

FCC TEST REPORT

(Part 15, Subpart E)

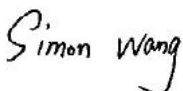
Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Manufacturer or Supplier:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Product:	Wireless Earphones
Brand Name:	Xiaomi
Model Name:	M2438E1
FCC ID:	2AFZZM2438E1
Date of tests:	Nov. 12, 2024 ~ Jan. 03, 2025

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

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

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Jan. 03, 2025	 Date: Jan. 03, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/>, and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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Test Report No.: W7L-241112W001RF03

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-241112W001RF03	Original release	Jan. 03, 2025



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
15.407(b)(9)	AC Power Conducted Emission	Compliance
15.407(b) (1/2/3/4/5)	Radiated Emission & Band Edge Measurement	Compliance
15.407(a/1/2/3)	Maximum conducted output Power	Compliance
15.407(a/1/2/3)	Peak Power Spectral Density	Compliance
15.407(a)(2)(12)	26 dB Bandwidth	Compliance
15.407(e)	6 dB Bandwidth	Compliance
15.203	Antenna Requirement	Compliance

NOTE:

1. Except the data of RSE and Band Edge Measurement, other data please refer to the appendix.



1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
AC Power Conducted emissions	±2.70dB
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions (30MHz~1GHz)	±4.98dB
Radiated emissions (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Power Spectral Density	±0.85 dB

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



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless Earphones
BRAND NAME	Xiaomi
MODEL NAME	M2438E1
NOMINAL VOLTAGE	3.87Vdc(Li-ion, battery) for Charging case 3.88Vdc(Li-ion, battery) for Earphone
MODULATION	OFDM
TRANSFER RATE	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 150.0Mbps
OPERATING FREQUENCY	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5720MHz, 5745 ~ 5825MHz
NUMBER OF CHANNEL	5180 ~ 5240MHz: 4 for 802.11a, 802.11n(20MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz) 5500 ~ 5720MHz: 11 for 802.11a, 802.11n (20MHz) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (20MHz)
MAX. OUTPUT POWER	10.74mW for 5180 ~ 5240MHz 10.28mW for 5260 ~ 5320MHz 10.69mW for 5500 ~ 5720MHz 9.80mW for 5745 ~ 5825MHz
ANTENNA TYPE	PIFA Antenna
ANTENNA GAIN	RIGHT: -8dBi for 5180 ~ 5240MHz -8dBi for 5260 ~ 5320MHz -8dBi for 5500 ~ 5720MHz -8dBi for 5745 ~ 5825MHz LEFT: -8.05dBi for 5180 ~ 5240MHz -8.05dBi for 5260 ~ 5320MHz -8.05dBi for 5500 ~ 5720MHz -8.05dBi for 5745 ~ 5825MHz
HW VERSION	V3
SW VERSION	0.0.6.7 for Charging case O71_W_2.0.4.8_241211 for Earphone
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable1: non-shielded cable, with w/o ferrite core, 0.21 meter USB cable2: non-shielded cable, with w/o ferrite core, 0.21 meter

**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

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the test report.
4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.

2.2 DESCRIPTION OF TEST MODES

FOR 5180 ~ 5240MHz

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

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

FOR 5260 ~ 5320MHz

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

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

FOR 5500 ~ 5720MHz

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	144	5720 MHz

FOR 5745 ~ 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		



2.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥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≥1G: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE:

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

NOTE: “-” means no effect

RADIATED EMISSION TEST (BELOW 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a (RIGHT)	5260-5320	52 to 64	64	OFDM	6.0
	802.11n(20MHz (LEFT))	5260-5320	52 to 64	64	OFDM	MCS0



RADIATED EMISSION TEST (ABOVE 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140,144	OFDM	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140,144	OFDM	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n (20MHz)		149 to 165	149, 157,165	OFDM	MCS0



POWER LINE CONDUCTED EMISSION TEST:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATIO N	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140,144	OFDM	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140,144	OFDM	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n (20MHz)		149 to 165	149, 157,165	OFDM	MCS0

BANDEDGE MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATIO N	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
A	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
A	802.11a	5500-5720	100 to 144	100, 116, 140,144	OFDM	6.0
A	802.11n (20MHz)		100 to 144	100, 116, 140,144	OFDM	MCS0
A	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
A	802.11n (20MHz)		149 to 165	149, 157,165	OFDM	MCS0



ANTENNA PORT CONDUCTED MEASUREMENT:

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATIO N	DATA RATE (Mbps)
B	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
B	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	MCS0
B	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
B	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	MCS0
B	802.11a	5500-5720	100 to 144	100, 116, 140,144	OFDM	6.0
B	802.11n (20MHz)		100 to 144	100, 116, 140,144	OFDM	MCS0
B	802.11a	5745-5825	149 to 165	149, 157,165	OFDM	6.0
B	802.11n (20MHz)		149 to 165	149, 157,165	OFDM	MCS0



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE<1G	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
RE≥1G	23deg. C, 70%RH	DC 5V By Adapter	Jace Hu
PLC	25deg. C, 52%RH	DC 5V By Adapter	James Fu
APCM	25deg. C, 60%RH	DC 5V By Battery	James Fu



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2.3 DUTY CYCLE OF TEST SIGNAL

Please Refer to Appendix A Of this test report.



2.4 DESCRIPTION OF SUPPORT UNITS

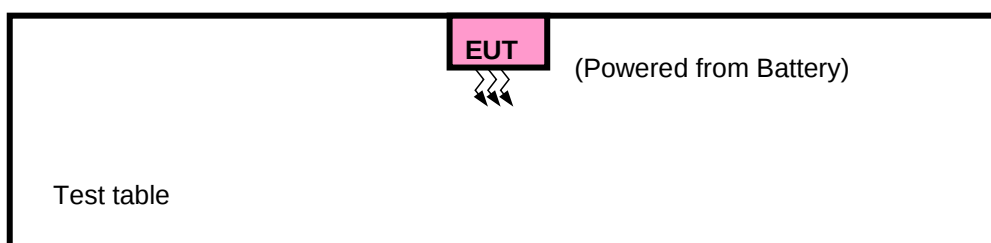
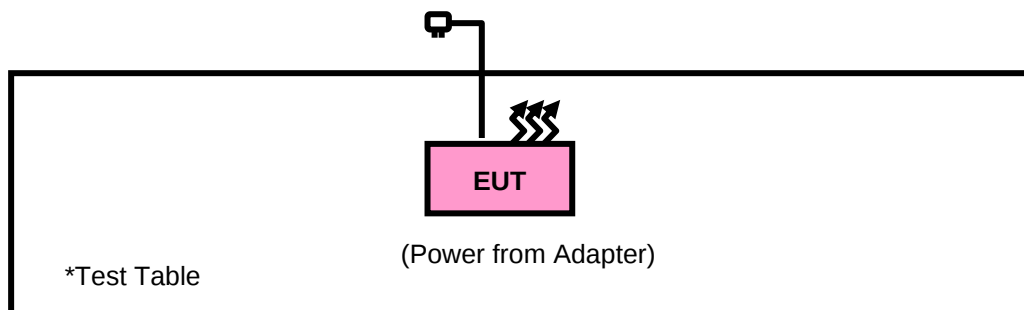
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA



2.4.1 CONFIGURATION OF SYSTEM UNDER TEST





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2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an 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 C63.10-2020

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

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



3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

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

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

NOTE:

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

3.1.2 LIMITS OF UNWANTED EMISSION

RESTRICTED BANDS	APPLICABLE TO	LIMIT	
	789033 D02 General UNII Test Procedures New Rules v02r01	FIELD STRENGTH AT 3m (dBµV/m)	
		PK : 74	AV : 54
OUT OF THE RESTRICTED BANDS	APPLICABLE TO	EIRP LIMIT (dBm/MHz)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	15.407(b)(1)	PK : -27	PK : 68.2
	15.407(b)(2)		
	15.407(b)(3)		
	15.407(b)(4)	See note 2 (FCC 16-24)	

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

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

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.



3.1.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 22, 23	May. 21,26
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 17,24	Feb. 16,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 17,24	Feb. 16,25
orn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.02, 24	Sep.01, 25
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120-3	3.2.06	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	N/A	May. 05,24	May. 04,25
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 27,24	Mar. 26,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 05,24	May. 04,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.09,24	May.08,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 16,24	Feb. 15,25
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 10,24	Aug. 09,25
Power Meter	Anritsu	ML2495A	1506002	Feb. 13,24	Feb. 12,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 13,24	Feb. 12,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.01,24	Aug.31,25

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months, and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in the 3m Chamber.

3. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

3.1.4 TEST PROCEDURES

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

NOTE:

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

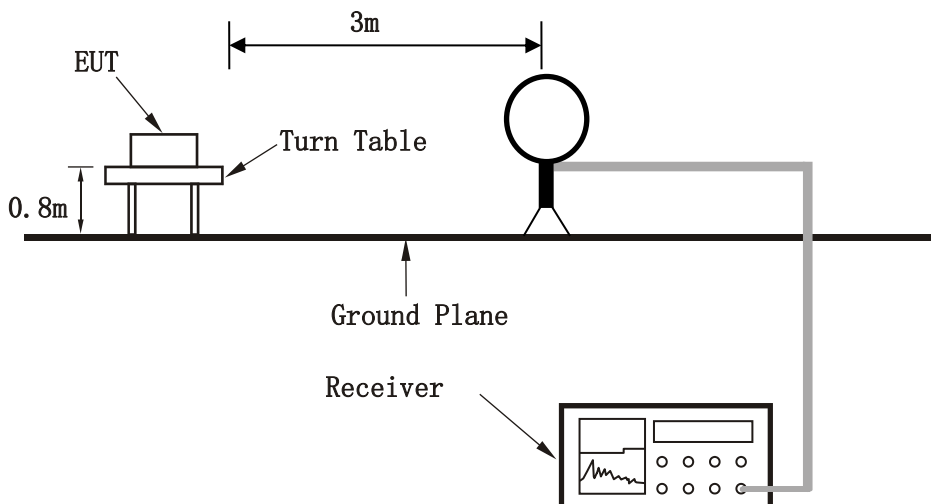
3.1.5 DEVIATION FROM TEST STANDARD

No deviation.

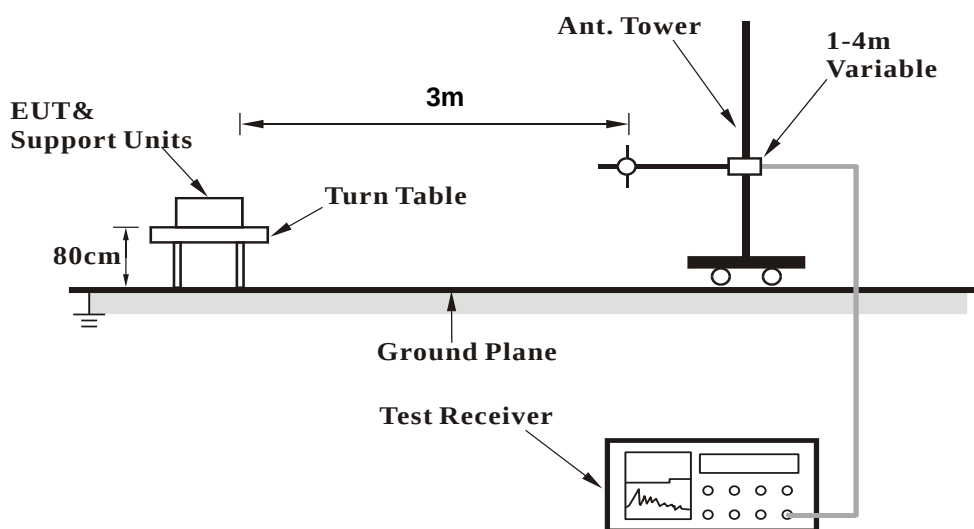


3.1.6 TEST SETUP

<Frequency Range 9KHz~30MHz >

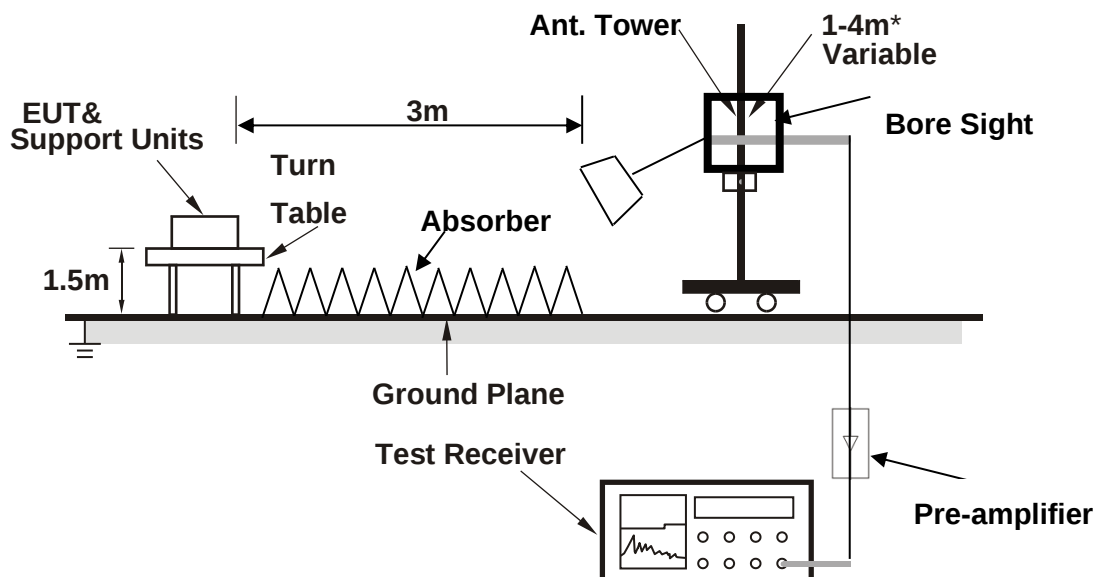


< Frequency Range 30MHz~1GHz >





<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

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

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

3.1.7 EUT OPERATING CONDITION

- Set the EUT under full load condition and placed it 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.



3.1.8 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

RIGHT

30 MHz – 1GHz data:

Band 2

802.11a:

CHANNEL	TX Channel 64	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
30	21.45	33.76	40	-18.55	25	0.13	37.44	100	360	Peak
69.77	18.44	42.08	40	-21.56	13.3	0.38	37.32	100	360	Peak
209.45	19.37	38.22	43.5	-24.13	16.68	1.03	36.56	100	360	Peak
257.95	21.58	37.88	46	-24.42	19.1	1.18	36.58	100	360	Peak
352.04	30.74	44.75	46	-15.26	21.18	1.44	36.63	100	360	Peak
384.05	29.04	41.85	46	-16.96	22.32	1.52	36.65	100	360	Peak

REMARKS:

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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	30.000	21.45	33.76	40.00	-18.55	-12.31	Peak	Horizontal
2	69.770	18.44	42.08	40.00	-21.56	-23.64	Peak	Horizontal
3	209.450	19.37	38.22	43.50	-24.13	-18.85	Peak	Horizontal
4	257.950	21.58	37.88	46.00	-24.42	-16.30	Peak	Horizontal
5 PP	352.040	30.74	44.75	46.00	-15.26	-14.01	Peak	Horizontal
6	384.050	29.04	41.85	46.00	-16.96	-12.81	Peak	Horizontal



CHANNEL	Channel 64	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
30	20.82	33.13	40	-19.18	25	0.13	37.44	100	0	Peak
70.74	18.29	41.99	40	-21.71	13.23	0.38	37.31	100	0	Peak
169.68	15.82	36.27	43.5	-27.68	15.4	0.81	36.66	100	0	Peak
288.99	17.93	34.87	46	-28.07	18.38	1.28	36.6	100	0	Peak
361.74	30.36	43.7	46	-15.64	21.83	1.47	36.64	100	0	Peak
394.72	28.04	40.06	46	-17.96	23.09	1.55	36.66	100	0	Peak

REMARKS:

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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	30.000	20.82	33.13	40.00	-19.18	-12.31	Peak	Vertical
2	70.740	18.29	41.99	40.00	-21.71	-23.70	Peak	Vertical
3	169.680	15.82	36.27	43.50	-27.68	-20.45	Peak	Vertical
4	288.990	17.93	34.87	46.00	-28.07	-16.94	Peak	Vertical
5 PP	361.740	30.36	43.70	46.00	-15.64	-13.34	Peak	Vertical
6	394.720	28.04	40.06	46.00	-17.96	-12.02	Peak	Vertical



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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	53.61	54.83	74	-20.39	34.2	11.17	46.59	100	40	Peak
5150	47.7	48.92	54	-6.3	34.2	11.17	46.59	100	40	Average
5180	93.65	94.78	/	/	34.26	11.2	46.59	100	40	Peak
5180	86.02	87.15	/	/	34.26	11.2	46.59	100	40	Average
5350	53.88	54.73	74	-20.12	34.3	11.39	46.54	100	40	Peak
5350	46.42	47.27	54	-7.58	34.3	11.39	46.54	100	40	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.24	54.66	74	-20.76	34	11.17	46.59	100	250	Peak
5150	47.56	48.98	54	-6.44	34	11.17	46.59	100	250	Average
5180	90.73	92.18	/	/	33.94	11.2	46.59	100	250	Peak
5180	82.82	84.27	/	/	33.94	11.2	46.59	100	250	Average
5350	53.61	53.96	74	-20.39	34.8	11.39	46.54	100	250	Peak
5350	47.16	47.51	54	-6.84	34.8	11.39	46.54	100	250	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.



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2. 5180MHz: Fundamental frequency.



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.82	55.04	74	-20.18	34.2	11.17	46.59	100	40	Peak
5150	46.96	48.18	54	-7.04	34.2	11.17	46.59	100	40	Average
5200	92.65	93.71	/	/	34.3	11.22	46.58	100	40	Peak
5200	86.33	87.39	/	/	34.3	11.22	46.58	100	40	Average
5350	52.41	53.26	74	-21.59	34.3	11.39	46.54	100	40	Peak
5350	47.19	48.04	54	-6.81	34.3	11.39	46.54	100	40	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.69	54.11	74	-21.31	34	11.17	46.59	150	250	Peak
5150	46.84	48.26	54	-7.16	34	11.17	46.59	150	250	Average
5200	91.83	93.29	/	/	33.9	11.22	46.58	150	250	Peak
5200	85.36	86.82	/	/	33.9	11.22	46.58	150	250	Average
5350	53.39	53.74	74	-20.61	34.8	11.39	46.54	150	250	Peak
5350	47.58	47.93	54	-6.42	34.8	11.39	46.54	150	250	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 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	52.84	54.06	74	-21.16	34.2	11.17	46.59	100	360	Peak
5150	46.47	47.69	54	-7.53	34.2	11.17	46.59	100	360	Average
5240	91.99	92.83	/	/	34.46	11.27	46.57	100	360	Peak
5240	85.22	86.06	/	/	34.46	11.27	46.57	100	360	Average
5350	54.65	55.5	74	-19.35	34.3	11.39	46.54	100	360	Peak
5350	47.63	48.48	54	-6.37	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.33	55.75	74	-19.67	34	11.17	46.59	150	250	Peak
5150	46.47	47.89	54	-7.53	34	11.17	46.59	150	250	Average
5240	89.79	91.11	/	/	33.98	11.27	46.57	150	250	Peak
5240	82.94	84.26	/	/	33.98	11.27	46.57	150	250	Average
5350	52.38	52.73	74	-21.62	34.8	11.39	46.54	150	250	Peak
5350	46.91	47.26	54	-7.09	34.8	11.39	46.54	150	250	Average

REMARKS:

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



Test Report No.: W7L-241112W001RF03

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	52.2	53.42	74	-21.8	34.2	11.17	46.59	100	40	Peak
5150	46.65	47.87	54	-7.35	34.2	11.17	46.59	100	40	Average
5180	93.86	94.99	/	/	34.26	11.2	46.59	100	40	Peak
5180	85.83	86.96	/	/	34.26	11.2	46.59	100	40	Average
5350	53.56	54.41	74	-20.44	34.3	11.39	46.54	100	40	Peak
5350	46.66	47.51	54	-7.34	34.3	11.39	46.54	100	40	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.84	53.26	74	-22.16	34	11.17	46.59	100	120	Peak
5150	47.46	48.88	54	-6.54	34	11.17	46.59	100	120	Average
5180	87.53	88.98	/	/	33.94	11.2	46.59	100	120	Peak
5180	78.62	80.07	/	/	33.94	11.2	46.59	100	120	Average
5350	55.22	55.57	74	-18.78	34.8	11.39	46.54	100	120	Peak
5350	46.89	47.24	54	-7.11	34.8	11.39	46.54	100	120	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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	52.04	53.26	74	-21.96	34.2	11.17	46.59	100	360	Peak
5150	47.71	48.93	54	-6.29	34.2	11.17	46.59	100	360	Average
5200	93.77	94.83	/	/	34.3	11.22	46.58	100	360	Peak
5200	85.93	86.99	/	/	34.3	11.22	46.58	100	360	Average
5350	53.31	54.16	74	-20.69	34.3	11.39	46.54	100	360	Peak
5350	46.91	47.76	54	-7.09	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.27	54.69	74	-20.73	34	11.17	46.59	100	120	Peak
5150	47.67	49.09	54	-6.33	34	11.17	46.59	100	120	Average
5200	89.95	91.41	/	/	33.9	11.22	46.58	100	120	Peak
5200	82.13	83.59	/	/	33.9	11.22	46.58	100	120	Average
5350	53.11	53.46	74	-20.89	34.8	11.39	46.54	100	120	Peak
5350	47.71	48.06	54	-6.29	34.8	11.39	46.54	100	120	Average

REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 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	51.96	53.18	74	-22.04	34.2	11.17	46.59	100	50	Peak
5150	47.49	48.71	54	-6.51	34.2	11.17	46.59	100	50	Average
5240	94.69	95.53	/	/	34.46	11.27	46.57	100	50	Peak
5240	85.93	86.77	/	/	34.46	11.27	46.57	100	50	Average
5350	52.76	53.61	74	-21.24	34.3	11.39	46.54	100	50	Peak
5350	47.41	48.26	54	-6.59	34.3	11.39	46.54	100	50	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.65	53.07	74	-22.35	34	11.17	46.59	100	135	Peak
5150	47.37	48.79	54	-6.63	34	11.17	46.59	100	135	Average
5240	90.92	92.24	/	/	33.98	11.27	46.57	100	135	Peak
5240	82.87	84.19	/	/	33.98	11.27	46.57	100	135	Average
5350	54.28	54.63	74	-19.72	34.8	11.39	46.54	100	135	Peak
5350	48.05	48.4	54	-5.95	34.8	11.39	46.54	100	135	Average

REMARKS:

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



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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	52.47	53.69	74	-21.53	34.2	11.17	46.59	100	10	Peak
5150	47.76	48.98	54	-6.24	34.2	11.17	46.59	100	10	Average
5260	93.98	94.8	/	/	34.46	11.29	46.57	100	10	Peak
5260	86.61	87.43	/	/	34.46	11.29	46.57	100	10	Average
5350	53.63	54.48	74	-20.37	34.3	11.39	46.54	100	10	Peak
5350	47.04	47.89	54	-6.96	34.3	11.39	46.54	100	10	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.99	55.41	74	-20.01	34	11.17	46.59	100	245	Peak
5150	48.27	49.69	54	-5.73	34	11.17	46.59	100	245	Average
5260	90.02	91.18	/	/	34.12	11.29	46.57	100	245	Peak
5260	83.48	84.64	/	/	34.12	11.29	46.57	100	245	Average
5350	52.18	52.53	74	-21.82	34.8	11.39	46.54	100	245	Peak
5350	47.43	47.78	54	-6.57	34.8	11.39	46.54	100	245	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.7	53.92	74	-21.3	34.2	11.17	46.59	100	360	Peak
5150	47.83	49.05	54	-6.17	34.2	11.17	46.59	100	360	Average
5300	94.01	94.93	/	/	34.3	11.34	46.56	100	360	Peak
5300	86.84	87.76	/	/	34.3	11.34	46.56	100	360	Average
5350	53.69	54.54	74	-20.31	34.3	11.39	46.54	100	360	Peak
5350	47.34	48.19	54	-6.66	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.54	55.96	74	-19.46	34	11.17	46.59	100	240	Peak
5150	47.33	48.75	54	-6.67	34	11.17	46.59	100	240	Average
5300	91.02	91.64	/	/	34.6	11.34	46.56	100	240	Peak
5300	83.19	83.81	/	/	34.6	11.34	46.56	100	240	Average
5350	54.24	54.59	74	-19.76	34.8	11.39	46.54	100	240	Peak
5350	48.26	48.61	54	-5.74	34.8	11.39	46.54	100	240	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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	52.98	54.2	74	-21.02	34.2	11.17	46.59	100	360	Peak
5150	48.34	49.56	54	-5.66	34.2	11.17	46.59	100	360	Average
5320	93.77	94.66	/	/	34.3	11.36	46.55	100	360	Peak
5320	86.86	87.75	/	/	34.3	11.36	46.55	100	360	Average
5350	54.07	54.92	74	-19.93	34.3	11.39	46.54	100	360	Peak
5350	46.83	47.68	54	-7.17	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.01	54.43	74	-20.99	34	11.17	46.59	100	310	Peak
5150	46.99	48.41	54	-7.01	34	11.17	46.59	100	310	Average
5320	91	91.51	/	/	34.68	11.36	46.55	100	310	Peak
5320	84.26	84.77	/	/	34.68	11.36	46.55	100	310	Average
5350	54.47	54.82	74	-19.53	34.8	11.39	46.54	100	310	Peak
5350	47.81	48.16	54	-6.19	34.8	11.39	46.54	100	310	Average

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	53.48	54.7	74	-20.52	34.2	11.17	46.59	100	360	Peak
5150	46.97	48.19	54	-7.03	34.2	11.17	46.59	100	360	Average
5260	93.84	94.66	/	/	34.46	11.29	46.57	100	360	Peak
5260	84.93	85.75	/	/	34.46	11.29	46.57	100	360	Average
5350	52.49	53.34	74	-21.51	34.3	11.39	46.54	100	360	Peak
5350	46.97	47.82	54	-7.03	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.44	55.86	74	-19.56	34	11.17	46.59	100	235	Peak
5150	46.56	47.98	54	-7.44	34	11.17	46.59	100	235	Average
5260	91.21	92.37	/	/	34.12	11.29	46.57	100	235	Peak
5260	82.85	84.01	/	/	34.12	11.29	46.57	100	235	Average
5350	54.76	55.11	74	-19.24	34.8	11.39	46.54	100	235	Peak
5350	47.61	47.96	54	-6.39	34.8	11.39	46.54	100	235	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.19	54.41	74	-20.81	34.2	11.17	46.59	100	360	Peak
5150	47.67	48.89	54	-6.33	34.2	11.17	46.59	100	360	Average
5300	93.68	94.6	/	/	34.3	11.34	46.56	100	360	Peak
5300	85.25	86.17	/	/	34.3	11.34	46.56	100	360	Average
5350	51.87	52.72	74	-22.13	34.3	11.39	46.54	100	360	Peak
5350	46.37	47.22	54	-7.63	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.46	53.88	74	-21.54	34	11.17	46.59	100	240	Peak
5150	47.27	48.69	54	-6.73	34	11.17	46.59	100	240	Average
5300	89.06	89.68	/	/	34.6	11.34	46.56	100	240	Peak
5300	81.48	82.1	/	/	34.6	11.34	46.56	100	240	Average
5350	52.99	53.34	74	-21.01	34.8	11.39	46.54	100	240	Peak
5350	47.8	48.15	54	-6.2	34.8	11.39	46.54	100	240	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L-241112W001RF03

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.68	54.9	74	-20.32	34.2	11.17	46.59	100	360	Peak
5150	47.22	48.44	54	-6.78	34.2	11.17	46.59	100	360	Average
5320	93.15	94.04	/	/	34.3	11.36	46.55	100	360	Peak
5320	85.58	86.47	/	/	34.3	11.36	46.55	100	360	Average
5350	52.6	53.45	74	-21.4	34.3	11.39	46.54	100	360	Peak
5350	46.78	47.63	54	-7.22	34.3	11.39	46.54	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.77	53.19	74	-22.23	34	11.17	46.59	100	240	Peak
5150	46.97	48.39	54	-7.03	34	11.17	46.59	100	240	Average
5320	90.19	90.7	/	/	34.68	11.36	46.55	100	240	Peak
5320	80.97	81.48	/	/	34.68	11.36	46.55	100	240	Average
5350	53.23	53.58	74	-20.77	34.8	11.39	46.54	100	240	Peak
5350	48.22	48.57	54	-5.78	34.8	11.39	46.54	100	240	Average

REMARKS:

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



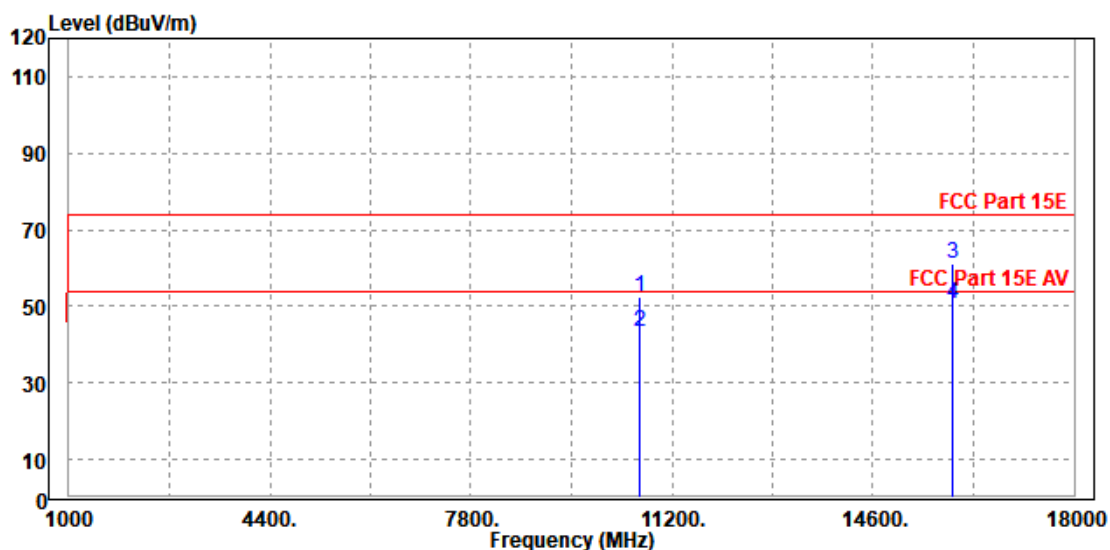
802.11a

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	10640.000	52.36	45.04	74.00	-21.64	7.32	Peak	Horizontal
2	10640.000	43.44	36.12	54.00	-10.56	7.32	Average	Horizontal
3	PK15960.000	61.19	42.12	74.00	-12.81	19.07	Peak	Horizontal
4	PP15960.000	50.51	31.44	54.00	-3.49	19.07	Average	Horizontal



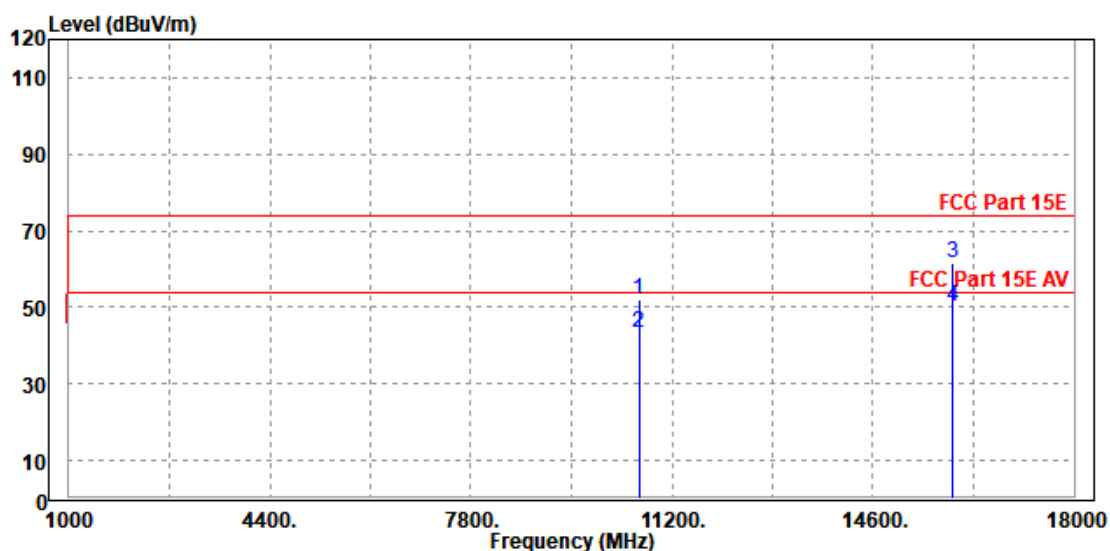


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	10639.000	51.82	44.70	74.00	-22.18	7.12	Peak	Vertical
2	10639.000	43.55	36.43	54.00	-10.45	7.12	Average	Vertical
3	PK15960.000	61.53	42.28	74.00	-12.47	19.25	Peak	Vertical
4	PP15960.000	50.35	31.10	54.00	-3.65	19.25	Average	Vertical

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5290MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.





Test Report No.: W7L-241112W001RF03

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	54.51	54.92	74	-19.49	34.58	11.52	46.51	100	360	Peak
5460	48.2	48.61	54	-5.8	34.58	11.52	46.51	100	360	Average
5470	51.67	52.09	68.2	-16.53	34.56	11.53	46.51	100	360	Peak
5500	93.21	93.66	/	/	34.5	11.56	46.51	100	360	Peak
5500	87.14	87.59	/	/	34.5	11.56	46.51	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.01	53.72	74	-20.99	34.28	11.52	46.51	100	295	Peak
5460	47.12	47.83	54	-6.88	34.28	11.52	46.51	100	295	Average
5470	53.74	54.46	68.2	-14.46	34.26	11.53	46.51	100	295	Peak
5500	90.73	91.48	/	/	34.2	11.56	46.51	100	295	Peak
5500	82.96	83.71	/	/	34.2	11.56	46.51	100	295	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	52.82	53.23	74	-21.18	34.58	11.52	46.51	100	30	Peak
5460	47.77	48.18	54	-6.23	34.58	11.52	46.51	100	30	Average
5470	52.98	53.4	68.2	-15.22	34.56	11.53	46.51	100	30	Peak
5580	94.32	94.92	/	/	34.3	11.59	46.49	100	30	Peak
5580	86.65	87.25	/	/	34.3	11.59	46.49	100	30	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.69	54.4	74	-20.31	34.28	11.52	46.51	100	235	Peak
5460	47.15	47.86	54	-6.85	34.28	11.52	46.51	100	235	Average
5470	53.32	54.04	68.2	-14.88	34.26	11.53	46.51	100	235	Peak
5580	93	92.96	/	/	34.94	11.59	46.49	100	235	Peak
5580	85.7	85.66	/	/	34.94	11.59	46.49	100	235	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	92.69	92.91	/	/	34.6	11.64	46.46	100	35	Peak
5700	86	86.22	/	/	34.6	11.64	46.46	100	35	Average
5725	54.37	54.62	68.2	-13.83	34.55	11.65	46.45	100	35	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	90.72	91.24	/	/	34.3	11.64	46.46	100	235	Peak
5700	83.77	84.29	/	/	34.3	11.64	46.46	100	235	Average
5725	52.61	53.06	68.2	-15.59	34.35	11.65	46.45	100	235	Peak

REMARKS:

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



CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	52.06	52.48	68.2	-16.14	34.56	11.53	46.51	100	0	Peak
5720	93.04	93.29	/	/	34.56	11.64	46.45	100	0	Peak
5720	86.55	86.8	/	/	34.56	11.64	46.45	100	0	Average
5850	53.51	53.34	68.2	-14.69	34.9	11.69	46.42	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	54.3	55.02	68.2	-13.9	34.26	11.53	46.51	100	180	Peak
5720	89.52	89.99	/	/	34.34	11.64	46.45	100	180	Peak
5720	82.68	83.15	/	/	34.34	11.64	46.45	100	180	Average
5850	54.14	53.57	68.2	-14.06	35.3	11.69	46.42	100	180	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.



Test Report No.: W7L-241112W001RF03

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	52.85	53.26	74	-21.15	34.58	11.52	46.51	100	20	Peak
5460	47.47	47.88	54	-6.53	34.58	11.52	46.51	100	20	Average
5470	52.82	53.24	68.2	-15.38	34.56	11.53	46.51	100	20	Peak
5500	93.72	94.17	/	/	34.5	11.56	46.51	100	20	Peak
5500	85.3	85.75	/	/	34.5	11.56	46.51	100	20	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	52.41	53.12	74	-21.59	34.28	11.52	46.51	100	315	Peak
5460	47.93	48.64	54	-6.07	34.28	11.52	46.51	100	315	Average
5470	53.55	54.27	68.2	-14.65	34.26	11.53	46.51	100	315	Peak
5500	90.88	91.63	/	/	34.2	11.56	46.51	100	315	Peak
5500	83.6	84.35	/	/	34.2	11.56	46.51	100	315	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.11	53.52	74	-20.89	34.58	11.52	46.51	100	360	Peak
5460	47.51	47.92	54	-6.49	34.58	11.52	46.51	100	360	Average
5470	52.39	52.81	68.2	-15.81	34.56	11.53	46.51	100	360	Peak
5580	93.84	94.44	/	/	34.3	11.59	46.49	100	360	Peak
5580	85.92	86.52	/	/	34.3	11.59	46.49	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	54.16	54.87	74	-19.84	34.28	11.52	46.51	100	235	Peak
5460	47.2	47.91	54	-6.8	34.28	11.52	46.51	100	235	Average
5470	54.15	54.87	68.2	-14.05	34.26	11.53	46.51	100	235	Peak
5580	91.87	91.83	/	/	34.94	11.59	46.49	100	235	Peak
5580	84.24	84.2	/	/	34.94	11.59	46.49	100	235	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	92.21	92.43	/	/	34.6	11.64	46.46	100	360	Peak
5700	84.44	84.66	/	/	34.6	11.64	46.46	100	360	Average
5725	55.14	55.39	68.2	-13.06	34.55	11.65	46.45	100	360	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	89.11	89.63	/	/	34.3	11.64	46.46	100	230	Peak
5700	81.56	82.08	/	/	34.3	11.64	46.46	100	230	Average
5725	53.21	53.66	68.2	-14.99	34.35	11.65	46.45	100	230	Peak

REMARKS:

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



CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	52.94	53.36	68.2	-15.26	34.56	11.53	46.51	100	0	Peak
5720	93.2	93.45	/	/	34.56	11.64	46.45	100	0	Peak
5720	86.01	86.26	/	/	34.56	11.64	46.45	100	0	Average
5850	53.87	53.7	68.2	-14.33	34.9	11.69	46.42	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.26	53.98	68.2	-14.94	34.26	11.53	46.51	100	230	Peak
5720	89.52	89.99	/	/	34.34	11.64	46.45	100	230	Peak
5720	80.27	80.74	/	/	34.34	11.64	46.45	100	230	Average
5850	53.81	53.24	68.2	-14.39	35.3	11.69	46.42	100	230	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.



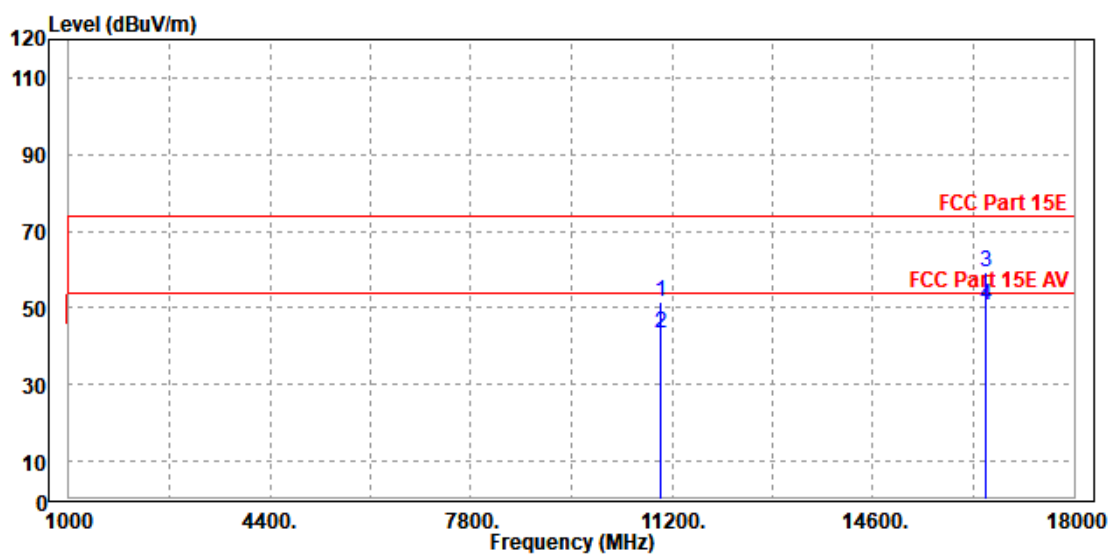
802.11a

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	10996.000	51.49	44.62	74.00	-22.51	6.87	Peak	Horizontal
2	10996.000	43.30	36.43	54.00	-10.70	6.87	Average	Horizontal
3	PK16500.000	59.26	41.30	74.00	-14.74	17.96	Peak	Horizontal
4	PP16500.000	50.73	32.77	54.00	-3.27	17.96	Average	Horizontal



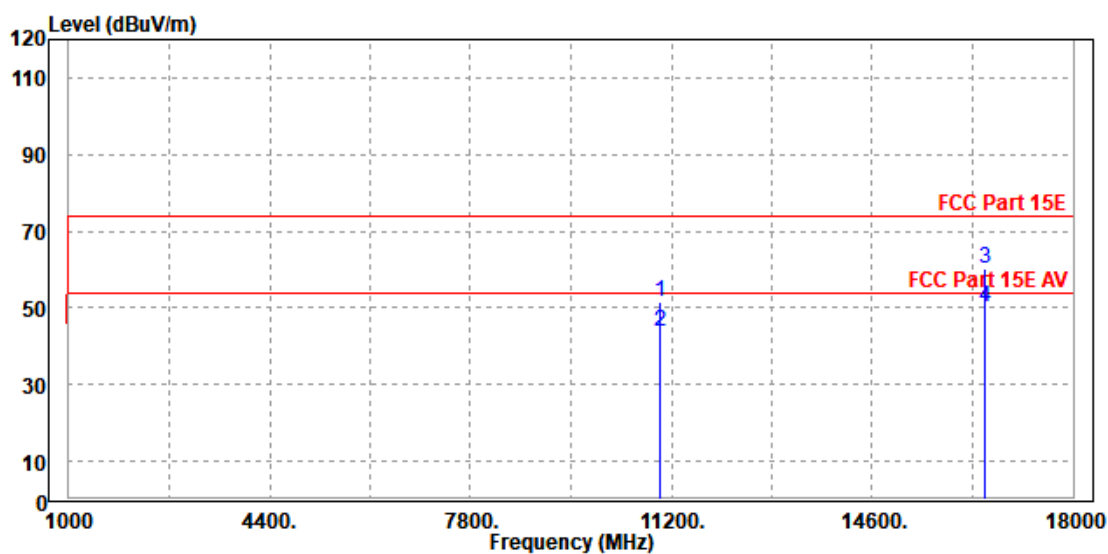


ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11000.000	51.57	44.30	74.00	-22.43	7.27	Peak	Vertical
2	11000.000	43.61	36.34	54.00	-10.39	7.27	Average	Vertical
3	PK16504.000	60.07	42.31	74.00	-13.93	17.76	Peak	Vertical
4	PP16504.000	50.09	32.33	54.00	-3.91	17.76	Average	Vertical

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5530MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.





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	93.1	93.38	/	/	34.51	11.65	46.44	100	360	Peak
5745	86.11	86.39	/	/	34.51	11.65	46.44	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	89.67	90.07	/	/	34.39	11.65	46.44	100	230	Peak
5745	82.64	83.04	/	/	34.39	11.65	46.44	100	230	Average

REMARKS:

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

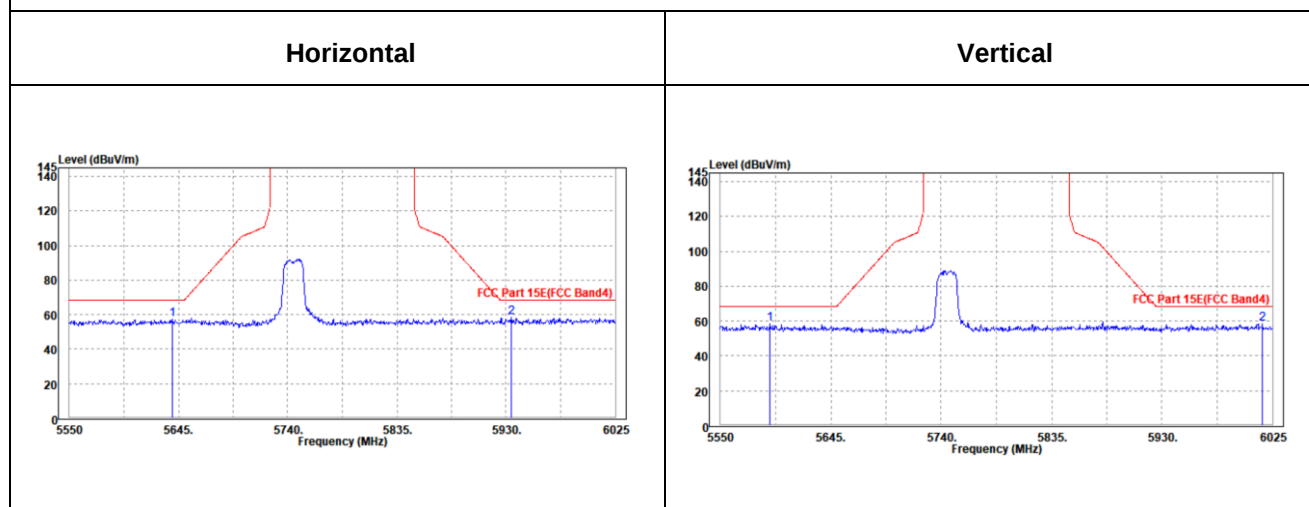


OOBE DATA

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5639.3	57.55	57.87	68.2	-10.65	34.54	11.61	46.47	100	360	Peak
5934.75	58.27	57.87	68.2	-9.93	35.07	11.73	46.4	100	360	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
5592.75	58.34	58.18	68.2	-9.86	35.04	11.6	46.48	100	0	Peak
6016.45	58.57	58.05	68.2	-9.63	35.13	11.77	46.38	100	0	Peak

CH 149





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	90.91	91.03	/	/	34.64	11.67	46.43	100	360	Peak
5785	84	84.12	/	/	34.64	11.67	46.43	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	89.46	89.47	/	/	34.75	11.67	46.43	100	330	Peak
5785	82.74	82.75	/	/	34.75	11.67	46.43	100	330	Average

REMARKS:

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



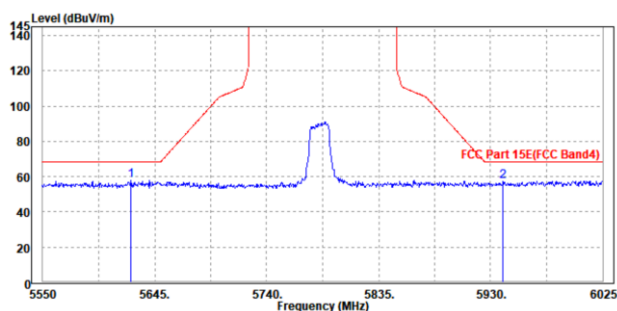
OUBE DATA

802.11a

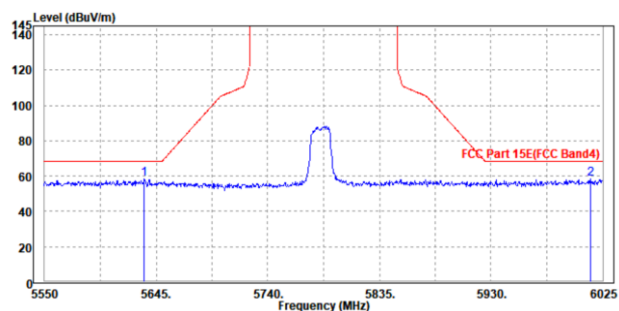
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5624.575	57.83	58.24	68.2	-10.37	34.45	11.61	46.47	100	0	Peak
5940.45	57.49	57.07	68.2	-10.71	35.08	11.73	46.39	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5635.025	58.18	58.36	68.2	-10.02	34.68	11.61	46.47	100	360	Peak
6015.025	58.52	58.01	68.2	-9.68	35.12	11.77	46.38	100	360	Peak

CH 157

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	91.6	91.54	74	17.6	34.8	11.68	46.42	100	0	Peak
5825	85.27	85.21	54	31.27	34.8	11.68	46.42	100	0	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	89.46	89.1	74	15.46	35.1	11.68	46.42	100	335	Peak
5825	82.24	81.88	54	28.24	35.1	11.68	46.42	100	335	Average

REMARKS:

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



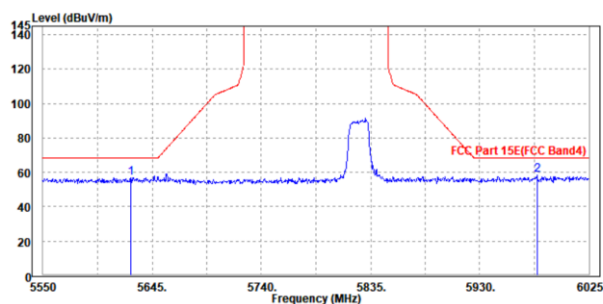
OUBE DATA

802.11a

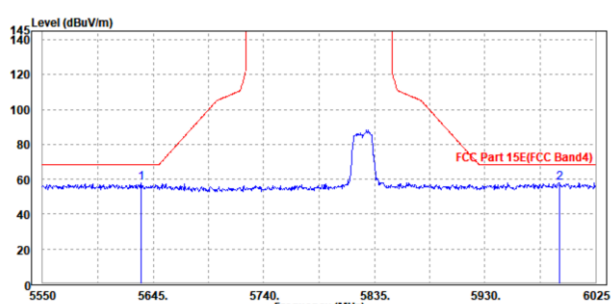
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5626.47 5	56.85	57.25	68.2	-11.35	34.46	11.61	46.47	100	360	Peak
5979.87 5	58.31	57.86	68.2	-9.89	35.1	11.74	46.39	100	360	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5635.02 5	57.88	58.06	68.2	-10.32	34.68	11.61	46.47	100	0	Peak
5993.65	57.85	57.49	68.2	-10.35	34.99	11.75	46.38	100	0	Peak

CH 165

Horizontal



Vertical





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	92.94	93.22	/	/	34.51	11.65	46.44	100	0	Peak
5745	85.16	85.44	/	/	34.51	11.65	46.44	100	0	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	90.63	91.03	/	/	34.39	11.65	46.44	100	330	Peak
5745	82.51	82.91	/	/	34.39	11.65	46.44	100	330	Average

REMARKS:

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



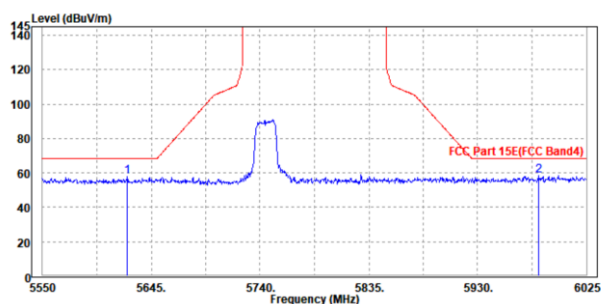
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802.11n (20MHZ)

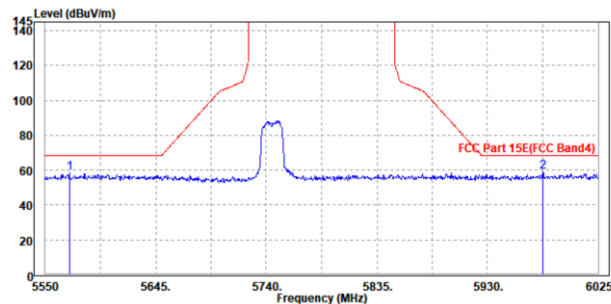
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5624.1	57.63	58.05	68.2	-10.57	34.44	11.61	46.47	100	0	Peak
5983.67 5	58.42	57.96	68.2	-9.78	35.1	11.74	46.38	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5570.9	58.31	58.34	68.2	-9.89	34.87	11.59	46.49	100	360	Peak
5977.5	59.03	58.72	68.2	-9.17	34.96	11.74	46.39	100	360	Peak

CH 149

Horizontal



Vertical





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	92.01	92.13	/	/	34.64	11.67	46.43	100	360	Peak
5785	83.7	83.82	/	/	34.64	11.67	46.43	100	360	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	89.44	89.45	/	/	34.75	11.67	46.43	100	5	Peak
5785	82.51	82.52	/	/	34.75	11.67	46.43	100	5	Average

REMARKS:

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

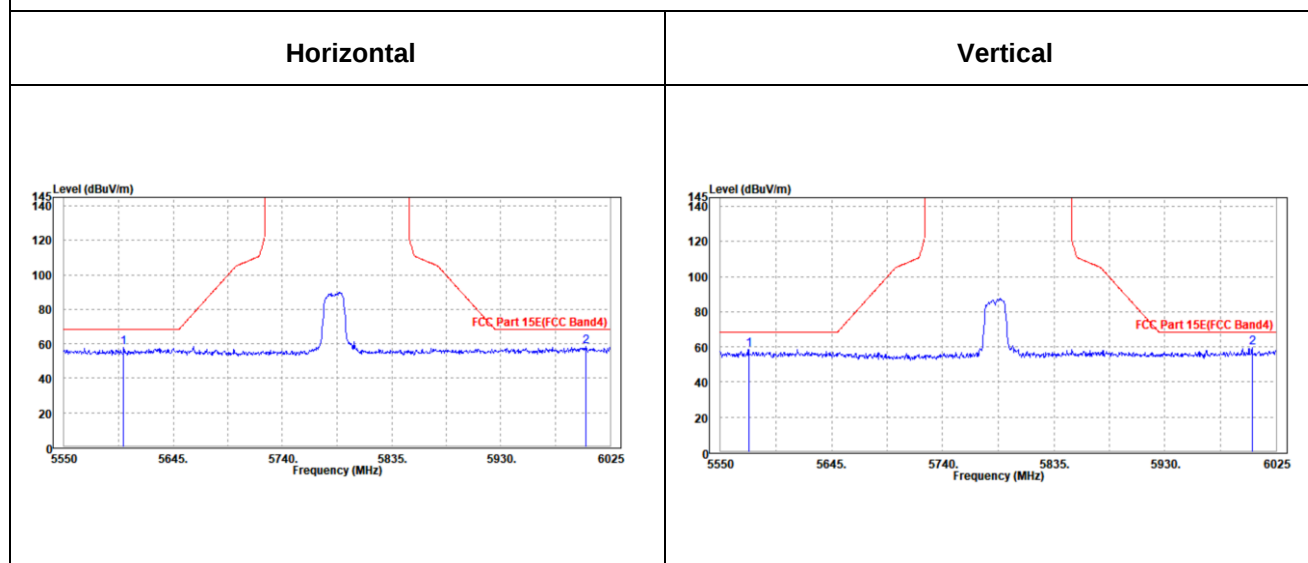


Oobe Data

802.11n (20MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV /m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5601.775	57.64	58.21	68.2	-10.56	34.31	11.6	46.48	100	0	Peak
6004.1	58.36	57.87	68.2	-9.84	35.11	11.76	46.38	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV /m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5574.225	58.4	58.41	68.2	-9.8	34.89	11.59	46.49	100	360	Peak
6004.575	59.37	58.95	68.2	-8.83	35.04	11.76	46.38	100	360	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	91.88	91.82	/	/	34.8	11.68	46.42	100	0	Peak
5825	83.49	83.43	/	/	34.8	11.68	46.42	100	0	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	91.87	91.51	/	/	35.1	11.68	46.42	100	320	Peak
5825	83.07	82.71	/	/	35.1	11.68	46.42	100	320	Average

REMARKS:

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

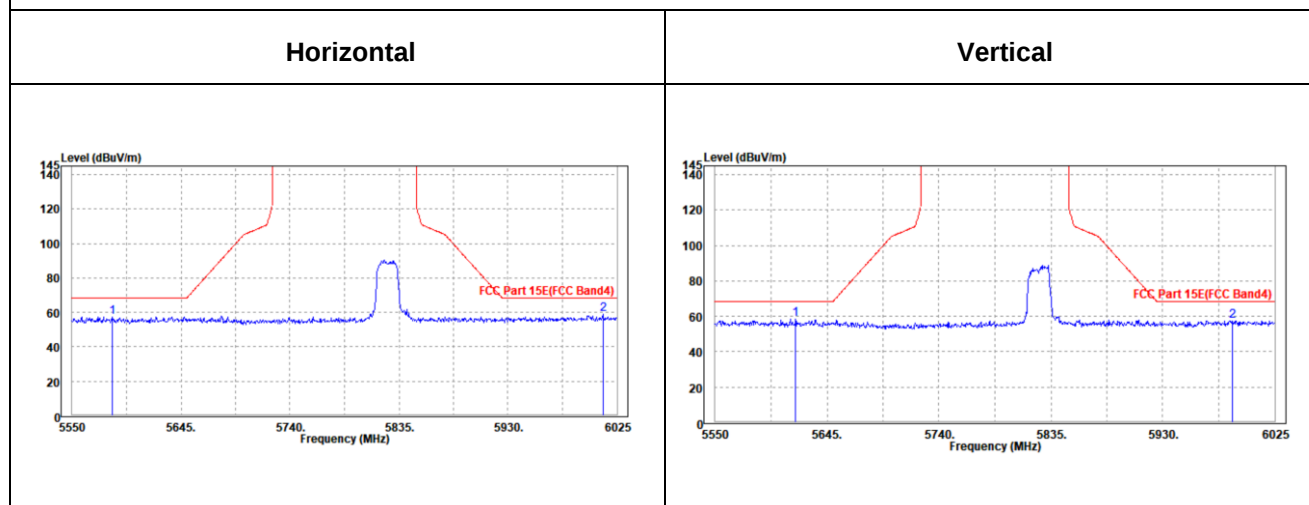


Oobe Data

802.11n (20MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5585.15	57.51	58.1	68.2	-10.69	34.3	11.59	46.48	100	360	Peak
6012.65	58.84	58.32	68.2	-9.36	35.13	11.77	46.38	100	360	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
5618.4	58.57	58.57	68.2	-9.63	34.88	11.6	46.48	100	0	Peak
5989.37 5	57.59	57.24	68.2	-10.61	34.98	11.75	46.38	100	0	Peak

CH 165





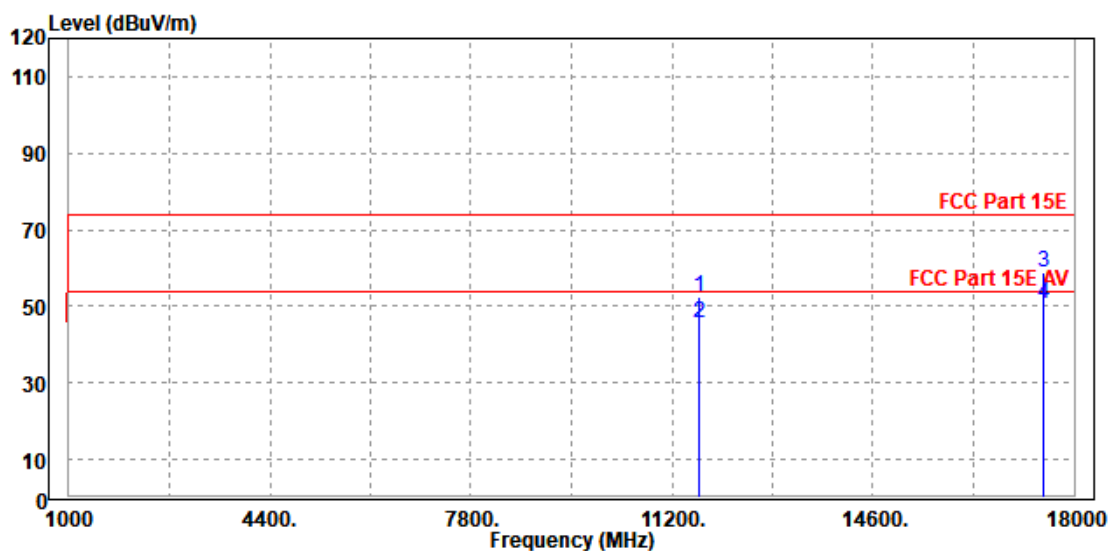
802.11n20

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

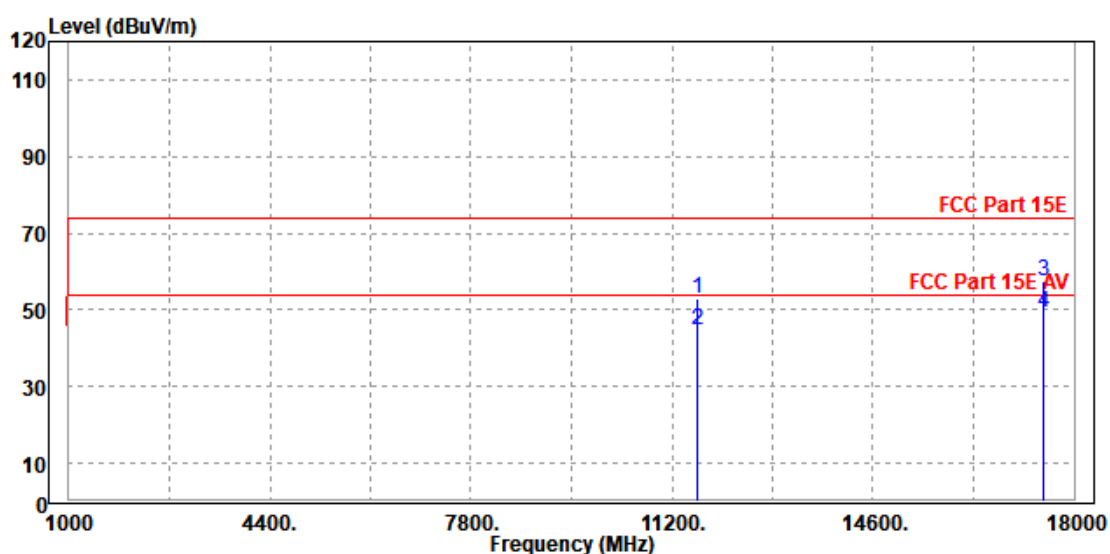
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11650.000	52.68	43.87	74.00	-21.32	8.81	Peak	Horizontal
2	11650.000	45.43	36.62	54.00	-8.57	8.81	Average	Horizontal
3	PK17473.000	58.70	41.79	74.00	-15.30	16.91	Peak	Horizontal
4	PP17473.000	50.70	33.79	54.00	-3.30	16.91	Average	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11642.000	52.93	44.92	74.00	-21.07	8.01	Peak	Vertical
2	11642.000	44.50	36.49	54.00	-9.50	8.01	Average	Vertical
3	PK17475.000	57.48	41.32	74.00	-16.52	16.16	Peak	Vertical
4	PP17475.000	49.28	33.12	54.00	-4.72	16.16	Average	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5755MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



Test Report No.: W7L-241112W001RF03

LEFT

30 MHz – 1GHz data:

Band 2

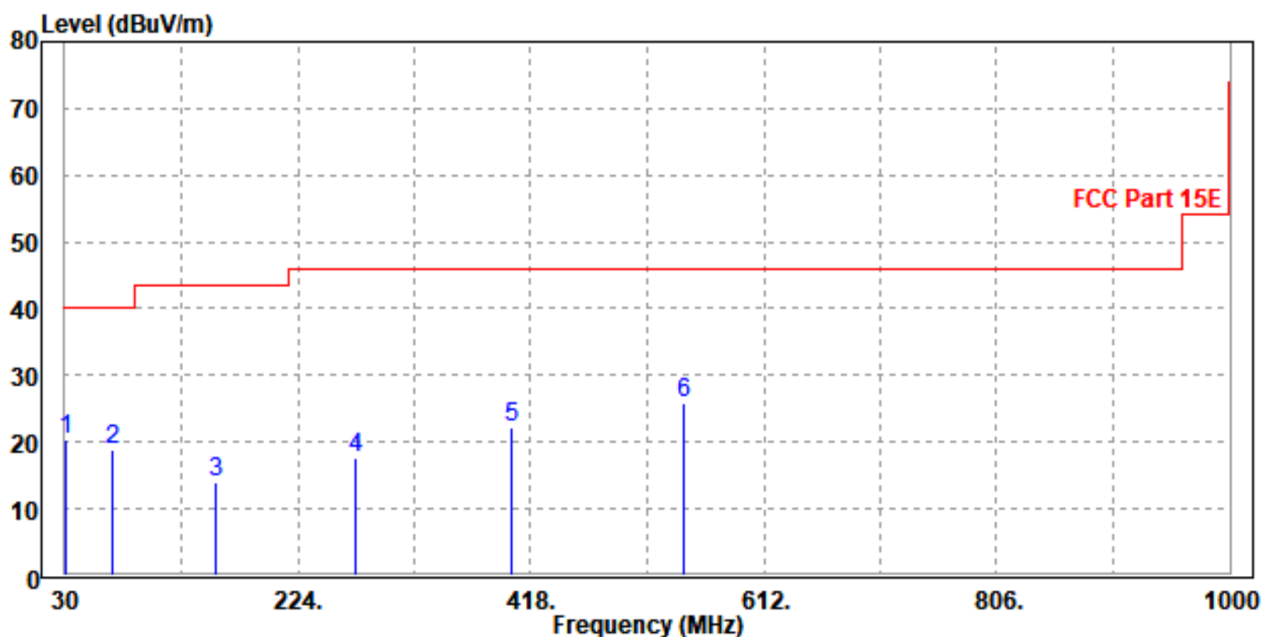
802.11n (20MHz):

CHANNEL	TX Channel 64	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
30.97	20.34	33.02	40	-19.66	24.61	0.14	37.43	100	0	Peak
69.77	18.74	42.38	40	-21.26	13.3	0.38	37.32	100	0	Peak
155.13	14.03	33.04	43.5	-29.47	16.91	0.79	36.71	100	0	Peak
272.5	17.68	33.99	46	-28.32	19.05	1.23	36.59	100	0	Peak
401.51	22.05	33.86	46	-23.95	23.29	1.57	36.67	100	0	Peak
546.04	25.76	33.66	46	-20.24	27.18	2.07	37.15	100	0	Peak

REMARKS:

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



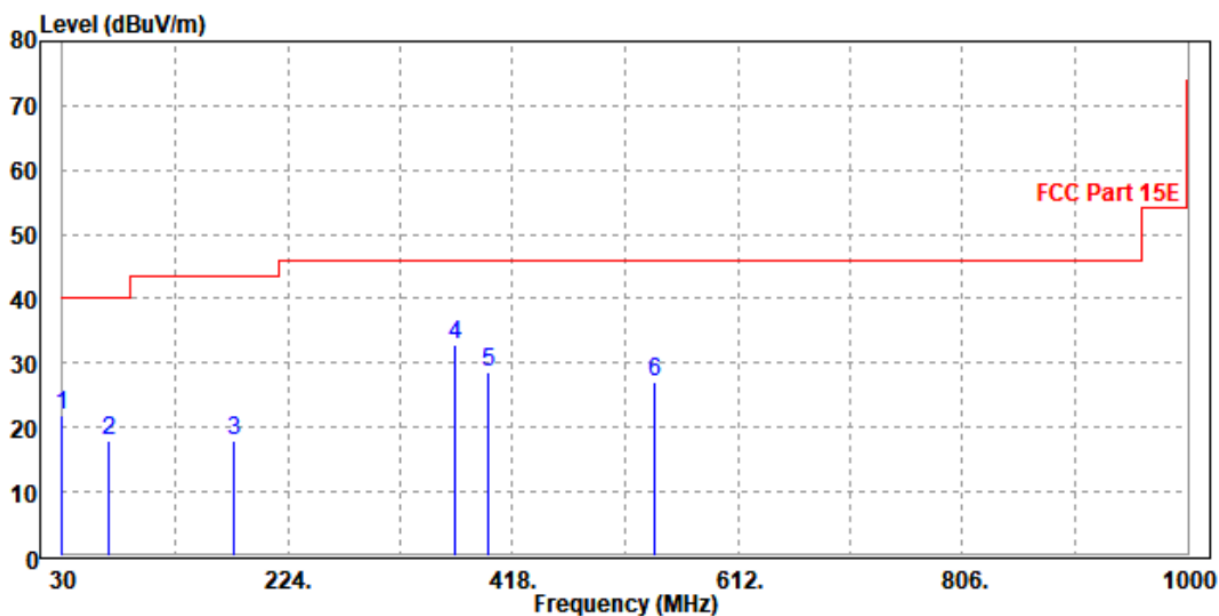


CHANNEL	Channel 64	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

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
30	21.84	34.15	40	-18.16	25	0.13	37.44	100	360	Peak
69.77	17.82	41.46	40	-22.18	13.3	0.38	37.32	100	360	Peak
177.44	17.89	37.78	43.5	-25.61	15.9	0.84	36.63	100	360	Peak
367.56	32.78	46.09	46	-13.22	21.85	1.48	36.64	100	360	Peak
396.66	28.6	40.58	46	-17.4	23.13	1.55	36.66	100	360	Peak
540.22	27.01	35.09	46	-18.99	27.01	2.06	37.15	100	360	Peak

REMARKS:

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





Test Report No.: W7L-241112W001RF03

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	53.45	54.67	74	-20.55	34.2	11.17	46.59	100	335	Peak
5150	46.89	48.11	54	-7.11	34.2	11.17	46.59	100	335	Average
5180	86.39	87.52	/	/	34.26	11.2	46.59	100	335	Peak
5180	79.07	80.2	/	/	34.26	11.2	46.59	100	335	Average
5350	55.08	55.93	74	-18.92	34.3	11.39	46.54	100	335	Peak
5350	46.25	47.1	54	-7.75	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.56	54.98	74	-20.44	34	11.17	46.59	100	280	Peak
5150	46.64	48.06	54	-7.36	34	11.17	46.59	100	280	Average
5180	84.84	86.29	/	/	33.94	11.2	46.59	100	280	Peak
5180	78.07	79.52	/	/	33.94	11.2	46.59	100	280	Average
5350	52.85	53.2	74	-21.15	34.8	11.39	46.54	100	280	Peak
5350	47.66	48.01	54	-6.34	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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	52.6	53.82	74	-21.4	34.2	11.17	46.59	100	335	Peak
5150	46.81	48.03	54	-7.19	34.2	11.17	46.59	100	335	Average
5200	87.21	88.27	/	/	34.3	11.22	46.58	100	335	Peak
5200	80.3	81.36	/	/	34.3	11.22	46.58	100	335	Average
5350	53.59	54.44	74	-20.41	34.3	11.39	46.54	100	335	Peak
5350	46.57	47.42	54	-7.43	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.5	53.92	74	-21.5	34	11.17	46.59	100	280	Peak
5150	46.91	48.33	54	-7.09	34	11.17	46.59	100	280	Average
5200	84.49	85.95	/	/	33.9	11.22	46.58	100	280	Peak
5200	78.05	79.51	/	/	33.9	11.22	46.58	100	280	Average
5350	51.98	52.33	74	-22.02	34.8	11.39	46.54	100	280	Peak
5350	47.32	47.67	54	-6.68	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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	52.42	53.64	74	-21.58	34.2	11.17	46.59	100	335	Peak
5150	47.64	48.86	54	-6.36	34.2	11.17	46.59	100	335	Average
5240	86.23	87.07	/	/	34.46	11.27	46.57	100	335	Peak
5240	79.92	80.76	/	/	34.46	11.27	46.57	100	335	Average
5350	54.13	54.98	74	-19.87	34.3	11.39	46.54	100	335	Peak
5350	46.82	47.67	54	-7.18	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.97	54.39	74	-21.03	34	11.17	46.59	100	280	Peak
5150	46.54	47.96	54	-7.46	34	11.17	46.59	100	280	Average
5240	84.11	85.43	/	/	33.98	11.27	46.57	100	280	Peak
5240	77.26	78.58	/	/	33.98	11.27	46.57	100	280	Average
5350	53.06	53.41	74	-20.94	34.8	11.39	46.54	100	280	Peak
5350	47.4	47.75	54	-6.6	34.8	11.39	46.54	100	280	Average

REMARKS:

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



802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	54.26	55.48	74	-19.74	34.2	11.17	46.59	100	335	Peak
5150	47.5	48.72	54	-6.5	34.2	11.17	46.59	100	335	Average
5180	87.29	88.42	/	/	34.26	11.2	46.59	100	335	Peak
5180	78.93	80.06	/	/	34.26	11.2	46.59	100	335	Average
5350	53.1	53.95	74	-20.9	34.3	11.39	46.54	100	335	Peak
5350	46.2	47.05	54	-7.8	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.15	53.57	74	-21.85	34	11.17	46.59	100	280	Peak
5150	46.6	48.02	54	-7.4	34	11.17	46.59	100	280	Average
5180	84.64	86.09	/	/	33.94	11.2	46.59	100	280	Peak
5180	77.03	78.48	/	/	33.94	11.2	46.59	100	280	Average
5350	52.84	53.19	74	-21.16	34.8	11.39	46.54	100	280	Peak
5350	47.08	47.43	54	-6.92	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.69	54.91	74	-20.31	34.2	11.17	46.59	100	335	Peak
5150	47.02	48.24	54	-6.98	34.2	11.17	46.59	100	335	Average
5200	87.23	88.29	/	/	34.3	11.22	46.58	100	335	Peak
5200	79.1	80.16	/	/	34.3	11.22	46.58	100	335	Average
5350	53.1	53.95	74	-20.9	34.3	11.39	46.54	100	335	Peak
5350	47.16	48.01	54	-6.84	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.14	53.56	74	-21.86	34	11.17	46.59	100	280	Peak
5150	46.98	48.4	54	-7.02	34	11.17	46.59	100	280	Average
5200	83.81	85.27	/	/	33.9	11.22	46.58	100	280	Peak
5200	77.17	78.63	/	/	33.9	11.22	46.58	100	280	Average
5350	53.14	53.49	74	-20.86	34.8	11.39	46.54	100	280	Peak
5350	47.23	47.58	54	-6.77	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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	51.96	53.18	74	-22.04	34.2	11.17	46.59	100	335	Peak
5150	46.89	48.11	54	-7.11	34.2	11.17	46.59	100	335	Average
5240	87.83	88.67	/	/	34.46	11.27	46.57	100	335	Peak
5240	80.11	80.95	/	/	34.46	11.27	46.57	100	335	Average
5350	53.24	54.09	74	-20.76	34.3	11.39	46.54	100	335	Peak
5350	47.42	48.27	54	-6.58	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.86	53.28	74	-22.14	34	11.17	46.59	100	280	Peak
5150	46.47	47.89	54	-7.53	34	11.17	46.59	100	280	Average
5240	83.85	85.17	/	/	33.98	11.27	46.57	100	280	Peak
5240	76.87	78.19	/	/	33.98	11.27	46.57	100	280	Average
5350	53.78	54.13	74	-20.22	34.8	11.39	46.54	100	280	Peak
5350	47.33	47.68	54	-6.67	34.8	11.39	46.54	100	280	Average

REMARKS:

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



Test Report No.: W7L-241112W001RF03

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	52.94	54.16	74	-21.06	34.2	11.17	46.59	100	335	Peak
5150	47.13	48.35	54	-6.87	34.2	11.17	46.59	100	335	Average
5260	87.31	88.13	/	/	34.46	11.29	46.57	100	335	Peak
5260	79.55	80.37	/	/	34.46	11.29	46.57	100	335	Average
5350	53.86	54.71	74	-20.14	34.3	11.39	46.54	100	335	Peak
5350	46.78	47.63	54	-7.22	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.22	53.64	74	-21.78	34	11.17	46.59	100	280	Peak
5150	46.43	47.85	54	-7.57	34	11.17	46.59	100	280	Average
5260	84.91	86.07	/	/	34.12	11.29	46.57	100	280	Peak
5260	77.22	78.38	/	/	34.12	11.29	46.57	100	280	Average
5350	52.92	53.27	74	-21.08	34.8	11.39	46.54	100	280	Peak
5350	47.3	47.65	54	-6.7	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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Test Report No.: W7L-241112W001RF03

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.07	54.29	74	-20.93	34.2	11.17	46.59	100	335	Peak
5150	47.34	48.56	54	-6.66	34.2	11.17	46.59	100	335	Average
5300	87.67	88.59	/	/	34.3	11.34	46.56	100	335	Peak
5300	79.5	80.42	/	/	34.3	11.34	46.56	100	335	Average
5350	53.33	54.18	74	-20.67	34.3	11.39	46.54	100	335	Peak
5350	46.82	47.67	54	-7.18	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.61	54.03	74	-21.39	34	11.17	46.59	100	280	Peak
5150	47.02	48.44	54	-6.98	34	11.17	46.59	100	280	Average
5300	85.43	86.05	/	/	34.6	11.34	46.56	100	280	Peak
5300	77.87	78.49	/	/	34.6	11.34	46.56	100	280	Average
5350	53.99	54.34	74	-20.01	34.8	11.39	46.54	100	280	Peak
5350	47.5	47.85	54	-6.5	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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VERITAS**

Test Report No.: W7L-241112W001RF03

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	51.91	53.13	74	-22.09	34.2	11.17	46.59	100	335	Peak
5150	46.94	48.16	54	-7.06	34.2	11.17	46.59	100	335	Average
5320	87.87	88.76	/	/	34.3	11.36	46.55	100	335	Peak
5320	80.86	81.75	/	/	34.3	11.36	46.55	100	335	Average
5350	53.41	54.26	74	-20.59	34.3	11.39	46.54	100	335	Peak
5350	47.5	48.35	54	-6.5	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.06	53.48	74	-21.94	34	11.17	46.59	100	280	Peak
5150	46.25	47.67	54	-7.75	34	11.17	46.59	100	280	Average
5320	86.06	86.57	/	/	34.68	11.36	46.55	100	280	Peak
5320	79.52	80.03	/	/	34.68	11.36	46.55	100	280	Average
5350	53.72	54.07	74	-20.28	34.8	11.39	46.54	100	280	Peak
5350	47.51	47.86	54	-6.49	34.8	11.39	46.54	100	280	Average

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	52.93	54.15	74	-21.07	34.2	11.17	46.59	100	335	Peak
5150	46.99	48.21	54	-7.01	34.2	11.17	46.59	100	335	Average
5260	89.71	90.53	/	/	34.46	11.29	46.57	100	335	Peak
5260	83.13	83.95	/	/	34.46	11.29	46.57	100	335	Average
5350	52.42	53.27	74	-21.58	34.3	11.39	46.54	100	335	Peak
5350	46.64	47.49	54	-7.36	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.06	53.48	74	-21.94	34	11.17	46.59	100	280	Peak
5150	46.43	47.85	54	-7.57	34	11.17	46.59	100	280	Average
5260	86.26	87.42	/	/	34.12	11.29	46.57	100	280	Peak
5260	80.42	81.58	/	/	34.12	11.29	46.57	100	280	Average
5350	52.83	53.18	74	-21.17	34.8	11.39	46.54	100	280	Peak
5350	46.93	47.28	54	-7.07	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	52.95	54.17	74	-21.05	34.2	11.17	46.59	100	335	Peak
5150	46.94	48.16	54	-7.06	34.2	11.17	46.59	100	335	Average
5300	88.11	89.03	/	/	34.3	11.34	46.56	100	335	Peak
5300	82.69	83.61	/	/	34.3	11.34	46.56	100	335	Average
5350	52.77	53.62	74	-21.23	34.3	11.39	46.54	100	335	Peak
5350	46.76	47.61	54	-7.24	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	51.76	53.18	74	-22.24	34	11.17	46.59	100	280	Peak
5150	46.44	47.86	54	-7.56	34	11.17	46.59	100	280	Average
5300	85.93	86.55	/	/	34.6	11.34	46.56	100	280	Peak
5300	78.51	79.13	/	/	34.6	11.34	46.56	100	280	Average
5350	52.14	52.49	74	-21.86	34.8	11.39	46.54	100	280	Peak
5350	46.89	47.24	54	-7.11	34.8	11.39	46.54	100	280	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.39	54.61	74	-20.61	34.2	11.17	46.59	100	335	Peak
5150	47.91	49.13	54	-6.09	34.2	11.17	46.59	100	335	Average
5320	89.53	90.42	/	/	34.3	11.36	46.55	100	335	Peak
5320	81.99	82.88	/	/	34.3	11.36	46.55	100	335	Average
5350	52.52	53.37	74	-21.48	34.3	11.39	46.54	100	335	Peak
5350	48.02	48.87	54	-5.98	34.3	11.39	46.54	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5150	53.26	54.68	74	-20.74	34	11.17	46.59	100	280	Peak
5150	47.41	48.83	54	-6.59	34	11.17	46.59	100	280	Average
5320	87.73	88.24	/	/	34.68	11.36	46.55	100	280	Peak
5320	79.21	79.72	/	/	34.68	11.36	46.55	100	280	Average
5350	52.2	52.55	74	-21.8	34.8	11.39	46.54	100	280	Peak
5350	48.73	49.08	54	-5.27	34.8	11.39	46.54	100	280	Average

REMARKS:

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



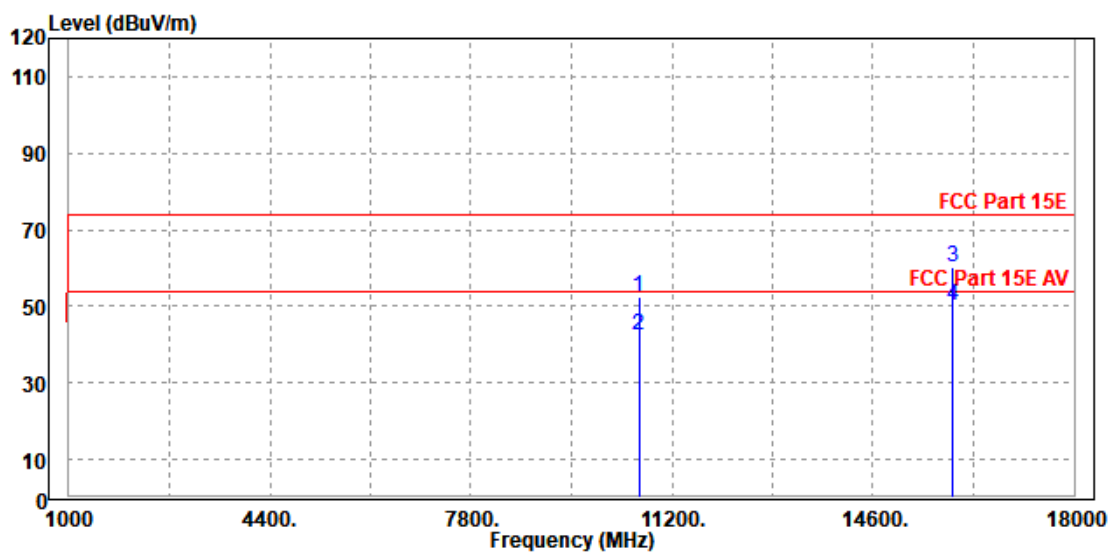
802.11n20

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

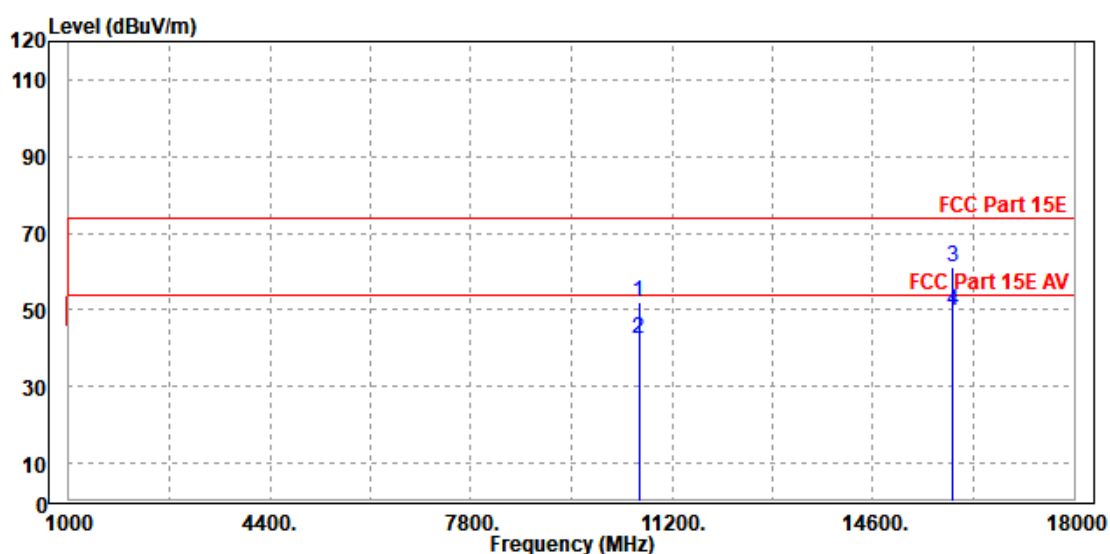
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	10639.000	52.28	44.96	74.00	-21.72	7.32	Peak	Horizontal
2	10639.000	42.45	35.13	54.00	-11.55	7.32	Average	Horizontal
3	PK15960.000	60.39	41.32	74.00	-13.61	19.07	Peak	Horizontal
4	PP15960.000	50.09	31.02	54.00	-3.91	19.07	Average	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	10639.000	51.81	44.69	74.00	-22.19	7.12	Peak	Vertical
2	10639.000	42.54	35.42	54.00	-11.46	7.12	Average	Vertical
3	PK15960.000	61.31	42.06	74.00	-12.69	19.25	Peak	Vertical
4	PP15960.000	49.66	30.41	54.00	-4.34	19.25	Average	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5290MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



Test Report No.: W7L-241112W001RF03

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	52.94	53.35	74	-21.06	34.58	11.52	46.51	100	140	Peak
5460	46.92	47.33	54	-7.08	34.58	11.52	46.51	100	140	Average
5470	52.94	53.36	68.2	-15.26	34.56	11.53	46.51	100	140	Peak
5500	91.59	92.04	/	/	34.5	11.56	46.51	100	140	Peak
5500	85.06	85.51	/	/	34.5	11.56	46.51	100	140	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	52.95	53.66	74	-21.05	34.28	11.52	46.51	100	260	Peak
5460	46.81	47.52	54	-7.19	34.28	11.52	46.51	100	260	Average
5470	54.13	54.85	68.2	-14.07	34.26	11.53	46.51	100	260	Peak
5500	89.62	90.37	/	/	34.2	11.56	46.51	100	260	Peak
5500	82.57	83.32	/	/	34.2	11.56	46.51	100	260	Average

REMARKS:

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



**BUREAU
VERITAS**

Test Report No.: W7L-241112W001RF03

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	51.07	51.48	74	-22.93	34.58	11.52	46.51	100	350	Peak
5460	47.03	47.44	54	-6.97	34.58	11.52	46.51	100	350	Average
5470	54.37	54.79	68.2	-13.83	34.56	11.53	46.51	100	350	Peak
5580	92.61	93.21	/	/	34.3	11.59	46.49	100	350	Peak
5580	85.68	86.28	/	/	34.3	11.59	46.49	100	350	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	55.08	55.79	74	-18.92	34.28	11.52	46.51	100	100	Peak
5460	46.73	47.44	54	-7.27	34.28	11.52	46.51	100	100	Average
5470	52.18	52.9	68.2	-16.02	34.26	11.53	46.51	100	100	Peak
5580	92.28	92.24	/	/	34.94	11.59	46.49	100	100	Peak
5580	85.12	85.08	/	/	34.94	11.59	46.49	100	100	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	93.41	93.63	74	19.41	34.6	11.64	46.46	100	350	Peak
5700	86.59	86.81	/	/	34.6	11.64	46.46	100	350	Average
5725	54.91	55.16	68.2	-13.29	34.55	11.65	46.45	100	350	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	92.32	92.84	74	18.32	34.3	11.64	46.46	100	100	Peak
5700	84.94	85.46	/	/	34.3	11.64	46.46	100	100	Average
5725	53.94	54.41	68.2	-14.26	34.34	11.64	46.45	100	100	Peak

REMARKS:

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



CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.73	54.15	68.2	-14.47	34.56	11.53	46.51	100	355	Peak
5720	94.66	94.91	/	/	34.56	11.64	46.45	100	355	Peak
5720	87.34	87.59	/	/	34.56	11.64	46.45	100	355	Average
5850	54.12	53.95	68.2	-14.08	34.9	11.69	46.42	100	355	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.27	53.68	68.2	-14.93	34.38	11.65	46.44	100	100	Peak
5720	91.8	92.27	/	/	34.34	11.64	46.45	100	100	Peak
5720	85.27	85.74	/	/	34.34	11.64	46.45	100	100	Average
5850	54.19	53.62	68.2	-14.01	35.3	11.69	46.42	100	100	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.



Test Report No.: W7L-241112W001RF03

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.75	54.16	74	-20.25	34.58	11.52	46.51	100	170	Peak
5460	46.62	47.03	54	-7.38	34.58	11.52	46.51	100	170	Average
5470	53.23	53.65	68.2	-14.97	34.56	11.53	46.51	100	170	Peak
5500	89.6	90.05	/	/	34.5	11.56	46.51	100	170	Peak
5500	82.71	83.16	/	/	34.5	11.56	46.51	100	170	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	52.93	53.64	74	-21.07	34.28	11.52	46.51	100	100	Peak
5460	46.95	47.66	54	-7.05	34.28	11.52	46.51	100	100	Average
5470	52.85	53.57	68.2	-15.35	34.26	11.53	46.51	100	100	Peak
5500	96.67	97.42	/	/	34.2	11.56	46.51	100	100	Peak
5500	80.31	81.06	/	/	34.2	11.56	46.51	100	100	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.51	53.92	74	-20.49	34.58	11.52	46.51	100	170	Peak
5460	47.12	47.53	54	-6.88	34.58	11.52	46.51	100	170	Average
5470	53.26	53.68	68.2	-14.94	34.56	11.53	46.51	100	170	Peak
5580	92.38	92.98	/	/	34.3	11.59	46.49	100	170	Peak
5580	84.08	84.68	/	/	34.3	11.59	46.49	100	170	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5460	53.15	53.86	74	-20.85	34.28	11.52	46.51	100	100	Peak
5460	47.13	47.84	54	-6.87	34.28	11.52	46.51	100	100	Average
5470	53.51	54.23	68.2	-14.69	34.26	11.53	46.51	100	100	Peak
5580	90.46	90.42	/	/	34.94	11.59	46.49	100	100	Peak
5580	83.32	83.28	/	/	34.94	11.59	46.49	100	100	Average

REMARKS:

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



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	93.45	93.67	/	/	34.6	11.64	46.46	100	170	Peak
5700	86.88	87.1	/	/	34.6	11.64	46.46	100	170	Average
5725	53.58	53.83	68.2	-14.62	34.55	11.65	46.45	100	170	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5700	91.43	91.95	/	/	34.3	11.64	46.46	100	100	Peak
5700	83.79	84.31	/	/	34.3	11.64	46.46	100	100	Average
5725	52.68	53.13	68.2	-15.52	34.35	11.65	46.45	100	100	Peak

REMARKS:

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



CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.26	53.68	68.2	-14.94	34.56	11.53	46.51	100	170	Peak
5720	94.5	94.75	/	/	34.56	11.64	46.45	100	170	Peak
5720	87.84	88.09	/	/	34.56	11.64	46.45	100	170	Average
5850	53.37	53.2	68.2	-14.83	34.9	11.69	46.42	100	170	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5470	53.05	53.77	68.2	-15.15	34.26	11.53	46.51	100	100	Peak
5720	91.38	91.85	/	/	34.34	11.64	46.45	100	100	Peak
5720	84.35	84.82	/	/	34.34	11.64	46.45	100	100	Average
5850	54.76	54.19	68.2	-13.44	35.3	11.69	46.42	100	100	Peak

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5720MHz: Fundamental frequency.
3. #: Out of restricted band.



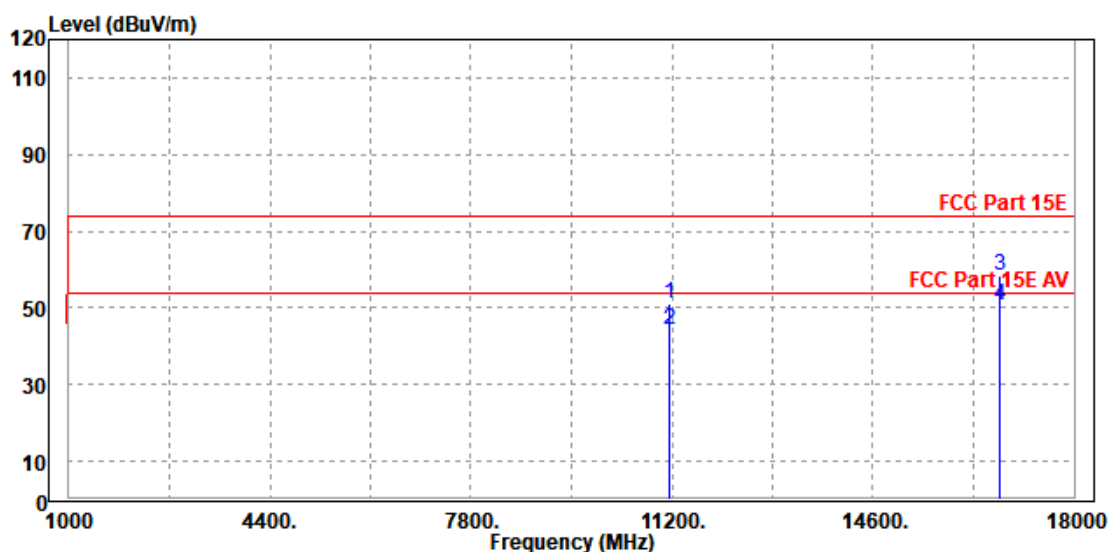
802.11n20

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

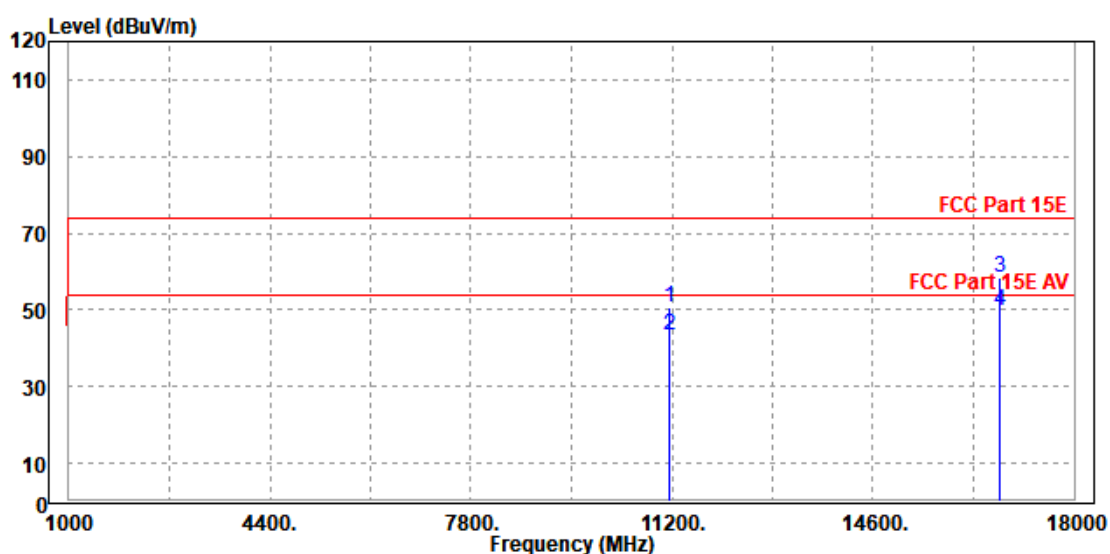
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11166.000	51.02	43.92	74.00	-22.98	7.10	Peak	Horizontal
2	11166.000	44.32	37.22	54.00	-9.68	7.10	Average	Horizontal
3	PK16740.000	58.47	40.71	74.00	-15.53	17.76	Peak	Horizontal
4	PP16740.000	50.44	32.68	54.00	-3.56	17.76	Average	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11160.000	50.78	43.44	74.00	-23.22	7.34	Peak	Vertical
2	11160.000	43.47	36.13	54.00	-10.53	7.34	Average	Vertical
3	PK16742.000	58.52	40.94	74.00	-15.48	17.58	Peak	Vertical
4	PP16742.000	49.89	32.31	54.00	-4.11	17.58	Average	Vertical



REMARKS:

- Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
- 5530MHz: Fundamental frequency.
- For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



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	95.27	95.55	/	/	34.51	11.65	46.44	100	335	Peak
5745	89.42	89.7	/	/	34.51	11.65	46.44	100	335	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	92.98	93.38	/	/	34.39	11.65	46.44	100	230	Peak
5745	87.29	87.69	/	/	34.39	11.65	46.44	100	230	Average

REMARKS:

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

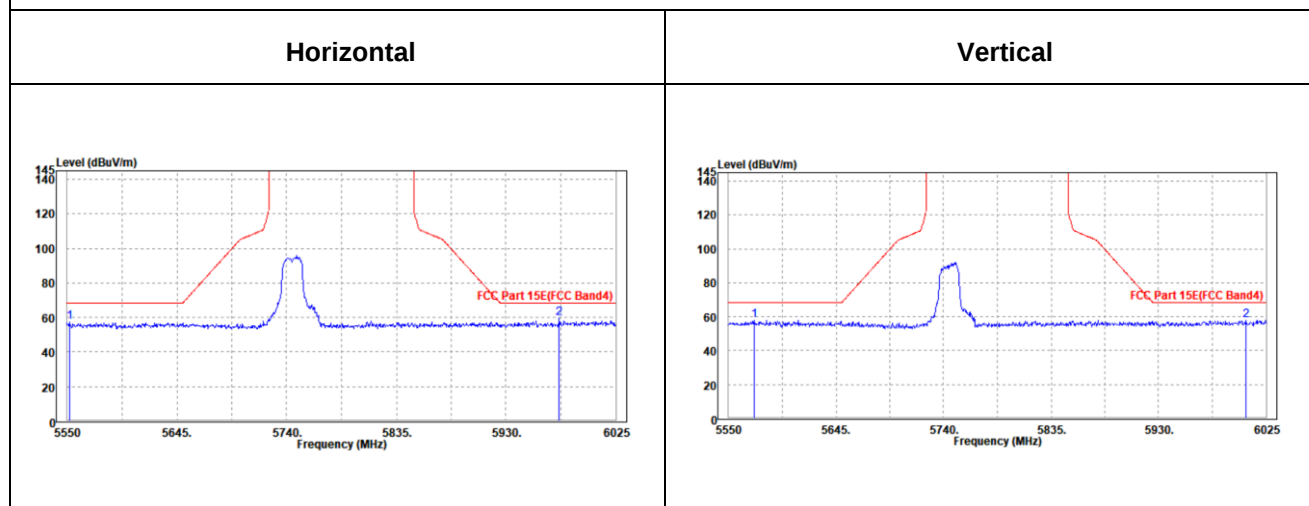


Oobe Data

802.11a

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5551.9	57.25	57.86	68.2	-10.95	34.3	11.58	46.49	100	360	Peak
5976.07 5	59.45	59	68.2	-8.75	35.1	11.74	46.39	100	360	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
5572.8	57.99	58.01	68.2	-10.21	34.88	11.59	46.49	100	0	Peak
6007.42 5	57.87	57.43	68.2	-10.33	35.06	11.76	46.38	100	0	Peak

CH 149





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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	95.33	95.45	/	/	34.64	11.67	46.43	100	320	Peak
5785	88.62	88.74	/	/	34.64	11.67	46.43	100	320	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	93.87	93.88	/	/	34.75	11.67	46.43	100	120	Peak
5785	86.94	86.95	/	/	34.75	11.67	46.43	100	120	Average

REMARKS:

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

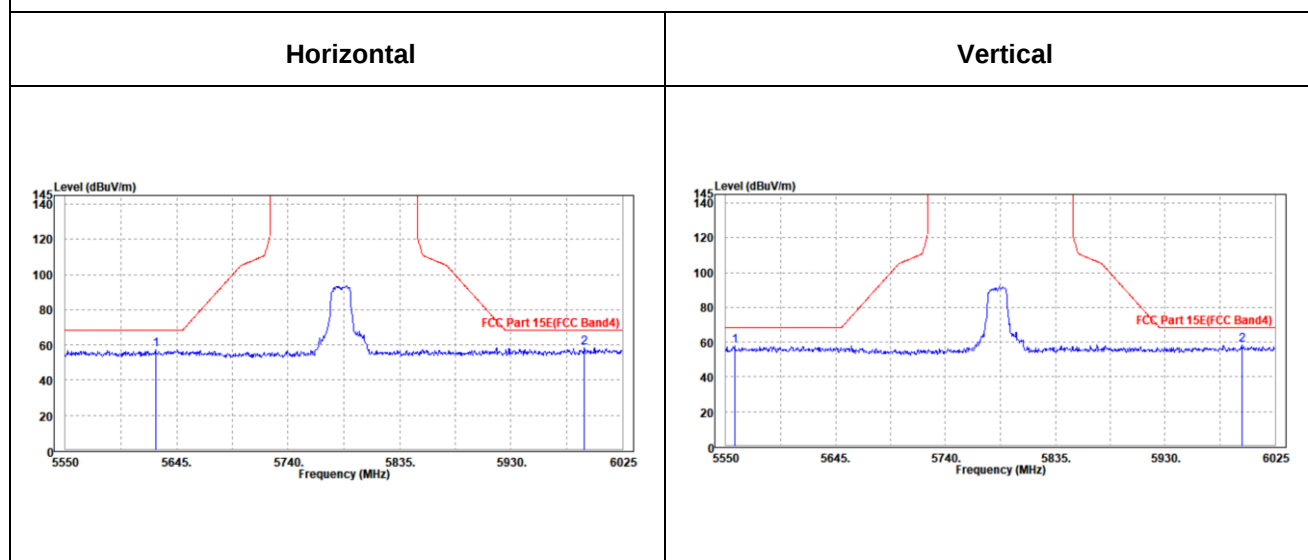


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802.11a

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
5626.95	57.14	57.54	68.2	-11.06	34.46	11.61	46.47	100	0	Peak
5992.7	58.47	58	68.2	-9.73	35.1	11.75	46.38	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5557.6	57.93	58.08	68.2	-10.27	34.76	11.58	46.49	100	360	Peak
5996.5	58.34	57.98	68.2	-9.86	34.99	11.75	46.38	100	360	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	95.71	95.65	/	/	34.8	11.68	46.42	100	320	Peak
5825	89.11	89.05	/	/	34.8	11.68	46.42	100	320	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	93.89	93.53	/	/	35.1	11.68	46.42	100	230	Peak
5825	87.5	87.14	/	/	35.1	11.68	46.42	100	230	Average

REMARKS:

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

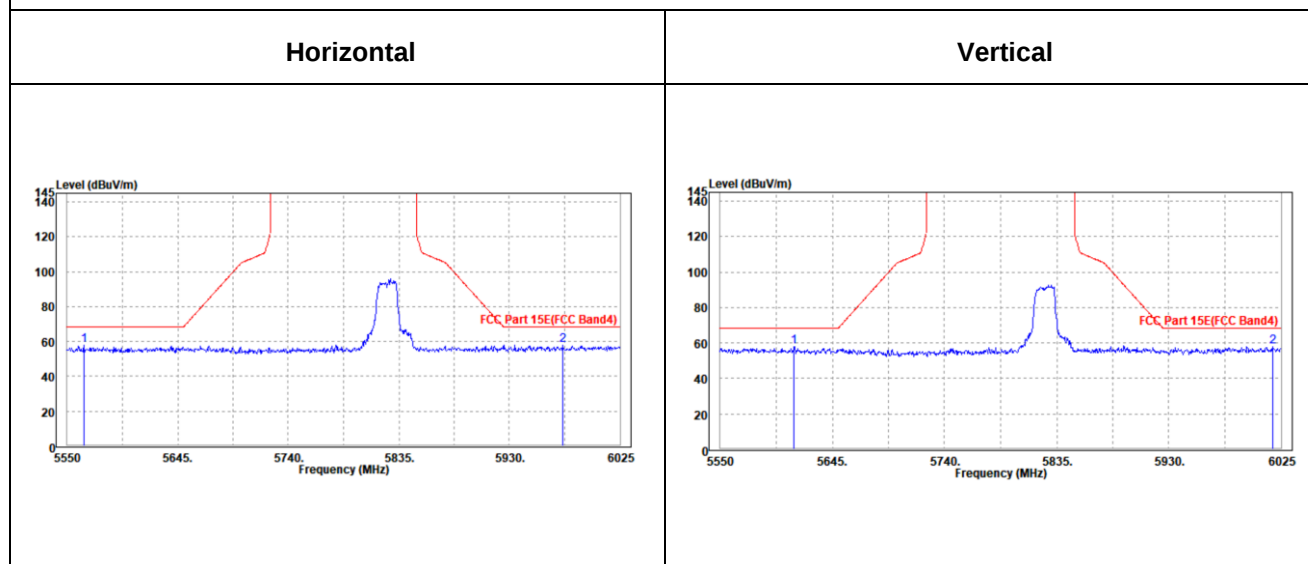


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802.11a

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
5564.25	57.79	58.4	68.2	-10.41	34.3	11.58	46.49	100	360	Peak
5975.6	57.72	57.27	68.2	-10.48	35.1	11.74	46.39	100	360	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
5612.7	57.9	57.83	68.2	-10.3	34.95	11.6	46.48	100	0	Peak
6017.87 5	58.16	57.62	68.2	-10.04	35.14	11.78	46.38	100	0	Peak

CH 165





802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	96.6	96.88	/	/	34.51	11.65	46.44	100	330	Peak
5745	88.8	89.08	/	/	34.51	11.65	46.44	100	330	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5745	93.77	94.17	/	/	34.39	11.65	46.44	100	230	Peak
5745	85.83	86.23	/	/	34.39	11.65	46.44	100	230	Average

REMARKS:

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

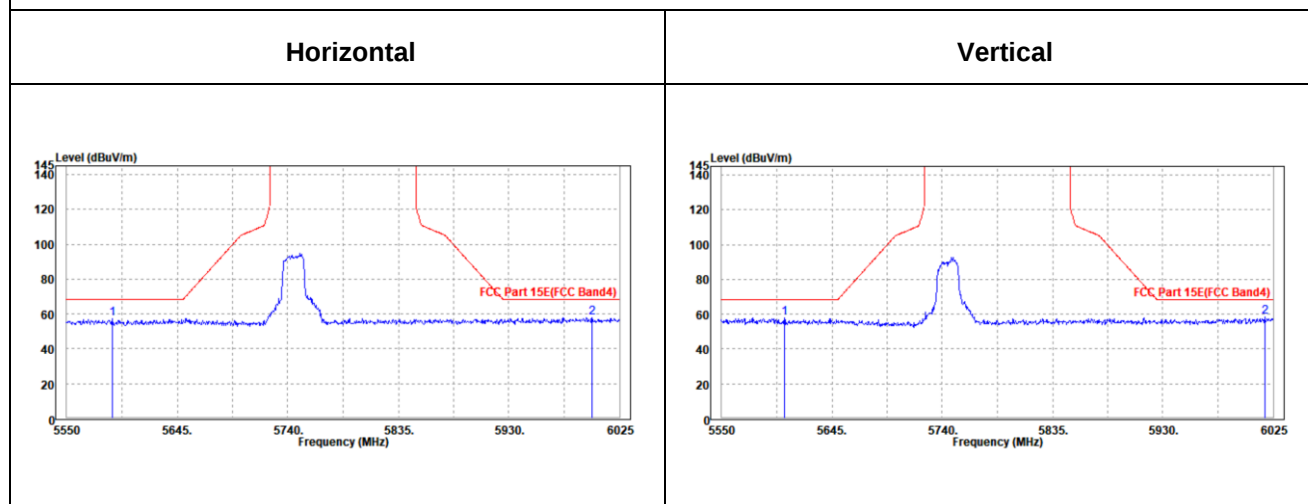


Oobe Data

802.11n (20MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5588.95	57.39	57.98	68.2	-10.81	34.3	11.59	46.48	100	0	Peak
6001.25	58.05	57.58	68.2	-10.15	35.1	11.75	46.38	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5604.15	57.73	57.56	68.2	-10.47	35.05	11.6	46.48	100	360	Peak
6017.87 5	58.29	57.75	68.2	-9.91	35.14	11.78	46.38	100	360	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	95.71	95.83	/	/	34.64	11.67	46.43	100	320	Peak
5785	87.65	87.77	/	/	34.64	11.67	46.43	100	320	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5785	92.7	92.71	/	/	34.75	11.67	46.43	100	120	Peak
5785	86.23	86.24	/	/	34.75	11.67	46.43	100	120	Average

REMARKS:

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

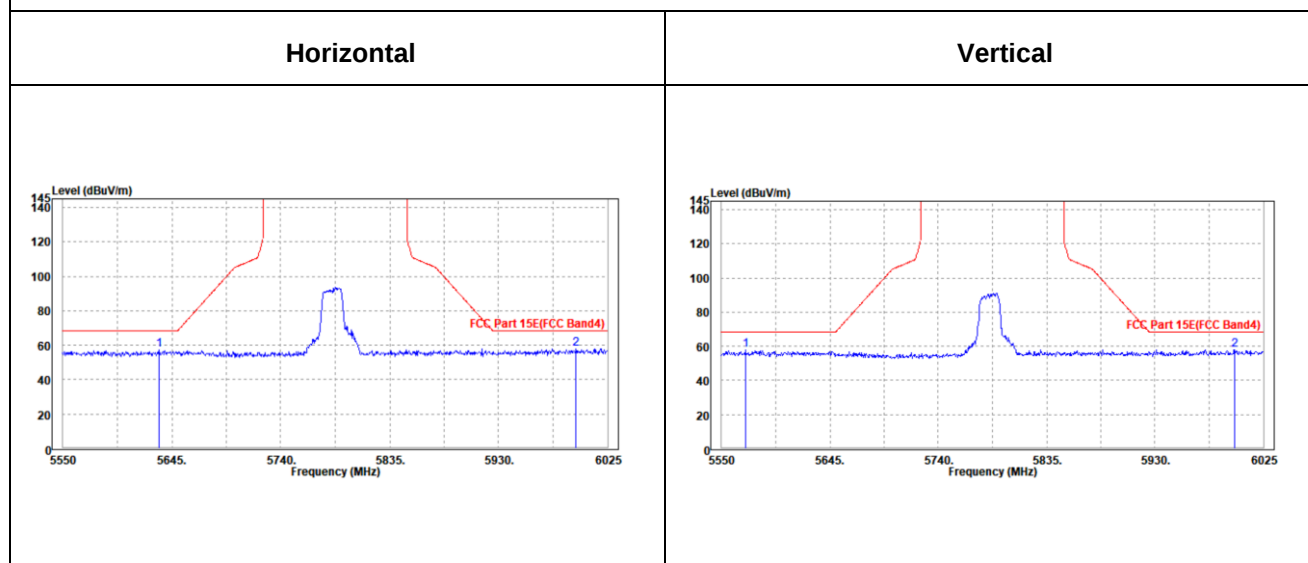


Oobe Data

802.11n (20MHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV /m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5633.6	57.33	57.69	68.2	-10.87	34.5	11.61	46.47	100	0	Peak
5997.45	58.05	57.58	68.2	-10.15	35.1	11.75	46.38	100	0	Peak
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV /m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5570.9	57.9	57.93	68.2	-10.3	34.87	11.59	46.49	100	360	Peak
5999.825	57.97	57.6	68.2	-10.23	35	11.75	46.38	100	360	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	95.83	95.77	/	/	34.8	11.68	46.42	100	330	Peak
5825	87.96	87.9	/	/	34.8	11.68	46.42	100	330	Average
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5825	94.82	94.46	/	/	35.1	11.68	46.42	100	230	Peak
5825	86.2	85.84	/	/	35.1	11.68	46.42	100	230	Average

REMARKS:

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



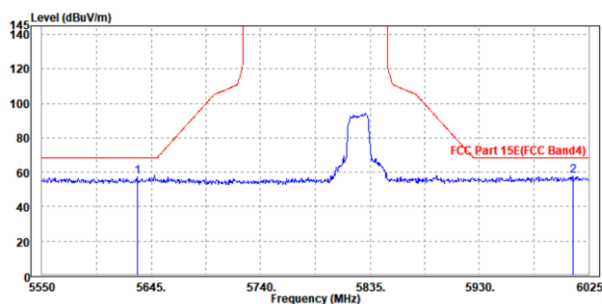
OOBE DATA

802.11n (20MHz)

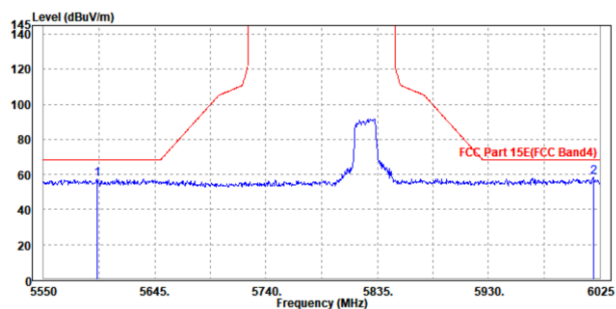
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5632.65	57.11	57.47	68.2	-11.09	34.5	11.61	46.47	100	360	Peak
6011.22	58.04	57.53	68.2	-10.16	35.12	11.77	46.38	100	360	Peak
5										
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	READ LEVEL (dBuV)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA FACTOR (dB /m)	CABLE LOSS (dB)	PREAMP FACTOR (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	REMARK
5595.6	57.39	57.21	68.2	-10.81	35.06	11.6	46.48	100	0	Peak
6019.3	58.7	58.15	68.2	-9.5	35.15	11.78	46.38	100	0	Peak

CH 165

Horizontal



Vertical





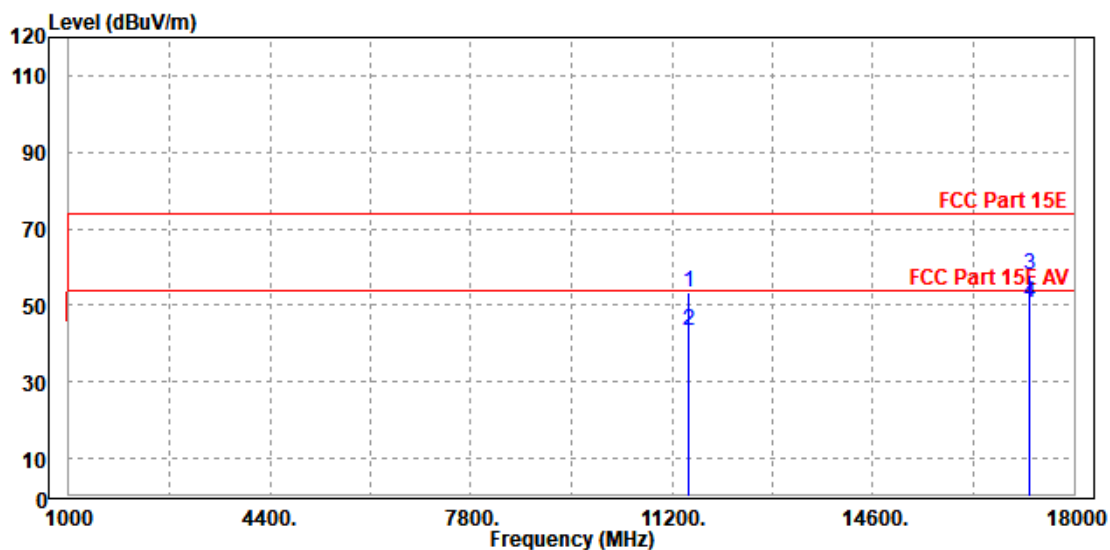
802.11a

Worst case harmonic:

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

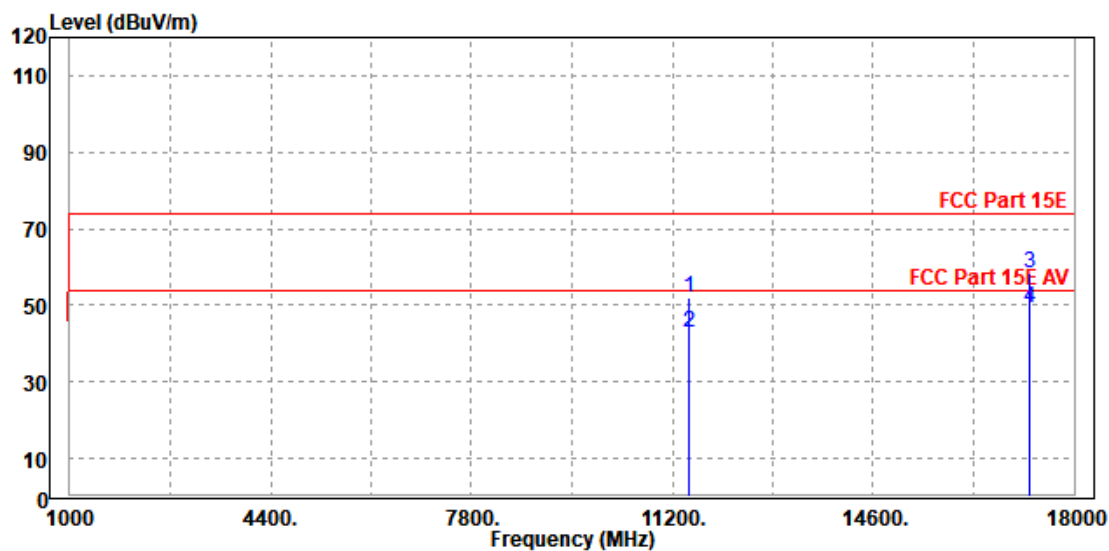
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11490.000	53.36	45.71	74.00	-20.64	7.65	Peak	Horizontal
2	11490.000	43.44	35.79	54.00	-10.56	7.65	Average	Horizontal
3	PK17235.000	58.09	41.23	74.00	-15.91	16.86	Peak	Horizontal
4	PP17235.000	50.52	33.66	54.00	-3.48	16.86	Average	Horizontal





ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m		
1	11489.000	51.81	44.54	74.00	-22.19	7.27	Peak	Vertical
2	11489.000	42.89	35.62	54.00	-11.11	7.27	Average	Vertical
3	PK17235.000	58.18	42.19	74.00	-15.82	15.99	Peak	Vertical
4	PP17235.000	49.15	33.16	54.00	-4.85	15.99	Average	Vertical



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
Margin value = Emission level – Limit value.
2. 5755MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.



3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 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.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 13,24	Feb. 12,25
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Mar. 02,24	Mar. 01,25

NOTE:

1. The test was performed in the CE shielded room.
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.

3.2.3 TEST PROCEDURES

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

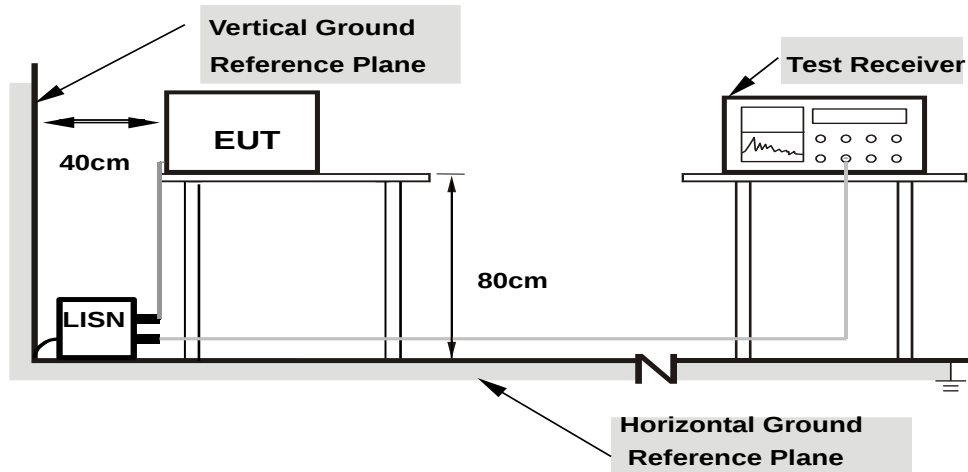
NOTE: All modes of operation were investigated, and the worst-case emissions are reported.



3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

3.2.5 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).

3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.7.



3.2.7 TEST RESULTS

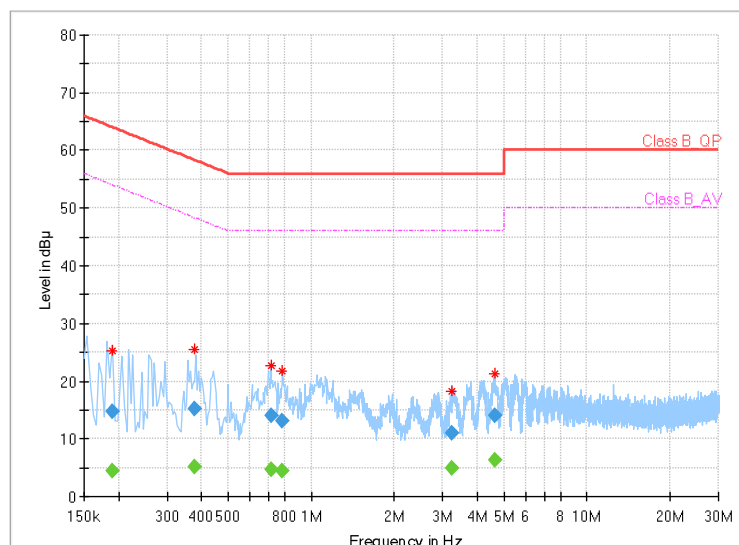
CONDUCTED WORST-CASE DATA:

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	26deg. C, 51%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBUV)	CAverage (dBUV)	Limit (dBUV)	Margin (dB)	Line	Filter	Corr. (dB)
0.191000	---	4.41	53.99	49.58	L1	ON	9.8
0.191000	14.84	---	63.99	49.15	L1	ON	9.8
0.379000	---	5.08	48.30	43.22	L1	ON	9.8
0.379000	15.15	---	58.30	43.15	L1	ON	9.8
0.719000	---	4.65	46.00	41.35	L1	ON	9.8
0.719000	14.00	---	56.00	42.00	L1	ON	9.8
0.787000	---	4.47	46.00	41.53	L1	ON	9.8
0.787000	13.15	---	56.00	42.85	L1	ON	9.8
3.251000	---	4.98	46.00	41.02	L1	ON	9.8
3.251000	11.04	---	56.00	44.96	L1	ON	9.8
4.639000	---	6.22	46.00	39.78	L1	ON	9.7
4.639000	14.08	---	56.00	41.92	L1	ON	9.7

- 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 = Limit value - Emission level
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum



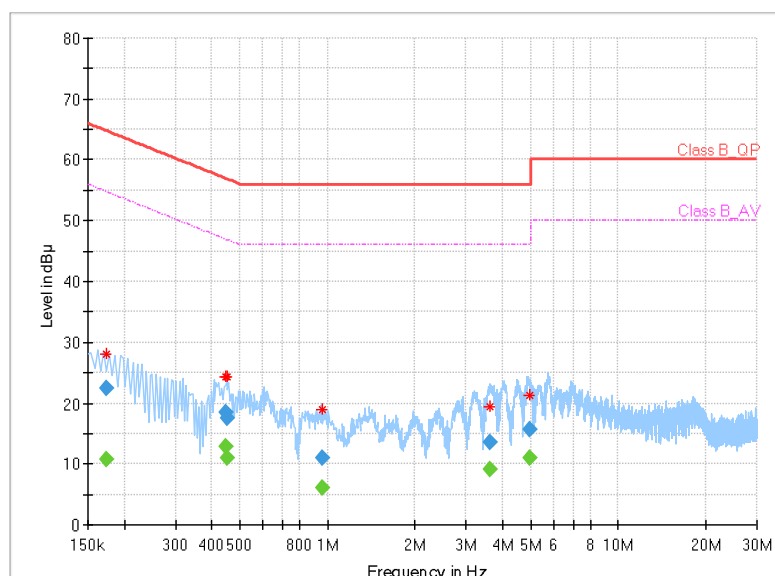


Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	26deg. C, 51%RH
Tested By	Carl Xie		

Frequency (MHz)	QuasiPeak (dBUV)	CAverage (dBUV)	Limit (dBUV)	Margin (dB)	Line	Filter	Corr. (dB)
0.174000	---	10.77	54.77	44.00	N	ON	9.7
0.174000	22.41	---	64.77	42.36	N	ON	9.7
0.448000	18.55	---	56.91	38.36	N	ON	9.6
0.448000	---	12.89	46.91	34.02	N	ON	9.6
0.454000	17.64	---	56.80	39.16	N	ON	9.6
0.454000	---	10.98	46.80	35.82	N	ON	9.6
0.958000	---	6.12	46.00	39.88	N	ON	9.7
0.958000	10.92	---	56.00	45.08	N	ON	9.7
3.626000	---	9.21	46.00	36.79	N	ON	9.7
3.626000	13.61	---	56.00	42.39	N	ON	9.7
4.952000	---	10.88	46.00	35.12	N	ON	9.7
4.952000	15.67	---	56.00	40.33	N	ON	9.7

- 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 = Limit value - Emission level
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

Full Spectrum





3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.3.1 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)

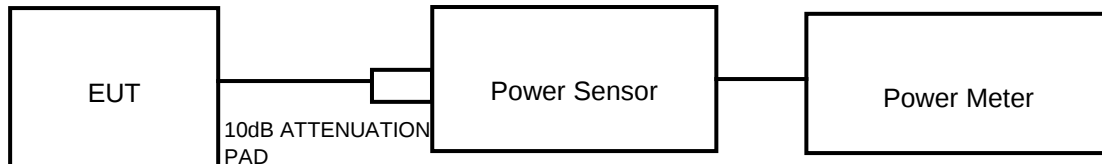
NOTE: Where B is the 26dB emission bandwidth in MHz



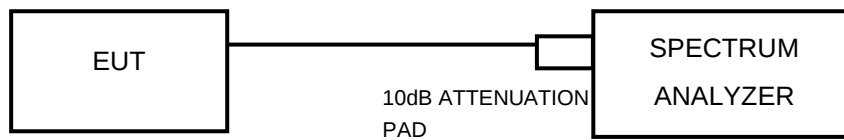
3.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

802.11a, 802.11n/ac (20MHz), 802.11 n/ac (40MHz), 802.11ac (80MHz) TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 13,24	Feb. 12,25
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510523	Feb. 13,24	Feb. 12,25
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.09,24	May.08,25
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 13,24	Feb. 12,25

NOTE:

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



3.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

For 802.11a, 802.11 n/ac (20MHz), 802.11 n/ac (40MHz) , 802.11ac (80MHz)

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



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

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 EUT OPERATING CONDITIONS

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

3.3.7 TEST RESULTS

Please Refer to Appendix Of this test report.

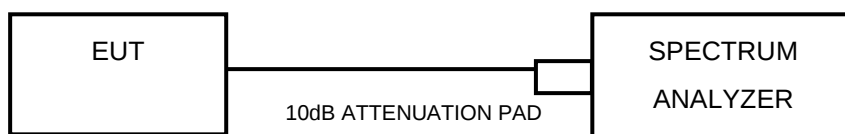


3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.4.1 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

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information about the above instrument.



3.4.4 TEST PROCEDURES

Using method SA-2(Band1/2/3)

- 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

Using method SA-2 (Band4)

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 300 KHz, Set VBW $\geq$ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Add $10 \log(500\text{kHz}/\text{RBW})$ to the test result. $10 \log(500\text{kHz}/300\text{KHZ}) = 2.22\text{dBm}$
- 7) 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).
- 8) Record the max value

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.7.



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3.4.7 TEST RESULTS

Please Refer to Appendix Of this test report.



3.5 AUTOMATICALLY DISCONTINUE TRANSMISSION

3.5.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

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

3.5.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information about the above instrument.

3.5.3 TEST RESULT

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



3.6 ANTENNA REQUIREMENTS

3.6.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmits power, and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

3.6.3 ANTENNA GAIN

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit and PSD limit.



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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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



6 APPENDIX: RLAN RIGHT

EMISSION BANDWIDTH

TEST RESULT

TestMode	Antenna	Freq(MHz)	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	21.520	5168.960	5190.480	---	---
		5220	23.320	5208.000	5231.320	---	---
		5240	22.440	5228.720	5251.160	---	---
		5260	22.040	5248.720	5270.760	---	---
		5300	22.240	5288.320	5310.560	---	---
		5320	22.280	5308.440	5330.720	---	---
		5500	21.480	5489.480	5510.960	---	---
		5580	21.840	5569.000	5590.840	---	---
		5700	21.320	5689.480	5710.800	---	---
		5720	20.960	5709.600	5730.560	---	---
		5720_UNII-2C	15.4	5709.600	5725	---	---
		5720_UNII-3	5.56	5725	5730.560	---	---
11N20SISO	Ant1	5180	22.600	5168.760	5191.360	---	---
		5220	22.680	5208.440	5231.120	---	---
		5240	21.960	5228.960	5250.920	---	---
		5260	22.440	5248.880	5271.320	---	---
		5300	22.280	5288.680	5310.960	---	---
		5320	22.160	5308.960	5331.120	---	---
		5500	22.600	5488.760	5511.360	---	---
		5580	21.920	5569.120	5591.040	---	---
		5700	23.080	5689.040	5712.120	---	---
		5720	21.760	5709.040	5730.800	---	---
		5720_UNII-2C	15.96	5709.040	5725	---	---
		5720_UNII-3	5.8	5725	5730.800	---	---



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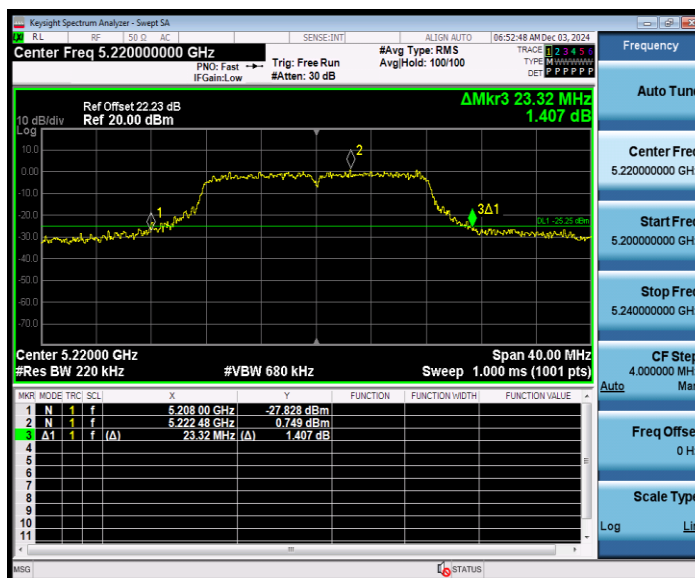
Test Report No.: W7L-241112W001RF03

TEST GRAPHS

11A_Ant1_5180



11A_Ant1_5220



11A_Ant1_5240



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VERITAS

Test Report No.: W7L-241112W001RF03



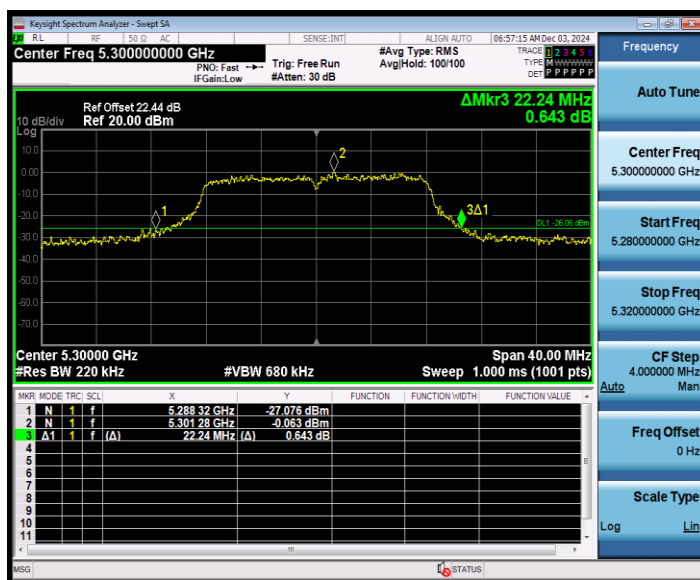
11A_Ant1_5260



11A_Ant1_5300



Test Report No.: W7L-241112W001RF03



11A Ant1 5320



11A Ant1 5500



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Test Report No.: W7L-241112W001RF03



11A_Ant1_5580

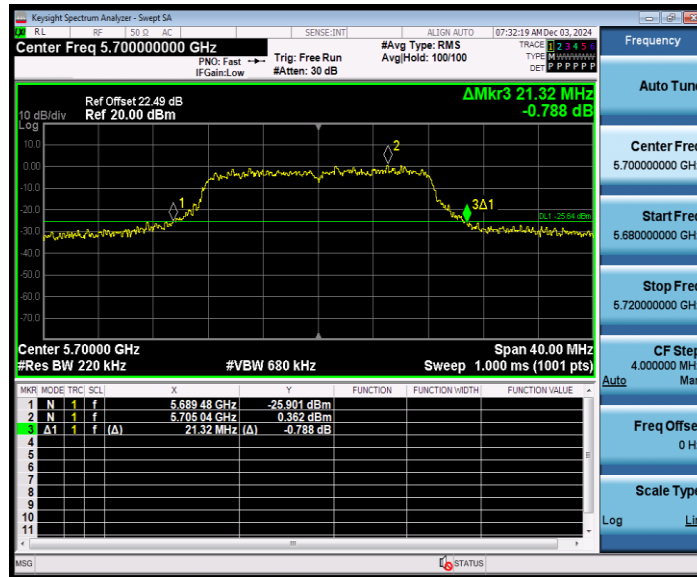


11A_Ant1_5700



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Test Report No.: W7L-241112W001RF03



11A_Ant1_5720



11N20SISO_Ant1_5180



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Test Report No.: W7L-241112W001RF03



11N20SISO_Ant1_5220



11N20SISO_Ant1_5240



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Test Report No.: W7L-241112W001RF03



11N20SISO_Ant1_5260



11N20SISO_Ant1_5300



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VERITAS

Test Report No.: W7L-241112W001RF03



11N20SISO_Ant1_5320



11N20SISO_Ant1_5500



BUREAU
VERITAS

Test Report No.: W7L-241112W001RF03



11N20SISO_Ant1_5580

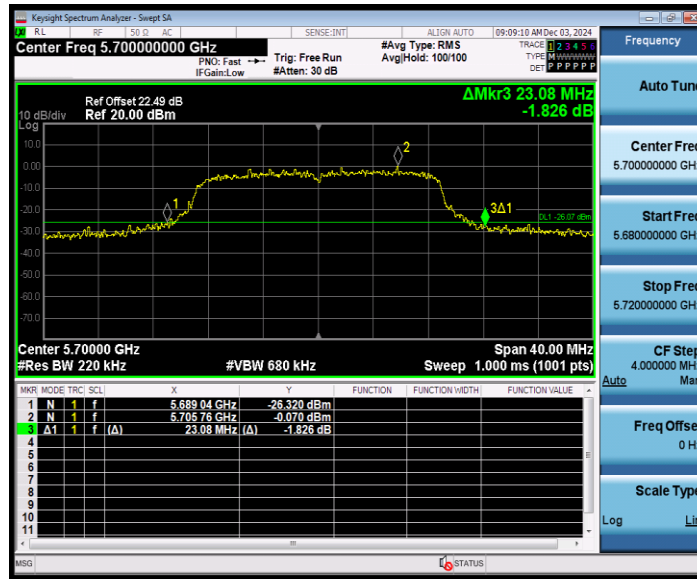


11N20SISO_Ant1_5700

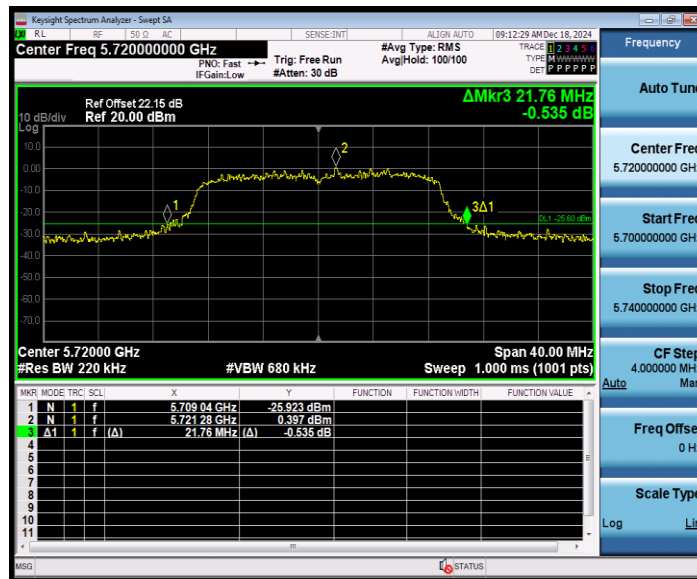


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VERITAS

Test Report No.: W7L-241112W001RF03



11N20SISO_Ant1_5720





OCCUPIED CHANNEL BANDWIDTH

TEST RESULT

TestMode	Antenna	Freq(MHz)	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.070	5171.5398	5188.6098	---	---
		5220	17.125	5211.5642	5228.6892	---	---
		5240	17.154	5231.5007	5248.6547	---	---
		5260	17.160	5251.4868	5268.6468	---	---
		5300	17.078	5291.5455	5308.6235	---	---
		5320	17.027	5311.5604	5328.5874	---	---
		5500	17.056	5491.5666	5508.6226	---	---
		5580	17.088	5571.5646	5588.6526	---	---
		5700	17.144	5691.5486	5708.6926	---	---
		5720	16.923	5711.6626	5728.5856	---	---
		5720_UNII-2C	13.337	5711.6626	5725	---	---
		5720_UNII-3	3.586	5725	5728.5856	---	---
		5745	17.128	5736.5114	5753.6394	---	---
		5785	17.073	5776.5332	5793.6062	---	---
		5825	17.069	5816.5483	5833.6173	---	---
11N20SISO	Ant1	5180	17.847	5171.1576	5189.0046	---	---
		5220	17.838	5211.1788	5229.0168	---	---
		5240	17.908	5231.1150	5249.0230	---	---
		5260	17.919	5251.1408	5269.0598	---	---
		5300	17.868	5291.1464	5309.0144	---	---
		5320	17.871	5311.1494	5329.0204	---	---
		5500	17.859	5491.1591	5509.0181	---	---
		5580	17.884	5571.1684	5589.0524	---	---
		5700	17.918	5691.1240	5709.0420	---	---
		5720	17.811	5711.2145	5729.0255	---	---
		5720_UNII-2C	13.786	5711.2145	5725	---	---
		5720_UNII-3	4.025	5725	5729.0255	---	---



Test Report No.: W7L-241112W001RF03

		5745	17.835	5736.1587	5753.9937	---	---
		5785	17.843	5776.1611	5794.0041	---	---
		5825	17.831	5816.1672	5833.9982	---	---

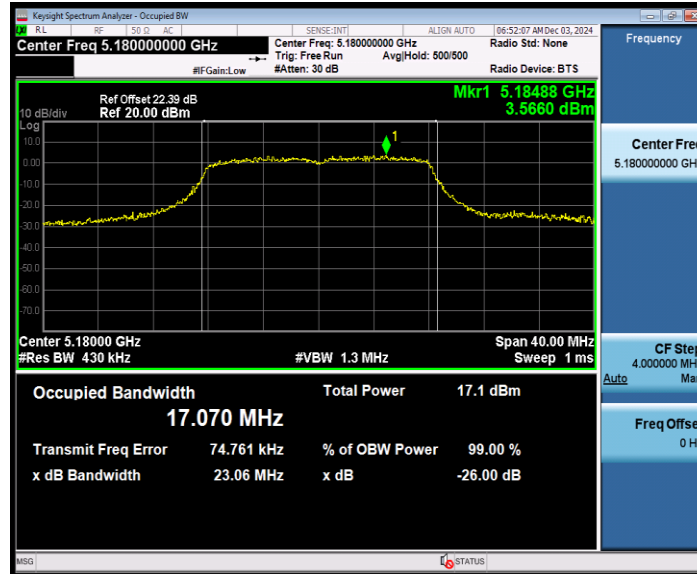


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VERITAS

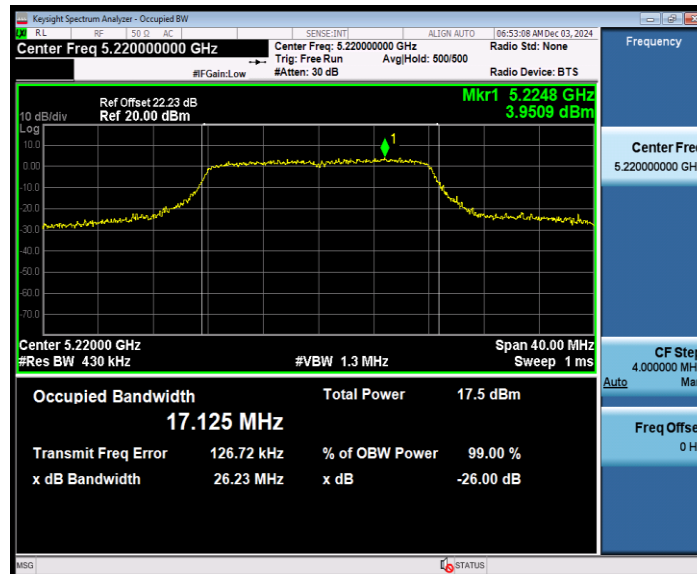
Test Report No.: W7L-241112W001RF03

TEST GRAPHS

11A_Ant1_5180



11A_Ant1_5220

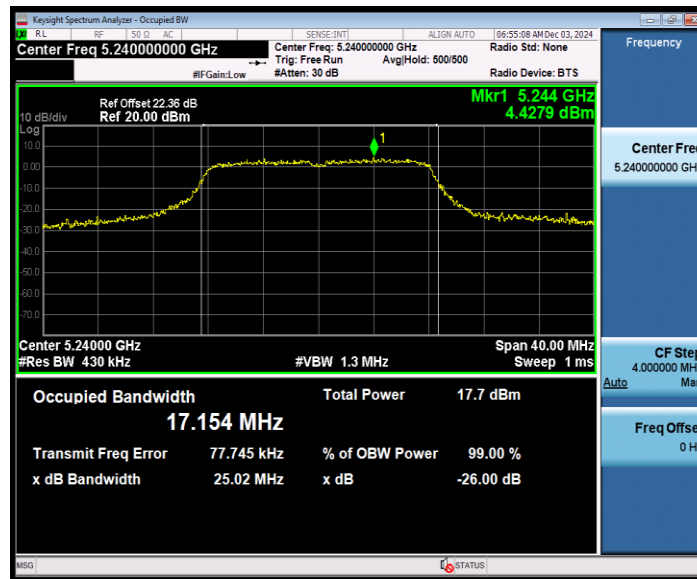


11A_Ant1_5240

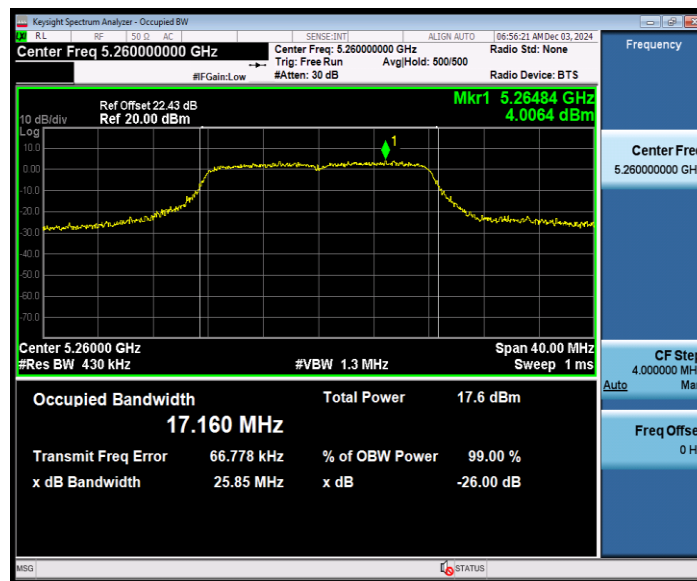


BUREAU
VERITAS

Test Report No.: W7L-241112W001RF03



11A_Ant1_5260



11A_Ant1_5300