

**CFR 47 FCC PART 15 SUBPART C**

**TEST REPORT**

*For*

**30W Power Bank**

**MODEL NUMBER: MAG21210**

**REPORT NUMBER: E04A25050259F01201**

**ISSUE DATE: May 29, 2025**

**FCC ID: 2AONA-MAG21210**

*Prepared for*

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*Prepared by*

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**Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park,  
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**This report is based on a single evaluation of the submitted sample(s) of the above mentioned  
Product, it does not imply an assessment of the production of the products.**

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Global Testing Technology Co., Ltd.**

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	May 29, 2025	Initial Issue	

### Summary of Test Results

Test Item	Limit/Requirement	Result
Antenna Requirement	FCC Part 15.203	Pass
AC Power Line Conducted Emission	FCC Part 15.207	Pass
20dB Bandwidth	FCC Part 15.215	Pass
Radiated Emission	FCC Part 15.205/15.209	Pass

Note:

1. N/A: In this whole report not applicable.

\*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

\*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.

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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Shenzhen Pilot Technology Co., Ltd  
Address: 101 A1 Industrial Park, building a 1, No.7 Shankeng Road,  
Shanxia community, Pinghu Street, Longgang District, Shenzhen  
City, China

### Manufacturer Information

Company Name: Shenzhen Pilot Technology Co., Ltd  
Address: 101 A1 Industrial Park, building a 1, No.7 Shankeng Road,  
Shanxia community, Pinghu Street, Longgang District, Shenzhen  
City, China

### EUT Information

Product Description: 30W Power Bank  
Model: MAG21210  
Series Model: /  
Brand: /  
Sample Received Date: May 22, 2025  
Sample Status: Normal  
Sample ID: A25050259 008  
Date of Tested: May 22, 2025 to May 29, 2025

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

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## 2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 6947.01)</b> Guangdong Global Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1343)</b> 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</p> <p><b>ISED (Company No.: 30714)</b> 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.</p>
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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 Items	k	Uncertainty
20dB Emission Bandwidth	2	$\pm 9.2$ PPM
Temperature	2	$\pm 0.5^{\circ}\text{C}$
Humidity	2	$\pm 3\%$
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.37
Radiated emissions	9 kHz ~ 30 MHz	2	4.16
Radiated emissions	30 MHz ~ 1 GHz	2	3.79
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		30W Power Bank
Model		MAG21210
Series Model		/
Model Difference		/
Hardware Version		V1.0
Software Version		V1.0
Ratings		Capacity: 10000mAh / 38.5Wh Type-C1/C2 Input: 5V = 3A, 9V = 3A Type-C1/C2 Output: 5V = 3A, 9V = 3A, 12V = 2.5A, 15V = 2A, 20V = 1.5A, 10V = 2.25A(SCP)/ Wireless Output: 5W, 7.5W, 10W, 15W(Qi2 MPP) Total Output: 5V = 3A(MAX)
Power Supply	DC	5V, 9V
	Battery	DC 3.85V 10000mAh, 38.5Wh
Operation Mode		Wireless Charging
Operating Frequency		113-205KHz for charging 360KHz for charging
Wireless Charging Power		5W/7.5W/10W/15W(Qi2 MPP) for charging
Modulation Technique		ASK
Antenna Type		Coil Antenna

### 5.2. TEST MODE

Test Mode	Description
M01	The EUT charges 15W load (113-205KHz)
M02	The EUT charges 15W load (360KHz)

### 5.3. SUPPORT UNITS FOR SYSTEM TEST

The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Manufacturer	Model No.	Serial No.	Note
1	Adapter	Xiaomi	MDY-11-EX	N/A	GTG Support
2	Smart phone	Xiao Mi	Mi 10	N/A	GTG Support

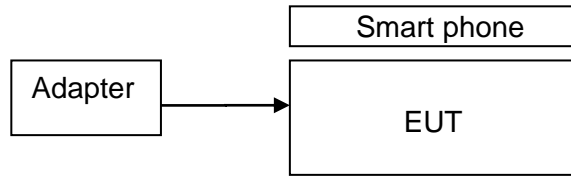
The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Length
C-1	USB-C cable	Unshielded	without ferrite	1.5 m

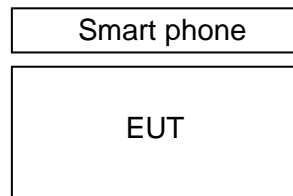


## 5.4. SETUP DIAGRAM

AC conducted emission:



Radiated Emission:



## 6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Radiated emissions below 1GHz					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2146	2022/08/30	2025/08/29
EMI Test Receiver	Rohde & Schwarz	ESCI3	101409	2024/09/14	2025/09/13
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2024/09/14	2025/09/13
Spectrum Analyzer	Rohde & Schwarz	FSV40	101413	2024/09/14	2025/09/13
Pre-Amplifier	HzEMC	HPA-9K0130	HYP A21001	2024/09/14	2025/09/13
Biconilog Antenna	Schwarzbeck	VULB 9168	01315	2022/10/10	2025/10/09
Biconilog Antenna	ETS	3142E	00243646	2025/02/22	2028/02/21
Loop Antenna	ETS	6502	243668	2025/02/22	2028/02/21
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Shielded Room	CHENG YU	8m*5m*4m	N/A	2022/10/29	2025/10/28
EMI Test Receiver	Rohde & Schwarz	ESR3	102647	2024/09/14	2025/09/13
LISN/AMN	Rohde & Schwarz	ENV216	102843	2024/09/14	2025/09/13
NNLK 8129 RC	Schwarzbeck	NNLK 8129 RC	5046	2024/09/14	2025/09/13
Test Software	Farad	EZ-EMC (Ver. EMC-con-3A1 1+)	N/A	N/A	N/A

## 7. RADIATED TEST RESULTS

### LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz		
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

FCC Emissions radiated outside of the specified frequency bands below 30 MHz			
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field Strength Limit (dBuV/m) at 3 m
			Quasi-Peak
0.009-0.490	2400/F(kHz)	300	128.5-93.8
0.490-1.705	24000/F(kHz)	30	73.8-63.0
1.705-30.0	30	30	69.5

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 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	( <sup>2</sup> )
13.36-13.41			

Note:<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

## TEST 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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
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 80 cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
5. 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 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1 GHz, 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 and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of  $377\Omega$ . For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to  $Y-51.5 = Z$  dBuA/m, which has the same margin, W dB, to the corresponding 15.209(a) limit.

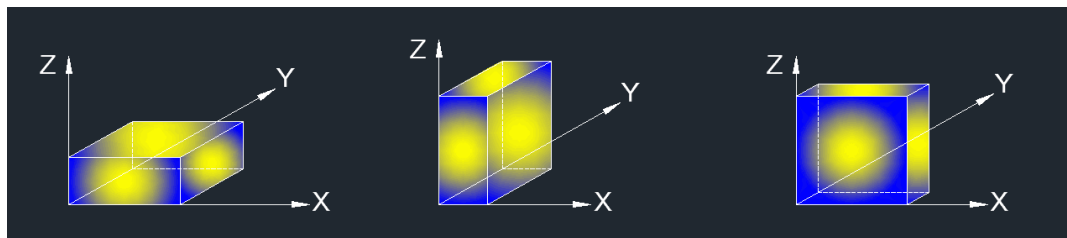
Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

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

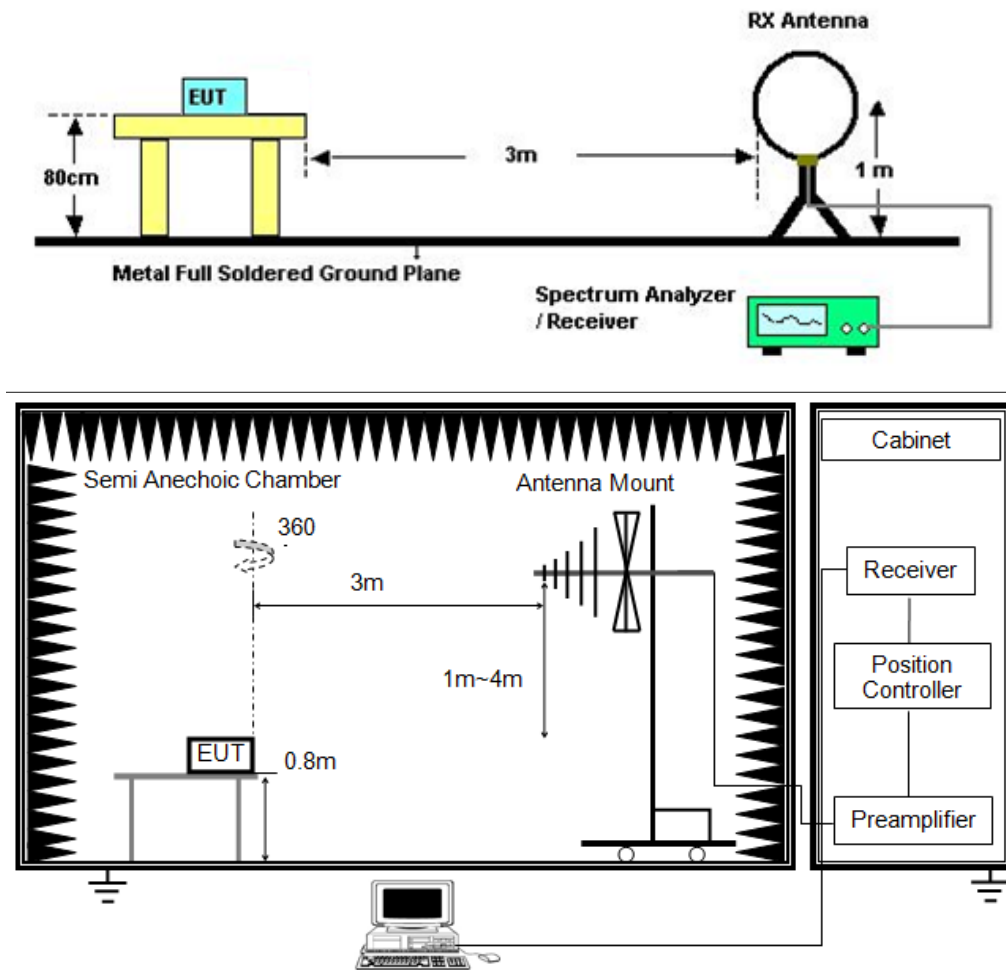
1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to 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. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1 GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

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) data recorded in the report.

## TEST SETUP



## TEST ENVIRONMENT

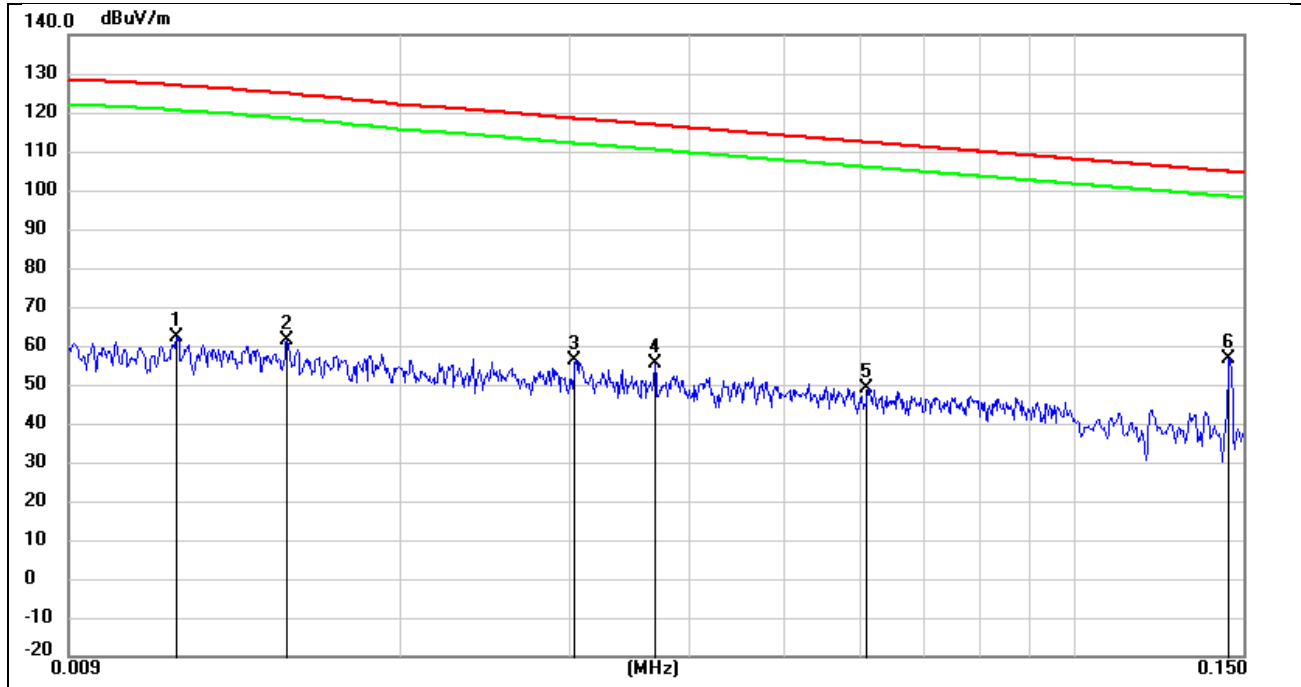
Temperature	22.9°C, 24.1°C	Relative Humidity	51%, 53%
Atmosphere Pressure	101kPa, 101kPa		

## TEST RESULTS

## 7.1. RADIATED SPURIOUS EMISSION

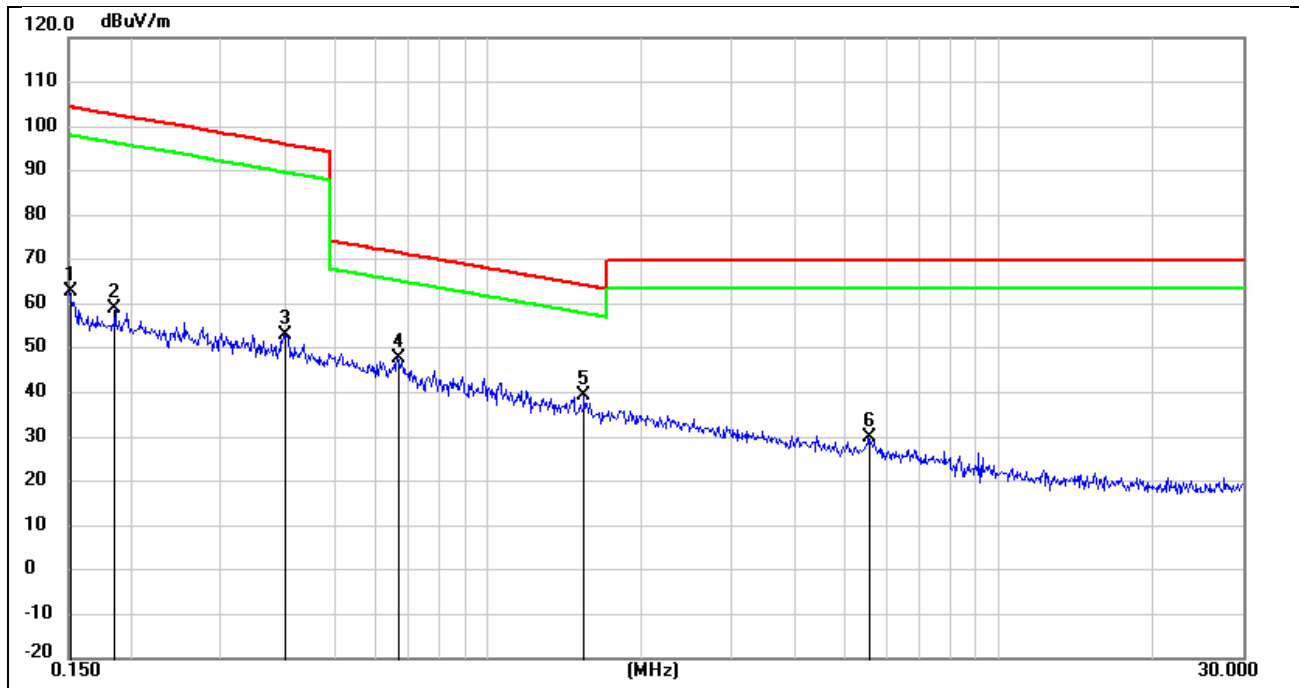
Undesirable radiated Spurious Emission below 30MHz (9KHz to 30MHz)

All modes have been tested and the worst result as bellow:



Mode: M01 Antenna: coaxial

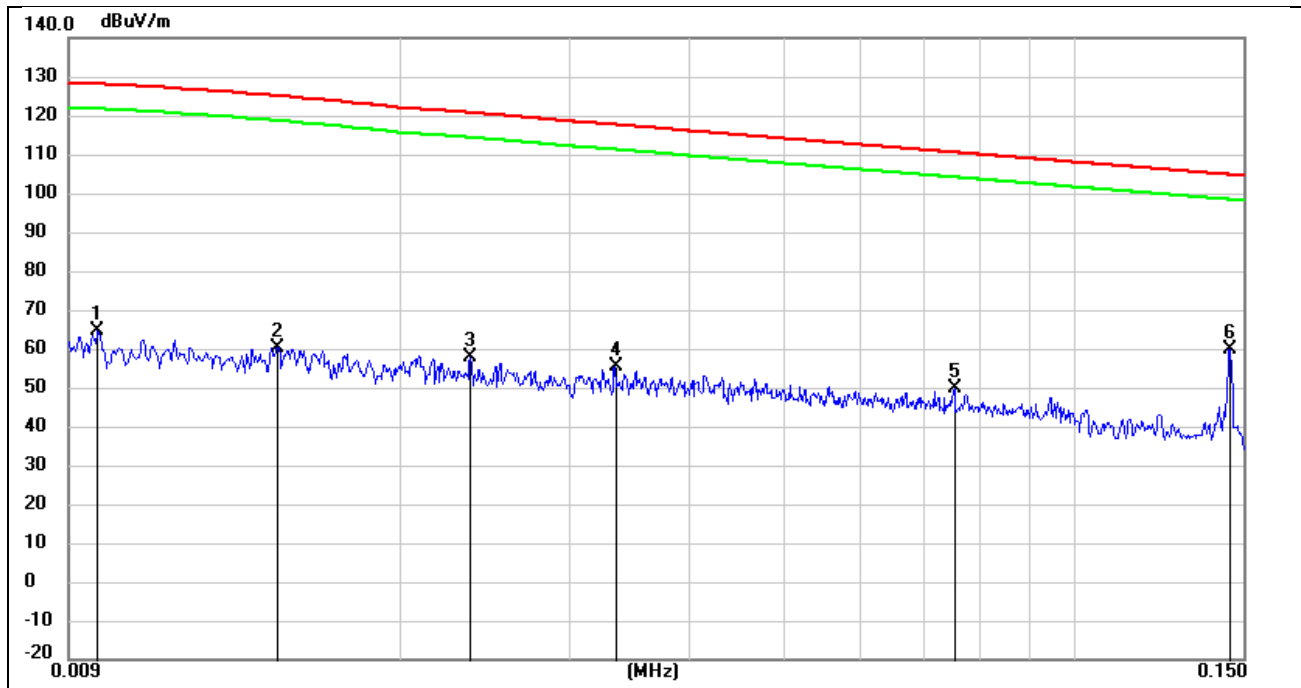
No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.0117	44.49	17.81	62.30	126.58	-64.28	peak	
2	0.0152	45.15	16.27	61.42	124.47	-63.05	peak	
3	0.0303	42.99	13.23	56.22	117.98	-61.76	peak	
4	0.0366	42.54	12.68	55.22	116.41	-61.19	peak	
5	0.0610	37.74	11.25	48.99	111.91	-62.92	peak	
6 *	0.1450	45.95	10.69	56.64	104.38	-47.74	peak	



Mode: M01 Antenna: coaxial

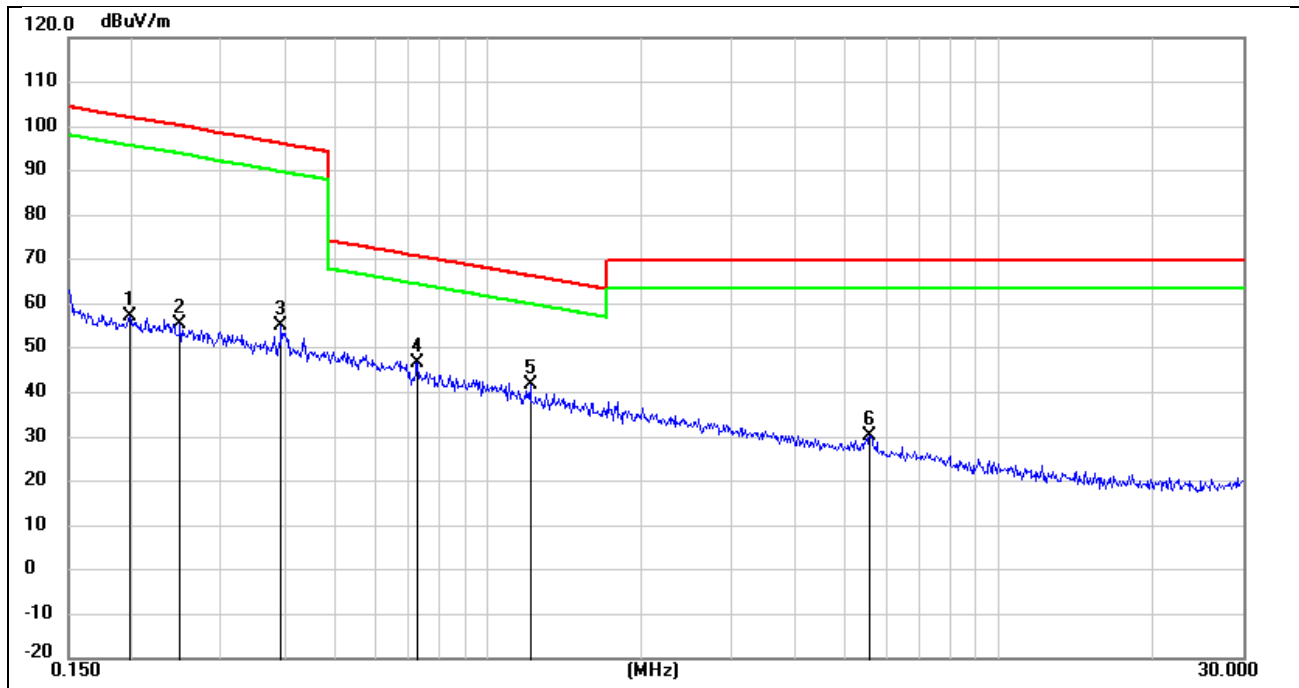
No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.1516	51.97	10.68	62.65	103.99	-41.34	peak	
2	0.1853	48.13	10.65	58.78	102.25	-43.47	peak	
3	0.3976	42.61	10.54	53.15	95.62	-42.47	peak	
4 *	0.6648	37.14	10.52	47.66	71.17	-23.51	peak	
5	1.5355	28.70	10.59	39.29	63.88	-24.59	peak	
6	5.5641	19.09	10.88	29.97	69.54	-39.57	peak	





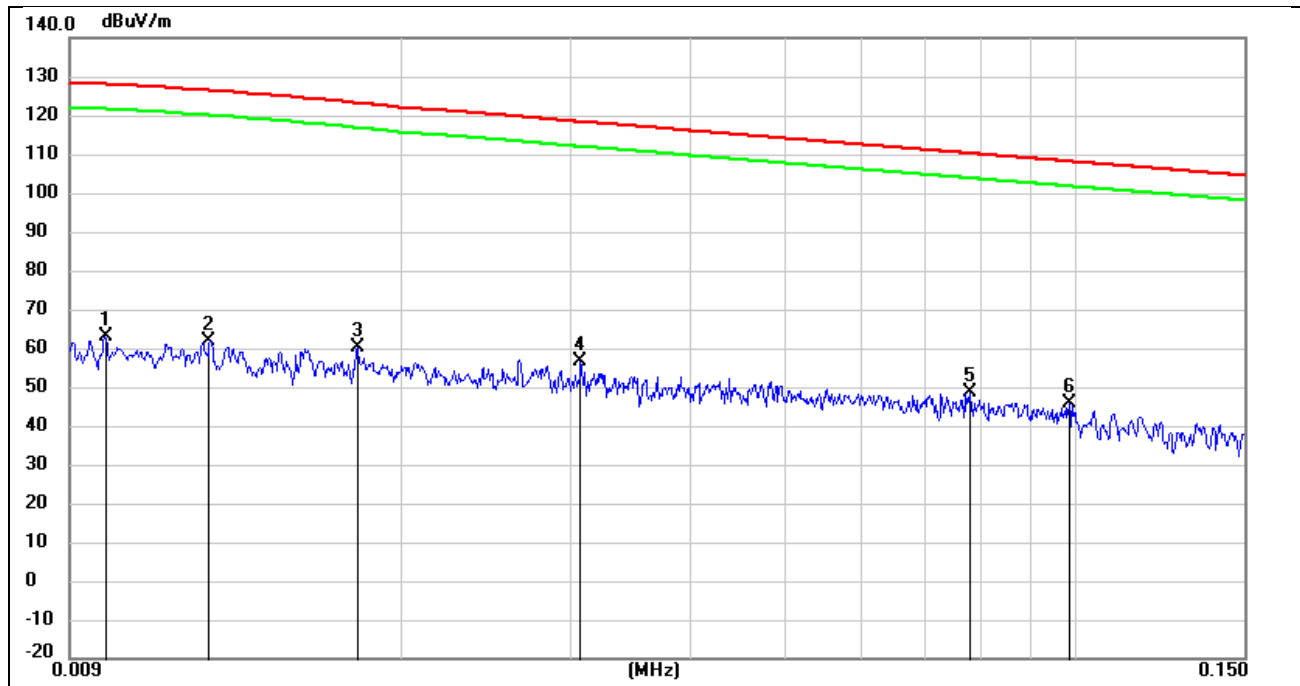
Mode: M01 Antenna: coplanar

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.0097	45.75	18.67	64.42	127.66	-63.24	peak	
2	0.0150	43.99	16.36	60.35	124.59	-64.24	peak	
3	0.0236	44.02	13.84	57.86	120.31	-62.45	peak	
4	0.0334	42.26	12.96	55.22	117.21	-61.99	peak	
5	0.0752	38.88	10.97	49.85	110.10	-60.25	peak	
6 *	0.1454	49.14	10.69	59.83	104.36	-44.53	peak	



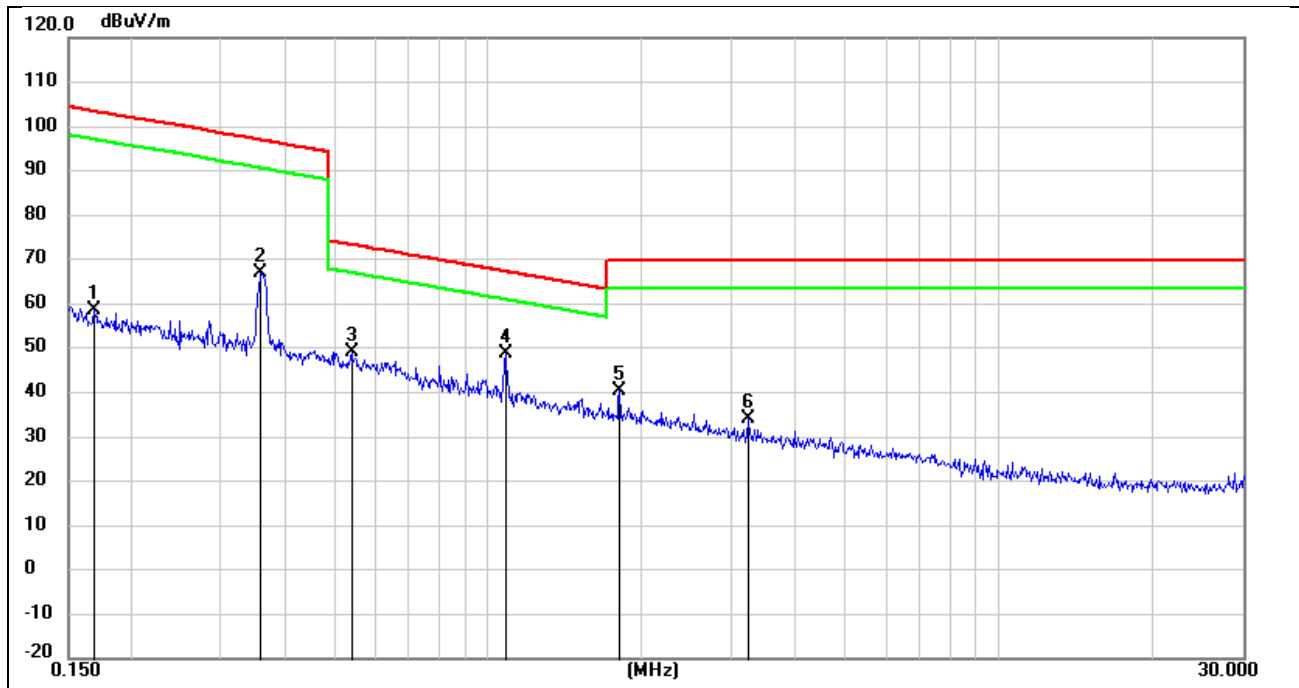
Mode: M01 Antenna: coplanar

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.1976	46.51	10.64	57.15	101.69	-44.54	peak	
2	0.2481	44.77	10.59	55.36	99.89	-44.53	peak	
3	0.3914	44.49	10.54	55.03	95.78	-40.75	peak	
4 *	0.7236	36.21	10.53	46.74	70.43	-23.69	peak	
5	1.2098	31.14	10.57	41.71	65.95	-24.24	peak	
6	5.5641	19.48	10.88	30.36	69.54	-39.18	peak	



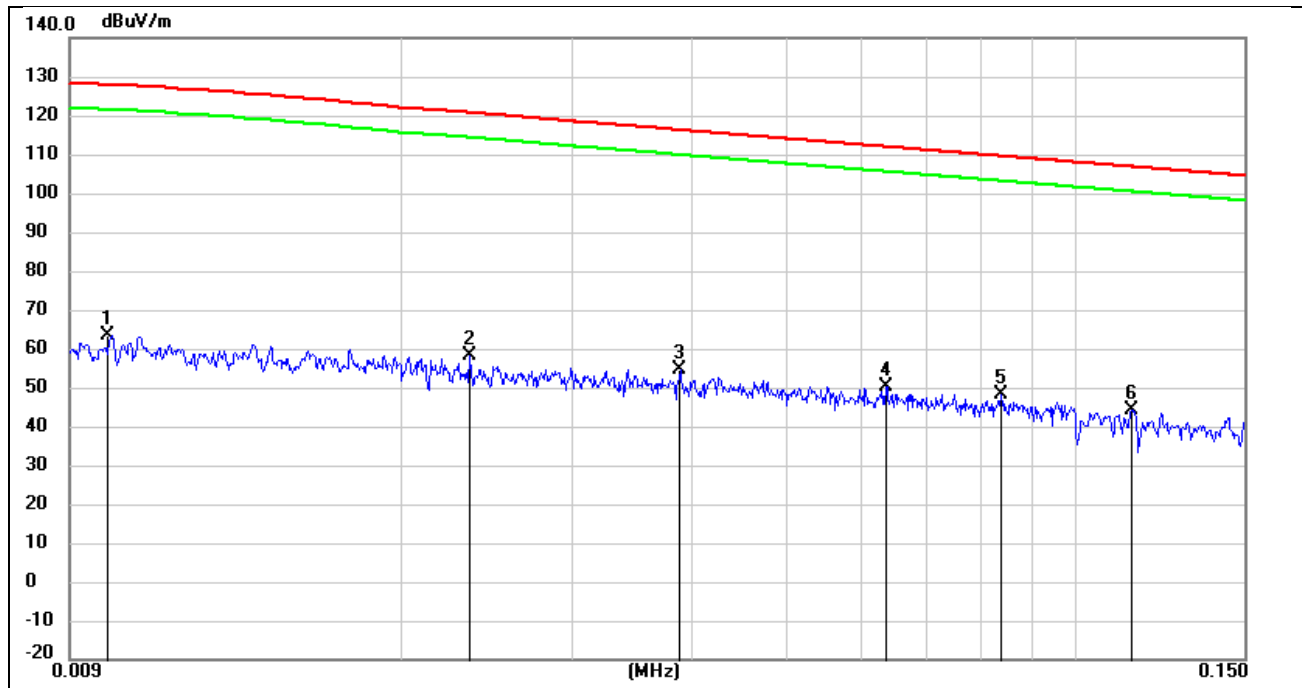
Mode: M02 Antenna: coaxial

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.0098	44.21	18.63	62.84	127.64	-64.80	peak	
2	0.0126	44.37	17.42	61.79	126.03	-64.24	peak	
3	0.0180	45.35	15.04	60.39	122.78	-62.39	peak	
4	0.0306	43.36	13.21	56.57	117.91	-61.34	peak	
5 *	0.0780	37.84	10.96	48.80	109.77	-60.97	peak	
6	0.0986	35.08	10.79	45.87	107.73	-61.86	peak	



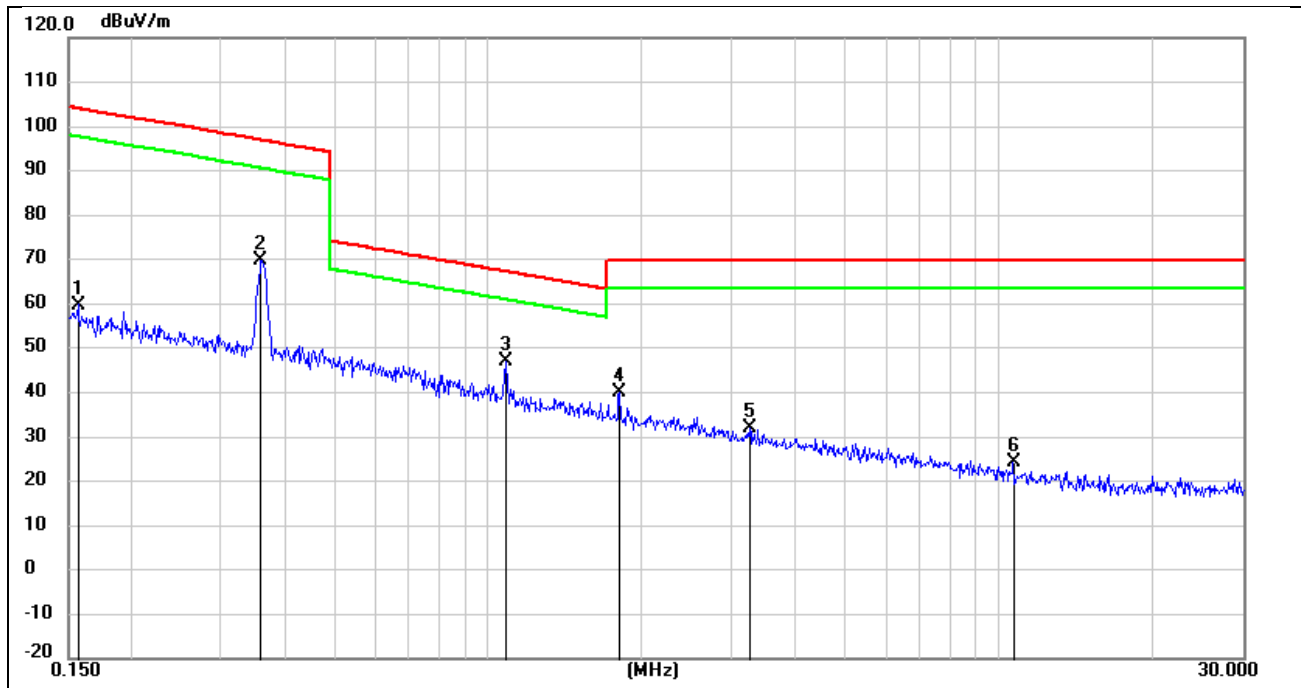
Mode: M02 Antenna: coaxial

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.1685	47.81	10.67	58.48	103.08	-44.60	peak	
2	0.3596	56.40	10.56	66.96	96.57	-29.61	peak	
3	0.5378	38.64	10.51	49.15	73.04	-23.89	peak	
4 *	1.0766	38.18	10.56	48.74	66.97	-18.23	peak	
5	1.8000	29.79	10.62	40.41	69.54	-29.13	peak	
6	3.2240	23.32	10.73	34.05	69.54	-35.49	peak	



Mode: M02 Antenna: coplanar

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.0100	45.04	18.56	63.60	127.60	-64.00	peak	
2	0.0235	44.49	13.85	58.34	120.35	-62.01	peak	
3	0.0388	41.93	12.48	54.41	115.86	-61.45	peak	
4	0.0637	39.00	11.20	50.20	111.54	-61.34	peak	
5 *	0.0837	37.46	10.91	48.37	109.16	-60.79	peak	
6	0.1145	33.30	10.75	44.05	106.44	-62.39	peak	



Mode: M02 Antenna: coplanar

No.	Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB/m)	Measure-Ment (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
1	0.1565	49.13	10.67	59.80	103.72	-43.92	peak	
2	0.3596	59.19	10.56	69.75	96.57	-26.82	peak	
3 *	1.0824	36.60	10.56	47.16	66.92	-19.76	peak	
4	1.8000	29.45	10.62	40.07	69.54	-29.47	peak	
5	3.2583	21.18	10.73	31.91	69.54	-37.63	peak	
6	10.6763	13.51	10.89	24.40	69.54	-45.14	peak	

Note:

1.Measurement = Reading Level + Correct Factor.

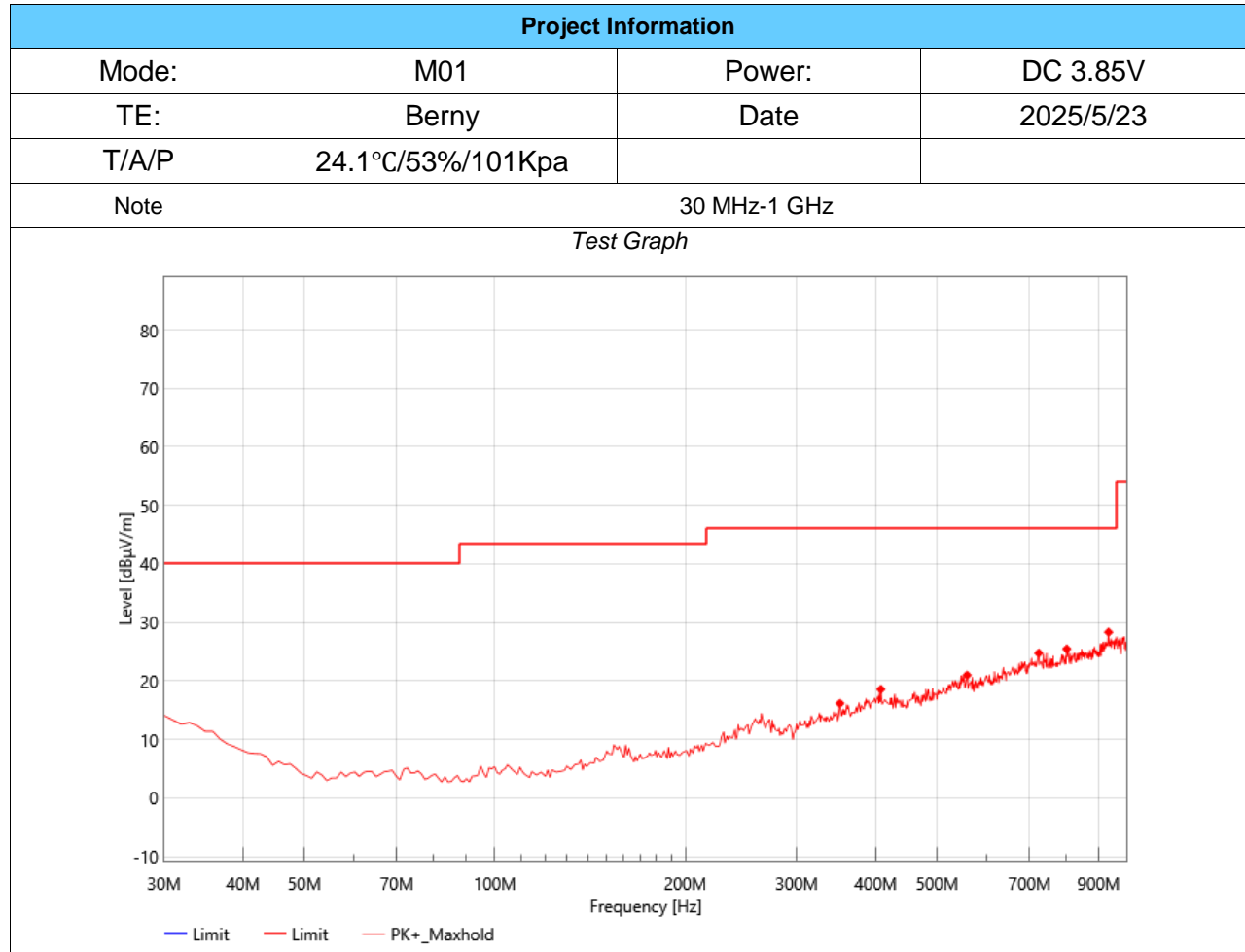
2.Margin= Measurement - Limit.

3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)

All modes have been tested and the worst result as bellow:

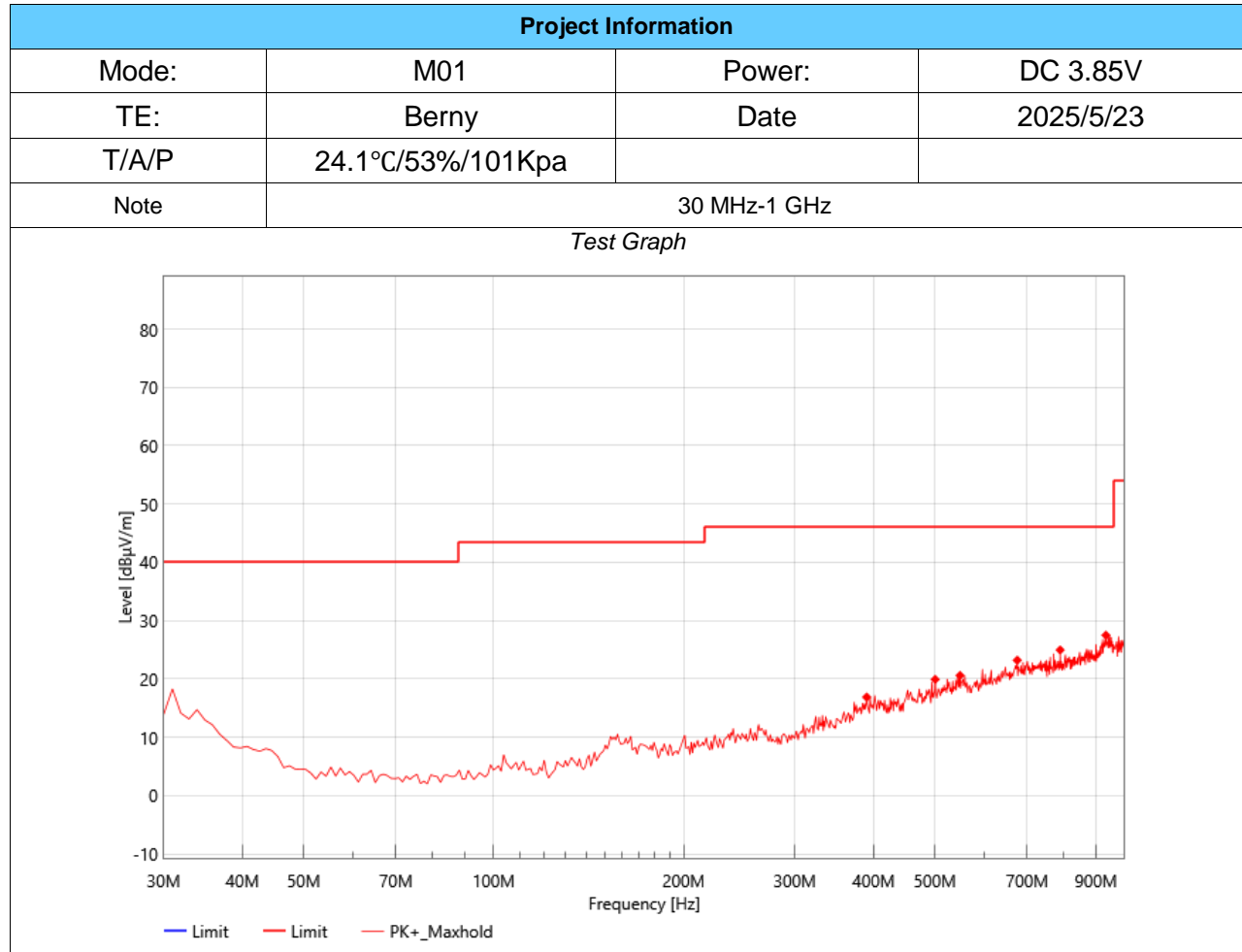
## Test Result



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector	Verdict
1	351.07	32.30	16.17	-16.13	46.00	29.83	Horizontal	PK	PASS
2	407.33	32.01	18.59	-13.42	46.00	27.41	Horizontal	PK	PASS
3	557.68	30.88	21.00	-9.88	46.00	25.00	Horizontal	PK	PASS
4	723.55	31.30	24.77	-6.53	46.00	21.23	Horizontal	PK	PASS
5	801.15	31.18	25.48	-5.7	46.00	20.52	Horizontal	PK	PASS
6	933.07	30.51	28.34	-2.17	46.00	17.66	Horizontal	PK	PASS

Note:(1)Level=Reading+Factor  
(2)Margin=Limit-Level]

## Test Result

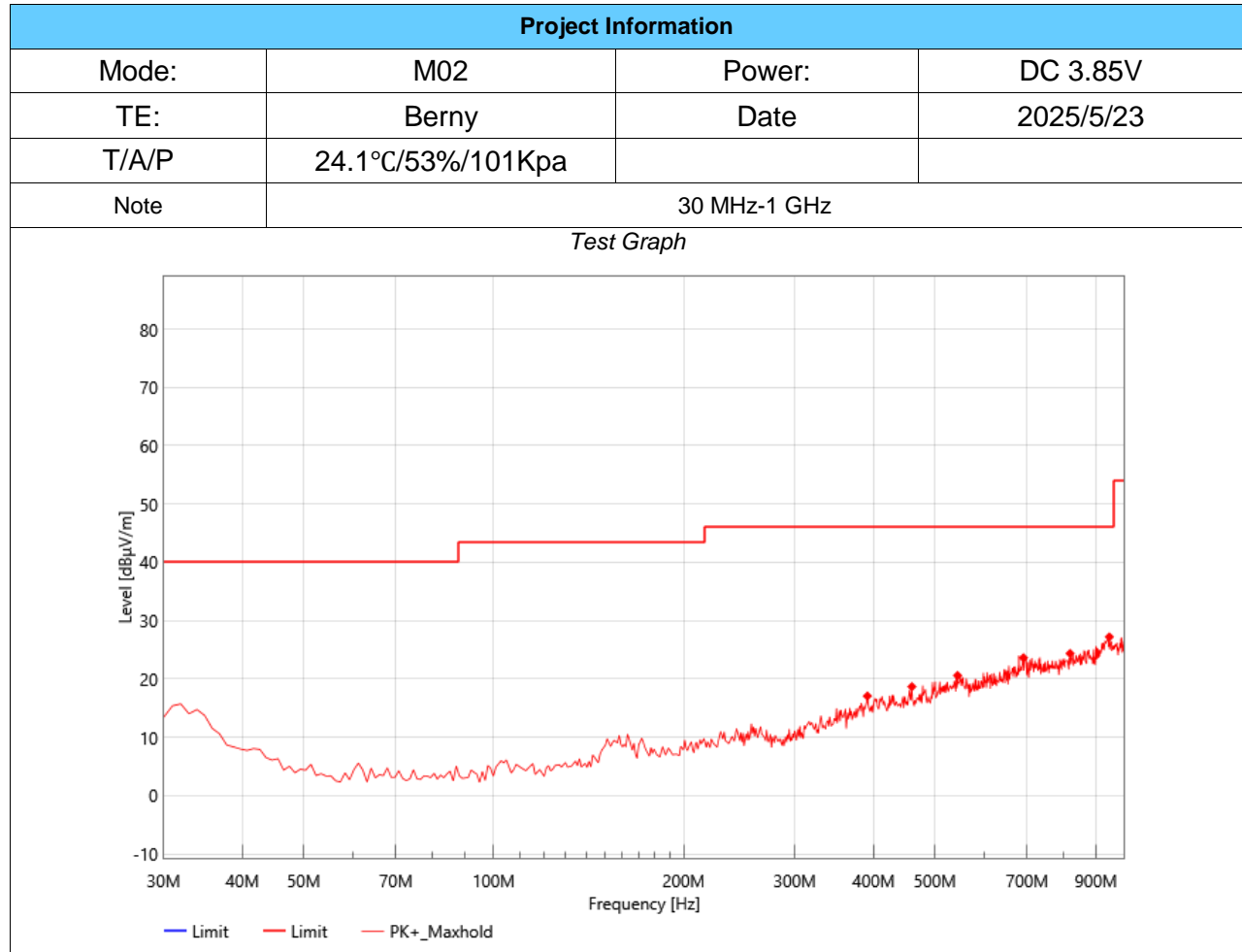


Suspected Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector	Verdict
1	389.87	30.91	16.90	-14.01	46.00	29.10	Vertical	PK	PASS
2	500.45	31.71	19.94	-11.77	46.00	26.06	Vertical	PK	PASS
3	547.98	30.19	20.61	-9.58	46.00	25.39	Vertical	PK	PASS
4	675.05	30.55	23.23	-7.32	46.00	22.77	Vertical	PK	PASS
5	789.51	31.17	24.99	-6.18	46.00	21.01	Vertical	PK	PASS
6	933.07	29.68	27.51	-2.17	46.00	18.49	Vertical	PK	PASS

Note:(1)Level=Reading+Factor  
 (2)Margin=Limit-Level]



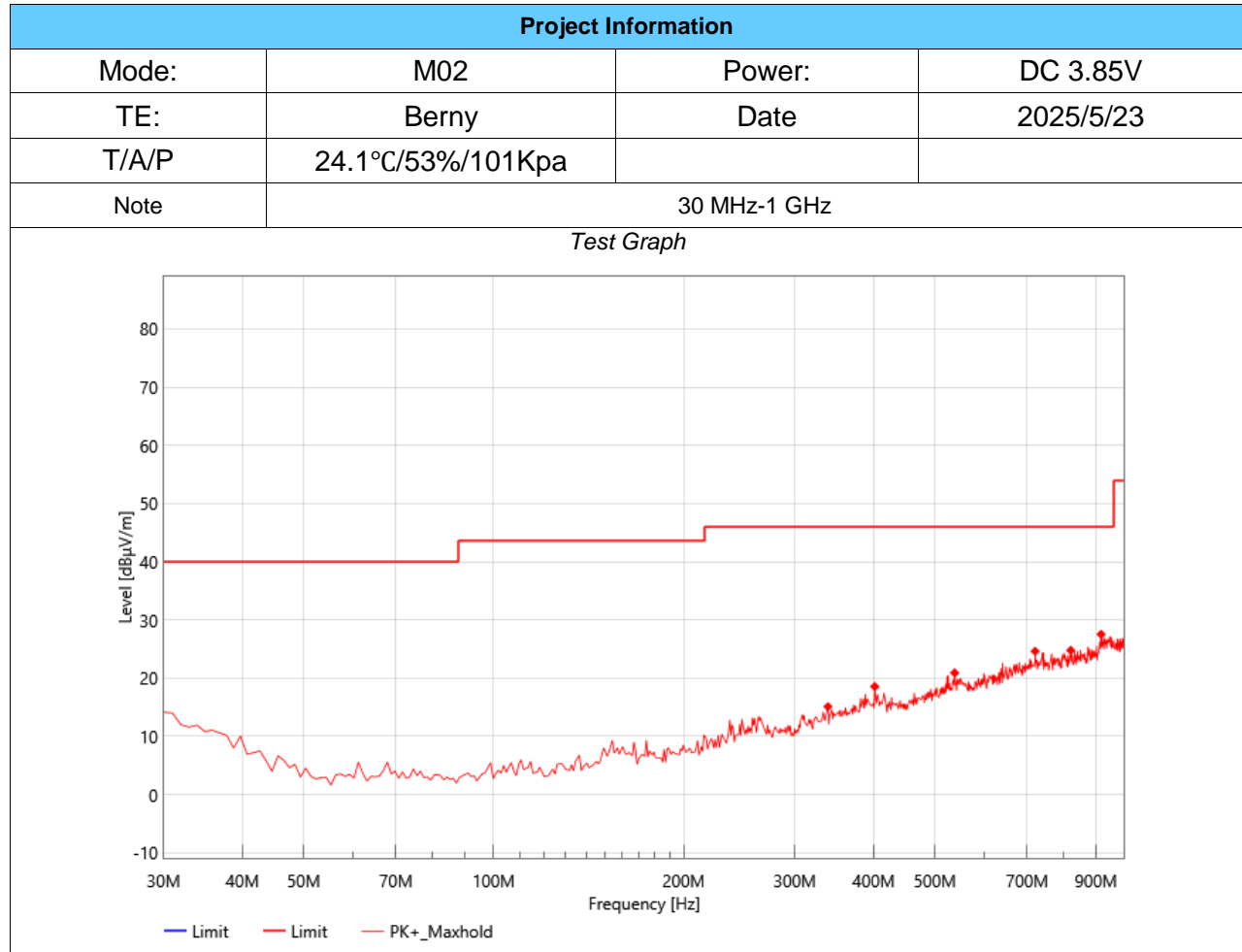
## Test Result



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector	Verdict
1	390.84	31.03	17.08	-13.95	46.00	28.92	Vertical	PK	PASS
2	459.71	32.05	18.69	-13.36	46.00	27.31	Vertical	PK	PASS
3	543.13	30.44	20.60	-9.84	46.00	25.40	Vertical	PK	PASS
4	690.57	30.83	23.63	-7.2	46.00	22.37	Vertical	PK	PASS
5	818.61	29.84	24.38	-5.46	46.00	21.62	Vertical	PK	PASS
6	944.71	29.40	27.23	-2.17	46.00	18.77	Vertical	PK	PASS

Note:(1)Level=Reading+Factor  
(2)Margin=Limit-Level]

## Test Result



Suspected Data List									
NO.	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector	Verdict
1	338.46	31.85	15.11	-16.74	46.00	30.89	Horizontal	PK	PASS
2	401.51	32.07	18.56	-13.51	46.00	27.44	Horizontal	PK	PASS
3	537.31	31.05	20.91	-10.14	46.00	25.09	Horizontal	PK	PASS
4	720.64	31.09	24.63	-6.46	46.00	21.37	Horizontal	PK	PASS
5	820.55	30.23	24.78	-5.45	46.00	21.22	Horizontal	PK	PASS
6	916.58	30.68	27.54	-3.14	46.00	18.46	Horizontal	PK	PASS

Note:(1)Level=Reading+Factor  
(2)Margin=Limit-Level]

## 8. AC POWER LINE CONDUCTED EMISSION

### LIMITS

Please refer to CFR 47 FCC §15.207 (a)

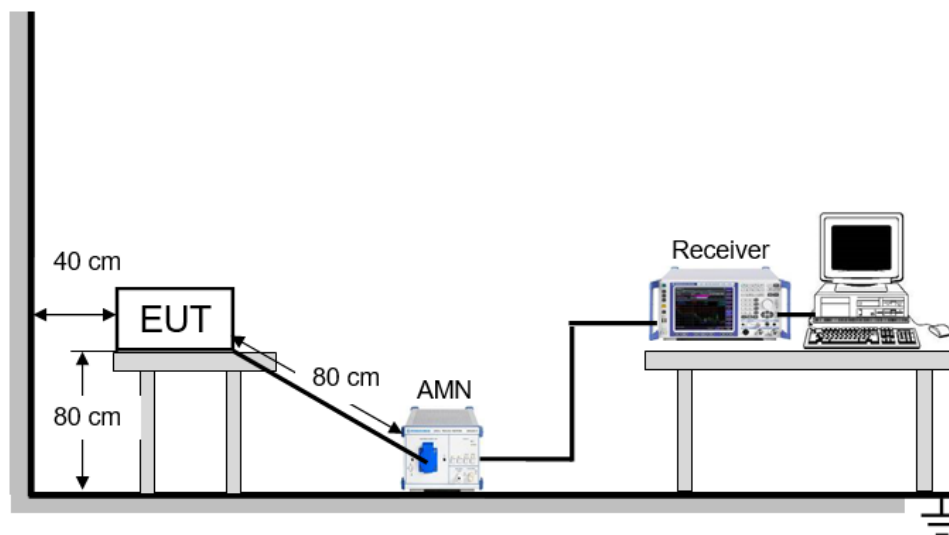
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

### TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

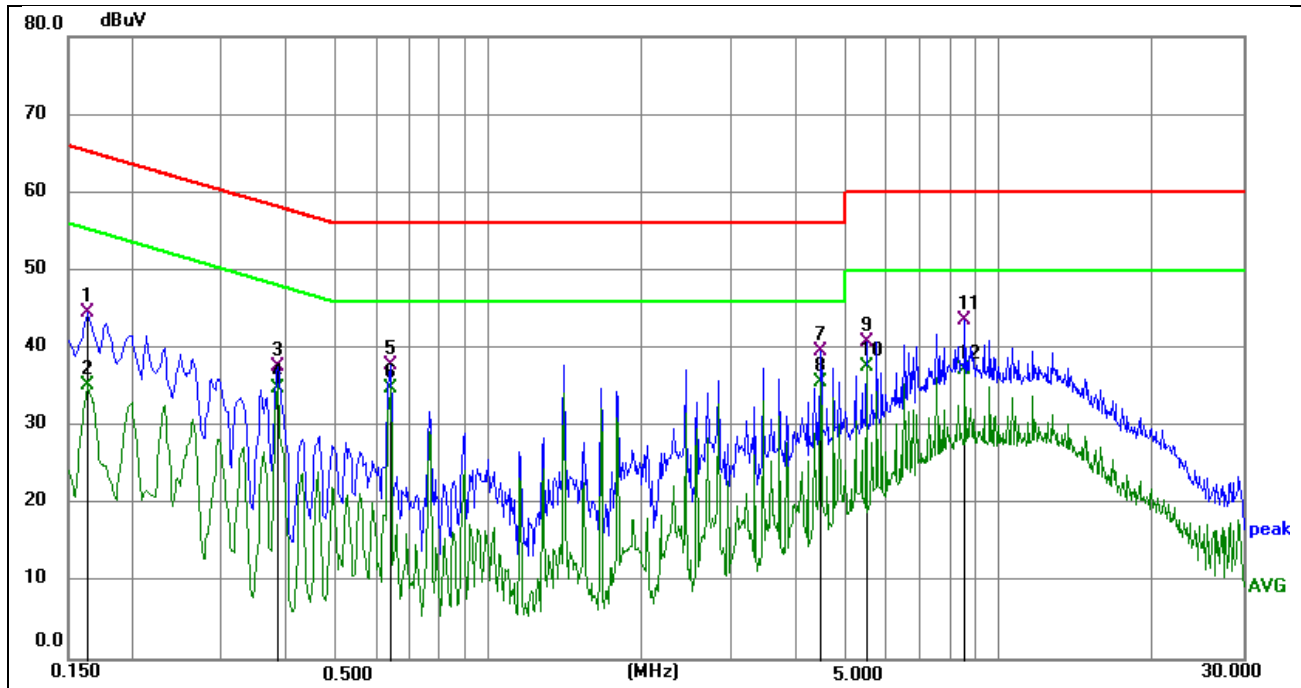
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

### TEST SETUP



### TEST ENVIRONMENT

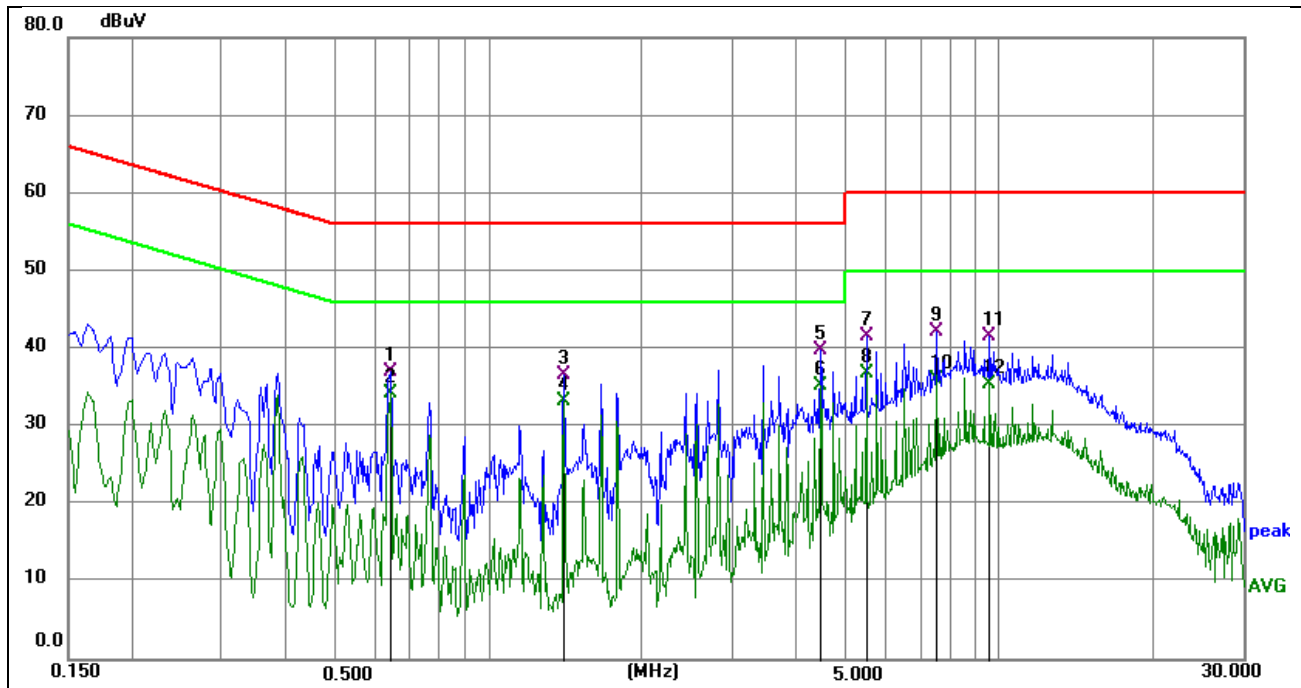
Temperature	23.2°C	Relative Humidity	52%
Atmosphere Pressure	101kPa		

**TEST RESULTS**

Phase: L1

Mode: M01

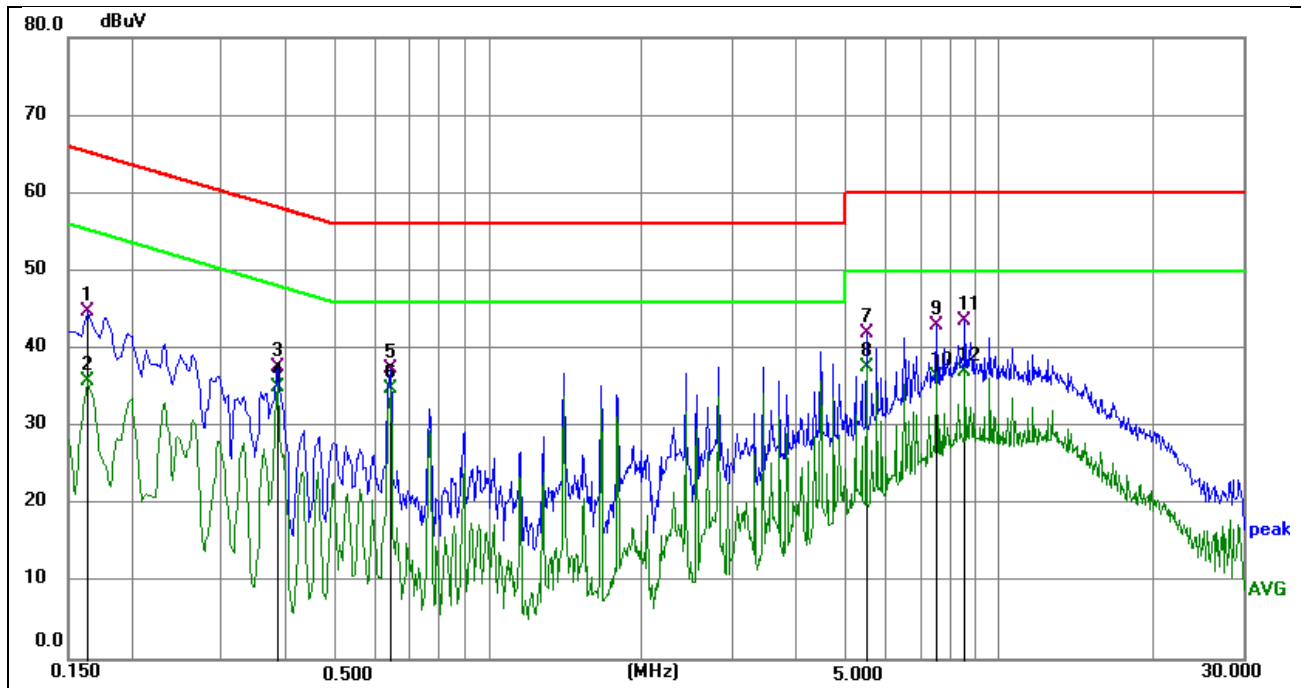
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1635	34.92	9.71	44.63	65.28	-20.65	QP
2	0.1635	25.57	9.71	35.28	55.28	-20.00	AVG
3	0.3840	27.89	9.78	37.67	58.19	-20.52	QP
4	0.3840	25.15	9.78	34.93	48.19	-13.26	AVG
5	0.6404	27.91	9.83	37.74	56.00	-18.26	QP
6	0.6404	25.01	9.83	34.84	46.00	-11.16	AVG
7	4.4744	29.66	9.86	39.52	56.00	-16.48	QP
8	4.4744	25.79	9.86	35.65	46.00	-10.35	AVG
9	5.4960	30.94	9.86	40.80	60.00	-19.20	QP
10	5.4960	27.66	9.86	37.52	50.00	-12.48	AVG
11	8.5649	33.77	9.88	43.65	60.00	-16.35	QP
12	8.5649	27.39	9.88	37.27	50.00	-12.73	AVG



Phase: N

Mode: M01

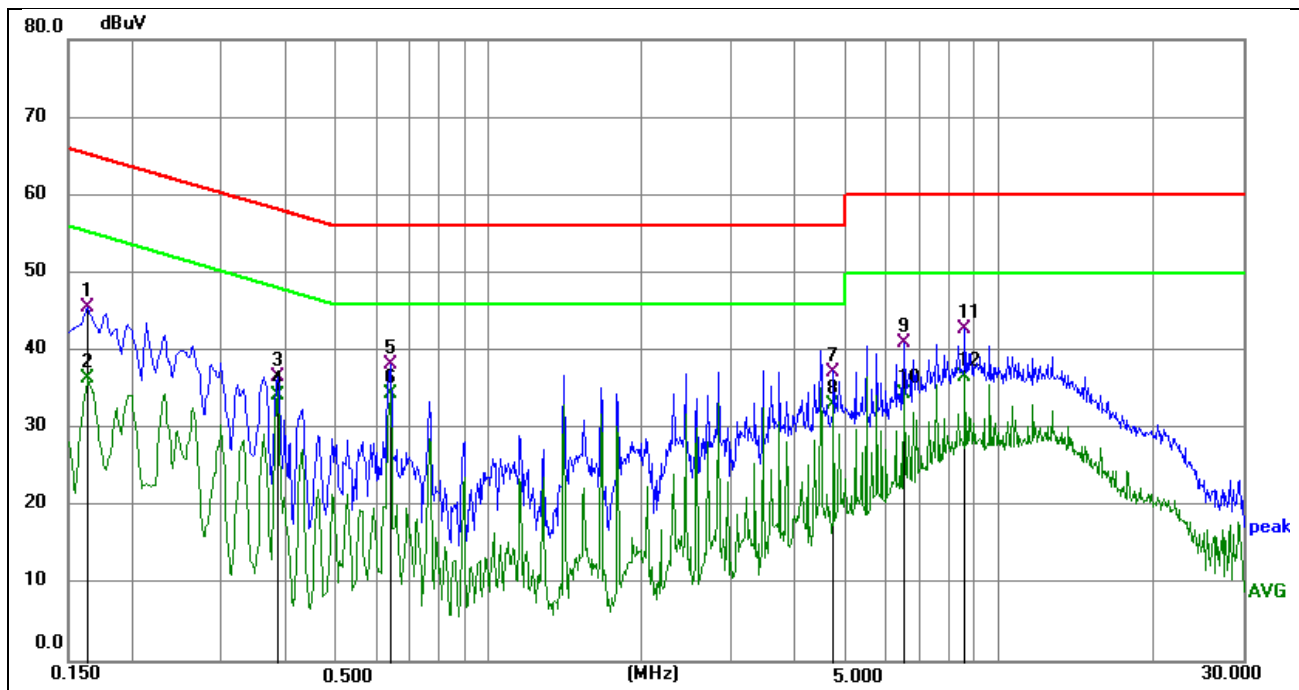
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.6406	27.24	9.80	37.04	56.00	-18.96	QP
2	0.6406	24.50	9.80	34.30	46.00	-11.70	AVG
3	1.4032	26.92	9.80	36.72	56.00	-19.28	QP
4	1.4032	23.43	9.80	33.23	46.00	-12.77	AVG
5	4.4540	29.94	9.88	39.82	56.00	-16.18	QP
6	4.4540	25.37	9.88	35.25	46.00	-10.75	AVG
7	5.4763	31.67	9.91	41.58	60.00	-18.42	QP
8	5.4763	26.97	9.91	36.88	50.00	-13.12	AVG
9	7.5258	32.28	9.98	42.26	60.00	-17.74	QP
10	7.5258	26.11	9.98	36.09	50.00	-13.91	AVG
11	9.5520	31.56	9.99	41.55	60.00	-18.45	QP
12	9.5520	25.43	9.99	35.42	50.00	-14.58	AVG



Phase: L1

Mode: M02

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1641	35.10	9.71	44.81	65.25	-20.44	QP
2	0.1641	26.13	9.71	35.84	55.25	-19.41	AVG
3	0.3852	27.85	9.78	37.63	58.17	-20.54	QP
4	0.3852	25.20	9.78	34.98	48.17	-13.19	AVG
5	0.6406	27.61	9.83	37.44	56.00	-18.56	QP
6	0.6406	25.04	9.83	34.87	46.00	-11.13	AVG
7	5.4763	32.11	9.86	41.97	60.00	-18.03	QP
8	5.4763	27.77	9.86	37.63	50.00	-12.37	AVG
9	7.5258	33.02	9.88	42.90	60.00	-17.10	QP
10	7.5258	26.60	9.88	36.48	50.00	-13.52	AVG
11	8.5463	33.75	9.88	43.63	60.00	-16.37	QP
12	8.5463	27.11	9.88	36.99	50.00	-13.01	AVG



Phase: N

Mode: M02

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1635	35.74	9.88	45.62	65.28	-19.66	QP
2	0.1635	26.49	9.88	36.37	55.28	-18.91	AVG
3	0.3840	26.88	9.76	36.64	58.19	-21.55	QP
4	0.3840	24.55	9.76	34.31	48.19	-13.88	AVG
5	0.6404	28.42	9.80	38.22	56.00	-17.78	QP
6	0.6404	24.57	9.80	34.37	46.00	-11.63	AVG
7	4.7310	27.44	9.88	37.32	56.00	-18.68	QP
8	4.7310	23.15	9.88	33.03	46.00	-12.97	AVG
9	6.5175	31.10	9.95	41.05	60.00	-18.95	QP
10	6.5175	24.51	9.95	34.46	50.00	-15.54	AVG
11	8.5649	32.89	9.98	42.87	60.00	-17.13	QP
12	8.5649	26.58	9.98	36.56	50.00	-13.44	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.
5. All the modes have been tested, only the worst data was recorded in the report.

## 9. 20DB BANDWIDTH

### LIMITS

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

### TEST PROCEDURE

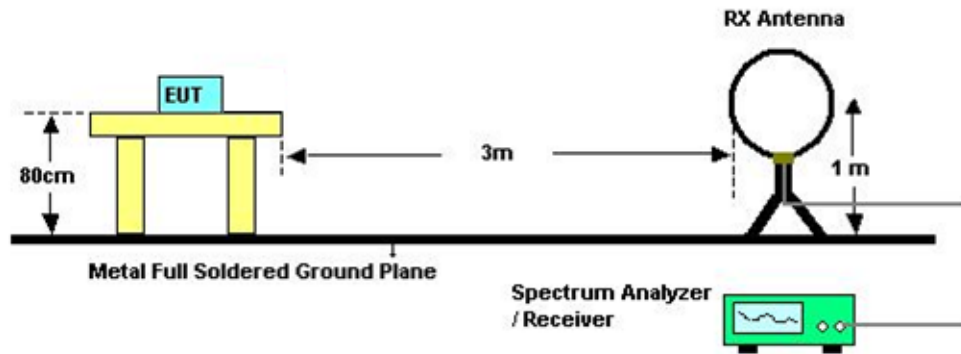
- a.) The EUT operates at maximum output power according to the user manual.
- b.) If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- c.) If the EUT is a floor standing device, it is placed on the ground.
- d.) Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- f.) The EUT is connected to DC Power Source or an adapter.
- e.) The measurement distance is 3 meter.
- f.) The EUT was set into operation.
- g.) Adjust the test instrument for the following setting.

RBW	1kHz
VBW	3*RBW
Detector	Peak
Sweep time	Auto
Trace Mode	Max hold

- h.) Allow trace to fully stabilize.



## TEST SETUP



## TEST ENVIRONMENT

Temperature	24.3°C	Relative Humidity	51%
Atmosphere Pressure	101kPa		

## TEST RESULTS

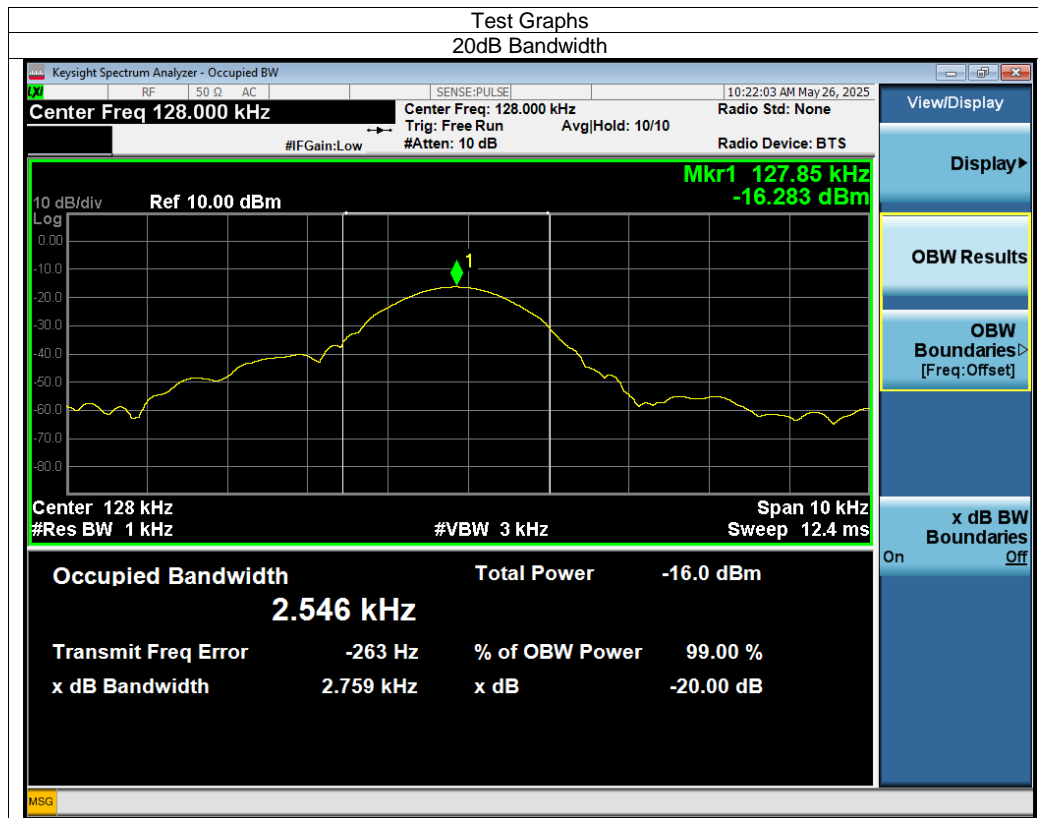
For M01

Frequency (kHz)	20dB Bandwidth (kHz)	Result
128	2.759	Pass

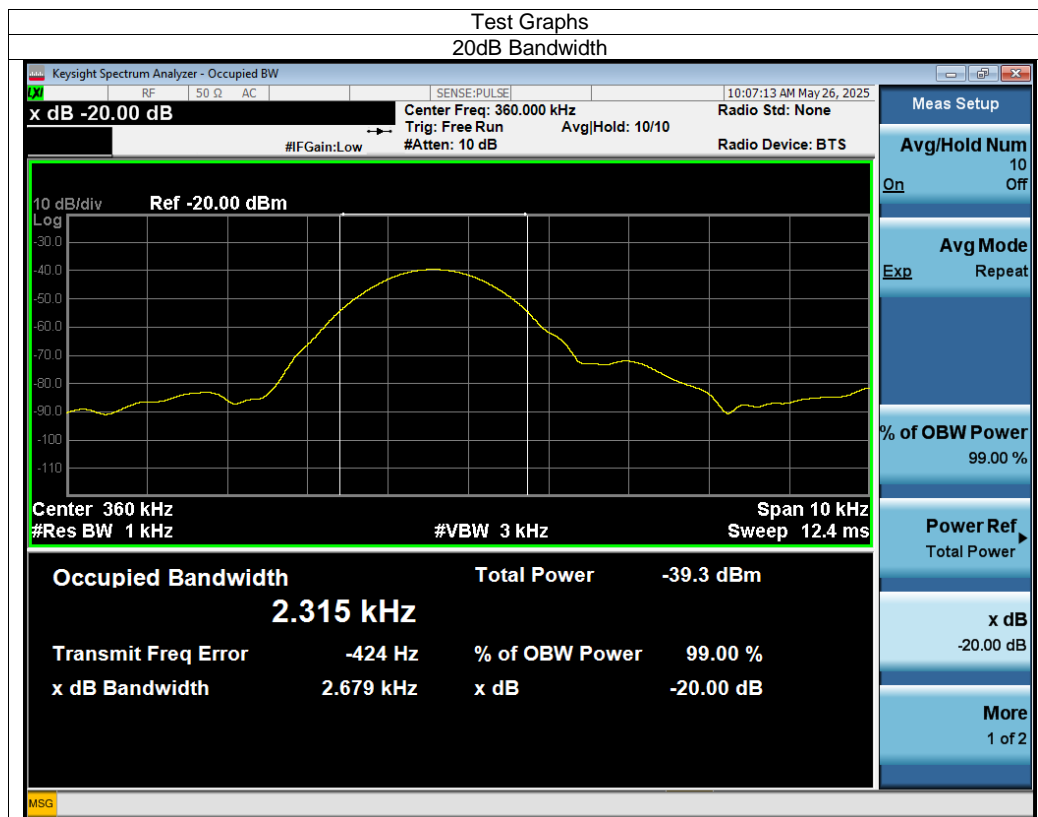
For M02

Frequency (kHz)	20dB Bandwidth (kHz)	Result
360	2.679	Pass

For M01:



For M02:



## **10. ANTENNA REQUIREMENT**

### **REQUIREMENT**

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.

### **DESCRIPTION**

Pass.

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**END OF REPORT**