NVLAP TESTING
NVLAP LAB CODE 600341-0

BACL Bay Area Compliance Labs Corp.

TEST REPORT

Applicant:	**Fujian LANDI Commercial Equipment Co.,Ltd.**
Address:	**FCC: Building 17, Section A, Software Park, No. 89 Software Road, Gulou District, Fuzhou Municipality, Fujian Province, China** **IC: Building 17, Section A, Software Park, No. 89 Software Road, Gulou District, Fuzhou Municipality, Fujian Province,P.R. 350003 China**
Product Name:	**POS Terminal**
FCC ID:	**2AG6N-C20SE**
IC:	**23725-C20SE**
HVIN:	**C20SES1, C20SED1**
Standard(s):	**47 CFR Part 15, Subpart C(15.247)** **RSS-247 Issue 3, August 2023** **RSS-Gen, Issue 5, February 2021 Amendment 2** **ANSI C63.10-2013** **KDB 558074 D01 15.247 Meas Guidance v05r02**
Report Number:	**XMDN240206-08078E-RF-00CA1**
Report Date:	**2025/4/25**

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

Reviewed By: **Pedro Yun**	**Approved By:** **Gavin Xu**
Title: **Project Engineer**	Title: **RF Supervisor**

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	XMDN240206-08078E-RF-00C	Original Report	2024/4/11
2.0	XMDN240206-08078E-RF-00CA1	Class II Permissive Change Report	2025/4/25

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	POS Terminal
EUT Model:	C20SE
Operation Frequency:	2402-2480 MHz
Maximum Peak Output Power (Conducted):	6.85dBm
Modulation Type:	GFSK
Rated Input Voltage:	19Vdc from adapter
Serial Number:	RF Conducted Test: 2VU3-8(Configuration1#) For Radiated spurious emission below 1GHz test and AC line conducted Emission tests: 2VU3-3(Configuration1#) 2VU3-5(Configuration2#) For Radiated spurious emission above 1GHz test: 2VU3-3(Configuration1#)
EUT Received Date:	2024/12/11
EUT Received Status:	Good
Note: test was performed with Configuration 1#~2# except Radiated spurious emission above 1GHz and power spot check only test with configuration 1#.	

Configuration Information:

Configuration No.	HVIN	10.1 inch Screen
1#	C20SED1	√
2#	C20SES1	×

1.2 Accessory Information

Adapter Information:

Adapter No.	Manufacturer	Model	Parameters
1#	Lite-On Technology(Europe)BV	PA-1400-76	Input:100-240Vac, 50/60Hz ,1.2A Output: 19Vdc, 2.1A
2#	Lite-On Electronics (Europe) Ltd.	PA-1650-90	Input:100-240Vac, 50/60Hz ,1.6A Output: 19Vdc, 3.42A
3#(New)	Lite-On Technology Corp.	PA-1650-57	Input:100-240Vac, 50/60Hz ,1.6A Output: 19Vdc, 3.42A

AC Power Cable Information:

Cable No.	Manufacturer
1#	EA Cable Assemblies GmbH
2#(New)	Fund Resources Electric Industry Co. Ltd. Shanghang

1.3 Antenna Information Detail▲

Antenna Manufacturer	Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
Shanghai Jesoncom Communication Engineering Co., Ltd	FPC	50	2.4-2.5GHz	4.55dBi
The design of compliance with §15.203:				
☒ Unit uses a permanently attached antenna. ☐ Unit uses a unique coupling to the intentional radiator. ☐ Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.				

1.4 Equipment Modifications

No modifications are made to the EUT during all test items.

2. SUMMARY OF TEST RESULTS

Standard(s) Section	Test Items	Result
§15.207(a) RSS-Gen Clause 8.8	AC line conducted emissions	Compliant
§15.205, §15.209, §15.247(d) RSS-Gen Clause 8.10	Radiated Spurious Emissions	Compliant
§15.247 (a)(2) RSS-247 Clause 5.2 a)	Minimum 6 dB Bandwidth	Compliant*
RSS-Gen Clause 6.7	99% Occupied Bandwidth	Compliant*
§15.247(b)(3) RSS-247 Clause 5.4 d)	Maximum Conducted Output Power	Reporting
§15.247(e) RSS-247 Clause 5.2 b)	Power Spectral Density	Compliant*
§15.247(d) RSS-247 Clause 5.5	100 kHz Bandwidth of Frequency Band Edge	Compliant*
FCC §15.203 RSS-Gen Clause 6.8	Antenna Requirement	Compliant

Purpose:
This is **Class II permissive change** application based on the original device, model: C20SE, FCC ID: 2AG6N-C20SE, IC: 23725-C20SE, HVIN: C20SES, C20SED. Differences between the previous device and the current one are stated and guaranteed by the manufacturer, as following:

1. Add one Adapter (model: PA-1650-57) for single and dual screens.
2. Change the WIFI/Bluetooth antenna.
3. Change MIC position.
4. Change the layout and routing of S&J board. The S board is only available with dual screens, and the J board is available with single and dual screens
5. Change to dual 5W speakers.
6. Change the version to V110 and the USB signal of C board.
7. Change the HVIN (HVIN:C20SED1,HVIN:C20SES1).
8. Change the internal circuit of the 15.6 inch LCD.

Per Spot check with RF output power, the RF parameters are identical with the original device. Therefore, AC line conducted emissions and Radiated Spurious Emissions was tested based on the change.
The other items please refer to the original report, report No.: XMDN240206-08078E-RF-00C, issued by Bay Area Compliance Laboratories Corp.(Dongguan).

Note 1: For AC line conducted emissions and Radiated Spurious Emissions 9kHz~ 1GHz and 18-25GHz, the maximum output power mode and channel was tested.

3. DESCRIPTION OF TEST CONFIGURATION

3.1 Operation Frequency Detail

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**2402**	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
…	…	38	2478
19	**2440**	39	**2480**

Note: The above frequencies in bold were performed the test.

3.2 EUT Operation Condition

The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The following summary table is showing all test modes to demonstrate in compliance with the standard:

Test Items	Test Modes
AC Line Conducted Emission:	M1: Transmitting& Configuration1# & Adapter 3#
	M2: Transmitting& Configuration2# & Adapter 3#
	M3: Transmitting& Configuration1# & Adapter 1#
Radiated Spurious Emission Below 1G:	M1: Transmitting& Configuration1# & Adapter 3#
	M2: Transmitting& Configuration2# & Adapter 3#
	M3: Transmitting& Configuration1# & Adapter 1#
Radiated Spurious Emission Above 1G:	M1: Transmitting& Configuration1# & Adapter 3#

Note: For Adapter 1# and Adapter 2#, per original XMDN240206-08078E-RF-00C, Configuration1# & Adapter 1# was the worst, so only performed it.

3.3 EUT Exercise Software

EUT Exercise Software:	cmd		
The software was provided by manufacturer. The maximum power was configured as below, that was provided by the manufacturer▲:			
Test Modes	Power Level Setting		
	Lowest Channel	Middle Channel	Highest Channel
BLE 1Mbps	Default	Default	Default
BLE 2Mbps	Default	Default	Default

3.4 Support Equipment List and Details

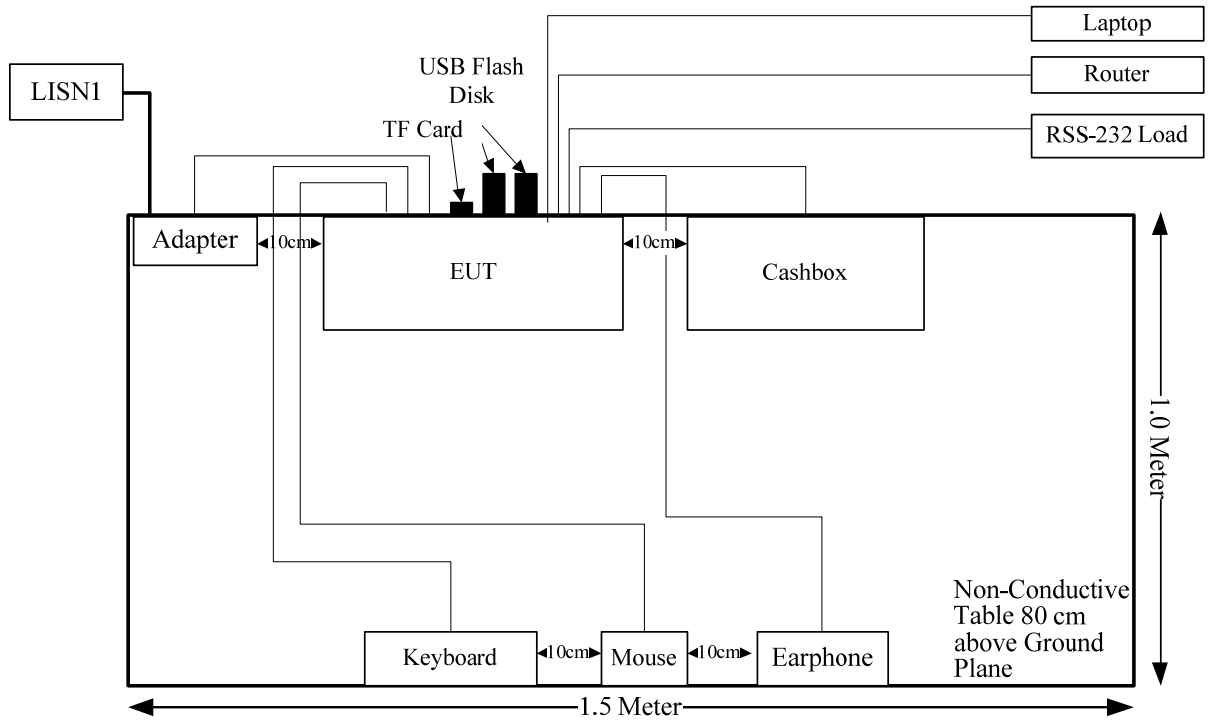
Manufacturer	Description	Model	Serial Number
ZIONCOM	Router	MB-R210-00	EMZBWR21103004
Kingston	USB Flash Disk	32G	EMZBUD21103001
SanDisk	Micro TF Card	UHS-I-16G	9292DVDSV0XZ
Unkonwn	RS232 Load	Unknown	EZF23GF4543
LANDI	Cashbox	Unknown	EZ240214F212
PHILIPS	Keyboard	SPK6234	K234210510742
PHILIPS	Mouse	SPK7214	M214BQ210411113
Keenion	Earphone	KDM-911	EMZBEP21103003B
Lenovo	Laptop	G510	EMZBPC21103006
SANDisk	USB Flash Disk	16G	BL201111386N
Baiyius	U-Disk-32GB	BA32GB	TJX21062632GB

3.5 Support Cable List and Details

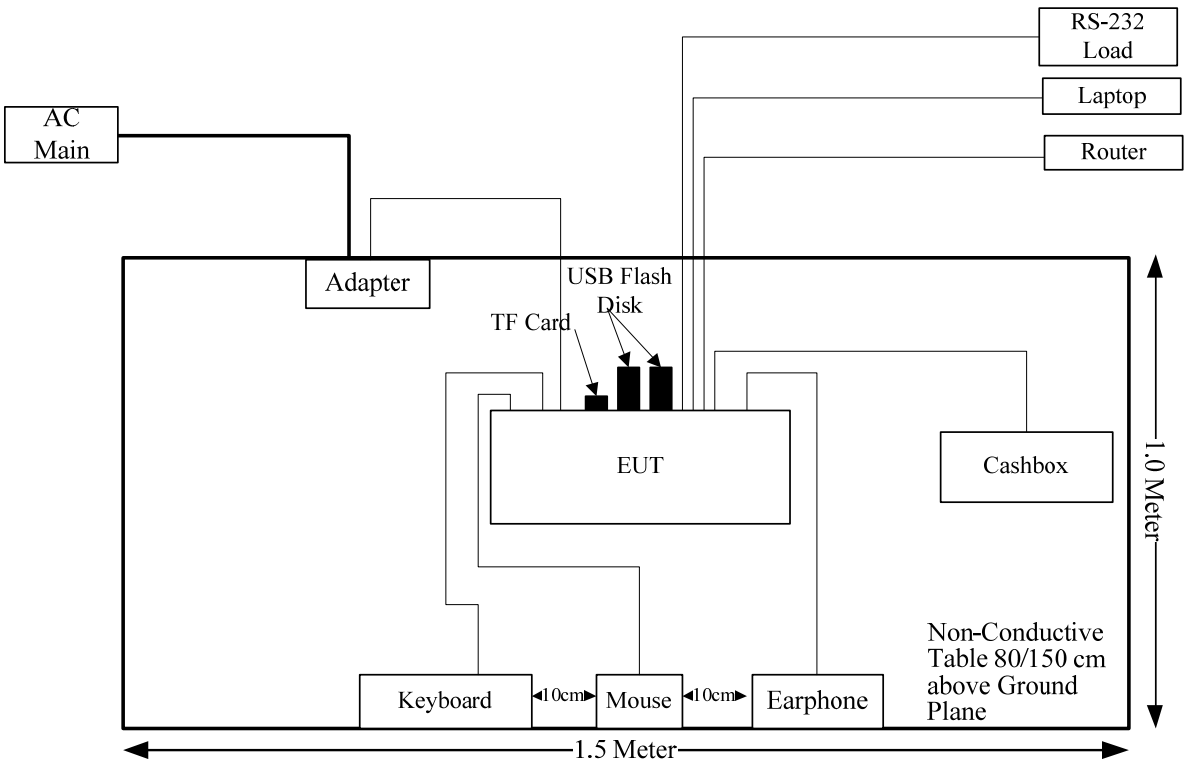
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
DC Cable	No	No	0.8	Adapter	EUT
RJ45 Cable	No	No	10	Router	EUT
RS232 Cable	No	No	3	RS232 Load	EUT
Cashbox Cable	No	No	1.2	Cashbox	EUT
Keyboard Cable	No	No	1.5	Keyboard	EUT
Mouse Cable	No	No	1.5	Mouse	EUT
Earphone Cable	No	No	1.2	Earphone	EUT
USB Cable	Yes	No	1.2	Laptop	EUT

3.6 Block Diagram of Test Setup

AC line conducted emissions:



Spurious Emissions:



3.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 829273, the FCC Designation No. : CN5044.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

3.8 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	9kHz~30MHz: 3.3dB, 30MHz~200MHz: 4.55 dB, 200MHz~1GHz: 5.92 dB, 1GHz~6GHz: 4.98 dB, 6GHz~18GHz: 5.89 dB, 18GHz~26.5GHz:5.47 dB, 26.5GHz~40GHz:5.63 dB
Unwanted Emissions, conducted	±2.47 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.11 dB (150 kHz to 30 MHz)

4. REQUIREMENTS AND TEST PROCEDURES

4.1 AC Line Conducted Emissions

4.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

	Conducted limit (dBμV)	
Frequency of emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtainig their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

RSS-Gen Clause 8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.
For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 4 – AC power-line conducted emissions limits

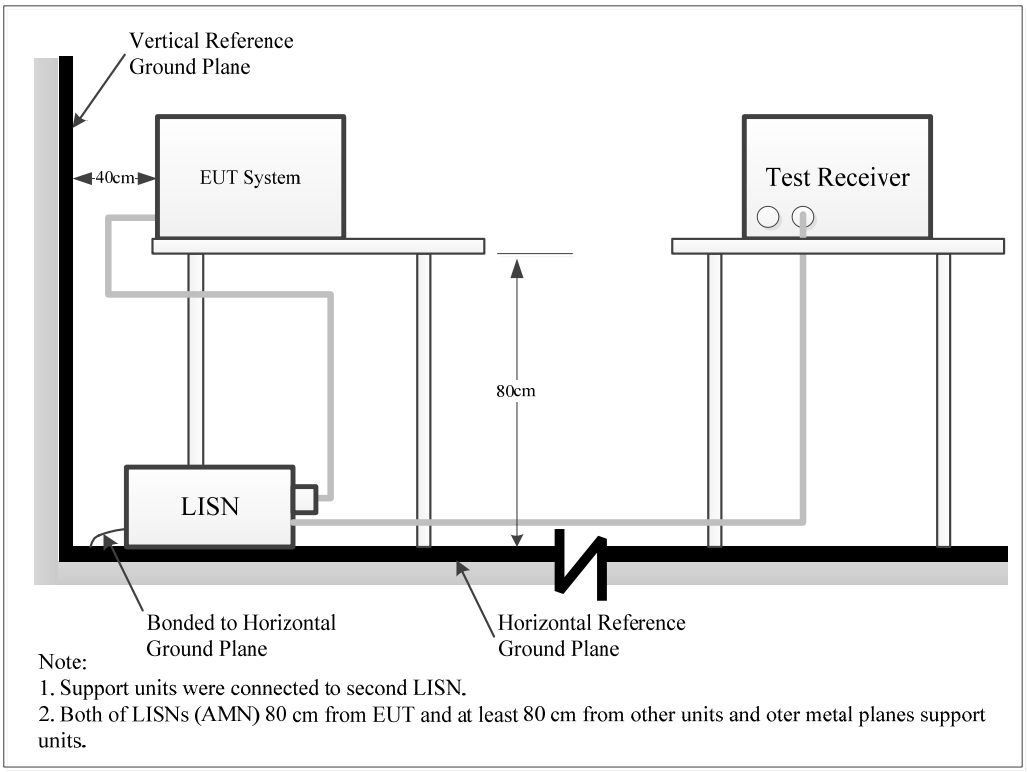
Frequency (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56[1]	56 to 46[1]
0.5 – 5	56	46
5 – 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:
(a) Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.

(b) Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

4.1.2 EUT Setup



Note:
1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at least 80 cm from other units and oter metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207, RSS-Gen limits.

The spacing between the peripherals was 10 cm.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

4.1.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

4.1.4 Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

4.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor
Factor = attenuation caused by cable loss + voltage division factor of AMN

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4.1.6 Test Result

Please refer to section 5.1.

4.2 Radiation Spurious Emissions

4.2.1 Applicable Standard

FCC §15.247 (d);

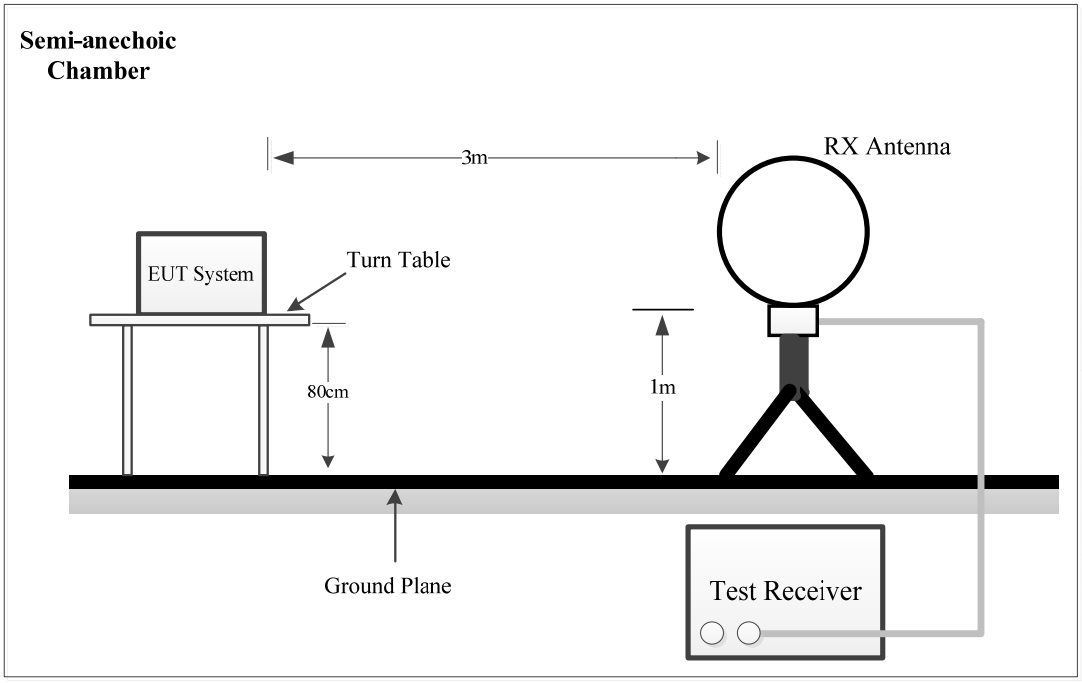
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted 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 §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

RSS-247 Clause 5.5

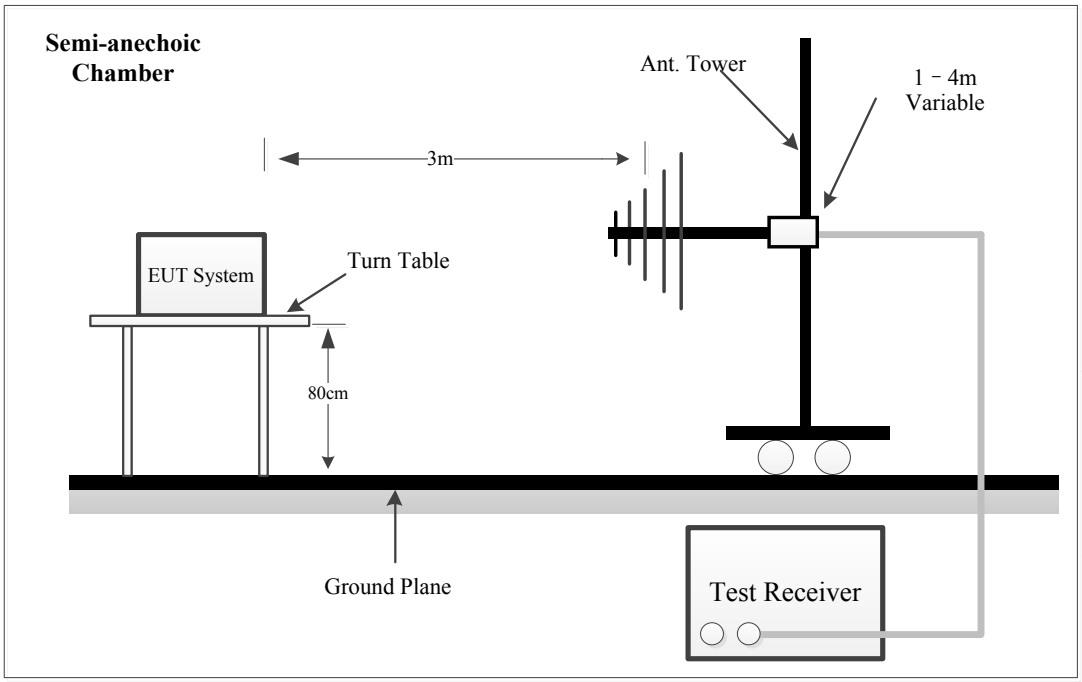
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

4.2.2 EUT Setup

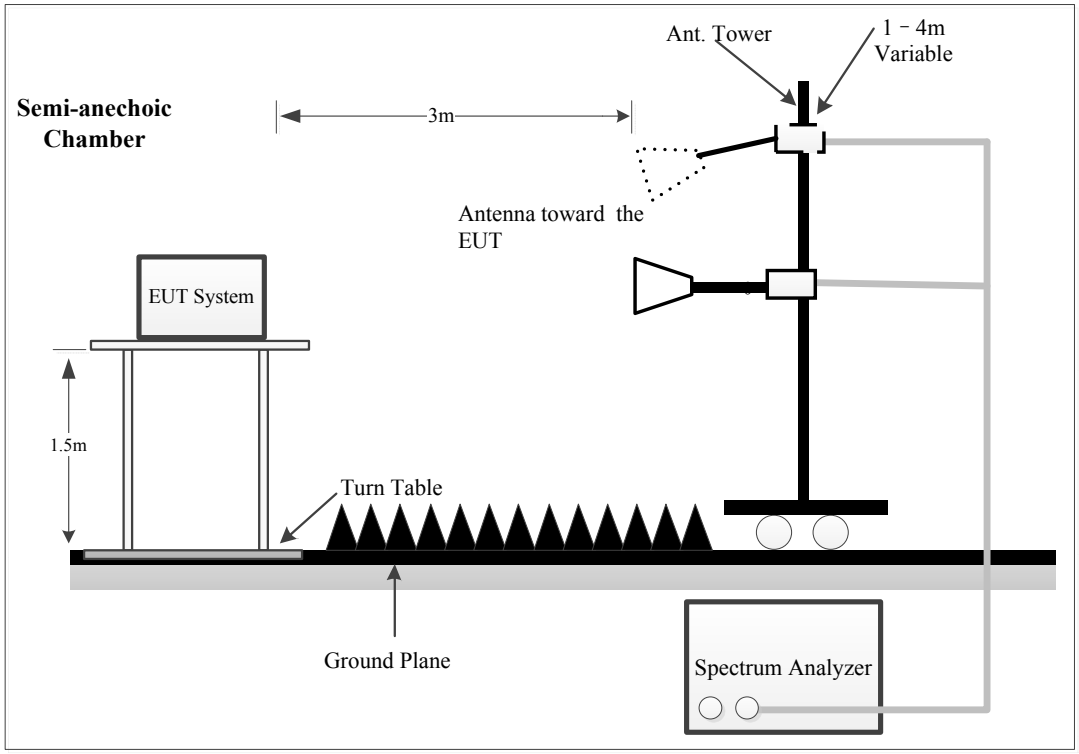
9kHz-30MHz:



30MHz~1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247, RSS-247, RSS-Gen limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

For 9kHz-30MHz test, the lowest height of the magnetic antenna shall be 1 m above the ground and three antenna orientations (parallel, perpendicular, and ground-parallel) shall be measured.

4.2.3 EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:
9kHz-1000MHz:

Frequency Range	Measurement	RBW	Video B/W	IF B/W	Detector
9 kHz-150 kHz	QP/AV	300 Hz	1 kHz	200 Hz	QP/AV
150 kHz-30 MHz	QP/AV	10kHz	30 kHz	9 kHz	QP/AV
30 MHz-1000 MHz	Peak	100 kHz	300 kHz	/	PK
	QP	/	/	120 kHz	QP

Above 1GHz:
Pre-scan:

Measurement	Detector	RBW	Video B/W
PK	PK	1MHz	3 MHz
Ave.	PK	1MHz	5kHz

Final measurement for emission identified during the pre-scan:

Measurement	Detector	Duty cycle	RBW	Video B/W
PK	PK	Any	1MHz	3 MHz
Ave.	PK	>98%	1MHz	10 Hz
		<98%	1MHz	1/T

Note: T is minimum transmission duration

4.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was required in Quasi-peak measurement for frequency range of 9 kHz-1 GHz except 9-90 kHz, 110-490 kHz, employing an average measurement, peak and Average measurement for frequencies above 1 GHz.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

4.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor
Factor = Antenna Factor + Cable Loss- Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

For the spurious emission below 30MHz, the limit was convert from dBμA/m to dBμV/m by adding 51.5 dB.

4.2.6 Test Result

Please refer to section 5.2.

4.3 Maximum Conducted Output Power:

4.3.1 Applicable Standard

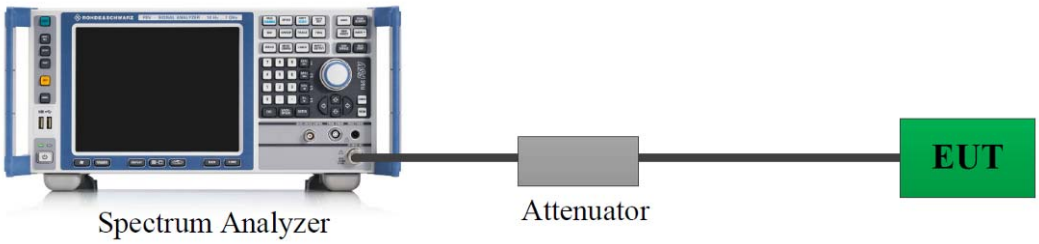
FCC §15.247 (b)(3)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

RSS-247 Clause 5.4 d

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

4.3.2 EUT Setup



A short RF cable with low cable loss connected to the EUT antenna port, which was provided by manufacturer. The insert loss of this RF cable/attenuator was offset into the setting of test equipment.

4.3.3 Test Procedure

According to ANSI C63.10-2013 Section 11.9.1.1

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:
a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × RBW].
d) Sweep time = auto couple.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

4.3.4 Test Result

Please refer to section 5.3.

4.4 Antenna Requirement

4.4.1 Applicable Standard

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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

RSS-Gen Clause 6.8

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).
When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.
The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.
For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:
This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

4.4.2 Judgment

Compliant. Please refer to the Antenna Information detail in Section 1.3.

5. Test DATA AND RESULTS

5.1 AC Line Conducted Emissions

Serial Number:	2VU3-3, 2VU3-5	Test Date:	2025/1/9 -2025/4/24
Test Site:	CE	Test Mode:	Transmitting
Tester:	Yukin Qiu	Test Result:	Pass

Environmental Conditions:

Temperature: (℃)	21.3-26.6	Relative Humidity: (%)	40-61	ATM Pressure: (kPa)	100.3-101.5

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101614	2024/9/5	2025/9/4
MICRO-COAX	Coaxial Cable	C-NJNJ-50	C-0200-01	2024/9/5	2025/9/4
R&S	EMI Test Receiver	ESCI	100035	2024/8/26	2025/8/25
Audix	Test Software	E3	191218 V9	N/A	N/A

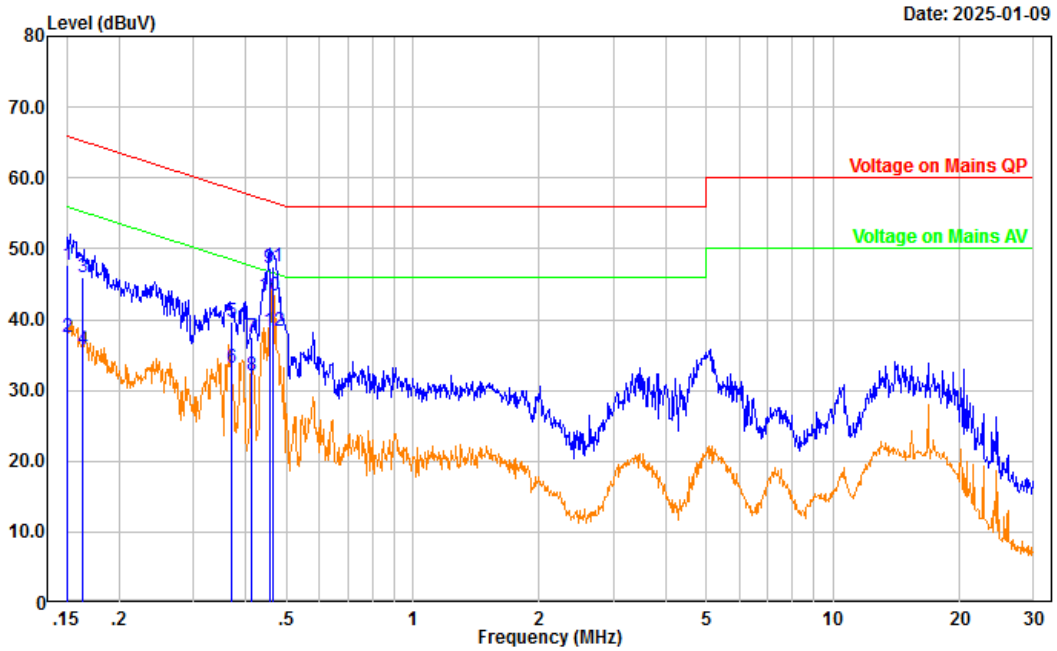
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Note: The maximum output power mode: BLE 2Mbps Low channel was tested.

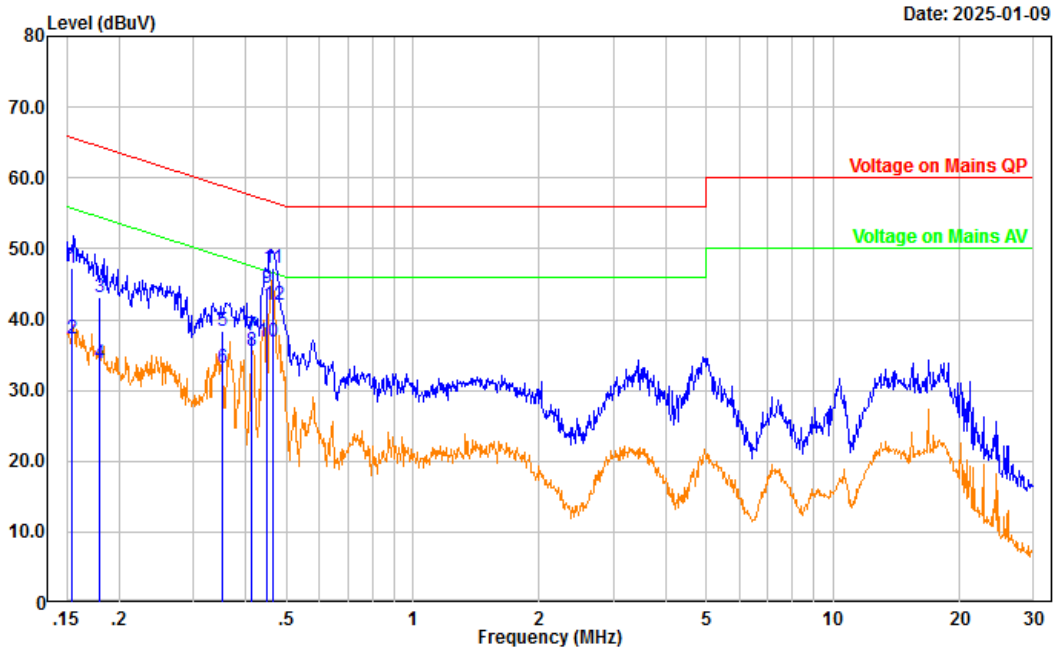
M1: Transmitting& Configuration1# & Adapter 3#:

```
Project No.: XMDN240206-08078E-RF-A1          Serial No.: 2VU3-3
       Port: Line                                 Tester: Yukin Qiu
  Test Mode: Transmitting                           Note:
             IF B/W 9kHz PK/AV
```



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.151	36.85	10.75	47.60	65.97	18.37	QP
2	0.151	26.72	10.75	37.47	55.97	18.50	Average
3	0.164	35.20	10.78	45.98	65.28	19.30	QP
4	0.164	25.07	10.78	35.85	55.28	19.43	Average
5	0.371	28.85	10.83	39.68	58.48	18.80	QP
6	0.371	22.25	10.83	33.08	48.48	15.40	Average
7	0.414	26.67	10.84	37.51	57.56	20.05	QP
8	0.414	21.33	10.84	32.17	47.56	15.39	Average
9	0.455	36.49	10.84	47.33	56.78	9.45	QP
10	0.455	32.46	10.84	43.30	46.78	3.48	Average
11	0.465	36.54	10.84	47.38	56.60	9.22	QP
12	0.465	27.56	10.84	38.40	46.60	8.20	Average

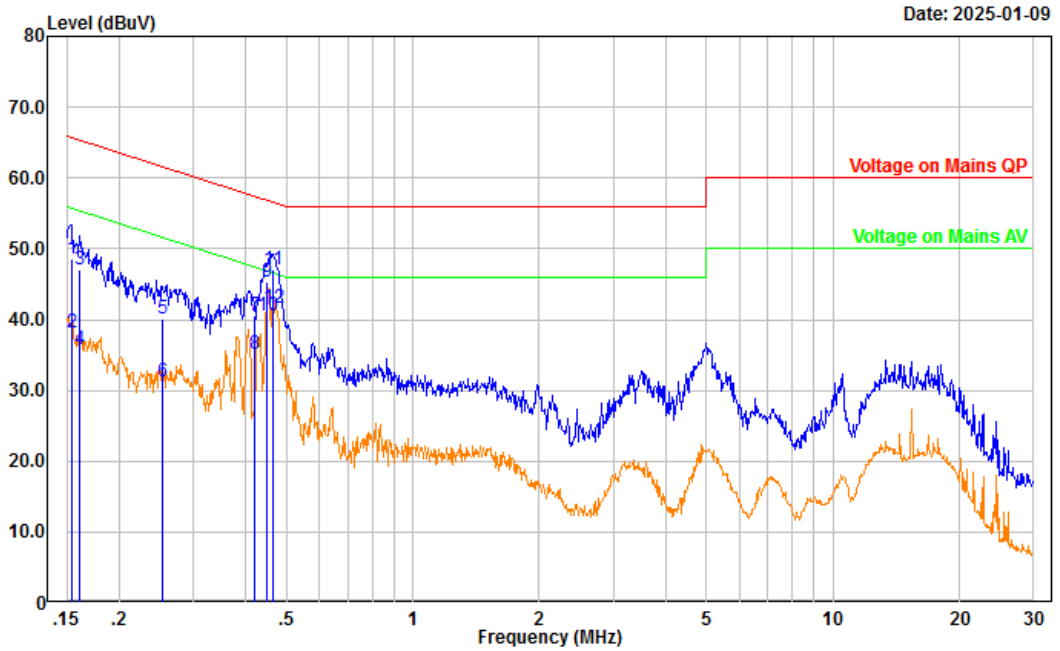
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Port: neutral Tester: Yukin Qiu
Test Mode: Transmitting Note:
IF B/W 9kHz PK/AV



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.154	36.43	10.85	47.28	65.76	18.48	QP
2	0.154	26.50	10.85	37.35	55.76	18.41	Average
3	0.179	32.30	10.85	43.15	64.51	21.36	QP
4	0.179	23.07	10.85	33.92	54.51	20.59	Average
5	0.352	27.66	10.78	38.44	58.91	20.47	QP
6	0.352	22.34	10.78	33.12	48.91	15.79	Average
7	0.415	27.01	10.77	37.78	57.55	19.77	QP
8	0.415	24.83	10.77	35.60	47.55	11.95	Average
9	0.448	33.75	10.76	44.51	56.91	12.40	QP
10	0.448	26.18	10.76	36.94	46.91	9.97	Average
11	0.465	36.50	10.75	47.25	56.60	9.35	QP
12	0.465	31.31	10.75	42.06	46.60	4.54	Average

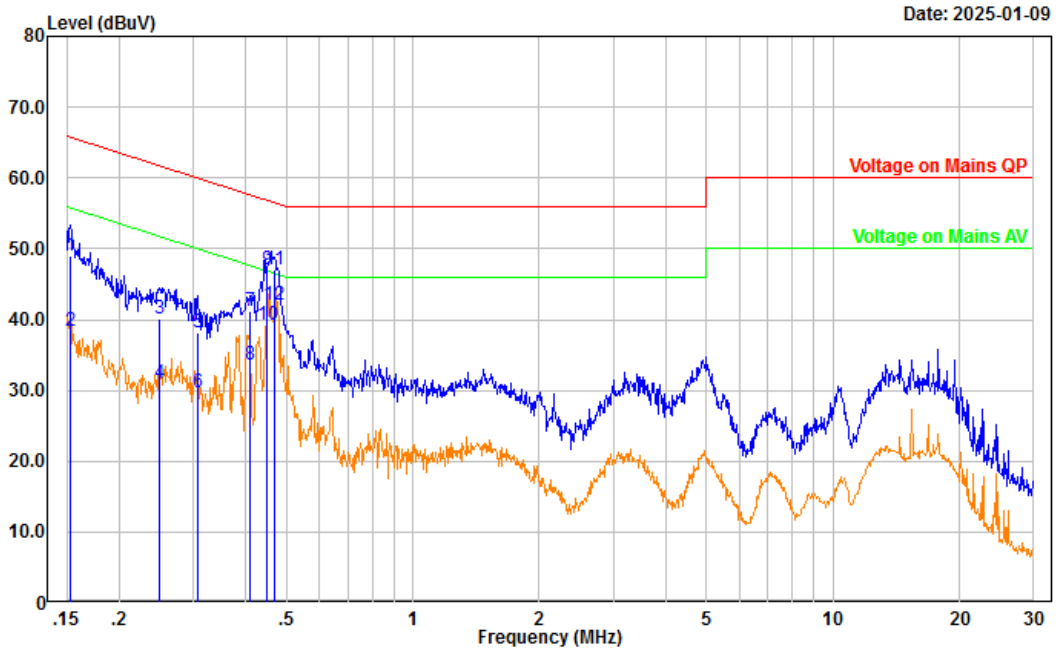
M2: Transmitting& Configuration2# & Adapter 3#:

```
Project No.: XMDN240206-08078E-RF-A1          Serial No.: 2VU3-5
       Port: Line                                 Tester: Yukin Qiu
  Test Mode: Transmitting                           Note: Adapter 3
             IF B/W 9kHz PK/AV
```



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.154	37.77	10.76	48.53	65.78	17.25	QP
2	0.154	27.41	10.76	38.17	55.78	17.61	Average
3	0.160	36.18	10.77	46.95	65.44	18.49	QP
4	0.160	24.93	10.77	35.70	55.44	19.74	Average
5	0.253	29.27	10.83	40.10	61.65	21.55	QP
6	0.253	20.46	10.83	31.29	51.65	20.36	Average
7	0.420	29.61	10.84	40.45	57.44	16.99	QP
8	0.420	24.21	10.84	35.05	47.44	12.39	Average
9	0.449	34.51	10.84	45.35	56.89	11.54	QP
10	0.449	29.77	10.84	40.61	46.89	6.28	Average
11	0.464	36.28	10.84	47.12	56.62	9.50	QP
12	0.464	30.72	10.84	41.56	46.62	5.06	Average

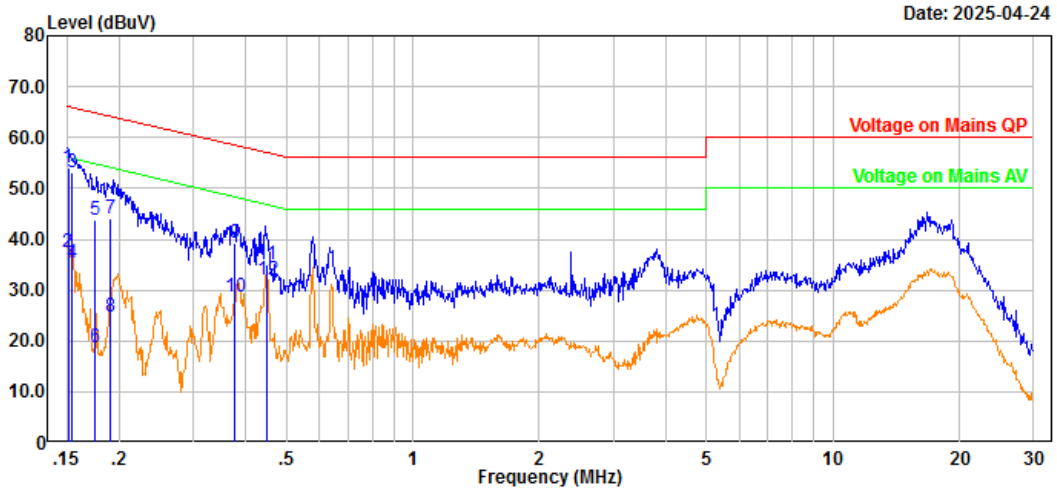
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-5
Port: neutral Tester: Yukin Qiu
Test Mode: Transmitting Note: Adapter 3
IF B/W 9kHz PK/AV



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector
1	0.153	38.07	10.85	48.92	65.85	16.93	QP
2	0.153	27.57	10.85	38.42	55.85	17.43	Average
3	0.249	29.21	10.82	40.03	61.79	21.76	QP
4	0.249	20.18	10.82	31.00	51.79	20.79	Average
5	0.307	27.45	10.78	38.23	60.05	21.82	QP
6	0.307	18.98	10.78	29.76	50.05	20.29	Average
7	0.411	30.50	10.77	41.27	57.63	16.36	QP
8	0.411	22.77	10.77	33.54	47.63	14.09	Average
9	0.450	36.38	10.76	47.14	56.87	9.73	QP
10	0.450	28.37	10.76	39.13	46.87	7.74	Average
11	0.467	36.38	10.75	47.13	56.57	9.44	QP
12	0.467	31.22	10.75	41.97	46.57	4.60	Average

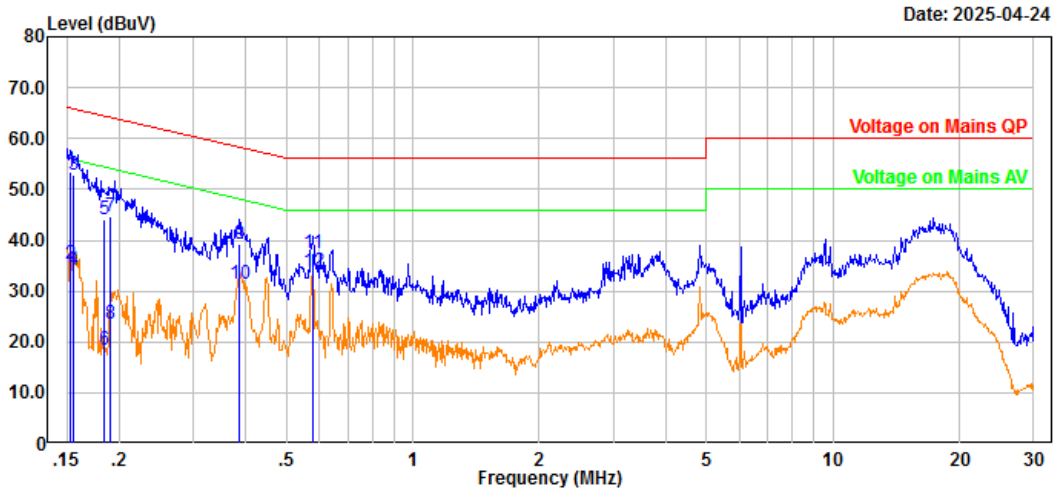
M3: Transmitting& Configuration1# & Adapter 1#

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Port: Line Tester: Yukin Qiu
Test Mode: Transmitting Note: Adapter 1
IF B/W 9KHz PK/AV



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Measurement
1	0.151	43.29	10.75	54.04	65.94	11.90	QP
2	0.151	26.53	10.75	37.28	55.94	18.66	Average
3	0.154	42.42	10.76	53.18	65.78	12.60	QP
4	0.154	24.62	10.76	35.38	55.78	20.40	Average
5	0.175	32.83	10.80	43.63	64.73	21.10	QP
6	0.175	7.87	10.80	18.67	54.73	36.06	Average
7	0.191	33.20	10.83	44.03	64.01	19.98	QP
8	0.191	13.92	10.83	24.75	54.01	29.26	Average
9	0.375	28.43	10.84	39.27	58.38	19.11	QP
10	0.375	17.76	10.84	28.60	48.38	19.78	Average
11	0.448	24.14	10.84	34.98	56.91	21.93	QP
12	0.448	21.13	10.84	31.97	46.91	14.94	Average

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Port: neutral Tester: Yukin Qiu
Test Mode: Transmitting Note: Adapter 1
IF B/W 9KHz PK/AV



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Measurement
1	0.153	42.43	10.85	53.28	65.83	12.55	QP
2	0.153	24.55	10.85	35.40	55.83	20.43	Average
3	0.155	42.04	10.85	52.89	65.72	12.83	QP
4	0.155	23.26	10.85	34.11	55.72	21.61	Average
5	0.185	33.10	10.85	43.95	64.27	20.32	QP
6	0.185	7.62	10.85	18.47	54.27	35.80	Average
7	0.190	33.91	10.85	44.76	64.03	19.27	QP
8	0.190	12.77	10.85	23.62	54.03	30.41	Average
9	0.387	28.53	10.78	39.31	58.13	18.82	QP
10	0.387	20.60	10.78	31.38	48.13	16.75	Average
11	0.579	26.69	10.72	37.41	56.00	18.59	QP
12	0.579	23.09	10.72	33.81	46.00	12.19	Average

5.2 Radiation Spurious Emissions

1) 9kHz - 1GHz

Serial Number:	2VU3-3,2VU3-5	Test Date:	2025/1/8-2025/4/24
Test Site:	Chamber 10m	Test Mode:	Transmitting
Tester:	Leesin Xiang	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	21.8-25.3	Relative Humidity: (%)	42-51	ATM Pressure: (kPa)	100.3-101.4

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMCO	Passive Loop Antenna	6512	9706-1206	2023/10/25	2026/10/24
Sunol Sciences	Hybrid Antenna	JB3	A060611-1	2023/9/6	2026/9/5
Narda	Coaxial Attenuator	779-6dB	04269	2023/9/6	2026/9/5
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-04	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2024/7/1	2025/6/30
Sonoma	Amplifier	310N	185914	2024/8/26	2025/8/25
R&S	EMI Test Receiver	ESCI	100224	2024/8/26	2025/8/25
Audix	Test Software	E3	191218 V9	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Please refer to the below table and plots.

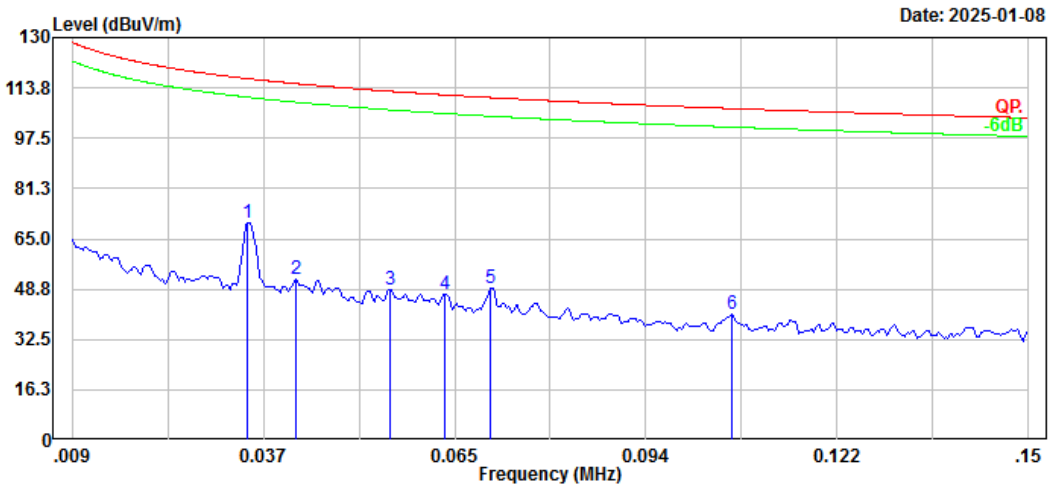
Note: The maximum output power mode: BLE 2Mbps Low channel was tested.

9kHz~30MHz

Three antenna orientations (parallel, perpendicular, and ground-parallel) were measured, the worst orientations were below:

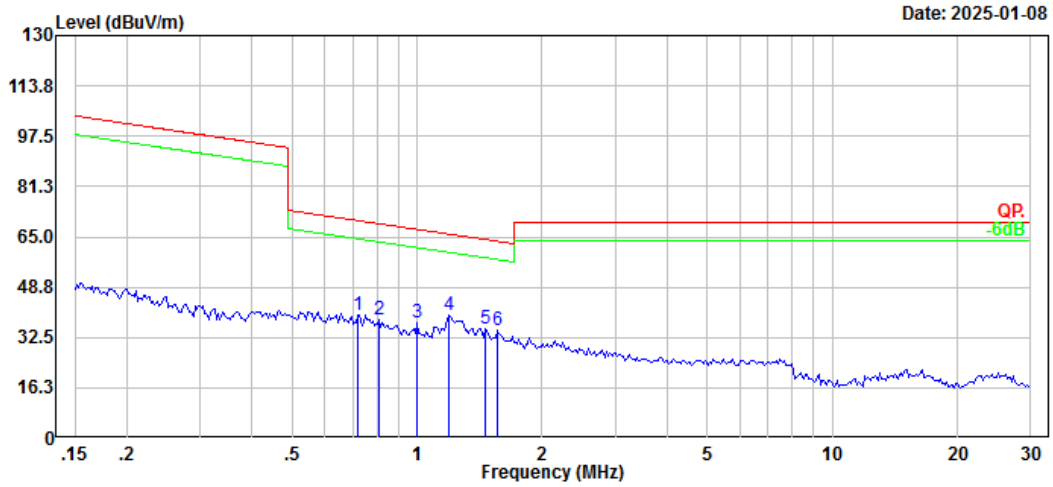
M1: Transmitting& Configuration1# & Adapter 3#:

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:300Hz VBW:1kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.035	23.53	46.67	70.20	116.74	46.54	Peak
2	0.042	6.44	45.42	51.86	115.14	63.28	Peak
3	0.056	5.49	43.05	48.54	112.67	64.13	Peak
4	0.064	5.66	41.64	47.30	111.48	64.18	Peak
5	0.071	8.61	40.46	49.07	110.61	61.54	Peak
6	0.106	5.42	35.05	40.47	107.07	66.60	Peak

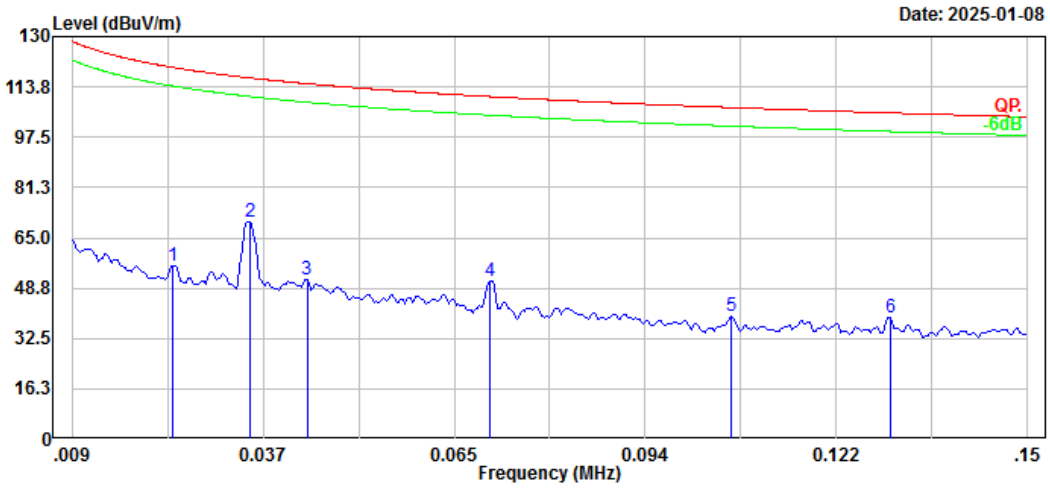
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:10kHz VBW:30kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.720	18.41	21.29	39.70	70.39	30.69	Peak
2	0.809	17.90	20.38	38.28	69.36	31.08	Peak
3	1.000	20.89	16.57	37.46	67.48	30.02	Peak
4	1.197	23.88	15.68	39.56	65.88	26.32	Peak
5	1.464	20.92	14.50	35.42	64.09	28.67	Peak
6	1.560	20.63	14.07	34.70	63.53	28.83	Peak

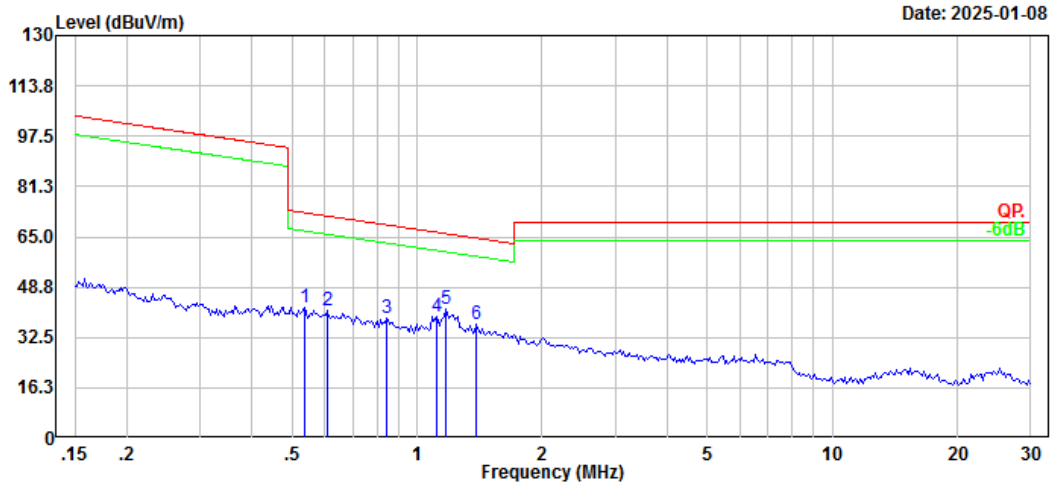
M2: Transmitting& Configuration2# & Adapter 3#:

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-5
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:300Hz VBW:1kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.024	6.94	49.05	55.99	120.02	64.03	Peak
2	0.035	23.75	46.62	70.37	116.67	46.30	Peak
3	0.044	6.24	45.14	51.38	114.80	63.42	Peak
4	0.071	10.50	40.46	50.96	110.61	59.65	Peak
5	0.106	4.47	35.05	39.52	107.07	67.55	Peak
6	0.130	5.66	33.76	39.42	105.35	65.93	Peak

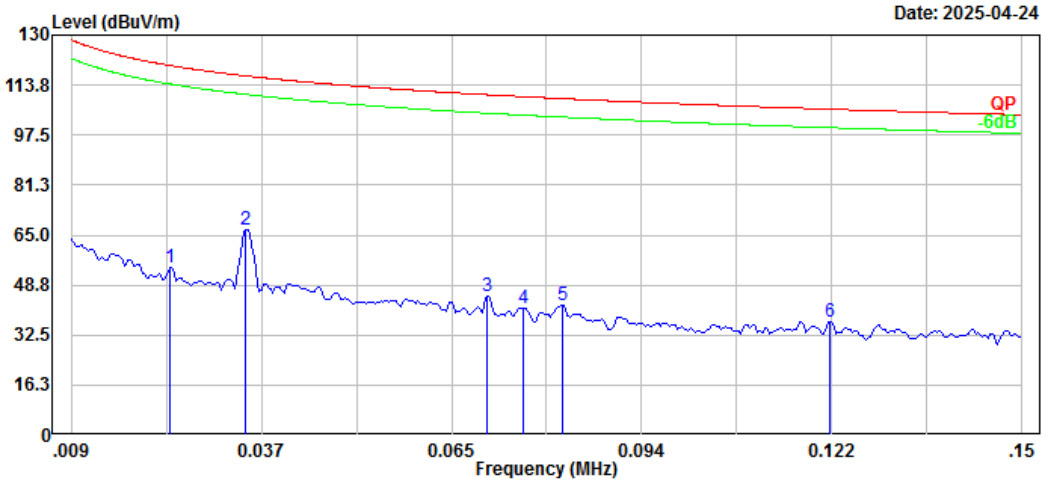
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-5
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:10kHz VBW:30kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.535	19.11	23.16	42.27	73.02	30.75	Peak
2	0.608	18.96	22.39	41.35	71.89	30.54	Peak
3	0.844	19.01	19.68	38.69	68.98	30.29	Peak
4	1.111	23.04	16.07	39.11	66.54	27.43	Peak
5	1.172	26.00	15.80	41.80	66.07	24.27	Peak
6	1.388	21.80	14.83	36.63	64.56	27.93	Peak

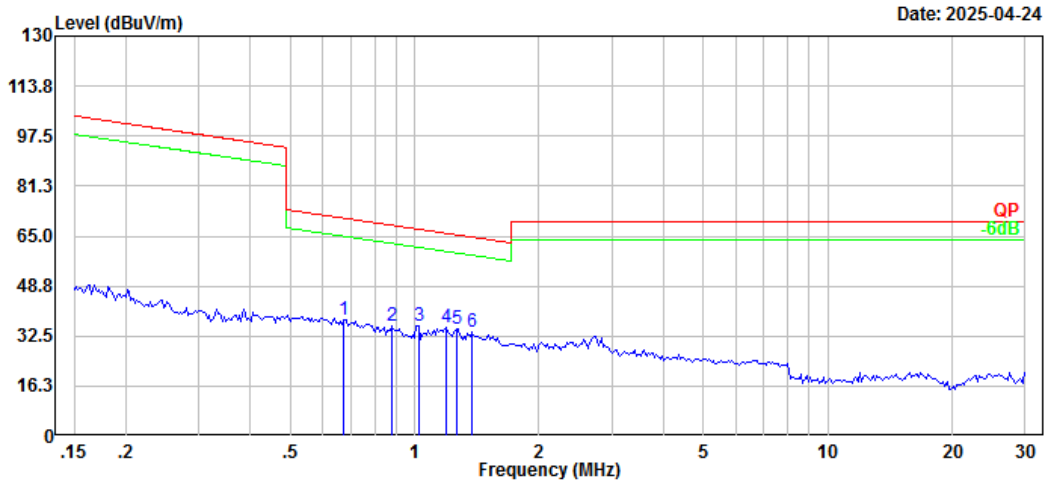
M3: Transmitting& Configuration1# & Adapter 1#

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:300Hz VBW:1kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.024	5.13	49.13	54.26	120.12	65.86	Peak
2	0.035	20.01	46.67	66.68	116.74	50.06	Peak
3	0.071	4.47	40.46	44.93	110.61	65.68	Peak
4	0.076	1.85	39.57	41.42	109.97	68.55	Peak
5	0.082	3.74	38.61	42.35	109.35	67.00	Peak
6	0.122	2.75	34.21	36.96	105.91	68.95	Peak

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Parallel Tester: Leesin Xiang
Test Mode: Transmitting
RBW:10kHz VBW:30kHz

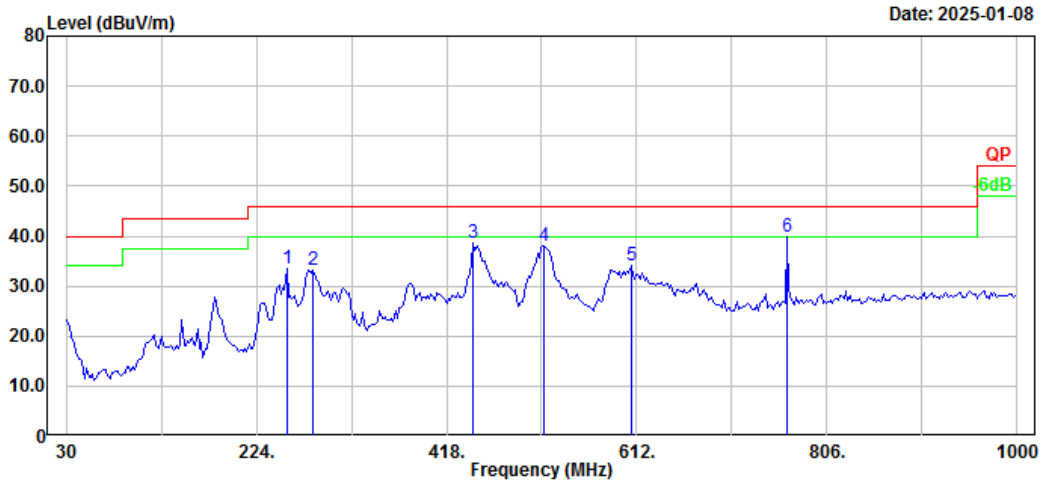


No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	0.675	16.30	21.71	38.01	70.95	32.94	Peak
2	0.880	16.96	18.95	35.91	68.60	32.69	Peak
3	1.021	19.43	16.47	35.90	67.29	31.39	Peak
4	1.197	19.71	15.68	35.39	65.88	30.49	Peak
5	1.262	19.60	15.40	35.00	65.41	30.41	Peak
6	1.374	18.86	14.90	33.76	64.66	30.90	Peak

30MHz-1GHz:

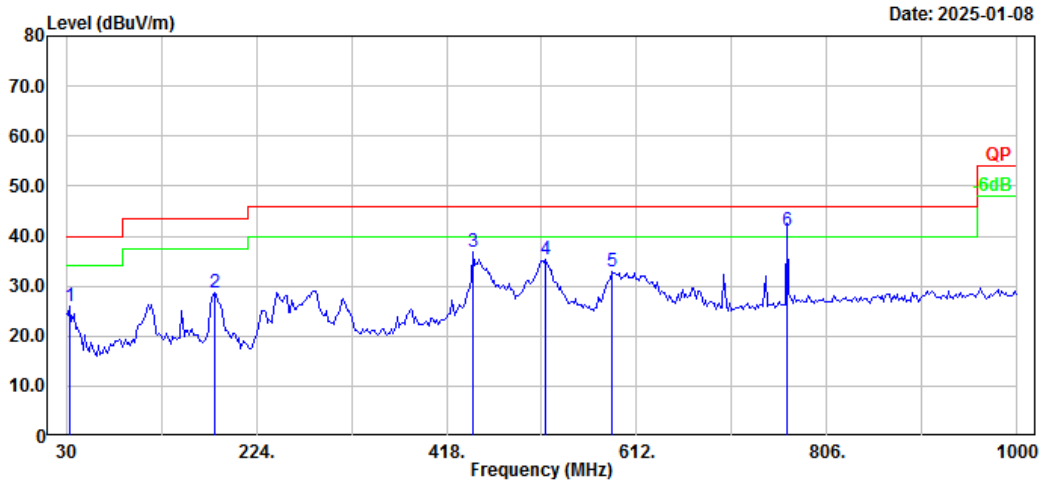
M1: Transmitting& Configuration1# & Adapter 3#:

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Horizontal Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	255.04	44.83	-11.27	33.56	46.00	12.44	Peak
2	282.20	42.93	-9.70	33.23	46.00	12.77	Peak
3	445.16	44.34	-5.65	38.69	46.00	7.31	Peak
4	516.94	42.04	-3.98	38.06	46.00	7.94	Peak
5	606.18	36.75	-2.79	33.96	46.00	12.04	Peak
6	765.26	39.85	-0.08	39.77	46.00	6.23	Peak

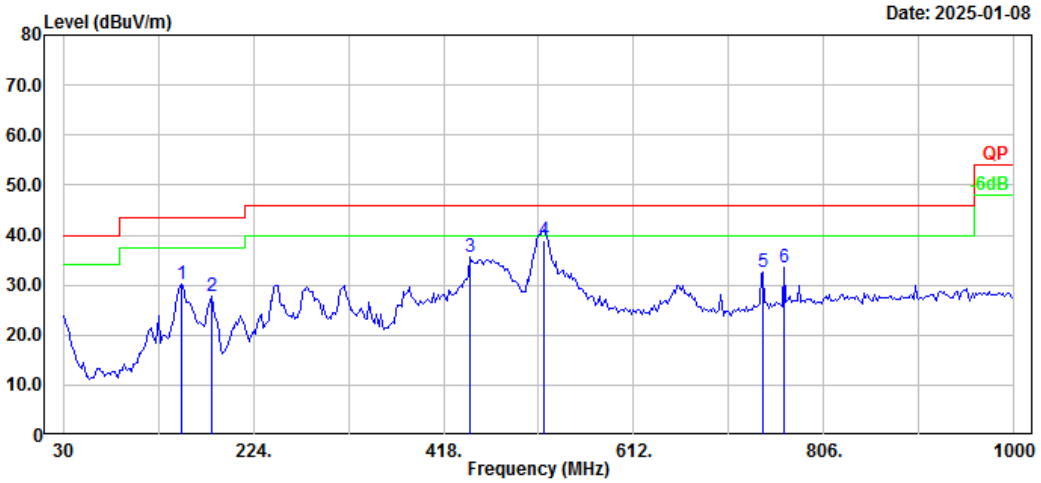
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Vertical Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	33.88	32.52	-6.62	25.90	40.00	14.10	Peak
2	181.32	41.00	-12.33	28.67	43.50	14.83	Peak
3	445.16	42.37	-5.65	36.72	46.00	9.28	Peak
4	518.88	39.27	-3.96	35.31	46.00	10.69	Peak
5	586.78	35.90	-3.06	32.84	46.00	13.16	Peak
6	765.26	41.21	-0.08	41.13	46.00	4.87	QP

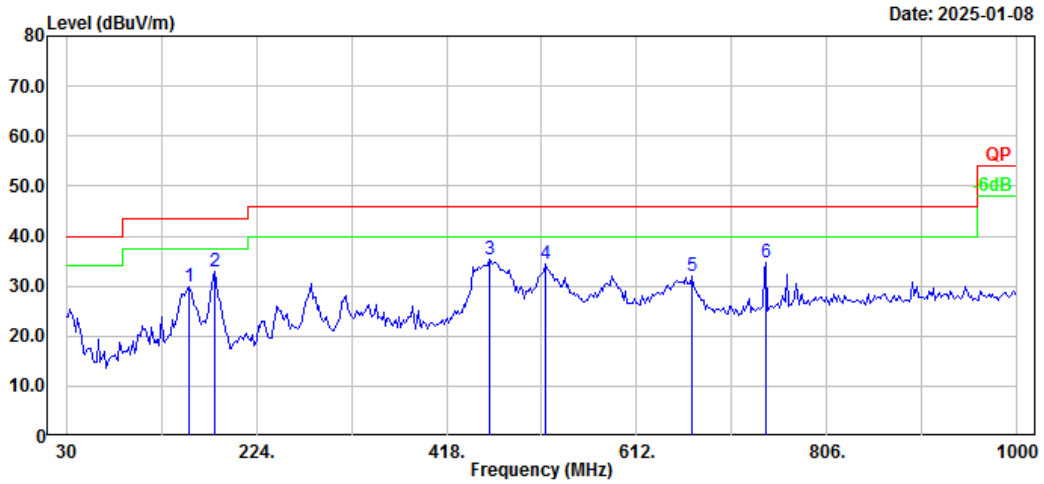
M2: Transmitting& Configuration2# & Adapter 3#:

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-5
Polarization: Horizontal Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	150.28	41.33	-11.06	30.27	43.50	13.23	Peak
2	181.32	40.18	-12.33	27.85	43.50	15.65	Peak
3	445.16	41.26	-5.65	35.61	46.00	10.39	Peak
4	520.82	42.99	-3.92	39.07	46.00	6.93	QP
5	743.92	32.99	-0.43	32.56	46.00	13.44	Peak
6	765.26	33.54	-0.08	33.46	46.00	12.54	Peak

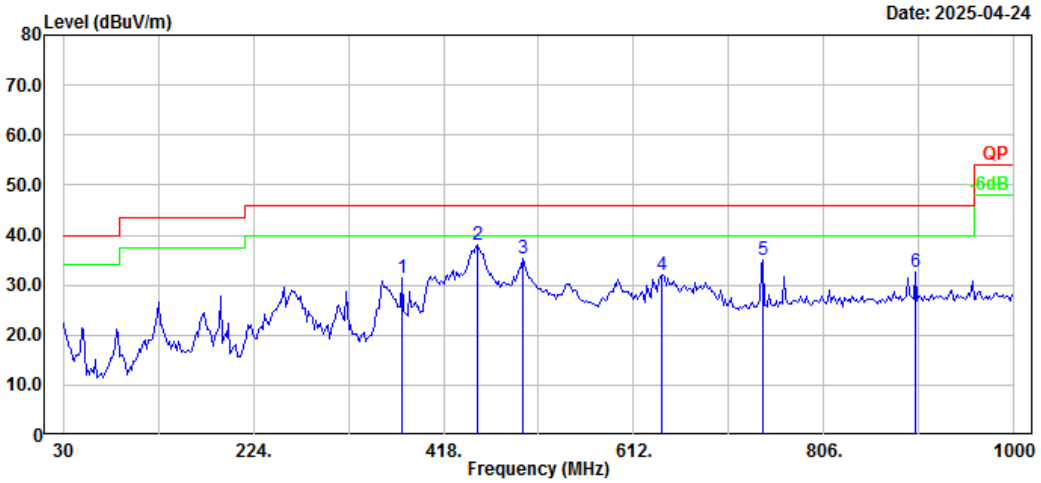
Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-5
Polarization: Vertical Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	156.10	41.04	-11.11	29.93	43.50	13.57	Peak
2	181.32	45.31	-12.33	32.98	43.50	10.52	Peak
3	462.62	40.35	-5.09	35.26	46.00	10.74	Peak
4	518.88	38.42	-3.96	34.46	46.00	11.54	Peak
5	668.26	33.79	-1.66	32.13	46.00	13.87	Peak
6	743.92	35.19	-0.43	34.76	46.00	11.24	Peak

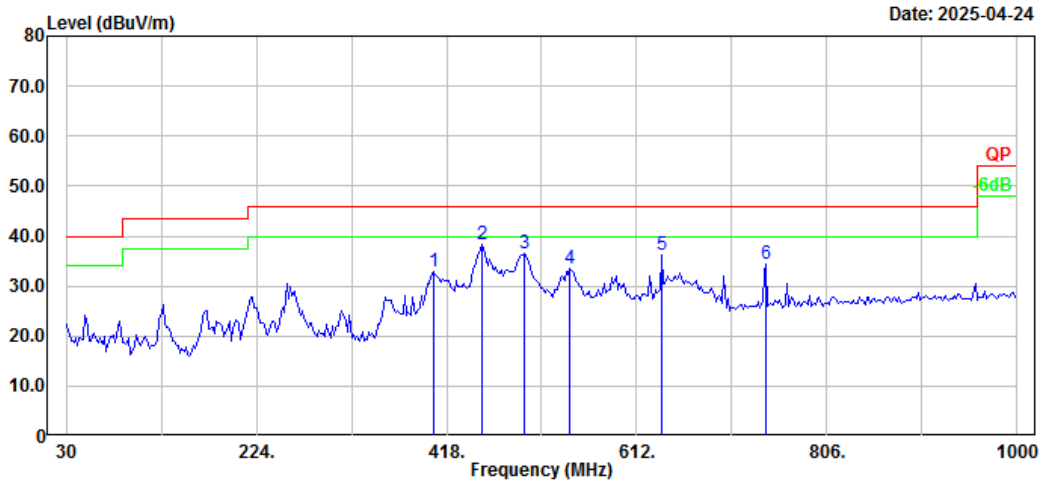
M3: Transmitting& Configuration1# & Adapter 1#:

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Horizontal Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	375.32	39.23	-7.79	31.44	46.00	14.56	Peak
2	452.92	43.44	-5.38	38.06	46.00	7.94	Peak
3	499.48	39.47	-4.29	35.18	46.00	10.82	Peak
4	641.10	34.04	-2.06	31.98	46.00	14.02	Peak
5	743.92	35.48	-0.43	35.05	46.00	10.95	Peak
6	899.12	31.16	1.40	32.56	46.00	13.44	Peak

Project No.: XMDN240206-08078E-RF-A1 Serial No.: 2VU3-3
Polarization: Vertical Tester: Leesin Xiang
Test Mode: Transmitting
RBW:100kHz VBW:300kHz



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	404.42	39.69	-6.86	32.83	46.00	13.17	Peak
2	454.86	43.69	-5.31	38.38	46.00	7.62	Peak
3	497.54	40.96	-4.34	36.62	46.00	9.38	Peak
4	544.10	36.94	-3.53	33.41	46.00	12.59	Peak
5	637.22	38.25	-2.13	36.12	46.00	9.88	Peak
6	743.92	34.91	-0.43	34.48	46.00	11.52	Peak

2) 1-25GHz:

Serial Number:	2VU3-3	Test Date:	2025/1/24
Test Site:	Chamber B	Test Mode:	Transmitting
Tester:	Colin Yang	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	21.5	Relative Humidity: (%)	56	ATM Pressure: (kPa)	100.9

Test Equipment List and Details:

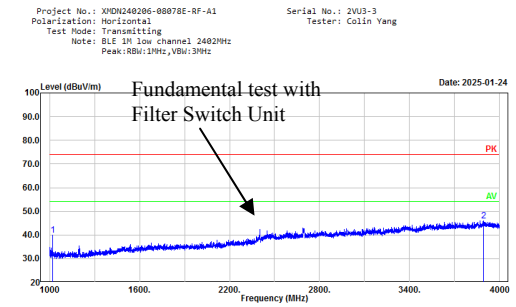
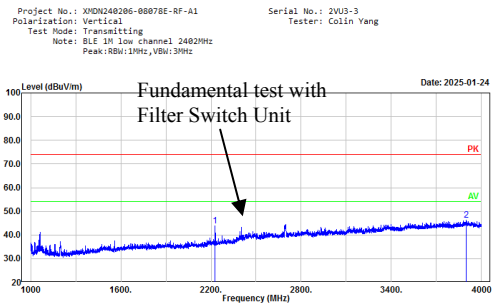
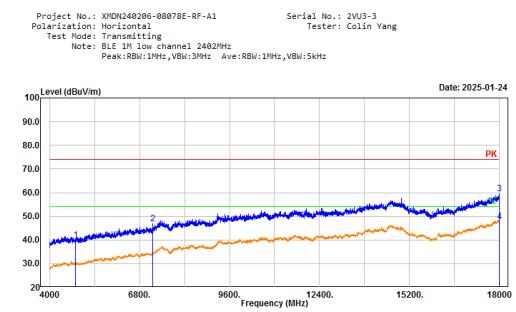
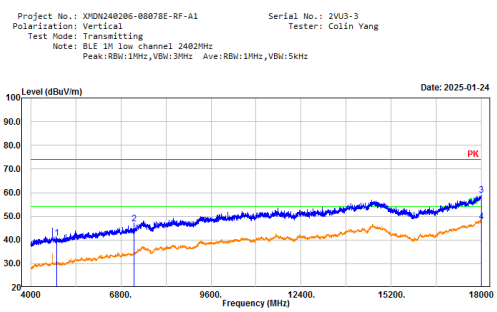
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
Xinhang Macrowave	Coaxial Cable	XH750A-N/J-SMA/J-10M	20231117004 #0001	2024/11/17	2025/11/16
AH	Preamplifier	PAM-0118P	469	2024/4/15	2025/4/14
Audix	Test Software	E3	191218 V9	N/A	N/A
R&S	Spectrum Analyzer	FSV40	101944	2024/9/6	2025/9/5
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2023/2/22	2026/2/21
Xinhang Macrowave	Coaxial Cable	XH360A-2.92/J-2.92/J-6M-A	20231208001 #0001	2024/12/9	2025/12/8
AH	Preamplifier	PAM-1840VH	191	2024/9/5	2025/9/4
Decentest	Multiplex Switch Test Control Set & Filter Switch Unit	DT7220SCU & DT7220FCU	DC79902 & DC79905	2024/8/27	2025/8/26

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Please refer to the below plots.

1-18GHz:

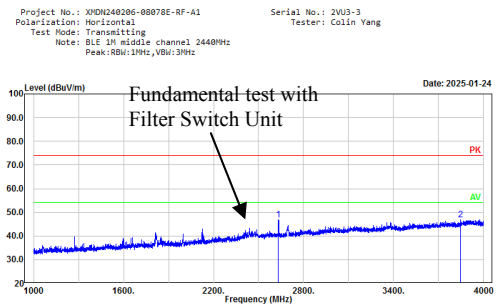
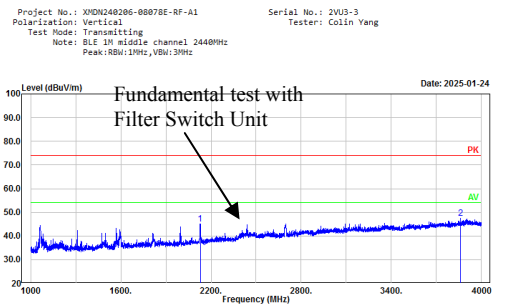
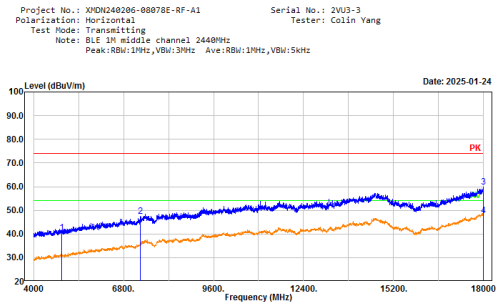
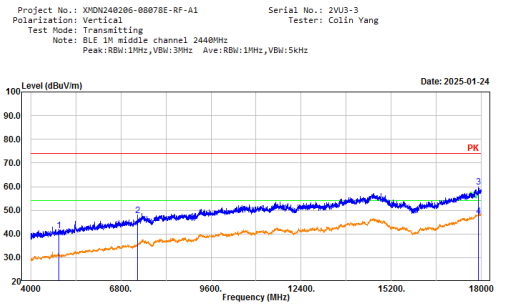
BLE 1M, Low Channel, 2402MHz, Horizontal	BLE 1M,Low Channel, 2402MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1019.20	54.38	-14.43	39.95	74.00	34.05	Peak
2	3895.60	49.72	-3.63	46.09	74.00	27.91	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2225.80	53.72	-10.02	43.70	74.00	30.30	Peak
2	3899.20	49.73	-3.60	46.13	74.00	27.87	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4804.00	48.65	-8.62	40.03	74.00	33.97	Peak
2	7206.00	50.55	-3.81	46.74	74.00	27.26	Peak
3	17994.40	48.13	11.37	59.50	74.00	14.50	Peak
4	17994.40	36.37	11.37	47.74	54.00	6.26	Average

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4804.00	49.42	-8.62	40.80	74.00	33.20	Peak
2	7206.00	50.70	-3.81	46.89	74.00	27.11	Peak
3	17991.60	47.66	11.35	59.01	74.00	14.99	Peak
4	17991.60	36.35	11.35	47.70	54.00	6.30	Average

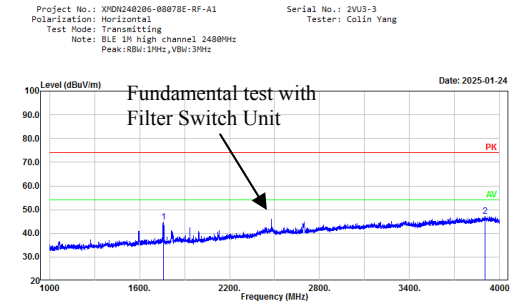
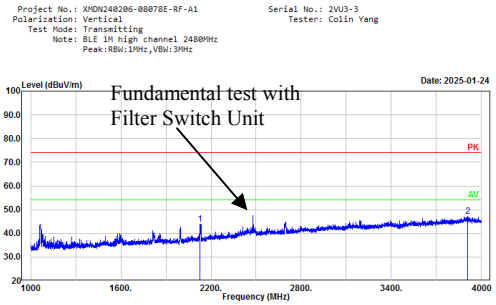
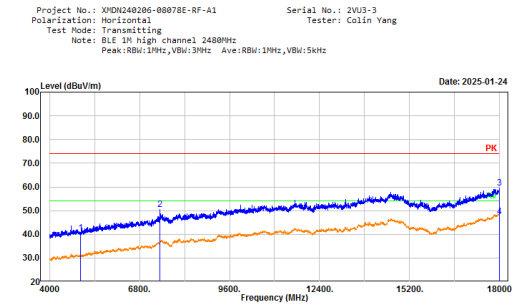
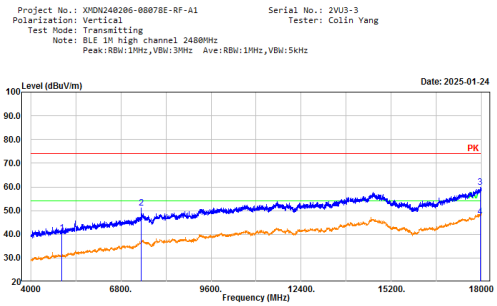
BLE 1M,Middle Channel, 2440MHz, Horizontal	BLE 1M,Middle Channel, 2440MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2633.20	54.55	-7.72	46.83	74.00	27.17	Peak
2	3847.00	50.76	-3.89	46.87	74.00	27.13	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2128.60	55.64	-10.53	45.11	74.00	28.89	Peak
2	3859.60	51.38	-3.94	47.44	74.00	26.56	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	4880.00	49.16	-8.48	40.68	74.00	33.32	Peak
2	7320.00	50.83	-3.21	47.62	74.00	26.38	Peak
3	17986.00	48.44	11.32	59.76	74.00	14.24	Peak
4	17986.00	36.53	11.32	47.85	54.00	6.15	Average

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	4880.00	49.86	-8.48	41.38	74.00	32.62	Peak
2	7320.00	50.86	-3.21	47.65	74.00	26.35	Peak
3	17913.20	48.99	10.82	59.81	74.00	14.19	Peak
4	17913.20	36.53	10.82	47.35	54.00	6.65	Average

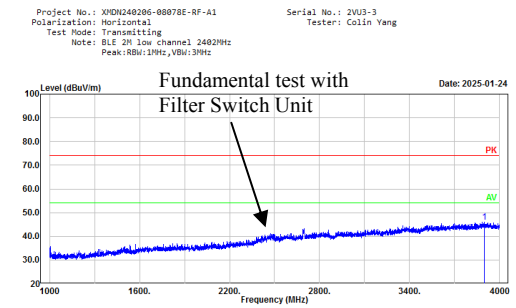
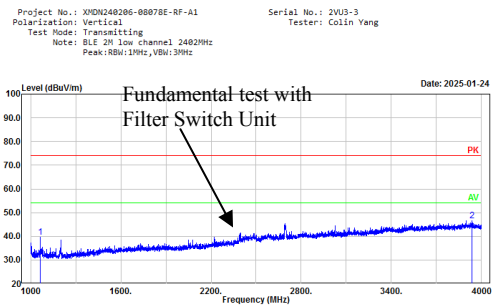
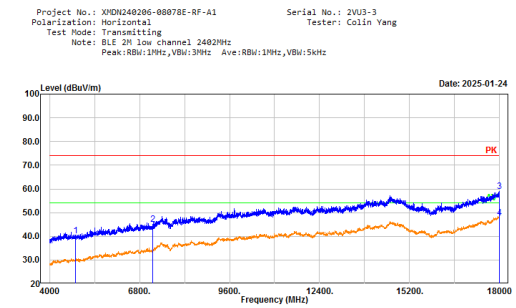
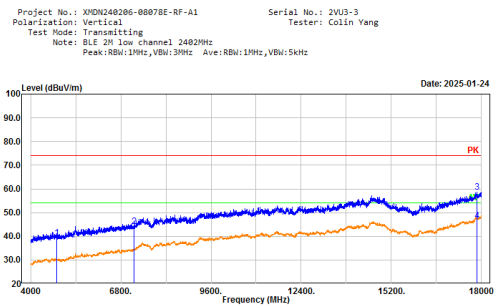
BLE 1M,High Channel, 2480MHz, Horizontal	BLE 1M,High Channel, 2480MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1757.80	56.57	-11.92	44.65	74.00	29.35	Peak
2	3902.80	50.69	-3.63	47.06	74.00	26.94	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2125.60	54.40	-10.54	43.86	74.00	30.14	Peak
2	3908.20	50.70	-3.68	47.02	74.00	26.98	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4960.00	49.09	-8.48	40.61	74.00	33.39	Peak
2	7440.00	53.18	-2.62	50.56	74.00	23.44	Peak
3	17983.20	48.15	11.32	59.47	74.00	14.53	Peak
4	17983.20	36.26	11.32	47.58	54.00	6.42	Average

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4960.00	49.10	-8.48	40.62	74.00	33.38	Peak
2	7440.00	53.81	-2.62	51.19	74.00	22.81	Peak
3	17958.00	48.77	11.14	59.91	74.00	14.09	Peak
4	17958.00	36.35	11.14	47.49	54.00	6.51	Average

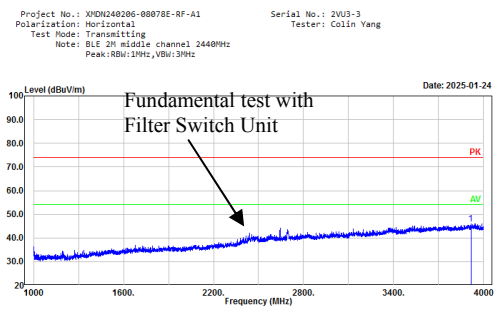
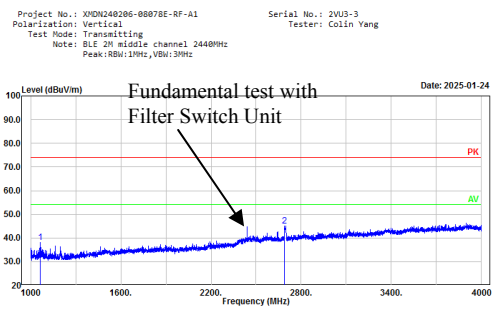
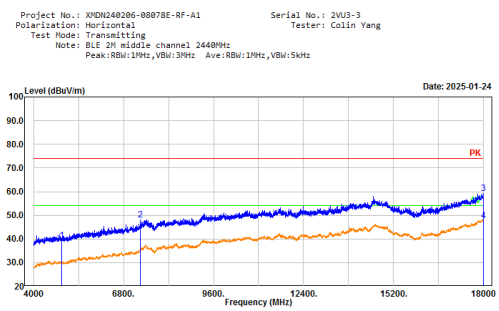
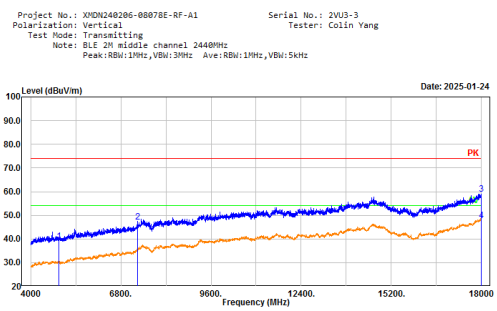
BLE 2M, Low Channel, 2402MHz, Horizontal	BLE 2M,Low Channel, 2402MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	3898.60	49.49	-3.60	45.89	74.00	28.11	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1063.60	53.87	-14.27	39.60	74.00	34.40	Peak
2	3936.40	50.40	-3.72	46.68	74.00	27.32	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	4804.00	48.78	-8.62	40.16	74.00	33.84	Peak
2	7206.00	48.78	-3.81	44.97	74.00	29.03	Peak
3	17988.80	47.61	11.33	58.94	74.00	15.06	Peak
4	17988.80	36.34	11.33	47.67	54.00	6.33	Average

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	4804.00	47.82	-8.62	39.20	74.00	34.80	Peak
2	7206.00	47.98	-3.81	44.17	74.00	29.83	Peak
3	17851.60	48.26	10.46	58.72	74.00	15.28	Peak
4	17851.60	36.10	10.46	46.56	54.00	7.44	Average

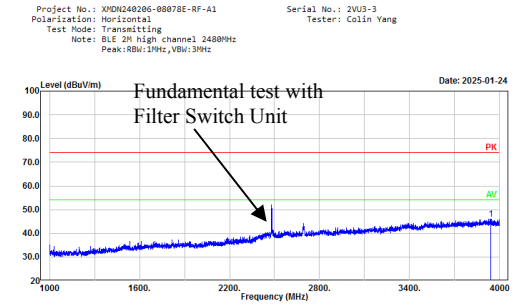
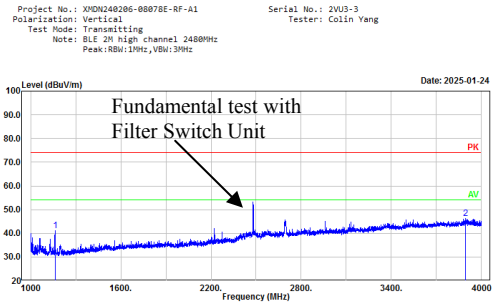
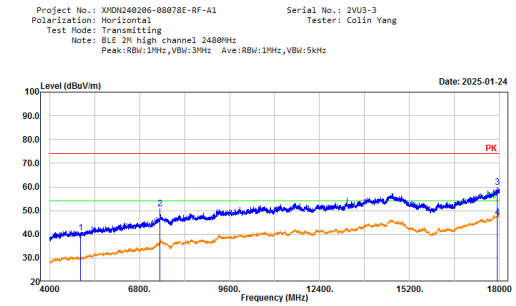
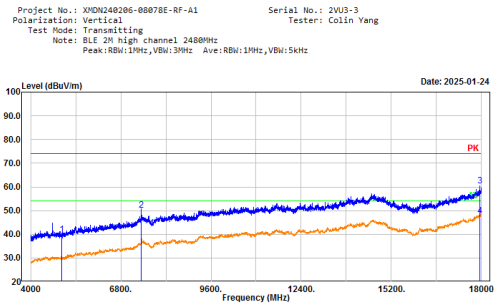
BLE 2M,Middle Channel, 2440MHz, Horizontal	BLE 2M,Middle Channel, 2440MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	3914.80	49.81	-3.72	46.09	74.00	27.91	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1063.60	52.33	-14.27	38.06	74.00	35.94	Peak
2	2689.00	52.71	-7.65	45.06	74.00	28.94	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4880.00	47.89	-8.48	39.41	74.00	34.59	Peak
2	7320.00	51.43	-3.21	48.22	74.00	25.78	Peak
3	17991.60	48.02	11.35	59.37	74.00	14.63	Peak
4	17991.60	36.35	11.35	47.70	54.00	6.30	Average

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4880.00	47.51	-8.48	39.03	74.00	34.97	Peak
2	7320.00	50.48	-3.21	47.27	74.00	26.73	Peak
3	17991.60	47.65	11.35	59.00	74.00	15.00	Peak
4	17991.60	36.37	11.35	47.72	54.00	6.28	Average

BLE 2M,High Channel, 2480MHz, Horizontal	BLE 2M,High Channel, 2480MHz, Vertical
	
	

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	3941.20	49.70	-3.66	46.04	74.00	27.96	Peak

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	1162.00	55.20	-14.06	41.14	74.00	32.86	Peak
2	3895.00	49.77	-3.64	46.13	74.00	27.87	Peak

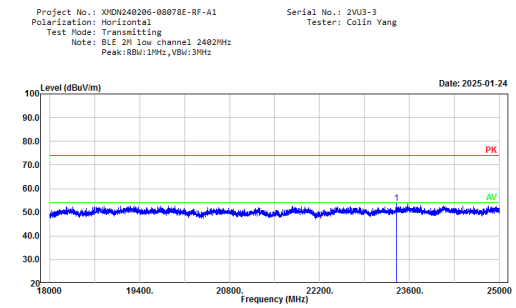
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4960.00	48.97	-8.48	40.49	74.00	33.51	Peak
2	7440.00	53.42	-2.62	50.80	74.00	23.20	Peak
3	17916.00	48.89	10.84	59.73	74.00	14.27	Peak
4	17916.00	36.24	10.84	47.08	54.00	6.92	Average

No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	4960.00	48.26	-8.48	39.78	74.00	34.22	Peak
2	7440.00	52.78	-2.62	50.16	74.00	23.84	Peak
3	17949.60	49.29	11.09	60.38	74.00	13.62	Peak
4	17949.60	36.57	11.09	47.66	54.00	6.34	Average

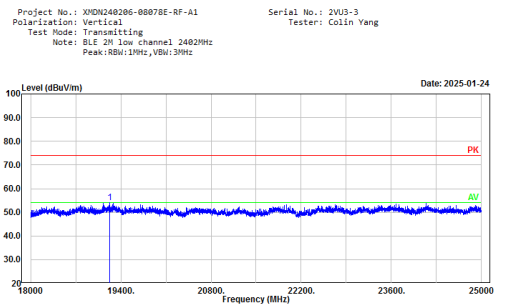
18-25GHz:

No Emission was detected in the range 18-25GHz, test was performed on the mode and channel which with the maximum power.

BLE 2M, Low Channel, 2402MHz, Horizontal	BLE 2M, Low Channel, 2402MHz, Vertical

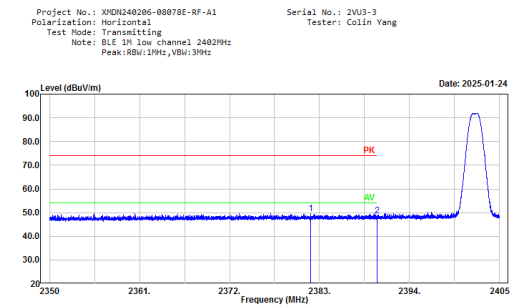
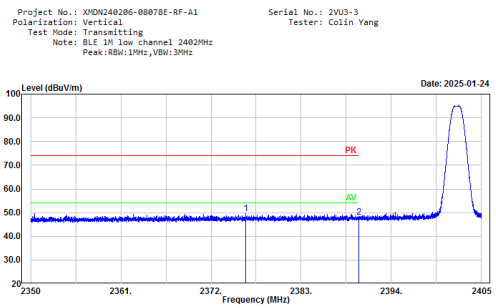
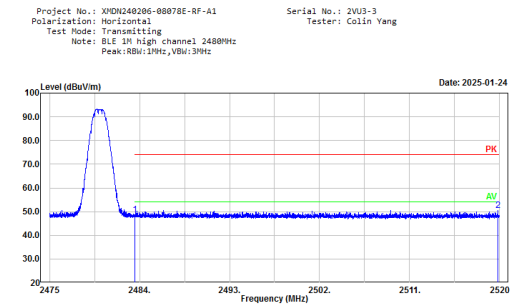
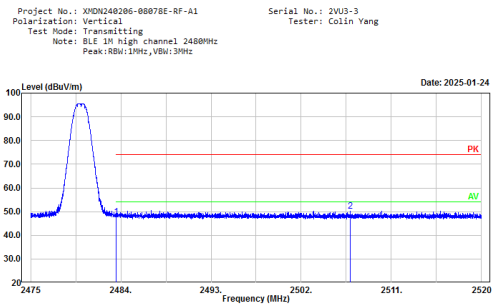


No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	23394.20	45.01	8.71	53.72	74.00	20.28	Peak



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	19230.60	47.97	6.02	53.99	74.00	20.01	Peak

Bandedge:

BLE 1M, Low Channel, Bandedge, Horizontal	BLE 1M, Low Channel, Bandedge, Vertical
	
	

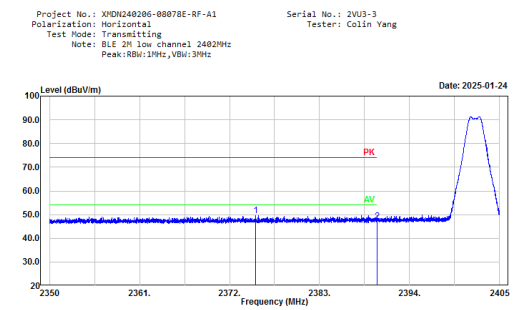
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2381.90	50.25	-0.55	49.70	74.00	24.30	Peak
2	2390.00	49.21	-0.49	48.72	74.00	25.28	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2376.21	50.24	-0.58	49.66	74.00	24.34	Peak
2	2390.00	48.51	-0.49	48.02	74.00	25.98	Peak

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2483.50	48.75	-0.05	48.70	74.00	25.30	Peak
2	2519.83	50.44	0.14	50.58	74.00	23.42	Peak

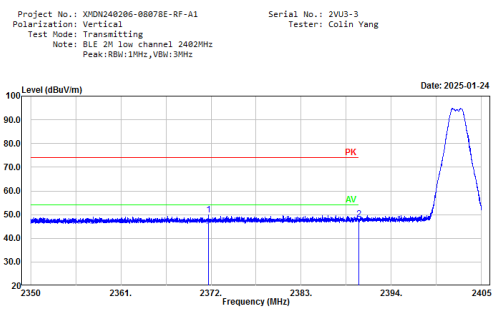
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	2483.50	47.97	-0.05	47.92	74.00	26.08	Peak
2	2506.90	50.14	0.06	50.20	74.00	23.80	Peak

BLE 2M, Low Channel, Bandedge, Horizontal



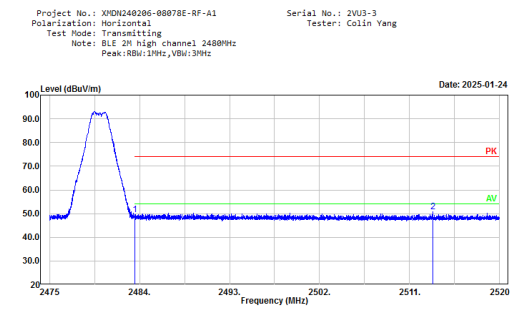
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2375.17	50.17	-0.58	49.59	74.00	24.41	Peak
2	2390.00	47.65	-0.49	47.16	74.00	26.84	Peak

BLE 2M, Low Channel, Bandedge, Vertical



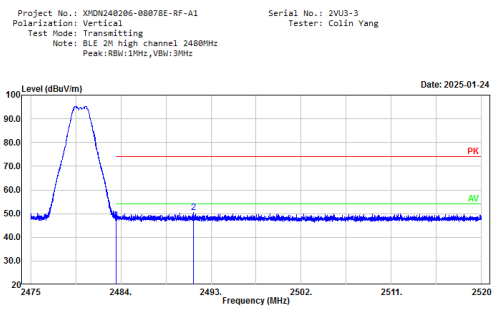
No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2371.69	50.65	-0.62	50.03	74.00	23.97	Peak
2	2390.00	48.51	-0.49	48.02	74.00	25.98	Peak

BLE 2M, High Channel, Bandedge, Horizontal



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2483.50	49.54	-0.05	49.49	74.00	24.51	Peak
2	2513.30	50.62	0.11	50.73	74.00	23.27	Peak

BLE 2M, High Channel, Bandedge, Vertical



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	2483.50	47.35	-0.05	47.30	74.00	26.70	Peak
2	2491.27	50.40	-0.01	50.39	74.00	23.61	Peak

5.3 Spot Check With Maximum Conducted Output Power

Serial No.:	2VU3-8	**Test Date:**	2025/2/7
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Tower Qing	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C):	21.9	**Relative Humidity: (%)**	42	**ATM Pressure: (kPa)**	101.5

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Coaxial Attenuator	10dB	F-08-EM512	2024/06/13	2025/06/12
R&S	Spectrum Analyzer	FSP 38	100478	2024/09/05	2025/09/04
R&S	Spectrum Analyzer	FSV40	101589	2024/09/05	2025/09/04

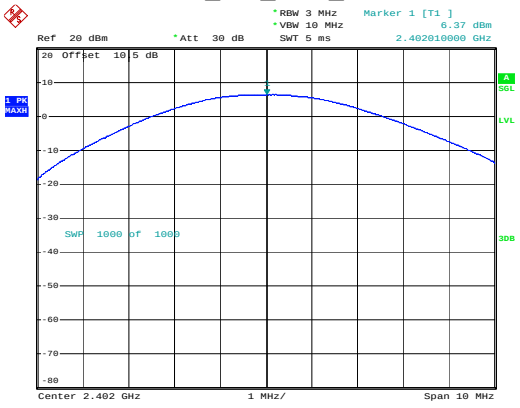
** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Channel	Result (dBm)	Limit (dBm)	Verdict
BLE 1Mbps Low	6.37	30.00	Pass
BLE 1Mbps Middle	5.02	30.00	Pass
BLE 1Mbps High	4.47	30.00	Pass
BLE 2Mbps Low	6.82	30.00	Pass
BLE 2Mbps Middle	5.42	30.00	Pass
BLE 2Mbps High	4.23	30.00	Pass
Max EIRP	11.37	36.00	Pass

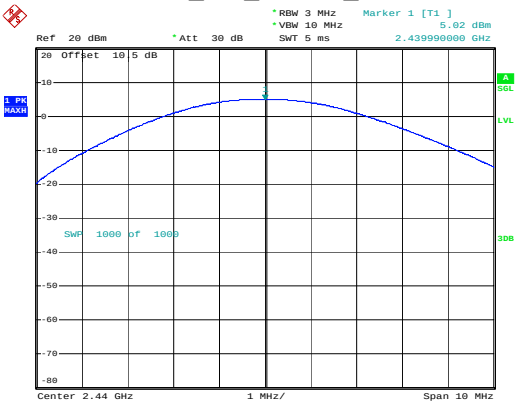
Note: The Spot Check data were similar to the original data.

BLE_1M_Low_Channel



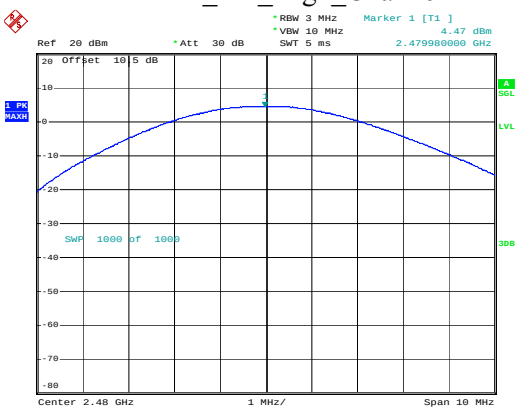
ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:14:12

BLE_1M_Middle_Channel



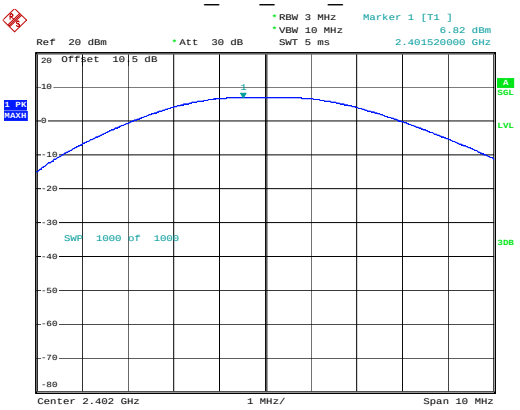
ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:18:22

BLE_1M_High_Channel



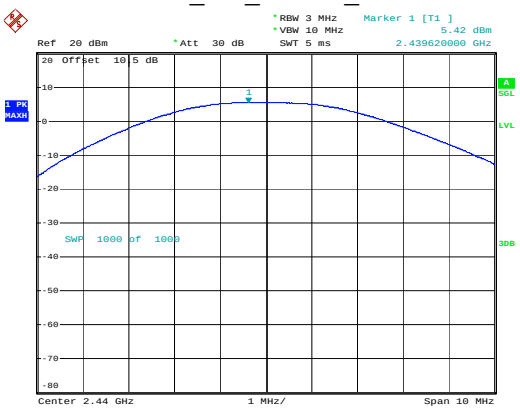
ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:39:14

BLE_2M_Low_Channel



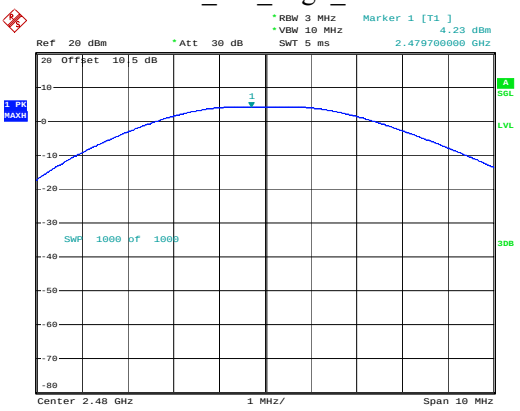
ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:40:17

BLE_2M_Middle_Channel



ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:41:54

BLE_2M_High_Channel



ProjectNo.:XMDN240206-08078E-RF Tester:Tower Qing
Date: 7.FEB.2025 13:42:49

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment XMDN240206-08078E-RF-A1-EXP EUT EXTERNAL PHOTOGRAPHS and XMDN240206-08078E-RF-A1-INP EUT INTERNAL PHOTOGRAPHS.

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment XMDN240206-08078E-RF-00CA1-TSP TEST SETUP PHOTOGRAPHS.

EXHIBIT C - RF EXPOSURE EVALUATION

Maximum Permissible Exposure (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Operation Modes	**Frequency (MHz)**	**Antenna Gain**		**Conducted output power including Tune-up Tolerance**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
		(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
WiFi 2.4G	2412-2462	4.55	2.85	24	251.19	20.00	0.1425	1.0
WiFi 5.2G	5150-5250	4.19	2.62	15	31.62	20.00	0.0165	1.0
WiFi 5.3G	5250-5350	4.19	2.62	15	31.62	20.00	0.0165	1.0
WiFi 5.6G	5470-5725	5.71	3.72	15	31.62	20.00	0.0234	1.0
WiFi 5.8G	5725-5850	5.43	3.49	15	31.62	20.00	0.0220	1.0
Bluetooth	2402-2480	4.55	2.85	7	5.01	20.00	0.0028	1.0
BLE	2402-2480	4.55	2.85	7	5.01	20.00	0.0028	1.0

1. The Conducted output power including Tune-up Tolerance provided by manufacturer
2. BT/BLE/WiFi can't transmit simultaneously.

Result: The device meet FCC MPE at 20 cm distance

Exemption Limits For Routine Evaluation-RF Exposure Evaluation

Applicable Standard

RSS-102, Issue 6, Clause 6.6:

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

• below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

• at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;

• at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

• at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

• at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Calculated Data:

Mode	Frequency (MHz)	Antenna Gain	Conducted output power including Tune-up Tolerance	EIRP		Exemption limits (mW)
		(dBi)	(dBm)	(dBm)	(mW)	
WiFi 2.4G	2412-2462	4.55	24	28.55	716.14	2684
WiFi 5.2G	5150-5250	4.19	15	19.19	82.99	4507
WiFi 5.3G	5250-5350	4.19	15	19.19	82.99	4567
WiFi 5.6G	5470-5725	5.71	15	20.71	117.76	4697
WiFi 5.8G	5725-5850	5.43	15	20.43	110.41	4845
Bluetooth	2402-2480	4.55	7	11.55	14.29	2676
BLE	2402-2480	4.55	7	11.55	14.29	2676

Note: 1. The Conducted output power including Tune-up Tolerance was provided by manufacturer.
2. BT/BLE/WiFi can't transmit simultaneously.

Result: Compliant, the device is compliance exemption from Routine Evaluation Limits –RF exposure Evaluation.

******* END OF REPORT *******