CFR 47 FCC PART 15 SUBPART C

TEST REPORT

For

Z-Wave 800 Dongle Plus

MODEL NUMBER: Dongle-PZG23

REPORT NUMBER: E04A25100430F00501

ISSUE DATE: December 15, 2025

FCC ID: 2APN5-DONGLEPZG23

Prepared for

Shenzhen Sonoff Technologies Co., Ltd.

3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

Prepared by

Guangdong Global Testing Technology Co., Ltd.

Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	December 15, 2025	Initial Issue	

Summary of Test Results			
Clause	Test Items	Rules	Test Results
1	20 dB Bandwidth 99 % Occupied Bandwidt	CFR 47 FCC §15.215 (c)	Pass
2	Radiated Emission	CFR 47 FCC §15.249 (a)(d)(e) CFR 47 FCC §15.205 and §15.209	Pass
3	Conducted Emission Test for AC Power Port	CFR 47 FCC §15.207	Pass
4	Antenna Requirement	CFR 47 FCC §15.203	Pass
Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China. Note 2: The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C> when <Accuracy Method> decision rule is applied.			

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Shenzhen Sonoff Technologies Co., Ltd.
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

Manufacturer Information

Company Name:	Shenzhen Sonoff Technologies Co., Ltd.
Address:	3F & 6F, Bldg A, No. 663, Bulong Rd, Shenzhen, Guangdong, China

EUT Information

EUT Name:	Z-Wave 800 Dongle Plus
Model:	Dongle-PZG23
Series Model:	/
Brand:	/
Sample Received Date:	November 13, 2025
Sample Status:	Normal
Sample ID:	A25100430 001
Date of Tested:	November 14, 2025 to December 03, 2025

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS

Prepared By:

Ellie Yang

Project Engineer

Checked By:

Alan He

Laboratory Leader

Approved By:

Shawn Wen

Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2020.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 6947.01)** Guangdong Global Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1343)** Guangdong Global Testing Technology Co., Ltd. has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules **ISED (Company No.: 30714)** Guangdong Global Testing Technology Co., Ltd. has been registered and fully described in a report filed with ISED. The Company Number is 30714 and the test lab Conformity Assessment Body Identifier (CABID) is CN0148.

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
AC Power Line Conducted Emission	0.009 MHz ~ 0.15 MHz	2	4.00
	0.15 MHz ~ 30 MHz	2	3.62
Radiated Band edge and Spurious Emission	9kHz ~ 30MHz	2	2.20
	30 MHz ~ 1 GHz	2	3.16
	1 GHz ~ 18 GHz	2	5.64
	18 GHz ~ 26.5 GHz	2	5.54
Conducted Output Power	/	2	0.73
6dB Bandwidth and 99% Occupied Bandwidth	/	2	9.2ppm
Power Spectral Density	/	2	1.84
Conducted Band edge and spurious emission	9kHz ~ 30MHz	2	0.95
	30 MHz ~ 1 GHz	2	1.49
	1 GHz ~ 18 GHz	2	1.75
	18 GHz ~ 26.5 GHz	2	2.06
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Z-Wave 800 Dongle Plus		
Model	Dongle-PZG23		
Product Description	Operation Frequency		908.4MHz, 916MHz
	Modulation Type		GFSK
Ratings	Input: 5V ⎓ 500mA		
Power Supply	DC Power	Input	5V
		Output	/
	Battery	/	
Hardware Version	v1.0		
Software Version	v1.0		

5.2. MAXIMUM FIELD STRENGTH

Frequency (MHz)	Ant.	Max Peak field strength (dBμV/m)
908.4MHz	1	91.15
916MHz	1	91.79

5.3. CHANNEL LIST

Channel	Frequency (MHz)
1	908.4MHz
2	916MHz

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	908.4MHz, 916MHz	Glue Stick Antenna	2.19

Test Mode	Transmit and Receive Mode	Description
GFSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.5. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	1	908.4MHz
GFSK	1	916MHz

5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 908.4MHz, 916MHz Band		
Test Software		/
Modulation Type	Transmit Antenna Number	Test Channel
		2
GFSK	1	200

5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	0 ~ 100 %	
Atmospheric Pressure:	1025 Pa	
Temperature	TN	-10 ~ 60 °C
Voltage:	VL	N/A
	VN	DC 5V
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Equipment	Manufacturer	Model No.
PC	Lenovo	T14

TEST SETUP

The EUT can work in engineering mode with the software in the laptop.

SETUP DIAGRAM FOR TEST

Radiated emissions:

AC Power Line Conducted Emission:

6. MEASURING INSTRUMENT AND SOFTWARE USED

Test Equipment of Continuous RF electromagnetic field disturbances					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Stacked Log-Per-Broadband Antenna	Schwarzbeck	STLP 9129	170	N/A	N/A
Power amplifier	MiCOTOP	MPA-80-1000-500	MPA2209336	8/23/2025	8/22/2026
Power amplifier	MiCOTOP	MPA-1000-6000-100	MPA2209337	8/23/2025	8/22/2026
EPM Series Power Meter	Keysight	N1914A	MY53240003	8/23/2025	8/22/2026
Average Power Sensor	Keysight	E9304A	MY41498925	8/23/2025	8/22/2026
Average Power Sensor	Keysight	E9304A	MY41497454	8/23/2025	8/22/2026
EXG Analog Signal Generator	Keysight	N5171B	MY61252624	8/23/2025	8/22/2026
Field Probe	Narda	EP 601	811ZX11137	8/26/2025	8/25/2026
Microphone kit	Magasig	MPA 663	220803075	8/25/2025	8/24/2026
Test Software for RS	HzEMC	FASLAB-RS	V2.7.2.3	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Chamber	ETS	9*6*6	Q2146	8/22/2025	8/21/2026
Receiver	R&S	ESCI3	101409	8/22/2025	8/21/2026
Loop Antenna	ETS	6502	243668	2/22/2025	2/21/2028
Pre-Amplifier	HzEMC	HPA-9K0130	HYPA21001	8/23/2025	8/22/2026
Biconilog Antenna	Schwarzbeck	VULB 9168	1315	8/20/2025	8/19/2028
Biconilog Antenna	ETS	3142E	243651	2/22/2025	2/21/2028
Test Software for RE	Farad	EZ-EMC	V1.1.4.2	N/A	N/A

Test Equipment of Radiated emissions above 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2146	8/22/2025	8/21/2026
Spectrum Analyzer	Rohde & Schwarz	FSV40	101413	8/22/2025	8/21/2026
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	8/22/2025	8/21/2026
Pre-Amplifier	A-INFO	HPA-1G1850	HYPA21003	8/22/2025	8/21/2026

Horn antenna	A-INFO	3117	246069	8/22/2025	8/21/2026
Pre-Amplifier	ZKJC	HPA-184057	HYPA21004	8/22/2025	8/21/2026
Horn antenna	ZKJC	3116C	246265	8/22/2025	8/21/2026
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE+)	N/A	N/A	N/A

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

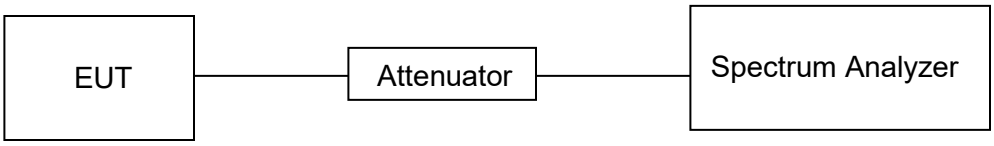
LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

TEST SETUP



TEST ENVIRONMENT

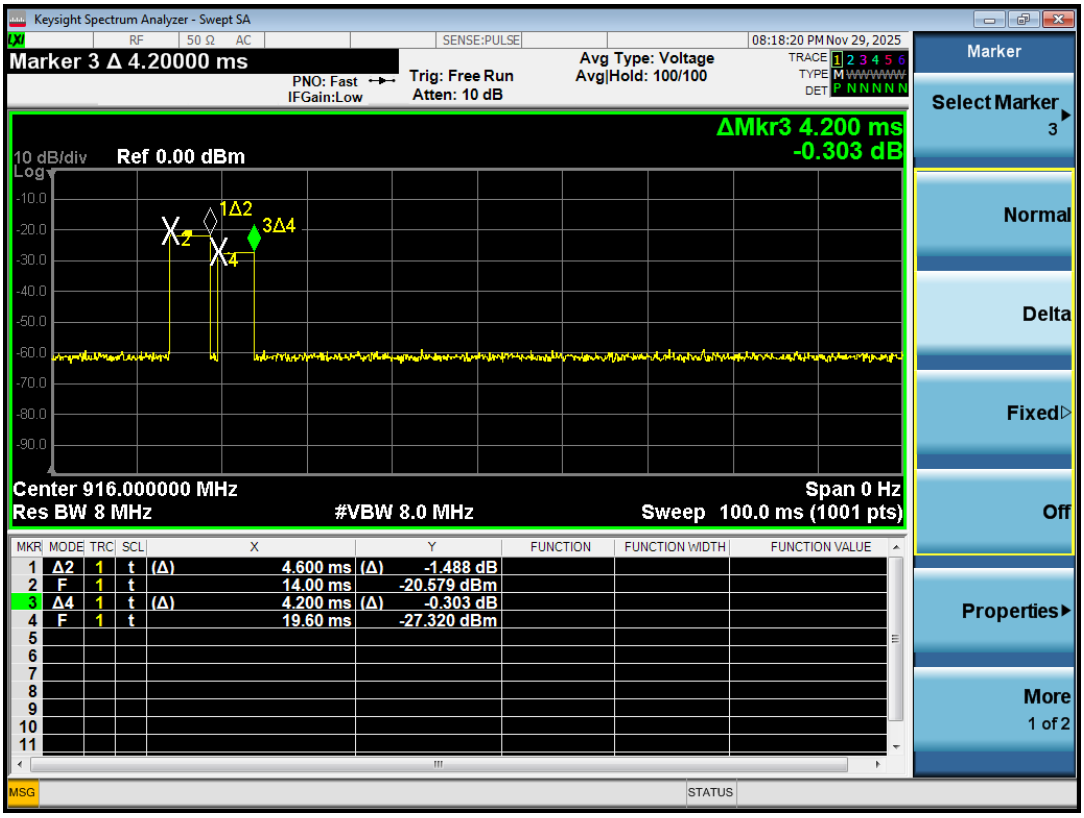
Temperature	22.3°C	Relative Humidity	53%
Atmosphere Pressure	101 kPa	Test Voltage	DC 5V

RESULTS

On Time T (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
8.8	100	0.088	8.8	-21.11

Note:
Duty Cycle Correction Factor=20log(x).
Where: x is Duty Cycle (Linear)
Where: T is On Time (transmitting duration)

ON TIME AND DUTY CYCLE



LIMITS

CFR 47 FCC Part15 (15.249) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.215 (c)	20 dB Bandwidth	for reporting purposes only	908.4-916

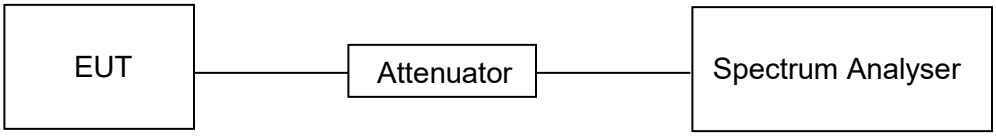
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	1 % to 5 % of the occupied bandwidth
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and 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 / 99 % relative to the maximum level measured in the fundamental emission.

TEST SETUP

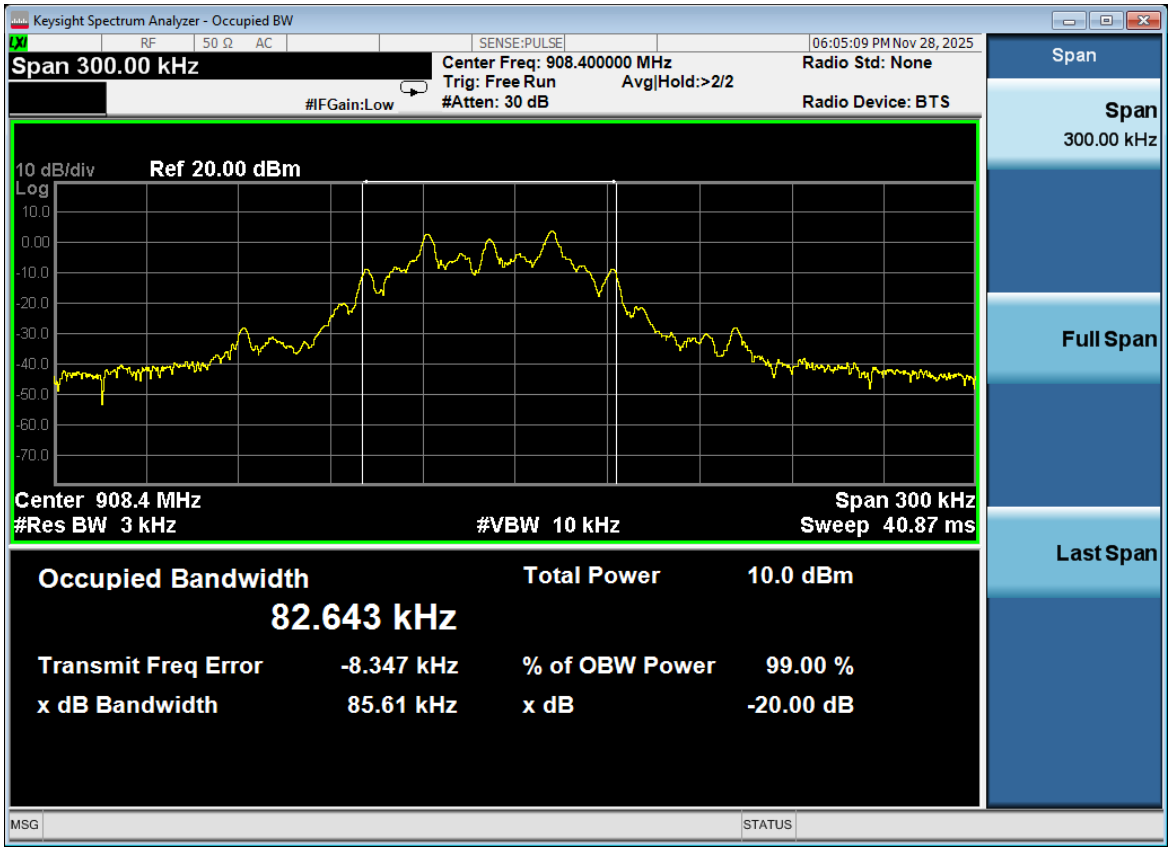


TEST ENVIRONMENT

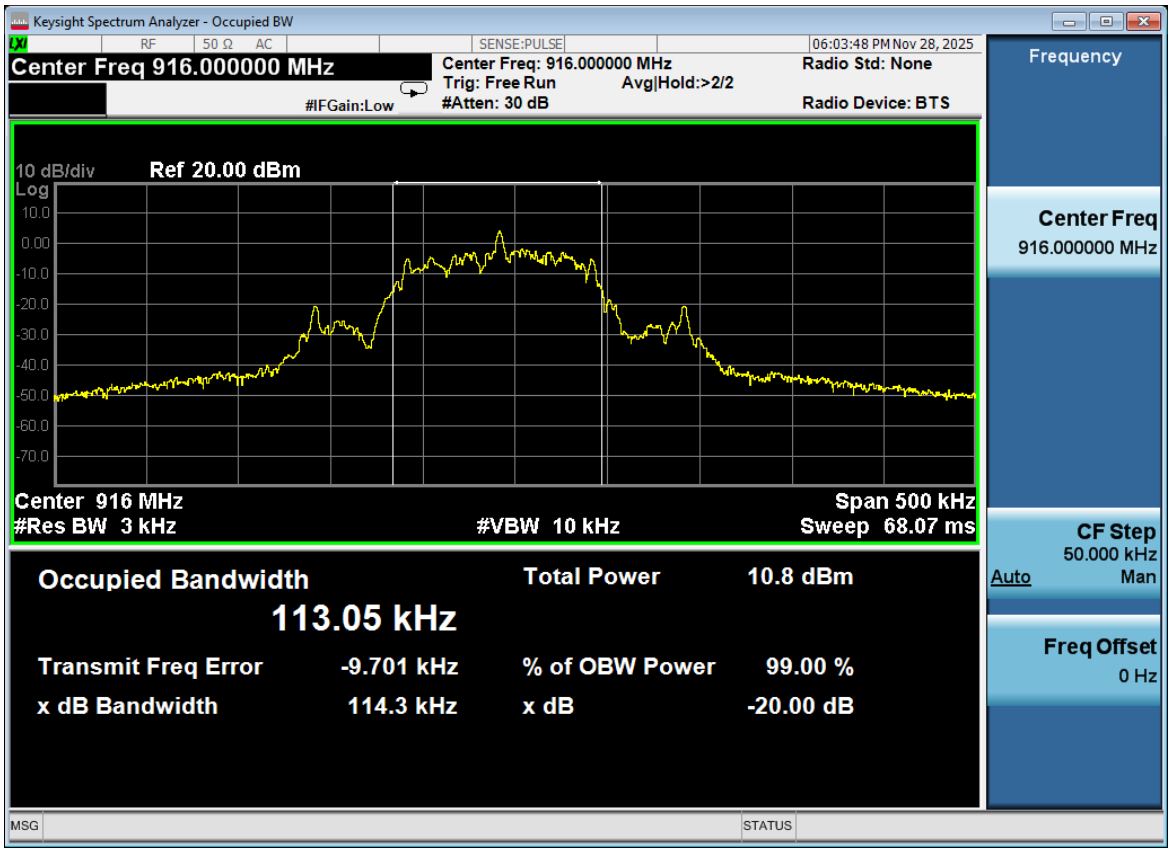
Temperature	22.3°C	Relative Humidity	53%
Atmosphere Pressure	101 kPa	Test Voltage	DC 5V

RESULTS

Channel	20dB bandwidth (KHz)	Limit (kHz)	Result
1	85.61	--	Pass



Channel	20dB bandwidth (KHz)	Limit (kHz)	Result
2	114.3	--	Pass



RADIATED TEST RESULTS

7.2. LIMITS AND PROCEDURE

LIMITS

CFR 47 FCC §15.205 and §15.209

CFR 47 FCC §15.249 (a)(d)(e)

The field strength of emissions from intentional radiators operated within these frequency bands			
Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3
2400 – 2483.5	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3
5725 – 5875	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3

Emissions radiated outside of the specified frequency bands above 30MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

Emissions radiated outside of the specified frequency bands below 30 MHz		
Frequency (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

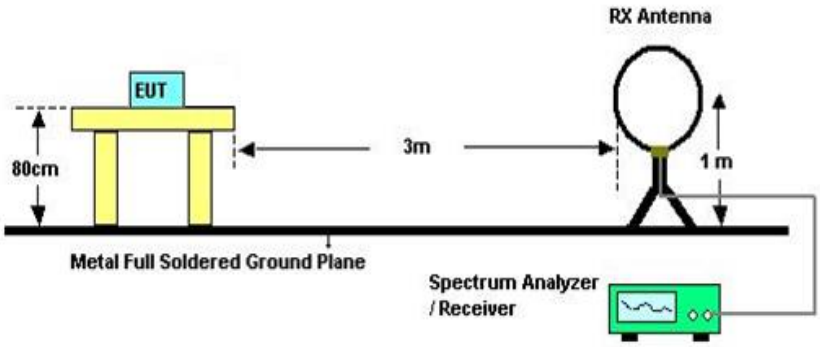
FCC Restricted bands of operation:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.

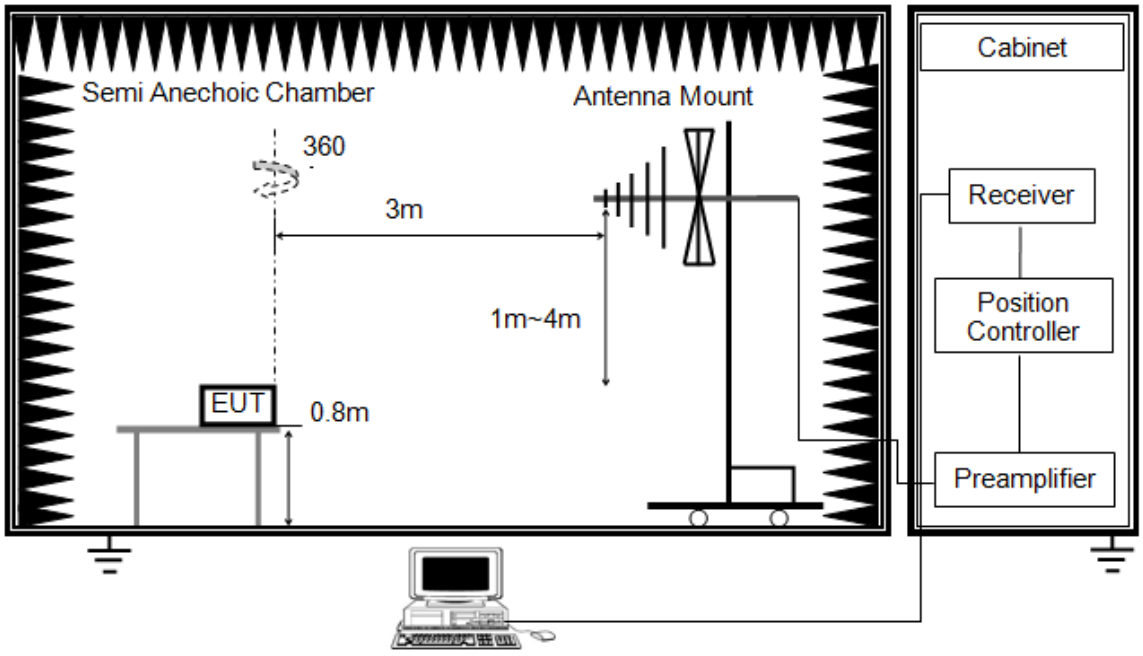
5. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

6. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

7. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

8. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open field site. Therefore, the sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1 GHz



The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

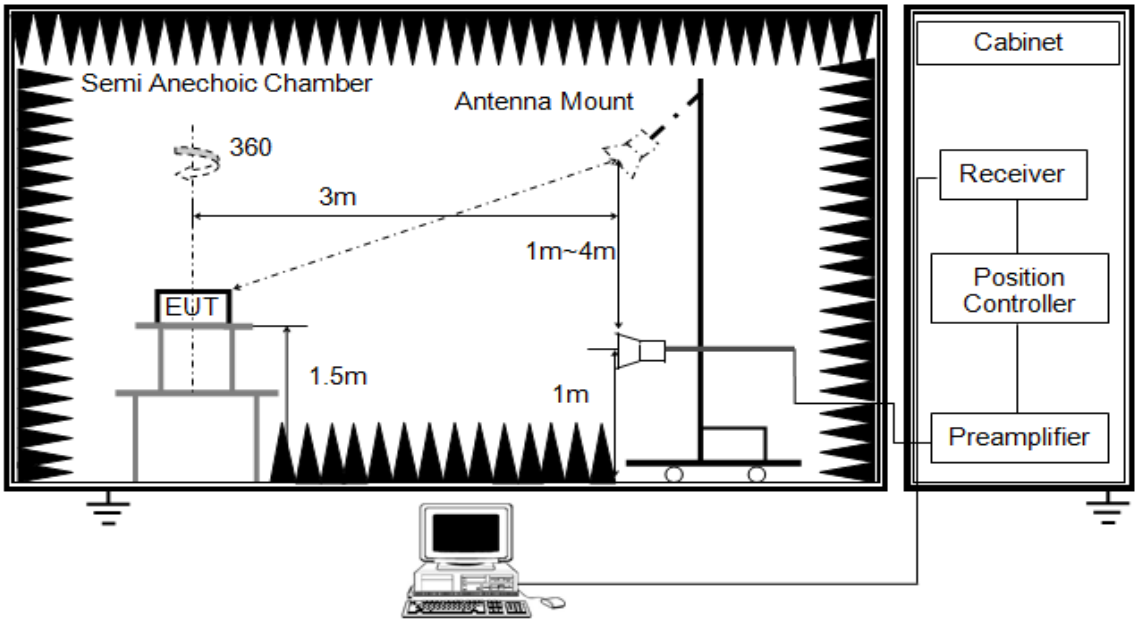
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

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

7. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

Above 1 GHz



The setting of the spectrum analyser

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2020.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter or band reject filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

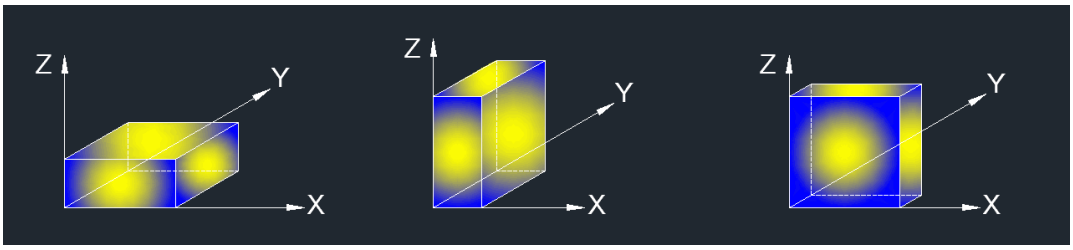
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

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

7. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 6.1. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



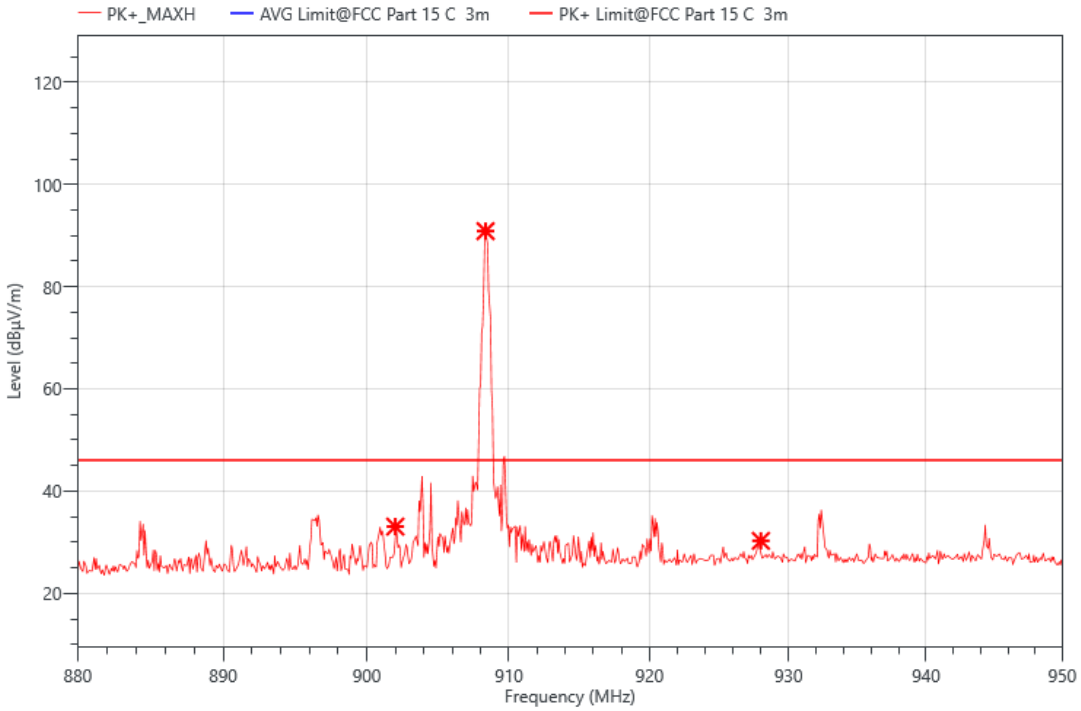
Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis for horizontal and Y axis for vertical) data recorded in the report.

TEST ENVIRONMENT

Temperature	24.3 °C	Relative Humidity	54%
Atmosphere Pressure	101 kPa	Test Voltage	DC 3V

7.3. RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS

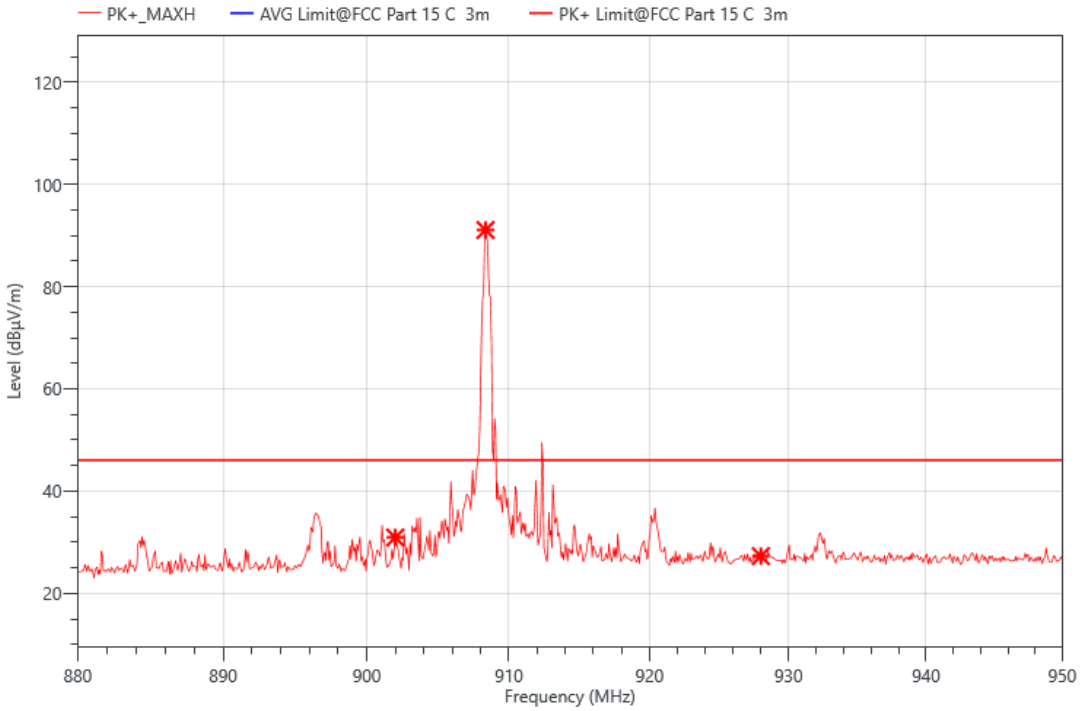
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (908.4 MHz, HORIZONTAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	902.000	37.32	-4.26	33.06	46.00	12.94	PK+	H
2	908.350	94.70	-3.83	90.87	46.00	-44.87	PK+	H
3	928.000	32.49	-2.22	30.27	46.00	15.73	PK+	H

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

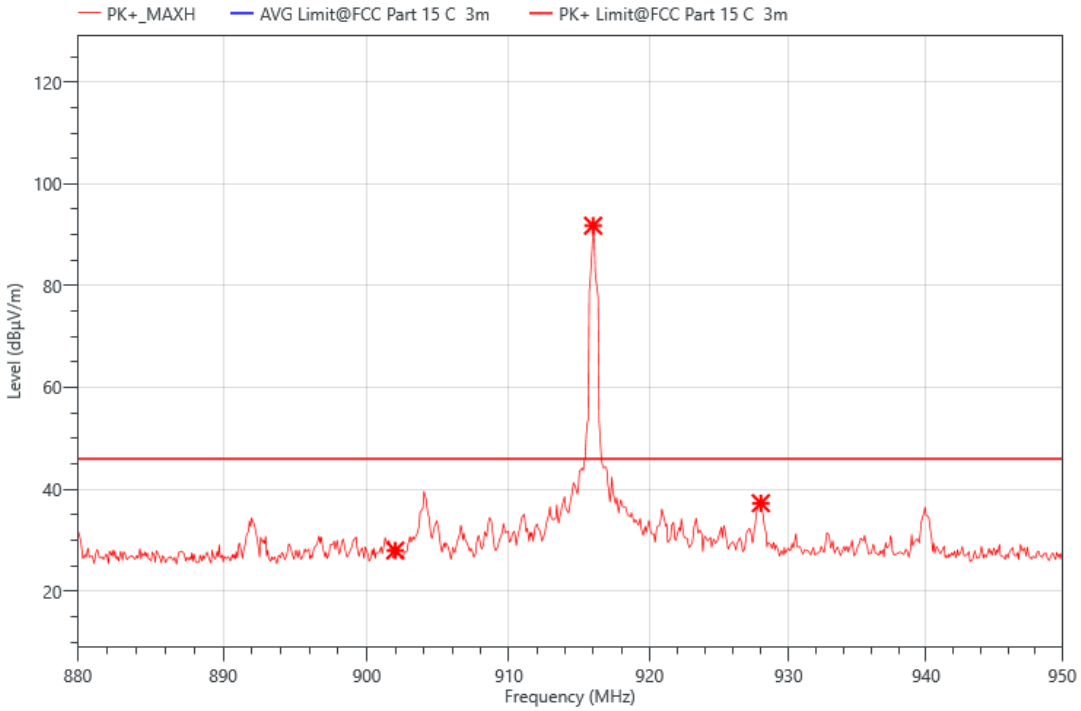
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (908.4 MHz, VERTICAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	902.000	35.20	-4.26	30.94	46.00	15.06	PK+	V
2	908.350	94.91	-3.83	91.08	46.00	-45.08	PK+	V
3	928.000	29.50	-2.22	27.28	46.00	18.72	PK+	V

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

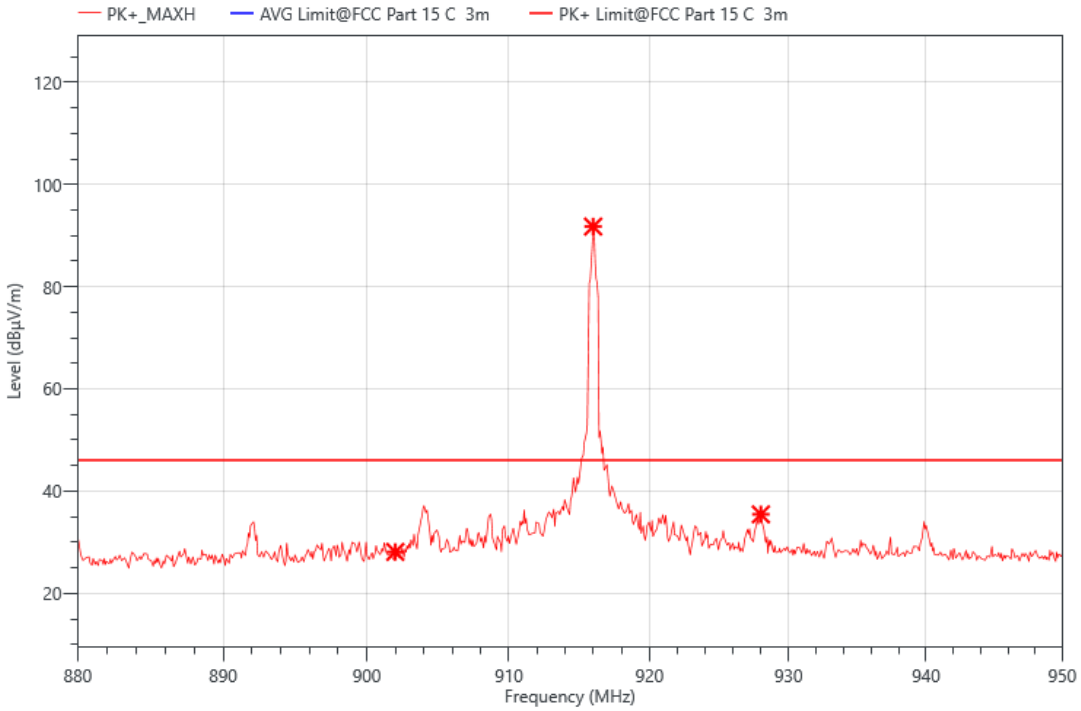
RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (916 MHz, HORIZONTAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	902.000	32.22	-4.26	27.96	46.00	18.04	PK+	H
2	915.980	94.96	-3.19	91.77	46.00	-45.77	PK+	H
3	928.000	39.48	-2.22	37.26	46.00	8.74	PK+	H

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE AND FIELD STRENGTH OF INTENTIONAL EMISSIONS (916 MHz, VERTICAL)

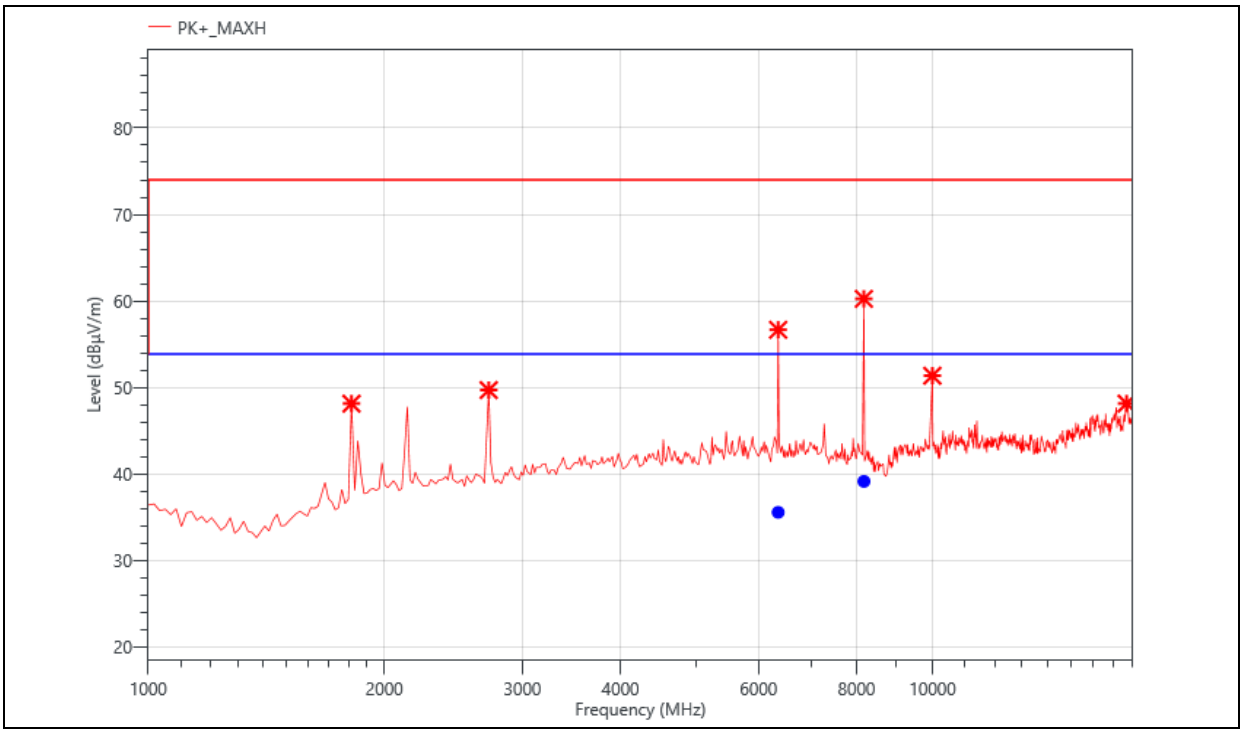


No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	902.000	32.37	-4.26	28.11	46.00	17.89	PK+	V
2	915.980	94.96	-3.19	91.77	46.00	-45.77	PK+	V
3	928.000	37.67	-2.22	35.45	46.00	10.55	PK+	V

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

7.4. SPURIOUS EMISSIONS (Above 1000MHz~10th Harmonics)

HARMONICS AND SPURIOUS EMISSIONS (908.4 MHz, HORIZONTAL)



Critical_Freqs

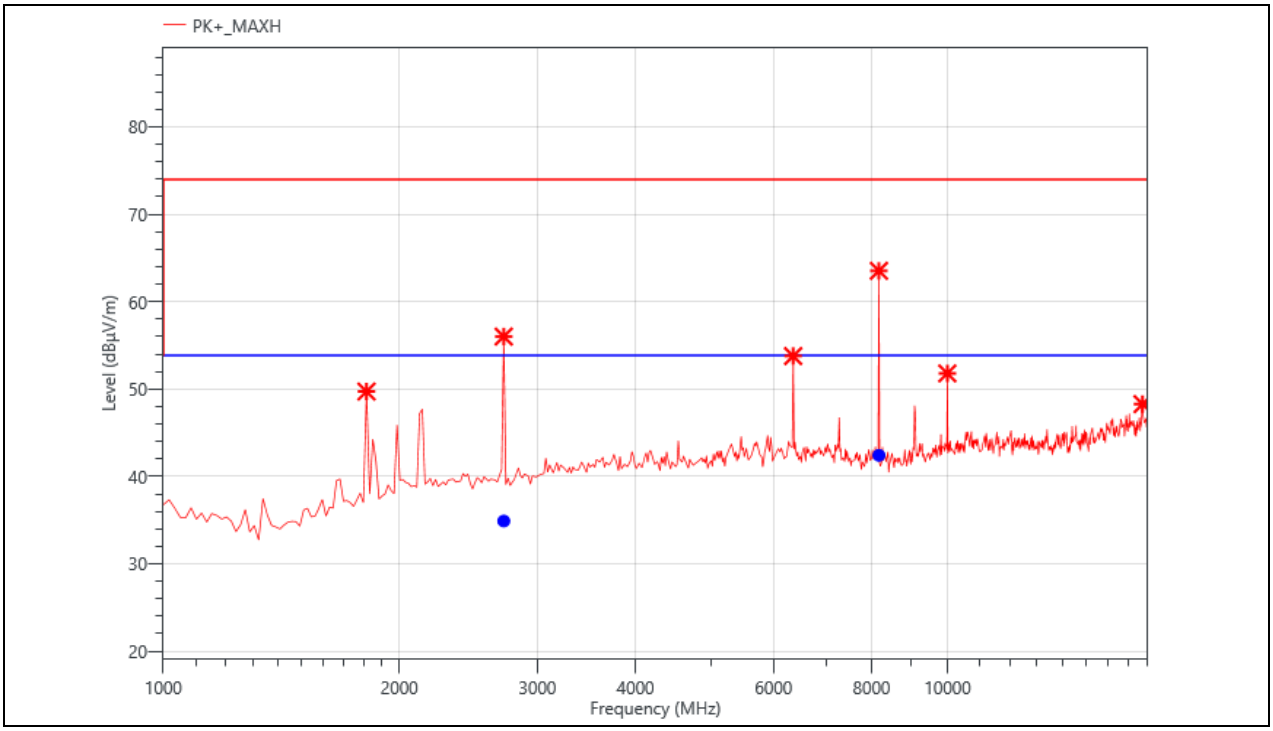
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	1816.000	68.04	-19.92	48.12	74.00	25.88	PK+	H
2	2717.000	66.51	-16.82	49.69	74.00	24.31	PK+	H
3	6355.000	64.70	-8.04	56.66	74.00	17.34	PK+	H
4	8174.000	68.51	-8.27	60.24	74.00	13.76	PK+	H
5	9993.000	57.45	-6.1	51.35	74.00	22.65	PK+	H
6	17677.000	48.49	-0.36	48.13	74.00	25.87	PK+	H

Final_Result

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	6355.000	43.59	-8.04	35.55	53.90	18.35	AVG	H	PASS
2	8174.000	47.40	-8.27	39.13	53.90	14.77	AVG	H	PASS

Note: 1. Peak Result = Reading Level + Correct Factor.
AVG Result = Peak Result + Duty Cycle Correction Factor
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (908.4 MHz, VERTICAL)



Critical_Freqs

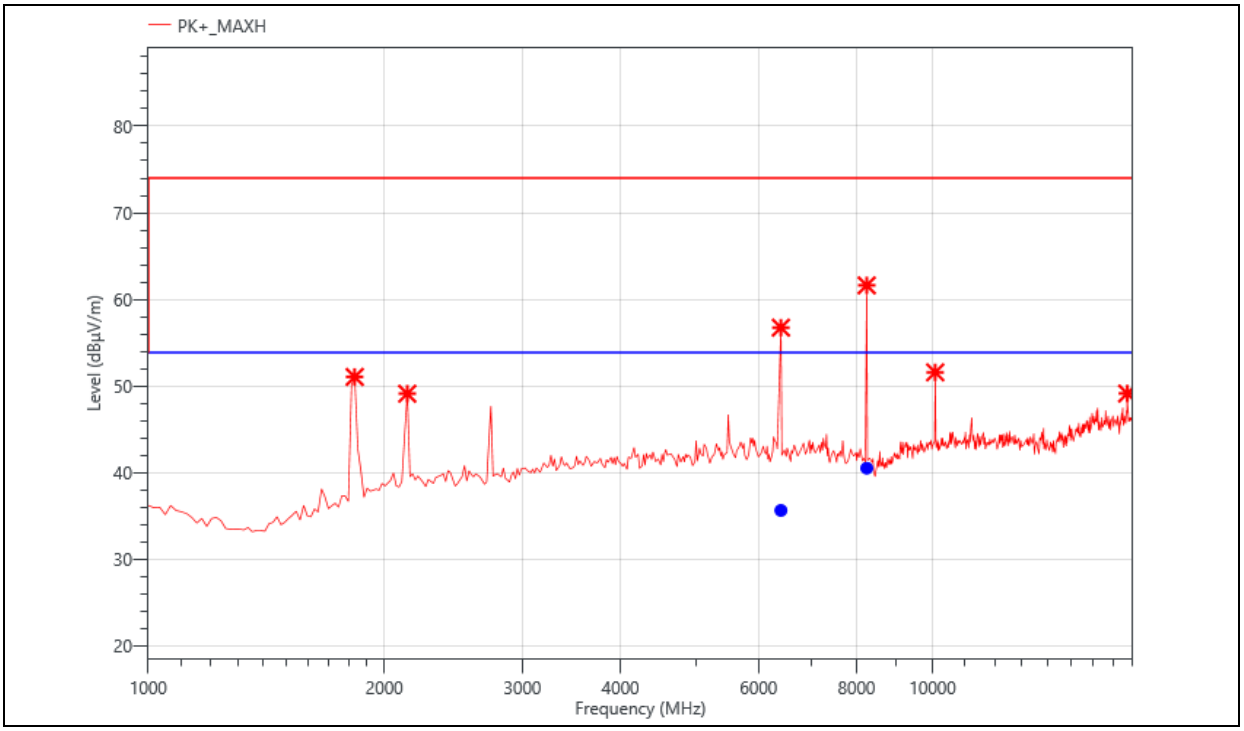
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	1816.000	69.64	-19.92	49.72	74.00	24.28	PK+	V
2	2717.000	72.83	-16.82	56.01	74.00	17.99	PK+	V
3	6355.000	61.82	-8.04	53.78	74.00	20.22	PK+	V
4	8174.000	71.80	-8.27	63.53	74.00	10.47	PK+	V
5	9993.000	57.89	-6.1	51.79	74.00	22.21	PK+	V
6	17728.000	47.76	0.52	48.28	74.00	25.72	PK+	V

Final_Result

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	2717.000	51.72	-16.82	34.90	53.90	19.00	AVG	V	PASS
2	8174.000	50.69	-8.27	42.42	53.90	11.48	AVG	V	PASS

Note: 1. Peak Result = Reading Level + Correct Factor.
AVG Result = Peak Result + Duty Cycle Correction Factor
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (916 MHz, HORIZONTAL)



Critical_Freqs

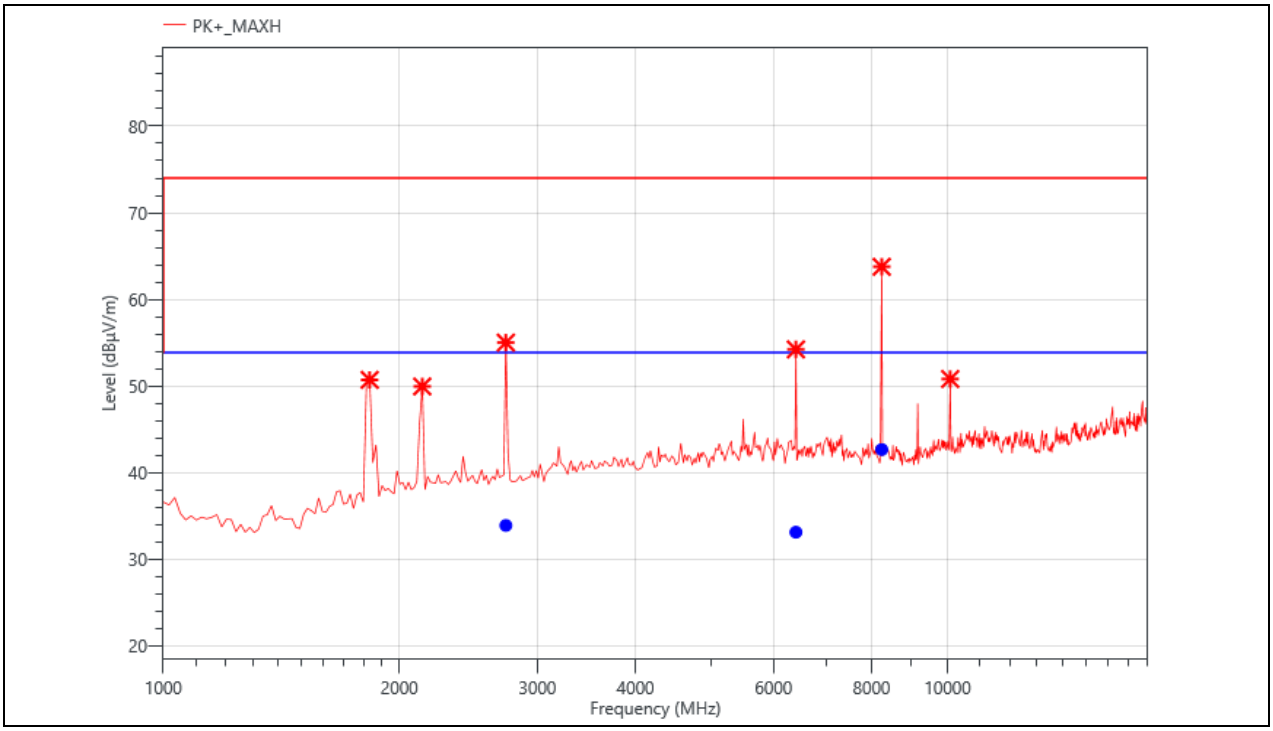
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	1833.000	70.81	-19.77	51.04	74.00	22.96	PK+	H
2	2139.000	67.11	-18.01	49.10	74.00	24.90	PK+	H
3	6406.000	64.96	-8.23	56.73	74.00	17.27	PK+	H
4	8242.000	69.55	-7.94	61.61	74.00	12.39	PK+	H
5	10078.000	57.91	-6.34	51.57	74.00	22.43	PK+	H
6	17711.000	48.87	0.25	49.12	74.00	24.88	PK+	H

Final_Result

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	6406.000	43.85	-8.23	35.62	53.90	18.28	AVG	H	PASS
2	8242.000	48.44	-7.94	40.50	53.90	13.40	AVG	H	PASS

Note: 1. Peak Result = Reading Level + Correct Factor.
AVG Result = Peak Result + Duty Cycle Correction Factor
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (916 MHz, VERTICAL)



Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	1833.000	70.47	-19.77	50.70	74.00	23.30	PK+	V
2	2139.000	67.95	-18.01	49.94	74.00	24.06	PK+	V
3	2734.000	71.76	-16.76	55.00	74.00	19.00	PK+	V
4	6406.000	62.45	-8.23	54.22	74.00	19.78	PK+	V
5	8242.000	71.70	-7.94	63.76	74.00	10.24	PK+	V
6	10078.000	57.14	-6.34	50.80	74.00	23.20	PK+	V

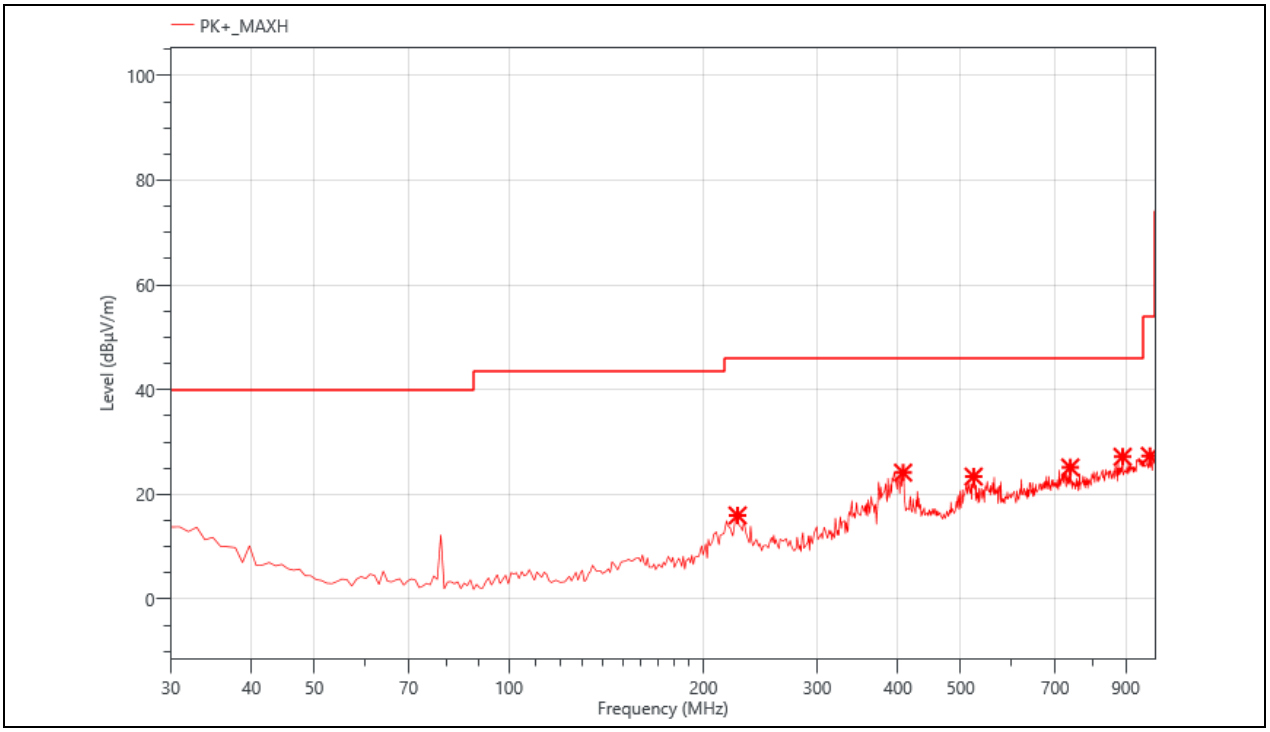
Final_Result

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	2734.000	50.65	-16.76	33.89	53.90	20.01	AVG	V	PASS
2	6406.000	41.34	-8.23	33.11	53.90	20.79	AVG	V	PASS
3	8242.000	50.59	-7.94	42.65	53.90	11.25	AVG	V	PASS

Note: 1. Peak Result = Reading Level + Correct Factor.
AVG Result = Peak Result + Duty Cycle Correction Factor
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

7.5. PURIOUS EMISSIONS BELOW 1 GHz AND ABOVE 30 MHz

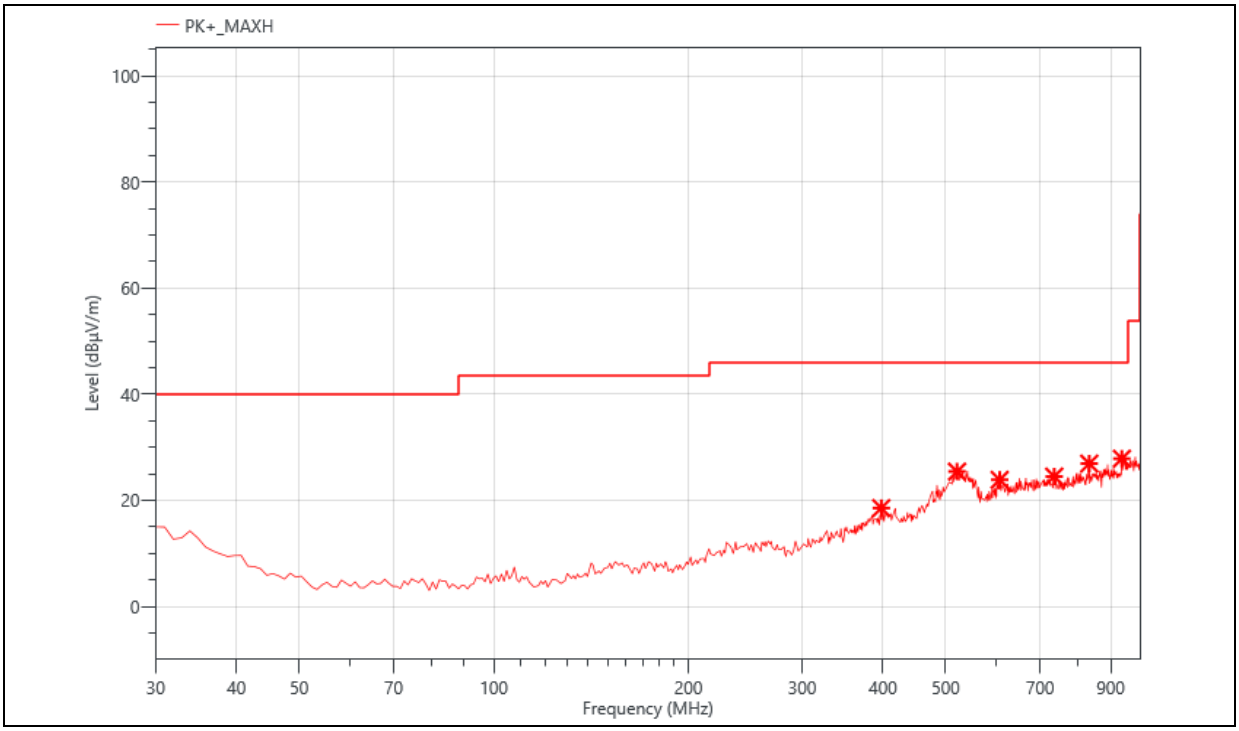
SPURIOUS EMISSIONS (908.4 MHz, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	225.940	36.15	-20.19	15.96	46.00	30.04	PK+	H
2	407.330	37.57	-13.42	24.15	46.00	21.85	PK+	H
3	523.730	34.12	-10.72	23.40	46.00	22.60	PK+	H
4	739.070	31.60	-6.46	25.14	46.00	20.86	PK+	H
5	890.390	31.54	-4.37	27.17	46.00	18.83	PK+	H
6	981.570	29.98	-2.64	27.34	53.90	26.56	PK+	H

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

SPURIOUS EMISSIONS (908.4 MHz, WORST-CASE CONFIGURATION, VERTICAL)

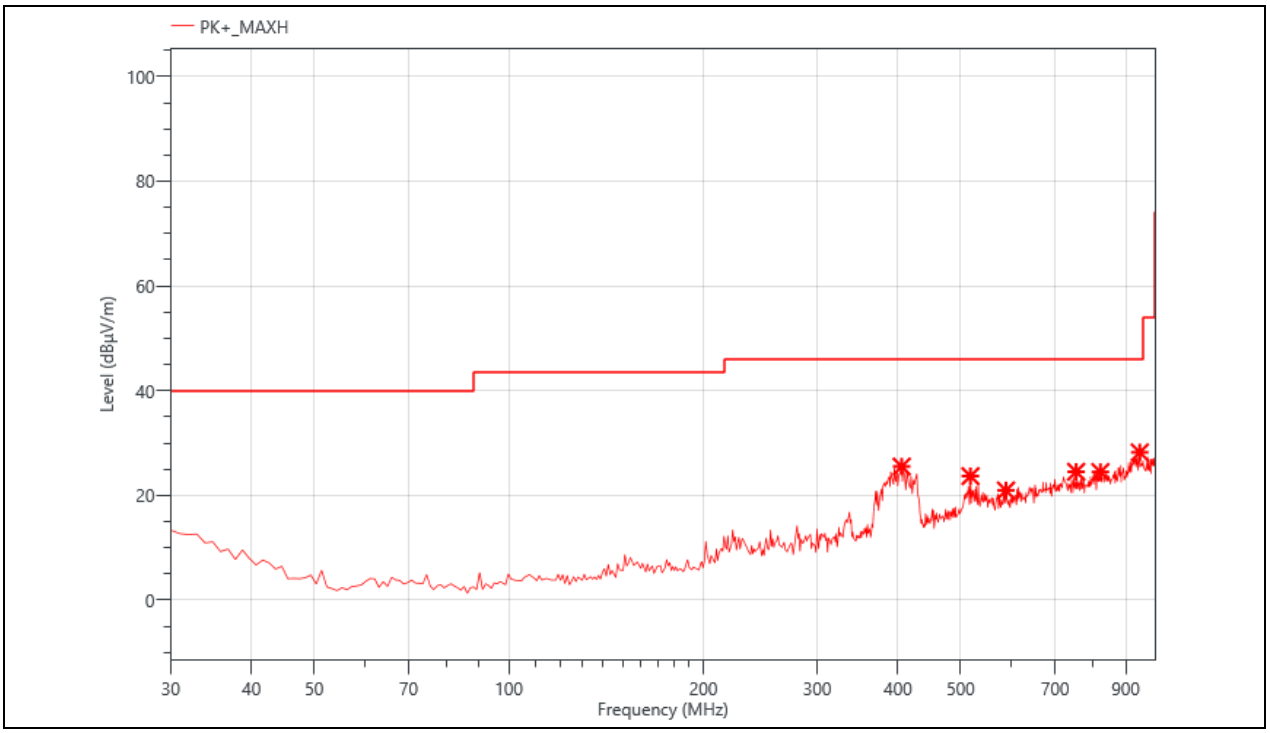


No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	397.630	32.28	-13.72	18.56	46.00	27.44	PK+	V
2	520.820	36.31	-10.88	25.43	46.00	20.57	PK+	V
3	606.180	33.05	-9.17	23.88	46.00	22.12	PK+	V
4	736.160	30.99	-6.49	24.50	46.00	21.50	PK+	V
5	834.130	32.19	-5.25	26.94	46.00	19.06	PK+	V
6	936.950	30.03	-2.16	27.87	46.00	18.13	PK+	V

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

Note: All test modes had been tested, only the worst data record in the report.

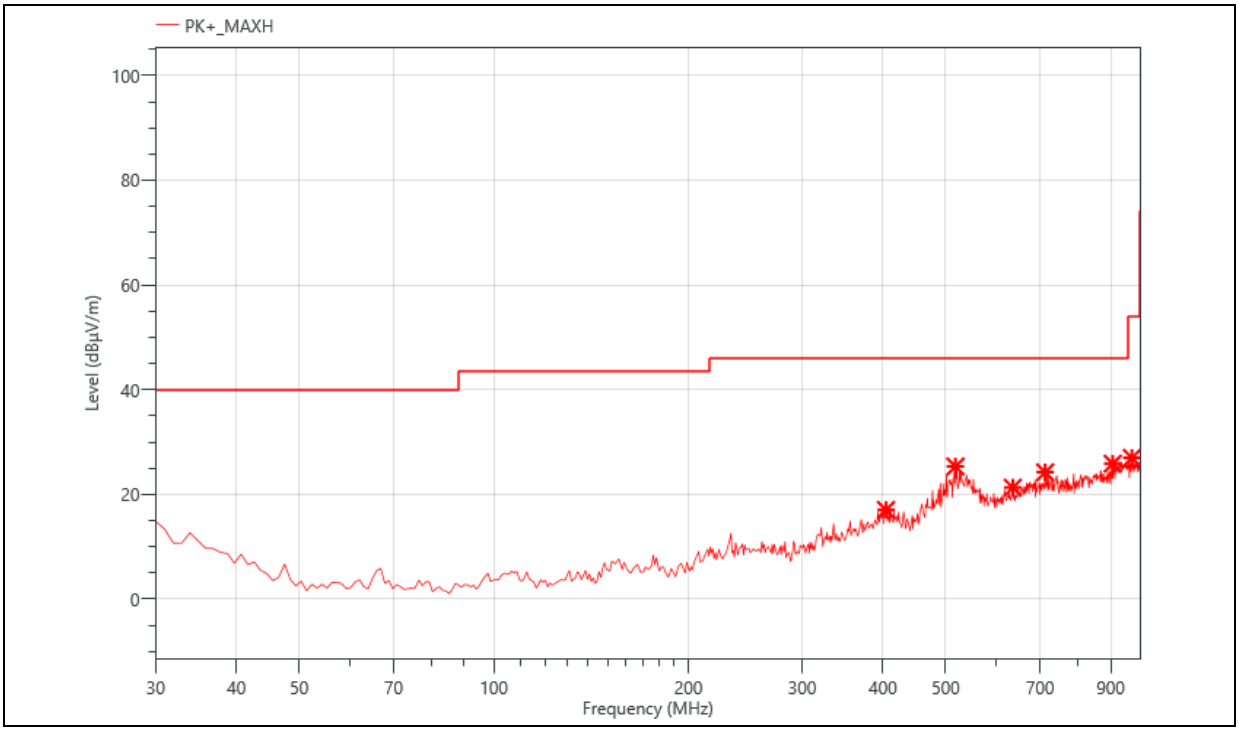
SPURIOUS EMISSIONS (916 MHz, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	405.390	38.87	-13.37	25.50	46.00	20.50	PK+	H
2	517.910	34.70	-11.02	23.68	46.00	22.32	PK+	H
3	587.750	30.72	-9.78	20.94	46.00	25.06	PK+	H
4	754.590	31.29	-6.79	24.50	46.00	21.50	PK+	H
5	822.490	29.89	-5.43	24.46	46.00	21.54	PK+	H
6	946.650	30.39	-2.18	28.21	46.00	17.79	PK+	H

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

SPURIOUS EMISSIONS (916 MHz, WORST-CASE CONFIGURATION, VERTICAL)



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	404.420	30.39	-13.36	17.03	46.00	28.97	PK+	V
2	517.910	36.35	-11.02	25.33	46.00	20.67	PK+	V
3	635.280	29.90	-8.61	21.29	46.00	24.71	PK+	V
4	712.880	30.81	-6.6	24.21	46.00	21.79	PK+	V
5	906.880	29.76	-3.91	25.85	46.00	20.15	PK+	V
6	970.900	29.82	-2.85	26.97	53.90	26.93	PK+	V

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

Note: All test modes had been tested, only the worst data record in the report.

7.6. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

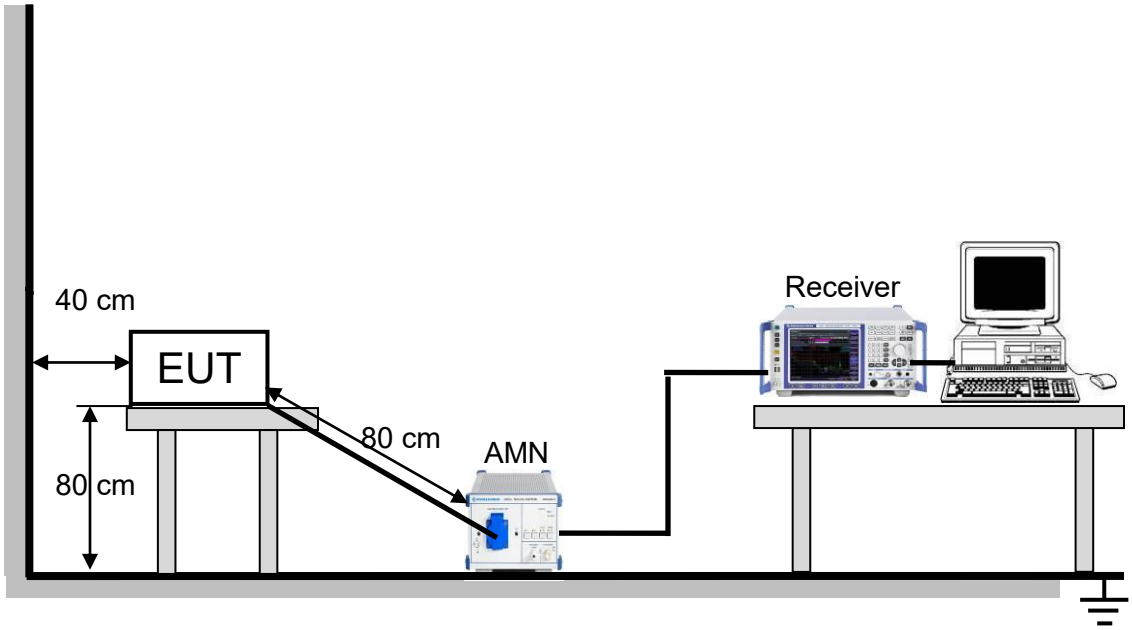
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

TEST SETUP AND PROCEDURE



The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

1. The testing follows the guidelines in ANSI C63.10-2020.

2. The EUT was placed on the top of a rotating table 0.8 meters above the horizontal ground plane and being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

3. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

4. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

5. LISN at least 80 cm from nearest part of EUT chassis.

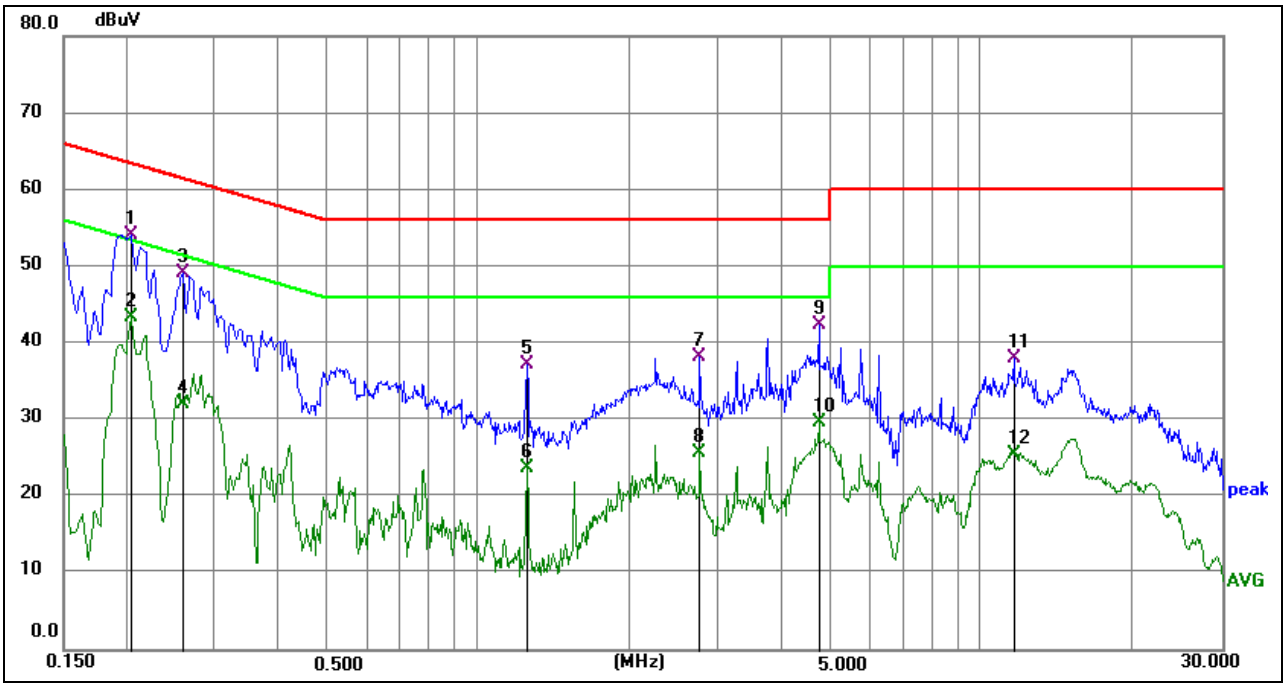
6. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

7. The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

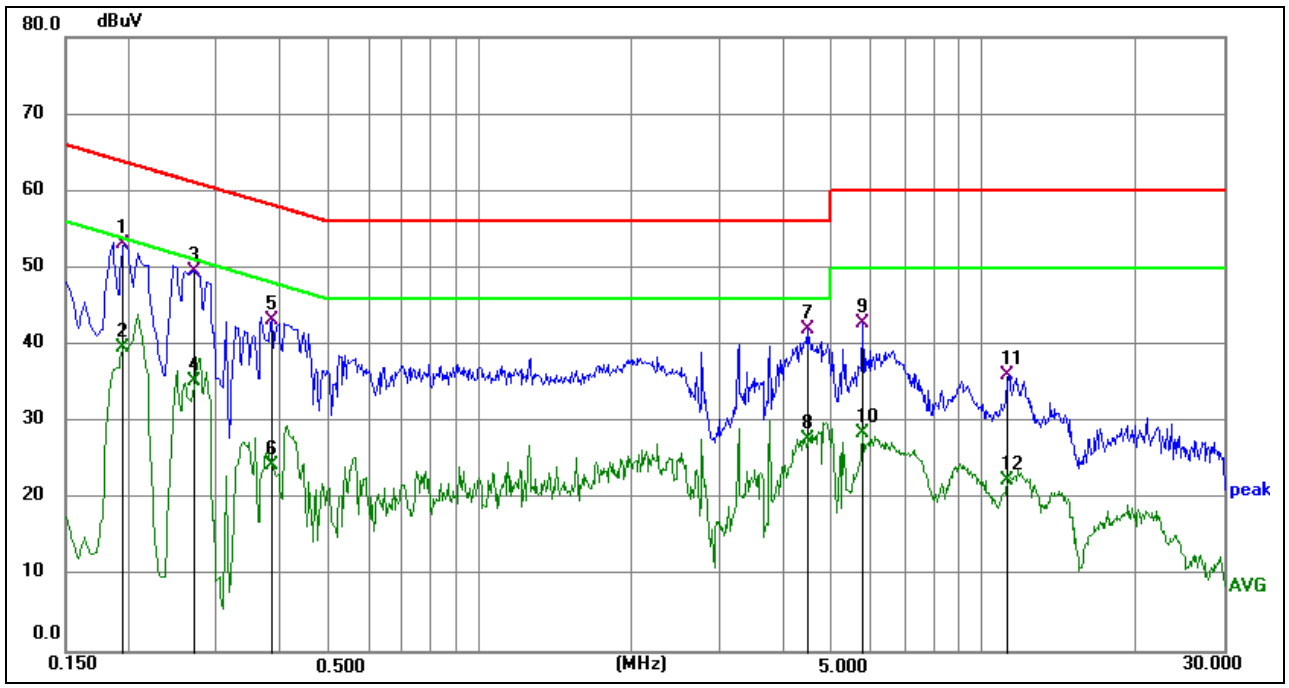
Temperature	23.7 °C	Relative Humidity	51%
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V

RESULTS



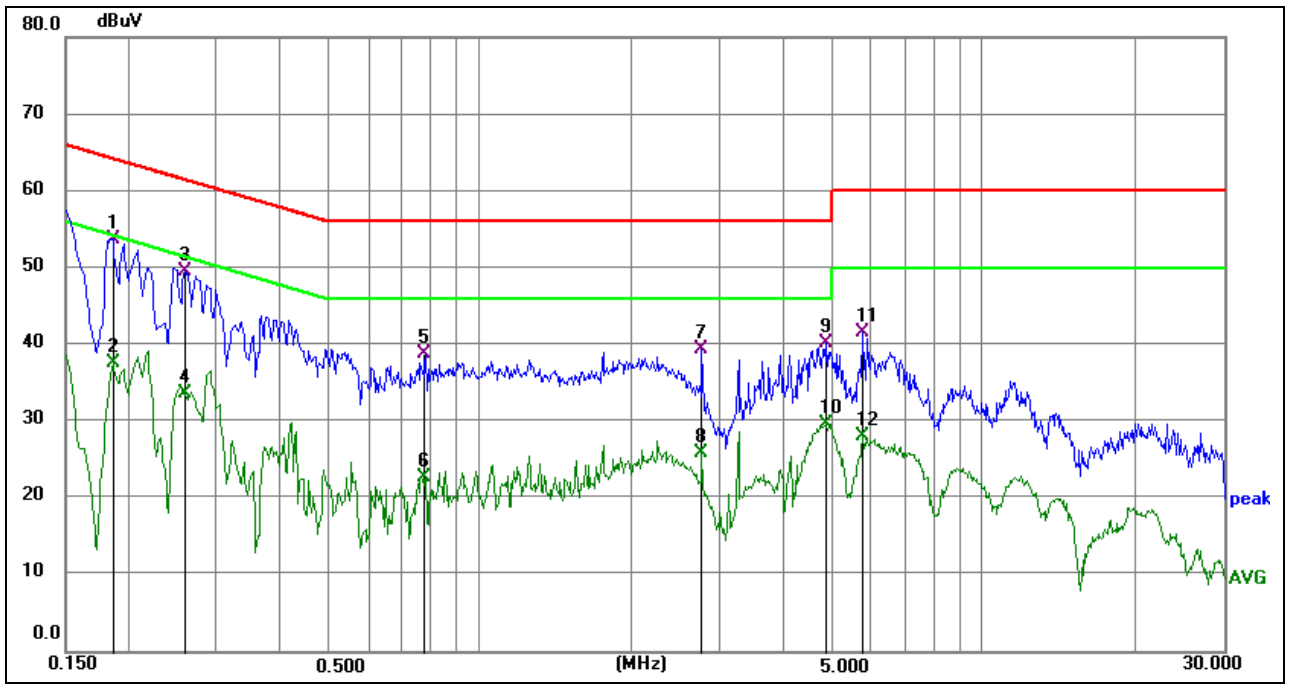
Phase: N	Mode: 908.4

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2040	44.36	9.67	54.03	63.45	-9.42	QP
2	0.2040	33.64	9.67	43.31	53.45	-10.14	AVG
3	0.2580	39.49	9.61	49.10	61.50	-12.40	QP
4	0.2580	22.41	9.61	32.02	51.50	-19.48	AVG
5	1.2524	27.57	9.68	37.25	56.00	-18.75	QP
6	1.2524	14.12	9.68	23.80	46.00	-22.20	AVG
7	2.7554	28.43	9.70	38.13	56.00	-17.87	QP
8	2.7554	15.96	9.70	25.66	46.00	-20.34	AVG
9	4.7670	32.57	9.77	42.34	56.00	-13.66	QP
10	4.7670	19.92	9.77	29.69	46.00	-16.31	AVG
11	11.5935	27.95	10.14	38.09	60.00	-21.91	QP
12	11.5935	15.38	10.14	25.52	50.00	-24.48	AVG



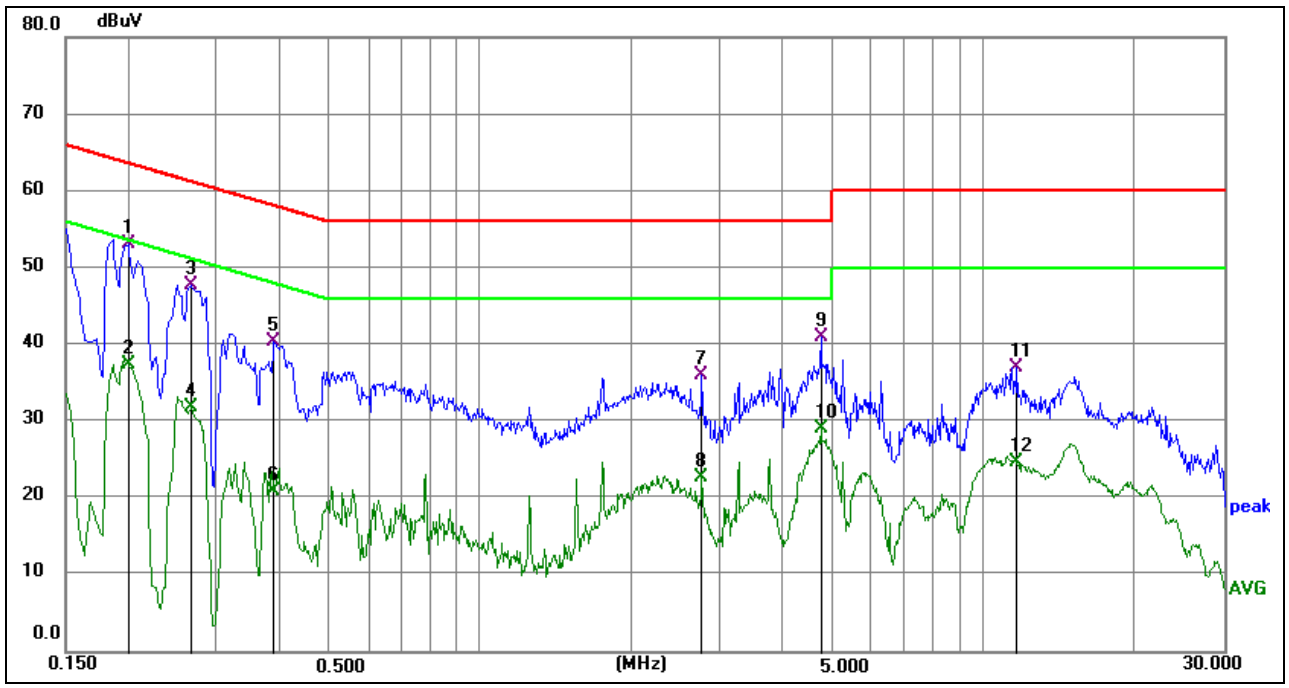
Phase: L1	Mode: 908.4

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1949	43.37	9.64	53.01	63.83	-10.82	QP
2	0.1949	30.01	9.64	39.65	53.83	-14.18	AVG
3	0.2714	39.88	9.59	49.47	61.07	-11.60	QP
4	0.2714	25.66	9.59	35.25	51.07	-15.82	AVG
5	0.3840	33.63	9.63	43.26	58.19	-14.93	QP
6	0.3840	14.66	9.63	24.29	48.19	-23.90	AVG
7	4.4654	32.11	9.81	41.92	56.00	-14.08	QP
8	4.4654	17.95	9.81	27.76	46.00	-18.24	AVG
9	5.7660	32.88	9.89	42.77	60.00	-17.23	QP
10	5.7660	18.56	9.89	28.45	50.00	-21.55	AVG
11	11.2514	25.91	10.19	36.10	60.00	-23.90	QP
12	11.2514	12.13	10.19	22.32	50.00	-27.68	AVG



Phase: L1	Mode: 916

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1860	44.12	9.67	53.79	64.21	-10.42	QP
2	0.1860	28.00	9.67	37.67	54.21	-16.54	AVG
3	0.2580	39.99	9.60	49.59	61.50	-11.91	QP
4	0.2580	24.00	9.60	33.60	51.50	-17.90	AVG
5	0.7799	29.20	9.64	38.84	56.00	-17.16	QP
6	0.7799	13.16	9.64	22.80	46.00	-23.20	AVG
7	2.7554	29.62	9.77	39.39	56.00	-16.61	QP
8	2.7554	16.16	9.77	25.93	46.00	-20.07	AVG
9	4.8840	30.31	9.83	40.14	56.00	-15.86	QP
10	4.8840	19.77	9.83	29.60	46.00	-16.40	AVG
11	5.7660	31.64	9.89	41.53	60.00	-18.47	QP
12	5.7660	18.22	9.89	28.11	50.00	-21.89	AVG



Phase: N	Mode: 916

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1995	43.43	9.67	53.10	63.63	-10.53	QP
2	0.1995	27.82	9.67	37.49	53.63	-16.14	AVG
3	0.2670	38.13	9.61	47.74	61.21	-13.47	QP
4	0.2670	22.22	9.61	31.83	51.21	-19.38	AVG
5	0.3885	30.84	9.63	40.47	58.10	-17.63	QP
6	0.3885	11.22	9.63	20.85	48.10	-27.25	AVG
7	2.7554	26.40	9.70	36.10	56.00	-19.90	QP
8	2.7554	13.06	9.70	22.76	46.00	-23.24	AVG
9	4.7670	31.29	9.77	41.06	56.00	-14.94	QP
10	4.7670	19.38	9.77	29.15	46.00	-16.85	AVG
11	11.6700	26.82	10.15	36.97	60.00	-23.03	QP
12	11.6700	14.63	10.15	24.78	50.00	-25.22	AVG

Note: 1. Result = Reading + Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

END OF REPORT