



FCC Radio Test Report

FCC ID: TLZ-XM643SUR

This report concerns: Original Grant

Project No.	: 2603H007
Equipment	: IEEE 802.11 a/b/g/n/ac/ax Wi-Fi + Bluetooth 6.0 Combo LGA Module
Brand Name	: AzureWave
Test Model	: AW-XM643-SUR
Series Model	: AW-XM612-SUR
Applicant	: AzureWave Technologies, Inc.
Address	: 8F., No.94, Baozhong Rd., Xindian Dist., New Taipei City 23144, Taiwan
Manufacturer	: AzureWave Technologies, Inc.
Address	: 8F., No.94, Baozhong Rd., Xindian Dist., New Taipei City 23144, Taiwan
Date of Receipt	: Mar. 09, 2026
Date of Test	: Mar. 09, 2026 ~ Jul. 03, 2026
Issued Date	: Jul. 21, 2026
Test Sample	: Engineering Sample No.: SH920260402914 for radiation; SH920260306220 for conducted.
Standard(s)	: FCC CFR Title 47, Part 15, Subpart C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc. (Shanghai)

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacturer's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. BTL assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by BTL.

The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the ISO/IEC 17025: 2017 requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-6-2603H007	R00	Original Report.	Jun. 24, 2026	Invalid
BTL-FCCP-6-2603H007	R01	This report has supplemented the software version information, corrected the test photos for 30M-1G, and updated the detection mode in Section 7.2. It is a revision of the report with serial number BTL-FCCP-6-2603H007 R00. This is a newly released report, replacing the BTL-FCCP-6-2603H007 R00 report.	Jul. 03, 2026	Invalid
BTL-FCCP-6-2603H007	R02	This report has supplemented the hardware version information and corrected the RBW settings. It is a revision of the report with serial number BTL-FCCP-6-2603H007 R01. This is a newly released report, replacing the BTL-FCCP-6-2603H007 R01 report.	Jul. 21, 2026	Valid

1. APPLICABLE STANDARDS

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

ANSI C63.10-2020+Cor. 1-2023.

The following reference test guidance is not within the scope of accreditation of A2LA:

KDB 558074 D01 15.247 Meas Guidance v05r02

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS	-----
15.247(a)(2)	Bandwidth	APPENDIX E	PASS	-----
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS	-----
15.247(d)	Conducted Spurious Emission	APPENDIX G	PASS	-----
15.247(e)	Power Spectral Density	APPENDIX H	PASS	-----
15.203	Antenna Requirement	-----	PASS	Note(2)

Note:

(1) "N/A" denotes test is not applicable to this device.

(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, People's Republic of China.

BTL's Registration Number for FCC: 964234

BTL's Designation Number for FCC: CN1374

2.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
SH-CB02	CISPR	9 KHz~30 MHz	-	2.30
		30 MHz~200 MHz	V	4.48
		30 MHz~200 MHz	H	3.16
		200 MHz~1,000 MHz	V	4.70
		200 MHz~1,000 MHz	H	3.82
		1GHz ~ 6GHz	-	3.94
		6GHz ~ 18GHz	-	4.62
		18 GHz ~ 26.5 GHz	-	2.84
		26.5 GHz~40 GHz	-	2.90

Note: unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

2.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	16.7°C	45%	DC 3.3V	Don Tang
Radiated Emissions-9 kHz to 30 MHz	20.2°C	48%	DC 3.3V	Ellie Wei
Radiated Emissions-30 MHz to 1000 MHz	20°C	48%	DC 3.3V	Ellie Wei
Radiated Emissions-Above 1000 MHz	20°C~24°C	39%~50%	DC 3.3V	Robert Xu
Bandwidth	21.5°C	43%	DC 3.3V	Noel Kuai
Maximum Output Power	21.5°C	43%	DC 3.3V	Noel Kuai
Conducted Spurious Emission	21.5°C	43%	DC 3.3V	Noel Kuai
Power Spectral Density	21.5°C	43%	DC 3.3V	Noel Kuai

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment		IEEE 802.11 a/b/g/n/ac/ax Wi-Fi + Bluetooth 6.0 Combo LGA Module
Brand Name		AzureWave
Test Model		AW-XM643-SUR
Series Model		AW-XM612-SUR
Model Difference(s)		AW-XM643-SUR supports WIFI 6G, AW-XM612-SUR does not support WIFI 6G, AW-XM643-SUR&AW-XM612-SUR have the same hardware, only different software
AW-XM643-SUR	Software Version	18.53.366.20(92690c4)
	Hardware Version	2653 Ver.01
AW-XM612-SUR	Software Version	18.53.284.17 (92de749)
	Hardware Version	2653 Ver.01
Power Source		Supplied from PC USB port.
Power Rating		DC 3.3V
Operation Frequency		2402 MHz ~ 2480 MHz
Modulation Type		GFSK
Bit Rate of Transmitter		1Mbps
Max. Output Power		1Mbps: 9.07 dBm (0.0081 W)

Note:

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

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

3. Table for Filed Antenna:

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	ARISTOTLEENT ERPRISES INC.	RFA-27-C38H1M HF4C198	Dipole	IPEX	3

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	ARISTOTLEENT ERPRISES INC.	RFA-27-JP326M HF4C198	PIFA	IPEX	3.5

3.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 39

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 39

Radiated emissions test - Above 1GHz	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39

Conducted test	
Final Test Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39

Note:

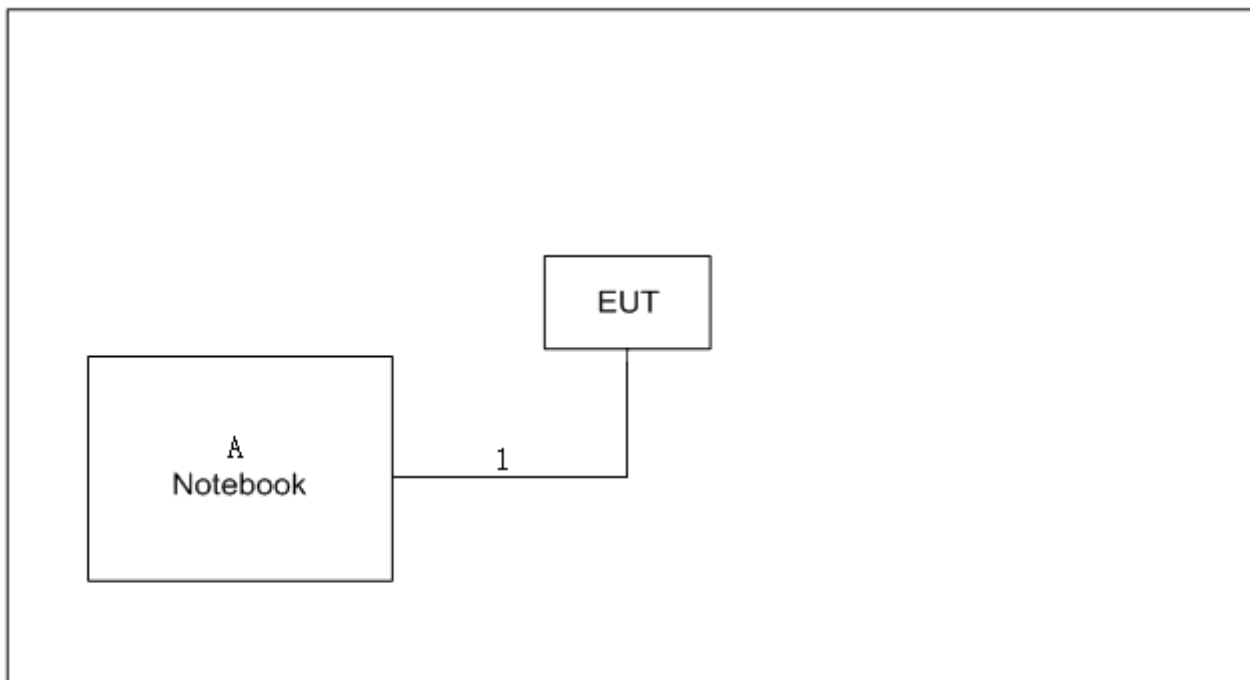
- (1) For AC power line conducted emissions and radiated emissions below 1 GHz test, the 1Mbps Channel 39 is found to be the worst case and recorded.
- (2) For radiated emission Harmonic 18-26.5GHz test, only tested the worst case and recorded.
- (3) Band edge tests evaluate both vertical and horizontal polarities. Only horizontal polarity data is presented in this report.
- (4) Harmonic tests evaluate both vertical and horizontal polarities. Only vertical polarity data is presented in this report.
- (5) Both antennas are evaluated, and the report only records the data of the worst antenna(RFA-27-JP326MHF4C198).
- (6) The radiated spurious test was conducted in the X/Y/Z three-axis mode, but only the worst X-axis mode results are listed in this report.
- (7) Both AW-XM643-SUR and AW-XM612-SUR have been assessed; the report presents data from the worst-case mode only.

3.3 PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test Software Version	IPOP V4.0		
Frequency (MHz)	2402	2440	2480
1Mbps	Default	Default	Default

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
A	Notebook	DELL	N/A	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	NO	NO	0.8m

3.6 CUSTOMER INFORMATION DESCRIPTION

- 1) The antenna gain is provided by the manufacturer.
- 2) Except for AC power line conducted emissions and radiated emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.

4. AC POWER LINE CONDUCTED EMISSIONS

4.1 LIMIT

Frequency of Emission (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

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.

4.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT 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/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

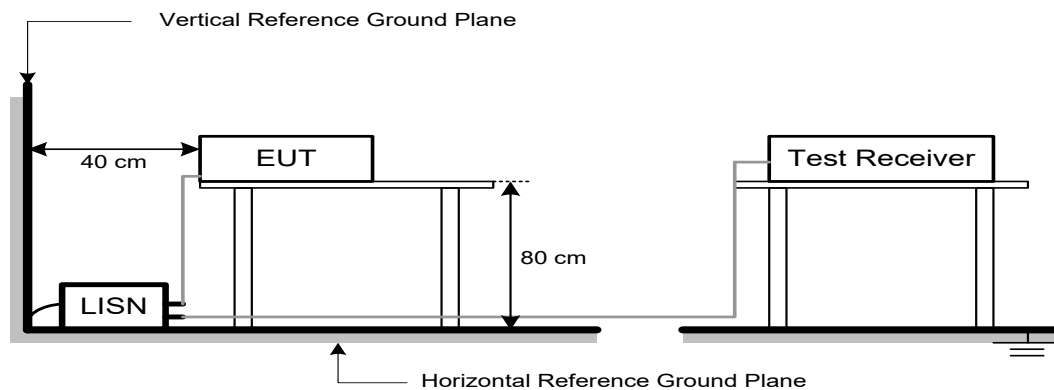
The following table is the setting of the receiver:

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

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform..In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.

5. RADIATED EMISSIONS

5.1 LIMIT

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 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
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

Note:

- (1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

5.2 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1 GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1 GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. 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 find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
(below 1 GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. For the actual test configuration, please refer to the related Item –EUT Test Photos.

The following table is the setting of the receiver:

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1 MHz / 3 MHz for PK value 1 MHz / 1/T Hz for AVG value

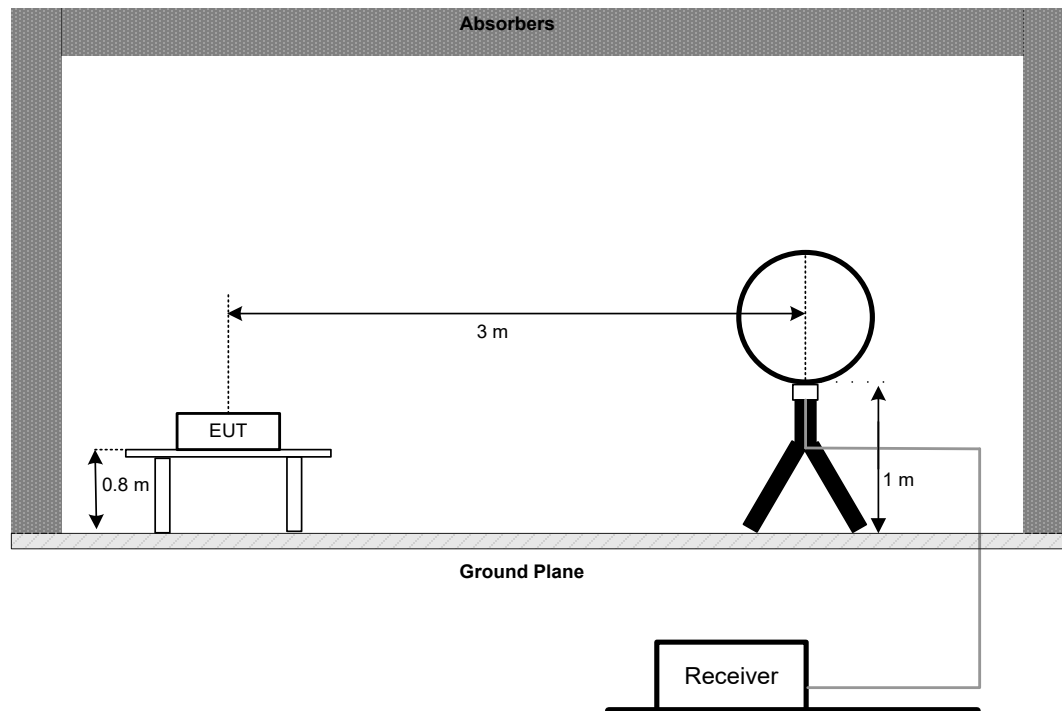
Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector

5.3 DEVIATION FROM TEST STANDARD

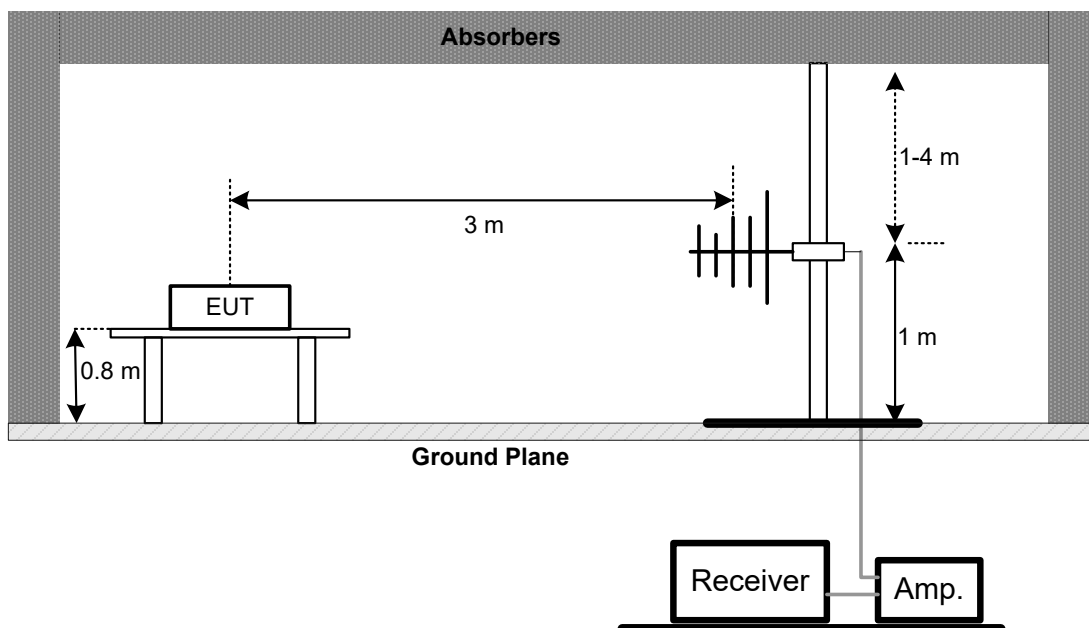
No deviation.

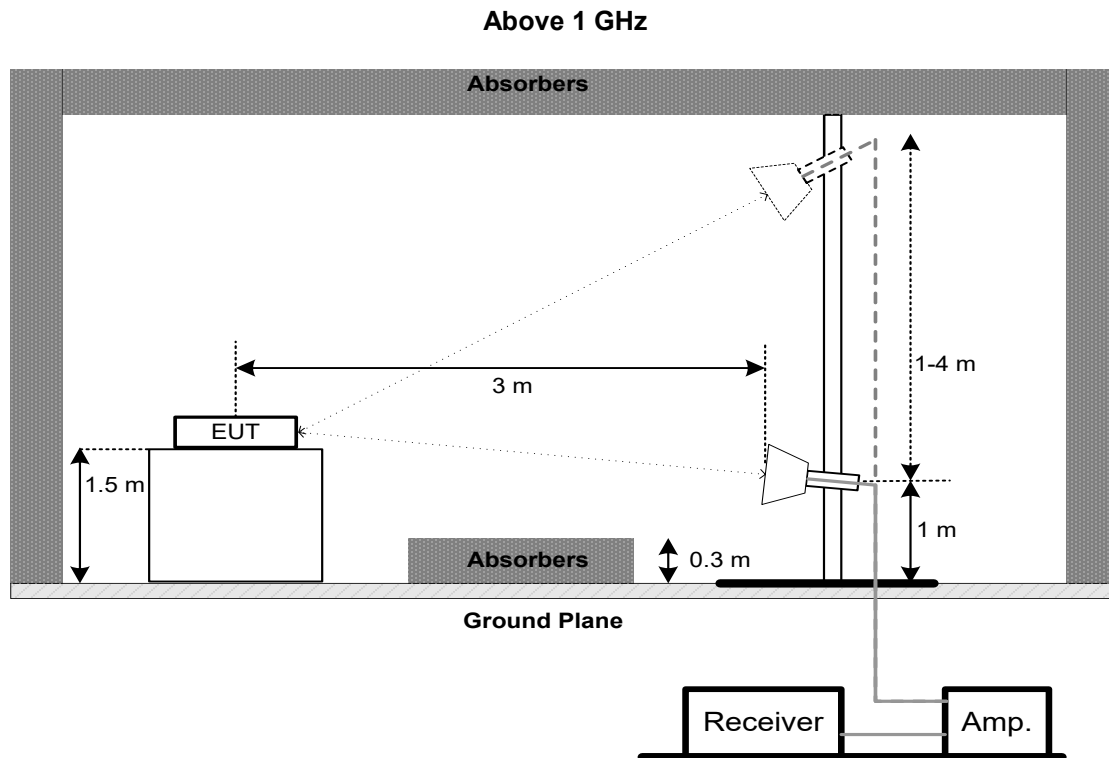
5.4 TEST SETUP

9 kHz to 30 MHz



30 MHz to 1 GHz





5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT - 9 kHz TO 30 MHz

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

5.7 TEST RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

5.8 TEST RESULT - ABOVE 1000 MHz

Please refer to the APPENDIX D.

Remark:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

6. BANDWIDTH

6.1 LIMIT

Section	Test Item	Limit
FCC 15.247(a)(2)	6 dB Bandwidth	≥ 500 kHz
	99% Emission Bandwidth	-

6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting
Span Frequency	> Measurement Bandwidth
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

For 99% Emission Bandwidth:

Spectrum Parameters	Setting
Span Frequency	Between 1.5 times and 5.0 times the OBW
RBW	30 kHz
VBW	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX E.

7. MAXIMUM OUTPUT POWER

7.1 LIMIT

Section	Test Item	Limit
FCC 15.247(b)(3)	Maximum Output Power	1.0000 watt or 30.00 dBm

7.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

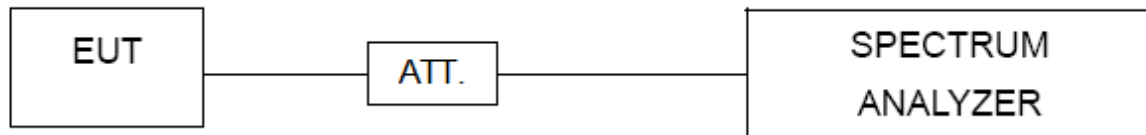
Spectrum Parameters	Setting
Span Frequency	At least 1.5 times the OBW
RBW	RBW > DTS bandwidth
VBW	$\geq 3 \times \text{RBW}$
Detector	Peak
Trace	Max Hold
Sweep Time	$\leq (\text{number of points in sweep}) \times T$ (Note)

Note: Where T is defined in 11.6 of ANSI C63.10-2020+Cor. 1-2023.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX F.

8. CONDUCTED SPURIOUS EMISSION

8.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

8.2 TEST PROCEDURE

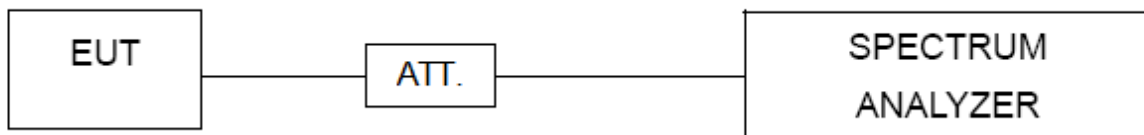
- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX G.

9. POWER SPECTRAL DENSITY

9.1 LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

9.2 TEST PROCEDURE

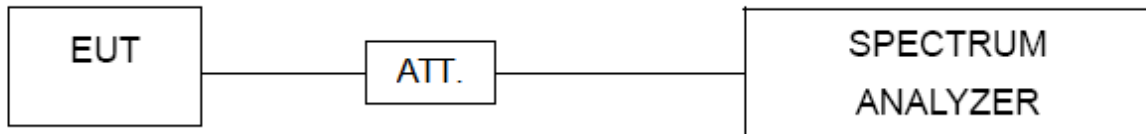
- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Span Frequency	2 MHz (1 Mbps)
RBW	3 kHz
VBW	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

9.6 TEST RESULTS

Please refer to the APPENDIX H.

10. MEASUREMENT INSTRUMENTS LIST

AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	101340	Jul. 04, 2026
2	Test Cable	Regal Way	RWLP50-104-NMS M-10M	20260228-001	Mar. 12, 2027
3	EMI Test Receiver	R&S	ESR3	100082	Dec.11, 2026
4	50Ω Terminator	SHX	TF2-1G-A	17051602	Dec. 27, 2026
5	50Ω coaxial switch	Anritsu	MP59B	6201750902	Dec. 26, 2026
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Feb. 28, 2027
2	MXE EMI Receiver	Keysight	N9038A	MY56400088	Dec. 26, 2026
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1	N/A	N/A
4	Test Cable	Regal Way	RWLP50-104-SMS M-0.8M	20260228 001	Mar.12.2027
5	Test Cable	Regal Way	RWLP50-104-SMS M-7M	20260228 003	Mar.12.2027
6	Test Cable	Regal Way	RWLP50-104-SMS M-2.5M	20260228 005	Mar.12.2027
7	Pre-Amplifier	emci	EMC9135	980401	Dec. 26, 2026

Radiated Emissions - 30 MHz to 1 GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB 9168	1467	Feb.6.2027
2	Pre-Amplifier	emci	EMC9135	980401	Dec. 26, 2026
3	MXE EMI Receiver	Keysight	N9038A	MY56400088	Dec. 26, 2026
4	Test Cable	Regal Way	RWLP50-104-SMS M-0.8M	20260228 001	Mar.12.2027
5	Test Cable	Regal Way	RWLP50-104-SMS M-7M	20260228 003	Mar.12.2027
6	Test Cable	Regal Way	RWLP50-104-SMS M-2.5M	20260228 005	Mar.12.2027
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1	N/A	N/A

Radiated Emissions - 1GHz-18GHz

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	BBHA 9120D	9120D-1817	Aug. 7, 2026
2	Pre-Amplifier	emci	EMC118A45SE	980910	Dec. 26, 2026
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480559	Dec. 26, 2026
4	Test Cable	Regal Way	RWLP50-104-SMS M-0.8M	20260228 001	Mar.12.2027
5	Test Cable	Regal Way	RWLP50-104-SMS M-7M	20260228 003	Mar.12.2027
6	Test Cable	Regal Way	RWLP50-104-SMS M-2.5M	20260228 005	Mar.12.2027
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1	N/A	N/A

Radiated Emissions – Above 18GHz

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	BBHA9170	9170-651	Feb. 7, 2027
2	Pre-Amplifier	EMC INSTRUMENT	EMC184045B	980265	Dec. 11, 2026
3	Test Cable	Regal Way	RWLP50-102-KMK M-0.8M	20250807-002	Mar. 12, 2027
4	Test Cable	Regal Way	RWLP50-102-KMK M-4M	20250807-001	Mar. 12, 2027
5	EXA Spectrum Analyzer	Keysight	N9010A	MY56480559	Dec. 26, 2026
6	Measurement Software	Farad	EZ-EMC Ver.NB-03A1	N/A	N/A

Bandwidth

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9020B	MY57120173	Jul. 04, 2026
2	BTL Conducted Test	BTL	20260106	N/A	N/A

Maximum Output Power

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9020B	MY57120173	Jul. 04, 2026
2	BTL Conducted Test	BTL	20260106	N/A	N/A

Antenna Conducted Spurious Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9020B	MY57120173	Jul. 04, 2026
2	BTL Conducted Test	BTL	20260106	N/A	N/A

Power Spectral Density

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9020B	MY57120173	Jul. 04, 2026
2	BTL Conducted Test	BTL	20260106	N/A	N/A

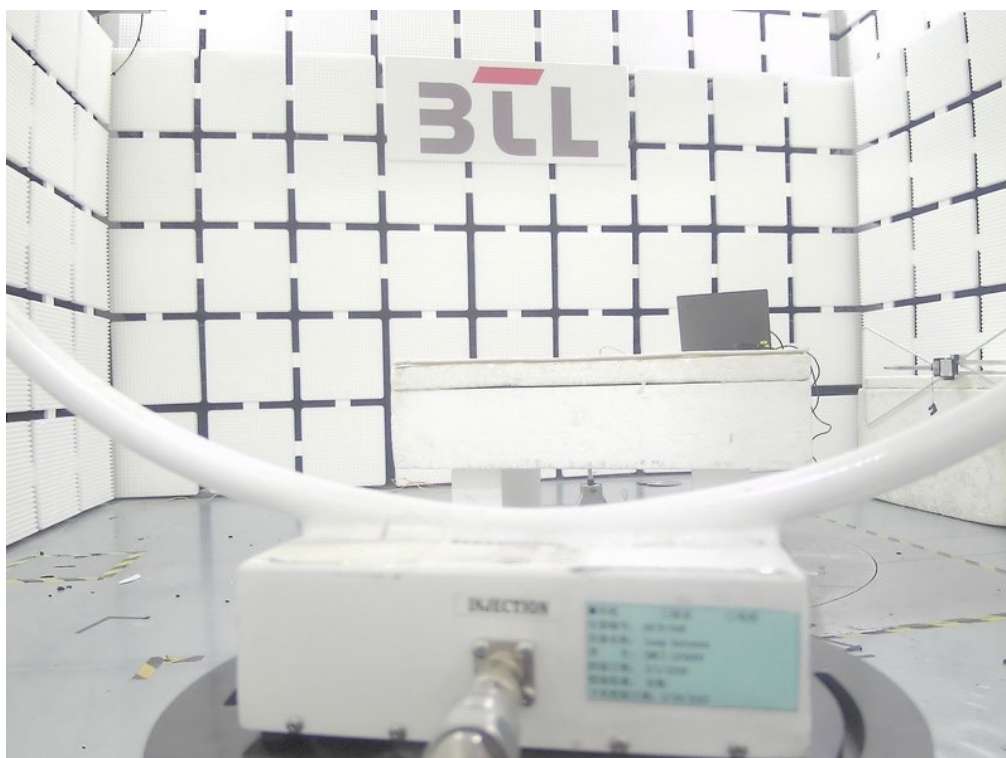
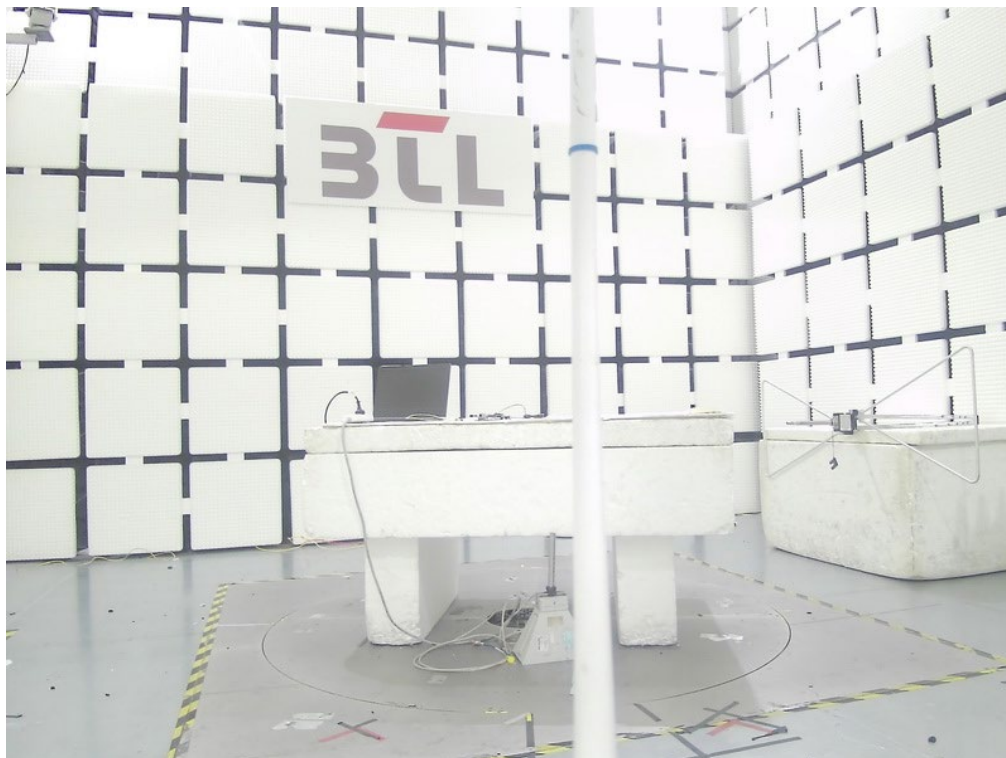
Remark: "N/A" denotes no model name, serial no. or calibration specified.

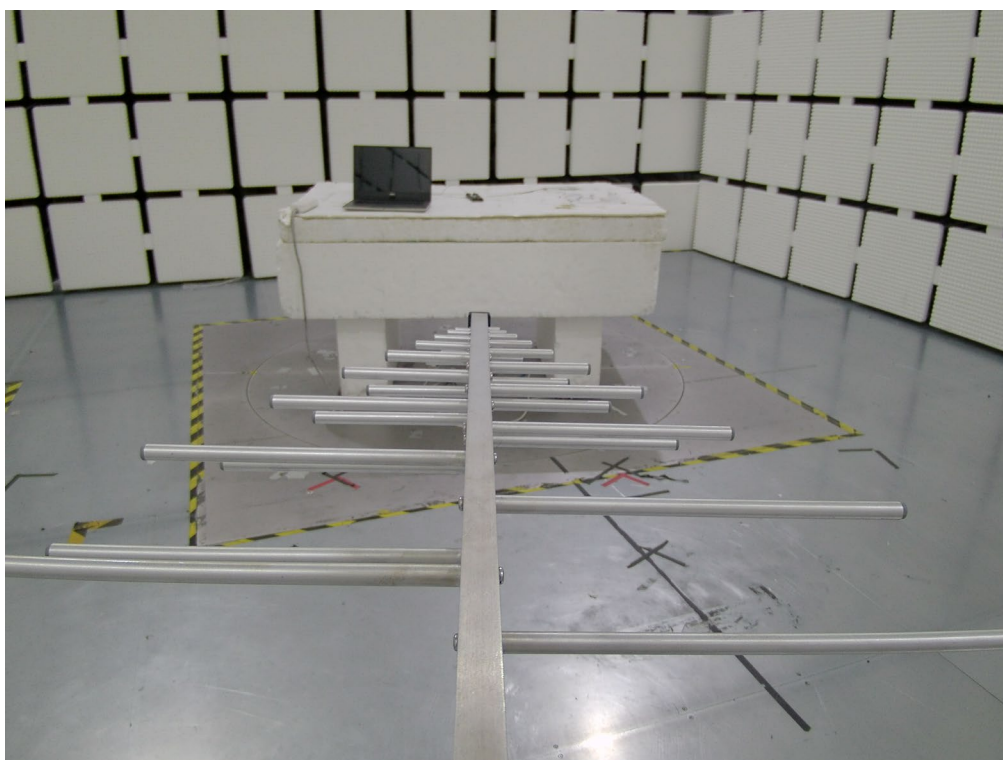
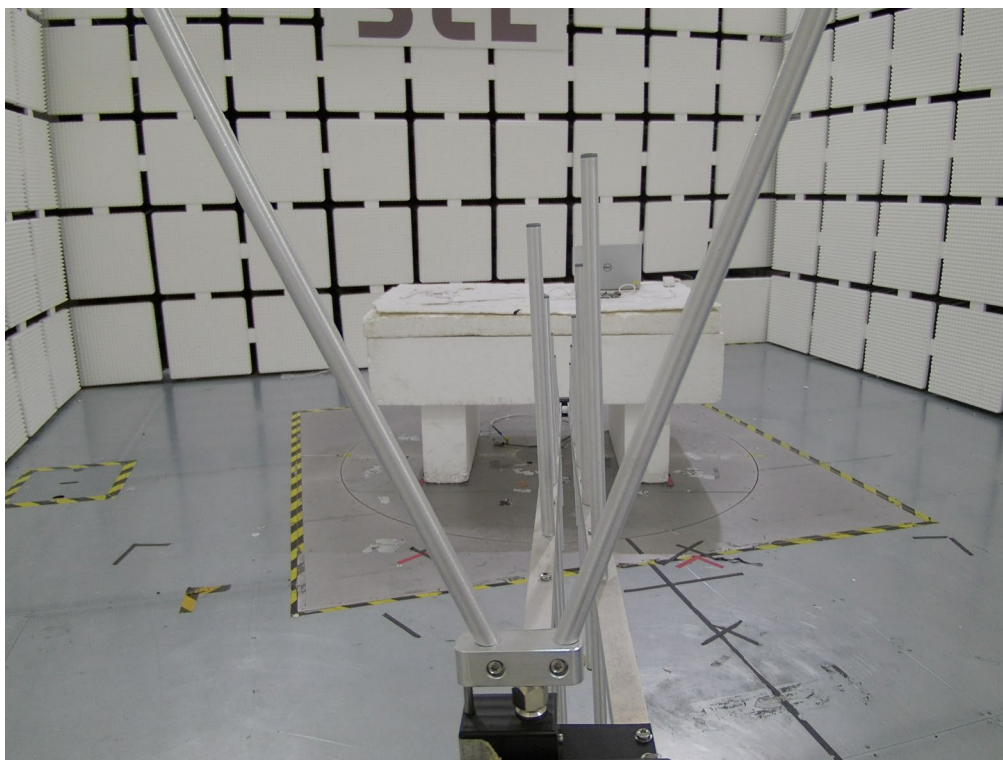
All calibration period of equipment list is one year.

11. EUT TEST PHOTO

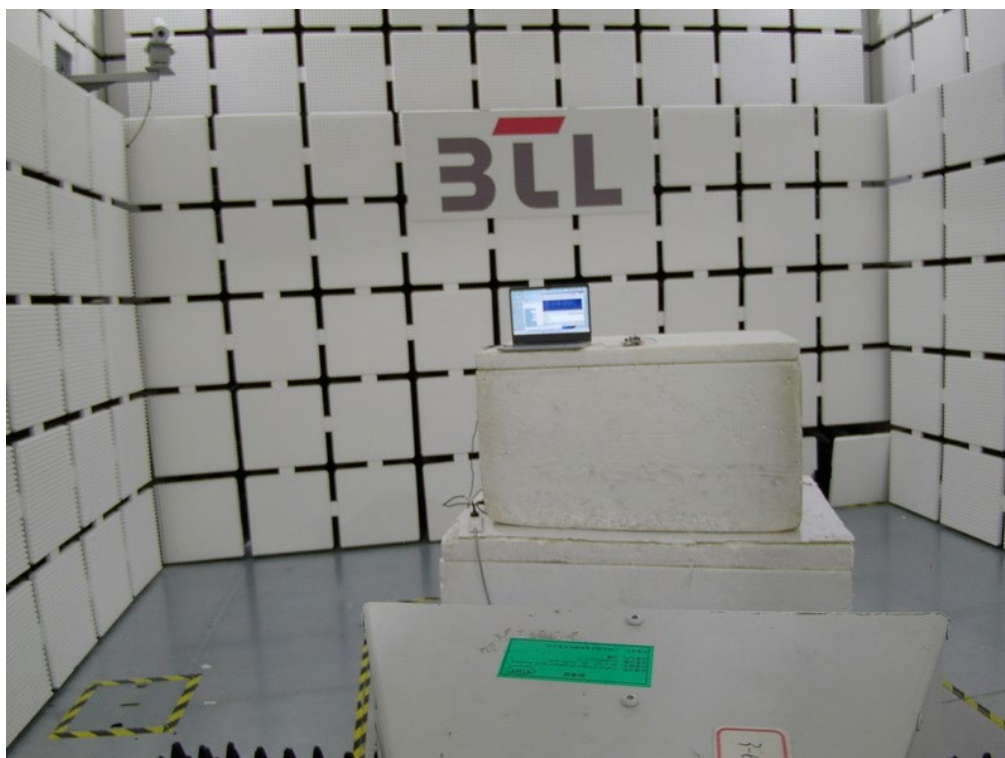
Radiated Emissions Test Photos

9 kHz to 30 MHz



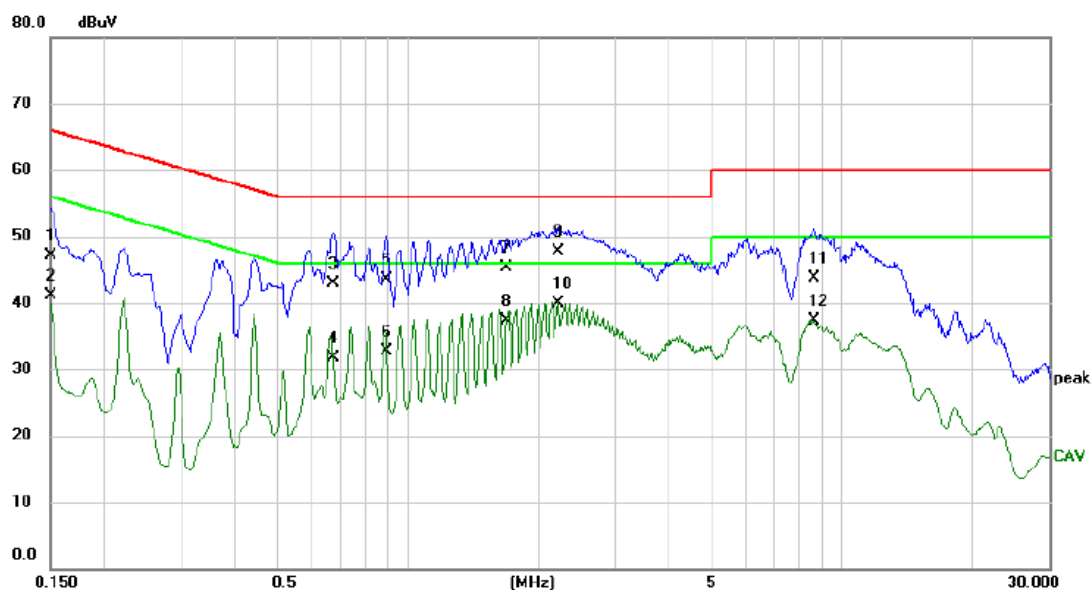
Radiated Emissions Test Photos**30 MHz to 1 GHz**

Above 1 GHz



APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

Test Mode	TX Mode_1Mbps Channel 39	Phase	Line
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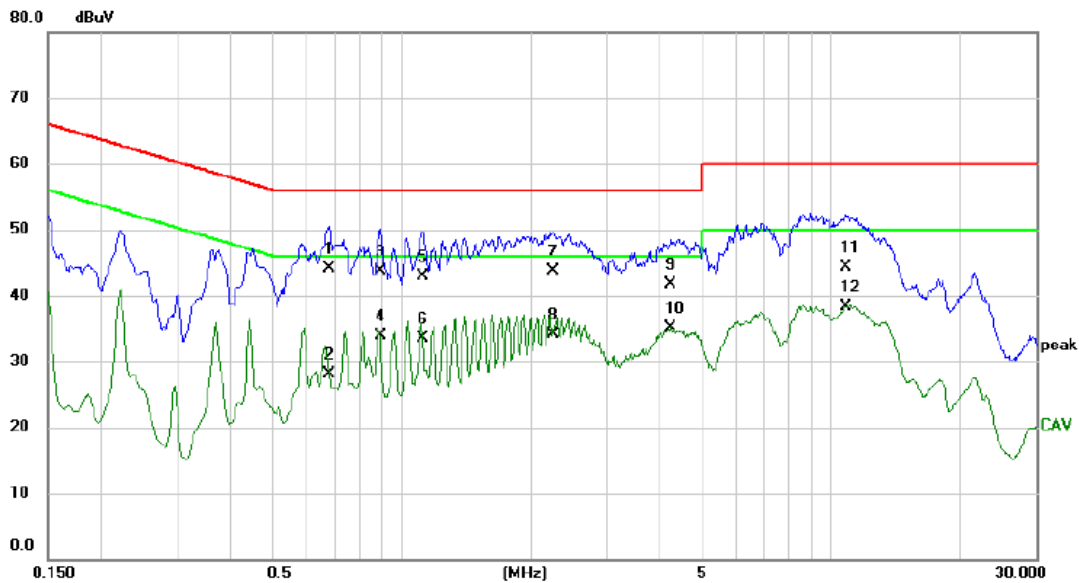
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	37.60	9.59	47.19	66.00	-18.81	QP	
2		0.1500	31.50	9.59	41.09	56.00	-14.91	AVG	
3		0.6720	33.20	9.65	42.85	56.00	-13.15	QP	
4		0.6720	22.00	9.65	31.65	46.00	-14.35	AVG	
5		0.8947	33.80	9.66	43.46	56.00	-12.54	QP	
6		0.8947	23.00	9.66	32.66	46.00	-13.34	AVG	
7		1.6890	35.70	9.68	45.38	56.00	-10.62	QP	
8		1.6890	27.70	9.68	37.38	46.00	-8.62	AVG	
9		2.2223	38.00	9.70	47.70	56.00	-8.30	QP	
10	*	2.2223	30.30	9.70	40.00	46.00	-6.00	AVG	
11		8.6460	33.80	9.96	43.76	60.00	-16.24	QP	
12		8.6460	27.40	9.96	37.36	50.00	-12.64	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Phase	Neutral
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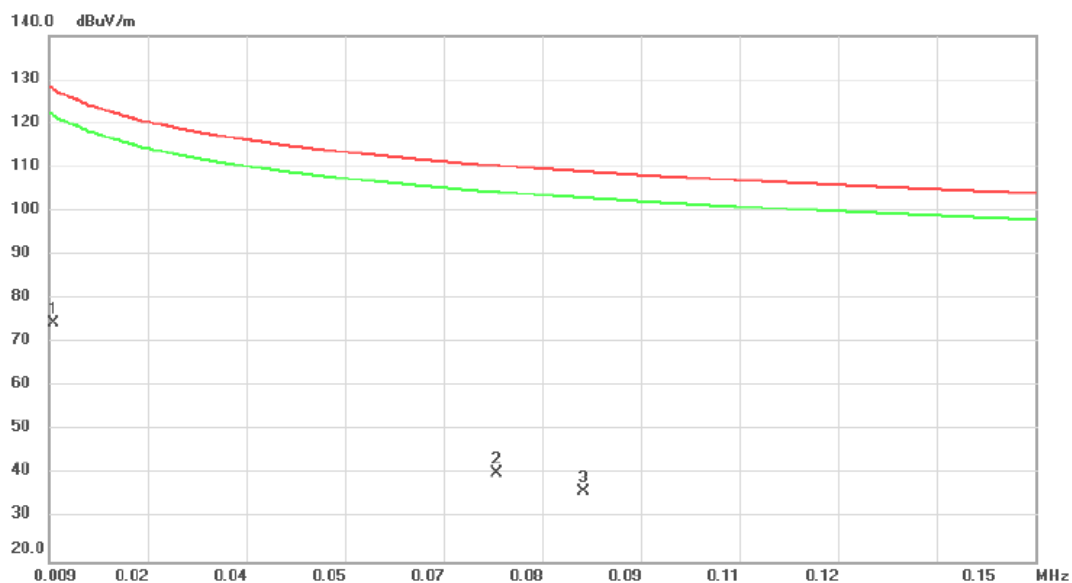
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.6765	34.40	9.74	44.14	56.00	-11.86	QP	
2		0.6765	18.30	9.74	28.04	46.00	-17.96	AVG	
3		0.8902	33.90	9.72	43.62	56.00	-12.38	QP	
4		0.8902	24.20	9.72	33.92	46.00	-12.08	AVG	
5		1.1174	33.10	9.74	42.84	56.00	-13.16	QP	
6		1.1174	23.70	9.74	33.44	46.00	-12.56	AVG	
7		2.2605	33.90	9.79	43.69	56.00	-12.31	QP	
8		2.2605	24.40	9.79	34.19	46.00	-11.81	AVG	
9		4.2248	31.80	9.89	41.69	56.00	-14.31	QP	
10	*	4.2248	25.30	9.89	35.19	46.00	-10.81	AVG	
11		10.8195	34.10	10.13	44.23	60.00	-15.77	QP	
12		10.8195	28.10	10.13	38.23	50.00	-11.77	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Vertical
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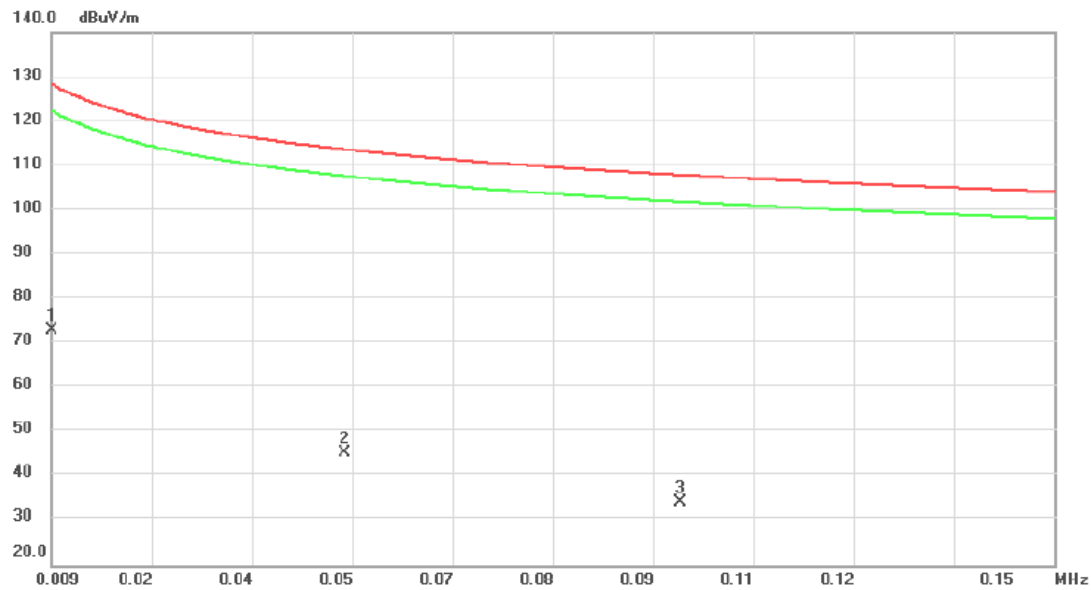


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV		dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0096	5.79	68.62	74.41	127.96	-53.55	peak	
2		0.0731	5.18	35.01	40.19	110.33	-70.14	peak	
3		0.0855	4.17	31.94	36.11	108.97	-72.86	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Horizontal
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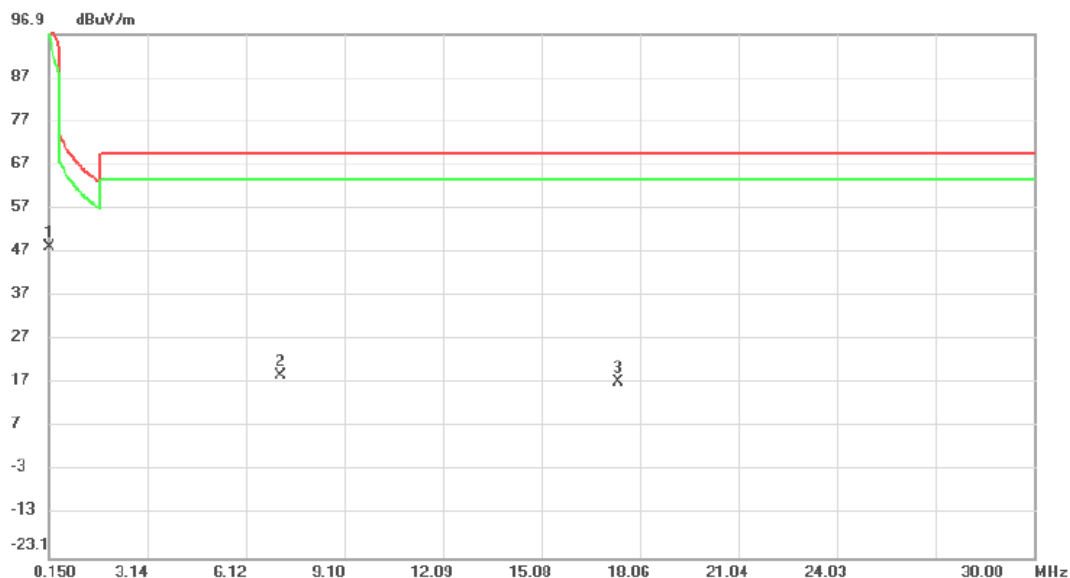


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV		dBuV/m	dBuV/m	dB	Detector	Comment
1	*	0.0091	2.86	70.05	72.91	128.42	-55.51	peak	
2		0.0503	3.89	41.45	45.34	113.57	-68.23	peak	
3		0.0974	5.01	29.18	34.19	107.83	-73.64	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Vertical
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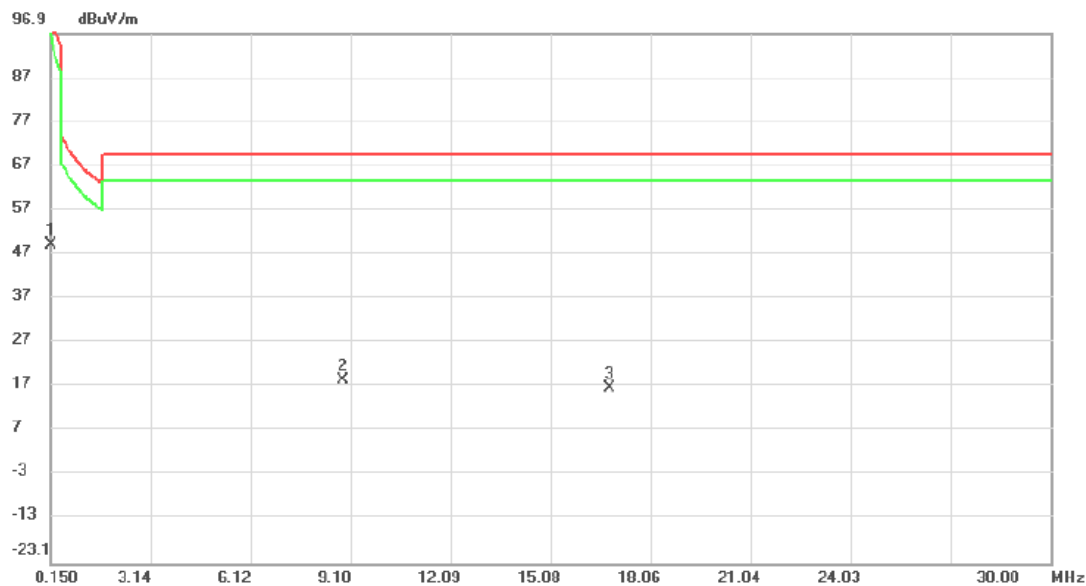


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV		dBuV/m	dBuV/m	dB	Detector Comment
1		0.1500	24.57	23.65	48.22	104.09	-55.87	peak
2	*	7.1647	20.11	-1.27	18.84	69.54	-50.70	peak
3		17.3884	20.46	-3.07	17.39	69.54	-52.15	peak

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Horizontal
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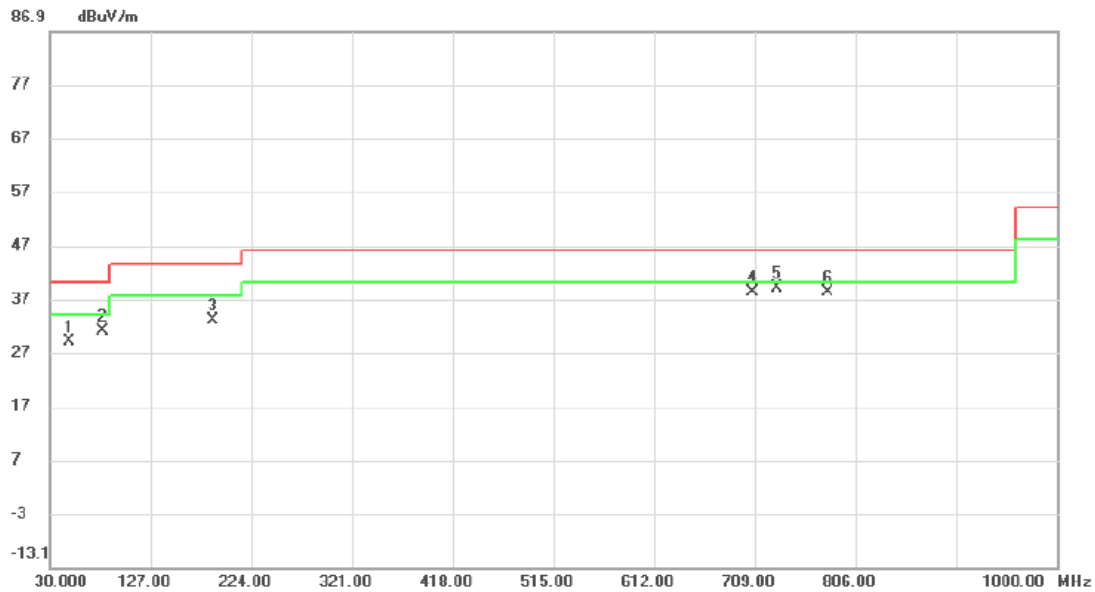
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	0.1500	25.51	23.65	49.16	104.09	-54.93	peak	
2 *	8.8961	20.54	-1.98	18.56	69.54	-50.98	peak	
3	16.8361	19.67	-2.98	16.69	69.54	-52.85	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Vertical
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV		dBuV/m	dBuV/m	dB	Detector	Comment
1		48.4300	46.40	-17.34	29.06	40.00	-10.94	peak	
2		80.9250	52.71	-21.62	31.09	40.00	-8.91	peak	
3		187.1400	52.25	-19.10	33.15	43.50	-10.35	peak	
4		706.5750	46.65	-8.49	38.16	46.00	-7.84	peak	
5	*	729.8550	46.74	-7.83	38.91	46.00	-7.09	peak	
6		778.8400	45.96	-7.57	38.39	46.00	-7.61	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Horizontal
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV		dBuV/m	dBuV/m	dB		
1		217.6950	53.54	-20.05	33.49	46.00	-12.51	peak	
2		740.5250	41.28	-7.53	33.75	46.00	-12.25	peak	
3	*	786.1150	47.42	-7.65	39.77	46.00	-6.23	peak	
4		800.1800	44.98	-7.80	37.18	46.00	-8.82	peak	
5		831.7050	42.63	-7.01	35.62	46.00	-10.38	peak	
6		880.2050	40.55	-6.37	34.18	46.00	-11.82	peak	

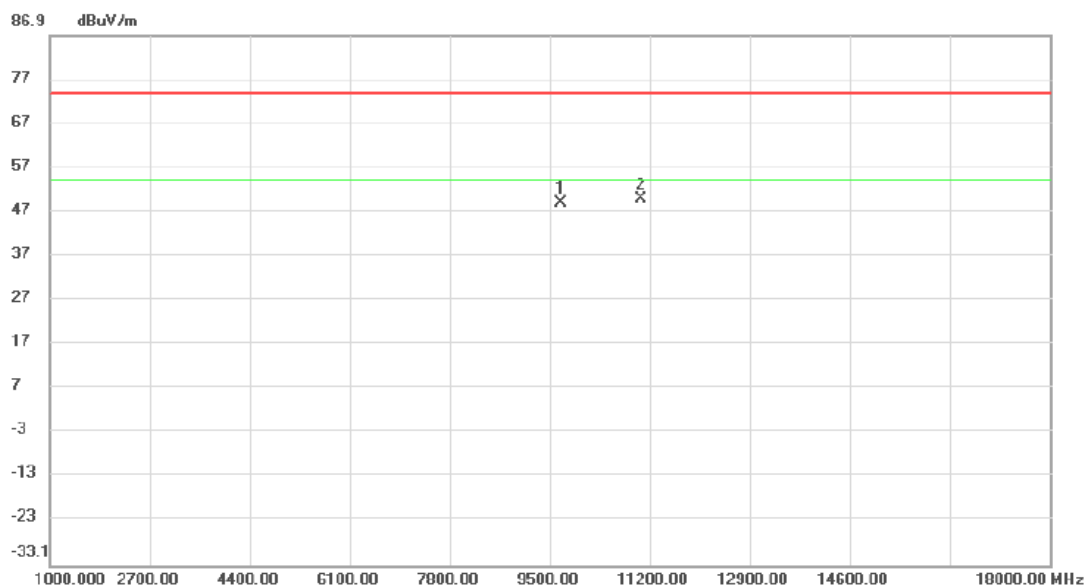
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ

Test Mode	TX 2402 MHz _CH00_1Mbps	Polarization	Vertical
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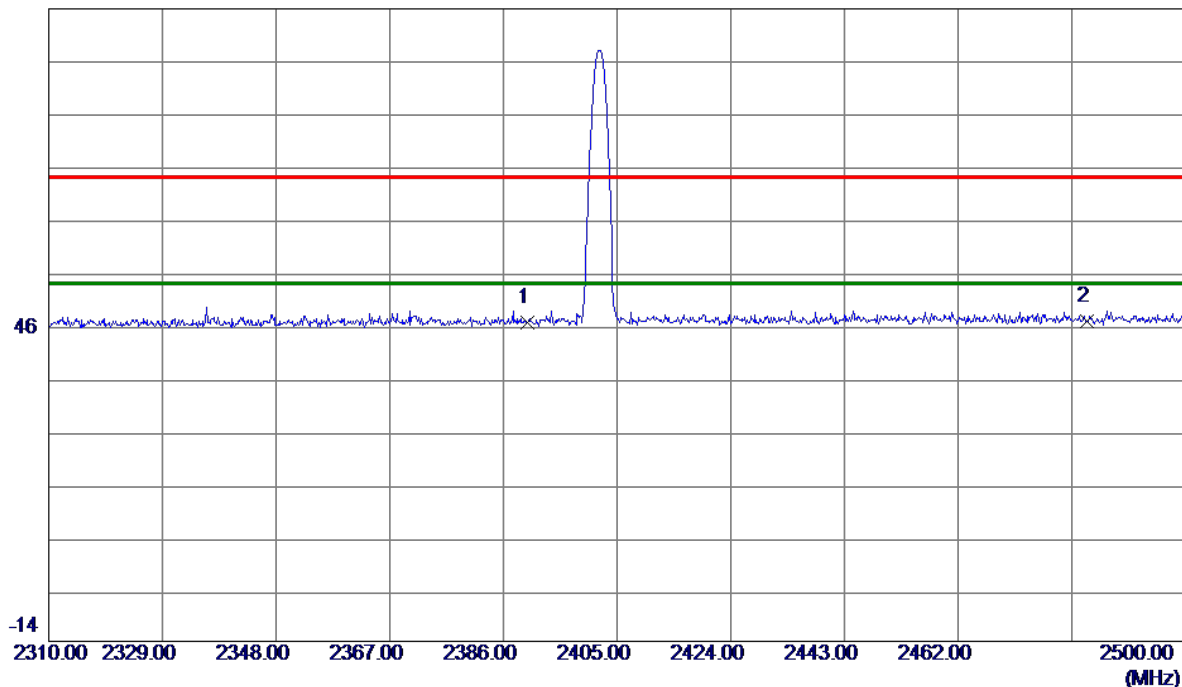
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		9692.100	44.26	4.70	48.96	74.00	-25.04	peak	
2	*	11051.250	43.85	6.09	49.94	74.00	-24.06	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX 2402 MHz _CH00_1Mbps	Polarization	Horizontal
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106 dBuV/m



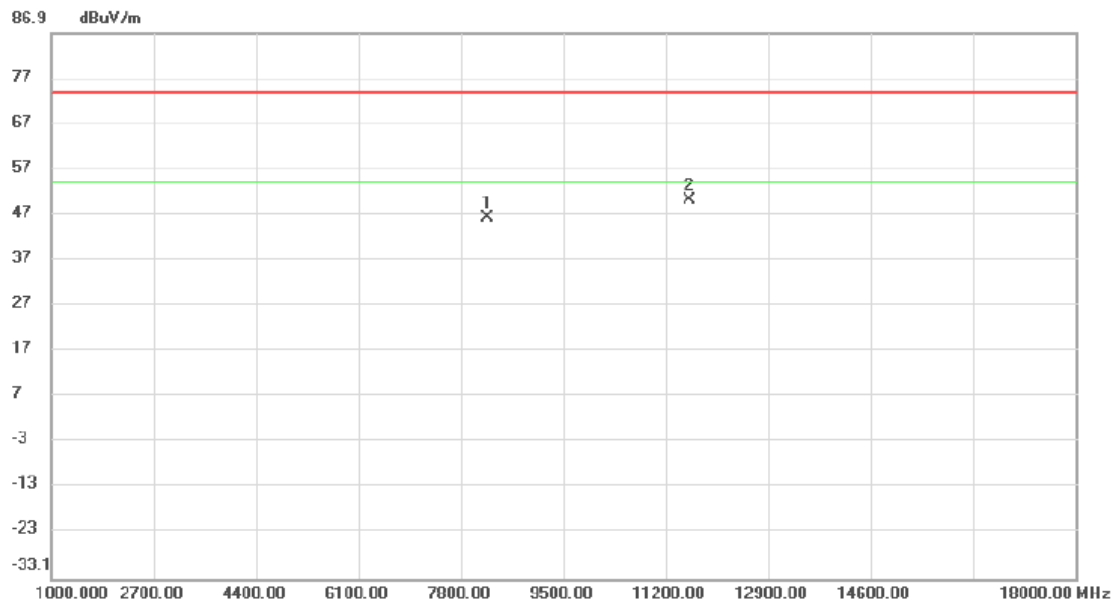
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	42.56	3.93	46.49	74.00	-27.51	Peak	
2 *	2483.5000	42.53	4.22	46.75	74.00	-27.25	Peak	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX 2440 MHz _CH19_1Mbps	Polarization	Vertical
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		8244.550	41.80	4.32	46.12	74.00	-27.88	peak	
2	*	11600.350	44.37	5.71	50.08	74.00	-23.92	peak	

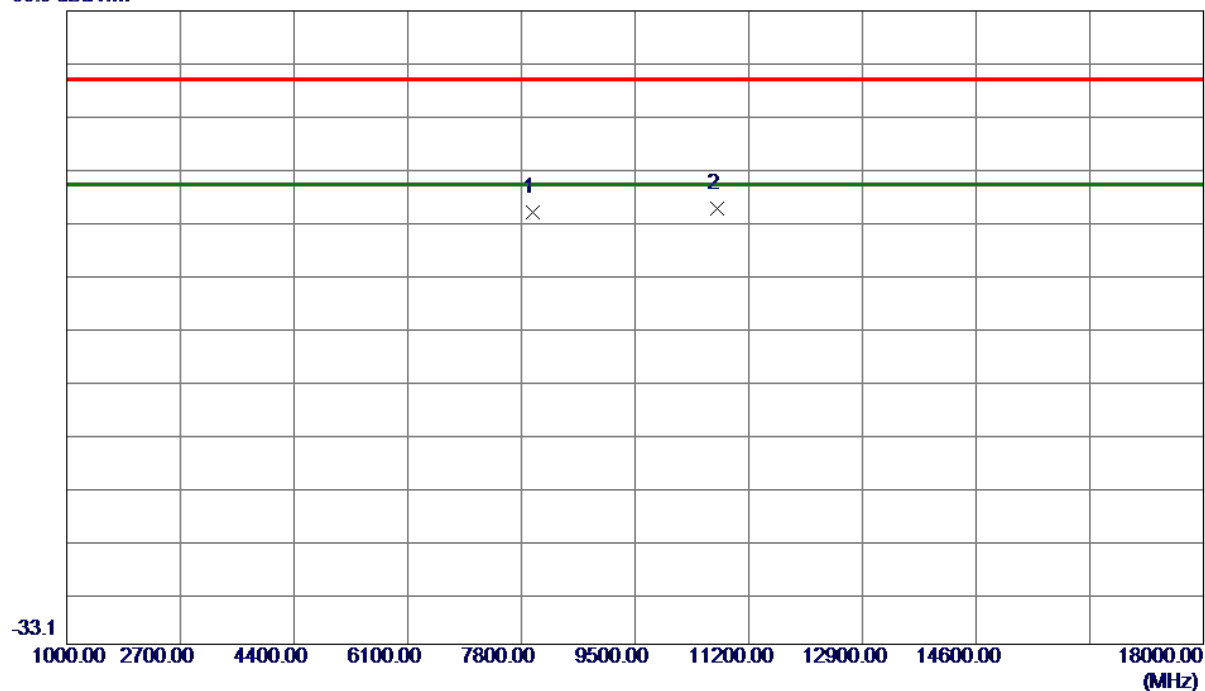
REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX 2480 MHz _CH39_1Mbps	Polarization	Vertical
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86.9 dBuV/m



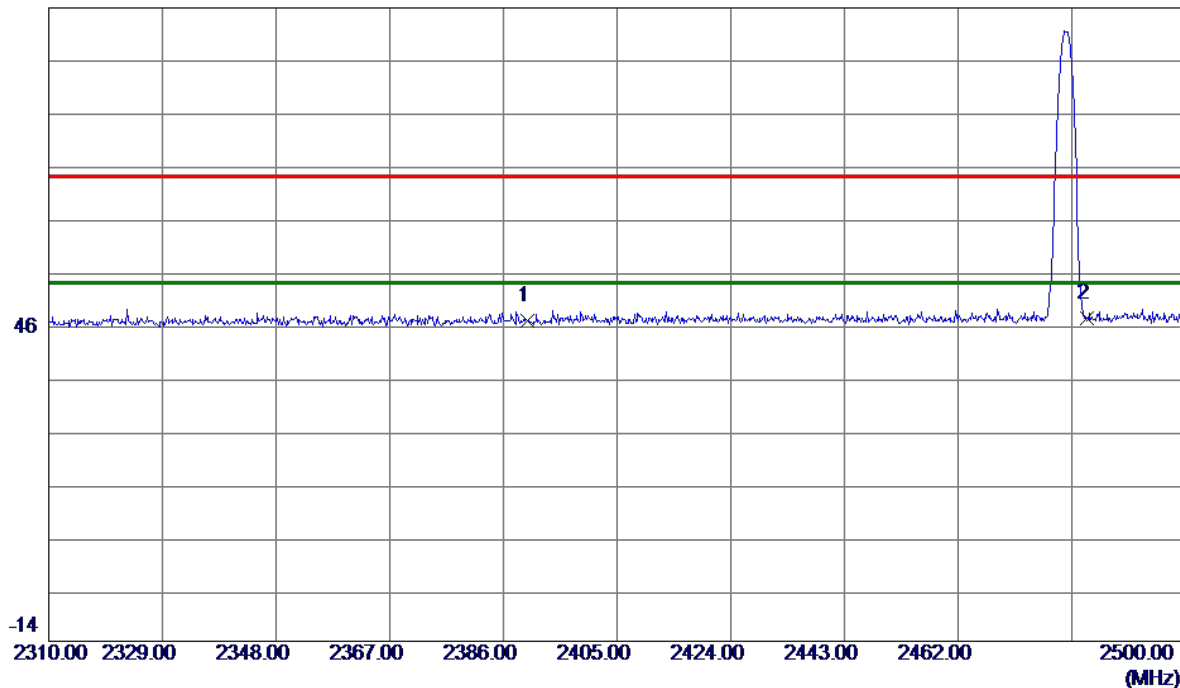
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	7970.8500	44.02	4.68	48.70	74.00	-25.30	Peak	
2 *	10727.4000	43.79	5.78	49.57	74.00	-24.43	Peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX 2480 MHz _CH39_1Mbps	Polarization	Horizontal
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106 dBuV/m



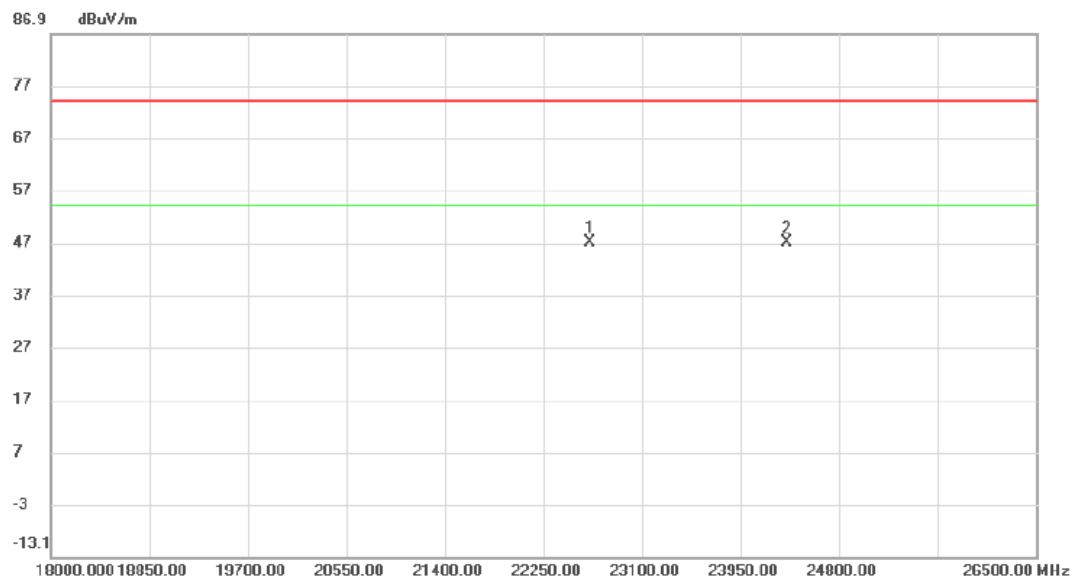
No.	Freq. MHz	Reading Level dBuV/m	Correct Factor dB	Measure ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	2390.0000	42.88	3.93	46.81	74.00	-27.19	Peak	
2 *	2483.5000	42.93	4.22	47.15	74.00	-26.85	Peak	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_1Mbps Channel 39	Polarization	Vertical
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No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	22651.625	51.29	-4.17	47.12	74.00	-26.88	peak	
2		24350.350	49.88	-2.77	47.11	74.00	-26.89	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX E - BANDWIDTH

Test Mode	TX Mode _1Mbps
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Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result
00	2402	0.667	1.043	0.5	Pass
19	2440	0.665	1.050	0.5	Pass
39	2480	0.672	1.050	0.5	Pass

CH00



CH19
6 dB Bandwidth



CH39



99 % Occupied Bandwidth

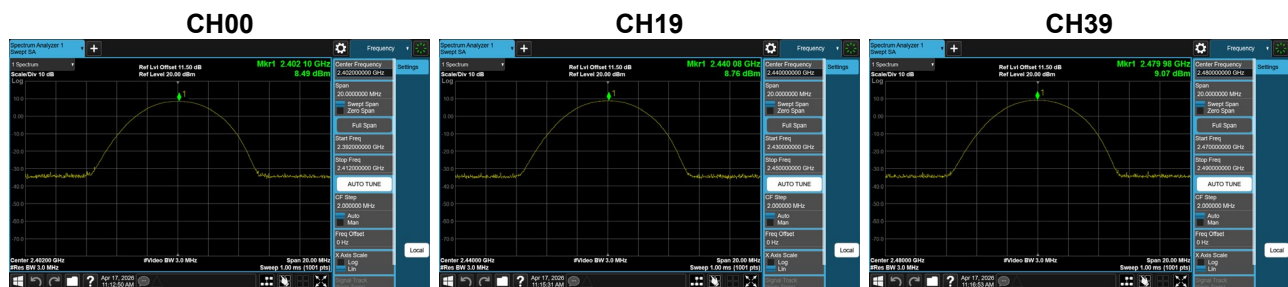


APPENDIX F - MAXIMUM OUTPUT POWER

Test Mode	TX Mode _1Mbps
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Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result
2402	8.49	0.0071	30.00	1.0000	Pass
2440	8.76	0.0075	30.00	1.0000	Pass
2480	9.07	0.0081	30.00	1.0000	Pass

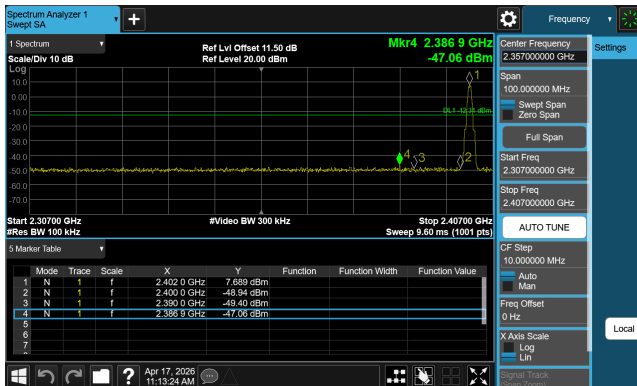
Note: Output power = Measure result + Cable loss



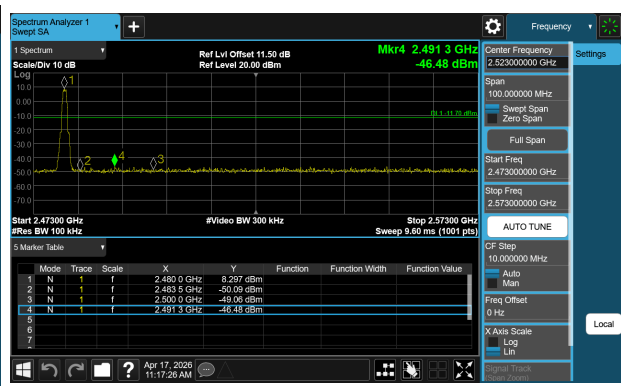
APPENDIX G - CONDUCTED SPURIOUS EMISSION

Test Mode TX Mode _ 1Mbps

Bandedge CH00 (Lower)



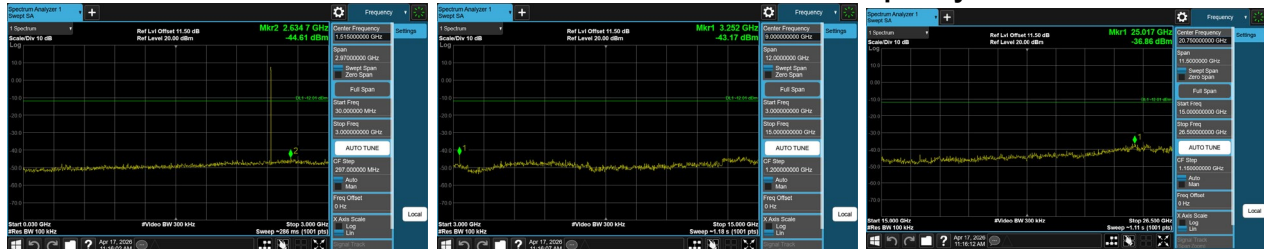
Bandedge CH39 (Upper)



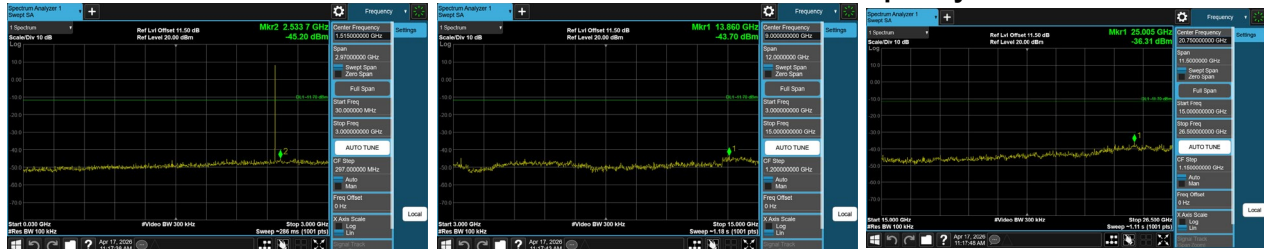
CH00 – 10th Harmonic of the fundamental frequency



CH19 – 10th Harmonic of the fundamental frequency



CH39 – 10th Harmonic of the fundamental frequency

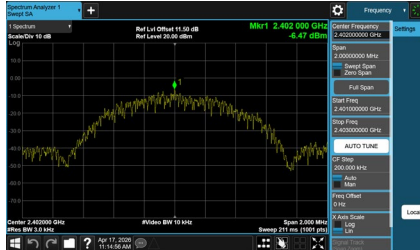


APPENDIX H - POWER SPECTRAL DENSITY

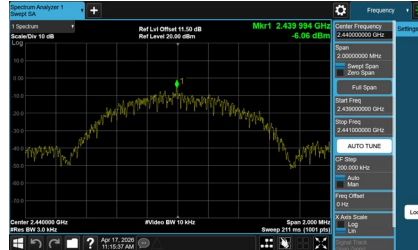
Test Mode	TX Mode _1Mbps
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Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-6.47	8.00	Pass
19	2440	-6.06	8.00	Pass
39	2480	-5.66	8.00	Pass

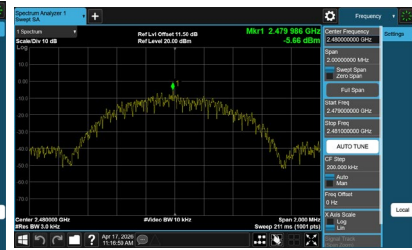
CH00



CH19



CH39



End of Test Report