



ELECTROMAGNETIC COMPATIBILITY TEST REPORT

**Report Reference Number:**

QA-2236-2R1

NFC Transmitter/Receiver Report

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Laboratory Accreditations (per ISO/IEC 17025:2017)

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Manufacturer:

Blackline Safety Corp.

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Equipment Tested:

Wearable Multi-Gas Detector

Model Number(s):

G8C-01-NA2
IC: 8255A-G8C2
FCC ID: W77G8C2

blacklinesafety

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REVISION HISTORY

Date	Report Number	Details	Author's Initials
January 15, 2026	QA-2236-2 Blackline G8C-01-NA2_FCC-ISED NFC-Rev-1	Added IC and FCC ID and Lab Reg #	DJ
November 28, 2025	QA-2236-2 Blackline G8C-01-NA2_FCC-ISED NFC	Original	DJ
All previous versions of this report have been superseded by the latest dated revision as listed in the above table. Please dispose of all previous electronic and paper printed revisions accordingly.			

REPORT AUTHORIZATION

The data documented in this report is for the test equipment provided by the manufacturer. The tests were conducted on the sample equipment as requested by the manufacturer for the purpose of demonstrating compliance with the standards outlined in [Section II](#) of this report as agreed upon by the Manufacturer under the quote QAI-2074.

The Manufacturer is responsible for the tested product configurations, continued product compliance, and for the appropriate auditing of subsequent products as required. This report may comprise a partial list of tests that are required for FCC Certification, and ISED Certification. FCC and ISED will require a Supplier's Declaration of Conformity (SDoC) which can only be produced by the manufacturer. This is to certify that the following report is true and correct to the best of our knowledge.

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QAI EMC ACCREDITATION

QAI EMC is your one-stop regulatory compliance partner for electromagnetic compatibility (EMC) and electromagnetic interference (EMI). Products are tested to the latest and applicable EMC/EMI requirements for domestic and international markets. QAI EMC goes above and beyond being a testing facility—we are your regulatory compliance partner. QAI EMC has the capability to perform RF Emissions and Immunity for all types of electronics manufacturing including Industrial, Scientific, Medical, Information Technology, Telecom, Wireless, Automotive, Marine and Avionics.

EMC Laboratory Location	FCC Designation (3m SAC)	IC Registration (3m SAC)	A2LA Certificate
Burnaby, BC, Canada	CA9543 Lab Reg# 669742	9543A	3657.02

EMC Facility Burnaby BC, Canada



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SECTION I: GENERAL INFORMATION

1.1 Product Description

“G8 is a portable gas detector. G8 continuously measures gas concentrations in the ambient environment and activates notifications when concentrations exceed setpoints, allowing operators to respond quickly and safely to changes in their environment. The product architecture incorporates cellular radio, Bluetooth, NFC, and GNSS technology.”

Equipment Under Test (EUT) Photos



EUT Information

EUT System	Description	Manufacturer	Model No.	Serial No.	Software/Firmware Version
1	Wearable Multi-Gas Detector	Blackline Safety	G8C-01-NA2	4020000053	0.001.000

Note: Highest frequency generated or tuned upon within the EUT is 2.4835GHz. 3 Wireless Modules are in the EUT.

NFC Transmitter/Receiver: 13.56 MHz (SDoC)

Cell LTE Module 665 to 1909.3 MHz FCC ID XPYUBX21BE02 ISED 8595A-UBX21BE02

BLE Bluetooth transmitter: 2.400 to 2.4835 GHz (Not Certified)

EUT Test Mode/Configuration/Operation During Testing

Test Mode	EUT Test Configuration/Operation investigated
1	Battery mode with Alarm lights and speaker Active with all Transmitters ON
2	Charge Mode with Alarm lights and speaker Active with all Transmitters ON
3	DC Power supply Mode with Alarm lights and speaker Active with all Transmitters ON

Note:

- It was decided that all measurements should be done when the EUT is in its worst mode of operation for the measurements of Radiated and AC Mains Conducted Emissions to reduce the number of measurements required.
- The worst mode of operation was in Alarm mode with Vibration, Speaker and LED's active as well as all transmitters NFC, LTE and BLE in continuous transmit modes
- Due to rapid battery discharge when the unit was operating in the worst case mode of operation, it was found that the Battery would still discharge too quickly even when being charged with the AC power adapter.
- The EUT required the attachment of a Pigtail Flexible Cable and a Programming Circuit Board to program the BLE 2.45GHz transmitter. It was discovered that during the removal of the Programming circuit board, the EUT would often reset and turn off all transmitters.
- An investigation to identify any differences between testing with and without the Programming Circuit Board showed that there was no identifiable differences in emission levels or frequencies.
- All final emissions testing was done in Test Mode 3 with a DC power supply replacing the battery; with the BLE Programming Circuit Board and flexible cable attached.

Ancillary Equipment Information

System	Description	Manufacturer	Model No.	Serial No.
Power	I.T.E Power Supply adapter 100-240Vac 50/60Hz 0.3A to 5Vdc 1000mA USB Type B Cable	SHENZHEN SHI YING YUAN ELECTRONICS CO LTD	SAW06D- 050-1000UB	N/A
USB Hub	4 port USB Interface HUB Type A to Type A	LOGiX.ca	N/A	N/A
2.45GHz Transmitter Programming Interface	USB Type MICRO-USB to Ribbon Cable	Blackline Safety	N/A	N/A
Computer	QAI Laptop Computer	Lenovo Thinkpad	21MN- 005MUS	PF- 54VJMK

EUT Cabling Configuration

Port name	Connection Type / Connectors	Shielded	Ferrites	Length
USB power and Comm.'s port	Custom	Yes	No	0.5m

Related reference Test Reports:

- QA-2236-1 Blackline G8C-01-NA2_FCC-ISED – Test report of basic Digital Emissions
- QA-3616-1 Blackline G8C-01-NA2_FCC-ISED_BLE – Test report of BLE Bluetooth Transmitter/Receiver

1.2 Environmental Conditions

The equipment under test was operated and tested under the following environmental conditions:

Parameter	Conditions
Location	Indoors
Temperature	22.9°C
Relative Humidity	39.9 %
Atmospheric Pressure	100.8 kPa

1.3 Measurement Uncertainty

Parameter	Uncertainty
Radiated Emissions, 10kHz-1GHz	± 2.40 dB
Radiated Emissions, 1GHz-40GHz	± 2.48 dB
Conducted Emissions, 10kHz to 40GHz	± 2.82 dB
Radio Frequency	±1.5 x 10 ⁻⁵ MHz
Total RF Power Conducted	±1.36 dB
Spurious Emissions, Conducted	±1.36 dB
RF Power Density, Conducted	±1.36 dB
Temperature	±1°C
Humidity	±5 %
DC and low frequency voltages	±3 %



1.4 Sample Calculations of Emissions Data

Radiated and conducted emissions were performed using EMC32 software developed by Rohde & Schwarz. Transducer factors like Antenna factors, Cable Losses and Amplifier gains were stored in the test templates which are used to perform the emissions measurements. After test is finished, data is generated from the EMC32 consisting of product details, emission plots and final data tables as shown below.

Frequency (MHz)	Quasi Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Band width (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.0064	25.67	40.00	14.33	1000	120	315.0	H	161	4.0

Quasi-Peak reading shown in the table above is already corrected by the software using correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

Or

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable Loss} - \text{Amp gain (if pre-amplifier was used)}$$

The final Quasi peak reading shown in the data is calculated by the software using following equation:

$$\text{Corrected Quasi-Peak (dBμV/m)} = \text{Raw Quasi-Peak Reading} + \text{Antenna factor} + \text{Cable loss}$$

To obtain the final Quasi-Peak or Average reading during power line conducted emissions, transducer factors are included in the final measurement as shown below.

Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.2410	---	23.71	52.06	28.35	1000.0	9.0	L1	GND	10.0
0.2411	38.98	---	62.06	23.08	1000.0	9.0	L1	GND	10.0

Quasi Peak or Average reading shown in above table is already corrected by the software using the correction factor shown in column “Corr.” The correction factor listed under “Corr.” table calculated as:

$$\text{Corr. (dB)} = \text{Antenna factor} + \text{Cable loss}$$

The final Quasi-peak or Average reading shown in the data is calculated by the software using following equation:

$$\text{Corr. Quasi-Peak/Average Reading (dBμV)} = \text{Raw Quasi-Peak/Average Reading} + \text{Antenna factor} + \text{Cable loss}$$

The allowable margin from the limits, as per the standards, were calculated for both radiated and conducted emissions:

$$\text{Margin (dB)} = \text{Limit} - \text{Quasi-Peak or Average reading}$$



1.5 Test Equipment List

The tables below contain all the equipment used by 'QAI Laboratories' in conducting all tests on the Equipment Under Test (EUT) as per Section I.

Emissions Test Equipment

	Manufacturer	Model	Description	Serial No.	S/W Version	Calibration Due Date
1	Com-Power Corporation	LI-220C	Line Impedance Stabilization Network (9kHz-30MHz)	20070025	N/A	2026-Jan-23
2	Sunol Sciences	SC 104V	Turntable Controller	042506-1	N/A	Indication Only
3	Sunol Sciences	SM46C	Turntable	071705-2	N/A	Indication Only
4	Maturo GmbH	BAM 4.0-P	Boresight Antenna Mast	365	3382.01	Indication Only
5	ETS Lindgren	S201	7-meter Semi-Anechoic Chamber	1030	N/A	Indication Only
6	Hewlett Packard	8447F	Amplifier (0.1-1300MHz)	1726A00566	N/A	Indication Only
7	Hewlett Packard	8449B	Preamplifier (1-26.5 GHz)	3008A00982	N/A	Indication Only
8	Microwave Lab	USMC10180	Low Noise Amplifier (0.1-18GHz)	001303JR0802 A2729	N/A	Indication Only
9	Keysight Technologies	N9038B	MXE EMI Receiver, Multi-touch	MY60180014	N/A	2026-Aug-22
10	ETS-Lindgren	3117	Horn, Double-Ridge Guide Ant, 1.0 - 18 GHz	75944	N/A	2026-Jan-25
11	Sunol Sciences	JB3	Biconilog Antenna (30MHz – 3GHz)	A120106	N/A	2026-Mar-28
12	California Instrument	PACS-1	Harmonics/Flicker Test System	72596	N/A	2028-Apr-2
13	California Instruments	OMNI 1-18i	Reference Impedance Network	7127	N/A	2028-Apr-2
14	California Instruments	3001i	AC Power Supply	52117	CTS3.0 v3.2.0.35	2028-Apr-2
15	TESEQ	ISN T800	Impedance Stabilization Network (150kHz – 30MHz)	27133	N/A	2026-Feb-08

Note: Equipment listed above have 3 years calibration interval.

Measurement Software List

	Manufacturer	Model	Version	Description
1	Rohde & Schwarz	EMC 32	10.35.10	Emissions Test Software



SECTION II: EXECUTIVE SUMMARY OF STANDARDS AND LIMITS

2.1 Applicable Emission Standards and Summary of Results

This product uses a Near Field Tag Reader System operating in the band 13.56MHz.

The following tests were performed pursuant to the FCC/ISED Intentional Radiated Emissions, and Radio Testing Standards:

Test Description	Standard Clause	Result
Antenna Requirement	FCC 47 CFR Part 15.203 IC RSS-Gen Issue 5 Section 6.8	Complies
RF Peak Power Output	FCC Title 47 CFR Part 15: Subpart C - §15.225 RSS-210 Issue 11 Section B.6	Complies
Radiated Spurious Emissions	RSS-Gen Iss. 5 Section 8.9 and Section 8.10 FCC Subpart C §15.205 & §15.209	Complies
AC Mains Conducted Emissions	FCC Title 47 CFR Part 15: Subpart B - §15.109 RSS Gen Iss.5 Section 8.8	Complies
Frequency Stability	FCC Title 47 CFR Part 2.1055, Part 15: Subpart C – 15.215(c) RSS Gen Iss.5 Section 8.11	Complies

ISED RSS-210 Regulations

B.6 Band 13.110-14.010 MHz

Devices in this band shall comply with the following requirements (the more strict limit applies at transition frequencies):

The field strength of any emission shall not exceed the following limits:

- 15.848 mV/m (84 dBμV/m) at 30 m, within the band 13.553-13.567 MHz
- 334 μV/m (50.47 dBμV/m) at 30 m, within the bands 13.410-13.553 MHz and 13.567-13.710 MHz
- 106 μV/m (40.51 dBμV/m) at 30 m, within the bands 13.110-13.410 MHz and 13.710-14.010 MHz
- Refer to RSS-Gen general field strength Sections 8.9 and 8.10 limits for frequencies outside the band 13.110 14.010 MHz
- The carrier frequency stability shall not exceed ±100 ppm

FCC Part 15.225 Regulations

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

(e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

**For measurements performed at 3meters in a SAC
FCC/ISED for above standards**

Frequency (MHz)	Limit (dBμV at 30m)	Limit (dBμV at 3m)	Result
13.553-13.567	84	104	Comply
13.410-13.553 and 13.567-13.710	50.47	70.47	Comply
13.110-13.410 and 13.710-14.010	40.51	60.51	Comply
Note 1: The lower limit shall apply at the transition frequencies.			

2.2 Applicable Conducted Emission Limits

CE/ FCC/ISED for above standards – Class B

Frequency (MHz)	Conducted Limit (dBμV) – Class B		Result
	Quasi-Peak	Average	
0.15 – 0.50	66.0 to 56.0	56.0 to 46.0	Comply
0.50 – 5	56.0	46.0	
5 – 30	60.0	50.0	
Note 1: The lower limit shall apply at the transition frequencies.			
Note 2: The limit decreases linearly with the logarithm of the frequency in the 0.15 to 0.50 MHz			

Method of Measurement:

For the radiated emissions, the Equipment under test (EUT) is positioned in the center of the turntable in the SAC. The Equipment under test (EUT) is then measured for all the radiated emissions using the spectrum analyzer and receiver using the appropriate antennas, amplifiers, attenuators, and filters.

The required Quasi-Peak CISPR bandwidth shall be 200Hz for the range 10kHz to 150KHz; 9kHz for the range 150kHz to 30MHz; 120 kHz for the range 30 – 1000 MHz and 1 MHz for the frequency above 1GHz. The ANSI C63.4 and C63.10 requirements for the placement of RF Absorber on the turntable Ground Plane shall be satisfied.

Emissions in both horizontal and vertical polarizations were measured while rotating the Equipment Under Test (EUT) on the turntable to maximize signal strength and the limit is adjusted as per the equation below. The result is added or subtracted to the required emission level to ensure compliance at the new distance.

$$20 \log \left(\frac{D1}{D2} \right); \quad \text{Where } D1 = \text{Current Distance} \\ D2 = \text{Required Distance}$$

SECTION III: DATA & TEST RESULTS

3.1 RF Peak Power Output

- **Date Performed:**
 - November 14, 2025
- **Test Standard:**
 - FCC Title 47 CFR Part 15: Subpart C - §15.225, RSS-210

Frequency (MHz)	Limit (dBμV at 30m)	Limit (dBμV at 3m)	Result
13.553-13.567	84	124	Comply
13.410-13.553 and 13.567-13.710	50.47	90.47	Comply
13.110-13.410 and 13.710-14.010	40.51	80.51	Comply
Note 1: The lower limit shall apply at the transition frequencies.			

- **Test Method:**

ANSI C63.10-2020 Section 6.4 Radiated emissions from unlicensed wireless devices below 30MHz was used for all measurements.
- **Result:**
 - The highest peak measured at 13.56 is >20dB below the limit line. No measurements were required for adjacent frequencies.
 - The EUT complies with the applicable standard.

Final Result - Radiated Emissions, 13.56MHz NFC Transmitter ON Measured at 3meters with Loop Antenna

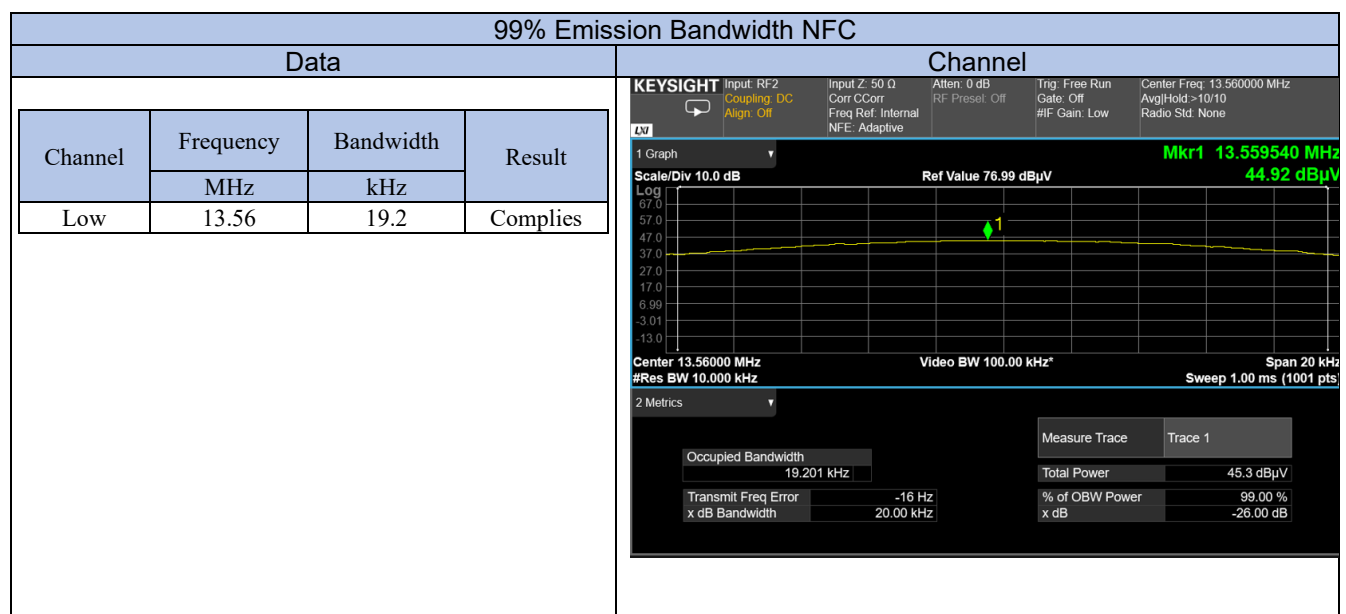
Frequency (MHz)	Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
13.56	65.56	124.0	58.35	1000.0	9.0	100.0	V	0	21.0



3.2 99% Emission Bandwidth (Occupied Band Width)

- **Date Performed:** December 03, 2025
- **Test Standard:** RSS-Gen Issue 5
- **Test Method:** ANSI C63.10:2013
- **Test Requirement:** The required value of 99% Emission bandwidth is not specified in the above standards. The bandwidth is measured and reported.
- **Measurement Method:** As called in ANSI C63.10-2013.
- **Result:** The EUT performed as expected.

Measurement Data and Plot:



3.3 Radiated Spurious Emissions

- **Date Performed:** November 10, 2025
- **Test Standard:** RSS-247-Issue 4, Section 6.6 RSS-Gen Iss. 5 Section 8.9 and Section 8.10
FCC Subpart C §15.205, 15.209 & 15.247

- **Required Limits:**

- 1) Radiated emission limits; general requirements.

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency, <i>f</i> (MHz)	Field strength (dBμV/m)
0.009 – 0.490	$(20 \cdot \log(2400/f \text{ (kHz)})) + 40 \text{ dB}$
0.490 – 1.705	$(20 \cdot \log(24000/f \text{ (kHz)})) + 20 \text{ dB}$
1.705 – 30.0	49.5
30 – 88	40.0
88 – 216	43.5
216 – 960	46.0
above 960	54.0

Note 1: The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

Note 2: The emissions limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

- 2) Restricted bands of operation.

Unwanted emissions that fall into the restricted bands specified on the table below shall comply with the limits specified on the table limits above as per §15.209 and Clause 8.9 of RSS-Gen.

IC Restricted Bands:

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138	--	

* Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.



FCC Restricted Bands:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

3) §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)).

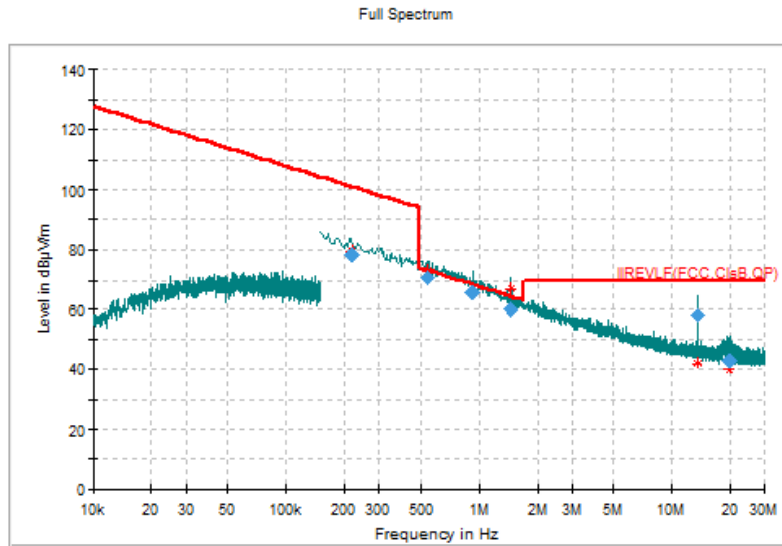
Method of Measurement:

The EUT was tested in our 3m SAC and was positioned on the center of the turntable to verify all requirements using the radiated emissions method as outlined in ANSI 63.10-2020. The NFC (13.56 MHz), the LTE (1.850GHz) and BLE (2.45GHz) transmitters were set for continuous transmission. The operating frequency of the device was investigated and all emissions within 20dB of the limit line was measured for all radiated emissions 10 kHz to 18 GHz up to the 10th harmonic of the highest fundamental frequency. The EUT was pre-scanned in 3 different orthogonal orientations and was found to radiate highest when placed Vertical on the tabletop as indicated in the test photos. The BLE transmitter was investigated for the Lowest, Middle and Highest channels as applicable.

Both Battery Mode and Charge mode were investigated. Final testing was done with DC power supply instead of a battery.

Result: The EUT complies with the applicable standards.

Measurement Data and Plot:

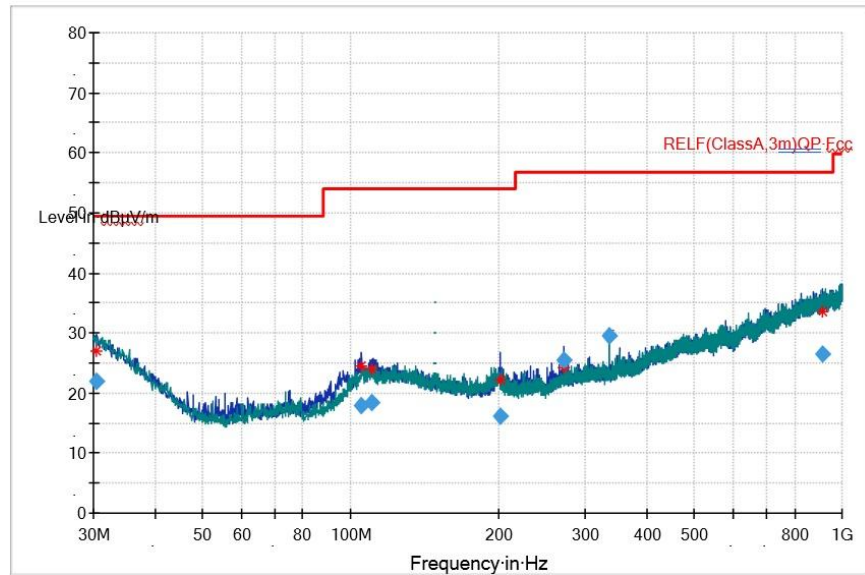


Notes: Limit line and measurement points are for reference only

Radiated Spurious Emissions, 10kHz – 30MHz NFC, LTE and BLE Transmitters ON

Final Result - Radiated Spurious Emissions, 10kHz – 30MHz NFC, LTE and BLE Transmitters ON

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
0.2198	78.18	100.76	22.58	1000.0	9.0	100.0	V	325	20.1
0.5465	70.79	72.86	2.07	1000.0	9.0	100.0	V	152	20.4
0.9175	65.70	68.37	2.67	1000.0	9.0	100.0	V	165	20.4
1.4695	60.20	64.29	4.09	1000.0	9.0	100.0	V	190	20.6
13.5538	58.11	69.50	11.39	1000.0	9.0	100.0	V	348	21.0
19.9868	43.09	69.50	26.41	1000.0	9.0	100.0	V	263	20.8

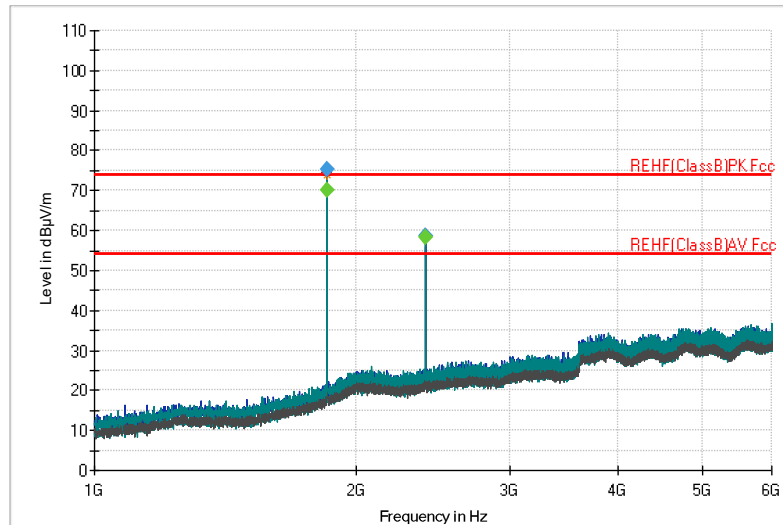


Notes: Limit line and measurement points are for reference only

Radiated Spurious Emissions, 30M – 1GHz NFC, LTE and BLE Transmitters ON

Final Result - Radiated Spurious Emissions, 30MHz – 1000MHz NFC, LTE and BLE Transmitters ON

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.4938	22.00	40.00	18.00	1000.0	120.0	300.0	H	149	-1.1
105.3359	17.99	43.50	25.51	1000.0	120.0	123.0	H	156	-9.3
110.6527	18.51	43.50	24.99	1000.0	120.0	145.0	H	283	-8.3
201.4661	16.04	43.50	27.46	1000.0	120.0	260.0	H	187	-8.7
271.9682	25.52	46.00	20.48	1000.0	120.0	100.0	H	132	-7.8
335.9870	29.45	46.00	16.55	1000.0	120.0	100.0	H	348	-6.9
914.7676	26.40	46.00	19.60	1000.0	120.0	150.0	H	290	3.8

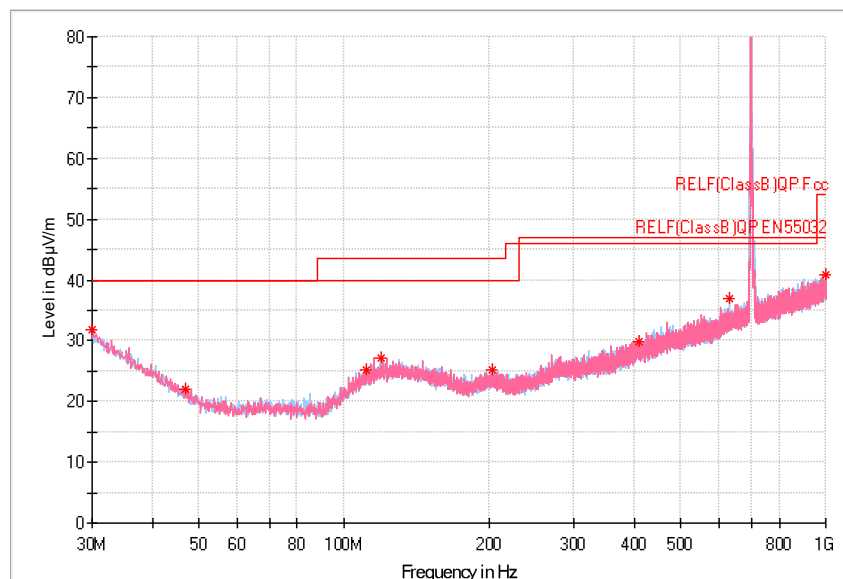


Notes: Limit line and measurement points are for reference only.
Nothing detected 6-25GHz

Radiated Spurious Emissions, 1-6GHz NFC, LTE and BLE Transmitters ON

Radiated Spurious Emissions 1-26GHz

- All spurious emissions were manually investigated. There are no spurious emissions to be measured as all emissions are greater than 20dB below the limit lines.



Spurious Emissions of Radio Collocation, 30M – 1G Hz, NFC Bluetooth & 4G Tx on

Spurious Emissions of Radio Co-location Data:

- The units transmitters were investigated with all 3 transmitters ON at the same time. The LTE transmitter was verified on all FCC NA2 Frequency bands. There were no intermodulation frequencies to be measured during the simultaneous transmission of the Three radio modules. Peaks showing in the plots are the fundamental frequencies. All Emissions are greater than 20 dB below the limits.

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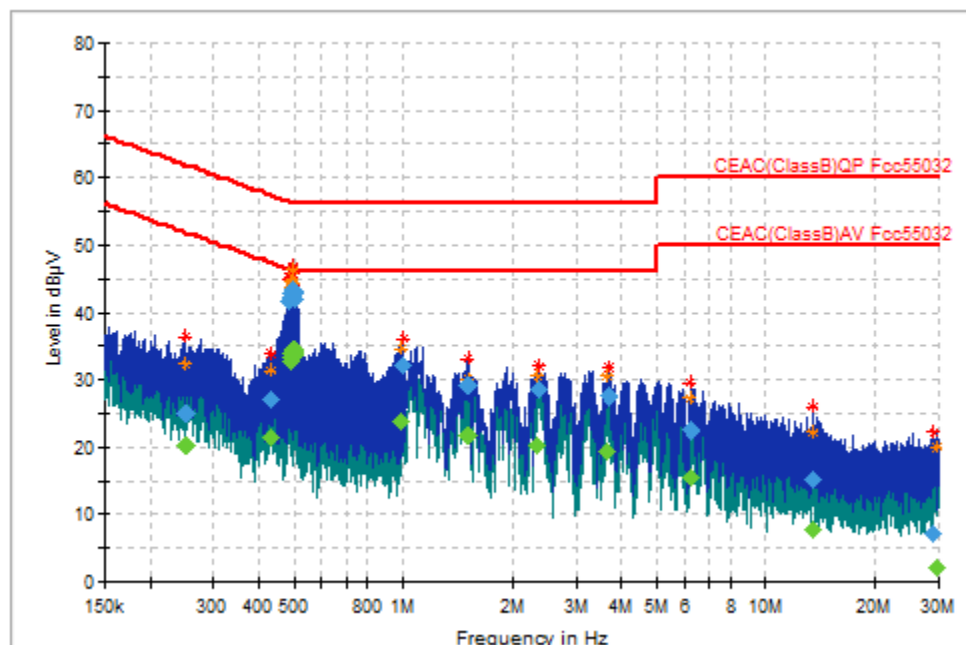


3.4 AC Mains Conducted Emissions

- **Date Performed:**
November 17, 2025
- **Test Standard:**
As per [Section 2.1](#) of this report
- **Required Limit:**
As per [Section 2.3](#) of this report
- **Test Method:**
As per [Section 2.1](#) of this report
- **Modifications:**
No modification was required.
- **Result:**
The EUT **complies** with the standard.

Measurement Data and Plot:

- Test Standard: FCC 15.107 and ICES-003
- Class: B
- EUT input voltage: 120V 60Hz – into AC/DC Power Adapter during Charge Mode
- Frequency Range: 150kHz to 30MHz
- Test mode: 2
- Port under test: AC



Plot 1: Conducted Emissions – FCC/ISED Class B Mode 2– Line 1

Table 1: Quasi-Peak and Average Data of Conducted Emissions– FCC/ISED Class B Mode 2 – Line 1

Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.2529	24.86	---	61.66	36.80	1000.0	9.0	L1	GND	10.0
0.2530	---	20.21	51.66	31.45	1000.0	9.0	L1	GND	10.0
0.4324	27.09	---	57.21	30.12	1000.0	9.0	L1	GND	10.0
0.4325	---	21.42	47.21	25.79	1000.0	9.0	L1	GND	10.0
0.4883	41.58	---	56.20	14.62	1000.0	9.0	L1	GND	10.0
0.4895	42.04	---	56.18	14.13	1000.0	9.0	L1	GND	10.0
0.4896	---	32.73	46.18	13.45	1000.0	9.0	L1	GND	10.0
0.4914	42.70	---	56.14	13.44	1000.0	9.0	L1	GND	10.0
0.4915	---	33.31	46.14	12.83	1000.0	9.0	L1	GND	10.0
0.4926	42.85	---	56.13	13.27	1000.0	9.0	L1	GND	10.0
0.4926	---	33.78	46.13	12.35	1000.0	9.0	L1	GND	10.0
0.4937	---	33.87	46.11	12.23	1000.0	9.0	L1	GND	10.0
0.4943	43.34	---	56.10	12.75	1000.0	9.0	L1	GND	10.0

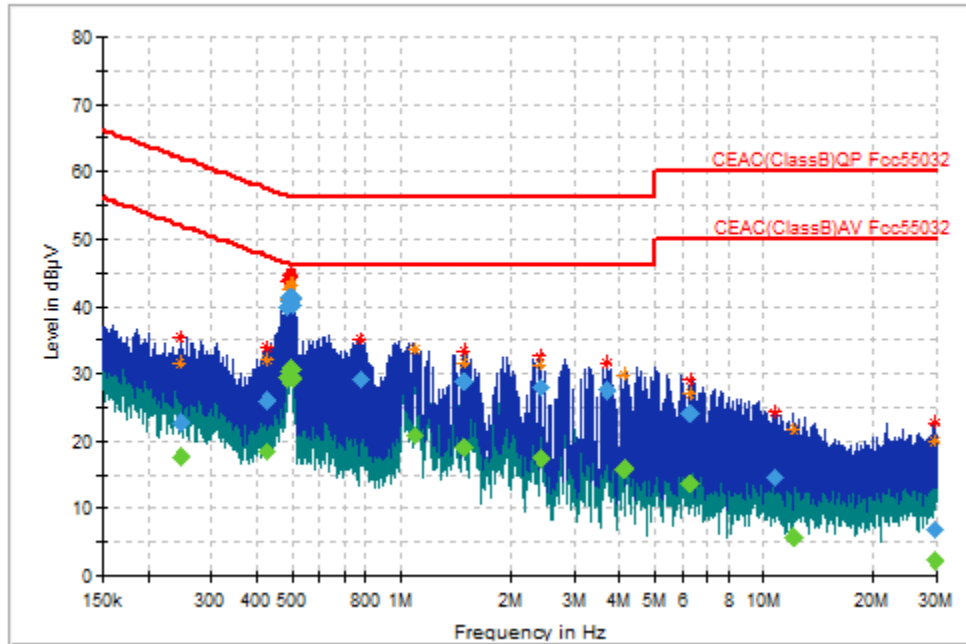
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0.4960	43.48	---	56.07	12.59	1000.0	9.0	L1	GND	10.0
0.4960	---	34.43	46.07	11.63	1000.0	9.0	L1	GND	10.0
0.4979	43.46	---	56.04	12.58	1000.0	9.0	L1	GND	10.0
0.4980	---	34.35	46.03	11.68	1000.0	9.0	L1	GND	10.0
0.4992	---	34.21	46.01	11.80	1000.0	9.0	L1	GND	10.0
0.4997	---	34.21	46.01	11.80	1000.0	9.0	L1	GND	10.0
0.5009	---	33.90	46.00	12.10	1000.0	9.0	L1	GND	10.0
0.5010	43.09	---	56.00	12.91	1000.0	9.0	L1	GND	10.0
0.5021	---	33.49	46.00	12.51	1000.0	9.0	L1	GND	10.0
0.5023	42.60	---	56.00	13.40	1000.0	9.0	L1	GND	10.0
0.5039	41.87	---	56.00	14.13	1000.0	9.0	L1	GND	10.0
0.9963	---	23.63	46.00	22.37	1000.0	9.0	L1	GND	10.0
0.9992	31.97	---	56.00	24.03	1000.0	9.0	L1	GND	10.0
1.5075	29.00	---	56.00	27.00	1000.0	9.0	L1	GND	10.1
1.5075	---	21.64	46.00	24.36	1000.0	9.0	L1	GND	10.1
2.3485	---	20.20	46.00	25.80	1000.0	9.0	L1	GND	10.1
2.3688	28.52	---	56.00	27.48	1000.0	9.0	L1	GND	10.1
3.6506	---	19.37	46.00	26.63	1000.0	9.0	L1	GND	10.2
6.1823	22.51	---	60.00	37.49	1000.0	9.0	L1	GND	10.3
6.1852	---	15.43	50.00	34.57	1000.0	9.0	L1	GND	10.3
13.4410	---	7.94	50.00	42.06	1000.0	9.0	L1	GND	10.5
13.4410	15.17	---	60.00	44.83	1000.0	9.0	L1	GND	10.5
29.1996	6.95	---	60.00	53.05	1000.0	9.0	L1	GND	11.3
29.5998	---	1.98	50.00	48.02	1000.0	9.0	L1	GND	11.3

Notes:

- 1) Testing was investigated in both Battery mode and Charge mode with all Transmitters in continuous transmission. The above data is the worst case mode during Charge mode of operation.
- 2) Bluetooth transmitter set for GFSK at 2.402GHz continuous transmission.
- 3) Cell Transmitter set of 1.850GHz
- 4) NFC transmitter set for continuous transmission at 13.56MHz



Plot 2: Conducted Emissions – FCC/ISED Class B Mode 2– Line 2

Table 2: Quasi-Peak and Average Data of Conducted Emissions– FCC/ISED Class B Mode 2 – Line 2

Frequency (MHz)	Quasi Peak (dBµV)	Average (dBµV)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.2455	22.71	---	61.91	39.20	1000.0	9.0	L1	GND	10.0
0.2455	---	17.75	51.91	34.16	1000.0	9.0	L1	GND	10.0
0.4275	25.99	---	57.30	31.31	1000.0	9.0	L1	GND	10.0
0.4276	---	18.47	47.30	28.83	1000.0	9.0	L1	GND	10.0
0.4889	---	29.31	46.19	16.88	1000.0	9.0	L1	GND	10.0
0.4889	39.86	---	56.19	16.33	1000.0	9.0	L1	GND	10.0
0.4900	---	29.46	46.17	16.71	1000.0	9.0	L1	GND	10.0
0.4902	40.11	---	56.17	16.06	1000.0	9.0	L1	GND	10.0
0.4914	40.54	---	56.14	15.61	1000.0	9.0	L1	GND	10.0
0.4915	---	29.88	46.14	16.26	1000.0	9.0	L1	GND	10.0
0.4922	40.72	---	56.13	15.41	1000.0	9.0	L1	GND	10.0
0.4934	41.01	---	56.11	15.10	1000.0	9.0	L1	GND	10.0
0.4937	---	30.40	46.11	15.70	1000.0	9.0	L1	GND	10.0
0.4945	41.27	---	56.09	14.82	1000.0	9.0	L1	GND	10.0
0.4947	---	30.43	46.09	15.66	1000.0	9.0	L1	GND	10.0
0.4959	41.41	---	56.07	14.66	1000.0	9.0	L1	GND	10.0
0.4960	---	30.82	46.07	15.24	1000.0	9.0	L1	GND	10.0
0.4982	---	30.74	46.03	15.29	1000.0	9.0	L1	GND	10.0
0.4988	41.21	---	56.02	14.81	1000.0	9.0	L1	GND	10.0
0.4996	41.23	---	56.01	14.78	1000.0	9.0	L1	GND	10.0
0.4997	---	30.56	46.01	15.44	1000.0	9.0	L1	GND	10.0

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0.5005	---	30.45	46.00	15.55	1000.0	9.0	L1	GND	10.0
0.5032	40.15	---	56.00	15.85	1000.0	9.0	L1	GND	10.0
0.5032	---	29.36	46.00	16.64	1000.0	9.0	L1	GND	10.0
0.7749	28.92	---	56.00	27.08	1000.0	9.0	L1	GND	10.0
1.0928	---	20.81	46.00	25.19	1000.0	9.0	L1	GND	10.0
1.4872	28.89	---	56.00	27.11	1000.0	9.0	L1	GND	10.1
1.4872	---	18.81	46.00	27.19	1000.0	9.0	L1	GND	10.1
2.4152	27.93	---	56.00	28.07	1000.0	9.0	L1	GND	10.1
2.4297	---	17.30	46.00	28.70	1000.0	9.0	L1	GND	10.1
3.7057	27.39	---	56.00	28.61	1000.0	9.0	L1	GND	10.2
4.1030	---	15.91	46.00	30.09	1000.0	9.0	L1	GND	10.2
6.2925	23.85	---	60.00	36.15	1000.0	9.0	L1	GND	10.3
6.2925	---	13.65	50.00	36.35	1000.0	9.0	L1	GND	10.3
10.7527	14.71	---	60.00	45.29	1000.0	9.0	L1	GND	10.4
12.0954	---	5.80	50.00	44.20	1000.0	9.0	L1	GND	10.5
29.6259	6.77	---	60.00	53.23	1000.0	9.0	L1	GND	11.3

Notes:

- 1) Testing was investigated in both Battery mode and Charge mode with all Transmitters in continuous transmission. The above data is the worst case mode during Charge mode of operation.
- 2) Bluetooth transmitter set for GFSK at 2.402GHz continuous transmission.
- 3) Cell Transmitter set of 1.850GHz
- 4) NFC transmitter set for continuous transmission at 13.56MHz



3.5 Frequency Stability

- **DATE:** December 03, 2025
- **TEST STANDARD:** FCC Part 15.215 (c), RSS Gen Iss.5 (8.8)
- **MINIMUM STANDARD:** Carrier frequency stability shall be maintained to $\pm 0.01\%$ (± 100 ppm).
- **OBSERVATIONS:** The EUT performed as expected.
- **PERFORMANCE:** Complies with Standard.

Temperature (C)	Frequency (MHz)	Deviation (ppm)	Deviation Rounded (ppm)
-20	13.559498	10.33	10
-10	13.559258	7.37	7
0	13.558998	26.56	27
10	13.559538	13.27	13
20 (reference)	13.559358	0.0	0
30	13.559258	19.17	19
40	13.559798	0.73	1

PPM deviation= $[(\text{Measured Frequency} - \text{Reference Frequency}) / (\text{Reference Frequency})] \times 10^6$

Appendix A: TEST SETUP PHOTOS

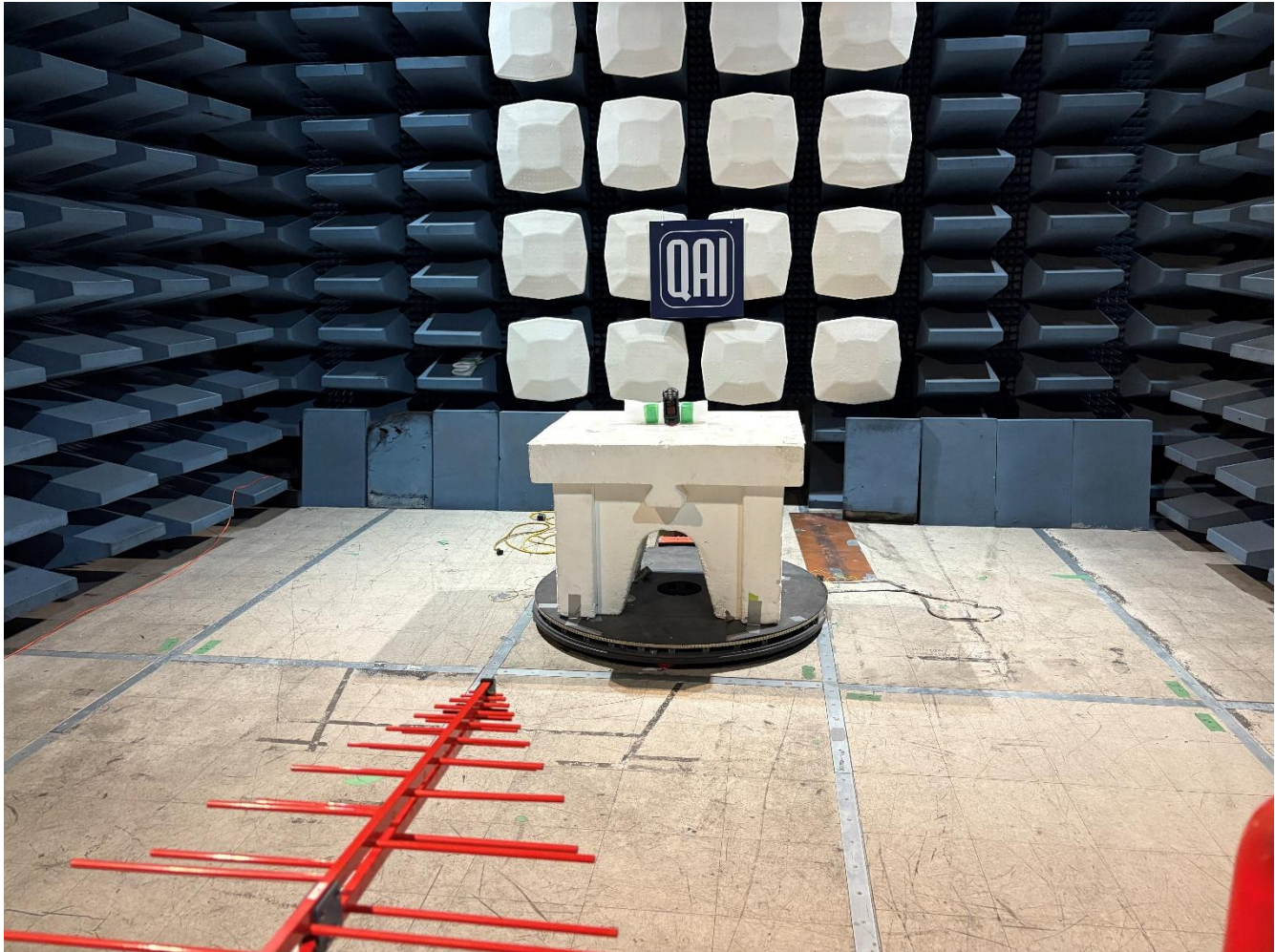


Figure 1: Radiated Emissions – 30MHz to 1GHz

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Figure 2: Radiated Emissions – 10kHz to 30MHz

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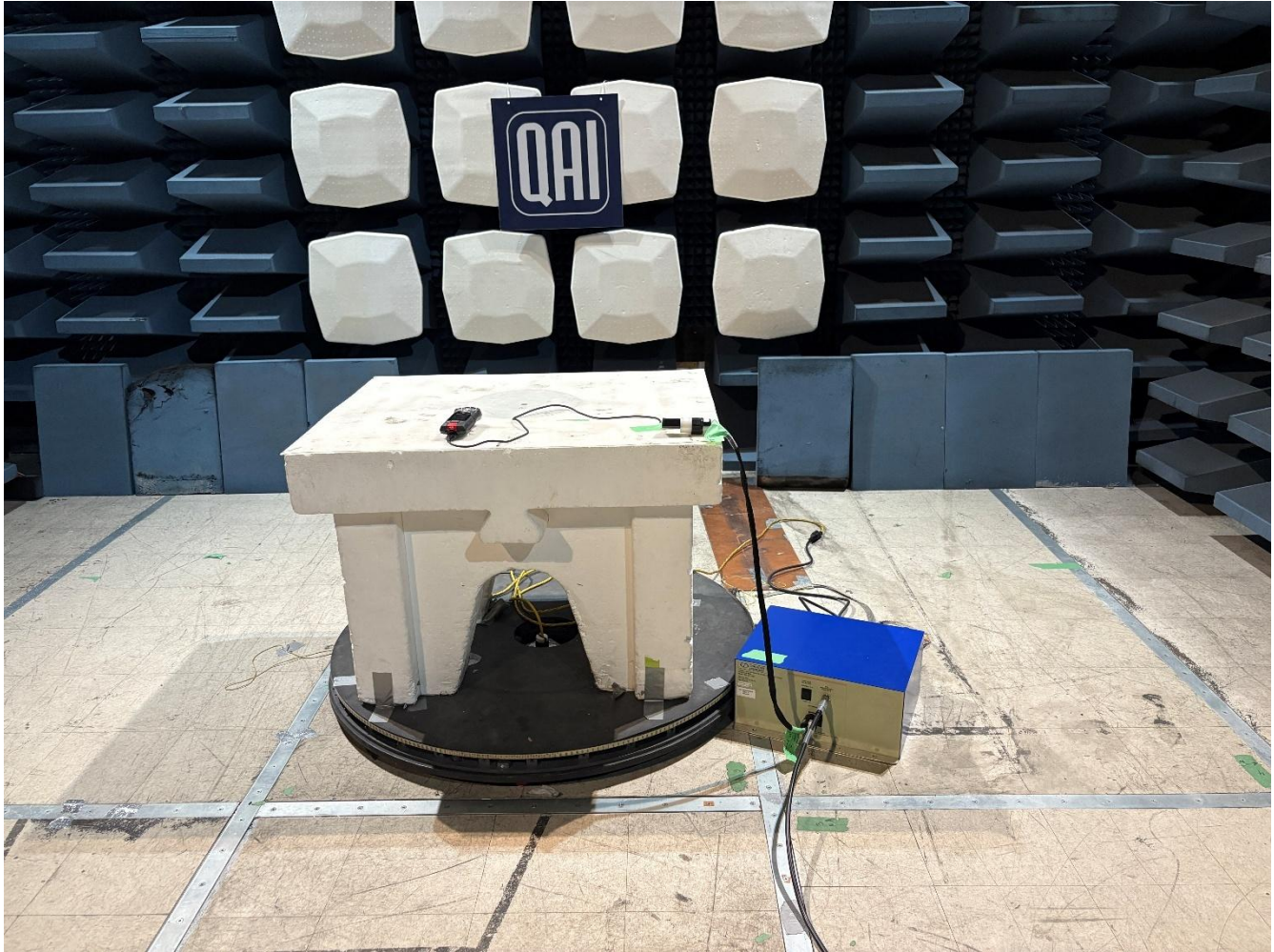


Figure 3: AC Mains Conducted Emissions – 150kHz to 30MHz

Appendix B: ABBREVIATIONS

Abbreviation	Definition
AC	Alternating Current
AM	Amplitude Modulation
ASW	Anti-Submarine Warfare
BIT	Built-in-Test
CE	European Conformity
CISPR	Comité International Spécial des Perturbations Radioélectriques (International Special Committee on Radio Interference)
DC	Direct Current
EFT	Electrical Fast Transient
EMC	Electro Magnetic Compatibility
EMI	Electro Magnetic Interference
ERP	Effective Radiated Power
ESD	Electrostatic Discharge
EUT	Equipment Under Test
FCC	Federal Communications Commission
FVIN	Firmware Version Identification Number FVIN
GFE	Government Furnished Equipment
IC	Industry Canada
ICES	Interference Causing Equipment Standard
IEC	International Electrotechnical Commission
LISN	Line Impedance Stabilizing Network
OATS	Open Area Test Site
RF	Radio Frequency
RMS	Root-Mean-Square
SAC	Semi-Anechoic Chamber
TEM	Transverse Electromagnetic
TPD	Terminal Protection Device

END OF REPORT

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