72	14.28	46.25	100	270	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.25	41.27	54	-10.75	34.48	13.71	46.21	100	225	Average
5150	52.49	50.51	74	-21.51	34.48	13.71	46.21	100	225	Peak
5200	94.33	92.16			34.54	13.85	46.22	100	225	Average
5200	102.4	100.23			34.54	13.85	46.22	100	225	Peak
5350	44.42	41.67	54	-9.58	34.72	14.28	46.25	100	225	Average
5350	53.59	50.84	74	-20.41	34.72	14.28	46.25	100	225	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.8	40.82	54	-11.2	34.48	13.71	46.21	100	272	Average
5150	52.64	50.66	74	-21.36	34.48	13.71	46.21	100	272	Peak
5200	91.18	89.01			34.54	13.85	46.22	100	272	Average
5200	98.89	96.72			34.54	13.85	46.22	100	272	Peak
5350	43.67	40.92	54	-10.33	34.72	14.28	46.25	100	272	Average
5350	52.62	49.87	74	-21.38	34.72	14.28	46.25	100	272	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.34	41.36	54	-10.66	34.48	13.71	46.21	100	230	Average
5150	52.06	50.08	74	-21.94	34.48	13.71	46.21	100	230	Peak
5240	93.4	91.07			34.59	13.97	46.23	100	230	Average
5240	101.69	99.36			34.59	13.97	46.23	100	230	Peak
5350	43.97	41.22	54	-10.03	34.72	14.28	46.25	100	230	Average
5350	53.11	50.36	74	-20.89	34.72	14.28	46.25	100	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.67	40.69	54	-11.33	34.48	13.71	46.21	100	265	Average
5150	51.89	49.91	74	-22.11	34.48	13.71	46.21	100	265	Peak
5240	90.16	87.83			34.59	13.97	46.23	100	265	Average
5240	98.95	96.62			34.59	13.97	46.23	100	265	Peak
5350	43.51	40.76	54	-10.49	34.72	14.28	46.25	100	265	Average
5350	52.91	50.16	74	-21.09	34.72	14.28	46.25	100	265	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 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	44.33	42.35	54	-9.67	34.48	13.71	46.21	105	232	Average
5150	53.36	51.38	74	-20.64	34.48	13.71	46.21	105	232	Peak
5190	91.61	89.48			34.53	13.82	46.22	105	232	Average
5190	101.22	99.09			34.53	13.82	46.22	105	232	Peak
5350	44.23	41.48	54	-9.77	34.72	14.28	46.25	105	232	Average
5350	53.46	50.71	74	-20.54	34.72	14.28	46.25	105	232	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.05	41.07	54	-10.95	34.48	13.71	46.21	100	272	Average
5150	52.31	50.33	74	-21.69	34.48	13.71	46.21	100	272	Peak
5190	87.67	85.54			34.53	13.82	46.22	100	272	Average
5190	96.2	94.07			34.53	13.82	46.22	100	272	Peak
5350	43.5	40.75	54	-10.5	34.72	14.28	46.25	100	272	Average
5350	53.18	50.43	74	-20.82	34.72	14.28	46.25	100	272	Peak

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	43.53	41.55	54	-10.47	34.48	13.71	46.21	100	233	Average
5150	52.39	50.41	74	-21.61	34.48	13.71	46.21	100	233	Peak
5230	90.93	88.64			34.58	13.94	46.23	100	233	Average
5230	100.25	97.96			34.58	13.94	46.23	100	233	Peak
5350	43.42	40.67	54	-10.58	34.72	14.28	46.25	100	233	Average
5350	52.88	50.13	74	-21.12	34.72	14.28	46.25	100	233	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.02	41.04	54	-10.98	34.48	13.71	46.21	100	268	Average
5150	51.46	49.48	74	-22.54	34.48	13.71	46.21	100	268	Peak
5230	87.98	85.69			34.58	13.94	46.23	100	268	Average
5230	96.16	93.87			34.58	13.94	46.23	100	268	Peak
5350	43.45	40.7	54	-10.55	34.72	14.28	46.25	100	268	Average
5350	52.29	49.54	74	-21.71	34.72	14.28	46.25	100	268	Peak

REMARKS:

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

802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45	43.02	54	-9	34.48	13.71	46.21	100	235	Average
5150	56.93	54.95	74	-17.07	34.48	13.71	46.21	100	235	Peak
5210	88.12	85.91			34.55	13.88	46.22	100	235	Average
5210	98.72	96.51			34.55	13.88	46.22	100	235	Peak
5350	43.49	40.74	54	-10.51	34.72	14.28	46.25	100	235	Average
5350	53.67	50.92	74	-20.33	34.72	14.28	46.25	100	235	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.14	41.16	54	-10.86	34.48	13.71	46.21	105	276	Average
5150	52.16	50.18	74	-21.84	34.48	13.71	46.21	105	276	Peak
5210	84.89	82.68			34.55	13.88	46.22	105	276	Average
5210	95.15	92.94			34.55	13.88	46.22	105	276	Peak
5350	43.41	40.66	54	-10.59	34.72	14.28	46.25	105	276	Average
5350	53.12	50.37	74	-20.88	34.72	14.28	46.25	105	276	Peak

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	43.14	41.16	54	-10.86	34.48	13.71	46.21	100	232	Average
5150	51.86	49.88	74	-22.14	34.48	13.71	46.21	100	232	Peak
5260	93.68	91.28			34.61	14.02	46.23	100	232	Average
5260	102.21	99.81			34.61	14.02	46.23	100	232	Peak
5350	43.87	41.12	54	-10.13	34.72	14.28	46.25	100	232	Average
5350	53.13	50.38	74	-20.87	34.72	14.28	46.25	100	232	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.67	40.69	54	-11.33	34.48	13.71	46.21	100	268	Average
5150	51.35	49.37	74	-22.65	34.48	13.71	46.21	100	268	Peak
5260	91.7	89.3			34.61	14.02	46.23	100	268	Average
5260	99.56	97.16			34.61	14.02	46.23	100	268	Peak
5350	43.52	40.77	54	-10.48	34.72	14.28	46.25	100	268	Average
5350	52.12	49.37	74	-21.88	34.72	14.28	46.25	100	268	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.21	40.23	54	-11.79	34.48	13.71	46.21	100	230	Average
5150	51.99	50.01	74	-22.01	34.48	13.71	46.21	100	230	Peak
5300	92.5	89.94			34.66	14.14	46.24	100	230	Average
5300	101.12	98.56			34.66	14.14	46.24	100	230	Peak
5350	42.9	40.15	54	-11.1	34.72	14.28	46.25	100	230	Average
5350	52.59	49.84	74	-21.41	34.72	14.28	46.25	100	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.1	40.12	54	-11.9	34.48	13.71	46.21	105	270	Average
5150	51.53	49.55	74	-22.47	34.48	13.71	46.21	105	270	Peak
5300	89.84	87.28			34.66	14.14	46.24	105	270	Average
5300	97.81	95.25			34.66	14.14	46.24	105	270	Peak
5350	43.3	40.55	54	-10.7	34.72	14.28	46.25	105	270	Average
5350	53.04	50.29	74	-20.96	34.72	14.28	46.25	105	270	Peak

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	42.14	40.16	54	-11.86	34.48	13.71	46.21	100	234	Average
5150	52.34	50.36	74	-21.66	34.48	13.71	46.21	100	234	Peak
5320	92.1	89.46			34.68	14.2	46.24	100	234	Average
5320	100.63	97.99			34.68	14.2	46.24	100	234	Peak
5350	43.12	40.37	54	-10.88	34.72	14.28	46.25	100	234	Average
5350	53.48	50.73	74	-20.52	34.72	14.28	46.25	100	234	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.29	40.31	54	-11.71	34.48	13.71	46.21	100	265	Average
5150	51.94	49.96	74	-22.06	34.48	13.71	46.21	100	265	Peak
5320	87.96	85.32			34.68	14.2	46.24	100	265	Average
5320	96.32	93.68			34.68	14.2	46.24	100	265	Peak
5350	43.37	40.62	54	-10.63	34.72	14.28	46.25	100	265	Average
5350	51.99	49.24	74	-22.01	34.72	14.28	46.25	100	265	Peak

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.51	40.53	54	-11.49	34.48	13.71	46.21	105	225	Average
5150	52.29	50.31	74	-21.71	34.48	13.71	46.21	105	225	Peak
5260	91.42	89.02			34.61	14.02	46.23	105	225	Average
5260	101.56	99.16			34.61	14.02	46.23	105	225	Peak
5350	43.08	40.33	54	-10.92	34.72	14.28	46.25	105	225	Average
5350	53.52	50.77	74	-20.48	34.72	14.28	46.25	105	225	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.19	40.21	54	-11.81	34.48	13.71	46.21	108	270	Average
5150	52.23	50.25	74	-21.77	34.48	13.71	46.21	108	270	Peak
5260	90.08	87.68			34.61	14.02	46.23	108	270	Average
5260	99.35	96.95			34.61	14.02	46.23	108	270	Peak
5350	42.97	40.22	54	-11.03	34.72	14.28	46.25	108	270	Average
5350	53.21	50.46	74	-20.79	34.72	14.28	46.25	108	270	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.27	40.29	54	-11.73	34.48	13.71	46.21	108	232	Average
5150	52.18	50.2	74	-21.82	34.48	13.71	46.21	108	232	Peak
5300	90.76	88.2			34.66	14.14	46.24	108	232	Average
5300	99.6	97.04			34.66	14.14	46.24	108	232	Peak
5350	43	40.25	54	-11	34.72	14.28	46.25	108	232	Average
5350	52.78	50.03	74	-21.22	34.72	14.28	46.25	108	232	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.89	39.91	54	-12.11	34.48	13.71	46.21	100	278	Average
5150	51.94	49.96	74	-22.06	34.48	13.71	46.21	100	278	Peak
5300	88.05	85.49			34.66	14.14	46.24	100	278	Average
5300	97.02	94.46			34.66	14.14	46.24	100	278	Peak
5350	43.31	40.56	54	-10.69	34.72	14.28	46.25	100	278	Average
5350	52.89	50.14	74	-21.11	34.72	14.28	46.25	100	278	Peak

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	42.17	40.19	54	-11.83	34.48	13.71	46.21	100	230	Average
5150	51.96	49.98	74	-22.04	34.48	13.71	46.21	100	230	Peak
5320	91.08	88.44			34.68	14.2	46.24	100	230	Average
5320	100.07	97.43			34.68	14.2	46.24	100	230	Peak
5350	43.11	40.36	54	-10.89	34.72	14.28	46.25	100	230	Average
5350	53.29	50.54	74	-20.71	34.72	14.28	46.25	100	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.05	40.07	54	-11.95	34.48	13.71	46.21	105	260	Average
5150	51.63	49.65	74	-22.37	34.48	13.71	46.21	105	260	Peak
5320	87.03	84.39			34.68	14.2	46.24	105	260	Average
5320	97.48	94.84			34.68	14.2	46.24	105	260	Peak
5350	43.37	40.62	54	-10.63	34.72	14.28	46.25	105	260	Average
5350	52.73	49.98	74	-21.27	34.72	14.28	46.25	105	260	Peak

REMARKS:

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.94	39.96	54	-12.06	34.48	13.71	46.21	150	230	Average
5150	51.86	49.88	74	-22.14	34.48	13.71	46.21	150	230	Peak
5270	88.93	86.49			34.62	14.05	46.23	150	230	Average
5270	98.32	95.88			34.62	14.05	46.23	150	230	Peak
5350	43.46	40.71	54	-10.54	34.72	14.28	46.25	150	230	Average
5350	52.96	50.21	74	-21.04	34.72	14.28	46.25	150	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.96	39.98	54	-12.04	34.48	13.71	46.21	100	270	Average
5150	52.29	50.31	74	-21.71	34.48	13.71	46.21	100	270	Peak
5270	86.62	84.18			34.62	14.05	46.23	100	270	Average
5270	95.79	93.35			34.62	14.05	46.23	100	270	Peak
5350	43.29	40.54	54	-10.71	34.72	14.28	46.25	100	270	Average
5350	53.26	50.51	74	-20.74	34.72	14.28	46.25	100	270	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.29	40.31	54	-11.71	34.48	13.71	46.21	180	235	Average
5150	51.63	49.65	74	-22.37	34.48	13.71	46.21	180	235	Peak
5310	90.43	87.83			34.67	14.17	46.24	180	235	Average
5310	98.32	95.72			34.67	14.17	46.24	180	235	Peak
5350	43.46	40.71	54	-10.54	34.72	14.28	46.25	180	235	Average
5350	52.78	50.03	74	-21.22	34.72	14.28	46.25	180	235	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.86	39.88	54	-12.14	34.48	13.71	46.21	150	273	Average
5150	51.87	49.89	74	-22.13	34.48	13.71	46.21	150	273	Peak
5310	84.79	82.19			34.67	14.17	46.24	150	273	Average
5310	95.89	93.29			34.67	14.17	46.24	150	273	Peak
5350	42.62	39.87	54	-11.38	34.72	14.28	46.25	150	273	Average
5350	52.64	49.89	74	-21.36	34.72	14.28	46.25	150	273	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 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	42.87	40.89	54	-11.13	34.48	13.71	46.21	100	230	Average
5150	52.27	50.29	74	-21.73	34.48	13.71	46.21	100	230	Peak
5290	86.81	84.29			34.65	14.11	46.24	100	230	Average
5290	96.11	93.59			34.65	14.11	46.24	100	230	Peak
5350	44.62	41.87	54	-9.38	34.72	14.28	46.25	100	230	Average
5350	53.81	51.06	74	-20.19	34.72	14.28	46.25	100	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	41.84	39.86	54	-12.16	34.48	13.71	46.21	100	268	Average
5150	51.66	49.68	74	-22.34	34.48	13.71	46.21	100	268	Peak
5290	83.92	81.4			34.65	14.11	46.24	100	268	Average
5290	93.87	91.35			34.65	14.11	46.24	100	268	Peak
5350	43.43	40.68	54	-10.57	34.72	14.28	46.25	100	268	Average
5350	53.16	50.41	74	-20.84	34.72	14.28	46.25	100	268	Peak

REMARKS:

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

Band 3

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.86	40.68	54	-10.14	34.85	14.6	46.27	100	250	Average
5460	52.29	49.11	74	-21.71	34.85	14.6	46.27	100	250	Peak
#5470	53	49.79	68.3	-15.3	34.86	14.62	46.27	100	250	Peak
5500	93.18	89.85			34.9	14.71	46.28	100	250	Average
5500	100.92	97.59			34.9	14.71	46.28	100	250	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.94	40.76	54	-10.06	34.85	14.6	46.27	100	300	Average
5460	52.37	49.19	74	-21.63	34.85	14.6	46.27	100	300	Peak
#5470	53.05	49.84	68.3	-15.25	34.86	14.62	46.27	100	300	Peak
5500	91.64	88.31			34.9	14.71	46.28	100	300	Average
5500	98.69	95.36			34.9	14.71	46.28	100	300	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.5	40.32	54	-10.5	34.85	14.6	46.27	100	256	Average
5460	51.86	48.68	74	-22.14	34.85	14.6	46.27	100	256	Peak
#5470	52.22	49.01	68.3	-16.08	34.86	14.62	46.27	100	256	Peak
5580	94.3	90.35			35	15.23	46.28	100	256	Average
5580	101.73	97.78			35	15.23	46.28	100	256	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.92	40.74	54	-10.08	34.85	14.6	46.27	120	310	Average
5460	52.23	49.05	74	-21.77	34.85	14.6	46.27	120	310	Peak
#5470	51.73	48.52	68.3	-16.57	34.86	14.62	46.27	120	310	Peak
5580	89.92	85.97			35	15.23	46.28	120	310	Average
5580	96.4	92.45			35	15.23	46.28	120	310	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	95.43	90.56			35.14	16.01	46.28	190	215	Average
5700	101.91	97.04			35.14	16.01	46.28	190	215	Peak
#5725	55.62	50.55	68.3	-12.68	35.17	16.18	46.28	190	215	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	90.42			35.14	16.01	46.28	100	210	Average
5700	101.44	96.57			35.14	16.01	46.28	100	210	Peak
#5725	56.26	51.19	68.3	-12.04	35.17	16.18	46.28	100	210	Peak

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.23	40.05	54	-10.77	34.85	14.6	46.27	120	260	Average
5460	52.71	49.53	74	-21.29	34.85	14.6	46.27	120	260	Peak
#5470	53.12	49.91	68.3	-15.18	34.86	14.62	46.27	120	260	Peak
5500	93.08	89.75			34.9	14.71	46.28	120	260	Average
5500	100.4	97.07			34.9	14.71	46.28	120	260	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.23	40.05	54	-10.77	34.85	14.6	46.27	120	220	Average
5460	53.65	50.47	74	-20.35	34.85	14.6	46.27	120	220	Peak
#5470	53.56	50.35	68.3	-14.74	34.86	14.62	46.27	120	220	Peak
5500	92.66	89.33			34.9	14.71	46.28	120	220	Average
5500	99.37	96.04			34.9	14.71	46.28	120	220	Peak

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	43.79	40.61	54	-10.21	34.85	14.6	46.27	1000	228	Average
5460	52.96	49.78	74	-21.04	34.85	14.6	46.27	1000	228	Peak
#5470	53.53	50.32	68.3	-14.77	34.86	14.62	46.27	1000	228	Peak
5580	94.64	90.69			35	15.23	46.28	1000	228	Average
5580	101.44	97.49			35	15.23	46.28	1000	228	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.81	40.63	54	-10.19	34.85	14.6	46.27	100	230	Average
5460	53.56	50.38	74	-20.44	34.85	14.6	46.27	100	230	Peak
#5470	53.39	50.18	68.3	-14.91	34.86	14.62	46.27	100	230	Peak
5580	90.86	86.91			35	15.23	46.28	100	230	Average
5580	98.62	94.67			35	15.23	46.28	100	230	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	93.38	88.51			35.14	16.01	46.28	100	260	Average
5700	100.96	96.09			35.14	16.01	46.28	100	260	Peak
#5725	57.59	52.52	68.3	-10.71	35.17	16.18	46.28	100	260	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	94.4	89.53			35.14	16.01	46.28	100	210	Average
5700	101.83	96.96			35.14	16.01	46.28	100	210	Peak
#5725	57.66	52.59	68.3	-10.64	35.17	16.18	46.28	100	210	Peak

REMARKS:

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.69	40.51	54	-10.31	34.85	14.6	46.27	130	255	Average
5460	52.24	49.06	74	-21.76	34.85	14.6	46.27	130	255	Peak
#5470	53.87	50.66	68.3	-14.43	34.86	14.62	46.27	130	255	Peak
5510	90.2	86.79			34.91	14.78	46.28	130	255	Average
5510	98.8	95.39			34.91	14.78	46.28	130	255	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	42.97	39.79	54	-11.03	34.85	14.6	46.27	100	290	Average
5460	52.73	49.55	74	-21.27	34.85	14.6	46.27	100	290	Peak
#5470	52.88	49.67	68.3	-15.42	34.86	14.62	46.27	100	290	Peak
5510	88.22	84.81			34.91	14.78	46.28	100	290	Average
5510	96.86	93.45			34.91	14.78	46.28	100	290	Peak

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	43.54	40.36	54	-10.46	34.85	14.6	46.27	100	258	Average
5460	53.05	49.87	74	-20.95	34.85	14.6	46.27	100	258	Peak
#5470	53.33	50.12	68.3	-14.97	34.86	14.62	46.27	100	258	Peak
5550	90.98	87.26			34.96	15.04	46.28	100	258	Average
5550	99.31	95.59			34.96	15.04	46.28	100	258	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.39	40.21	54	-10.61	34.85	14.6	46.27	100	300	Average
5460	52.42	49.24	74	-21.58	34.85	14.6	46.27	100	300	Peak
#5470	52.68	49.47	68.3	-15.62	34.86	14.62	46.27	100	300	Peak
5550	89.4	85.68			34.96	15.04	46.28	100	300	Average
5550	96.58	92.86			34.96	15.04	46.28	100	300	Peak

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5670	92.81	87.74			35.1	15.82	46.28	100	258	Average
5670	99.7	95.06			35.1	15.82	46.28	100	258	Peak
#5725	56.11	51.04	68.3	-12.19	35.17	16.18	46.28	100	258	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	89.24	84.6			35.1	15.82	46.28	100	215	Average
5670	96.88	92.24			35.1	15.82	46.28	100	215	Peak
#5725	55.13	50.06	68.3	-13.17	35.17	16.18	46.28	100	215	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.

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	44.24	41.06	54	-9.76	34.85	14.6	46.27	230	230	Average
5460	52.31	49.13	74	-21.69	34.85	14.6	46.27	230	230	Peak
#5470	54.2	50.99	68.3	-14.1	34.86	14.62	46.27	230	230	Peak
5530	89.17	85.6			34.94	14.91	46.28	230	230	Average
5530	97.79	94.22			34.94	14.91	46.28	230	230	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	43.77	40.59	54	-10.23	34.85	14.6	46.27	100	300	Average
5460	53.85	50.67	74	-20.15	34.85	14.6	46.27	100	300	Peak
#5470	54.18	50.97	68.3	-14.12	34.86	14.62	46.27	100	300	Peak
5530	85.1	81.53			34.94	14.91	46.28	100	300	Average
5530	94.97	91.4			34.94	14.91	46.28	100	300	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5530MHz: Fundamental frequency.
- #: 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	95.73	90.51			35.19	16.31	46.28	100	250	Average
5745	102.38	97.16			35.19	16.31	46.28	100	250	Peak
11490	47.29	34.62	54	-6.71	39.1	19.08	45.51	100	250	Average
11490	57.43	44.76	74	-16.57	39.1	19.08	45.51	100	250	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	93.31	88.09			35.19	16.31	46.28	100	248	Average
5745	100.9	95.68			35.19	16.31	46.28	100	248	Peak
11490	47.19	34.52	54	-6.81	39.1	19.08	45.51	100	248	Average
11490	57.59	44.92	74	-16.41	39.1	19.08	45.51	100	248	Peak

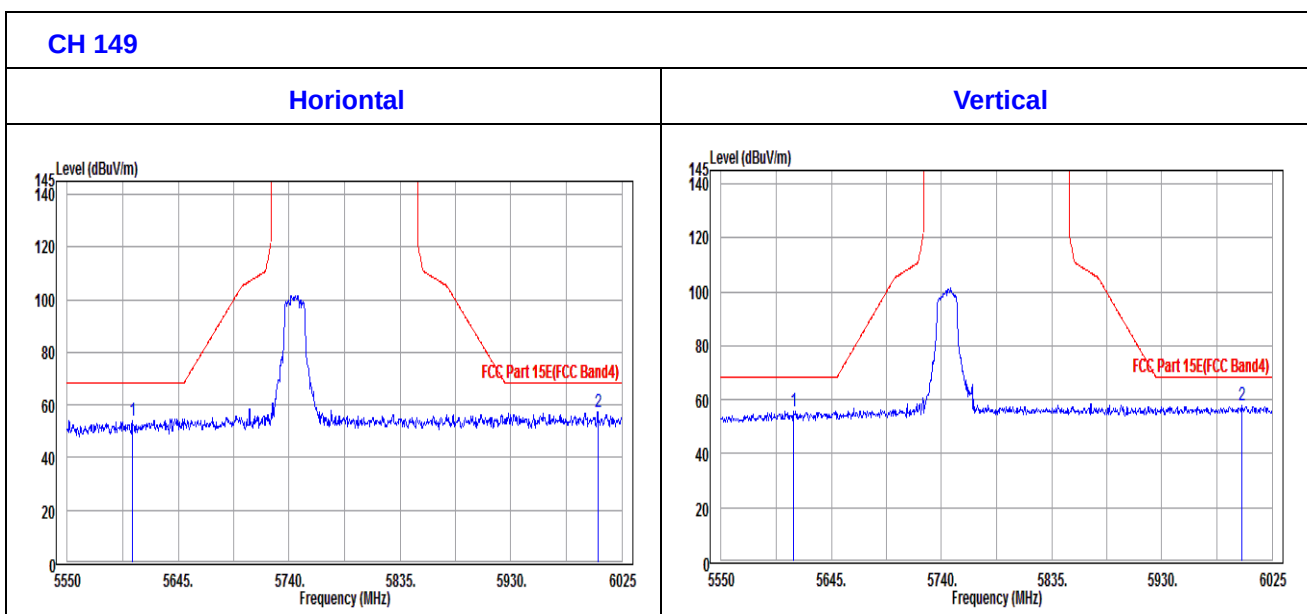
REMARKS:

- 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
5605.575	53.9	49.75	68.3	-14.4	35.03	15.4	46.28	100	250	Peak
6004.575	57.18	50.01	68.3	-11.12	35.5	17.95	46.28	100	250	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	55.6	51.41	68.3	-12.7	35.03	15.44	46.28	100	248	Peak
5999.35	57.75	50.56	68.3	-10.55	35.5	17.97	46.28	101	250	Peak



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	94.8	89.27			35.24	16.57	46.28	220	258	Average
5785	102.94	97.41			35.24	16.57	46.28	220	258	Peak
11570	47.04	34.28	54	-6.96	39.16	19.12	45.52	220	258	Average
11570	58.45	45.69	74	-15.55	39.16	19.12	45.52	220	258	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	94.12	88.59			35.24	16.57	46.28	100	225	Average
5785	100.17	94.64			35.24	16.57	46.28	100	225	Peak
11570	47.8	35.04	54	-6.2	39.16	19.12	45.52	100	225	Average
11570	58.13	45.37	74	-15.87	39.16	19.12	45.52	100	225	Peak

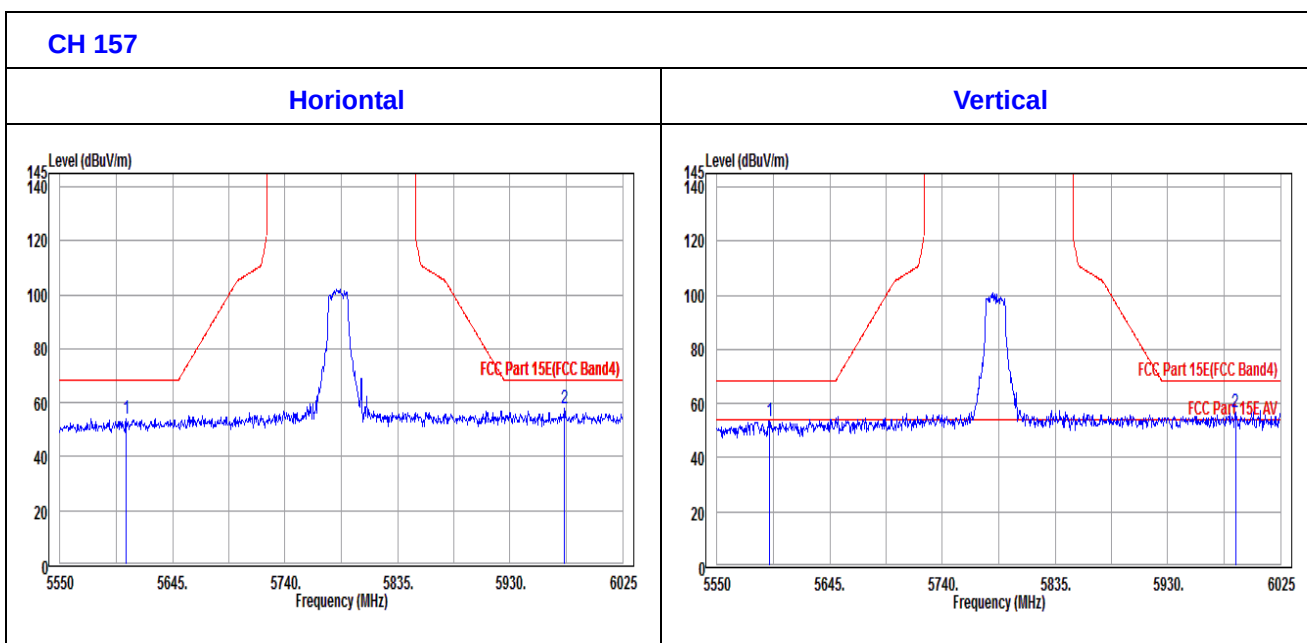
REMARKS:

- 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
5605.575	54.23	50.08	68.3	-14.07	35.03	15.4	46.28	220	258	Peak
5976.075	57.83	50.83	68.3	-10.47	35.47	17.81	46.28	220	258	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
5594.175	53.46	49.41	68.3	-14.84	35.01	15.32	46.28	100	225	Peak
5987	57.02	49.93	68.3	-11.28	35.48	17.89	46.28	100	225	Peak



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5805	95.23	89.54			35.27	16.7	46.28	180	255	Average
5805	102.51	96.82			35.27	16.7	46.28	180	255	Peak
11610	47.92	35.11	54	-6.08	39.19	19.14	45.52	180	255	Average
11610	59.73	46.92	74	-14.27	39.19	19.14	45.52	180	255	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
5805	91.99	86.3			35.27	16.7	46.28	100	245	Average
5805	100.21	94.52			35.27	16.7	46.28	100	245	Peak
11610	47.96	35.15	54	-6.04	39.19	19.14	45.52	100	245	Average
11610	59.75	46.94	74	-14.25	39.19	19.14	45.52	100	245	Peak

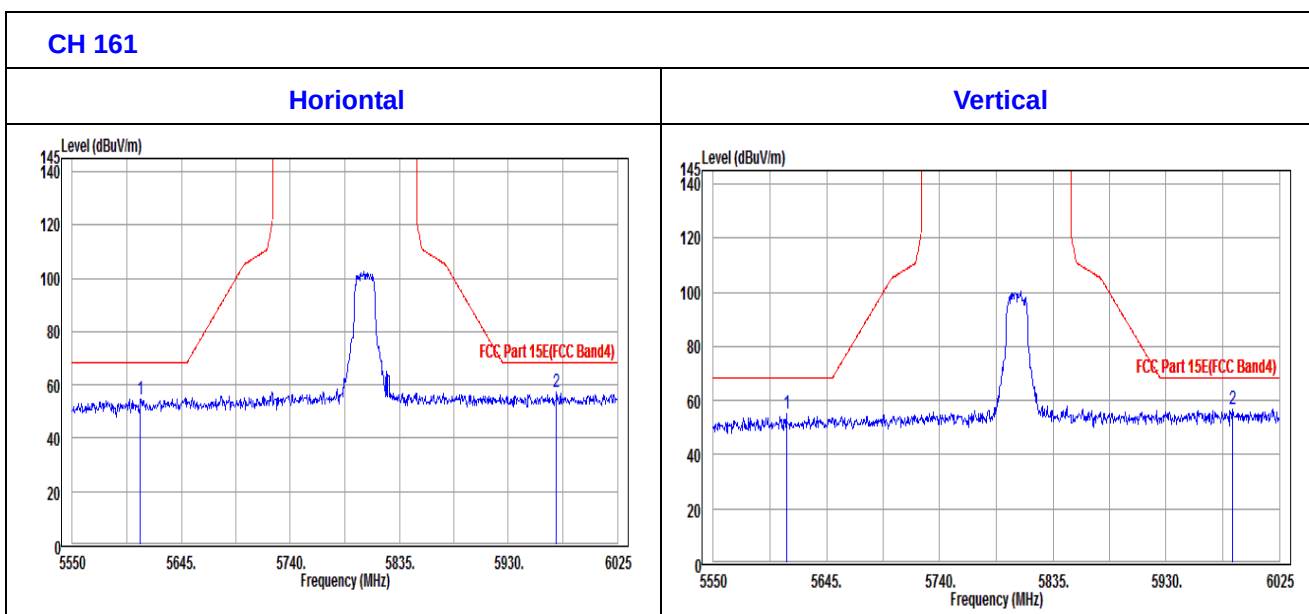
REMARKS:

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

OOBE DATA

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5609.375	54.66	50.49	68.3	-13.64	35.03	15.42	46.28	180	255	Peak
5971.8	57.36	50.38	68.3	-10.94	35.47	17.79	46.28	180	255	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
5611.275	55.08	50.89	68.3	-13.22	35.03	15.44	46.28	100	245	Peak
5985.575	56.6	49.52	68.3	-11.7	35.48	17.88	46.28	100	245	Peak



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	94.29	89.07			35.19	16.31	46.28	100	255	Average
5745	101.23	96.01			35.19	16.31	46.28	100	255	Peak
11490	47.88	35.21	54	-6.12	39.1	19.08	45.51	100	255	Average
11490	59.06	46.39	74	-14.94	39.1	19.08	45.51	100	255	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	91.61	86.39			35.19	16.31	46.28	100	210	Average
5745	98.71	93.49			35.19	16.31	46.28	100	210	Peak
11490	47.82	35.15	54	-6.18	39.1	19.08	45.51	100	210	Average
11490	59.46	46.79	74	-14.54	39.1	19.08	45.51	100	210	Peak

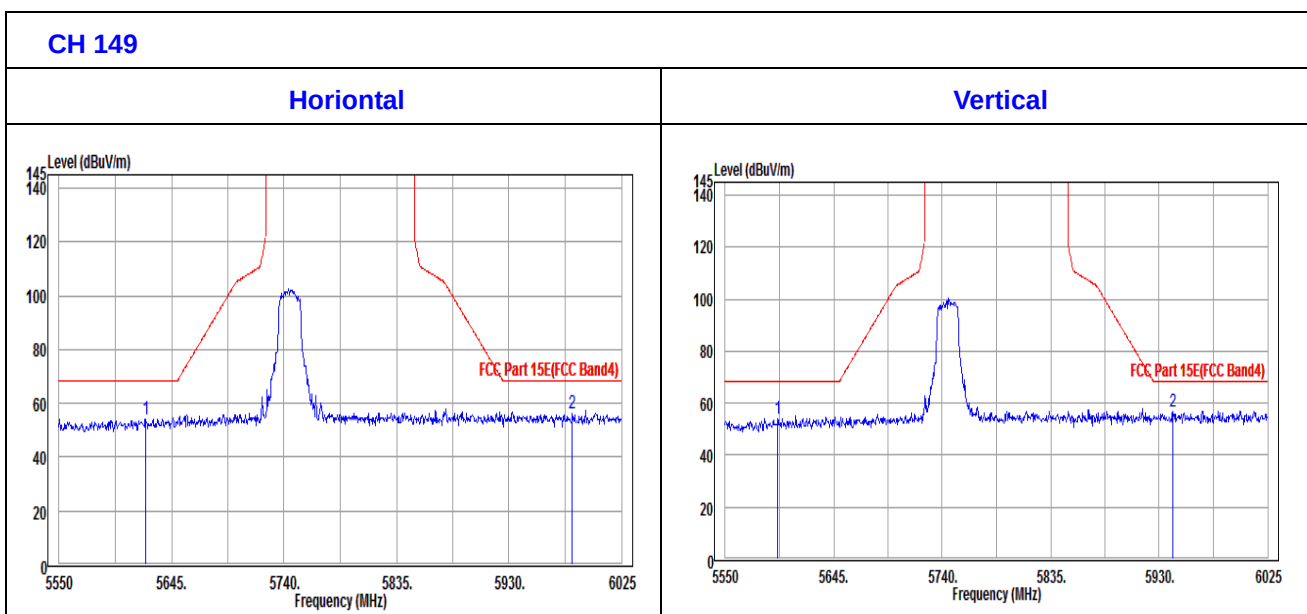
REMARKS:

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

OOBE DATA

802.11n (20MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5623.15	54.25	49.97	68.3	-14.05	35.05	15.51	46.28	100	255	Peak
5983.675	56.01	48.95	68.3	-12.29	35.48	17.86	46.28	100	255	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
5596.075	54.13	50.05	68.3	-14.17	35.02	15.34	46.28	100	210	Peak
5941.875	56.96	50.22	68.3	-11.34	35.43	17.59	46.28	100	210	Peak



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	93.91	88.38			35.24	16.57	46.28	170	258	Average
5785	102.17	96.64			35.24	16.57	46.28	170	258	Peak
11570	47.87	35.11	54	-6.13	39.16	19.12	45.52	170	258	Average
11570	59.68	46.92	74	-14.32	39.16	19.12	45.52	170	258	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	91.84	86.31			35.24	16.57	46.28	100	225	Average
5785	99.48	93.95			35.24	16.57	46.28	100	225	Peak
11570	47.84	35.08	54	-6.16	39.16	19.12	45.52	100	225	Average
11570	59.55	46.79	74	-14.45	39.16	19.12	45.52	100	225	Peak

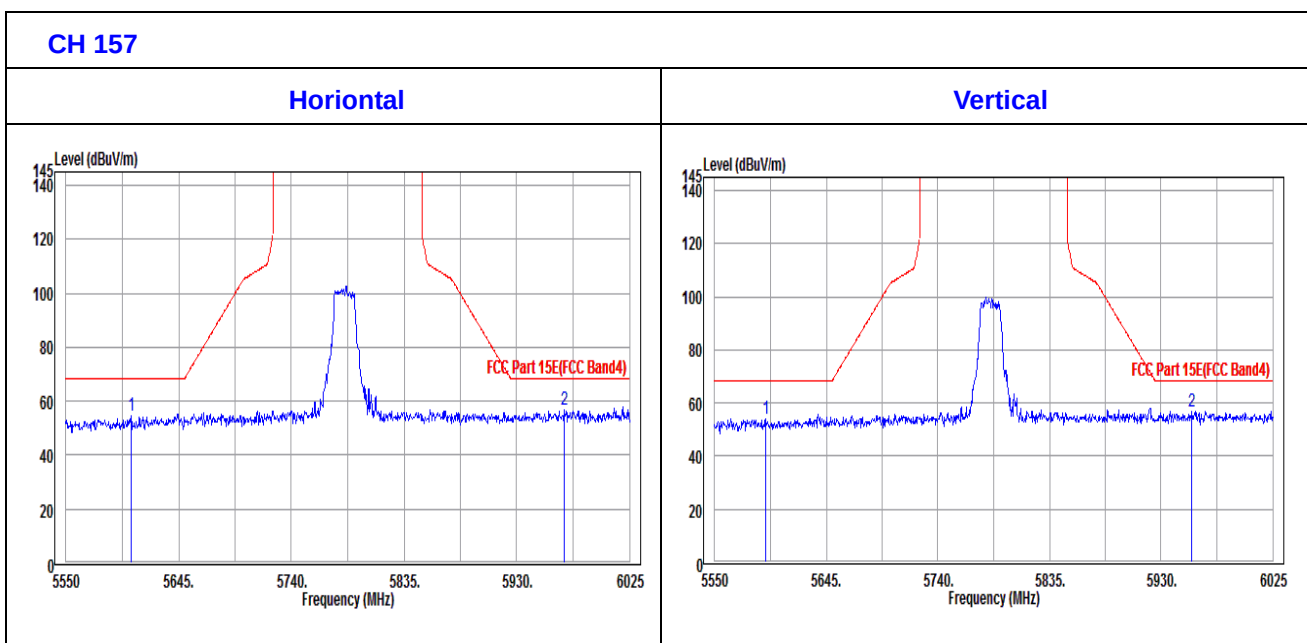
REMARKS:

- 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
5604.625	54.7	50.56	68.3	-13.6	35.03	15.39	46.28	170	258	Peak
5970.375	56.65	49.69	68.3	-11.65	35.46	17.78	46.28	170	258	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
5593.7	53.77	49.72	68.3	-14.53	35.01	15.32	46.28	100	225	Peak
5956.125	56.68	49.83	68.3	-11.62	35.45	17.68	46.28	100	225	Peak



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5805	92.37	86.68			35.27	16.7	46.28	100	253	Average
5805	102.1	96.41			35.27	16.7	46.28	100	253	Peak
11610	47.95	35.14	54	-6.05	39.19	19.14	45.52	100	253	Average
11610	59.74	46.93	74	-14.26	39.19	19.14	45.52	100	253	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
5805	90.96	85.27			35.27	16.7	46.28	100	218	Average
5805	98.96	93.27			35.27	16.7	46.28	100	218	Peak
11610	47.86	35.05	54	-6.14	39.19	19.14	45.52	100	218	Average
11610	59.59	46.78	74	-14.41	39.19	19.14	45.52	100	218	Peak

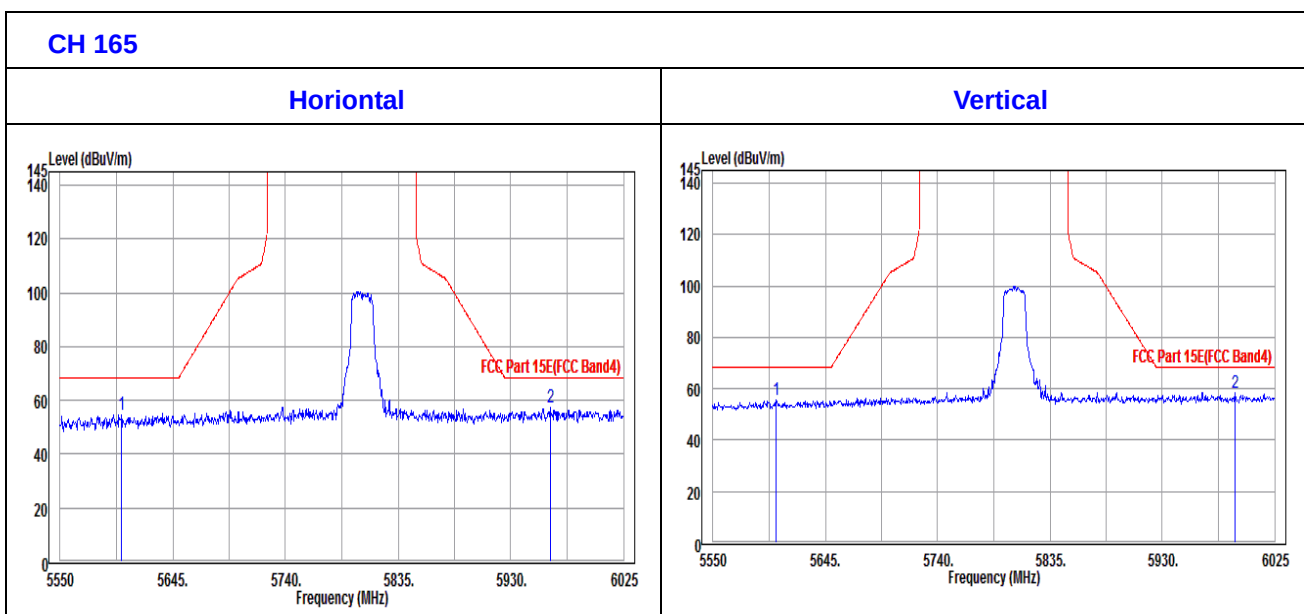
REMARKS:

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

OOBE DATA

802.11n (20MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5601.775	54.63	50.52	68.3	-13.67	35.02	15.37	46.28	100	253	Peak
5963.25	57.07	50.16	68.3	-11.23	35.46	17.73	46.28	100	253	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	55.67	51.55	68.3	-12.63	35.02	15.38	46.28	100	218	Peak
5991.75	58.67	51.54	68.3	-9.63	35.49	17.92	46.28	100	218	Peak



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	92.48	87.18			35.21	16.37	46.28	110	252	Average
5755	100.27	94.97			35.21	16.37	46.28	110	252	Peak
11510	47.84	35.15	54	-6.16	39.11	19.09	45.51	110	252	Average
11510	59.45	46.76	74	-14.55	39.11	19.09	45.51	110	252	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	89.74	84.44			35.21	16.37	46.28	100	225	Average
5755	98.33	93.03			35.21	16.37	46.28	100	225	Peak
11510	47.91	35.22	54	-6.09	39.11	19.09	45.51	100	225	Average
11510	59.38	46.69	74	-14.62	39.11	19.09	45.51	100	225	Peak

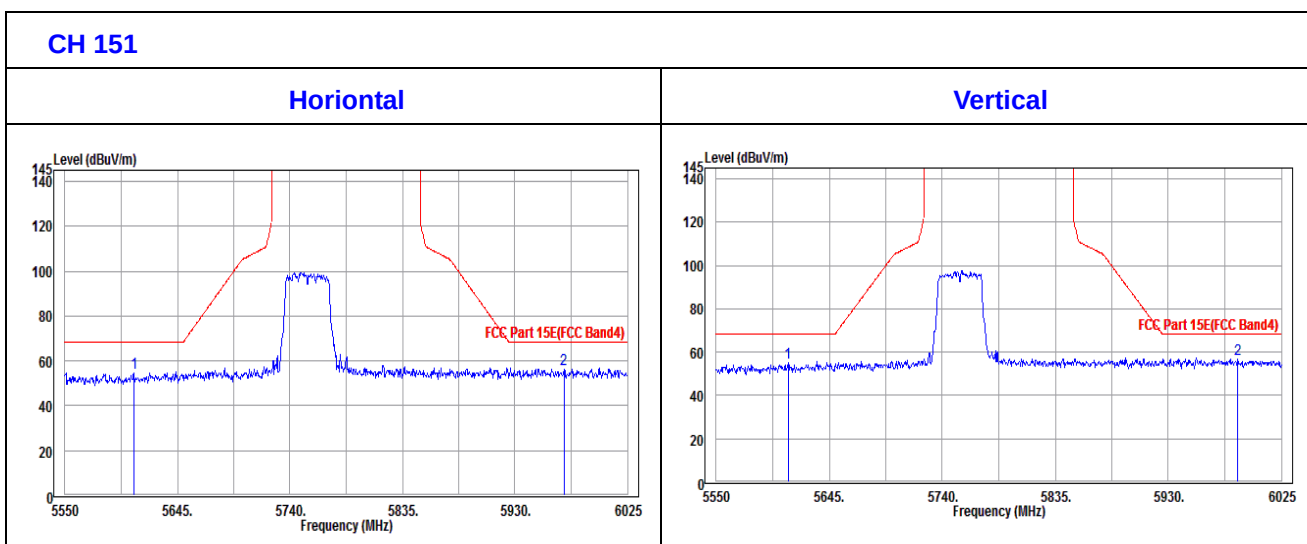
REMARKS:

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

OOBE DATA

802.11n (40MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5607.95	54.35	50.19	68.3	-13.95	35.03	15.41	46.28	110	252	Peak
5971.325	56.31	49.34	68.3	-11.99	35.47	17.78	46.28	110	252	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
5610.325	54.89	50.71	68.3	-13.41	35.03	15.43	46.28	100	225	Peak
5988.425	56.58	49.48	68.3	-11.72	35.49	17.89	46.28	100	225	Peak



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	91.13	85.53			35.25	16.63	46.28	110	255	Average
5795	100.53	94.93			35.25	16.63	46.28	110	255	Peak
11590	47.83	35.05	54	-6.17	39.17	19.13	45.52	110	255	Average
11590	58.43	45.65	74	-15.57	39.17	19.13	45.52	110	255	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	89.38	83.78			35.25	16.63	46.28	100	215	Average
5795	98.47	92.87			35.25	16.63	46.28	100	215	Peak
11590	46.80	34.02	54	-7.20	39.17	19.13	45.52	100	215	Average
11590	59.54	46.76	74	-14.46	39.17	19.13	45.52	100	215	Peak

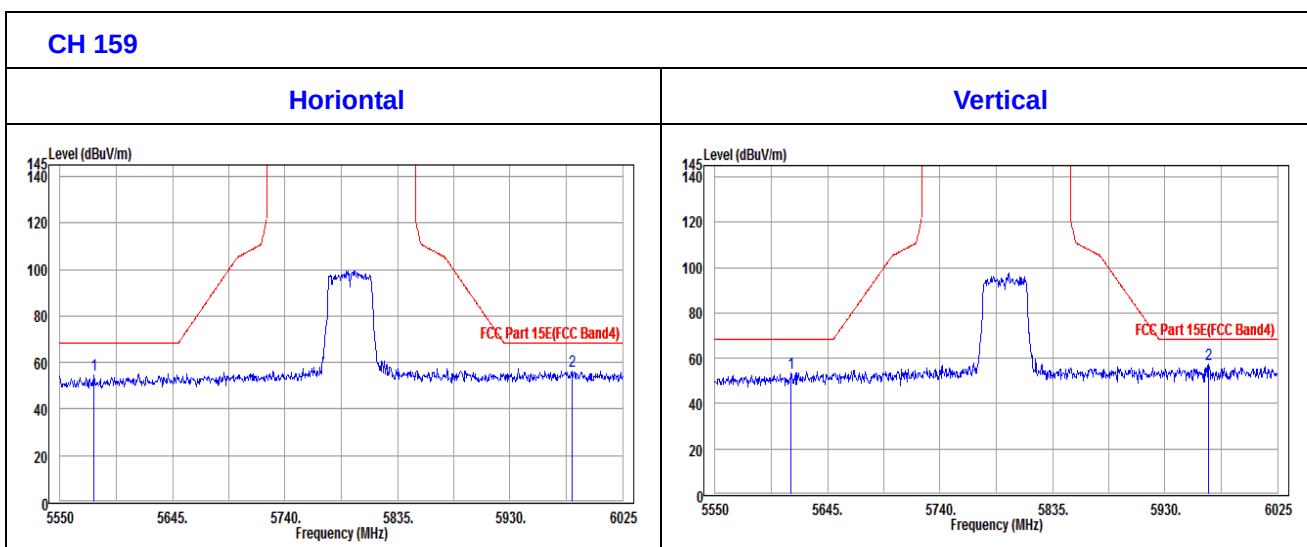
REMARKS:

- 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
5578.5	54.32	50.39	68.3	-13.98	34.99	15.22	46.28	110	255	Peak
5982.25	56.41	49.36	68.3	-11.89	35.48	17.85	46.28	110	255	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
5614.125	53.42	49.21	68.3	-14.88	35.04	15.45	46.28	100	215	Peak
5967.05	57.12	50.18	68.3	-11.18	35.46	17.76	46.28	100	215	Peak



802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	88.01	82.71			35.21	16.37	46.28	150	255	Average
5755	96.89	91.59			35.21	16.37	46.28	150	255	Peak
11550	47.99	35.25	54	-6.01	39.14	19.11	45.51	150	255	Average
11550	59.39	46.65	74	-14.61	39.14	19.11	45.51	150	255	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5775	86.5	81.05			35.23	16.5	46.28	100	215	Average
5775	95.43	89.98			35.23	16.5	46.28	100	215	Peak
11550	47.3	34.56	54	-6.7	39.14	19.11	45.51	100	215	Average
11550	58.29	45.55	74	-15.71	39.14	19.11	45.51	100	215	Peak

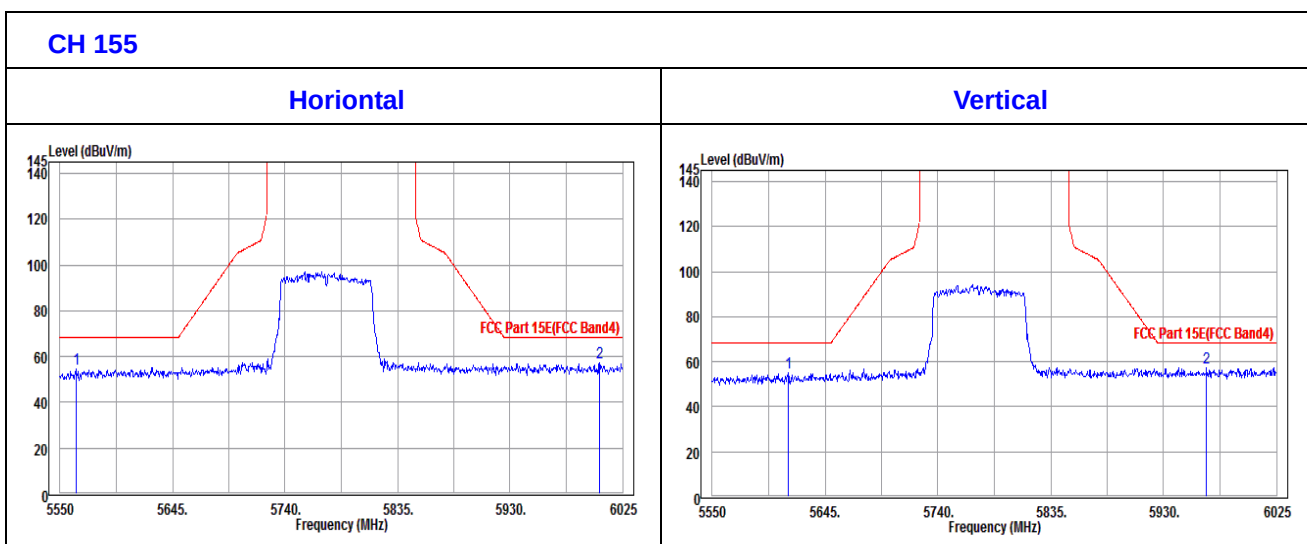
REMARKS:

- 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
5563.3	54.66	50.84	68.3	-13.64	34.98	15.12	46.28	150	255	Peak
6005.525	57.34	50.17	68.3	-10.96	35.5	17.95	46.28	150	255	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
5614.125	55.26	51.05	68.3	-13.04	35.04	15.45	46.28	100	215	Peak
5966.1	57.42	50.49	68.3	-10.88	35.46	17.75	46.28	100	215	Peak



Note: The test, calibration and test results are compliance with the A2LA (Certificate # 3939.01).

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.2.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS 30	100288	Aug. 17, 2017	Aug. 16, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 08, 2017	Sep. 07, 2018
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 TEST PROCEDURES

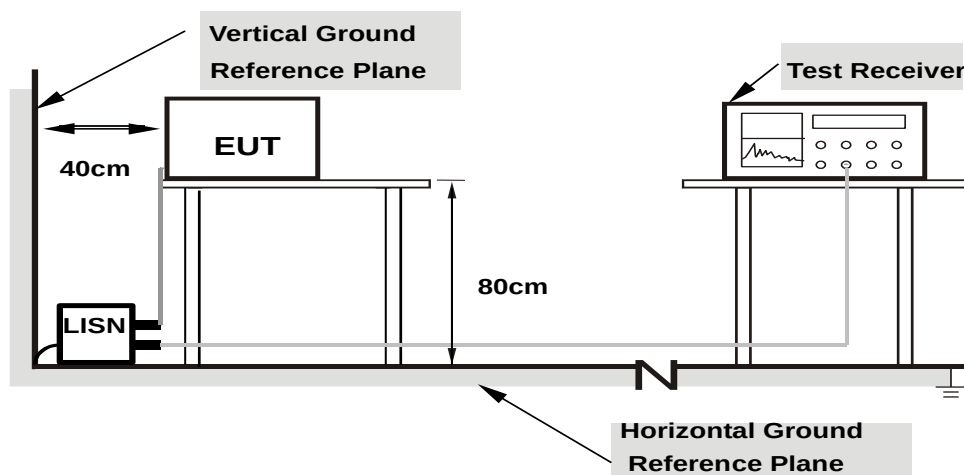
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



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

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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

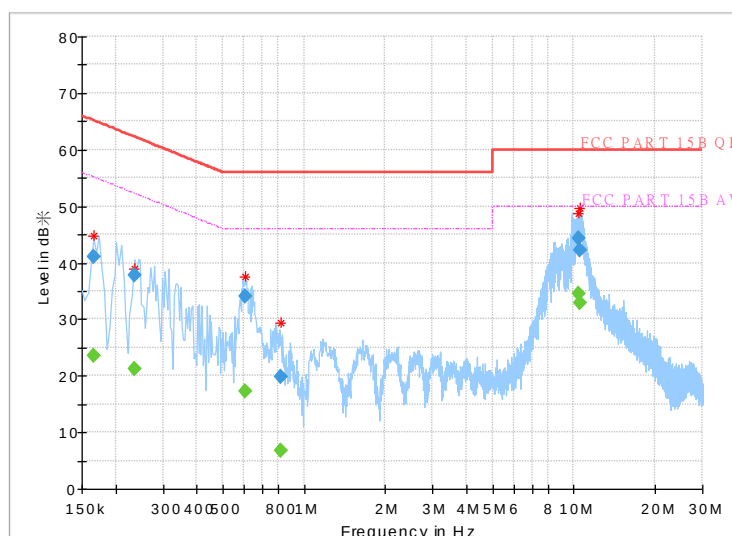
CONDUCTED WORST-CASE DATA :

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	Felix Chen	TEST DATE	2017/11/14

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.166000	---	23.60	55.16	-31.56	L	ON	9.7
0.166000	41.13	---	65.16	-24.03	L	ON	9.7
0.236000	---	21.18	52.24	-31.06	L	ON	9.7
0.236000	37.71	---	62.24	-24.53	L	ON	9.7
0.604000	---	17.29	46.00	-28.71	L	ON	9.7
0.604000	33.95	---	56.00	-22.05	L	ON	9.7
0.820000	---	6.67	46.00	-39.33	L	ON	9.7
0.820000	19.76	---	56.00	-36.24	L	ON	9.7
10.432000	---	34.54	50.00	-15.46	L	ON	9.9
10.432000	44.29	---	60.00	-15.71	L	ON	9.9
10.536000	---	32.91	50.00	-17.09	L	ON	9.9
10.536000	42.30	---	60.00	-17.70	L	ON	9.9

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

Full Spectrum

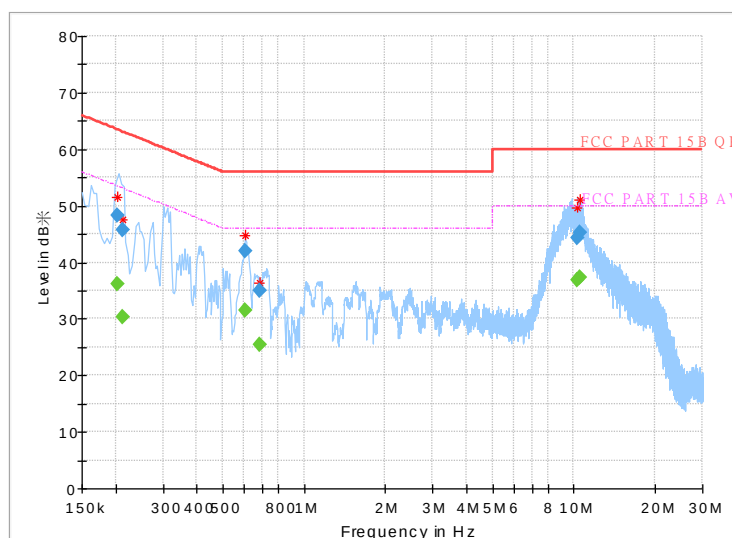


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	Felix Chen	TEST DATE	2017/11/14

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.204000	---	36.10	53.45	-17.35	N	ON	9.9
0.204000	48.36	---	63.45	-15.09	N	ON	9.9
0.212000	---	30.41	53.13	-22.72	N	ON	9.9
0.212000	45.82	---	63.13	-17.31	N	ON	9.9
0.604000	---	31.45	46.00	-14.55	N	ON	10.1
0.604000	41.88	---	56.00	-14.12	N	ON	10.1
0.684000	---	25.49	46.00	-20.51	N	ON	10.0
0.684000	34.92	---	56.00	-21.08	N	ON	10.0
10.248000	---	36.81	50.00	-13.19	N	ON	9.9
10.248000	44.39	---	60.00	-15.61	N	ON	9.9
10.504000	---	37.37	50.00	-12.63	N	ON	9.9
10.504000	45.36	---	60.00	-14.64	N	ON	9.9

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

Full Spectrum



Note: Conducted Emission was performed by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch.**

4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

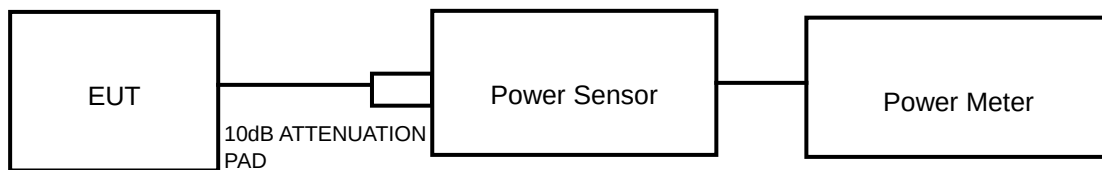
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24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

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

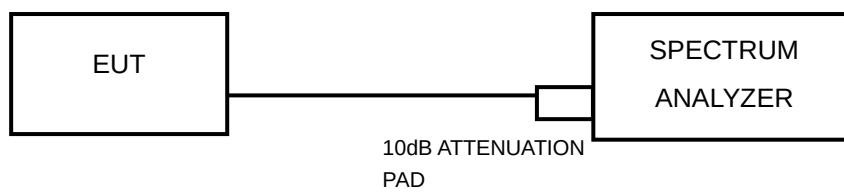
4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

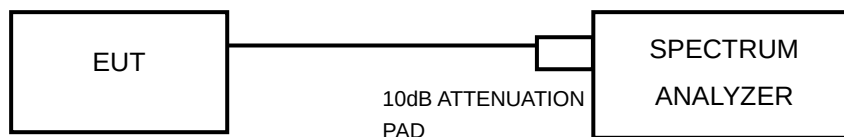
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



11ac TEST CONFIGURATION



FOR 26dB BANDWIDTH



4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Mar. 01,17	Feb. 28,18
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Mar. 01,17	Feb. 28,18
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510332	Mar. 01,17	Feb. 28,18
Power Sensor	ANRITSU	MA2411B	1339352	Mar. 01,17	Feb. 28,18

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.

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Spectrum Analyzer Agilent	N9010A	MY52220314	No. 24, 2017	Nov. 23, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	100115	Nov. 23, 2017	Nov. 22, 2018
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 23, 2017	Jun. 22, 2018
MXG Vector signal generator Agilent	N5182B	MY53050430	Oct. 24, 2017	Oct. 23, 2018
Power Meter Anritsu	ML2495A	1012010	Aug. 15, 2017	Aug. 14, 2018
Power Sensor Anritsu	MA2411B	1315050	Aug. 15, 2017	Aug. 14, 2018
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-8000 &3000	140811+170717	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-100 0(140807)	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 20, 2017	Oct. 19, 2018

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The calibration interval of the loop antenna is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

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

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

For 802.11ac (80MHz)

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

FOR 99 PERCENT OCCUPIED BANDWIDTH

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

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

FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

4.3.7 TEST RESULTS

OUTPUT POWER:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.74	9.42	24	PASS
40	5200	9.58	9.08	24	PASS
48	5240	9.70	9.33	24	PASS
52	5260	9.68	9.29	24	PASS
60	5300	9.61	9.14	24	PASS
64	5320	9.72	9.38	24	PASS
100	5500	9.86	9.68	24	PASS
116	5580	9.77	9.48	24	PASS
140	5700	9.81	9.57	24	PASS
149	5745	9.58	9.08	30	PASS
157	5785	9.51	8.93	30	PASS
161	5805	9.69	9.31	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	9.60	9.12	24	PASS
40	5200	9.44	8.79	24	PASS
48	5240	9.49	8.89	24	PASS
52	5260	9.53	8.97	24	PASS
60	5300	9.68	9.29	24	PASS
64	5320	9.65	9.23	24	PASS
100	5500	9.75	9.44	24	PASS
116	5580	9.64	9.20	24	PASS
140	5700	9.71	9.35	24	PASS
149	5745	9.47	8.85	30	PASS
157	5785	9.46	8.83	30	PASS
161	5805	9.67	9.27	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	9.70	9.33	24	PASS
46	5230	9.63	9.18	24	PASS
54	5270	9.57	9.06	24	PASS
62	5310	9.62	9.16	24	PASS
102	5510	9.87	9.71	24	PASS
110	5550	9.78	9.51	24	PASS
134	5670	9.82	9.59	24	PASS
151	5755	9.53	8.97	30	PASS
159	5795	9.69	9.31	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER w/o Duty Factor (dBm)	Duty Factor	AVERAGE POWER with Duty Factor (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	8.94	0.74	9.68	9.29	24	PASS
58	5290	9.02	0.74	9.76	9.46	24	PASS
106	5530	9.13	0.74	9.87	9.71	24	PASS
155	5775	8.85	0.74	9.59	9.10	30	PASS

Note: Conducted power performed by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch.**

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

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.62	22.98	PASS
40	5200	16.62	22.33	PASS
48	5240	16.62	22.47	PASS
52	5260	16.62	22.82	PASS
60	5300	16.62	22.02	PASS
64	5320	16.68	22.33	PASS
100	5500	16.68	21.23	PASS
116	5580	16.62	23.36	PASS
140	5700	16.56	22.18	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	16.56	15.74	PASS
157	5785	16.56	15.34	PASS
161	5805	15.53	15.53	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.88	23.52	PASS
40	5200	17.82	22.95	PASS
48	5240	16.68	22.05	PASS
52	5260	17.76	23.20	PASS
60	5300	17.88	22.87	PASS
64	5320	17.88	23.07	PASS
100	5500	17.76	23.41	PASS
116	5580	17.88	22.47	PASS
140	5700	17.82	22.78	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	17.76	17.14	PASS
157	5785	17.82	16.78	PASS
161	5805	17.82	16.79	PASS

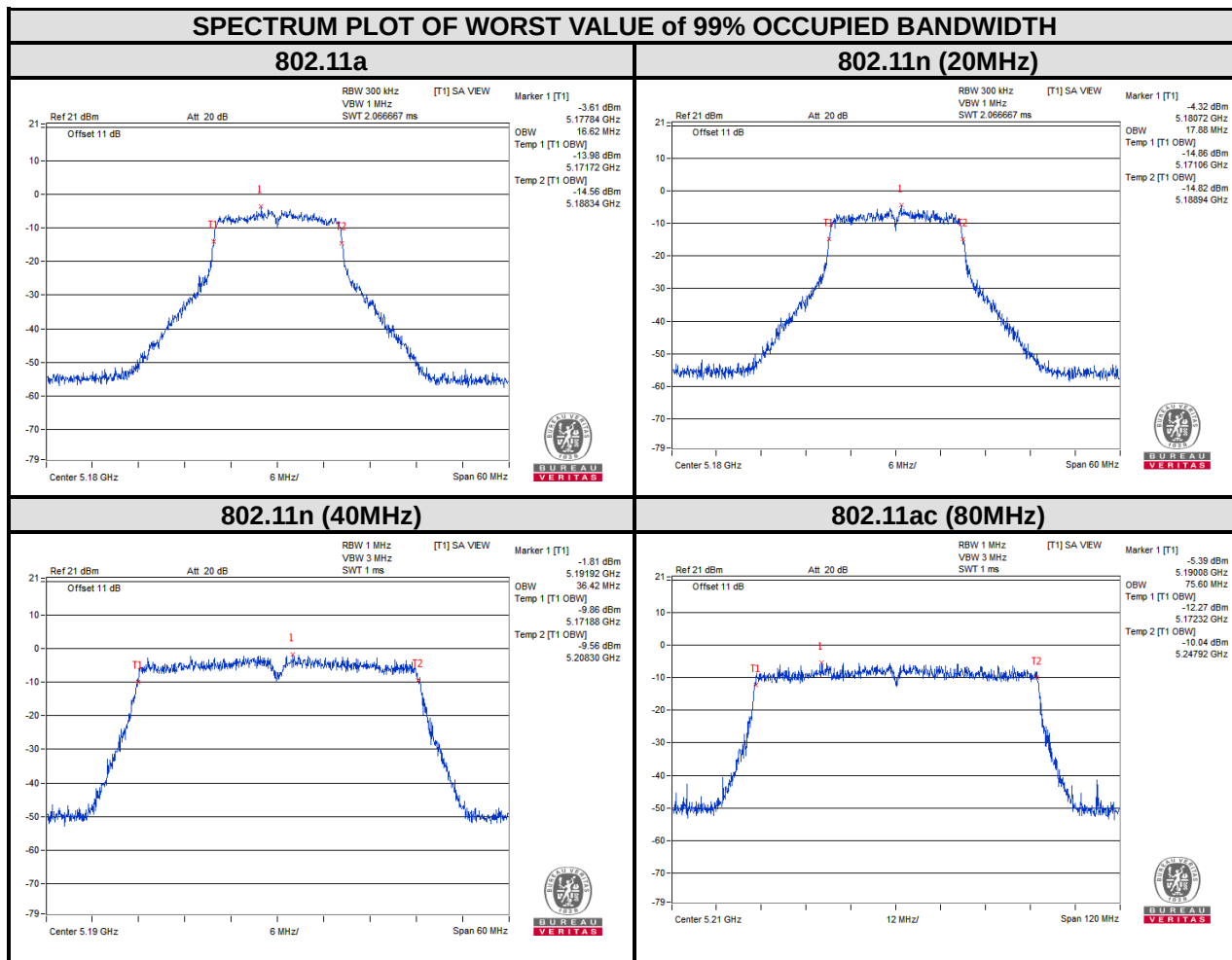
802.11n (40MHz)

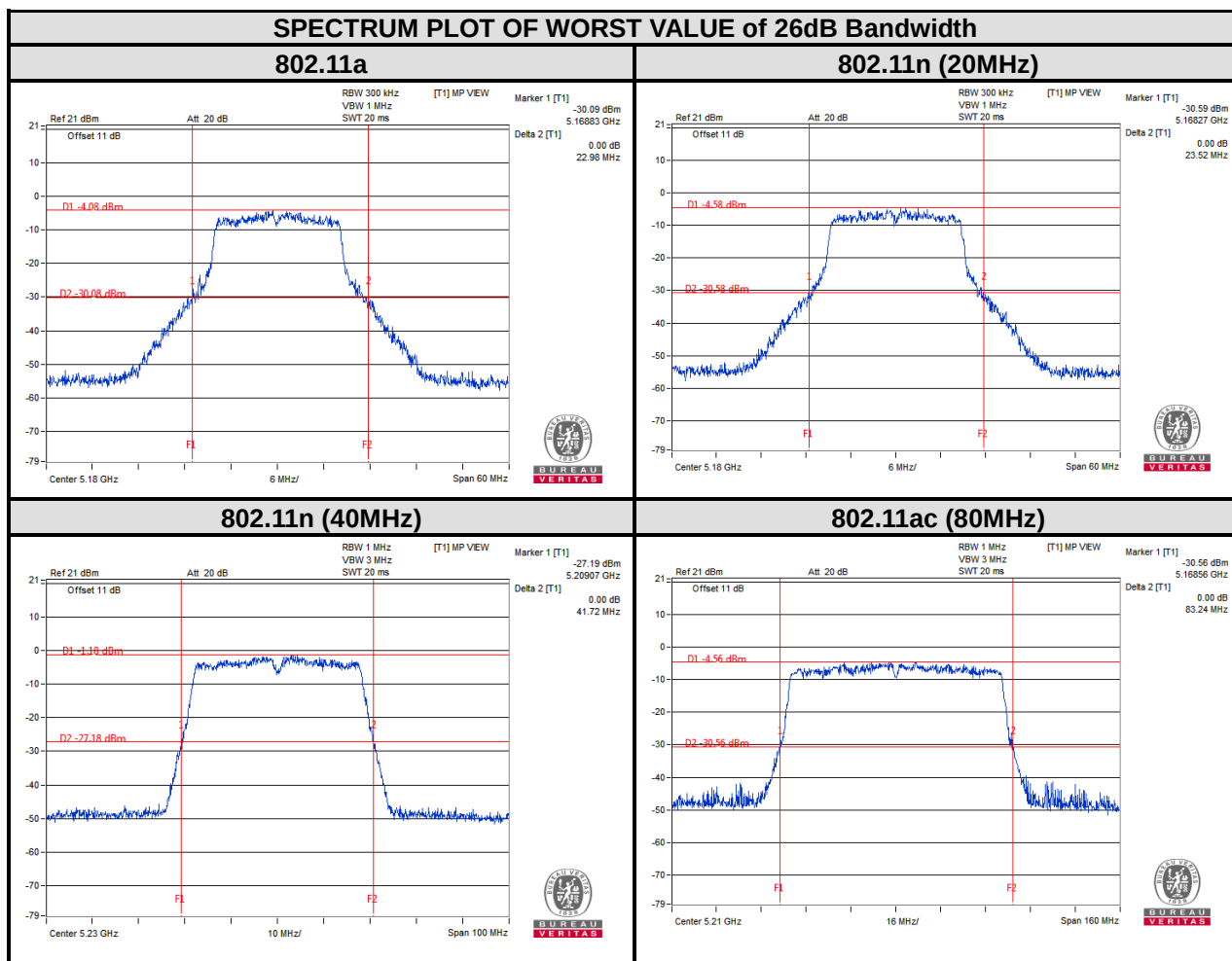
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.42	41.46	PASS
46	5230	36.36	41.72	PASS
54	5270	36.42	41.22	PASS
62	5310	36.42	41.45	PASS
102	5510	36.36	41.70	PASS
110	5550	36.54	41.48	PASS
134	5670	36.48	41.62	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.42	35.12	PASS
159	5795	36.48	35.35	PASS

802.11ac (80MHz)

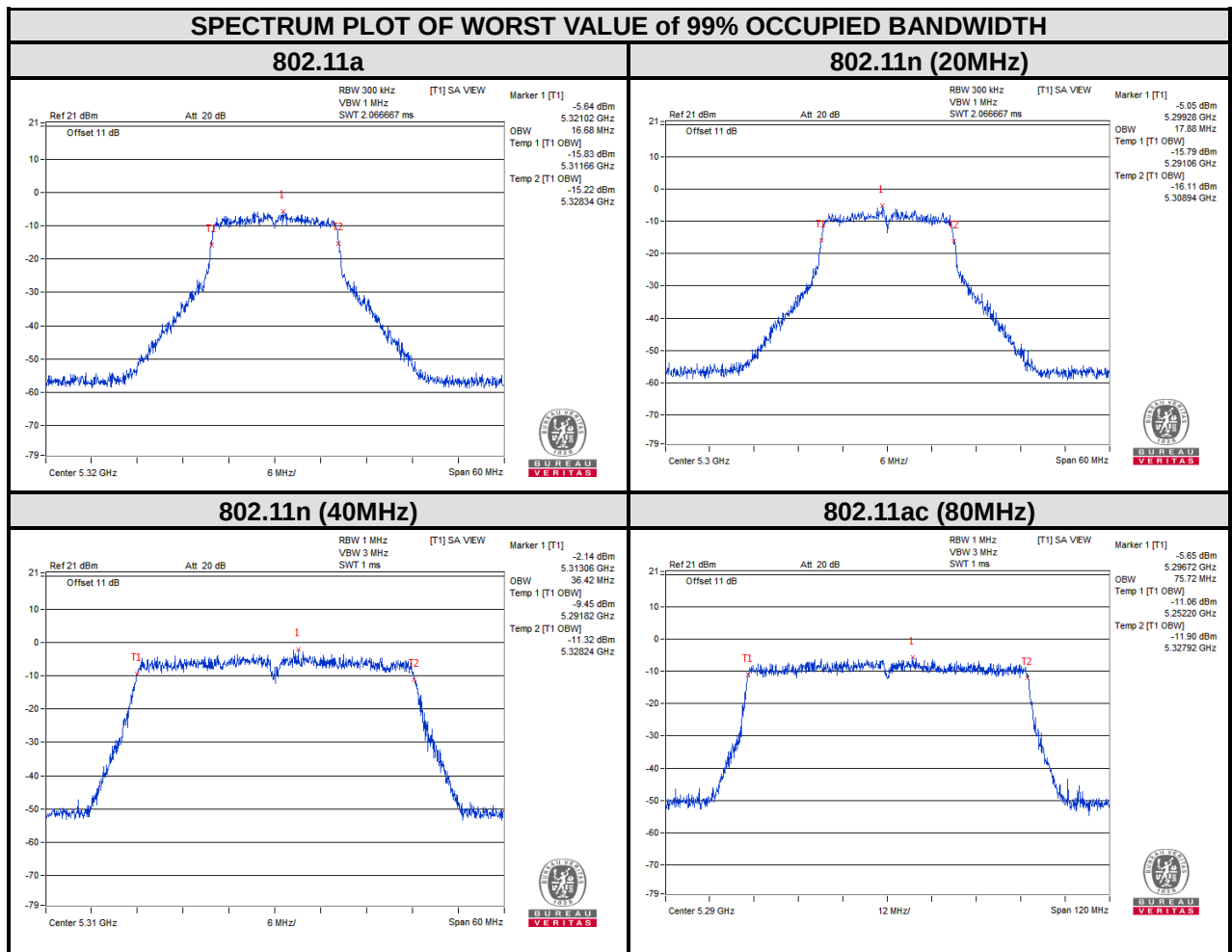
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.60	83.24	PASS
58	5290	75.72	83.45	PASS
106	5530	75.72	82.79	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
155	5775	75.72	75.37	PASS

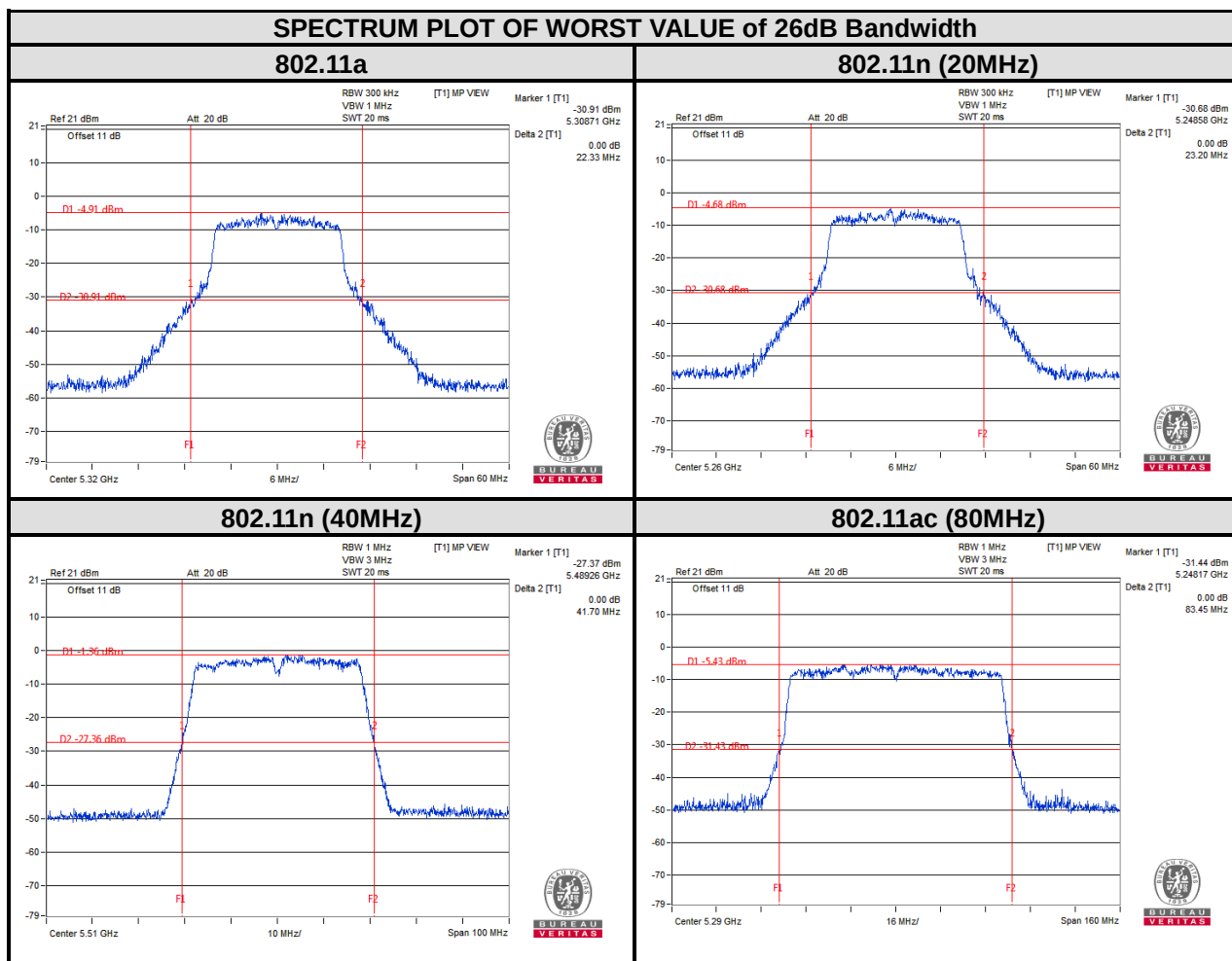
For U-NII-1:



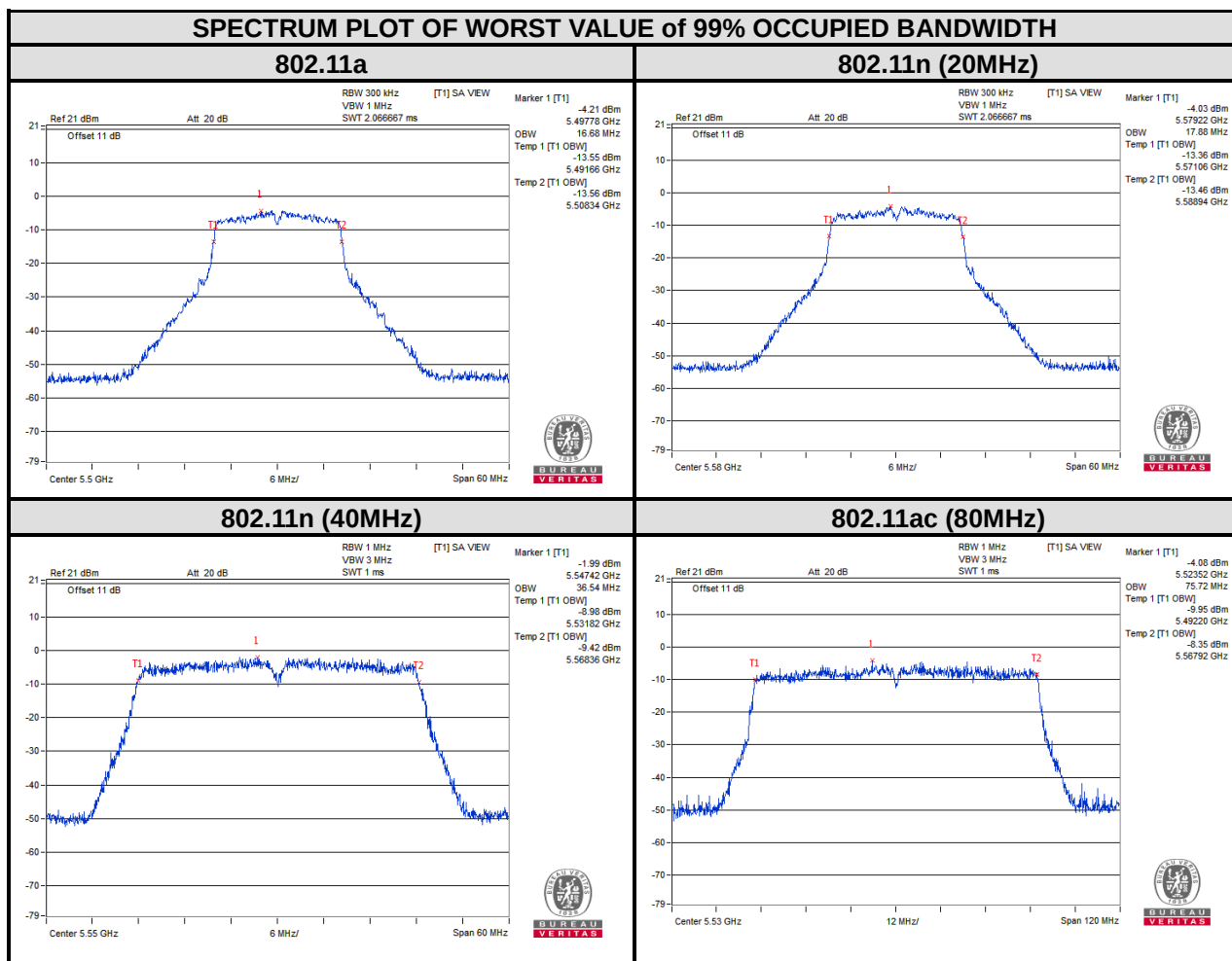


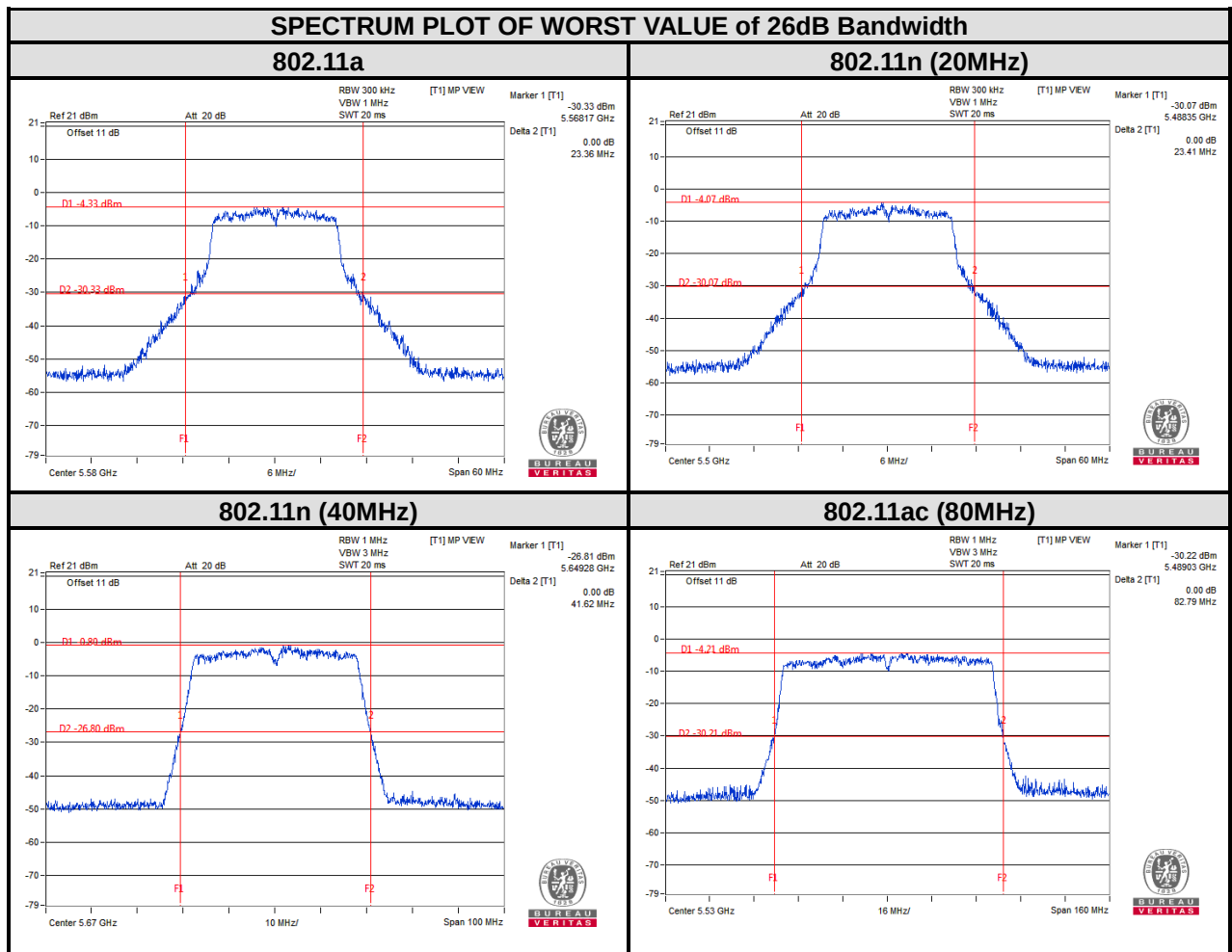
For U-NII-2A:



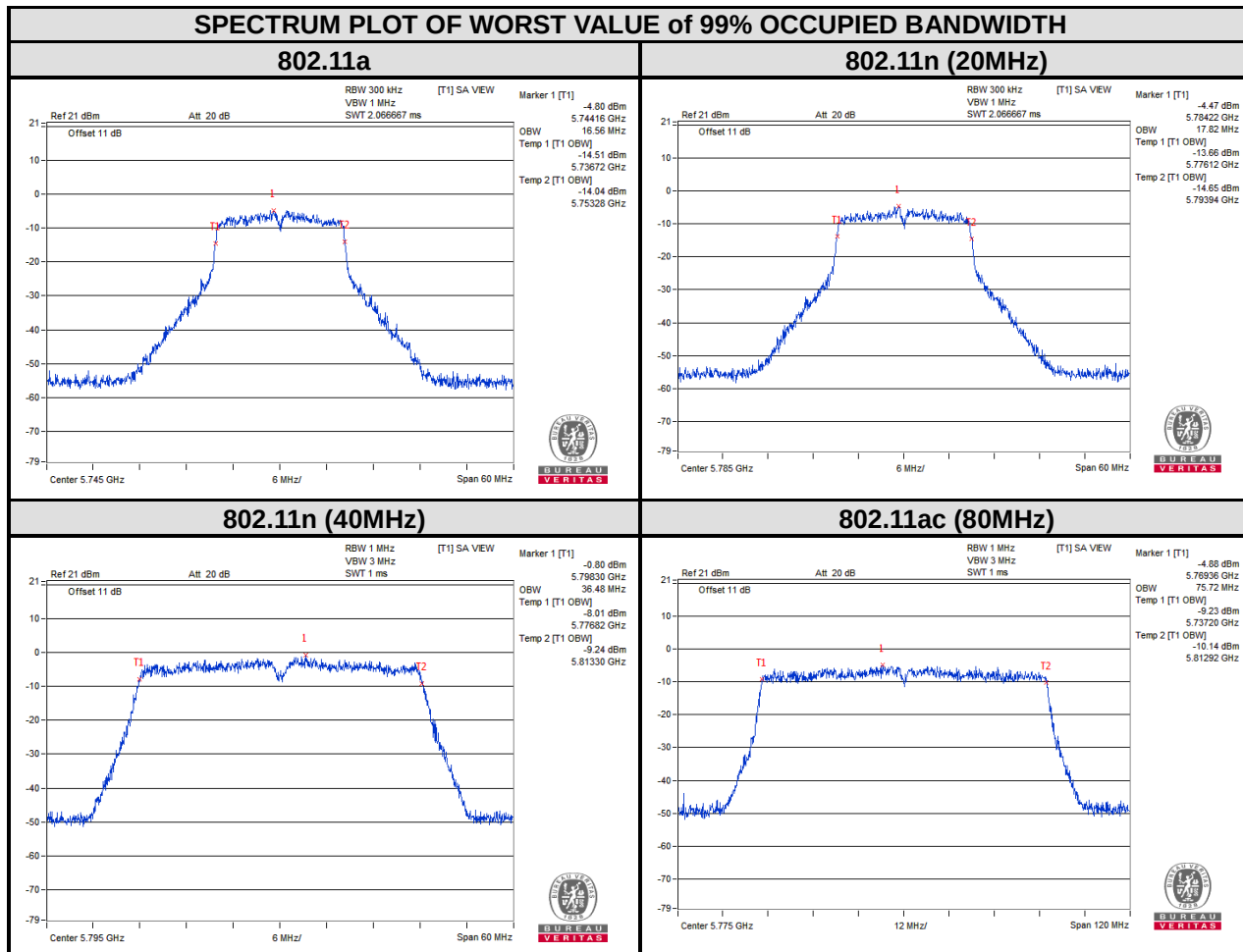


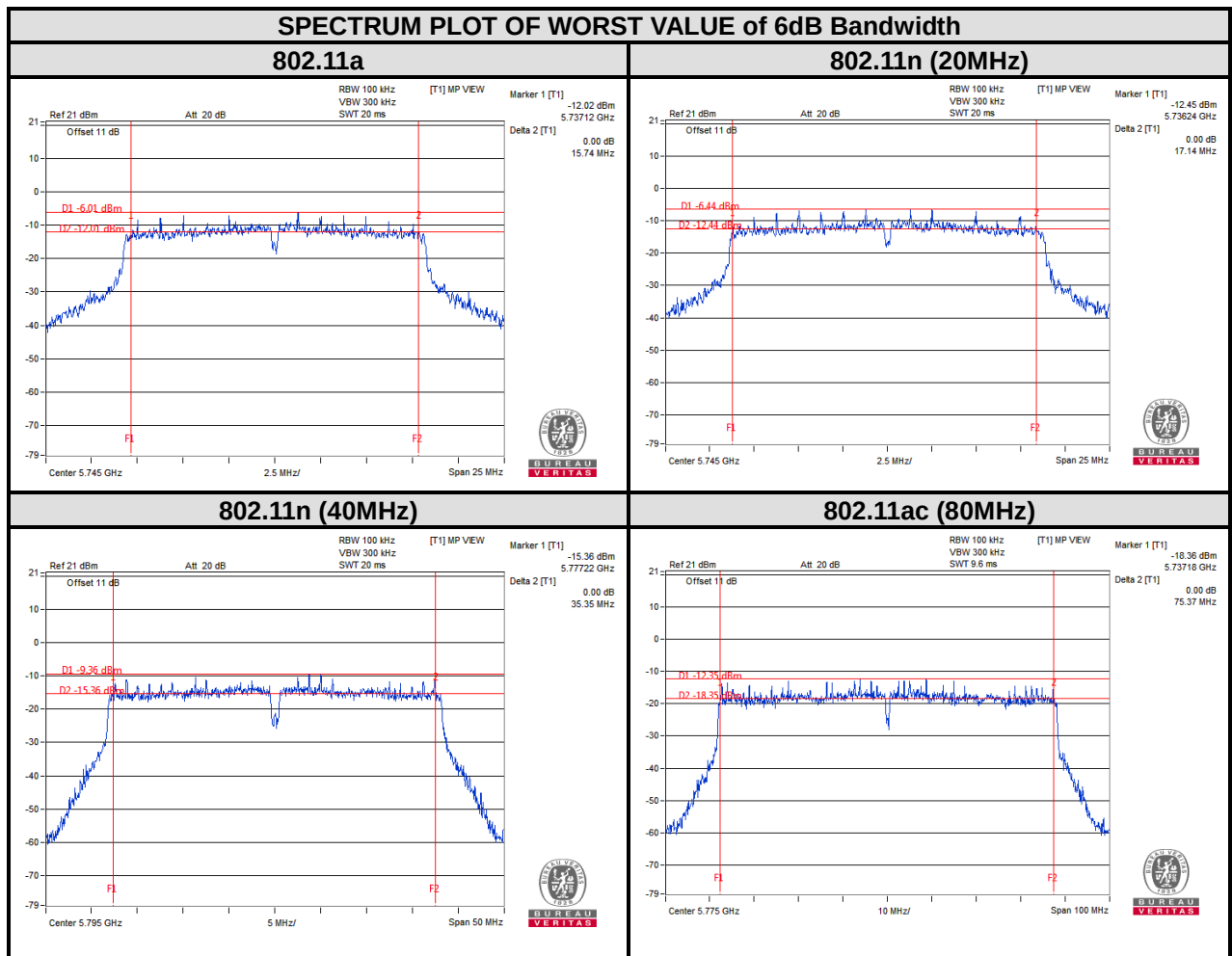
For U-NII-2C:





For U-NII-3:





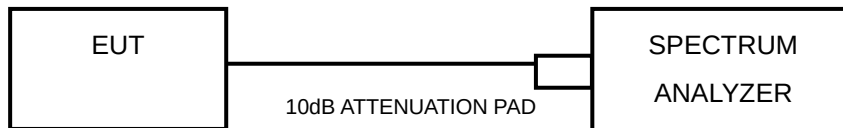
Note: The test, calibration and test results are compliance with the A2LA (Certificate # 3939.01).

4.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

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

4.4.2 TEST SETUP



4.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Mar. 01,17	Feb. 28,18
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Mar. 01,17	Feb. 28,18
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510332	Mar. 01,17	Feb. 28,18
Power Sensor	ANRITSU	MA2411B	1339352	Mar. 01,17	Feb. 28,18

NOTE:

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

4.4.4 TEST PROCEDURES

Using method SA-2

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

4.4.5 DEVIATION FROM TEST STANDARD

No deviation.

4.4.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.4.7 TEST RESULTS

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

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	-1.58	0.21	-1.37	11	PASS
40	5200	-1.66	0.21	-1.45	11	PASS
48	5240	-1.93	0.21	-1.72	11	PASS
52	5260	-1.94	0.21	-1.73	11	PASS
60	5300	-3.28	0.21	-3.07	11	PASS
64	5320	-3.28	0.21	-3.07	11	PASS
100	5500	-1.90	0.21	-1.69	11	PASS
116	5580	-1.97	0.21	-1.76	11	PASS
140	5700	-1.29	0.21	-1.08	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	-1.40	0.27	-1.13	11	PASS
40	5200	-2.35	0.27	-2.08	11	PASS
48	5240	-2.29	0.27	-2.02	11	PASS
52	5260	-2.95	0.27	-2.68	11	PASS
60	5300	-2.81	0.27	-2.54	11	PASS
64	5320	-2.58	0.27	-2.31	11	PASS
100	5500	-1.51	0.27	-1.24	11	PASS
116	5580	-1.51	0.27	-1.24	11	PASS
140	5700	-0.91	0.27	-0.64	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	-4.82	0.47	-4.35	11	PASS
46	5230	-4.96	0.47	-4.49	11	PASS
54	5270	-5.82	0.47	-5.35	11	PASS
62	5310	-6.04	0.47	-5.57	11	PASS
102	5510	-5.25	0.47	-4.78	11	PASS
110	5550	-5.29	0.47	-4.82	11	PASS
134	5670	-5.35	0.47	-4.88	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	-7.87	0.74	-15.76	11	PASS
58	5290	-8.63	0.74	-7.89	11	PASS
106	5530	-8.08	0.74	-7.34	11	PASS

For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	1.68	-1.33	0.21	-1.12	30	PASS
157	5785	1.61	-1.40	0.21	-1.19	30	PASS
161	5805	2.13	-0.88	0.21	-0.67	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	1.38	-1.63	0.27	-1.36	30	PASS
157	5785	1.28	-1.73	0.27	-1.46	30	PASS
161	5805	1.72	-1.29	0.27	-1.02	30	PASS

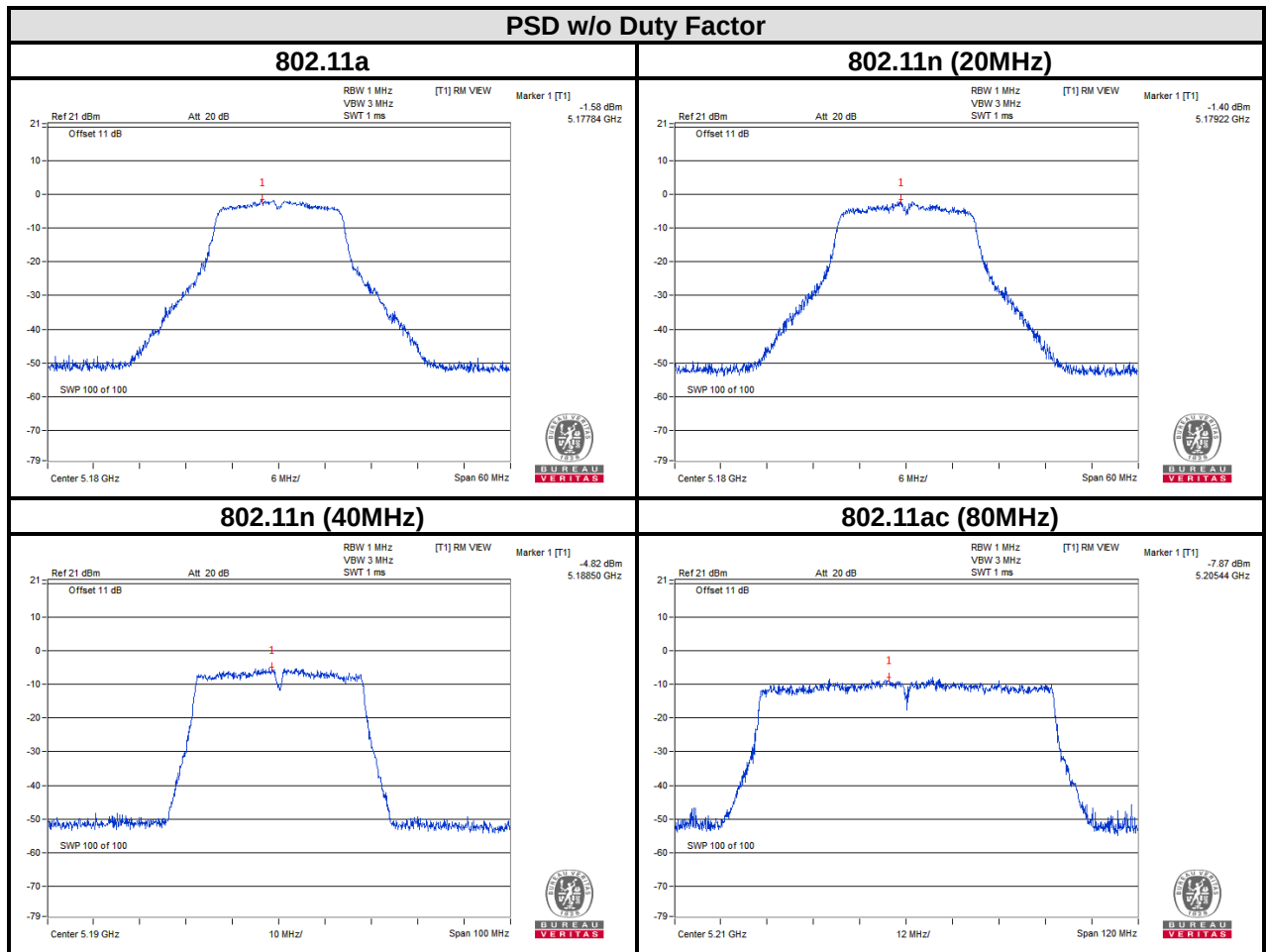
802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	-0.99	-4.00	0.47	-3.53	30	PASS
159	5795	-1.02	-4.03	0.47	-3.56	30	PASS

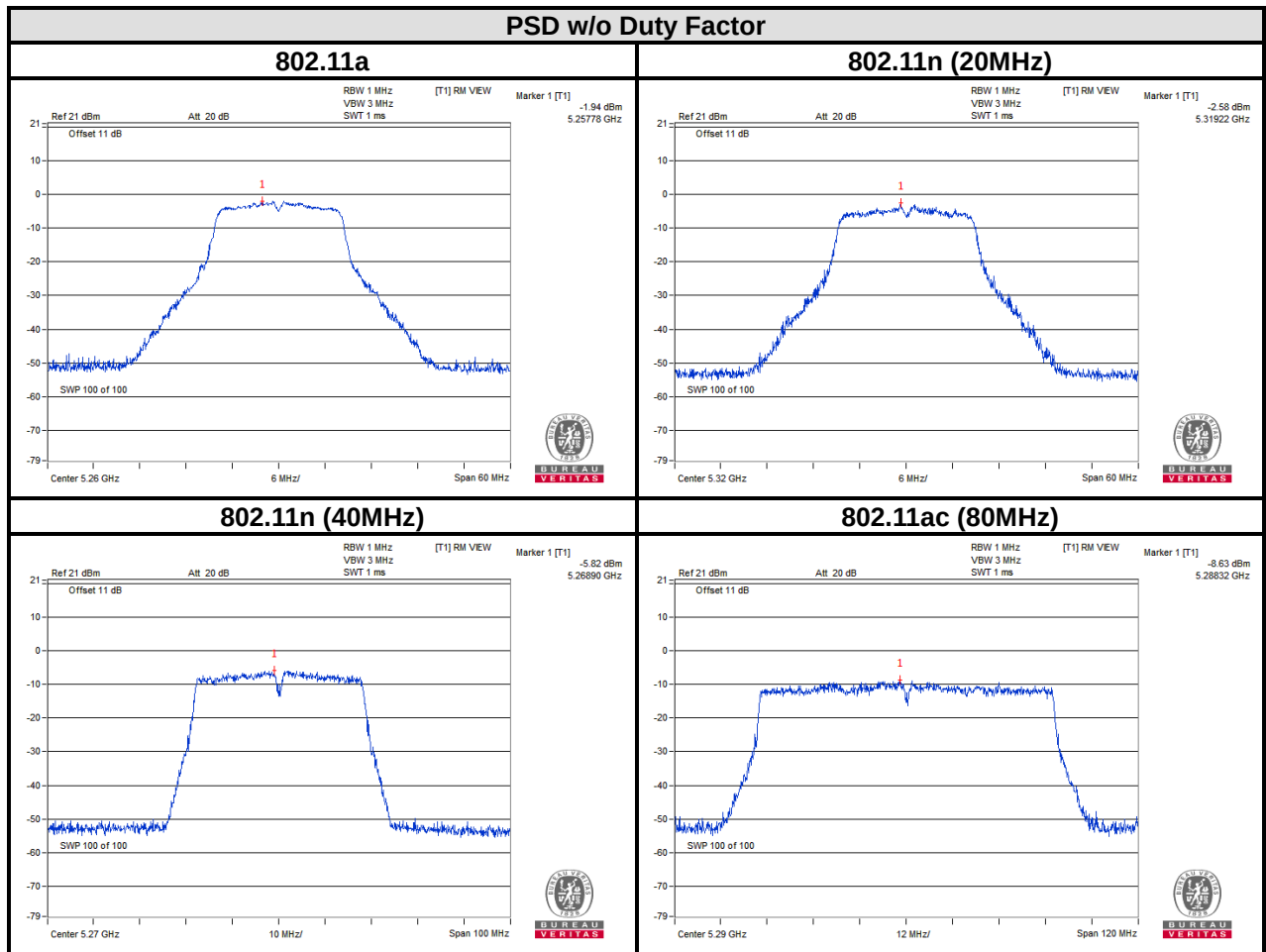
802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
155	5775	-4.31	-7.32	0.74	-6.58	30	PASS

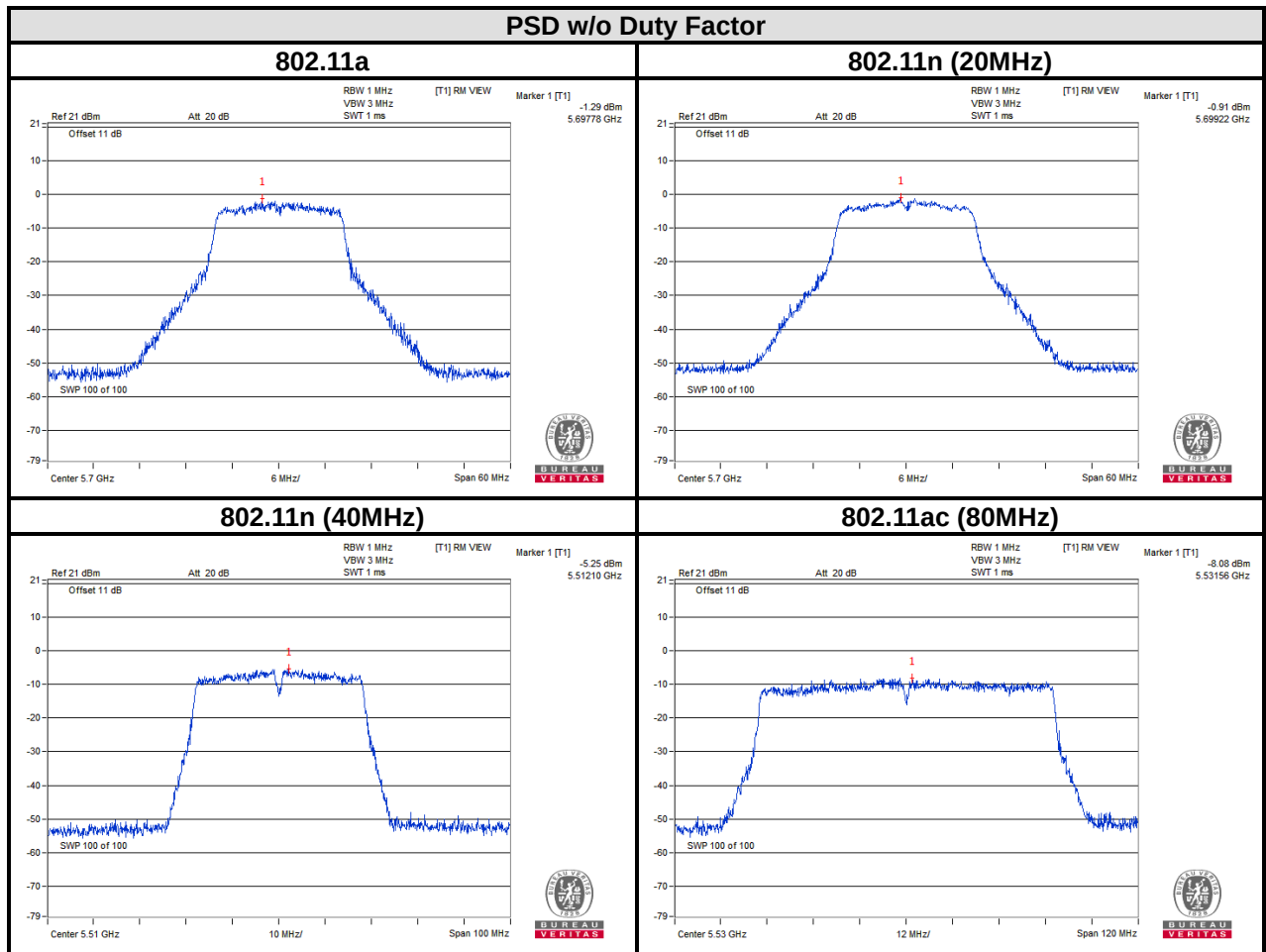
For 5180~5240MHz



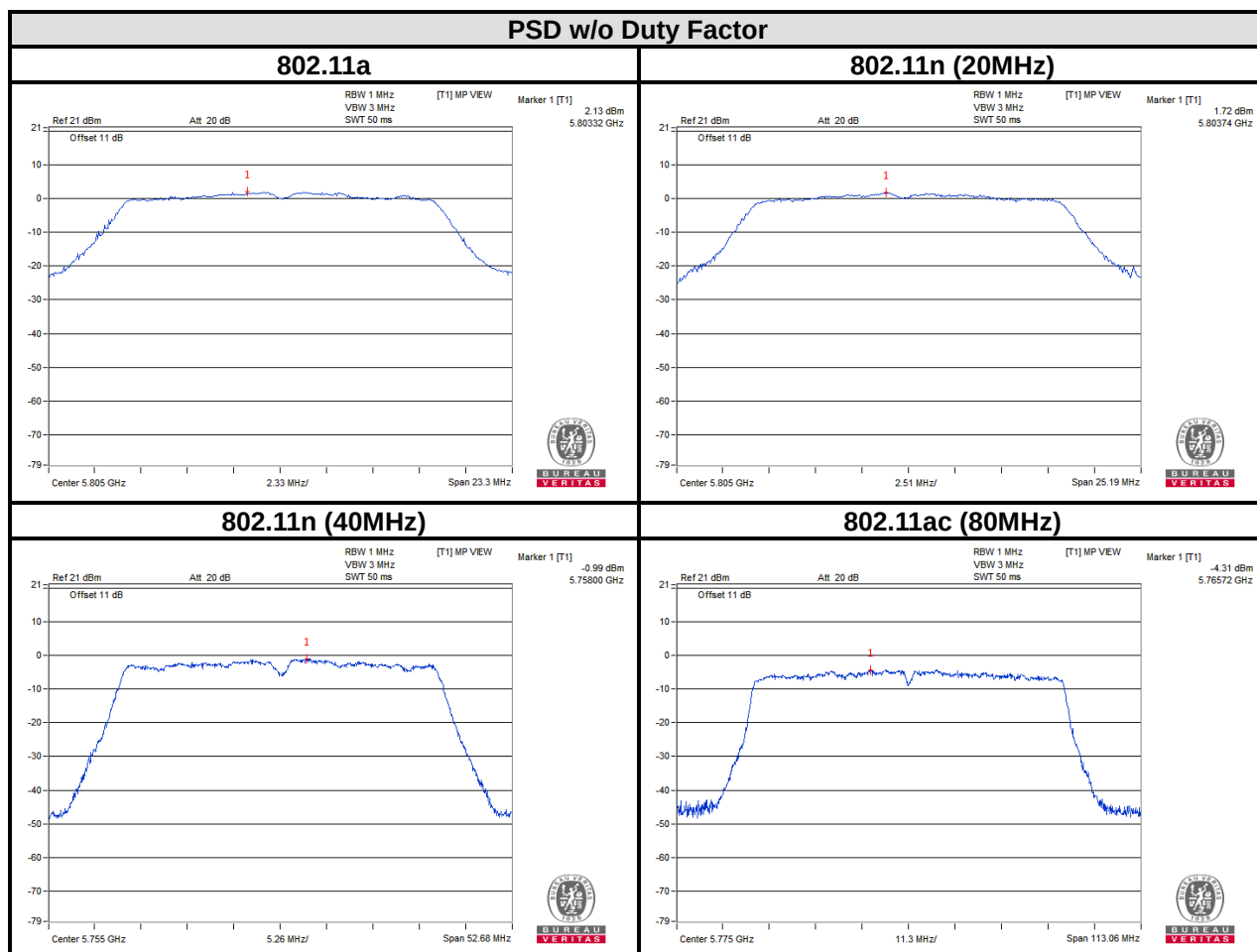
For 5260~5320MHz



For 5500~5700MHz



For 5745~5825MHz



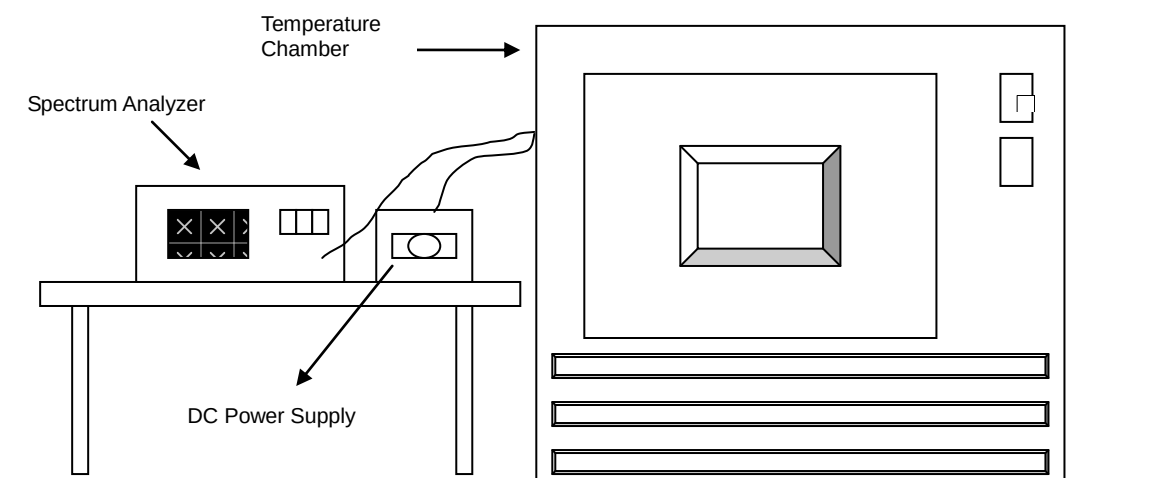
Note: The test, calibration and test results are compliance with the A2LA (Certificate # 3939.01).

4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.4.3 to get information of above instrument.

4.5.4 TEST PROCEDURE

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

4.5.5 DEVIATION FROM TEST STANDARD

No deviation.

4.5.6 EUT OPERATING CONDITION

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

4.5.7 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5180MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
50	3.85	5179.9841	-3.069	5179.9849	-2.915	5179.9889	-2.143	5179.9849	-2.915	PASS
40	3.85	5180.0188	3.629	5180.0122	2.355	5180.0125	2.413	5180.0114	2.201	PASS
30	3.85	5179.9944	-1.081	5179.995	-0.965	5179.9928	-1.390	5179.996	-0.772	PASS
20	3.85	5180.0176	3.398	5180.0224	4.324	5180.0147	2.838	5180.0189	3.649	PASS
10	3.85	5179.9847	-2.954	5179.9917	-1.602	5179.9897	-1.988	5179.9868	-2.548	PASS
0	3.85	5180.009	1.737	5180.0123	2.375	5180.0087	1.680	5180.0123	2.375	PASS
-10	3.85	5179.9944	-1.081	5179.9993	-0.135	5179.9981	-0.367	5179.9893	-2.066	PASS
-20	3.85	5180.0227	4.382	5180.0259	5.000	5180.0272	5.251	5180.0186	3.591	PASS
-30	3.85	5180.0078	1.506	5180.0062	1.197	5180.0024	0.463	5180.0059	1.139	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5180MHZ										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
20	4.4	5180.0186	3.591	5180.0227	4.382	5180.0148	2.857	5180.0172	3.320	PASS
	3.85	5180.0176	3.398	5180.0224	4.324	5180.0147	2.838	5180.0189	3.649	PASS
	3.5	5180.017	3.282	5180.0218	4.208	5180.0156	3.012	5180.018	3.475	PASS

FREQUENCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5805MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
50	3.85	5804.9842	-2.722	5804.984	-2.756	5804.9808	-3.307	5804.9852	-2.550	PASS
40	3.85	5805.0189	3.256	5805.0207	3.566	5805.0147	2.532	5805.0118	2.033	PASS
30	3.85	5805.0164	2.825	5805.0076	1.309	5805.0174	2.997	5805.0181	3.118	PASS
20	3.85	5805.0225	3.876	5805.0168	2.894	5805.019	3.273	5805.0138	2.377	PASS
10	3.85	5804.9855	-2.498	5804.994	-1.034	5804.9882	-2.033	5804.9868	-2.274	PASS
0	3.85	5804.9889	-1.912	5804.9983	-0.293	5804.9929	-1.223	5804.9994	-0.103	PASS
-10	3.85	5804.977	-3.962	5804.9822	-3.066	5804.9819	-3.118	5804.9836	-2.825	PASS
-20	3.85	5805.0033	0.568	5804.9994	-0.103	5804.9982	-0.310	5804.9992	-0.138	PASS
-30	3.85	5805.0085	1.464	5805.0091	1.568	5805.0128	2.205	5805.0068	1.171	PASS

FREQUENCY STABILITY VERSUS VOLTAGE										RESULT
OPERATING FREQUENCY: 5805MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
20	4.4	5805.0228	3.928	5805.0182	3.135	5805.0198	3.411	5805.0139	2.394	PASS
	3.85	5805.0225	3.876	5805.0168	2.894	5805.019	3.273	5805.0138	2.377	PASS
	3.5	5805.0225	3.876	5805.0177	3.049	5805.0182	3.135	5805.0152	2.618	PASS

Note: The test, calibration and test results are compliance with the A2LA (Certificate # 3939.01).

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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

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

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