

FCC TEST REPORT

(Part 15, Subpart E)

Product: Tablet PC

Model No.: 9024O

FCC ID: 2ACCJBT02

Applicant: TCL Communication Ltd.

Address: 5F, C-Tower, No. 232, Liang Jing Road, ZhangJiang High-Tech Park, Pudong Area, Shanghai, 201203, P.R.China

Manufacturer: TCL Communication Ltd.

Address: 5F, C-Tower, No. 232, Liang Jing Road, ZhangJiang High-Tech Park, Pudong Area, Shanghai, 201203, P.R.China

Prepared by: Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch

Lab Location: No. 34, Chenwulu Section, Guantai Rd., Houjie Town, Dongguan City, Guangdong 523942, China

TEL: +86 769 8593 5656

FAX: +86 769 8593 1080

E-MAIL: customerservice.dg@cn.bureauveritas.com

Report No.: RF170428W003-7

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TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 CERTIFICATION	5
2 SUMMARY OF TEST RESULTS.....	6
2.1 MEASUREMENT UNCERTAINTY	6
3 GENERAL INFORMATION	7
3.1 GENERAL DESCRIPTION OF EUT	7
3.2 DESCRIPTION OF TEST MODES	9
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	10
3.3 DUTY CYCLE OF TEST SIGNAL	13
3.4 DESCRIPTION OF SUPPORT UNITS	14
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST	15
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
4 TEST TYPES AND RESULTS.....	16
4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT	16
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT.....	16
4.1.2 LIMITS OF UNWANTED EMISSION	16
4.1.3 TEST INSTRUMENTS.....	17
4.1.4 TEST PROCEDURES	18
4.1.5 DEVIATION FROM TEST STANDARD	18
4.1.6 TEST SETUP	19
4.1.7 EUT OPERATING CONDITION	20
4.1.8 TEST RESULTS	21
4.2 CONDUCTED EMISSION MEASUREMENT	55
4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	55
4.2.2 TEST INSTRUMENTS.....	55
4.2.3 TEST PROCEDURES	55
4.2.4 DEVIATION FROM TEST STANDARD	56
4.2.5 TEST SETUP	56
4.2.6 EUT OPERATING CONDITIONS	56
4.2.7 TEST RESULTS	57



4.3	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	59
4.3.1	LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	59
4.3.2	TEST SETUP	59
4.3.3	TEST INSTRUMENTS	60
4.3.4	TEST PROCEDURE	61
4.3.5	DEVIATION FROM TEST STANDARD	62
4.3.6	EUT OPERATING CONDITIONS	62
4.3.7	TEST RESULTS	63
4.4	MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT	72
4.4.1	LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT	72
4.4.2	TEST SETUP	72
4.4.3	TEST INSTRUMENTS	72
4.4.4	TEST PROCEDURES	73
4.4.5	DEVIATION FROM TEST STANDARD	73
4.4.6	EUT OPERATING CONDITIONS	73
4.4.7	TEST RESULTS	74
4.5	FREQUENCY STABILITY	79
4.5.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	79
4.5.2	TEST SETUP	79
4.5.3	TEST INSTRUMENTS	79
4.5.4	TEST PROCEDURE	80
4.5.5	DEVIATION FROM TEST STANDARD	80
4.5.6	EUT OPERATING CONDITION	80
4.5.7	TEST RESULTS	81
5	PHOTOGRAPHS OF THE TEST CONFIGURATION	83
6	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	84



Test Report No.: RF170428W003-7

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF170428W003-7	Original release	May 31, 2017



1 CERTIFICATION

PRODUCT: Tablet PC
BRAND NAME: alcatel
MODEL NO.: 9024O
APPLICANT: TCL Communication Ltd.
TESTED: Apr. 29, 2017 ~ May 31, 2017
TEST SAMPLE: Identical Prototype
STANDARDS: **FCC Part 15, Subpart E (15.407), Section 15.407**
ANSI C63.10-2013

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

PREPARED BY : Harry , **DATE:** May 31, 2017
(Harry Li/ Engineer)

APPROVED BY : Sam Tung , **DATE:** May 31, 2017
(Sam Tung / Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -20.96dB at 0.524000MHz.
15.407(b)(1/2/3/4/6)	Radiated Emission & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -1.35dB at 5350MHz.
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	2.70dB
Radiated emissions	9KHz ~ 30MHz	2.90dB
	30MHz ~ 1GMHz	4.06dB
	1GHz ~ 18GHz	4.58dB
	18GHz ~ 40GHz	1.94dB

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



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Tablet PC
MODEL NO.	9024O
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.85Vdc (Li-polymer, battery)
MODULATION TYPE	64QAM, 16QAM, QPSK, BPSK
MODULATION TECHNOLOGY	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to MCS7
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
AVERAGE POWER	22.909mW for 5180 ~ 5240MHz 22.182mW for 5260 ~ 5320MHz 23.550mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA Antenna with -5dBi gain
HW VERSION	05
SW VERSION	MAB-UDB0
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: non-shielded, detachable, 0.8m

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT was powered by the following adapter:

ADAPTER	
BRAND:	alcatel
MODEL:	UC13US
INPUT:	AC 100-240V, 400mA
OUTPUT:	DC 5V, 2000mA



3. The EUT matched the following USB cable:

USB CABLE	
BRAND:	N/A
MODEL:	N/A
SIGNAL LINE:	0.8 METER

4. 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

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

3.2 DESCRIPTION OF TEST MODES

FOR 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

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
58	5290 MHz		

FOR 5725 ~ 5825MHz

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

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

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
151	5755 MHz	159	5795 MHz



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	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 56, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 56, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5725-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0



POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11n (40MHz)	5260-5320	54 to 62	62	OFDM	BPSK	MCS0

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 48	OFDM	BPSK	6.0
A	802.11n (20MHz)		36 to 48	36, 48	OFDM	BPSK	MCS0
A	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
A	802.11a	5260-5320	52 to 64	52, 64	OFDM	BPSK	6.0
A	802.11n (20MHz)		52 to 64	52, 64	OFDM	BPSK	MCS0
A	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
A	802.11a	5725-5825	149 to 165	149, 165	OFDM	BPSK	6.0
A	802.11n (20MHz)		149 to 165	149, 165	OFDM	BPSK	MCS0
A	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

**ANTENNA PORT CONDUCTED MEASUREMENT:**

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
B	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
B	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
B	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	MCS0
B	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
B	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
B	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	MCS0
B	802.11a	5725-5825	149 to 165	149, 165	OFDM	BPSK	6.0
B	802.11n (20MHz)		149 to 165	149, 165	OFDM	BPSK	MCS0
B	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 62%RH	DC 5V By Adapter	Tony Zou
RE≥1G	23deg. C, 62%RH	DC 5V By Adapter	Tony Zou
PLC	24deg. C, 61%RH	DC 5V By Adapter	Simon Yang
APCM	23.5deg. C, 60%RH	DC 3.85V By battery	Moon Xiong



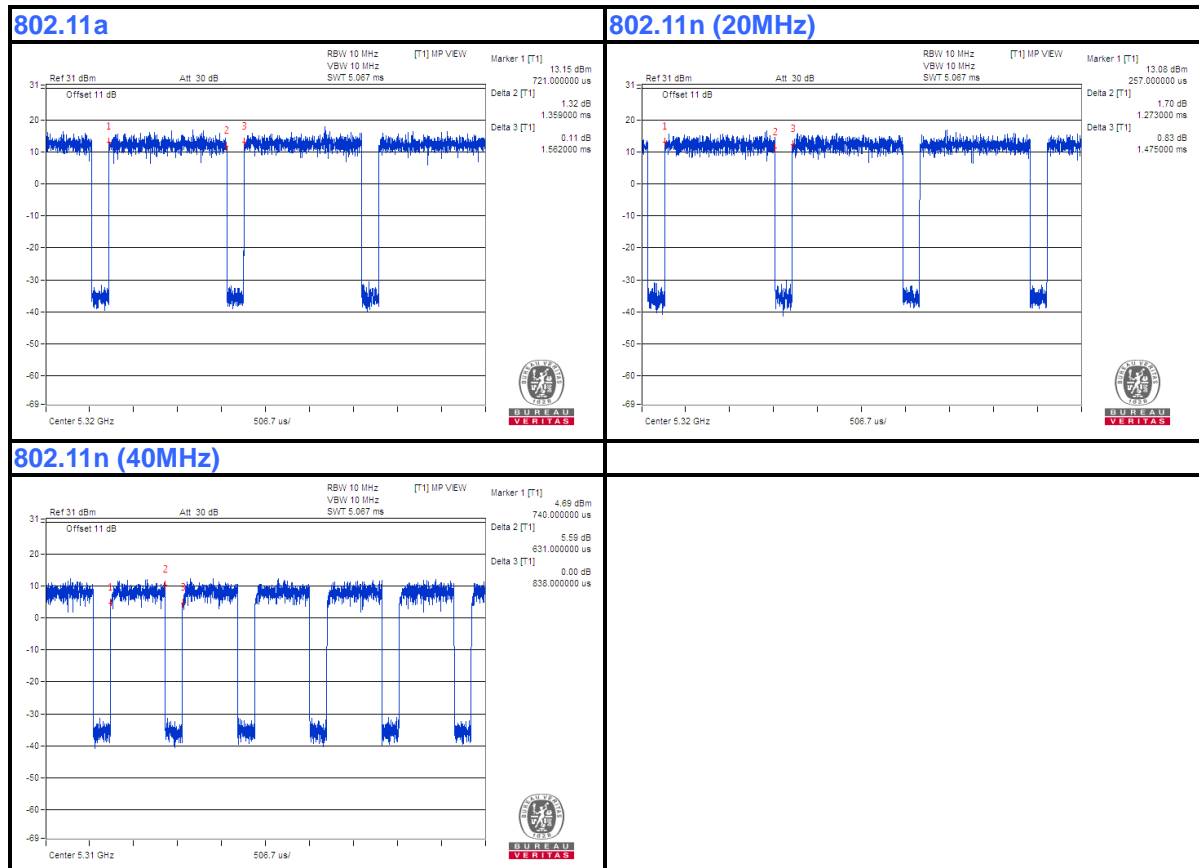
3.3 DUTY CYCLE OF TEST SIGNAL

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

802.11a: Duty cycle = $1.359/1.562 = 0.870$, Duty factor = $10 * \log(1/0.870) = 0.61$

802.11n (20MHz): Duty cycle = $1.273/1.475 = 0.863$, Duty factor = $10 * \log(1/0.863) = 0.64$

802.11n (40MHz): Duty cycle = $0.631/0.838 = 0.753$, Duty factor = $10 * \log(1/0.753) = 1.23$





3.4 DESCRIPTION OF SUPPORT UNITS

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

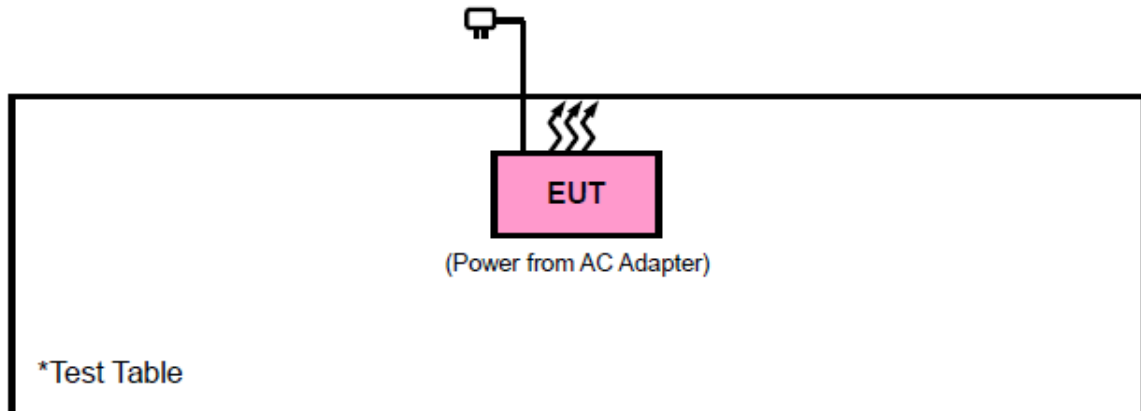
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A

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

NOTE:

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST



3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General U-NII Test Procedures New Rules v01r02

ANSI C63.10-2013

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

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

4 TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

4.1.2 LIMITS OF UNWANTED EMISSION

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



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

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

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.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 01,17	Mar. 31,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,16	Nov. 03,17
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 14, 16	Jul. 13, 17
Loop antenna	Daze	ZN30900A	0708	Nov. 28,16	Nov. 27,17
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 05,17	May 04,18
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8.8m	NSEMC006	Mar. 12,16	Mar. 11,18
Test Software	E3	V 9.160323	N/A	N/A	N/A
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 02,17	Mar. 01,18
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Feb. 10,17	Feb. 09,18
Pre-Amplifier(1-18G)	HP	8449B	3008A00409	Apr. 16,17	Apr. 15,18
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,16	Nov. 03,17
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 08,16	Aug. 07,17

NOTE:

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

4.1.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 10 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.

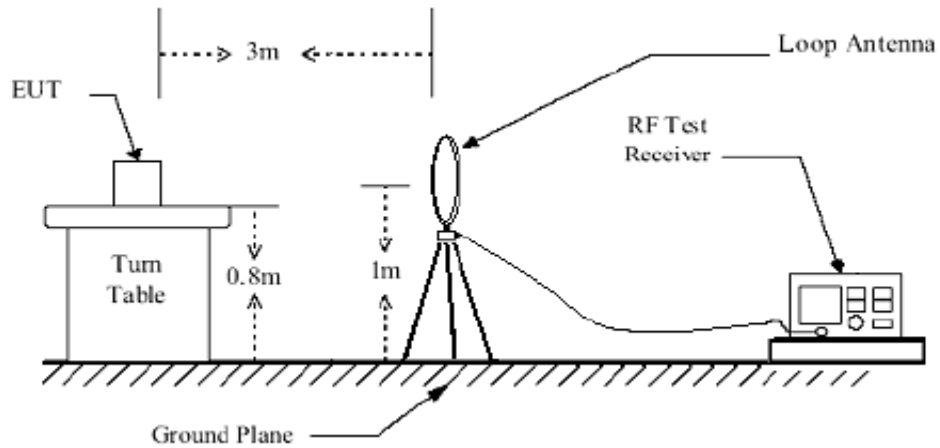
4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

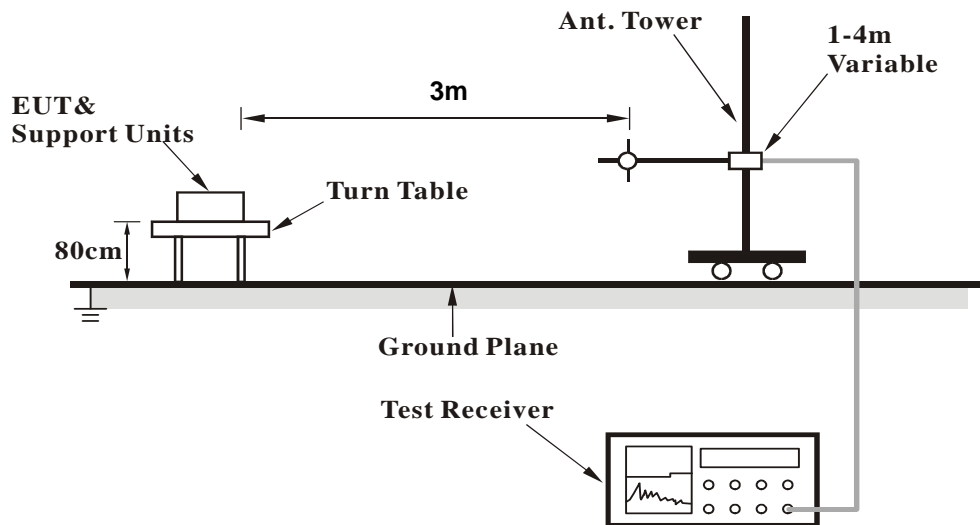


4.1.6 TEST SETUP

< Frequency Range below 30MHz >

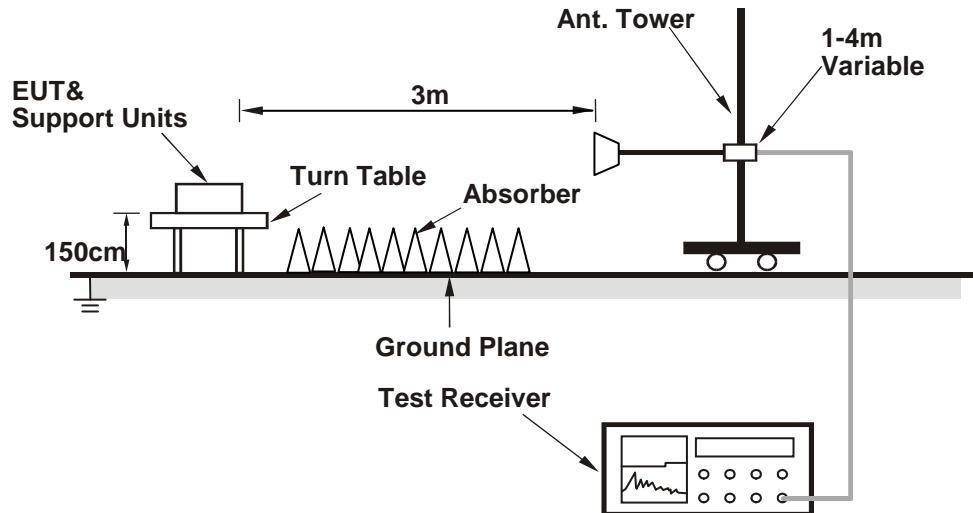


< Frequency Range 30MHz~1GHz >





<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:

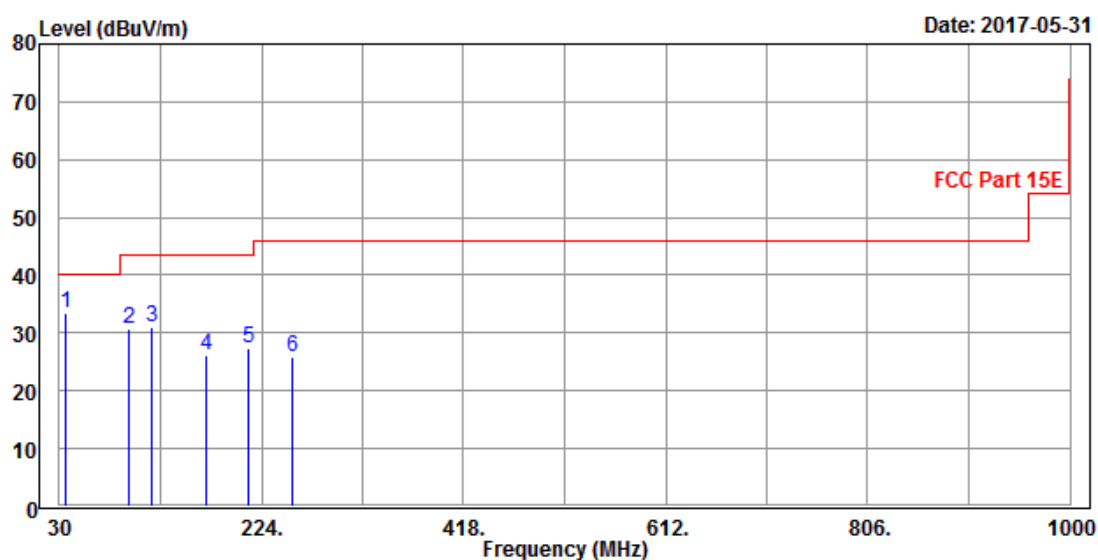
802.11n (40MHz)

CHANNEL	TX Channel 62	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
35.82	33.44	56.97	40	-6.56	13.08	0.9	37.51	100	30	QP
95.96	30.63	58.57	43.5	-12.87	7.56	1.51	37.01	100	115	QP
118.27	30.99	58.9	43.5	-12.51	7.36	1.67	36.94	100	150	QP
171.62	26.31	50.98	43.5	-17.19	10.03	2.01	36.71	100	163	QP
211.39	27.26	50.95	43.5	-16.24	10.62	2.23	36.54	100	248	QP
254.07	25.97	47.57	46	-20.03	12.45	2.47	36.52	100	90	QP

REMARKS:

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



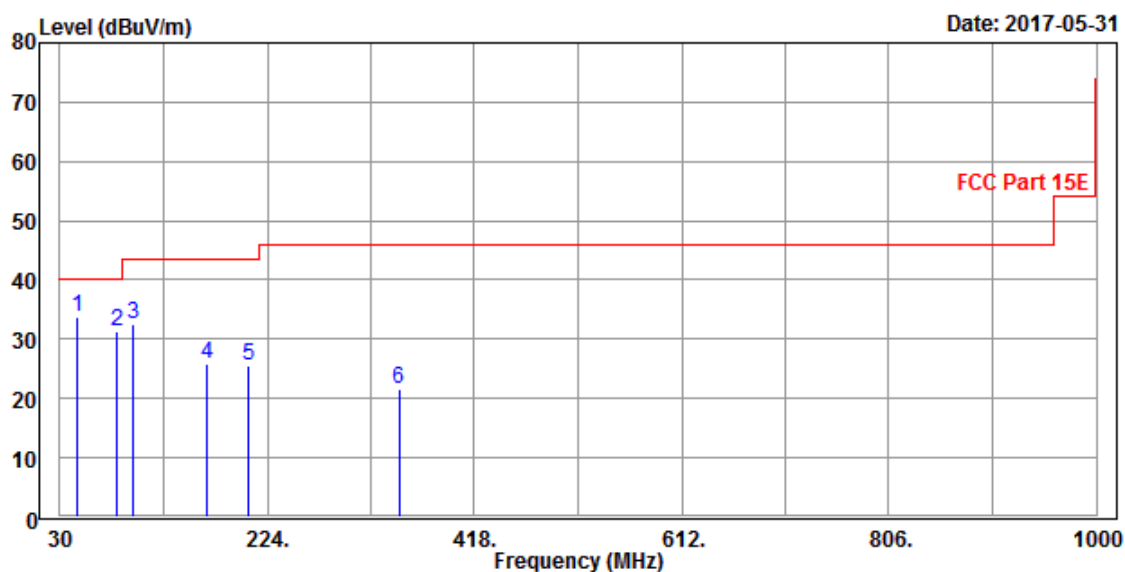


CHANNEL	Channel 62	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
46.49	33.68	62.27	40	-6.32	7.8	1.03	37.42	200	32	QP
83.35	31.38	60.38	40	-8.62	6.7	1.41	37.11	200	68	QP
97.9	32.49	60.2	43.5	-11.01	7.77	1.52	37	200	98	QP
167.74	25.98	50.64	43.5	-17.52	10.08	1.98	36.72	200	140	QP
206.54	25.49	49.42	43.5	-18.01	10.4	2.21	36.54	200	243	QP
347.19	21.47	40.17	46	-24.53	14.98	2.92	36.6	200	145	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	51.07	51.89	54	-2.93	34.48	13.71	49.01	260	300	Average
5150	68.8	69.62	74	-5.2	34.48	13.71	49.01	260	300	Peak
5180	99.74	100.45			34.52	13.79	49.02	260	300	Average
5180	109.13	109.84			34.52	13.79	49.02	260	300	Peak
5350	42.48	42.56	54	-11.52	34.72	14.28	49.08	260	300	Average
5350	53.6	53.68	74	-20.4	34.72	14.28	49.08	260	300	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	50.4	51.22	54	-3.6	34.48	13.71	49.01	100	270	Average
5150	68.52	69.34	74	-5.48	34.48	13.71	49.01	100	270	Peak
5180	97.97	98.68			34.52	13.79	49.02	100	270	Average
5180	107.44	108.15			34.52	13.79	49.02	100	270	Peak
5350	42.36	42.44	54	-11.64	34.72	14.28	49.08	100	270	Average
5350	54	54.08	74	-20	34.72	14.28	49.08	100	270	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	49.05	49.87	54	-4.95	34.48	13.71	49.01	200	296	Average
5150	59.44	60.26	74	-14.56	34.48	13.71	49.01	200	296	Peak
5200	101.12	101.76			34.54	13.85	49.03	200	296	Average
5200	110.47	111.11			34.54	13.85	49.03	200	296	Peak
5350	42.6	42.68	54	-11.4	34.72	14.28	49.08	200	296	Average
5350	53.05	53.13	74	-20.95	34.72	14.28	49.08	200	296	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	48.99	49.81	54	-5.01	34.48	13.71	49.01	100	280	Average
5150	59.59	60.41	74	-14.41	34.48	13.71	49.01	100	280	Peak
5200	100.38	101.02			34.54	13.85	49.03	100	280	Average
5200	109.98	110.62			34.54	13.85	49.03	100	280	Peak
5350	42.48	42.56	54	-11.52	34.72	14.28	49.08	100	280	Average
5350	53.51	53.59	74	-20.49	34.72	14.28	49.08	100	280	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	43.15	43.97	54	-10.85	34.48	13.71	49.01	230	300	Average
5150	54.35	55.17	74	-19.65	34.48	13.71	49.01	230	300	Peak
5240	101.38	101.86			34.59	13.97	49.04	230	300	Average
5240	110.18	110.66			34.59	13.97	49.04	230	300	Peak
5350	41.89	41.97	54	-12.11	34.72	14.28	49.08	230	300	Average
5350	53.15	53.23	74	-20.85	34.72	14.28	49.08	230	300	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	43.01	43.83	54	-10.99	34.48	13.71	49.01	100	280	Average
5150	54.01	54.83	74	-19.99	34.48	13.71	49.01	100	280	Peak
5240	100.53	101.01			34.59	13.97	49.04	100	280	Average
5240	110	110.48			34.59	13.97	49.04	100	280	Peak
5350	42.26	42.34	54	-11.74	34.72	14.28	49.08	100	280	Average
5350	53.97	54.05	74	-20.03	34.72	14.28	49.08	100	280	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	51.35	52.17	54	-2.65	34.48	13.71	49.01	220	300	Average
5150	68	68.82	74	-6	34.48	13.71	49.01	220	300	Peak
5180	98.93	99.64			34.52	13.79	49.02	220	300	Average
5180	108.62	109.33			34.52	13.79	49.02	220	300	Peak
5350	42.61	42.69	54	-11.39	34.72	14.28	49.08	220	300	Average
5350	54.15	54.23	74	-19.85	34.72	14.28	49.08	220	300	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	49.95	50.77	54	-4.05	34.48	13.71	49.01	100	280	Average
5150	63.91	64.73	74	-10.09	34.48	13.71	49.01	100	280	Peak
5180	97.95	98.66			34.52	13.79	49.02	100	280	Average
5180	108.28	108.99			34.52	13.79	49.02	100	280	Peak
5350	42.54	42.62	54	-11.46	34.72	14.28	49.08	100	280	Average
5350	53.29	53.37	74	-20.71	34.72	14.28	49.08	100	280	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	50.52	51.34	54	-3.48	34.48	13.71	49.01	210	300	Average
5150	62.44	63.26	74	-11.56	34.48	13.71	49.01	210	300	Peak
5200	100.97	101.61			34.54	13.85	49.03	210	300	Average
5200	110.07	110.71			34.54	13.85	49.03	210	300	Peak
5350	42.48	42.56	54	-11.52	34.72	14.28	49.08	210	300	Average
5350	53.5	53.58	74	-20.5	34.72	14.28	49.08	210	300	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	49.3	50.12	54	-4.7	34.48	13.71	49.01	100	275	Average
5150	59.37	60.19	74	-14.63	34.48	13.71	49.01	100	275	Peak
5200	99.77	100.41			34.54	13.85	49.03	100	275	Average
5200	109.98	110.62			34.54	13.85	49.03	100	275	Peak
5350	42.44	42.52	54	-11.56	34.72	14.28	49.08	100	275	Average
5350	54.01	54.09	74	-19.99	34.72	14.28	49.08	100	275	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	43.01	43.83	54	-10.99	34.48	13.71	49.01	220	300	Average
5150	54.15	54.97	74	-19.85	34.48	13.71	49.01	220	300	Peak
5240	100.98	101.46			34.59	13.97	49.04	220	300	Average
5240	111.25	111.73			34.59	13.97	49.04	220	300	Peak
5350	42.15	42.23	54	-11.85	34.72	14.28	49.08	220	300	Average
5350	53.06	53.14	74	-20.94	34.72	14.28	49.08	220	300	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	42.88	43.7	54	-11.12	34.48	13.71	49.01	100	275	Average
5150	54.37	55.19	74	-19.63	34.48	13.71	49.01	100	275	Peak
5240	99.51	99.99			34.59	13.97	49.04	100	275	Average
5240	109.1	109.58			34.59	13.97	49.04	100	275	Peak
5350	42.21	42.29	54	-11.79	34.72	14.28	49.08	100	275	Average
5350	53.8	53.88	74	-20.2	34.72	14.28	49.08	100	275	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	52.55	53.37	54	-1.45	34.48	13.71	49.01	230	300	Average
5150	66.88	67.7	74	-7.12	34.48	13.71	49.01	230	300	Peak
5190	91.25	91.93			34.53	13.82	49.03	230	300	Average
5190	102.1	102.78			34.53	13.82	49.03	230	300	Peak
5350	42.59	42.67	54	-11.41	34.72	14.28	49.08	230	300	Average
5350	55.21	55.29	74	-18.79	34.72	14.28	49.08	230	300	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	49.88	50.7	54	-4.12	34.48	13.71	49.01	100	275	Average
5150	64.48	65.3	74	-9.52	34.48	13.71	49.01	100	275	Peak
5190	89.6	90.28			34.53	13.82	49.03	100	275	Average
5190	100.69	101.37			34.53	13.82	49.03	100	275	Peak
5350	42.48	42.56	54	-11.52	34.72	14.28	49.08	100	275	Average
5350	53.18	53.26	74	-20.82	34.72	14.28	49.08	100	275	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	47.14	47.96	54	-6.86	34.48	13.71	49.01	235	300	Average
5150	59.55	60.37	74	-14.45	34.48	13.71	49.01	235	300	Peak
5230	96.21	96.73			34.58	13.94	49.04	235	300	Average
5230	107.42	107.94			34.58	13.94	49.04	235	300	Peak
5350	42.75	42.83	54	-11.25	34.72	14.28	49.08	235	300	Average
5350	54.73	54.81	74	-19.27	34.72	14.28	49.08	235	300	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	45.97	46.79	54	-8.03	34.48	13.71	49.01	100	275	Average
5150	58.28	59.1	74	-15.72	34.48	13.71	49.01	100	275	Peak
5230	95.21	95.73			34.58	13.94	49.04	100	275	Average
5230	105.51	106.03			34.58	13.94	49.04	100	275	Peak
5350	42.6	42.68	54	-11.4	34.72	14.28	49.08	100	275	Average
5350	53.59	53.67	74	-20.41	34.72	14.28	49.08	100	275	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5230MHz: 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	42.78	43.6	54	-11.22	34.48	13.71	49.01	250	295	Average
5150	55.9	56.72	74	-18.1	34.48	13.71	49.01	250	295	Peak
5260	100.11	100.53			34.61	14.02	49.05	250	295	Average
5260	108.64	109.06			34.61	14.02	49.05	250	295	Peak
5350	42.77	42.85	54	-11.23	34.72	14.28	49.08	250	295	Average
5350	53.43	53.51	74	-20.57	34.72	14.28	49.08	250	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.76	43.58	54	-11.24	34.48	13.71	49.01	100	275	Average
5150	54.09	54.91	74	-19.91	34.48	13.71	49.01	100	275	Peak
5260	99.05	99.47			34.61	14.02	49.05	100	275	Average
5260	108.95	109.37			34.61	14.02	49.05	100	275	Peak
5350	42.58	42.66	54	-11.42	34.72	14.28	49.08	100	275	Average
5350	53.1	53.18	74	-20.9	34.72	14.28	49.08	100	275	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 56	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	42.85	43.67	54	-11.15	34.48	13.71	49.01	250	295	Average
5150	53.17	53.99	74	-20.83	34.48	13.71	49.01	250	295	Peak
5280	100	100.33			34.64	14.08	49.05	250	295	Average
5280	109.44	109.77			34.64	14.08	49.05	250	295	Peak
5350	42.8	42.88	54	-11.2	34.72	14.28	49.08	250	295	Average
5350	54.21	54.29	74	-19.79	34.72	14.28	49.08	250	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	42.96	43.78	54	-11.04	34.48	13.71	49.01	100	280	Average
5150	54.27	55.09	74	-19.73	34.48	13.71	49.01	100	280	Peak
5280	99.48	99.81			34.64	14.08	49.05	100	280	Average
5280	108.89	109.22			34.64	14.08	49.05	100	280	Peak
5350	42.68	42.76	54	-11.32	34.72	14.28	49.08	100	280	Average
5350	52.85	52.93	74	-21.15	34.72	14.28	49.08	100	280	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5280MHz: 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	43.54	44.36	54	-10.46	34.48	13.71	49.01	220	300	Average
5150	54.08	54.9	74	-19.92	34.48	13.71	49.01	220	300	Peak
5320	99.64	99.83			34.68	14.2	49.07	220	300	Average
5320	107.96	108.15			34.68	14.2	49.07	220	300	Peak
5350	52.17	52.25	54	-1.83	34.72	14.28	49.08	220	300	Average
5350	67.16	67.24	74	-6.84	34.72	14.28	49.08	220	300	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	43.4	44.22	54	-10.6	34.48	13.71	49.01	100	280	Average
5150	54.99	55.81	74	-19.01	34.48	13.71	49.01	100	280	Peak
5320	97.95	98.14			34.68	14.2	49.07	100	280	Average
5320	106.84	107.03			34.68	14.2	49.07	100	280	Peak
5350	50.63	50.71	54	-3.37	34.72	14.28	49.08	100	280	Average
5350	66.94	67.02	74	-7.06	34.72	14.28	49.08	100	280	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 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	42.88	43.7	54	-11.12	34.48	13.71	49.01	230	300	Average
5150	53.44	54.26	74	-20.56	34.48	13.71	49.01	230	300	Peak
5260	100.19	100.61			34.61	14.02	49.05	230	300	Average
5260	110.84	111.26			34.61	14.02	49.05	230	300	Peak
5350	42.68	42.76	54	-11.32	34.72	14.28	49.08	230	300	Average
5350	53.06	53.14	74	-20.94	34.72	14.28	49.08	230	300	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	42.77	43.59	54	-11.23	34.48	13.71	49.01	100	275	Average
5150	54.1	54.92	74	-19.9	34.48	13.71	49.01	100	275	Peak
5260	98.83	99.25			34.61	14.02	49.05	100	275	Average
5260	108.5	108.92			34.61	14.02	49.05	100	275	Peak
5350	42.58	42.66	54	-11.42	34.72	14.28	49.08	100	275	Average
5350	53.82	53.9	74	-20.18	34.72	14.28	49.08	100	275	Peak

REMARKS:

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



CHANNEL	TX Channel 56	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	42.93	43.75	54	-11.07	34.48	13.71	49.01	240	300	Average
5150	54.82	55.64	74	-19.18	34.48	13.71	49.01	240	300	Peak
5280	99.71	100.04			34.64	14.08	49.05	240	300	Average
5280	109.04	109.37			34.64	14.08	49.05	240	300	Peak
5350	42.76	42.84	54	-11.24	34.72	14.28	49.08	240	300	Average
5350	54.3	54.38	74	-19.7	34.72	14.28	49.08	240	300	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	42.89	43.71	54	-11.11	34.48	13.71	49.01	100	275	Average
5150	54.06	54.88	74	-19.94	34.48	13.71	49.01	100	275	Peak
5280	98.99	99.32			34.64	14.08	49.05	100	275	Average
5280	107.8	108.13			34.64	14.08	49.05	100	275	Peak
5350	42.66	42.74	54	-11.34	34.72	14.28	49.08	100	275	Average
5350	53.99	54.07	74	-20.01	34.72	14.28	49.08	100	275	Peak

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5280MHz: 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	43.45	44.27	54	-10.55	34.48	13.71	49.01	245	300	Average
5150	53.99	54.81	74	-20.01	34.48	13.71	49.01	245	300	Peak
5320	98.11	98.3			34.68	14.2	49.07	245	300	Average
5320	107.24	107.43			34.68	14.2	49.07	245	300	Peak
5350	51.7	51.78	54	-2.3	34.72	14.28	49.08	245	300	Average
5350	67.55	67.63	74	-6.45	34.72	14.28	49.08	245	300	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	43.09	43.91	54	-10.91	34.48	13.71	49.01	110	275	Average
5150	54.35	55.17	74	-19.65	34.48	13.71	49.01	110	275	Peak
5320	97.84	98.03			34.68	14.2	49.07	110	275	Average
5320	107.36	107.55			34.68	14.2	49.07	110	275	Peak
5350	51.78	51.86	54	-2.22	34.72	14.28	49.08	110	275	Average
5350	67.21	67.29	74	-6.79	34.72	14.28	49.08	110	275	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	43.15	43.97	54	-10.85	34.48	13.71	49.01	245	298	Average
5150	55.34	56.16	74	-18.66	34.48	13.71	49.01	245	298	Peak
5270	95.97	96.35			34.62	14.05	49.05	245	298	Average
5270	105.98	106.36			34.62	14.05	49.05	245	298	Peak
5350	45.62	45.7	54	-8.38	34.72	14.28	49.08	245	298	Average
5350	58.66	58.74	74	-15.34	34.72	14.28	49.08	245	298	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	43.1	43.92	54	-10.9	34.48	13.71	49.01	105	280	Average
5150	54.98	55.8	74	-19.02	34.48	13.71	49.01	105	280	Peak
5270	94.6	94.98			34.62	14.05	49.05	105	280	Average
5270	105.79	106.17			34.62	14.05	49.05	105	280	Peak
5350	44.84	44.92	54	-9.16	34.72	14.28	49.08	105	280	Average
5350	58.37	58.45	74	-15.63	34.72	14.28	49.08	105	280	Peak

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	43.24	44.06	54	-10.76	34.48	13.71	49.01	255	305	Average
5150	54.62	55.44	74	-19.38	34.48	13.71	49.01	255	305	Peak
5310	91.57	91.79			34.67	14.17	49.06	255	305	Average
5310	100.98	101.2			34.67	14.17	49.06	255	305	Peak
5350	52.65	52.73	54	-1.35	34.72	14.28	49.08	255	305	Average
5350	68.14	68.22	74	-5.86	34.72	14.28	49.08	255	305	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	43.16	43.98	54	-10.84	34.48	13.71	49.01	105	280	Average
5150	55.28	56.1	74	-18.72	34.48	13.71	49.01	105	280	Peak
5310	89.12	89.34			34.67	14.17	49.06	105	280	Average
5310	100.11	100.33			34.67	14.17	49.06	105	280	Peak
5350	49.03	49.11	54	-4.97	34.72	14.28	49.08	105	280	Average
5350	62.55	62.63	74	-11.45	34.72	14.28	49.08	105	280	Peak

REMARKS:

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



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	99.55	97.19			35.19	16.31	49.14	215	295	Average
5745	107.9	105.54			35.19	16.31	49.14	215	295	Peak
11490	47.22	37.2	54	-6.78	39.1	19.08	48.16	100	320	Average
11490	59.97	49.95	74	-14.03	39.1	19.08	48.16	100	320	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	98.88	96.52			35.19	16.31	49.14	100	280	Average
5745	108.08	105.72			35.19	16.31	49.14	100	280	Peak
11490	47.38	37.36	54	-6.62	39.1	19.08	48.16	100	150	Average
11490	60.22	50.2	74	-13.78	39.1	19.08	48.16	100	150	Peak

REMARKS:

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

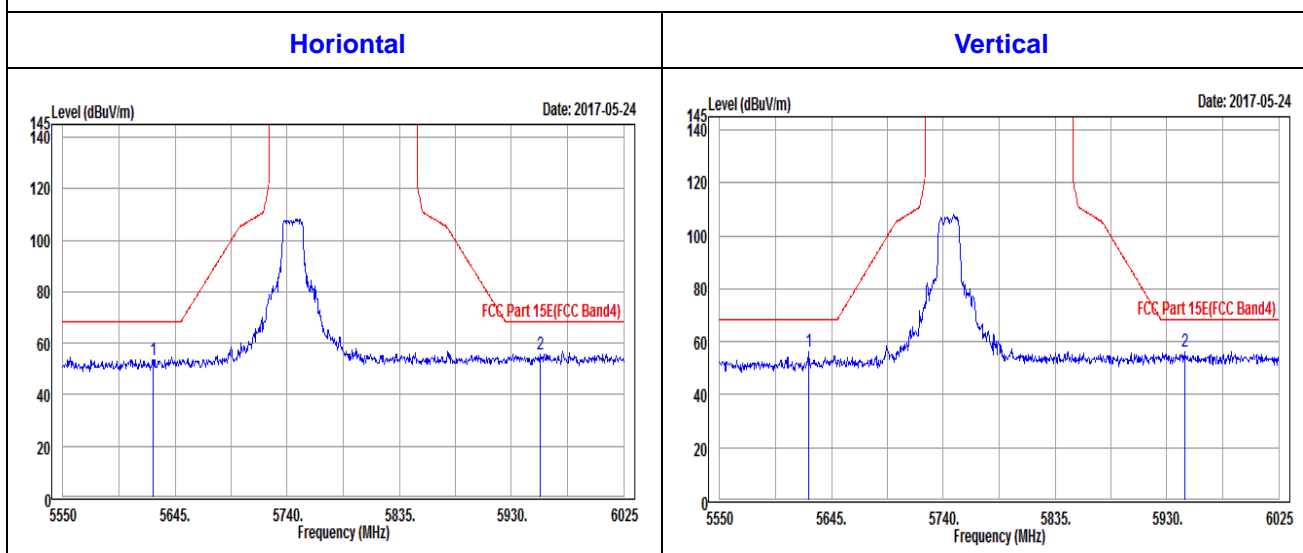


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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5626.48	53.73	52.28	68.3	-14.57	35.05	15.53	49.13	215	295	Peak
5954.7	55.6	51.65	68.3	-12.7	35.45	17.67	49.17	215	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5625.53	56.04	54.59	68.3	-12.26	35.05	15.53	49.13	100	280	Peak
5945.68	56.05	52.16	68.3	-12.25	35.43	17.62	49.16	100	280	Peak

CH 149





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	99.64	96.98			35.24	16.57	49.15	230	295	Average
5785	109.45	106.79			35.24	16.57	49.15	230	295	Peak
11570	49.3	39.19	54	-4.7	39.16	19.12	48.17	100	65	Average
11570	59.7	49.59	74	-14.3	39.16	19.12	48.17	100	65	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	98.1	95.44			35.24	16.57	49.15	100	275	Average
5785	106.69	104.03			35.24	16.57	49.15	100	275	Peak
11570	48.74	38.63	54	-5.26	39.16	19.12	48.17	100	95	Average
11570	59.76	49.65	74	-14.24	39.16	19.12	48.17	100	95	Peak

REMARKS:

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

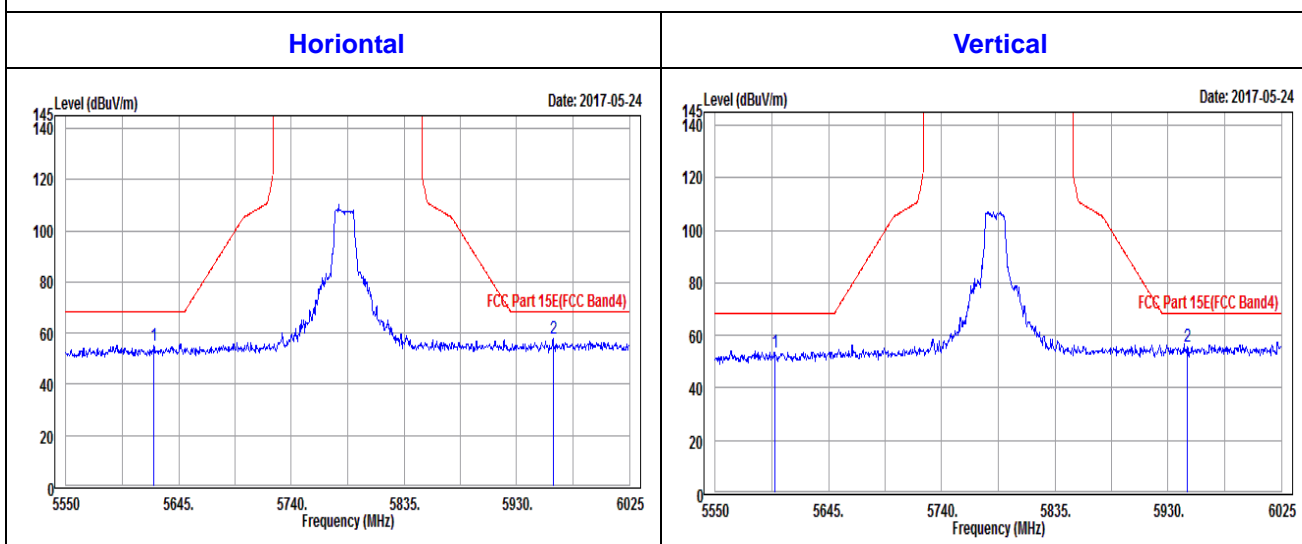


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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5624.1	55.18	53.74	68.3	-13.12	35.05	15.52	49.13	230	295	Peak
5960.88	57.77	53.78	68.3	-10.53	35.45	17.71	49.17	230	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5599.88	53.73	52.48	68.3	-14.57	35.02	15.36	49.13	100	275	Peak
5946.15	55.59	51.69	68.3	-12.71	35.44	17.62	49.16	100	275	Peak

CH 157





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	99.13	96.16			35.29	16.83	49.15	224	296	Average
5825	107.26	104.29			35.29	16.83	49.15	224	296	Peak
11650	48.31	38.11	54	-5.69	39.22	19.16	48.18	100	165	Average
11650	59.56	49.36	74	-14.44	39.22	19.16	48.18	100	165	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	98.7	95.73			35.29	16.83	49.15	100	275	Average
5825	108.04	105.07			35.29	16.83	49.15	100	275	Peak
11650	48.31	38.11	54	-5.69	39.22	19.16	48.18	100	115	Average
11650	59.84	49.64	74	-14.16	39.22	19.16	48.18	100	115	Peak

REMARKS:

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

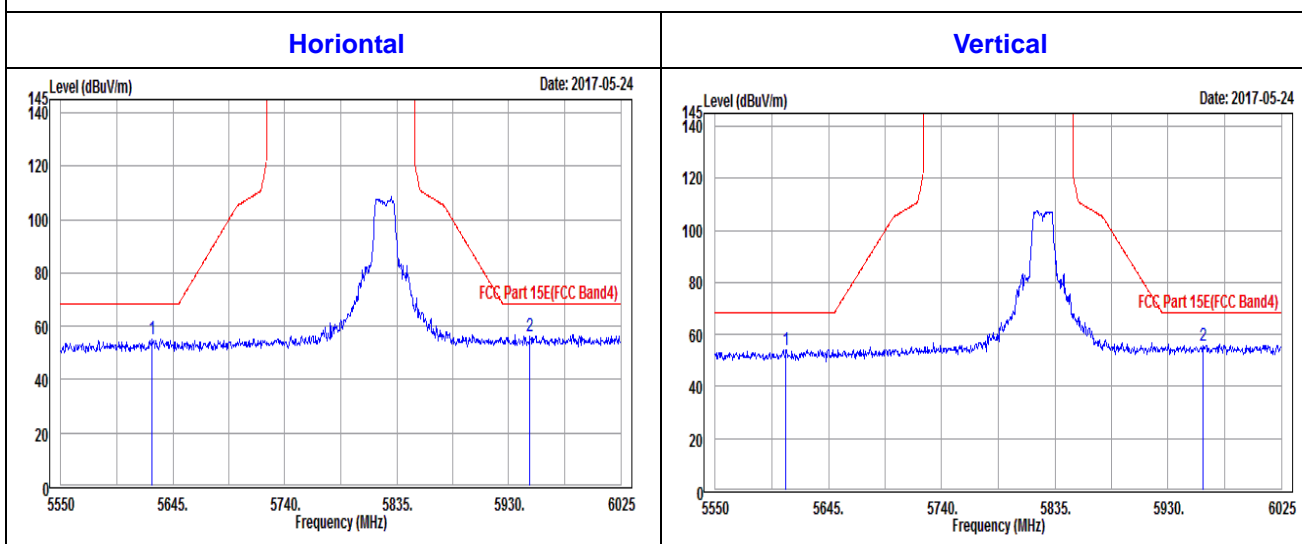


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802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5627.43	55	53.54	68.3	-13.3	35.05	15.54	49.13	224	296	Peak
5948.05	56.23	52.32	68.3	-12.07	35.44	17.63	49.16	224	296	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5609.38	54.2	52.88	68.3	-14.1	35.03	15.42	49.13	100	275	Peak
5958.98	55.79	51.81	68.3	-12.51	35.45	17.7	49.17	100	275	Peak

CH 165





802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	98.63	96.27			35.19	16.31	49.14	226	295	Average
5745	107.92	105.56			35.19	16.31	49.14	226	295	Peak
11490	48.34	38.32	54	-5.66	39.1	19.08	48.16	100	265	Average
11490	59.35	49.33	74	-14.65	39.1	19.08	48.16	100	265	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	97.2	94.84			35.19	16.31	49.14	100	275	Average
5745	105.98	103.62			35.19	16.31	49.14	100	275	Peak
11490	48.53	38.51	54	-5.47	39.1	19.08	48.16	100	35	Average
11490	59.35	49.33	74	-14.65	39.1	19.08	48.16	100	35	Peak

REMARKS:

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

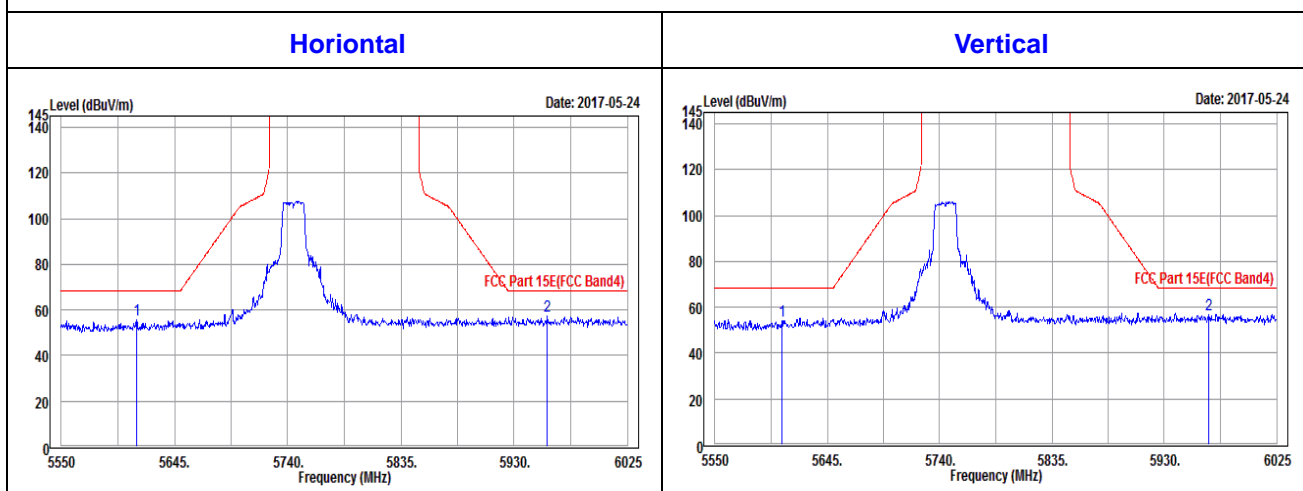


OUBE DATA

802.11n (20MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5613.18	55.86	54.5	68.3	-12.44	35.04	15.45	49.13	226	295	Peak
5958.03	57.42	53.44	68.3	-10.88	35.45	17.7	49.17	226	295	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5606.53	53.98	52.68	68.3	-14.32	35.03	15.4	49.13	100	275	Peak
5967.53	56.52	52.47	68.3	-11.78	35.46	17.76	49.17	100	275	Peak

CH 149





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	97.06	94.4			35.24	16.57	49.15	228	298	Average
5785	106.17	103.51			35.24	16.57	49.15	228	298	Peak
11570	48.22	38.11	54	-5.78	39.16	19.12	48.17	100	75	Average
11570	59.46	49.35	74	-14.54	39.16	19.12	48.17	100	75	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	97.66	95			35.24	16.57	49.15	100	275	Average
5785	106.6	103.94			35.24	16.57	49.15	100	275	Peak
11570	48.45	38.34	54	-5.55	39.16	19.12	48.17	100	150	Average
11570	59.22	49.11	74	-14.78	39.16	19.12	48.17	100	150	Peak

REMARKS:

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



BUREAU
VERITAS

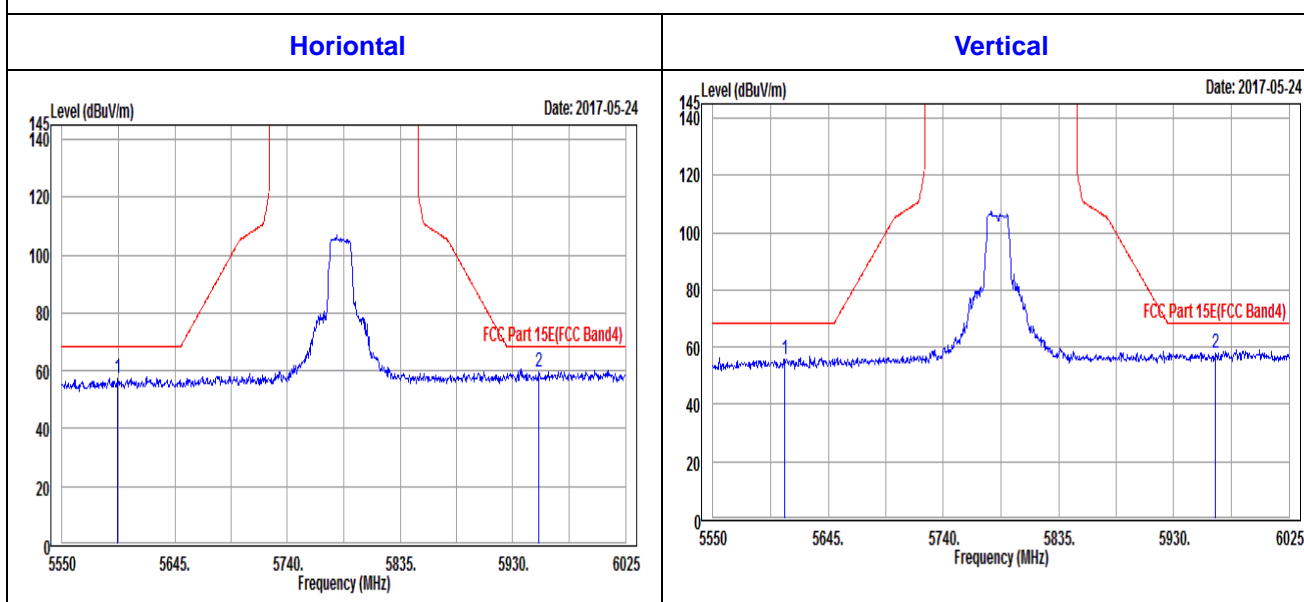
Test Report No.: RF170428W003-7

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
5597.03	57.4	56.17	68.3	-10.9	35.02	15.34	49.13	228	298	Peak
5951.85	59.49	55.56	68.3	-8.81	35.44	17.66	49.17	228	298	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
5608.9	55.94	54.62	68.3	-12.36	35.03	15.42	49.13	100	275	Peak
5964.68	57.95	53.92	68.3	-10.35	35.46	17.74	49.17	100	275	Peak

CH 157





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	98.18	95.21			35.29	16.83	49.15	215	297	Average
5825	106.97	104			35.29	16.83	49.15	215	297	Peak
11650	48.83	38.63	54	-5.17	39.22	19.16	48.18	100	215	Average
11650	59.7	49.5	74	-14.3	39.22	19.16	48.18	100	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
5825	99.19	96.22			35.29	16.83	49.15	100	278	Average
5825	108.31	105.34			35.29	16.83	49.15	100	278	Peak
11650	48.63	38.43	54	-5.37	39.22	19.16	48.18	100	175	Average
11650	59.54	49.34	74	-14.46	39.22	19.16	48.18	100	175	Peak

REMARKS:

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

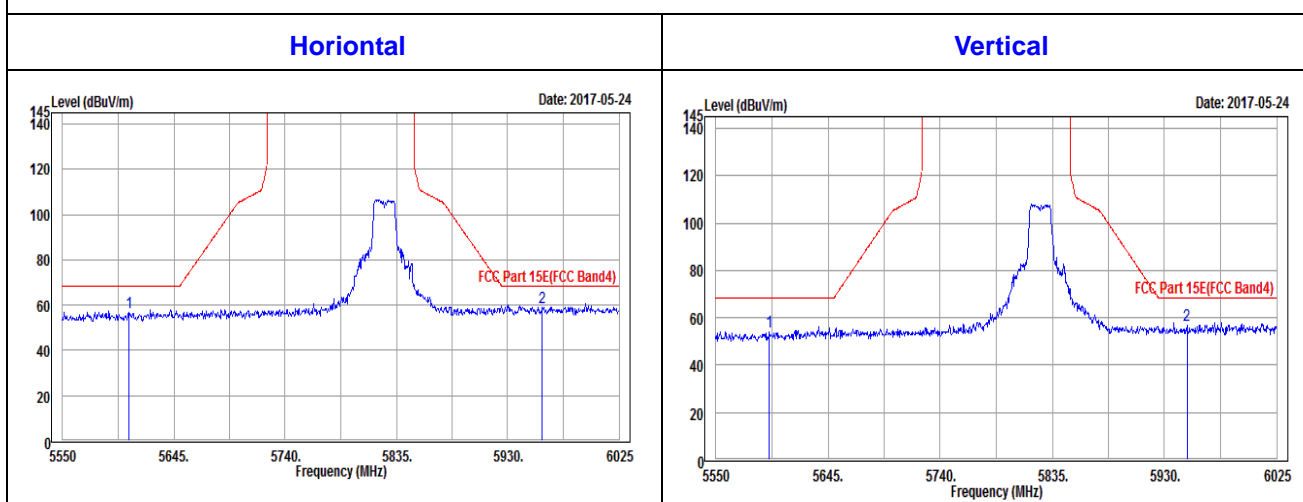


OUBE DATA

802.11n (20MHZ)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5606.53	56.98	55.68	68.3	-11.32	35.03	15.4	49.13	215	297	Peak
5959.45	59.16	55.17	68.3	-9.14	35.45	17.71	49.17	215	297	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
5595.13	53.81	52.6	68.3	-14.49	35.01	15.33	49.13	100	278	Peak
5949	56.77	52.85	68.3	-11.53	35.44	17.64	49.16	100	278	Peak

CH 165





802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5755	93.46	91.03			35.21	16.37	49.15	220	297	Average
5755	103.56	101.13			35.21	16.37	49.15	220	297	Peak
11510	48.22	38.18	54	-5.78	39.11	19.09	48.16	100	250	Average
11510	59.36	49.32	74	-14.64	39.11	19.09	48.16	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
5755	92	89.57			35.21	16.37	49.15	105	274	Average
5755	103.19	100.76			35.21	16.37	49.15	105	274	Peak
11510	48.25	38.21	54	-5.75	39.11	19.09	48.16	100	315	Average
11510	59.59	49.55	54	5.59	39.11	19.09	48.16	100	315	Average

REMARKS:

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



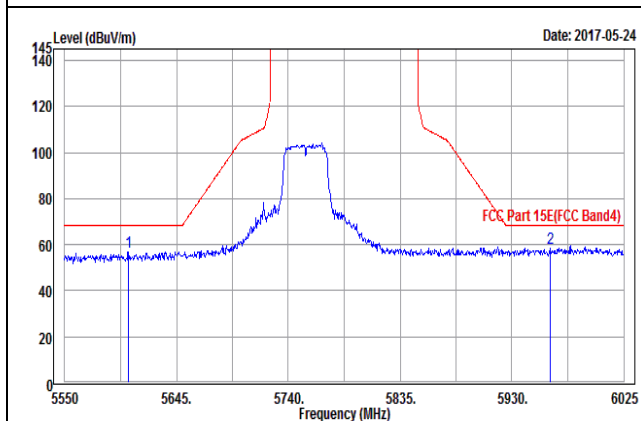
Oobe Data

802.11n (40MHz)

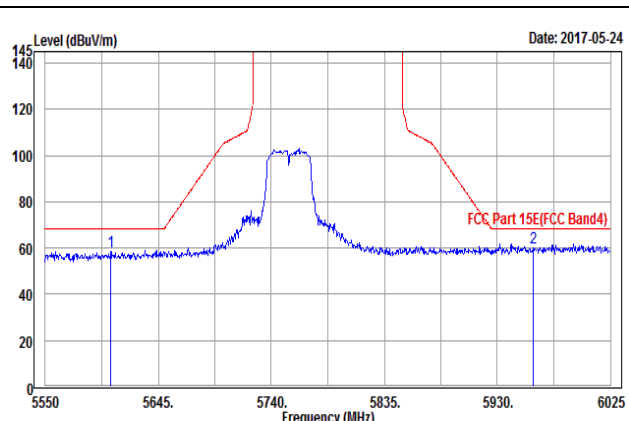
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5604.15	56.76	55.48	68.3	-11.54	35.02	15.39	49.13	220	297	Peak
5962.3	58.71	54.71	68.3	-9.59	35.45	17.72	49.17	220	297	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5605.1	58.32	57.02	68.3	-9.98	35.03	15.4	49.13	105	274	Peak
5959.93	60.3	56.31	68.3	-8	35.45	17.71	49.17	105	274	Peak

CH 151

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5795	88.9	86.17			35.25	16.63	49.15	240	300	Average
5795	99.63	96.9			35.25	16.63	49.15	240	300	Peak
11590	48.34	38.21	54	-5.66	39.17	19.13	48.17	100	95	Average
11590	60.24	50.11	74	-13.76	39.17	19.13	48.17	100	95	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	91.96	89.23			35.25	16.63	49.15	100	280	Average
5795	102.08	99.35			35.25	16.63	49.15	100	280	Peak
11590	48.26	38.13	54	-5.74	39.17	19.13	48.17	100	56	Average
11590	60.14	50.01	74	-13.86	39.17	19.13	48.17	100	56	Peak

REMARKS:

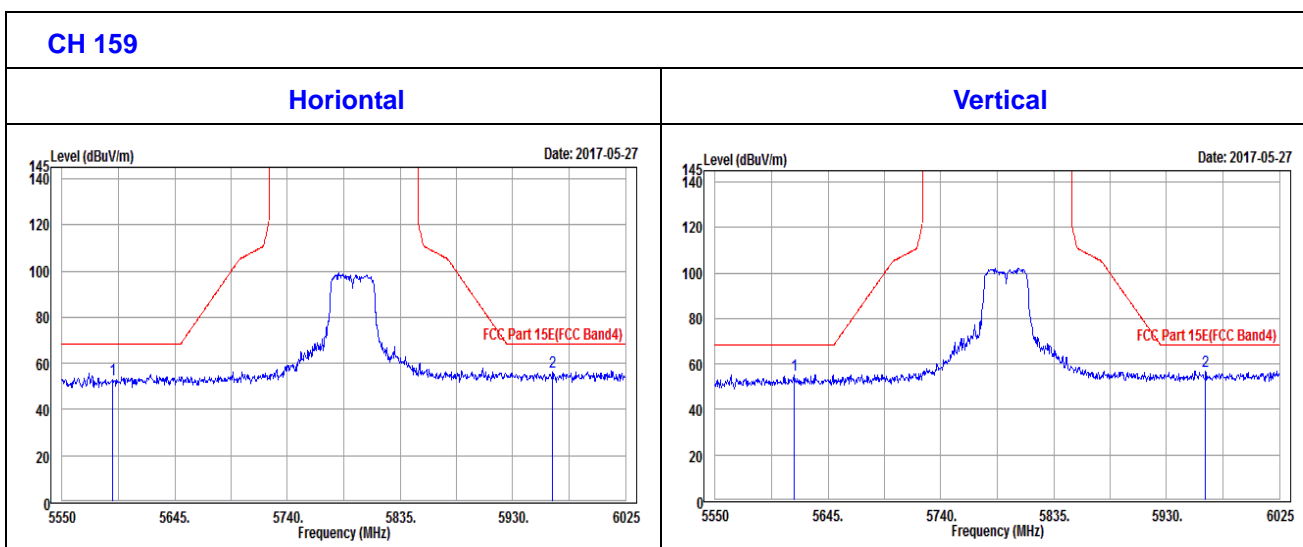
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5795MHz: Fundamental frequency.



OUBE 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
5592.75	52.84	51.65	68.3	-15.46	35.01	15.31	49.13	240	300	Peak
5963.73	56.32	52.3	68.3	-11.98	35.46	17.73	49.17	240	300	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
5616.5	54.9	53.52	68.3	-13.4	35.04	15.47	49.13	100	280	Peak
5962.78	56.56	52.54	68.3	-11.74	35.46	17.73	49.17	100	280	Peak



4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Apr. 01,17	Mar. 31,18
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Feb. 18,17	Feb. 17,18
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Apr. 01,17	Mar. 31,18
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Nov. 25,16	Nov. 24,17
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A	N/A

NOTE:

1. The test was performed in shielded room 553.

2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

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.

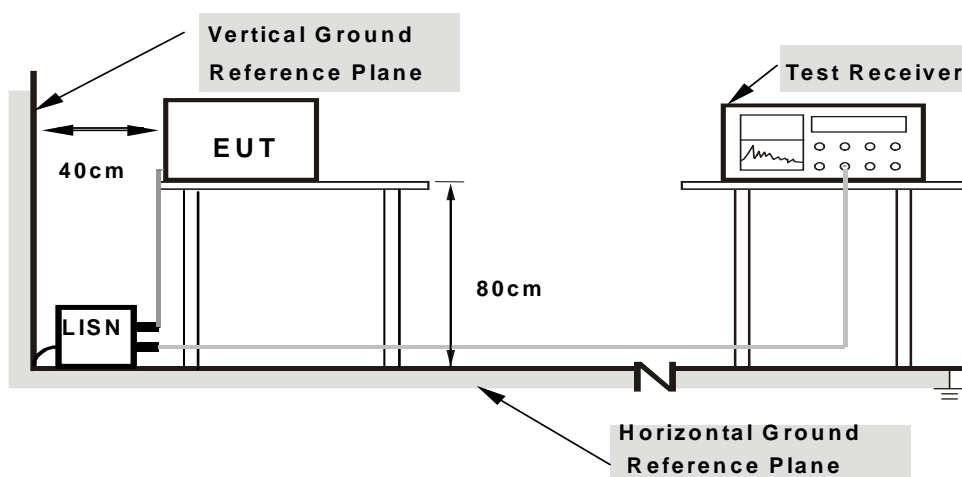
NOTE: All modes of operation were investigated and the worst-case emissions are reported.



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

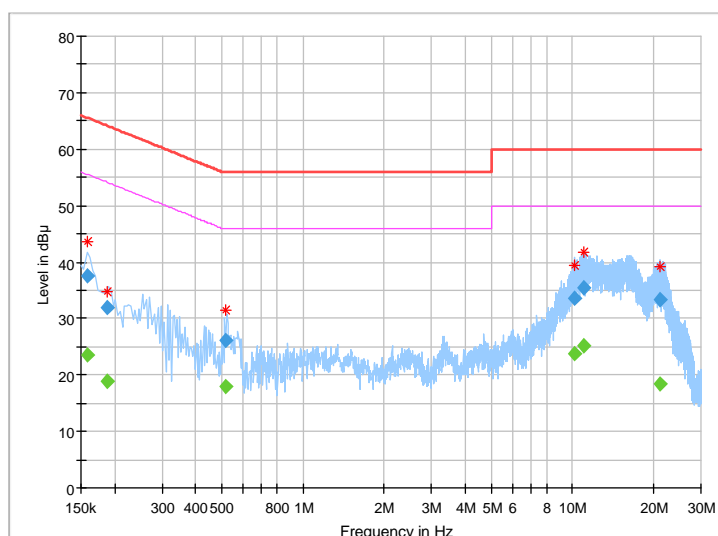
CONDUCTED WORST-CASE DATA :

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	Simon Yang	TEST DATE	2017/05/08

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.158000	---	23.63	55.57	-31.94	L	ON	9.6
0.158000	37.60	---	65.57	-27.97	L	ON	9.6
0.188000	---	18.81	54.12	-35.31	L	ON	9.7
0.188000	31.86	---	64.12	-32.26	L	ON	9.7
0.516000	---	17.95	46.00	-28.05	L	ON	9.7
0.516000	26.12	---	56.00	-29.88	L	ON	9.7
10.224000	---	23.75	50.00	-26.25	L	ON	9.9
10.224000	33.54	---	60.00	-26.46	L	ON	9.9
11.072000	---	25.28	50.00	-24.72	L	ON	9.9
11.072000	35.40	---	60.00	-24.60	L	ON	9.9
21.128000	---	18.50	50.00	-31.50	L	ON	9.9
21.128000	33.32	---	60.00	-26.68	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



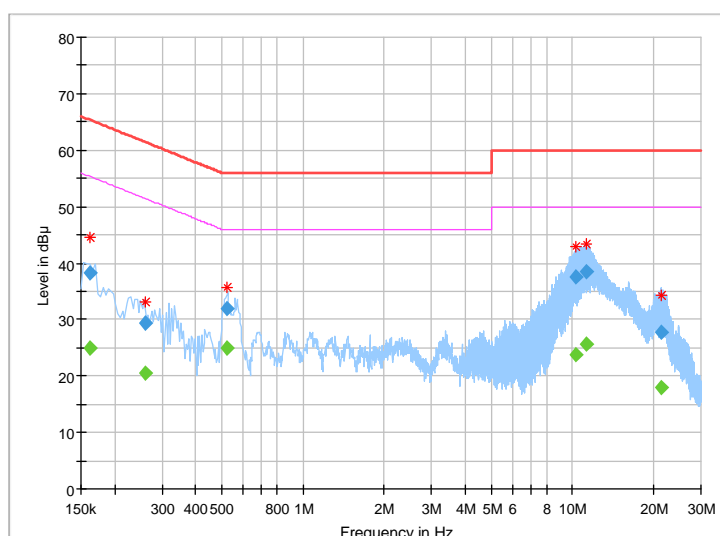


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55RH
Tested By	Simon Yang	TEST DATE	2017/05/08

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	---	25.04	55.36	-30.32	N	ON	10.1
0.162000	38.29	---	65.36	-27.07	N	ON	10.1
0.260000	---	20.42	51.43	-31.01	N	ON	10.0
0.260000	29.41	---	61.43	-32.02	N	ON	10.0
0.524000	---	25.04	46.00	-20.96	N	ON	10.1
0.524000	31.90	---	56.00	-24.10	N	ON	10.1
10.320000	---	23.76	50.00	-26.24	N	ON	9.9
10.320000	37.45	---	60.00	-22.55	N	ON	9.9
11.224000	---	25.72	50.00	-24.28	N	ON	9.9
11.224000	38.37	---	60.00	-21.63	N	ON	9.9
21.378000	---	18.00	50.00	-32.00	N	ON	10.0
21.378000	27.82	---	60.00	-32.18	N	ON	10.0

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

Full Spectrum



4.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

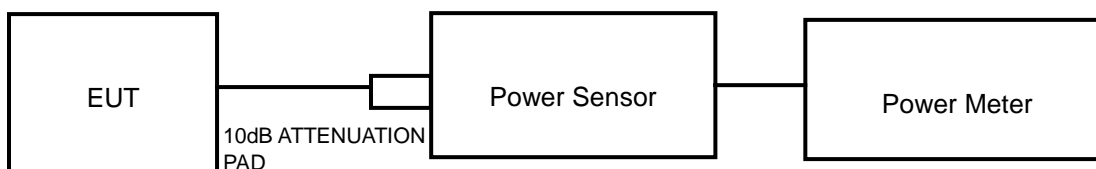
4.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

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)

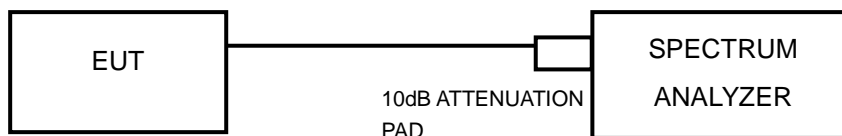
NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB BANDWIDTH





4.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	Apr. 21, 17	Apr. 20, 18
Power Sensor	Keysight	U2021XA	MY55060018	Apr. 21, 17	Apr. 20, 18
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jul. 27, 16	Jul. 26, 17
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 13, 16	Oct. 12, 17
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep. 05, 16	Sep. 04, 17
Oscilloscope	Agilent	DSO9254A	MY51260160	Nov. 04, 16	Nov. 03, 17
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 04, 16	Nov. 03, 17
Signal Generator	Agilent	N5183A	MY50140980	Nov. 04, 16	Nov. 03, 17
Agile Signal Generator	Agilent	8645A	Agilent	Aug. 08, 16	Aug. 07, 17
ESG Vector Signal Generator	Agilent	E4438C	MY49072505	Apr. 15, 17	Apr. 14, 18
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Aug. 08, 16	Aug. 07, 17

NOTE:

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

4.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

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

FOR 99 PERCENT OCCUPIED BANDWIDTH

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

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



FOR 26dB BANDWIDTH

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

FOR 6dB BANDWIDTH

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

4.3.5 DEVIATION FROM TEST STANDARD

No deviation.

4.3.6 EUT OPERATING CONDITIONS

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

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

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	11.40	13.804	24	PASS
40	5200	13.22	20.989	24	PASS
48	5240	13.60	22.909	24	PASS
52	5260	13.33	21.528	24	PASS
60	5300	13.46	22.182	24	PASS
64	5320	12.09	16.181	24	PASS
149	5745	13.71	23.496	30	PASS
157	5785	13.72	23.550	30	PASS
165	5825	13.61	22.961	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	11.24	13.305	24	PASS
40	5200	13.56	22.699	24	PASS
48	5240	13.54	22.594	24	PASS
52	5260	13.43	22.029	24	PASS
60	5300	13.42	21.979	24	PASS
64	5320	11.94	15.631	24	PASS
149	5745	13.34	21.577	30	PASS
157	5785	13.18	20.797	30	PASS
165	5825	13.42	21.979	30	PASS



802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	6.45	4.416	24	PASS
46	5230	12.60	18.197	24	PASS
54	5270	12.56	18.030	24	PASS
62	5310	7.98	6.281	24	PASS
151	5755	12.23	16.711	30	PASS
165	5825	12.15	16.406	30	PASS

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

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.10	35.24	PASS
40	5200	17.40	37.63	PASS
48	5240	17.76	34.39	PASS
52	5260	16.68	35.00	PASS
60	5300	17.22	31.52	PASS
64	5320	17.22	35.51	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	16.92	16.38	PASS
157	5785	17.58	16.34	PASS
165	5825	17.34	16.35	PASS

**802.11n (20MHz)**

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	18.42	35.02	PASS
40	5200	18.30	37.21	PASS
48	5240	18.30	40.75	PASS
52	5260	18.12	33.85	PASS
60	5300	18.18	32.23	PASS
64	5320	18.30	30.73	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
149	5745	18.00	17.59	PASS
157	5785	18.06	17.57	PASS
165	5825	18.18	17.61	PASS

802.11n (40MHz)

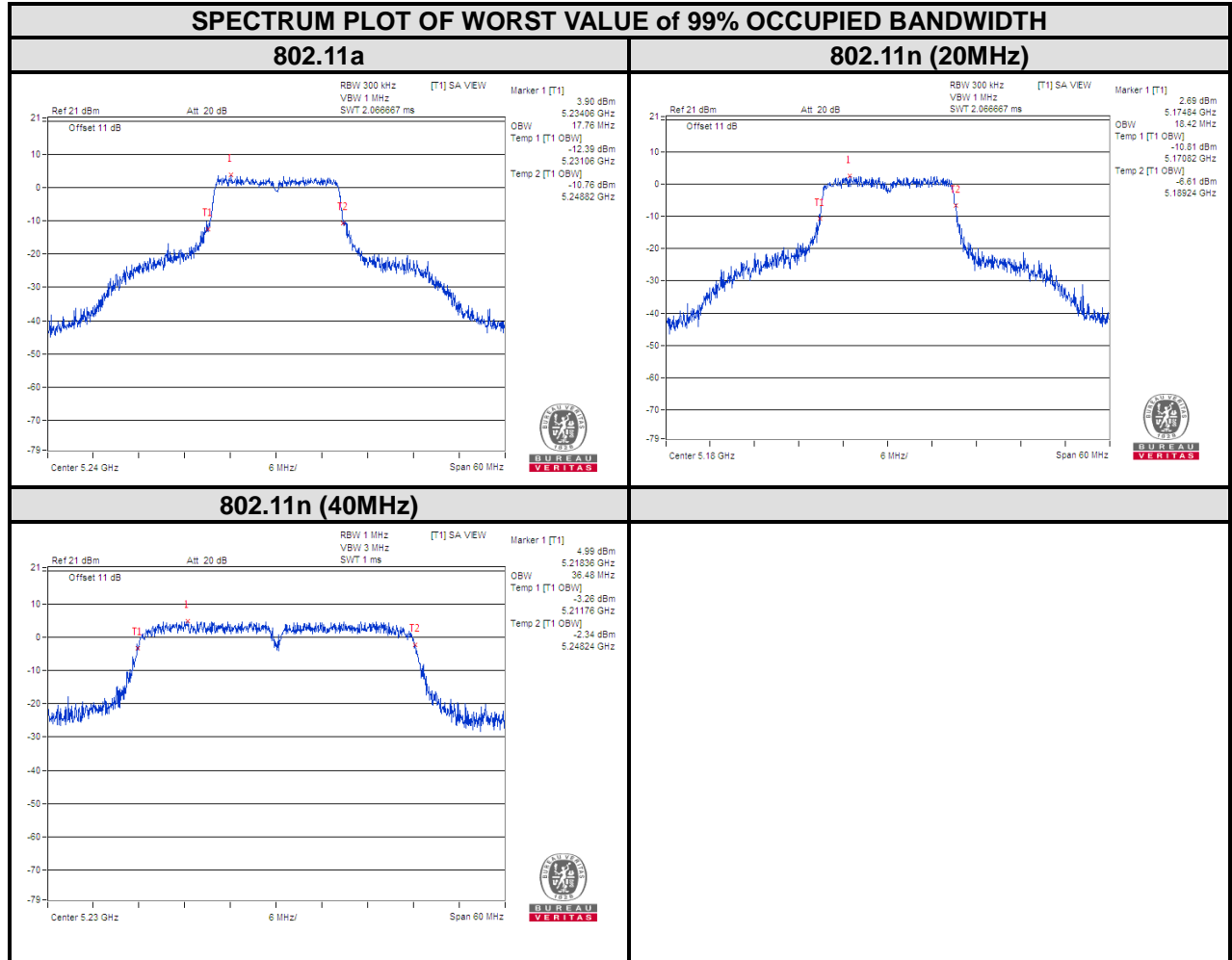
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.30	59.43	PASS
46	5230	36.48	69.30	PASS
54	5270	36.48	52.15	PASS
62	5310	36.42	50.83	PASS
CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH (MHz)	PASS/FAIL
151	5755	36.42	35.10	PASS
159	5795	36.36	35.16	PASS



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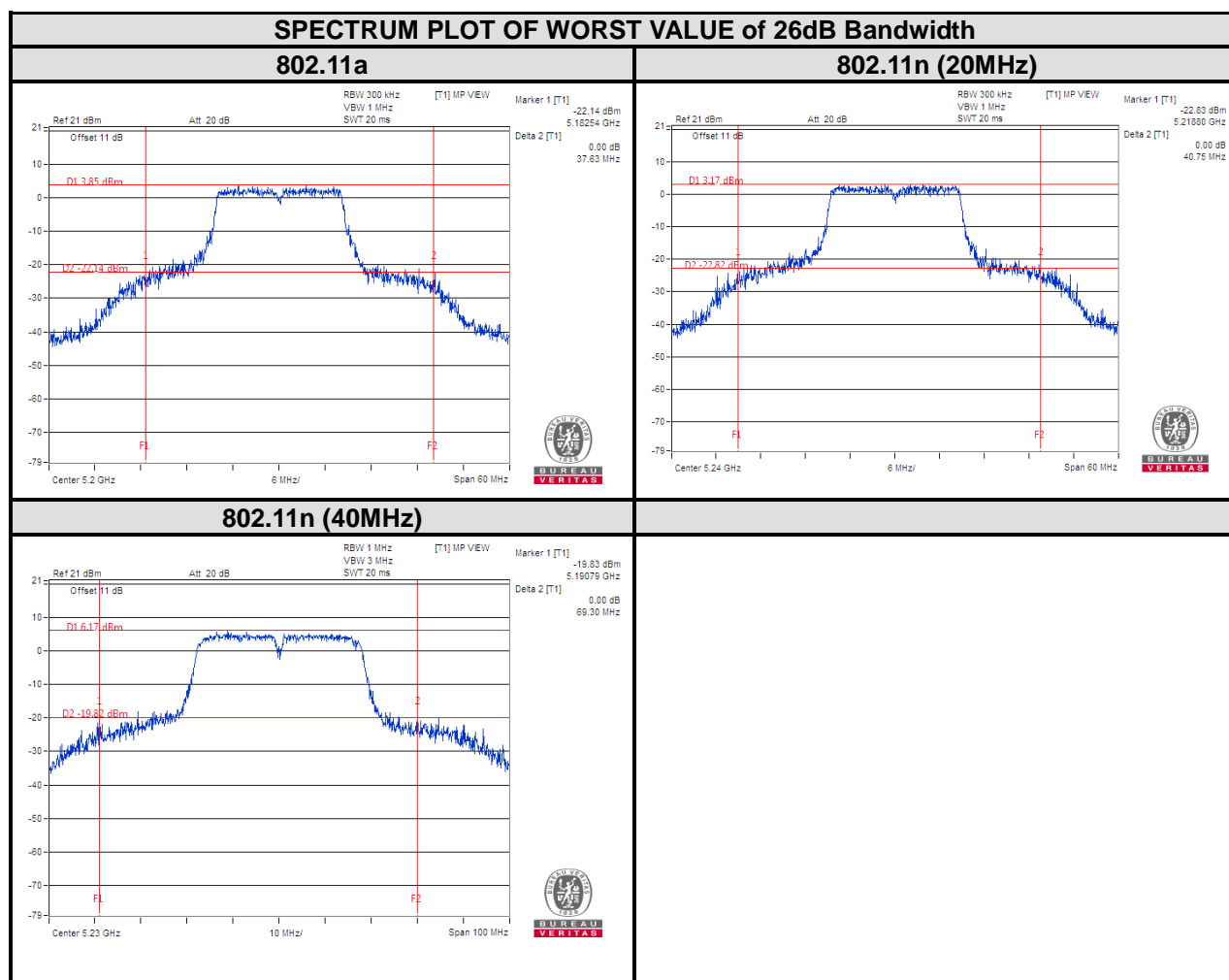
For U-NII-1:





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Test Report No.: RF170428W003-7

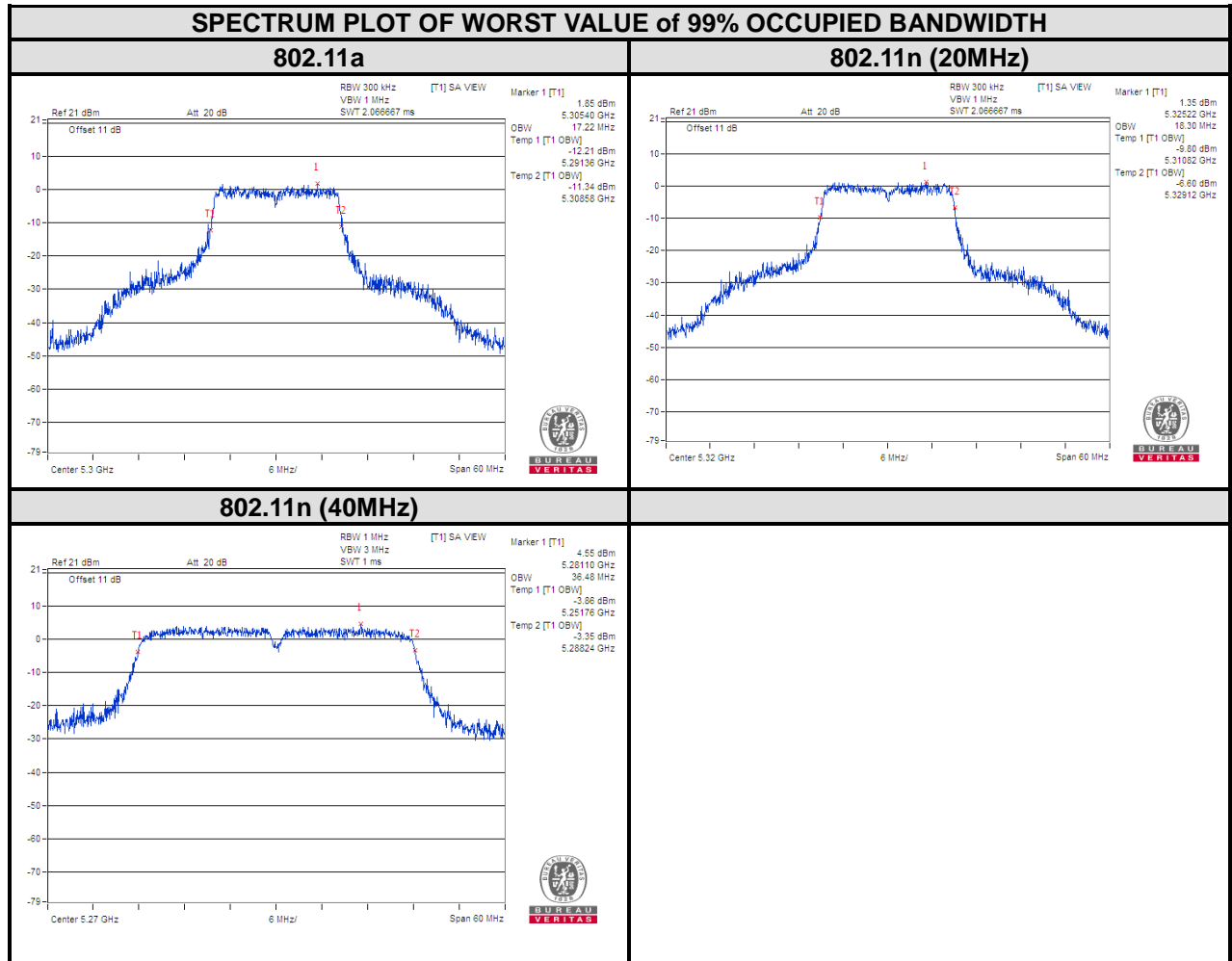




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VERITAS

Test Report No.: RF170428W003-7

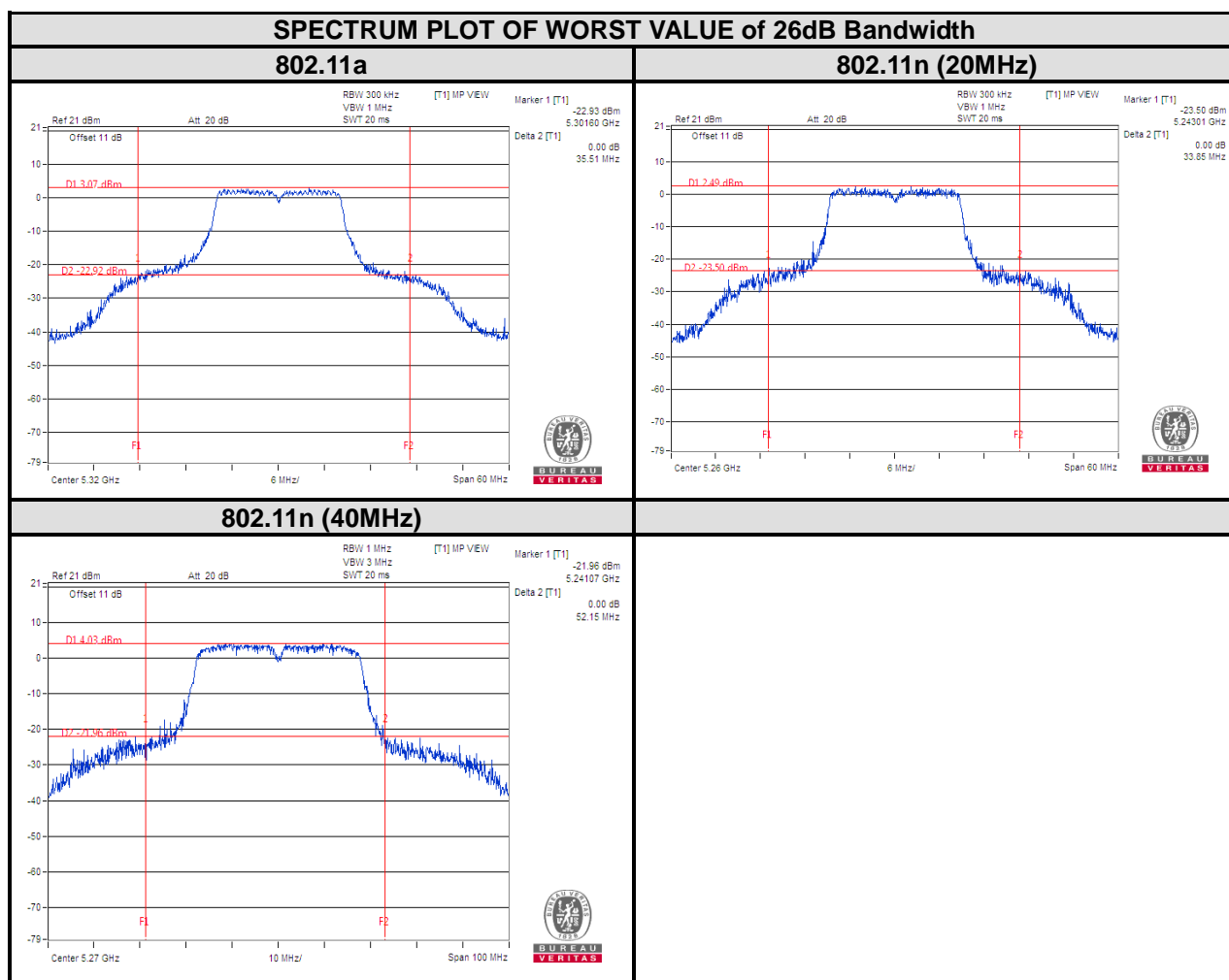
For U-NII-2A:





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Test Report No.: RF170428W003-7

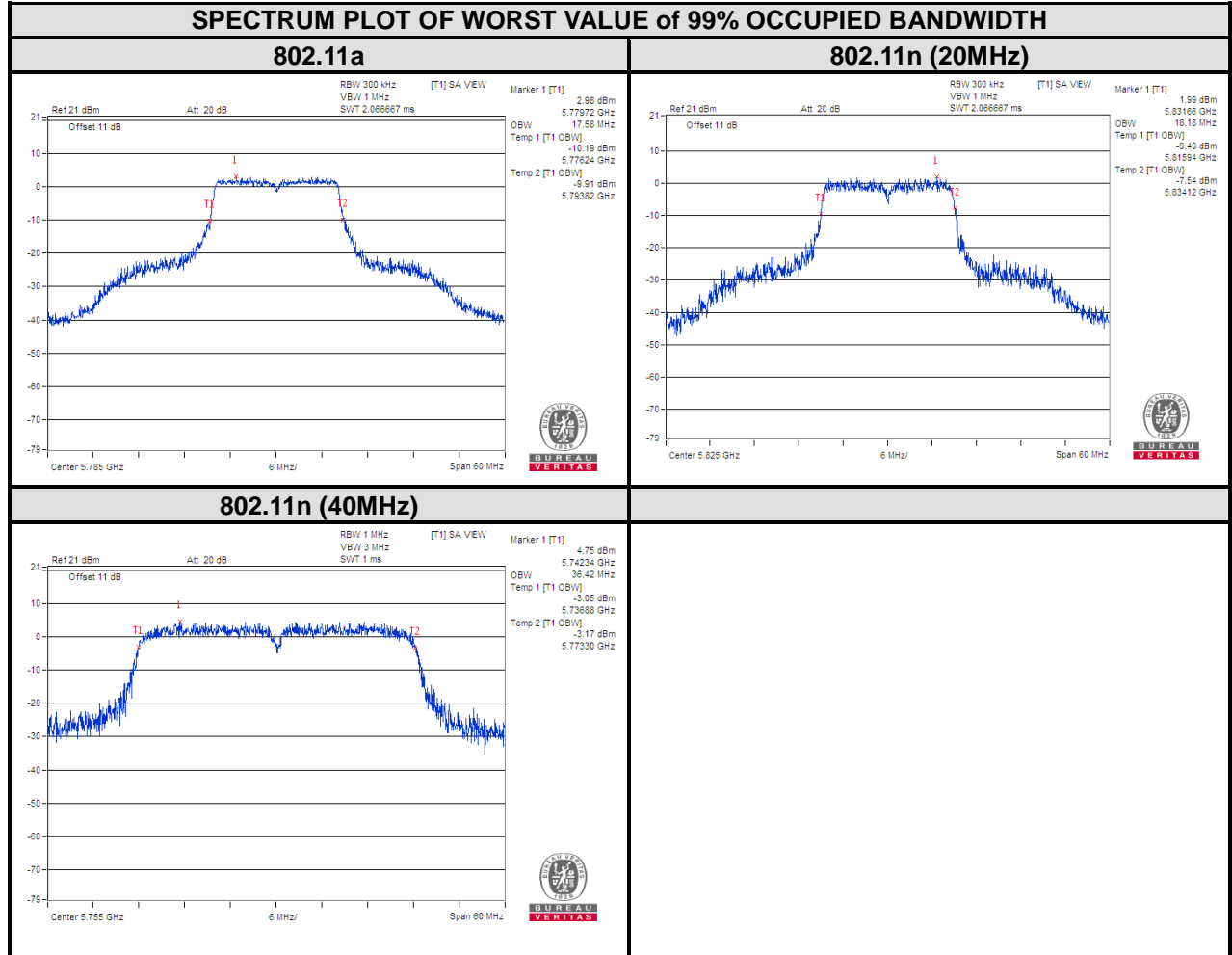




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VERITAS

Test Report No.: RF170428W003-7

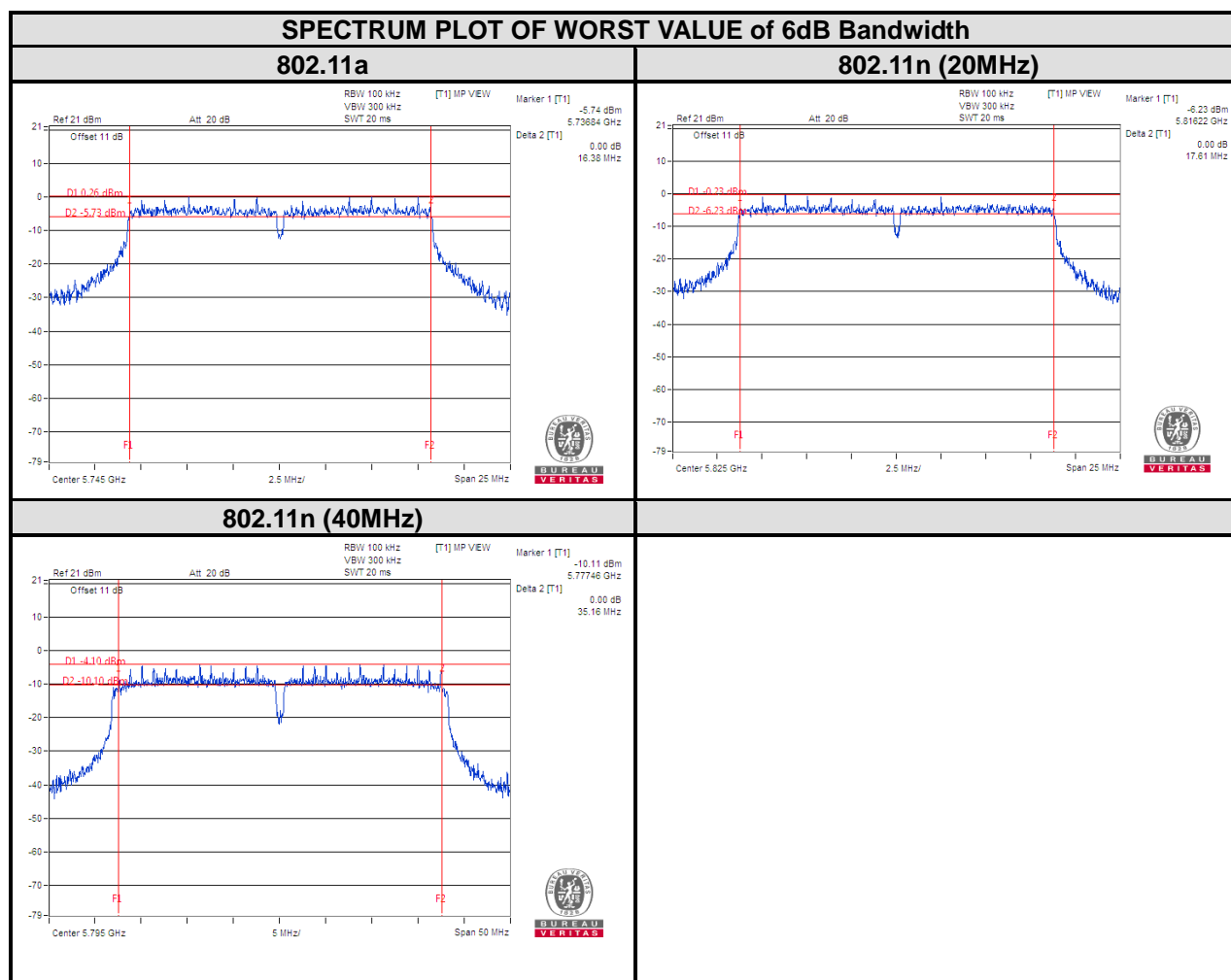
For U-NII-3:





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VERITAS

Test Report No.: RF170428W003-7

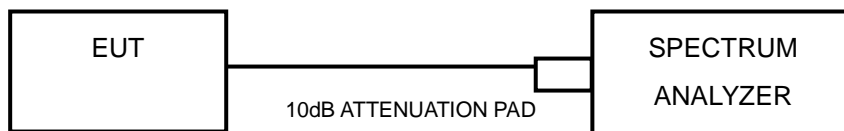


4.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

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

Refer to section 4.1.3 to get information of above instrument.

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	6.39	0.61	7.00	11	PASS
40	5200	5.76	0.61	6.37	11	PASS
48	5240	5.91	0.61	6.52	11	PASS
52	5260	5.30	0.61	5.91	11	PASS
60	5300	5.15	0.61	5.76	11	PASS
64	5320	3.77	0.61	4.38	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	5.05	0.64	5.69	11	PASS
40	5200	6.62	0.64	7.26	11	PASS
48	5240	5.95	0.64	6.59	11	PASS
52	5260	5.25	0.64	5.89	11	PASS
60	5300	4.94	0.64	5.58	11	PASS
64	5320	4.30	0.64	4.94	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	1.84	1.23	3.07	11	PASS
46	5230	1.71	1.23	2.94	11	PASS
54	5270	0.86	1.23	2.09	11	PASS
62	5310	-0.17	1.23	1.06	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	9.88	6.87	0.61	7.48	30	PASS
157	5785	9.77	6.76	0.61	7.37	30	PASS
165	5825	9.53	6.52	0.61	7.13	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	8.74	5.73	0.64	6.37	30	PASS
157	5785	8.52	5.51	0.64	6.15	30	PASS
165	5825	8.82	5.81	0.64	6.45	30	PASS

802.11n (40MHz)

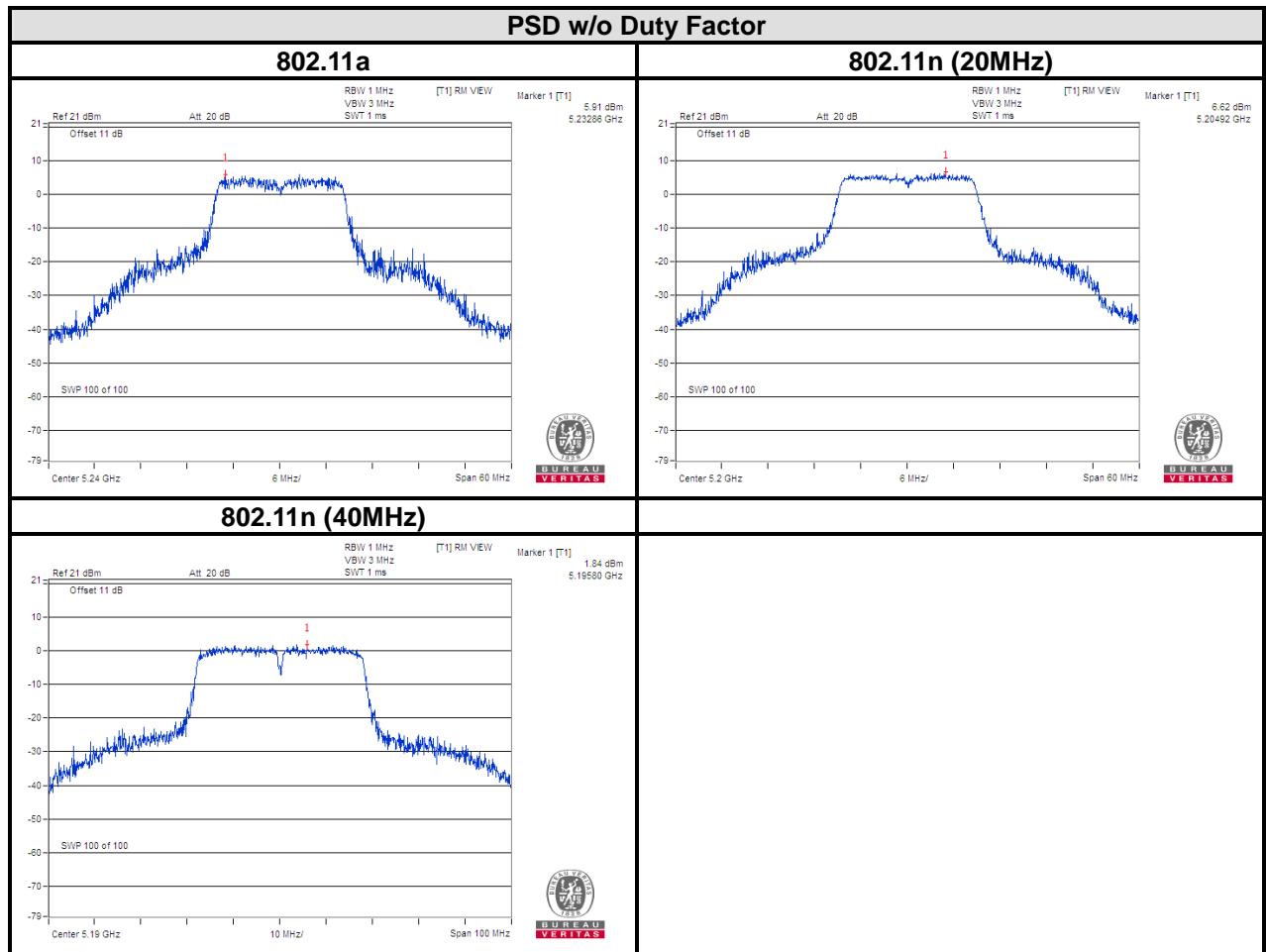
CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	5.94	2.93	1.23	4.16	30	PASS
159	5795	4.96	1.95	1.23	3.18	30	PASS



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Test Report No.: RF170428W003-7

For 5180~5240MHz

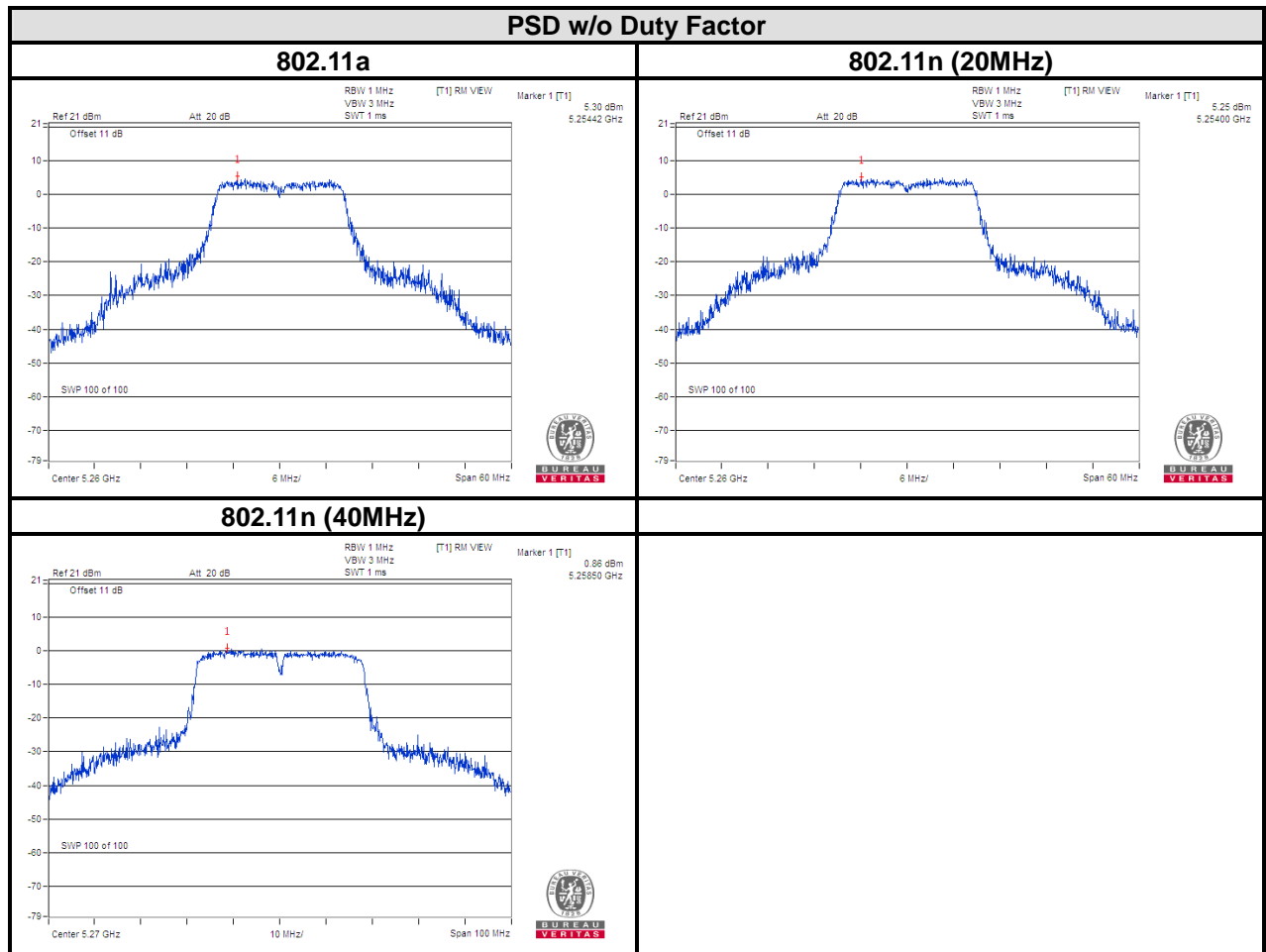




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Test Report No.: RF170428W003-7

For 5260~5300MHz





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Test Report No.: RF170428W003-7

For 5745~5825MHz

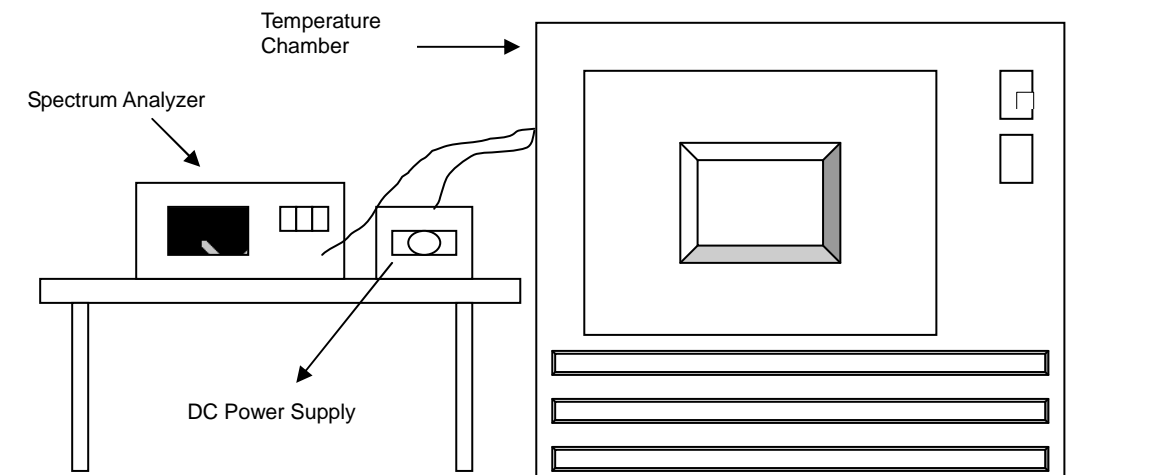


4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST SETUP



4.5.3 TEST INSTRUMENTS

Refer to section 4.1.3 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	3.9	5179.9932	-1.313	5179.9998	-0.039	5179.9937	-1.216	5179.9958	-0.811	PASS
40	3.9	5180.0235	4.537	5180.0222	4.286	5180.0214	4.131	5180.0202	3.900	PASS
30	3.9	5180.0292	5.637	5180.0251	4.846	5180.0205	3.958	5180.0225	4.344	PASS
20	3.9	5179.9784	-4.170	5179.9803	-3.803	5179.9774	-4.363	5179.9744	-4.942	PASS
10	3.9	5180.0098	1.892	5180.0078	1.506	5180.0068	1.313	5180.014	2.703	PASS
0	3.9	5179.9793	-3.996	5179.9744	-4.942	5179.9739	-5.039	5179.9805	-3.764	PASS
-10	3.9	5180.0177	3.417	5180.0193	3.726	5180.0221	4.266	5180.0238	4.595	PASS
-20	3.9	5179.9849	-2.915	5179.9856	-2.780	5179.9848	-2.934	5179.9861	-2.683	PASS
-30	3.9	5179.9883	-2.259	5179.9887	-2.181	5179.998	-0.386	5179.9956	-0.849	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	4.2	5179.9781	-4.228	5179.981	-3.668	5179.9771	-4.421	5179.975	-4.826	PASS
	3.9	5179.9784	-4.170	5179.9803	-3.803	5179.9774	-4.363	5179.9744	-4.942	PASS
	3.6	5179.9796	-3.938	5179.9802	-3.822	5179.9784	-4.170	5179.976	-4.633	PASS



FREQUENCY STABILITY VERSUS TEMP.										RESULT
OPERATING FREQUENCY: 5825MHz										
TEMP. (°C)	Power Supply (Vdc)	0 MINUTE		2 MINUTES		5 MINUTES		10 MINUTE		
		Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	Measured Frequency (MHz)	Frequency Drift (ppm)	
50	3.9	5824.9899	-1.734	5824.9902	-1.682	5824.9824	-3.021	5824.9888	-1.923	PASS
40	3.9	5825.0033	0.567	5825.0052	0.893	5825.0025	0.429	5824.9967	-0.567	PASS
30	3.9	5825.0209	3.588	5825.0152	2.609	5825.0162	2.781	5825.0217	3.725	PASS
20	3.9	5824.9888	-1.923	5824.9772	-3.914	5824.9838	-2.781	5824.9814	-3.193	PASS
10	3.9	5825.004	0.687	5824.9962	-0.652	5825.0042	0.721	5824.9998	-0.034	PASS
0	3.9	5824.9883	-2.009	5824.9894	-1.820	5824.9788	-3.639	5824.9858	-2.438	PASS
-10	3.9	5824.977	-3.948	5824.9734	-4.567	5824.9686	-5.391	5824.9725	-4.721	PASS
-20	3.9	5825.0102	1.751	5825.0106	1.820	5825.0099	1.700	5825.0099	1.700	PASS
-30	3.9	5825.0121	2.077	5825.0031	0.532	5825.0039	0.670	5825.0018	0.309	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	4.2	5824.988	-2.060	5824.9764	-4.052	5824.982	-3.090	5824.9792	-3.571	PASS
	3.9	5824.9888	-1.923	5824.9772	-3.914	5824.9838	-2.781	5824.9814	-3.193	PASS
	3.6	5824.9875	-2.146	5824.9762	-4.086	5824.9821	-3.073	5824.9803	-3.382	PASS



Test Report No.: RF170428W003-7

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.

---END---