FCC TEST REPORT

(Part 15, Subpart C)

Applicant:	Bluebird Inc.
Address:	3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea

Manufacturer or Supplier:	Bluebird Inc.
Address:	3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea
Product:	Enterprise Full Touch Handheld Computer
Brand Name:	Bluebird
Model Name:	S50/S70
FCC ID:	SS4S50F1
Date of tests:	May. 11, 2024 ~ Jun. 20, 2024

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

☒ **FCC Part 15, Subpart C, Section 15.247**

☒ **ANSI C63.10-2020**

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

Prepared by Simon Wang	Approved by Luke Lu
Engineer / Mobile Department	Manager / Mobile Department
Simon Wang	Luke Lu
Date: Jun. 20, 2024	Date: Jun. 20, 2024

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P24040002RF01	Original release	Jun. 20, 2024

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**TEST LAB***
15.207	AC Power Conducted Emission	Compliance	B
15.205 15.209	Radiated Emissions	Compliance	B
15.247(d)	Out of band Emission Measurement	Compliance	A
15.247(a)(2)	6dB bandwidth	Compliance	A
15.247(b)	Conducted Output power	Compliance	A
15.247(e)	Power Spectral Density	Compliance	A
15.203	Antenna Requirement	Compliance	A

Note：Except RSE and AC Power Conducted Emission, other data please refer to Appendix A.

***Test Lab Information Reference**

Lab A:

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China

Accredited Test Lab Cert 3939.01

The FCC Site Registration No. : 525120; Designation No. : CN1171;

Lab B:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

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	Enterprise Full Touch Handheld Computer
BRAND NAME	Bluebird
MODEL NAME	S50/S70
NOMINAL VOLTAGE	5Vdc (Adapter) 3.85Vdc (Battery)
MODULATION	DSSS, OFDM, GFSK, OFDMA
TRANSMISSION RATE	802.11b: 11/ 5.5/ 2.0 / 1.0 Mbps 802.11g: 54/ 48/ 36 / 24 / 18 / 9/ 6 Mbps 802.11n/ac(HT20)/ax(HE20): up to 144.4 Mbps 802.11n/ac(HT40)/ax(HE40): up to 300 Mbps 802.11ax 20 (RU26/52/106/242): up to 286.8Mbps 802.11ax 40 (RU484): up to 573.5Mbps
OPERATING FREQUENCY	2412-2462MHz for 11b/g/n/ac(HT20/40) /ax(HE20/40) 2412-2462MHz for ax(20M RU26/52/106/242)/ax (40M RU484)
MAX. OUTPUT POWER	WLAN: 72.78mW (Maximum) RU WLAN: 75.51mW (Maximum)
ANTENNA TYPE	ANT 8: Internal Antenna with -1.41dBi gain for WIFI ANT 9: Internal Antenna with 1.57dBi gain for WIFI
HW VERSION	REV0.1
SW VERSION	R1.17
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

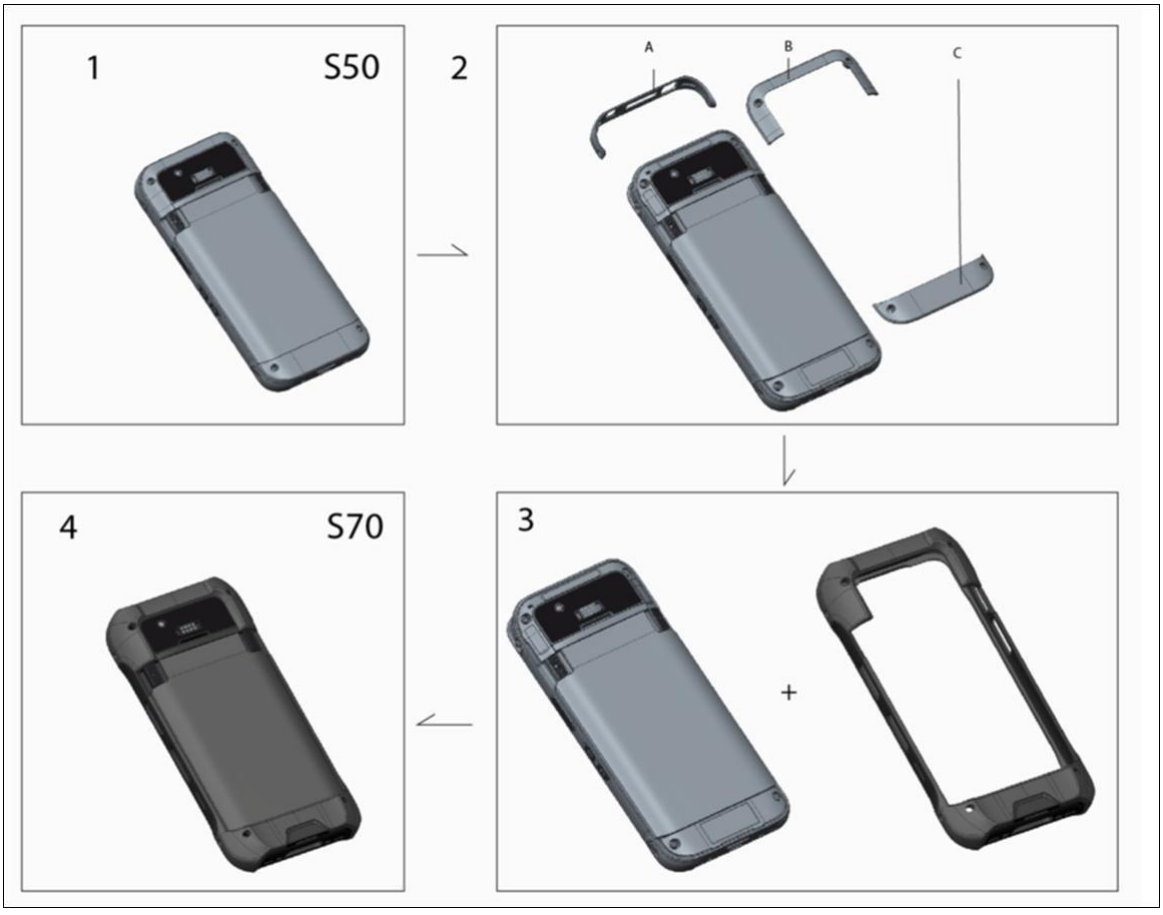
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. EUT operating function.:

MODULATION MODE	TX/RX FUNCTION
802.11b	2TX /2RX
802.11g	2TX /2RX
802.11n/ac(HT20)/ax(HE20)	2TX /2RX
802.11n/ac(HT40)/ax(HE40)	2TX /2RX
802.11ax (20MHz RU 26/52/106/242)	2TX /2RX
802.11ax (40MHz RU 484)	2TX /2RX

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

5. The only difference between model S50 and model S70 is the external rubber shell as below:



2.2 DESCRIPTION OF TEST MODES

11 channels are provided for 802.11b, 802.11g and 802.11n/ac (HT20), 802.11ax20 (HE20); 802.11ax20 (RU 26/52/106/242):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

7 channels are provided for 802.11n/ac (HT40), 802.11ax40 (HE40); 802.11ax40 (RU 484):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

2.2.1 CONFIGURATION OF SYSTEM UNDER TEST

Please see section 4 photographs of the test configuration for reference.

2.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
The worst case was found when positioned on Y axis for radiated emission. Following test modes were selected for the final test, and the final worst case is marked in boldface and recorded in the report:

EUT CONFIGURE MODE	APPLICABLE TO				MODE
	RE<1G	RE≥1G	PLC	APCM	
-	√	√	√	√	-

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

NOTE: No need to concern of Conducted Emission due to the EUT is powered by battery.

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11ax 20 (RU 26)	1 to 11	6	OFDMA	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n/ac HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11ax HE20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n/ac HT40	3 to 9	3,6,9	OFDM	MCS0
802.11ax HE40	3 to 9	3,6,9	OFDM	MCS0
802.11ax 20 (RU 26/52/106/242)	1 to 11	1, 6, 11	OFDMA	MCS0
802.11ax 40 (RU 484)	3 to 9	3, 6, 9	OFDMA	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11ax 20 (RU 26)	1 to 11	6	OFDMA	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n/ac HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11ax HE20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n/ac HT40	3 to 9	3,6,9	OFDM	MCS0
802.11ax 20 (RU 26/52/106/242)	1 to 11	1,11	OFDMA	MCS0
802.11ax 40 (RU 484)	3 to 9	3 ,9	OFDMA	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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1.0
802.11g	1 to 11	1, 6, 11	OFDM	6.0
802.11n/ac HT20	1 to 11	1, 6, 11	OFDM	MCS0
802.11ax HE20	1 to 11	1, 6, 11	OFDM	MCS0
802.11n/ac HT40	3 to 9	3,6,9	OFDM	MCS0
802.11ax HE40	3 to 9	3,6,9	OFDM	MCS0
802.11ax 20 (RU 26/52/106/242)	1 to 11	1,11	OFDMA	MCS0
802.11ax 40 (RU 484)	3 to 9	3 ,9	OFDMA	MCS0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE	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	Carl Xie
APCM	25deg. C, 60%RH	DC 3.85V By Battery	James Fu

2.3 DUTY CYCLE OF TEST SIGNAL

Please Refer to Appendix A Of this test report..

2.4 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC Part 15, Subpart C, Section 15.247

KDB 558074 D01 DTS Meas Guidance v05r02

ANSI C63.10-2020

Note：

1. All test items have been performed and recorded as per the above standards.
2. 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.

2.5 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Desktop	Lenovo	M73 SFF	PC04GRQV	N/A
2	Desktop	Lenovo	M73 SFF	PC06CS27	N/A
3	Laptop	Lenovo	Thinkpad T450	PC-049PT1	N/A

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

3 TEST TYPES AND RESULTS

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	102749	Feb.25,24	Feb.24,26
ELEKTRA test software	Rohde&Schwarz	ELEKTRA	NA	N/A	N/A
LISN network	Rohde&Schwarz	ENV216	102640	Feb.17,24	Feb.16,26
CABLE	Rohde&Schwarz	W61.01	N/A	Apr.28,24	Apr.27,25
CABLE	Rohde&Schwarz	W601	N/A	Apr.28,24	Apr.27,25

NOTE: 1. The test was performed in CE shielded room.

2. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.1.3 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.

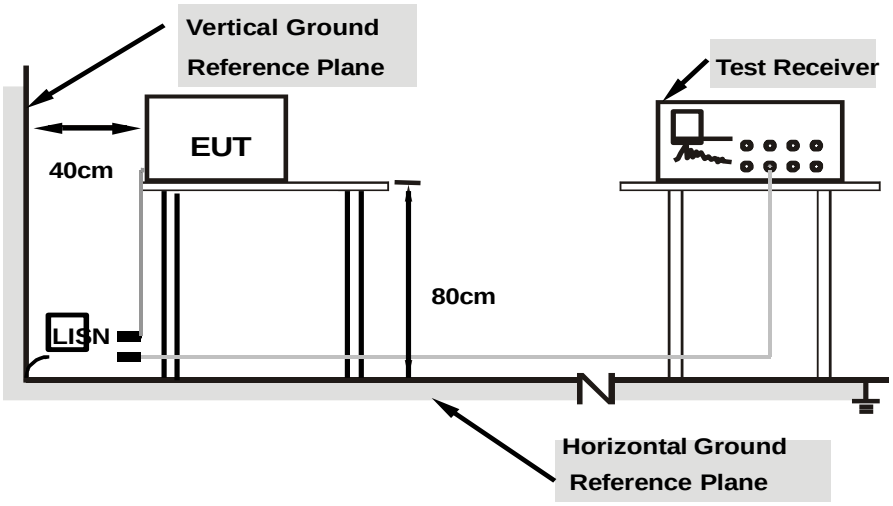
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

3.1.4 DEVIATION FROM TEST STANDARD

No deviation.

3.1.5 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).

3.1.6 EUT OPERATING CONDITIONS

a. Turned on the power and connected of all equipment.
b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

3.1.7 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		

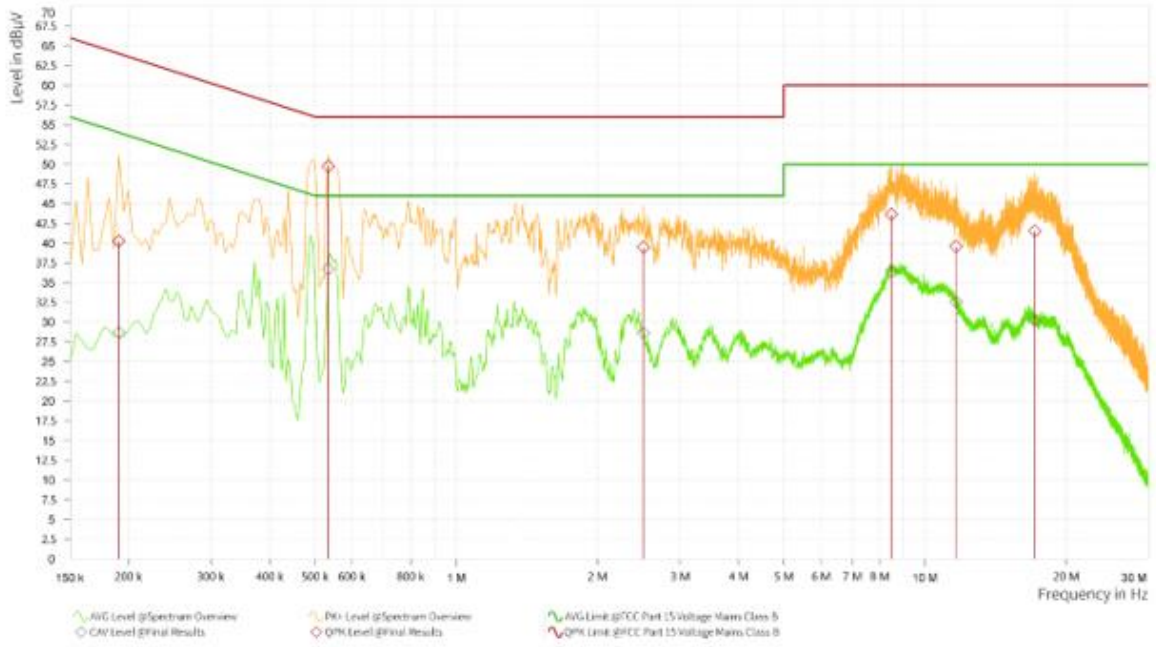
Rg	Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.173	42.33	64.84	22.51	21.21	54.84	33.63	12.31	L1	9.000
1	0.501	38.05	56.00	17.95	20.74	46.00	25.26	11.75	L1	9.000
1	1.302	29.81	56.00	26.19	21.02	46.00	24.98	11.75	L1	9.000
1	2.301	27.44	56.00	28.56	17.67	46.00	28.33	11.76	L1	9.000
1	9.573	38.89	60.00	21.11	25.95	50.00	24.05	11.83	L1	9.000
1	16.868	35.71	60.00	24.29	27.60	50.00	22.40	11.85	L1	9.000

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.

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		

Rg	Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.191	40.27	64.01	23.74	28.70	54.01	25.31	12.25	N	9.000
1	0.533	49.71	56.00	6.29	36.74	46.00	9.26	12.77	N	9.000
1	2.508	39.49	56.00	16.51	28.63	46.00	17.37	12.74	N	9.000
1	8.484	43.65	60.00	16.35	36.43	50.00	13.57	12.78	N	9.000
1	11.652	39.61	60.00	20.39	32.56	50.00	17.44	12.80	N	9.000
1	17.165	41.55	60.00	18.45	30.19	50.00	19.81	12.84	N	9.000

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.



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

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. As shown in 15.35(b), 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.

3.2.2 TEST INSTRUMENTS

Lab A:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Nov. 14,23	Nov. 13,26
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 18,24	Feb. 17,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 18,24	Feb. 17,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.04, 23	Sep.03, 24
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. 06,24	May. 05,25
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 28,24	Mar. 27,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,24	May. 05,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May. 10,24	May. 09,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,24	Feb. 16,25
DC Source	Kikusui/JP	PMX18-5A	0000001	Aug. 12,23	Aug. 11,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,24	Feb. 13,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,24	Feb. 13,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,23	Sep.02,24

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

2. The test was performed in 3m Chamber.

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

Lab B:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Signal Generator	R&S	SMB100A	182185	Feb.16,24	Feb.15,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,24	Feb.24,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,24	Feb.27,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,24	Aug.21,26
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,24	Feb.22,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,24	Feb.22,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.28,24	Apr.27,25
CABLE	R&S	W12.14	N/A	Apr.28,24	Apr.27,25

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 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

3.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.

Note:

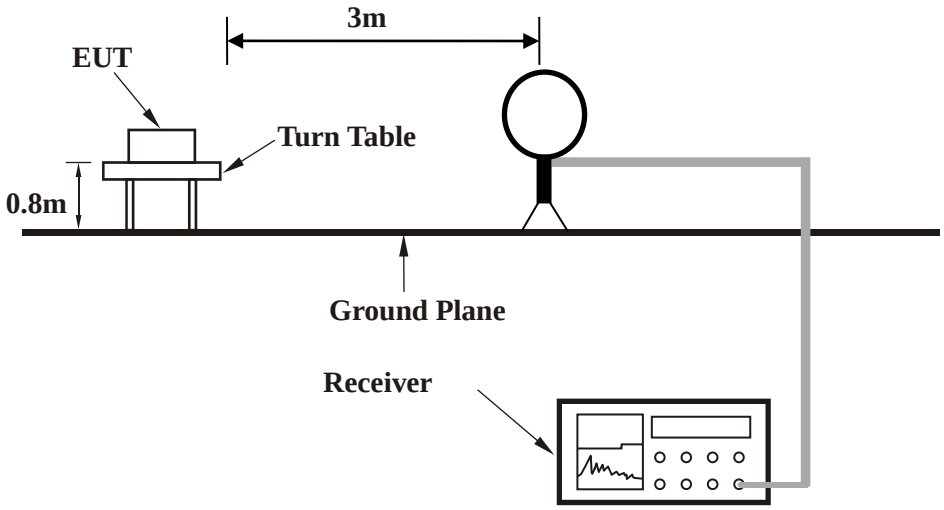
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 DEVIATION FROM TEST STANDARD

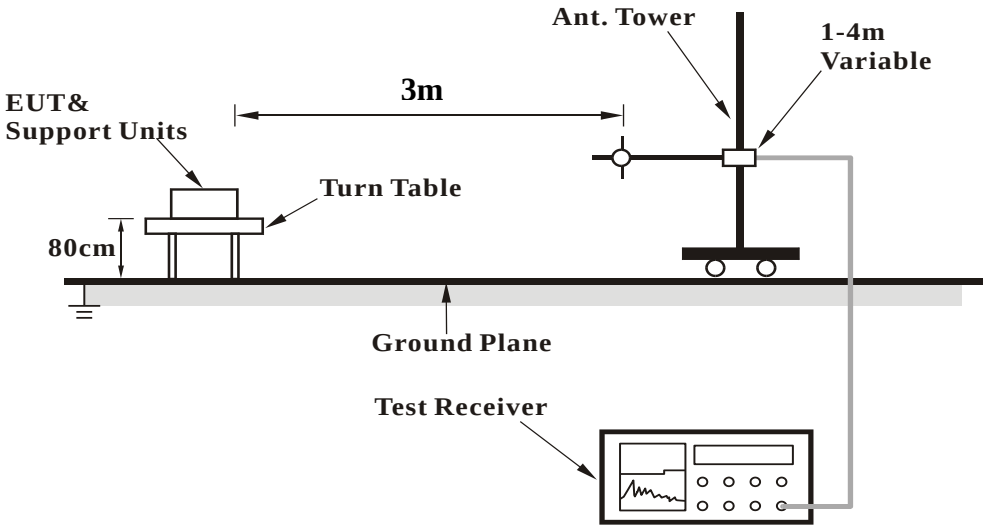
No deviation

3.2.5 TEST SETUP

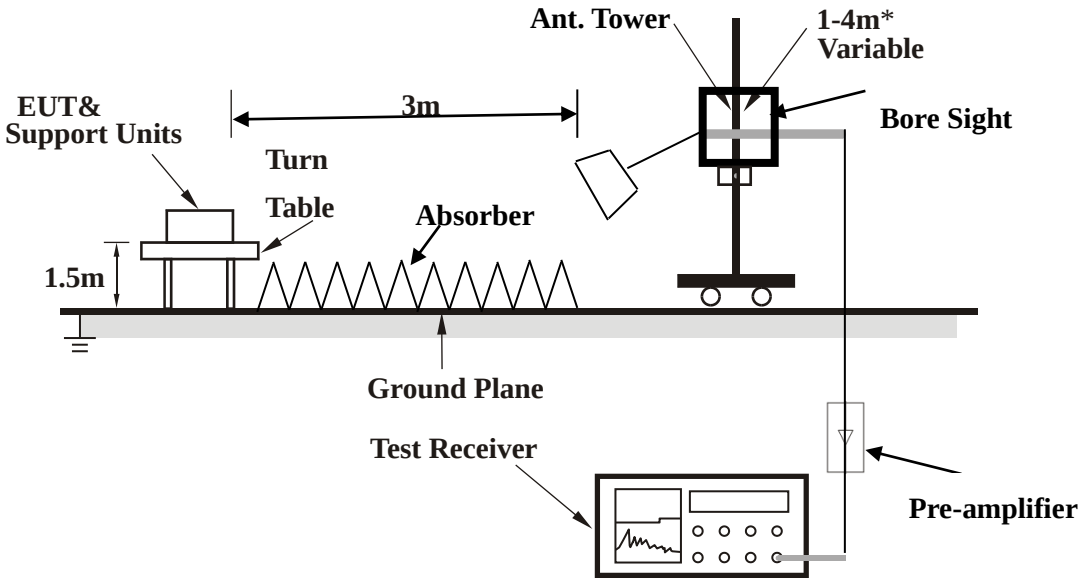
<Frequency Range 9KHz~30MHz >



< 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).

3.2.6 EUT OPERATING CONDITIONS

a. Set the EUT under full load condition and placed them on a testing table.

b. Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

c. The necessary accessories enable the EUT in full functions.

3.2.7 TEST RESULTS

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

BELOW 1GHz WORST-CASE DATA:

30 MHz – 1GHz data:

802.11ax (20MHz) (RU26):

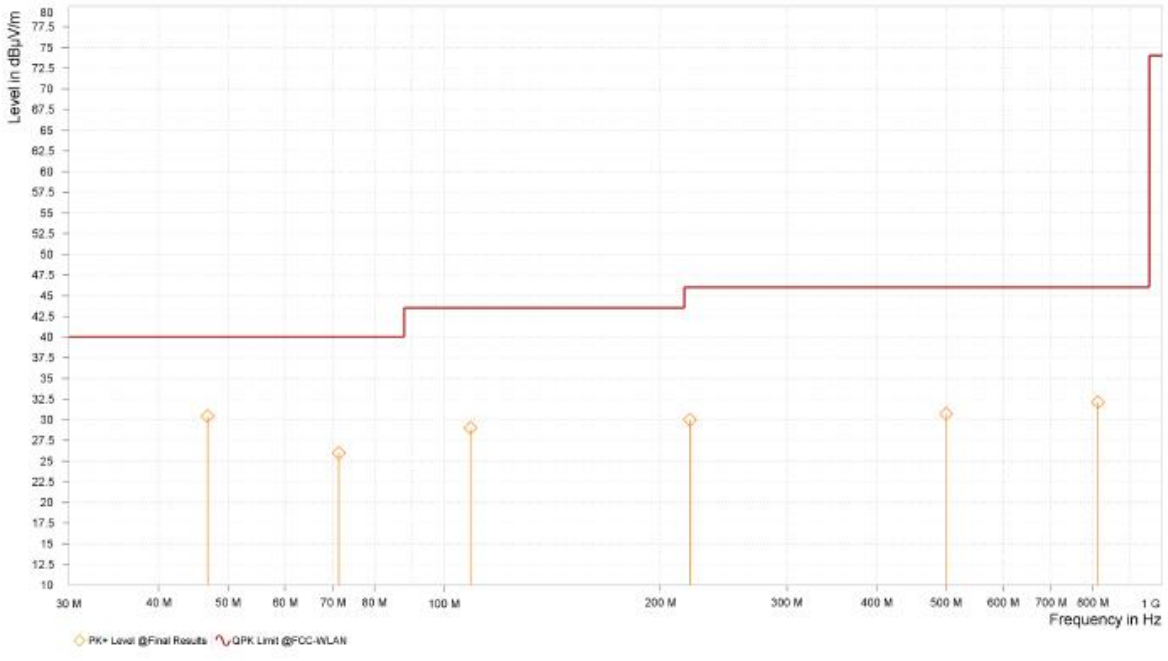
CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	46.781	30.42	40.00	9.58	-7.50	H	1	2.00
1	71.322	25.96	40.00	14.04	-12.33	H	1.6	2.00
1	108.716	28.99	43.50	14.51	-9.20	H	264.8	1.00
1	219.781	29.96	46.00	16.04	-8.31	H	1	2.00
1	499.917	30.70	46.00	15.30	-3.54	H	5	1.00
1	813.421	32.09	46.00	13.91	1.22	H	359.1	1.00

REMARKS:

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



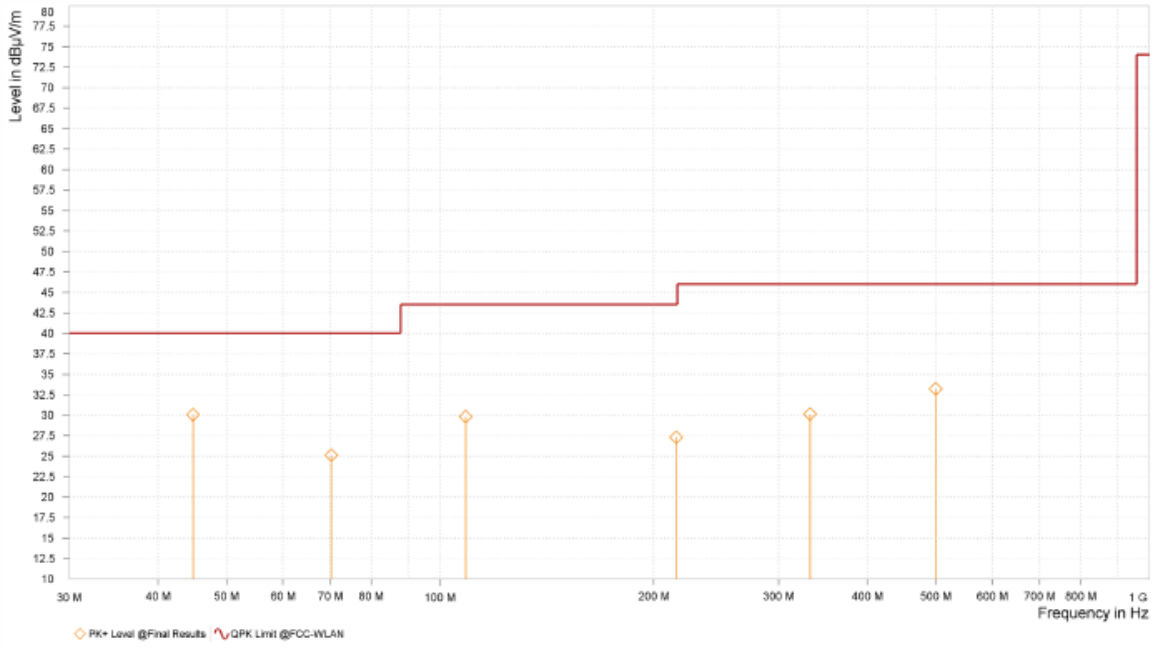
CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	44.841	30.03	40.00	9.97	-7.48	V	1.6	2.00
1	70.207	25.08	40.00	14.92	-11.87	V	129.8	1.00
1	108.667	29.80	43.50	13.70	-9.20	V	355.6	2.00
1	215.028	27.29	43.50	16.21	-8.56	V	231.5	2.00
1	332.301	30.11	46.00	15.89	-4.38	V	359.1	1.00
1	499.335	33.20	46.00	12.80	-3.54	V	0.9	2.00

REMARKS:

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



ABOVE 1GHz WORST-CASE DATA:

Note: 1. For radiated emissions testing，the full testing range of different modes have been scanned，only the worst case harmonic data is reported in the sheet.

2. All other emissions were greater than 20dB below the limit was not recorded

802.11b:

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,386.720	34.59	54.00	19.41	-1.07	H	1	2.00
1	2,390.000	32.03	54.00	21.97	-1.05	H	1	2.00
1	2,411.360	98.63			-0.88	H	354.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,385.320	47.86	74.00	26.14	-1.08	H	0.9	2.00
1	2,390.000	47.18	74.00	26.82	-1.05	H	120.2	2.00
1	2,411.080	101.40			-0.88	H	355	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,385.320	32.05	54.00	21.95	-1.08	V	0.9	2.00
1	2,390.000	31.16	54.00	22.84	-1.05	V	1	1.00
1	2,411.360	95.03			-0.88	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,384.760	45.35	74.00	28.65	-1.09	V	359.1	1.00
1	2,390.000	44.97	74.00	29.03	-1.05	V	1	1.00
1	2,413.040	97.79			-0.87	V	0.9	2.00

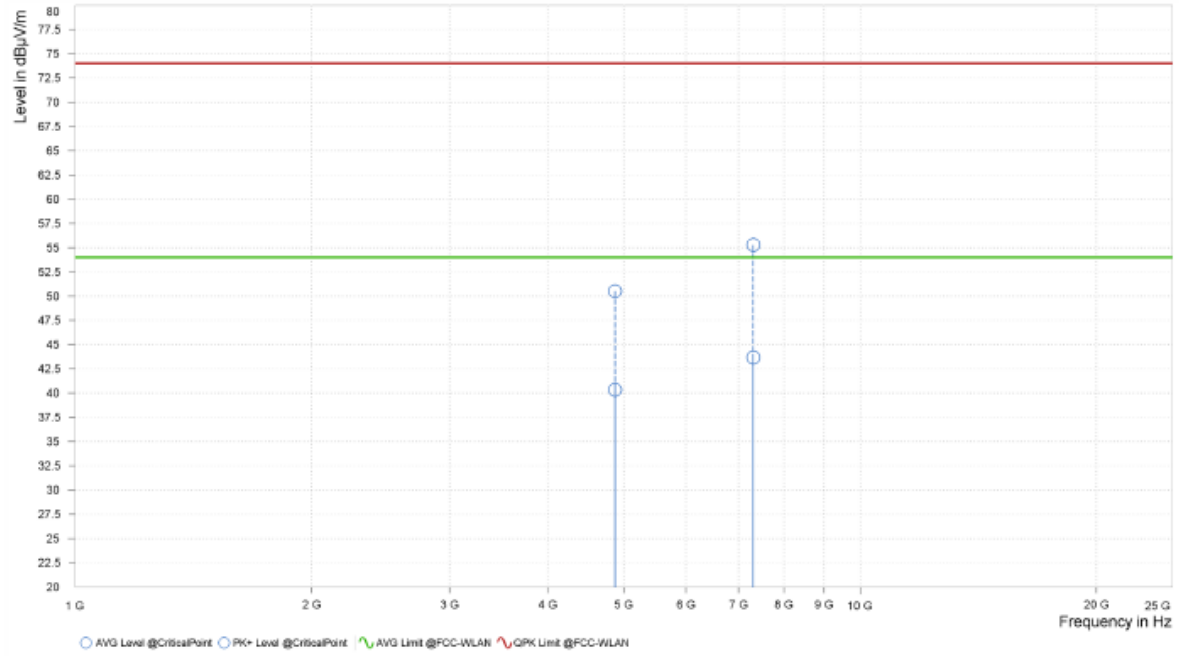
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

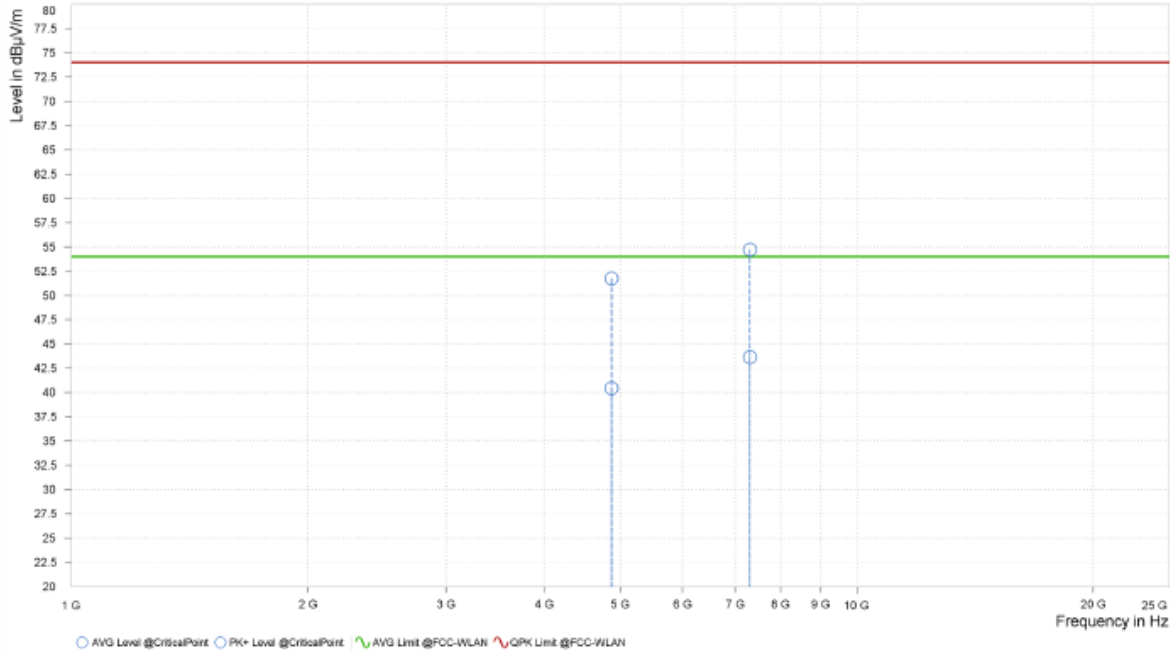
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.53	74.00	23.47	40.34	54.00	13.66	4.89	H	359	2.00
3	7,311.000	55.27	74.00	18.73	43.70	54.00	10.30	11.16	H	359	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.74	74.00	22.26	40.44	54.00	13.56	4.89	V	127.4	2.00
3	7,311.000	54.72	74.00	19.28	43.66	54.00	10.34	11.16	V	359	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.240	100.09			-0.90	H	0.9	2.00
2	2,483.500	35.68	54.00	18.32	-0.87	H	339.5	1.00
2	2,485.840	34.53	54.00	19.47	-0.86	H	359.1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,460.760	103.61			-0.90	H	1.9	2.00
2	2,483.500	49.95	74.00	24.05	-0.87	H	117.8	2.00
2	2,486.080	48.99	74.00	25.01	-0.86	H	359	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.240	97.74			-0.90	V	355	2.00
2	2,483.500	33.51	54.00	20.49	-0.87	V	1	1.00
2	2,484.760	33.68	54.00	20.32	-0.86	V	1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,460.760	101.02			-0.90	V	359	2.00
2	2,483.500	50.32	74.00	23.68	-0.87	V	4.5	1.00
2	2,486.200	48.02	74.00	25.98	-0.86	V	336.5	1.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11g

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.800	43.35	54.00	10.65	-1.05	H	0.9	2.00
1	2,390.000	43.35	54.00	10.65	-1.05	H	0.9	2.00
1	2,411.640	94.98			-0.88	H	292.3	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.800	58.59	74.00	15.41	-1.05	H	1	2.00
1	2,390.000	58.59	74.00	15.41	-1.05	H	1	2.00
1	2,411.360	106.11			-0.88	H	359	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.800	39.79	54.00	14.21	-1.05	V	355.4	1.00
1	2,390.000	39.90	54.00	14.10	-1.05	V	355.4	1.00
1	2,412.760	91.16			-0.87	V	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.520	55.69	74.00	18.31	-1.05	V	359.1	1.00
1	2,390.000	55.69	74.00	18.31	-1.05	V	359.1	1.00
1	2,412.760	102.05			-0.87	V	359	2.00

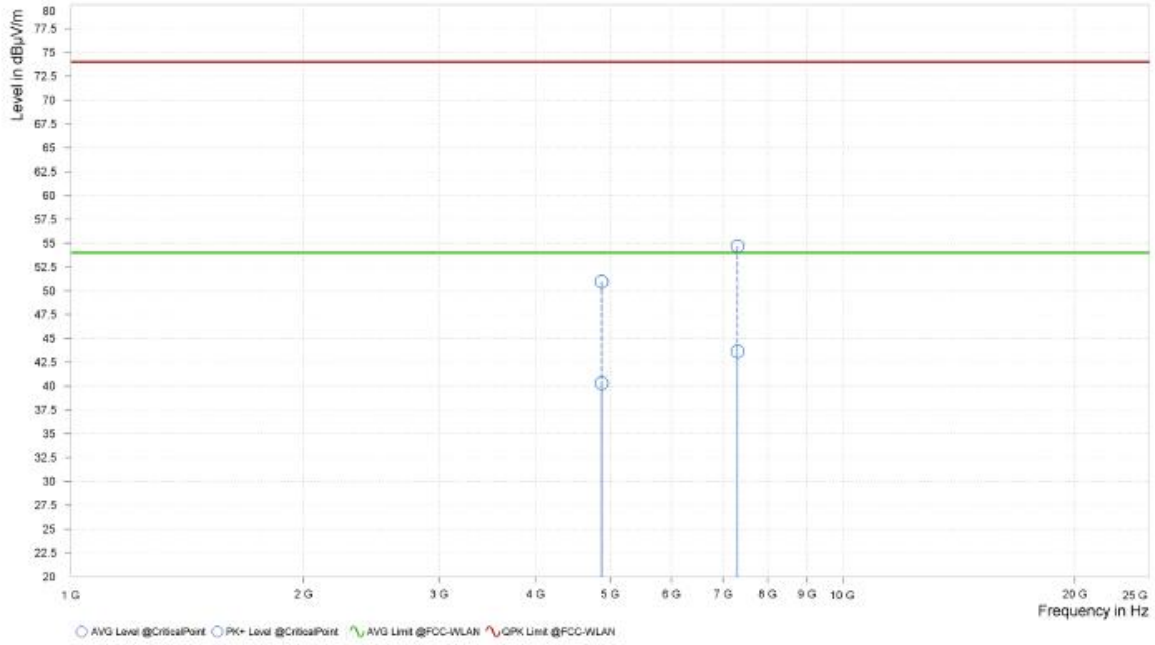
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

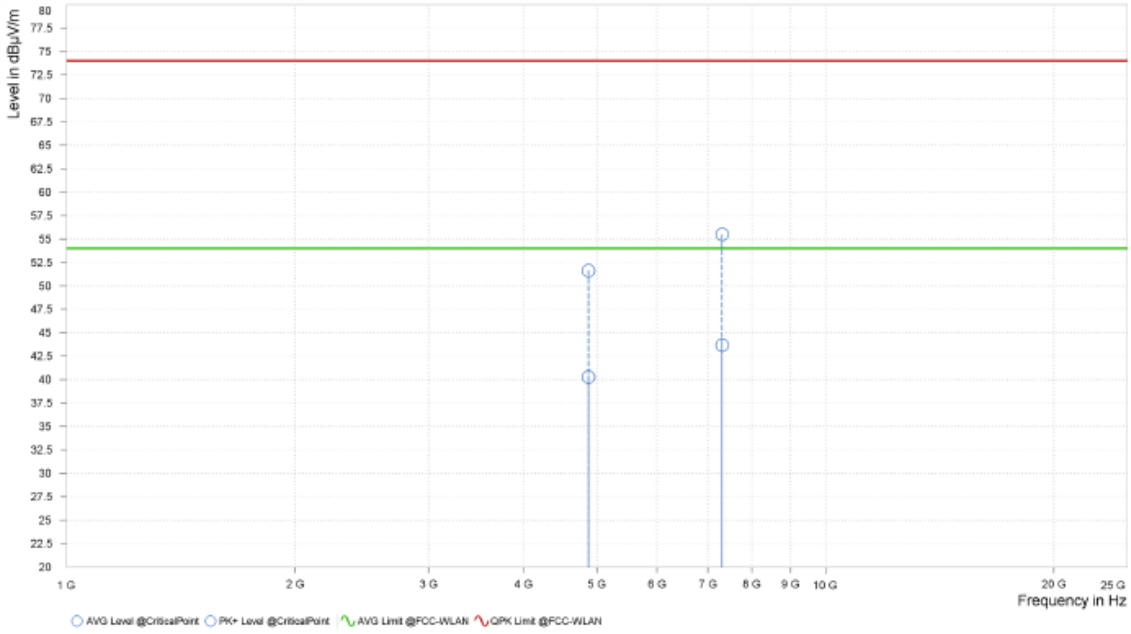
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.95	74.00	23.05	40.32	54.00	13.68	4.89	H	1	2.00
3	7,311.000	54.68	74.00	19.32	43.63	54.00	10.37	11.16	H	359	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.63	74.00	22.37	40.27	54.00	13.73	4.89	V	123.8	2.00
3	7,311.000	55.47	74.00	18.53	43.68	54.00	10.32	11.16	V	0.9	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.240	97.24			-0.90	H	359	1.00
2	2,483.500	44.31	54.00	9.69	-0.87	H	116.6	2.00
2	2,483.560	43.62	54.00	10.38	-0.87	H	116.6	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.880	108.18			-0.91	H	67.7	2.00
2	2,483.500	61.01	74.00	12.99	-0.87	H	117.8	2.00
2	2,483.560	59.28	74.00	14.72	-0.87	H	117.8	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,462.920	92.25			-0.91	V	42.6	1.00
2	2,483.500	41.79	54.00	12.21	-0.87	V	42.6	1.00
2	2,483.560	40.51	54.00	13.49	-0.87	V	42.6	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.160	103.27			-0.91	V	359	1.00
2	2,483.500	56.75	74.00	17.25	-0.87	V	43.7	1.00
2	2,483.560	55.57	74.00	18.43	-0.87	V	43.7	1.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11n (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.800	46.27	54.00	7.73	-1.05	H	0.9	2.00
1	2,390.000	45.16	54.00	8.84	-1.05	H	0.9	2.00
1	2,411.080	95.02			-0.88	H	305.6	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.800	59.27	74.00	14.73	-1.05	H	71.3	2.00
1	2,390.000	59.27	74.00	14.73	-1.05	H	71.3	2.00
1	2,409.960	105.27			-0.89	H	0.9	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,388.680	40.73	54.00	13.27	-1.06	V	202.6	1.00
1	2,390.000	40.73	54.00	13.27	-1.06	V	202.6	1.00
1	2,413.040	90.95			-0.87	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.520	52.26	74.00	21.74	-1.05	V	280.4	1.00
1	2,390.000	51.36	74.00	22.64	-1.06	V	313.9	2.00
1	2,413.880	101.85			-0.86	V	17.8	2.00

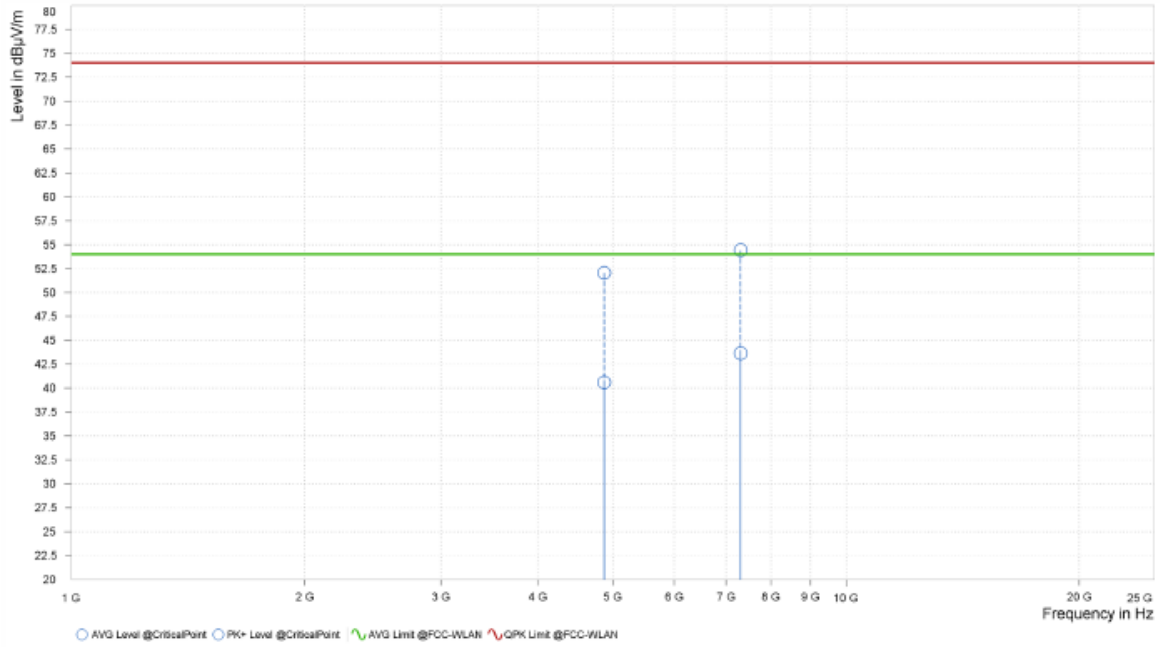
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

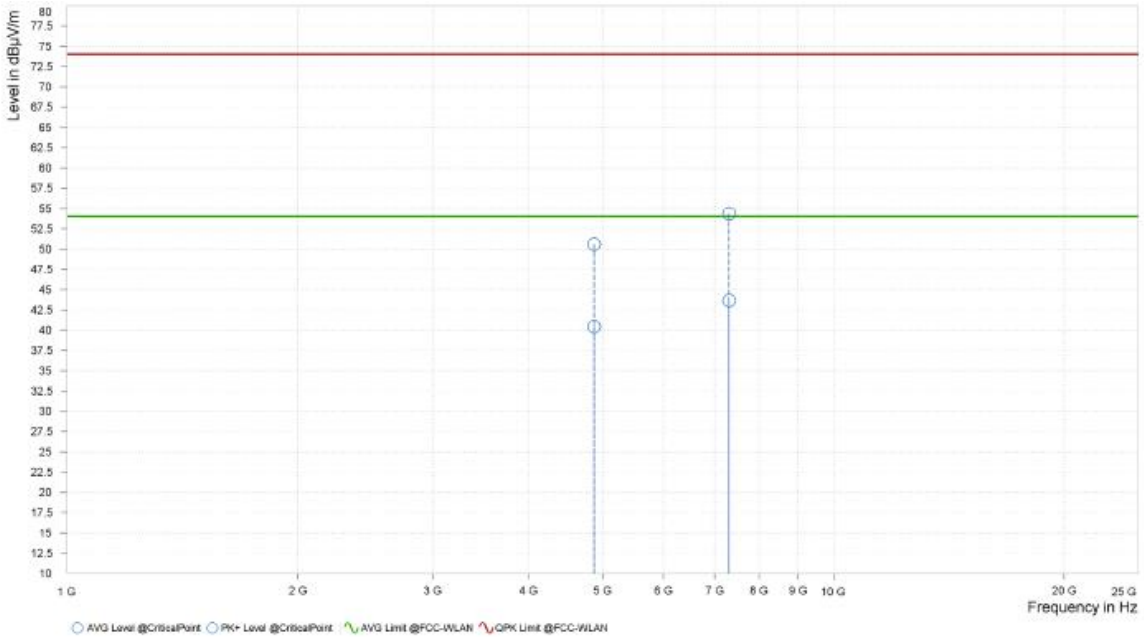
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	52.04	74.00	21.96	40.60	54.00	13.40	4.89	H	56.9	2.00
3	7,311.000	54.41	74.00	19.59	43.65	54.00	10.35	11.16	H	232.6	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.59	74.00	23.41	40.44	54.00	13.56	4.89	V	1.1	2.00
3	7,311.000	54.37	74.00	19.63	43.66	54.00	10.34	11.16	V	359.1	1.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.000	97.41			-0.90	H	359	1.00
2	2,483.500	47.55	54.00	6.45	-0.87	H	119	2.00
2	2,483.560	46.63	54.00	7.37	-0.87	H	119	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.280	103.73			-0.91	H	354.9	2.00
2	2,483.500	57.32	74.00	16.68	-0.87	H	357.8	1.00
2	2,483.560	57.05	74.00	16.95	-0.87	H	337.5	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.280	92.30			-0.91	V	58	1.00
2	2,483.500	42.40	54.00	11.60	-0.87	V	355.4	1.00
2	2,483.680	41.94	54.00	12.06	-0.87	V	321	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,460.640	109.06			-0.90	V	358	1.00
2	2,483.500	62.94	74.00	11.06	-0.87	V	120.2	2.00
2	2,483.800	62.37	74.00	11.63	-0.87	V	120.2	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11n (40MHz)

CHANNEL	TX Channel 3	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.000	50.77	54.00	3.23	5.76	H	1	1.00
3	2,390.000	50.82	54.00	3.18	5.77	H	359	1.00
3	2,420.500	94.29			5.95	H	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.313	68.87	74.00	5.13	-1.05	H	5.1	1.00
3	2,390.000	68.48	74.00	5.52	-1.05	H	1	1.00
3	2,423.400	107.05			-0.84	H	44.9	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,385.600	46.36	54.00	7.64	-1.08	V	1	1.00
3	2,390.000	44.28	54.00	9.72	-1.05	V	43.8	1.00
3	2,425.763	88.15			-0.84	V	1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,386.950	62.63	74.00	11.37	-1.07	V	1	1.00
3	2,390.000	59.62	74.00	14.38	-1.05	V	1	1.00
3	2,425.760	101.13			-0.84	V	359	1.00

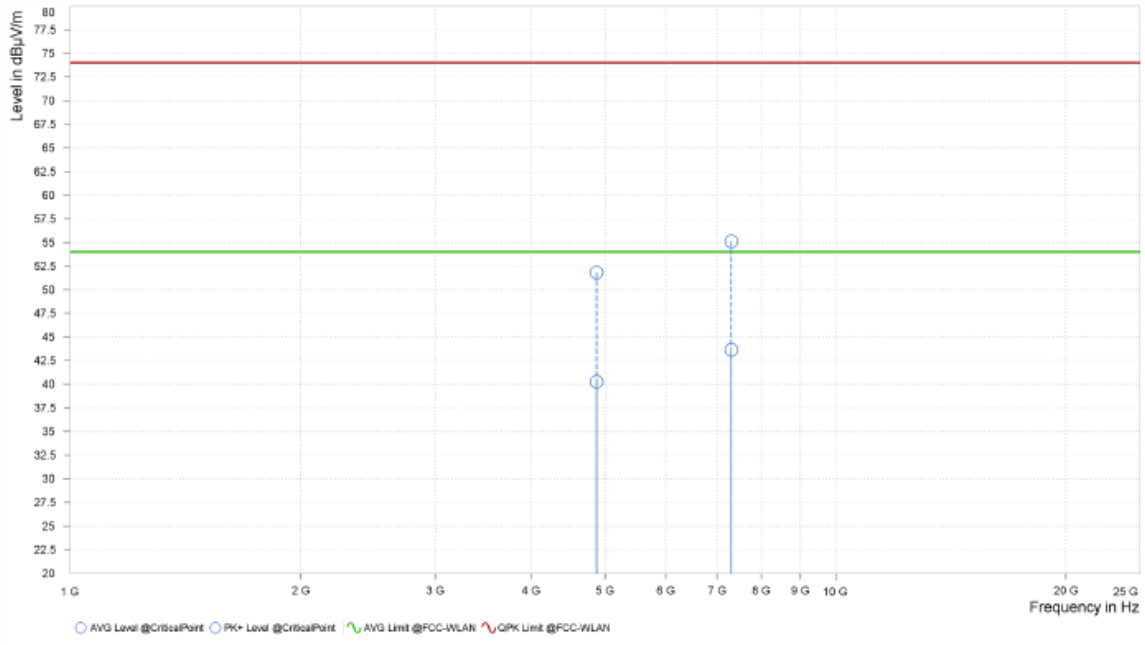
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2422MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

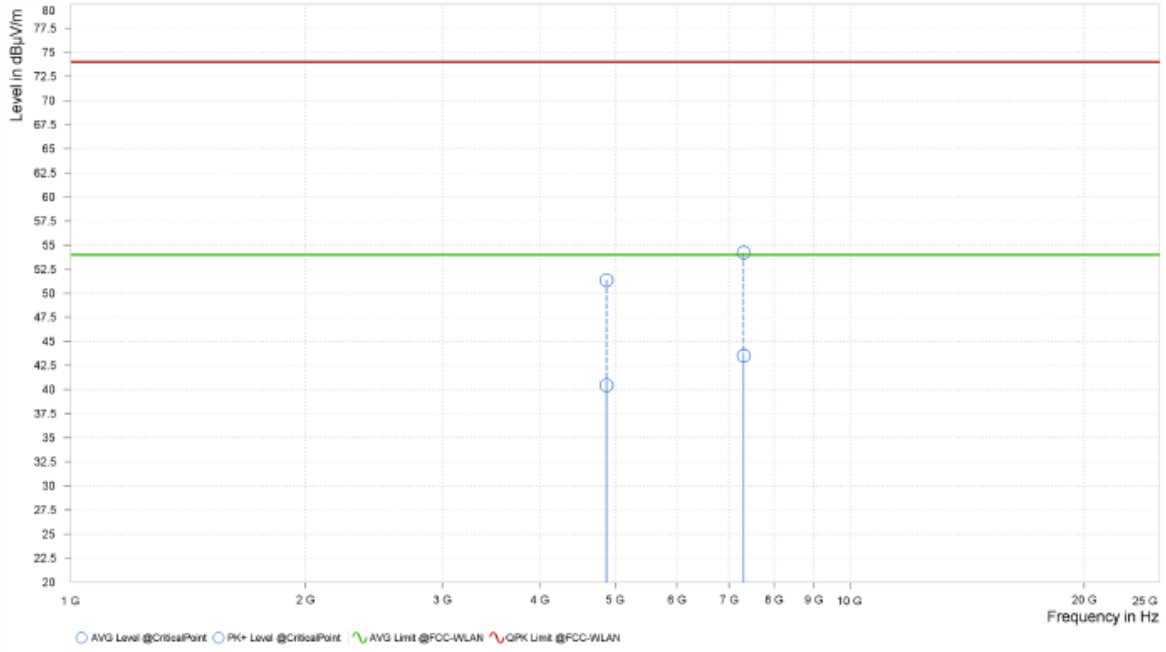
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.81	74.00	22.19	40.27	54.00	13.73	4.89	H	238	1.00
3	7,311.000	55.13	74.00	18.87	43.63	54.00	10.37	11.16	H	359	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.37	74.00	22.63	40.45	54.00	13.55	4.89	V	359	1.00
3	7,311.000	54.22	74.00	19.78	43.51	54.00	10.49	11.16	V	123.8	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.500	89.59			5.89	H	1	1.00
4	2,483.500	47.63	54.00	6.37	5.91	H	291	1.00
4	2,485.000	47.64	54.00	6.36	5.92	H	291	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.000	103.32			5.89	H	359	1.00
4	2,483.500	68.20	74.00	5.80	5.91	H	288.6	1.00
4	2,484.500	67.62	74.00	6.38	5.92	H	288.6	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,453.000	85.44			5.88	V	359	2.00
4	2,483.500	47.99	54.00	6.01	5.91	V	0.9	2.00
4	2,484.500	48.05	54.00	5.95	5.92	V	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,453.500	99.63			5.87	V	355.1	2.00
4	2,483.500	65.21	74.00	8.79	5.91	V	359	2.00
4	2,484.000	65.67	74.00	8.33	5.92	V	359	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2452MHz: Fundamental frequency.

802.11ax (20MHz)

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.100	47.04	54.00	6.96	-1.05	H	65.3	2.00
1	2,390.000	46.79	54.00	7.21	-1.05	H	1.6	2.00
1	2,410.288	94.81			-0.89	H	359.1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	65.17	74.00	8.83	-1.05	H	70.1	2.00
1	2,390.000	63.95	74.00	10.05	-1.05	H	70.1	2.00
1	2,409.720	109.07			-0.90	H	1	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	41.50	54.00	12.50	-1.05	V	242.2	1.00
1	2,390.000	41.89	54.00	12.11	-1.05	V	292.3	1.00
1	2,413.113	89.53			-0.87	V	1	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	60.12	74.00	13.88	-1.05	V	242.2	1.00
1	2,390.000	58.19	74.00	15.81	-1.05	V	242.2	1.00
1	2,413.680	103.98			-0.86	V	359	2.00

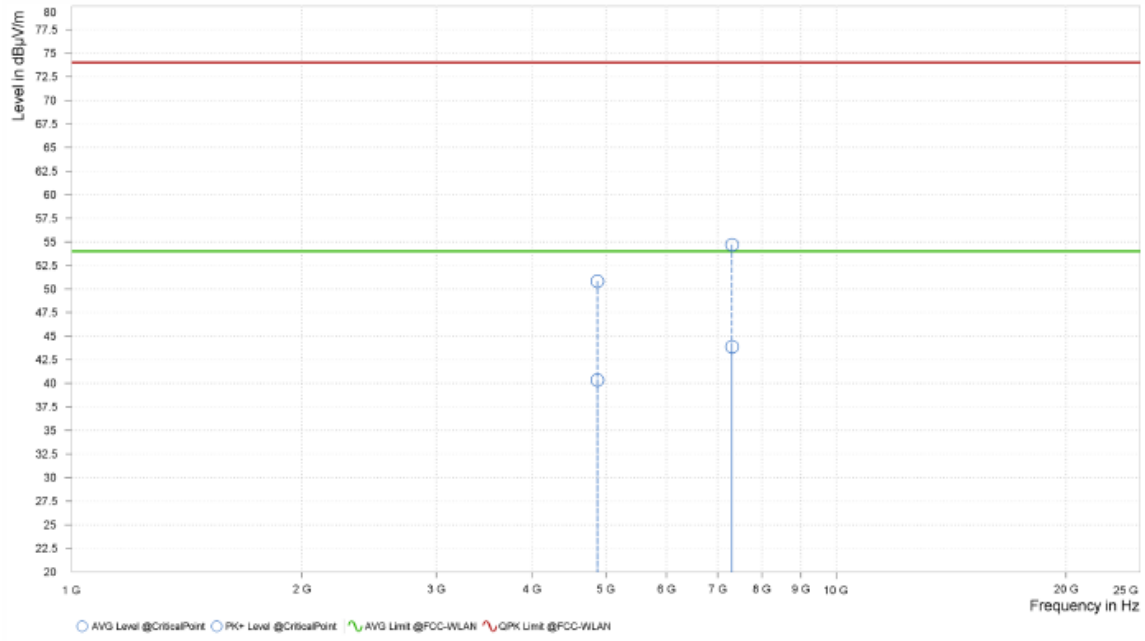
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

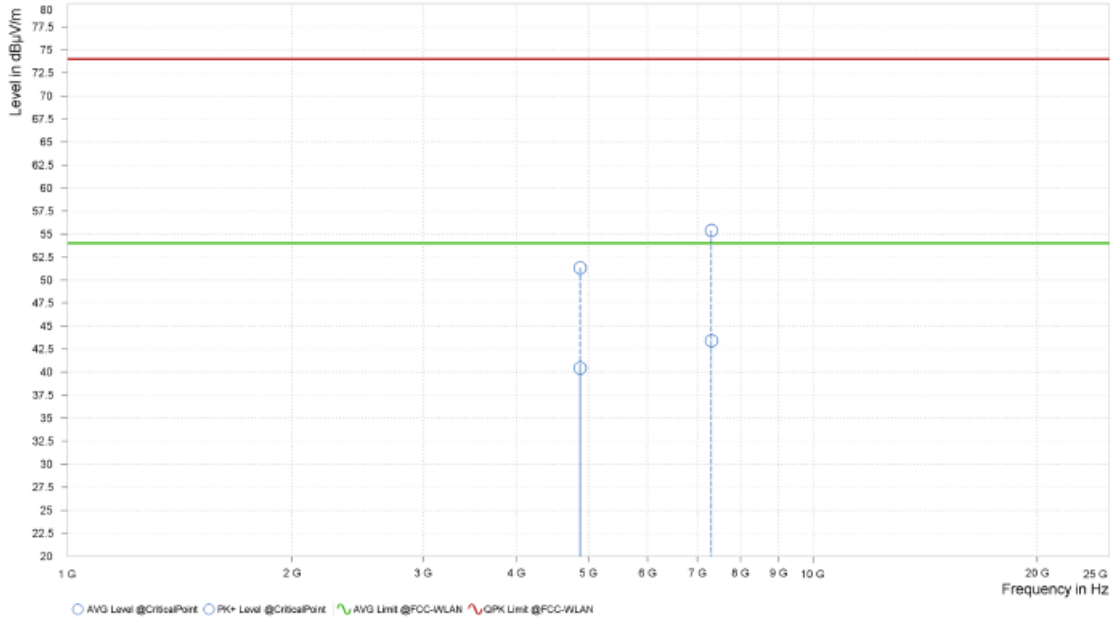
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.83	74.00	23.17	40.35	54.00	13.65	4.89	H	359	1.00
3	7,311.000	54.69	74.00	19.31	43.87	54.00	10.13	11.16	H	359	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.33	74.00	22.67	40.43	54.00	13.57	4.89	V	0.9	2.00
3	7,311.000	55.40	74.00	18.60	43.42	54.00	10.58	11.16	V	359	1.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,460.800	95.88			5.83	H	0.9	2.00
2	2,483.500	50.14	54.00	3.86	5.92	H	355	2.00
2	2,483.900	50.59	54.00	3.41	5.92	H	271.8	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.100	110.82			5.83	H	9.4	2.00
2	2,483.500	69.02	74.00	4.98	5.92	H	355.1	2.00
2	2,484.200	68.67	74.00	5.33	5.92	H	271.8	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,462.300	88.90			5.82	V	4.9	1.00
2	2,483.500	48.03	54.00	5.97	5.92	V	359.1	1.00
2	2,484.200	48.13	54.00	5.87	5.92	V	359.1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.280	107.73			-0.91	V	1.8	2.00
2	2,483.500	70.66	74.00	3.34	-0.87	V	350.1	1.00
2	2,484.040	69.42	74.00	4.58	-0.87	V	350.1	1.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11ax (40MHz)

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.530	43.77	54.00	10.23	5.66	H	359	1.00
3	2,390.000	43.85	54.00	10.15	5.67	H	358	1.00
3	2,421.210	103.61			7.02	H	1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,387.550	59.32	74.00	14.68	5.55	H	1	1.00
3	2,390.000	57.95	74.00	16.05	5.69	H	358.3	1.00
3	2,420.550	117.25			7.03	H	1	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.200	40.72	54.00	13.28	5.64	V	241	1.00
3	2,390.000	40.58	54.00	13.42	5.67	V	241	1.00
3	2,422.860	99.35			6.98	V	1	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,315.940	54.44	74.00	19.56	6.28	V	272	1.00
3	2,390.000	53.88	74.00	20.12	5.69	V	355	1.00
3	2,423.850	112.50			6.96	V	359	1.00

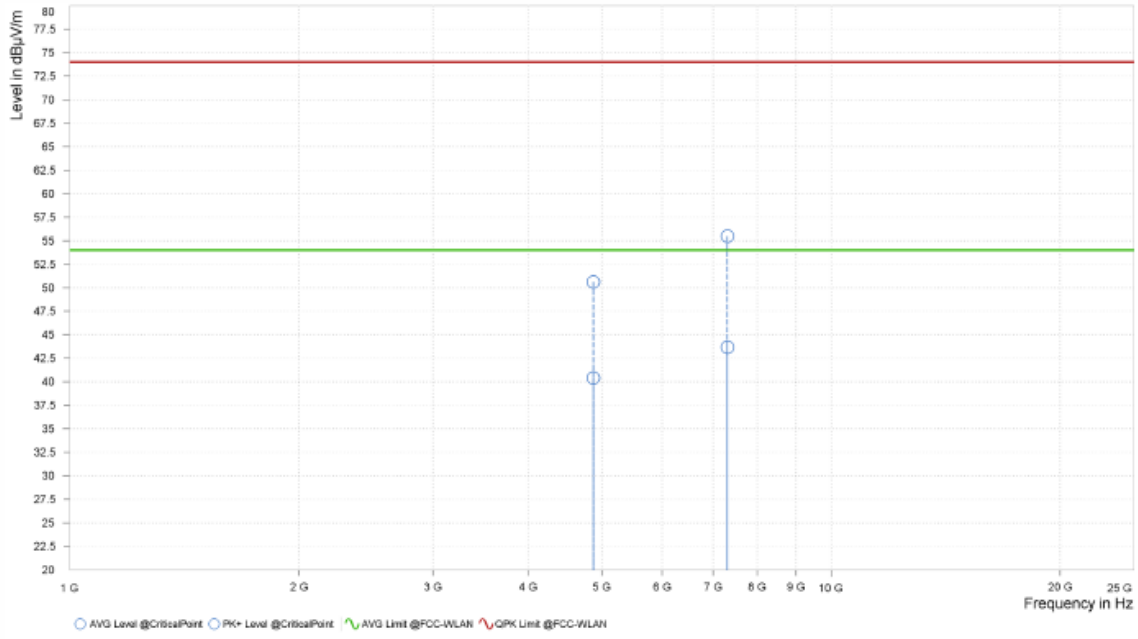
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2422MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

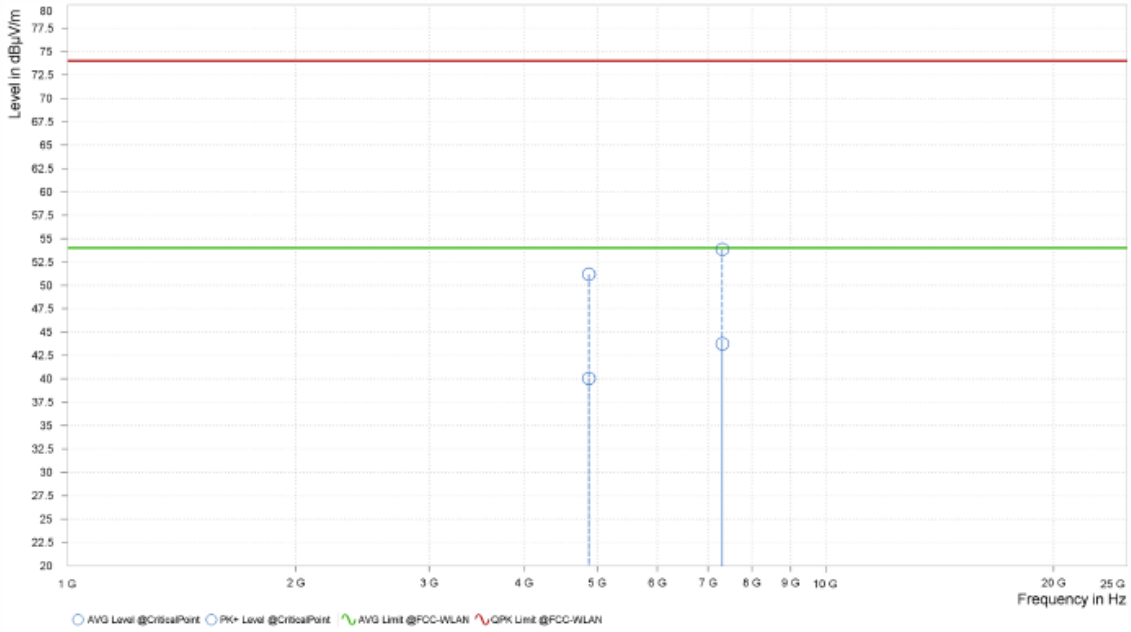
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.62	74.00	23.38	40.40	54.00	13.60	4.89	H	36.6	2.00
3	7,311.000	55.48	74.00	18.52	43.69	54.00	10.31	11.16	H	36.6	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.19	74.00	22.81	40.05	54.00	13.95	4.89	V	0.9	2.00
3	7,311.000	53.84	74.00	20.16	43.75	54.00	10.25	11.16	V	1	1.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.000	89.86			5.89	H	1	1.00
4	2,484.000	50.35	54.00	3.65	5.92	H	288.5	1.00
4	2,485.500	49.77	54.00	4.23	5.93	H	288.5	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.500	105.69			5.89	H	1	1.00
4	2,483.500	69.17	74.00	4.83	5.91	H	291	1.00
4	2,484.500	68.77	74.00	5.23	5.92	H	291	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,454.000	86.64			5.87	V	355.8	2.00
4	2,483.500	47.90	54.00	6.10	5.91	V	359	2.00
4	2,485.000	46.94	54.00	7.06	5.92	V	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,447.500	103.65			5.90	V	290.2	2.00
4	2,483.500	70.28	74.00	3.72	5.91	V	5.5	1.00
4	2,484.500	69.68	74.00	4.32	5.92	V	5.5	1.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2452MHz: Fundamental frequency.

2.4G WIFI-RU

802.11ax (20MHz) (RU26):

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.383	33.42	54.00	20.58	-1.05	H	77.3	2.00
1	2,390.000	33.53	54.00	20.47	-1.05	H	77.3	2.00
1	2,403.790	102.19			-0.94	H	128.6	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	58.60	74.00	15.40	-1.05	H	1	1.00
1	2,390.000	58.38	74.00	15.62	-1.05	H	1	1.00
1	2,403.790	113.05			-0.94	H	248.2	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,387.970	32.52	54.00	21.48	-1.06	V	10	2.00
1	2,390.000	32.43	54.00	21.57	-1.05	V	1	2.00
1	2,403.508	98.92			-0.94	V	1	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	61.20	74.00	12.80	-1.05	V	217	1.00
1	2,390.000	61.20	74.00	12.80	-1.05	V	217	1.00
1	2,403.790	111.15			-0.94	V	0.9	2.00

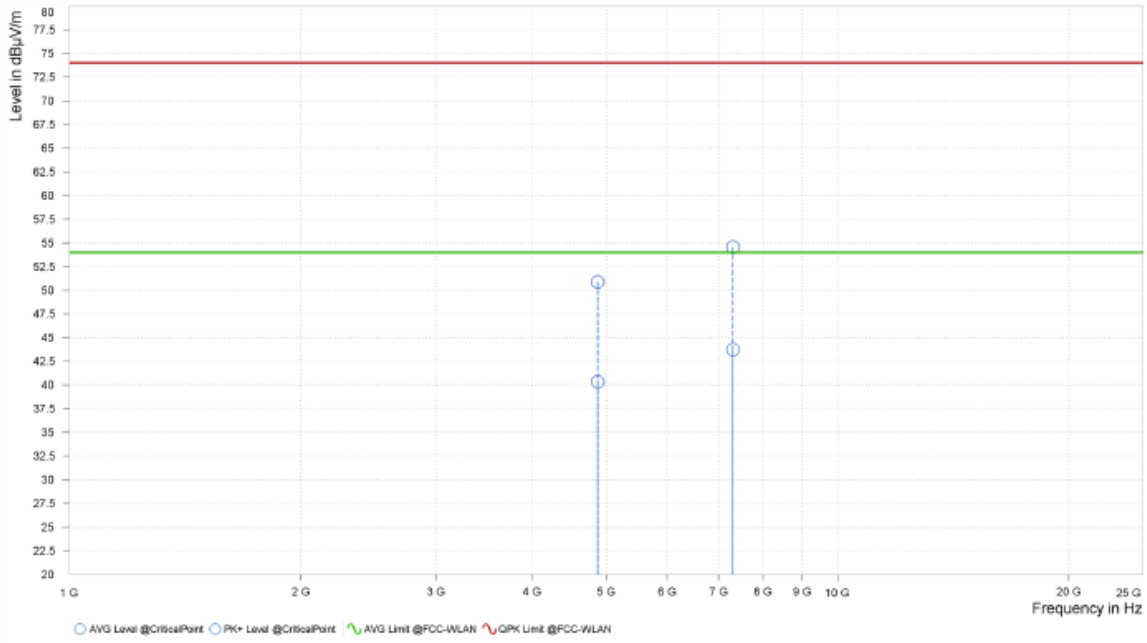
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

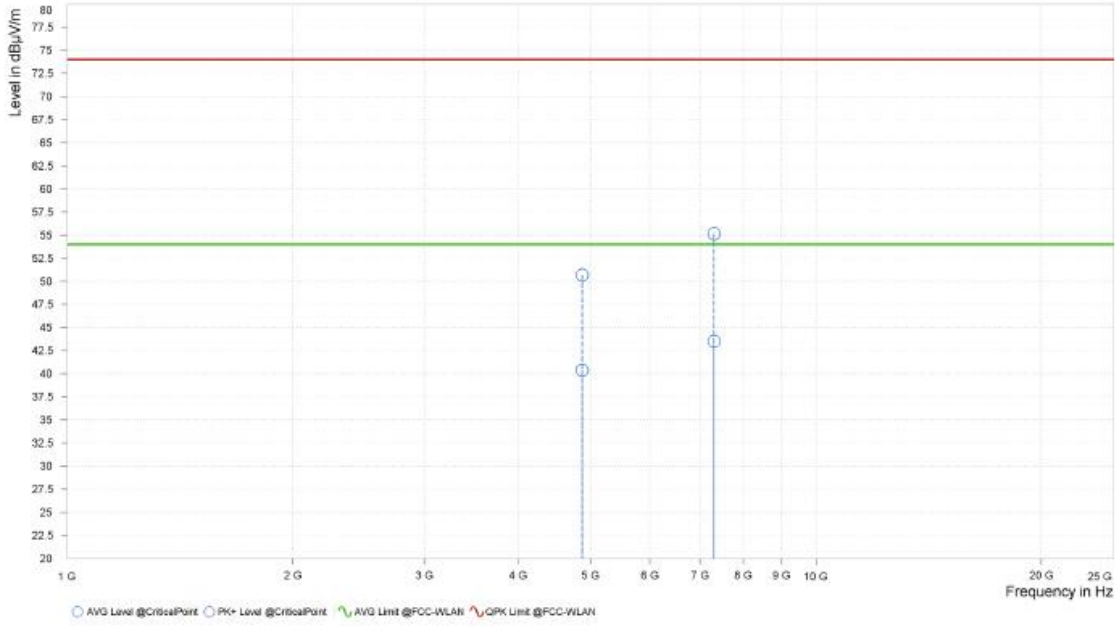
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.88	74.00	23.12	40.35	54.00	13.65	4.89	H	359	2.00
3	7,311.000	54.57	74.00	19.43	43.75	54.00	10.25	11.16	H	312.8	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.70	74.00	23.30	40.39	54.00	13.61	4.89	V	359.1	1.00
3	7,311.000	55.15	74.00	18.85	43.51	54.00	10.49	11.16	V	0.9	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
   2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.480	104.11			-0.90	H	359	2.00
2	2,483.500	37.76	54.00	16.24	-0.87	H	11.4	2.00
2	2,483.560	37.76	54.00	16.24	-0.87	H	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,471.080	110.23			-0.90	H	0.9	2.00
2	2,483.500	63.84	74.00	10.16	-0.86	H	311.6	2.00
2	2,483.680	66.57	74.00	7.43	-0.87	H	359	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.840	98.93			-0.90	V	12.2	2.00
2	2,483.500	34.79	54.00	19.21	-0.87	V	0.9	2.00
2	2,483.680	34.82	54.00	19.18	-0.87	V	12.2	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,471.080	109.89			-0.90	V	1	2.00
2	2,483.500	66.35	74.00	7.65	-0.87	V	54.4	1.00
2	2,483.560	67.46	74.00	6.54	-0.87	V	12.8	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11ax (20MHz) (RU52):

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	34.00	54.00	20.00	-1.05	H	56.9	2.00
1	2,390.000	34.13	54.00	19.87	-1.05	H	56.9	2.00
1	2,404.355	99.25			-0.94	H	108.3	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.950	58.91	74.00	15.09	-1.05	H	1	2.00
1	2,390.000	56.95	74.00	17.05	-1.08	H	1	1.00
1	2,403.230	111.37			-0.95	H	279.2	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.950	32.61	54.00	21.39	-1.05	V	0.9	2.00
1	2,390.000	32.56	54.00	21.44	-1.05	V	313.9	2.00
1	2,403.790	95.92			-0.94	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	56.69	74.00	17.31	-1.05	V	253	1.00
1	2,390.000	54.32	74.00	19.68	-1.05	V	311.5	2.00
1	2,404.070	109.27			-0.94	V	0.9	2.00

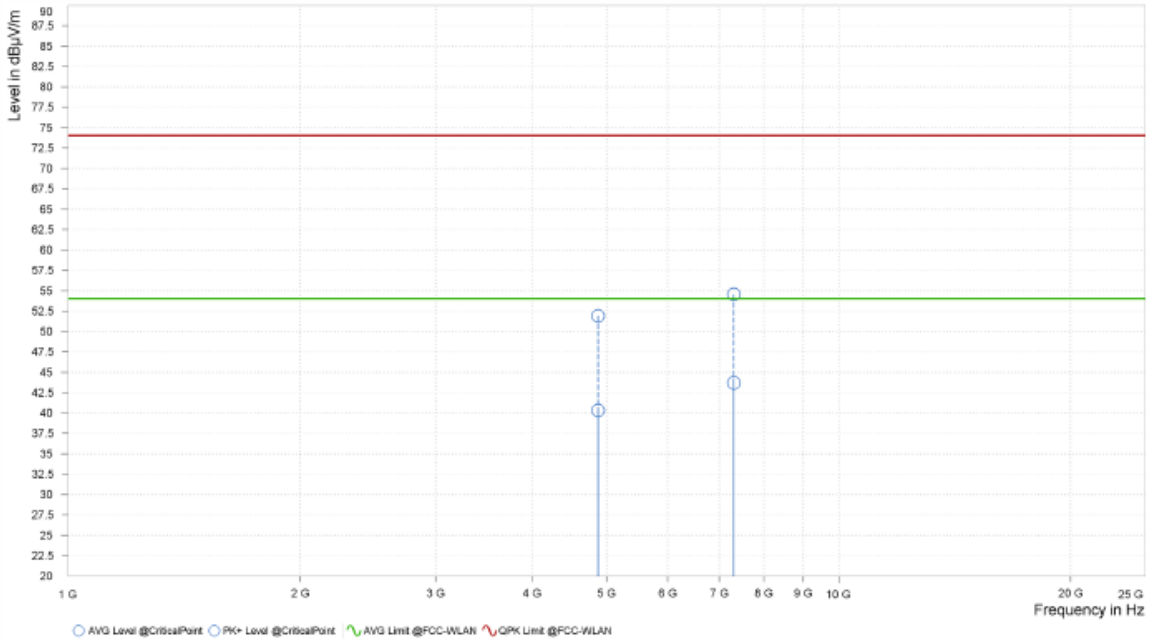
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

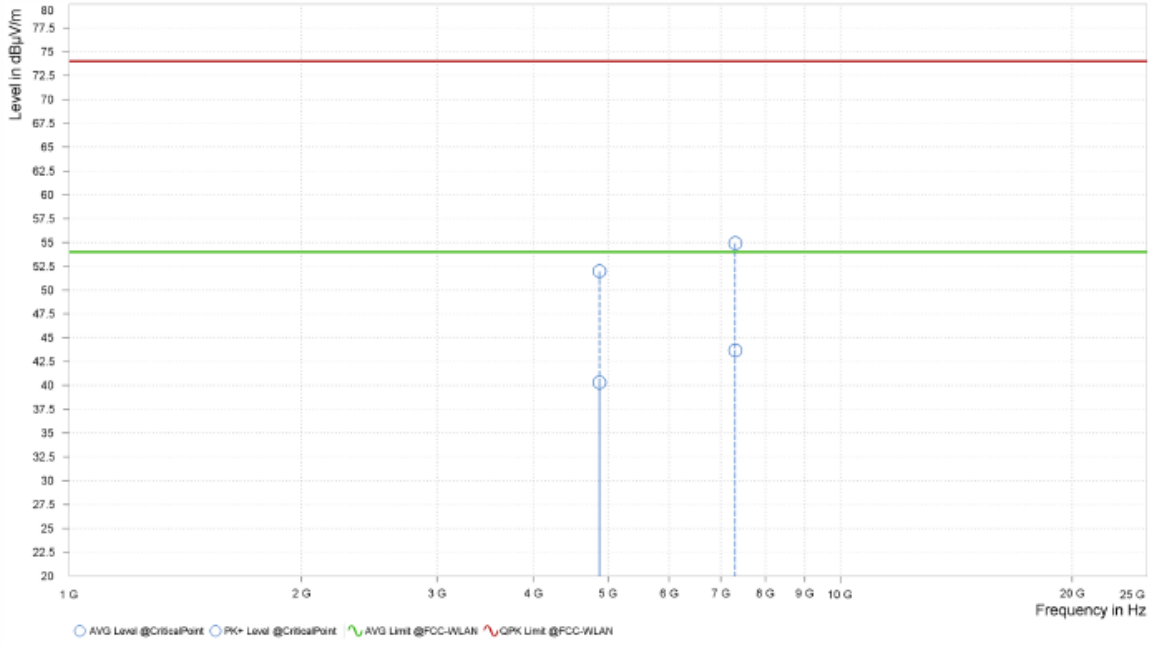
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.92	74.00	22.08	40.30	54.00	13.70	4.89	H	0.9	2.00
3	7,311.000	54.54	74.00	19.46	43.70	54.00	10.30	11.16	H	0.9	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.97	74.00	22.03	40.32	54.00	13.68	4.89	V	359	1.00
3	7,311.000	54.91	74.00	19.09	43.68	54.00	10.32	11.16	V	115.4	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
   2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,468.200	102.43			-0.91	H	57	2.00
2	2,483.500	37.62	54.00	16.38	-0.87	H	0.9	2.00
2	2,483.560	37.82	54.00	16.18	-0.87	H	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.360	114.32			-0.90	H	359	2.00
2	2,483.500	65.44	74.00	8.56	-0.87	H	58.1	2.00
2	2,483.560	69.15	74.00	4.85	-0.87	H	109.5	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.720	95.53			-0.90	V	1.1	2.00
2	2,483.500	34.51	54.00	19.49	-0.86	V	312.8	2.00
2	2,483.560	34.98	54.00	19.02	-0.87	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.360	108.55			-0.90	V	0.9	2.00
2	2,483.500	62.79	74.00	11.21	-0.86	V	312.7	2.00
2	2,483.560	67.82	74.00	6.18	-0.87	V	359	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11ax (20MHz) (RU106):

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	38.82	54.00	15.18	-1.05	H	1	2.00
1	2,390.000	38.55	54.00	15.45	-1.05	H	1	2.00
1	2,409.440	96.80			-0.90	H	1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	62.64	74.00	11.36	-1.05	H	0.9	2.00
1	2,390.000	60.37	74.00	13.63	-1.05	H	55.7	2.00
1	2,403.508	110.49			-0.94	H	107.1	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	35.54	54.00	18.46	-1.05	V	311.6	2.00
1	2,390.000	35.52	54.00	18.48	-1.05	V	311.6	2.00
1	2,404.638	93.38			-0.93	V	2.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.665	57.16	74.00	16.84	-1.05	V	49.7	1.00
1	2,390.000	56.44	74.00	17.56	-1.05	V	49.7	1.00
1	2,403.510	107.48			-0.94	V	8.2	2.00

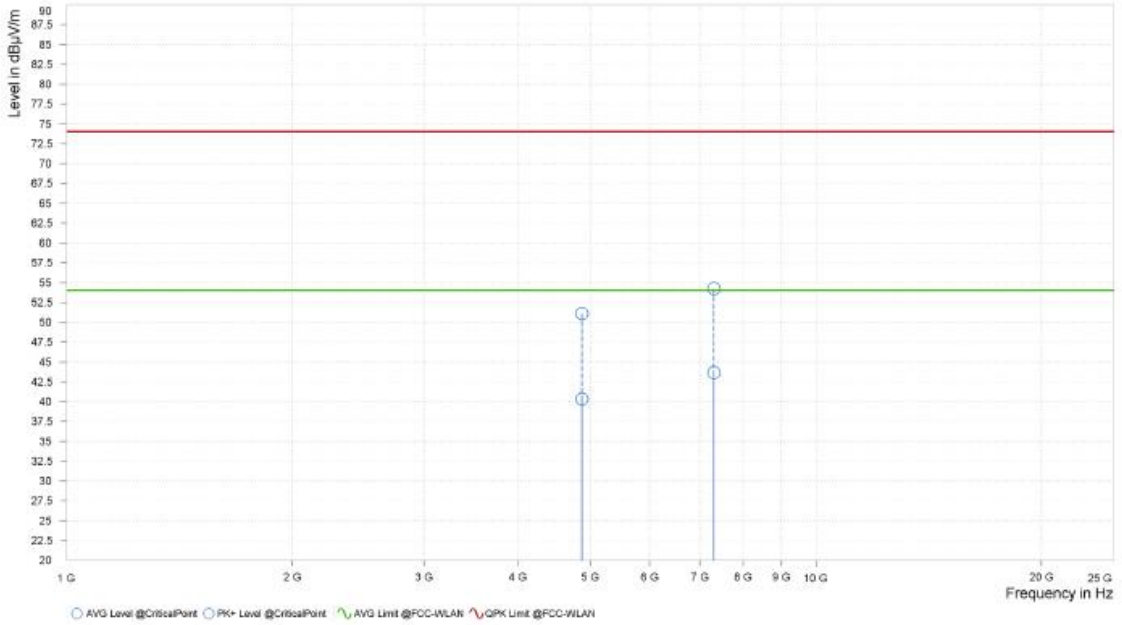
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

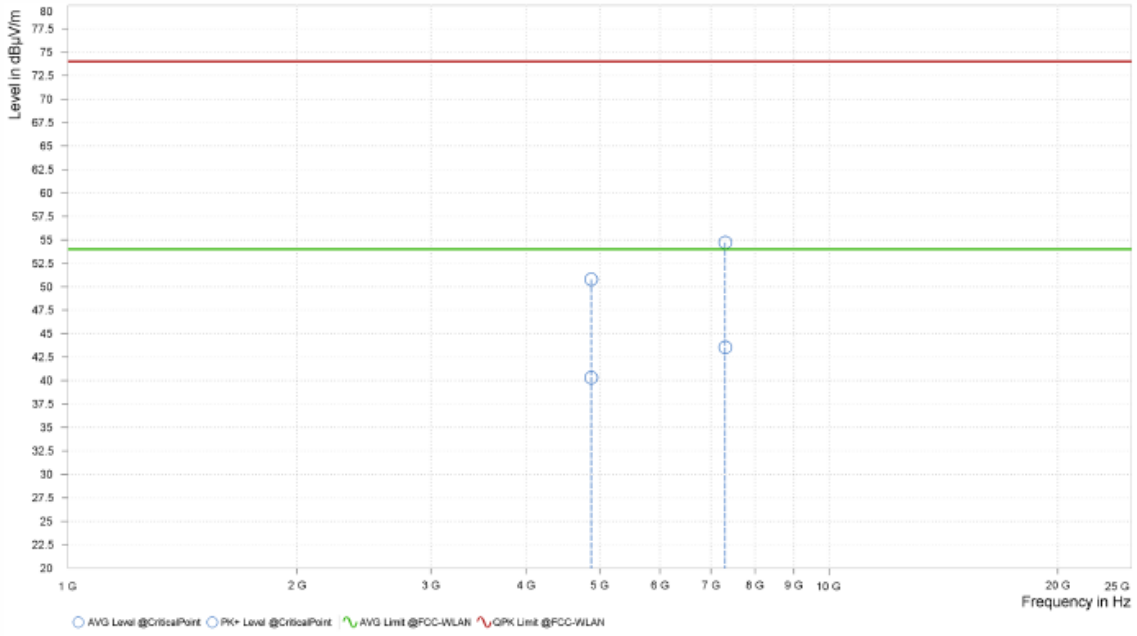
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.07	74.00	22.93	40.33	54.00	13.67	4.89	H	359	2.00
3	7,311.000	54.24	74.00	19.76	43.67	54.00	10.33	11.16	H	359.1	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.77	74.00	23.23	40.32	54.00	13.68	4.89	V	0.9	2.00
3	7,311.000	54.70	74.00	19.30	43.54	54.00	10.46	11.16	V	359	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
   2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.600	99.38			-0.90	H	359	2.00
2	2,483.500	39.80	54.00	14.20	-0.87	H	304.4	1.00
2	2,483.560	39.90	54.00	14.10	-0.87	H	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.840	107.24			-0.90	H	1	2.00
2	2,483.500	66.27	74.00	7.73	-0.87	H	359	2.00
2	2,483.560	67.12	74.00	6.88	-0.87	H	0.9	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.840	94.24			-0.90	V	7.8	2.00
2	2,483.560	37.58	54.00	16.42	-0.87	V	359	2.00
2	2,483.500	37.17	54.00	16.83	-0.87	V	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,470.960	107.26			-0.90	V	1.1	2.00
2	2,483.500	65.84	74.00	8.16	-0.87	V	1	1.00
2	2,483.560	67.47	74.00	6.53	-0.87	V	359	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11ax (20MHz) (RU 242):

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	44.12	54.00	9.88	-1.05	H	49.8	2.00
1	2,390.000	44.22	54.00	9.78	-1.05	H	49.8	2.00
1	2,411.418	95.55			-0.88	H	309.1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,388.818	61.23	74.00	12.77	-1.06	H	53.4	2.00
1	2,389.948	60.90	74.00	13.10	-1.05	H	357.6	1.00
1	2,409.160	108.77			-0.90	H	53.4	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,389.948	39.57	54.00	14.43	-1.05	V	255.3	1.00
1	2,390.000	38.15	54.00	15.85	-1.06	V	309.2	2.00
1	2,413.113	90.78			-0.87	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	2,388.253	54.60	74.00	19.40	-1.06	V	205.1	2.00
1	2,390.000	51.70	74.00	22.30	-1.05	V	311.6	2.00
1	2,413.960	104.03			-0.86	V	1	1.00

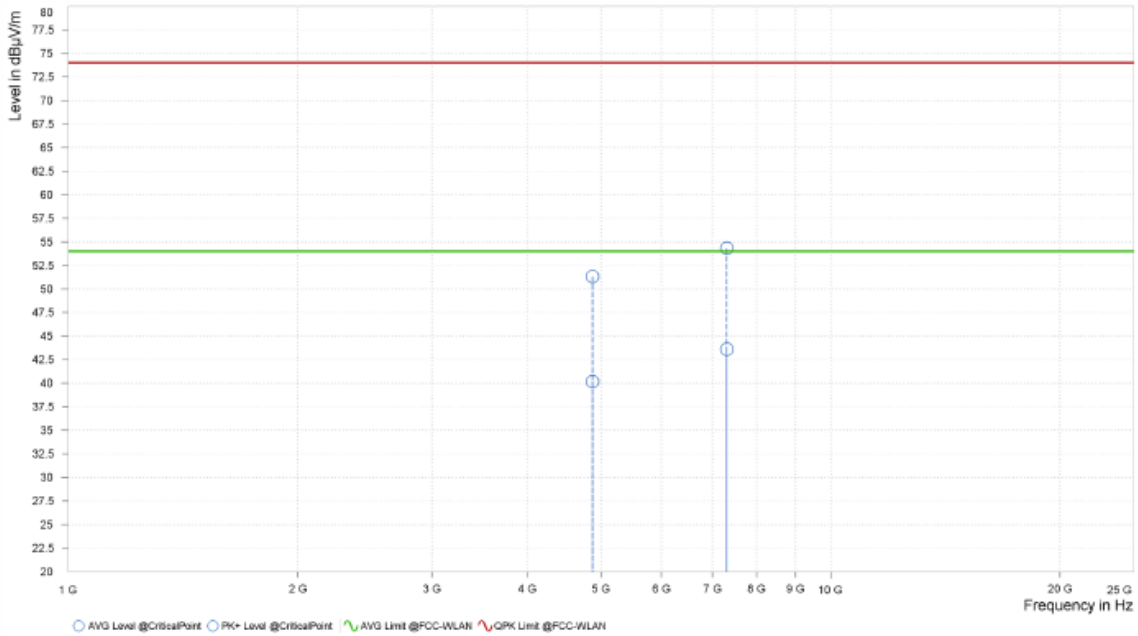
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2412MHz: Fundamental frequency.

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

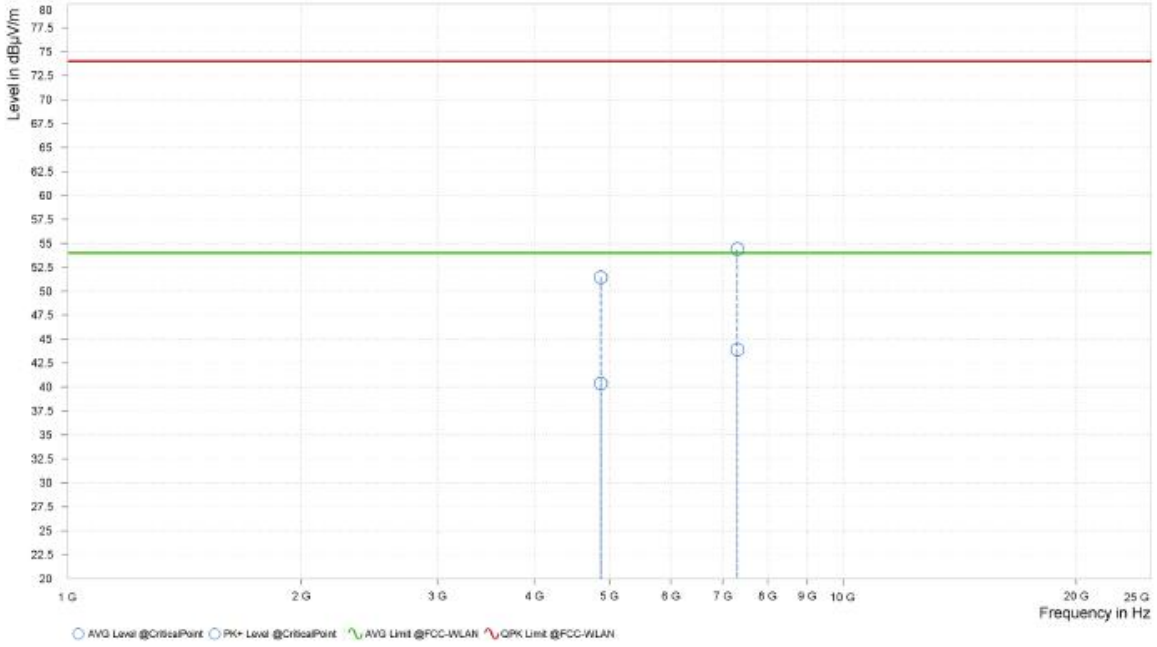
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.32	74.00	22.68	40.18	54.00	13.82	4.89	H	251.8	1.00
3	7,311.000	54.31	74.00	19.69	43.60	54.00	10.40	11.16	H	129.8	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.46	74.00	22.54	40.39	54.00	13.61	4.89	V	1	2.00
3	7,311.000	54.37	74.00	19.63	43.91	54.00	10.09	11.16	V	359	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,461.120	97.69			-0.90	H	359	2.00
2	2,483.500	47.49	54.00	6.51	-0.87	H	308	1.00
2	2,483.560	47.87	54.00	6.13	-0.87	H	308	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,460.640	111.45			-0.90	H	1	2.00
2	2,483.500	63.15	74.00	10.85	-0.87	H	99.9	2.00
2	2,484.280	64.59	74.00	9.41	-0.87	H	99.9	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,462.800	93.78			-0.91	V	359	2.00
2	2,483.500	43.47	54.00	10.53	-0.87	V	359	2.00
2	2,483.560	44.95	54.00	9.05	-0.87	V	0.9	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	2,463.520	107.36			-0.91	V	359	2.00
2	2,483.500	60.73	74.00	13.27	-0.87	V	8.3	2.00
2	2,485.000	62.59	74.00	11.41	-0.86	V	310.3	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2462MHz: Fundamental frequency.

802.11ax (40MHz) (RU484):

CHANNEL	TX Channel 3	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.988	39.28	54.00	14.72	-1.05	H	47.4	2.00
3	2,390.000	39.15	54.00	14.85	-1.05	H	47.4	2.00
3	2,421.375	98.52			-0.84	H	311.5	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.650	52.54	74.00	21.46	-1.05	H	2.5	2.00
3	2,390.000	52.34	74.00	21.66	-1.06	H	161	2.00
3	2,421.380	111.31			-0.84	H	334.2	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.988	36.00	54.00	18.00	-1.05	V	317.5	1.00
3	2,390.000	35.91	54.00	18.09	-1.05	V	317.5	1.00
3	2,424.413	91.98			-0.84	V	1	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	2,389.988	49.30	74.00	24.70	-1.05	V	310.4	2.00
3	2,390.000	49.04	74.00	24.96	-1.05	V	310.4	2.00
3	2,424.750	106.20			-0.84	V	1	1.00

REMARKS:

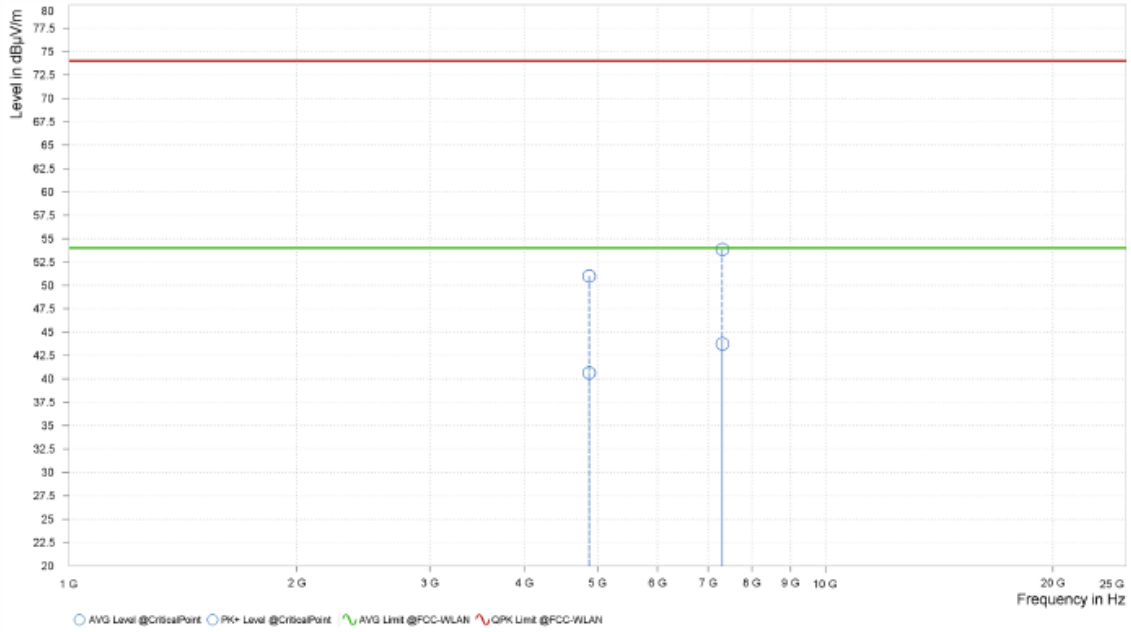
1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2422MHz: Fundamental frequency.

802.11ax (40MHz) (RU484):

CHANNEL	TX Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

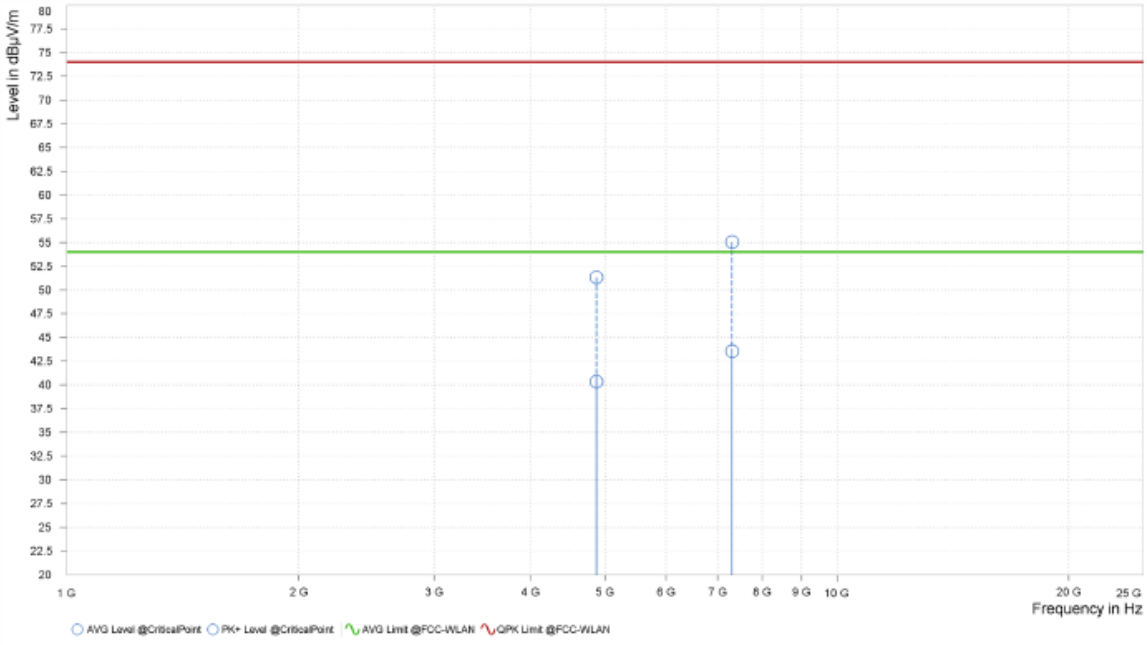
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	50.99	74.00	23.01	40.66	54.00	13.34	4.89	H	0.9	2.00
3	7,311.000	53.85	74.00	20.15	43.74	54.00	10.26	11.16	H	1	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+: QPK Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
3	4,874.000	51.30	74.00	22.70	40.33	54.00	13.67	4.89	V	129.8	2.00
3	7,311.000	55.04	74.00	18.96	43.54	54.00	10.46	11.16	V	359	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2437MHz: Fundamental frequency.
3. For frequency above 18GHz, the emission was tested 20db below the limit so the data not recorded in the sheet.

802.11ax (40MHz) (RU484):

CHANNEL	TX Channel 9	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.700	98.13			-0.85	H	353	1.00
4	2,483.500	38.25	54.00	15.75	-0.86	H	311.6	1.00
4	2,483.680	39.37	54.00	14.63	-0.87	H	311.6	1.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,450.360	111.73			-0.85	H	353.4	1.00
4	2,483.500	51.25	74.00	22.75	-0.86	H	359	1.00
4	2,483.680	53.42	74.00	20.58	-0.87	H	312.8	1.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,452.740	93.67			-0.86	V	359	2.00
4	2,483.500	35.38	54.00	18.62	-0.86	V	359	2.00
4	2,483.680	36.23	54.00	17.77	-0.87	V	359	2.00

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	2,452.740	107.38			-0.86	V	0.9	2.00
4	2,483.500	49.65	74.00	24.35	-0.87	V	359	2.00
4	2,484.360	49.65	74.00	24.35	-0.87	V	359	2.00

REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
   Margin value = Limit value – Emission Level.
2. 2452MHz: Fundamental frequency.

3.3 6 dB BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum 6dB Bandwidth Measurement is 0.5 MHz.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	R&S	ESW 44	101973	Feb.25,24	Feb.24,26
Open Switch and Control Unit	R&S	OSP-B157W 8	100836	N/A	N/A
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,24	Feb.15,26
Signal Generator	R&S	SMB100A03	182185	Feb.16,24	Feb.15,26
Wideband Radio Communication	R&S	CMW500	169399	Jun.26,22	Jun.25,24
Hygrothermograph	DELI	20210528	SZ015	Sep.06,22	Sep.05,24
PC	LENOVO	E14	HRSW0024	N/A	N/A
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.28,24	Apr.27,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.28,24	Apr.27,25
Test Software	EMC32	EMC32	N/A	N/A	N/A
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,24
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

NOTE:

1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

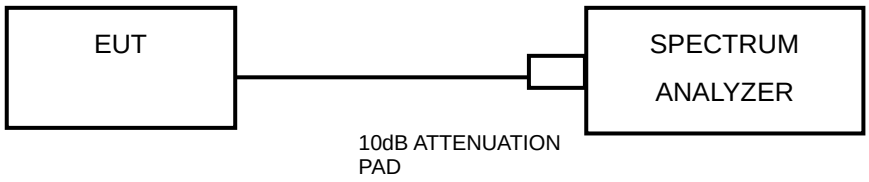
3.3.3 TEST PROCEDURE

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.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.3.7 TEST RESULTS

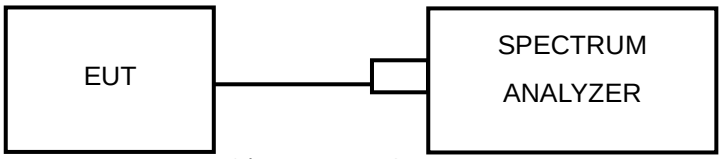
Please Refer to Appendix A Of this test report.

3.4 CONDUCTED OUTPUT POWER

3.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

3.4.2 TEST SETUP



10dB ATTENUATION PAD

3.4.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.4.4 TEST PROCEDURES

For 2.4G WIFI:

a) Measure the duty cycle D of the transmitter output signal as described in 11.6.

b) Set span to >1.5 times the OBW.

c) Set RBW = 1% to 5% of the OBW, but do not exceed 1 MHz.

d) Set VBW ≥ [3 × RBW].

e) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)

f) Sweep time = auto.

g) Detector = Power averaging (rms), if available. Otherwise, use the sample detector mode.

h) Do not use sweep triggering. Allow the sweep to “free run.”

i) Trace average at least 100 traces in power averaging (rms) mode; however, the

number of traces to be averaged shall be increased above 100 until trace is stabilized so that the average accurately represents the true average over the ON and OFF periods of the transmitter.

j) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band-power measurement function with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

k) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is 25%.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

The software provided by the client enables the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.4.7 TEST RESULTS

3.4.7.1 MAXIMUM PEAK OUTPUT POWER

Please Refer to Appendix A Of this test report.

3.4.7.2 AVERAGE OUTPUT POWER (FOR REFERENCE)

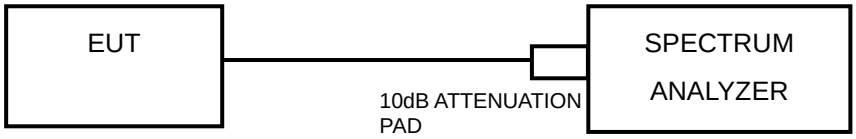
Please Refer to Appendix A Of this test report.

3.5 POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm/3KHz.

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.5.4 TEST PROCEDURE

Method AVGPSD-1 uses trace averaging with EUT transmitting at full power throughout each sweep.
The following procedure may be used when the maximum (average) conducted output power was used to determine compliance to the fundamental output power limit. This is the baseline method for determining the maximum (average) conducted PSD level. If the instrument has a power averaging (rms) detector, then it must be used; otherwise, use the sample detector. The EUT must be configured to transmit continuously ($D \geq 98\%$), or else sweep triggering/signal gating must be implemented to help ensure that measurements are made only when the EUT is transmitting at its maximum power control level (no transmitter OFF time to be considered):

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to > 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
d) Set VBW ≥ [3 × RBW].
e) Detector = power averaging (rms) or sample detector (when rms not available).
f) Ensure that the number of measurement points in the sweep ≥ [2 × span / RBW].
g) Sweep time = auto couple.
h) Employ trace averaging (rms) mode over a minimum of 100 traces.
i) Use the peak marker function to determine the maximum amplitude level

j) If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat (note that this might require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.5.7 TEST RESULTS

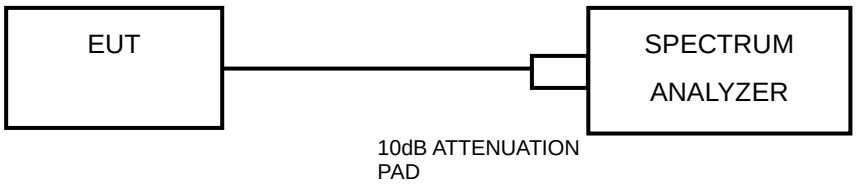
Please Refer to Appendix A Of this test report.

3.6 OUT OF BAND EMISSION MEASUREMENT

3.6.1 LIMITS OF OUT OF BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

3.6.2 TEST SETUP



3.6.3 TEST INSTRUMENTS

Refer to section 3.3.2 to get information of above instrument.

3.6.4 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOBE

1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

3.6.5 DEVIATION FROM TEST STANDARD

No deviation.

3.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.6.7 TEST RESULTS

The spectrum plots are attached on the following images. D1 line indicates the highest level. D2 line indicates the 20dB offset below D1. It shows compliance to the requirement.

Please Refer to Appendix A Of this test report.

3.7 ANTENNA REQUIREMENTS

3.7.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit 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.

3.7.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

3.7.3 ANTENNA GAIN

According to FCC KDB 662911 D01 Multiple Transmitter Output v02r01
For CDD transmissions, directional gain is calculated as
Directional gain=GANT +Array Gain, where Array Gain is as follows.
For power spectral density (PSD) measurements on all devices,
Array Gain= 10 log(NANT/ Nss) dB;
For power measurements on IEEE 802.11 devices,Array Gain = 0 dB for NANT≤ 4;
The EUT supports Cyclic Delay Diversity (CDD) mode,
For power measurements,the directional GANT is set equal to the antenna having the highest gain as following formulas.

Directional Gain = Max.Gain + Array Gain.

For PSD measurements,the directional GANT is calculation is following F)2)f)ii of KDB 662911 D01 v02r01.
The directional gain is calculated as following table.

2.4GHz	Ant 8 (dBi)	Ant 9 (dBi)	DG For Power (dBi)	DG For PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
	-1.41	1.57	1.57	3.22	0.00	0.00

NOTE :DG= directional gain, Power Limit Reduction = DG For Power Gain -6dbi<0

PSD Limit Reduction = DG For PSD – 6dBi<0.Therefore, it is not necessary to reduce maximum peak output power and PSD limit.

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

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

No any modifications are made to the EUT by the lab during the test.

--END--