

Robotime C&C (Jiangsu) Co., Ltd.

TEST REPORT

SCOPE OF WORK

FCC TESTING—CGM01

REPORT NUMBER

SZHH02103446-001

ISSUE DATE

Jan 13, 2026

[REVISED DATE]

[-----]

PAGES

27

DOCUMENT CONTROL NUMBER

FCC ID 249_C

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Robotime C&C (Jiangsu) Co., Ltd.

Application
For
Certification

FCC ID: 2BKHZCGM0126

Navi Lighthouse

Model: CGM01

2.4GHz Transceiver

Report No.: SZHH02103446-001

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-24]

Prepared and Checked by:

Approved by:



Terry Tang
Assistant Supervisor



Johnny Wang
Project Engineer
Date: Jan 13, 2026

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Intertek Testing Services Shenzhen Ltd. Longhua Branch

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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one): Original Grant X Class II Change _____

Equipment Type: DXX - Part 15 Low Power Communication Device Transmitter

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No X

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No X

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-24 Edition] provision.

Report prepared by:

Terry Tang
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1.0 Summary of Test Result

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Applicant Address: 28 Wenzhou Road, Shuyang, Suqian, Jiangsu, China

Manufacturer: Robotime C&C (Jiangsu) Co., Ltd.

Manufacturer Address: 28 Wenzhou Road, Shuyang, Suqian, Jiangsu, China

MODEL: CGM01

FCC ID: 2BKHZCGM0126

Test Specification	Reference	Results
Transmitter Radiated Emission	15.249 & 15.209 & 15.205	Pass
Conducted Emission	15.207	Pass
Band edge	15.249 & 15.209 & 15.205	Pass
20dB Bandwidth	15.215(c)	Pass

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

2.0 General Description

2.1 Product Description

The equipment under test (EUT) is a Navi Lighthouse operating at 2.4G Band. The EUT is powered by DC 5.0V by adaptor. For more detail information pls. refer to the user manual.

Antenna Type: Integral antenna

Modulation Type: GFSK

Antenna Gain: -3.66dBi Max

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of a transceiver for the Navi Lighthouse, and there is no related application.

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2020). Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst-case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "Justification Section" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Longhua Branch** and located at 101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen, P.R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: CN1188).

3.0 System Test Configuration

3.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10 (2020).

The EUT is powered by DC 5.0V by adaptor during the test, only the worst data was reported in this report.

For maximizing emissions below 30 MHz, the EUT was rotated through 360°, the bottom of the loop antenna was placed 1 meter above the ground, and the antenna polarization was changed. For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Section 4.

The EUT and transmitting antenna was centered on the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

3.2 EUT Exercising Software

There was no special software to exercise the device.

3.3 Special Accessories

No special accessories used.

3.4 Equipment Modification

Any modifications installed previous to testing by Robotime C&C (Jiangsu) Co., Ltd. will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Longhua Branch.

3.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

Measurement Uncertainty	Uncertainty
20dB Bandwidth	$\pm 3.46\%$
Conducted Unwanted Emission	$\pm 0.55\text{dB}$
Spurious emission (above 18GHz)	$\pm 5.3\text{dB}$
Spurious emission (6GHz to 18GHz)	$\pm 5.1\text{dB}$
Radiated emission (1GHz to 6GHz)	$\pm 4.8\text{dB}$
Radiated emission (Up to 1GHz)	$\pm 4.8\text{dB}$
AC Conducted emission	$\pm 3.6\text{ dB}$
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$

3.6 Support Equipment List and Description

Description	Manufacturer	Remark
Adapter (Provided by Intertek)	Cellularline S. p. A	ACHIPDUSBCPD20WW
USB Cable (Provided by Intertek)	N/A	Unshielded, Length: 31.5cm

4.0 Emission Results

Data is included worst-case configuration (the configuration which resulted in the highest emission levels).

4.1 Radiated Test Results

A sample calculation, configuration photographs and data tables of the emissions are included.

4.1.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

Where

- FS = Field Strength in dB μ V/m
- RA = Receiver Amplitude (including preamplifier) in dB μ V
- CF = Cable Attenuation Factor in dB
- AF = Antenna Factor in dB/m
- AG = Amplifier Gain in dB
- PD = Pulse Desensitization in dB
- AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB/m and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB/m}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

4.1.2 Radiated Emission Configuration Photograph

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

4.1.3 Radiated Emissions

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Worst Case Radiated Emission
at
662.682500 MHz

Judgement: Passed by 12.9 dB

TEST PERSONNEL:

Sign on file

Terry Tang, Assistant Supervisor
Typed/Printed Name

Nov 28, 2025
Date

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

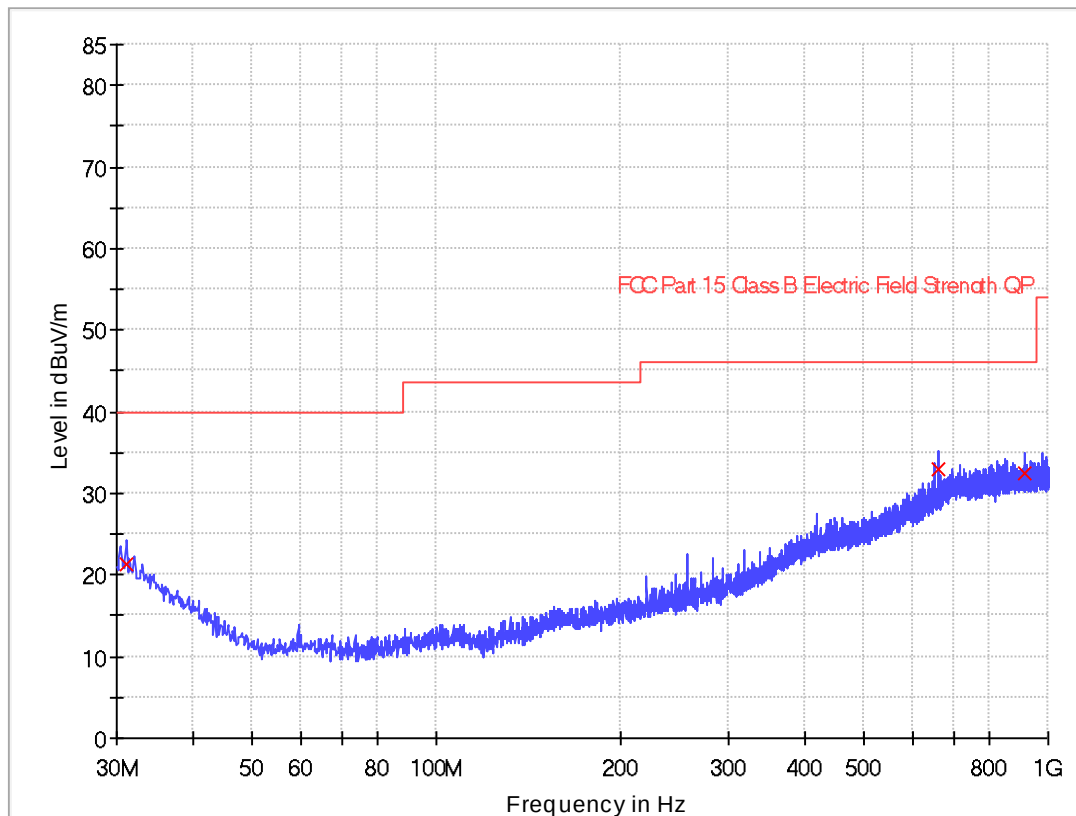
Model: CGM01

Worst Case Operating Mode:

Transmitting(2402MHz)

ANT Polarity: Horizontal

FCC Part 15



Frequency (MHz)	Quasi Peak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
31.091250	21.4	1000.0	120.000	H	23.6	18.6	40.0
662.682500	33.1	1000.0	120.000	H	31.3	12.9	46.0
915.246250	32.5	1000.0	120.000	H	32.9	13.5	46.0

Remark:

1. Corr. (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
2. Quasi Peak (dBuV/m) = Corr. (dB/m) + Read Level (dBuV)
3. Margin (dB) = Limit Line (dBuV/m) – Level (dBuV/m)

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

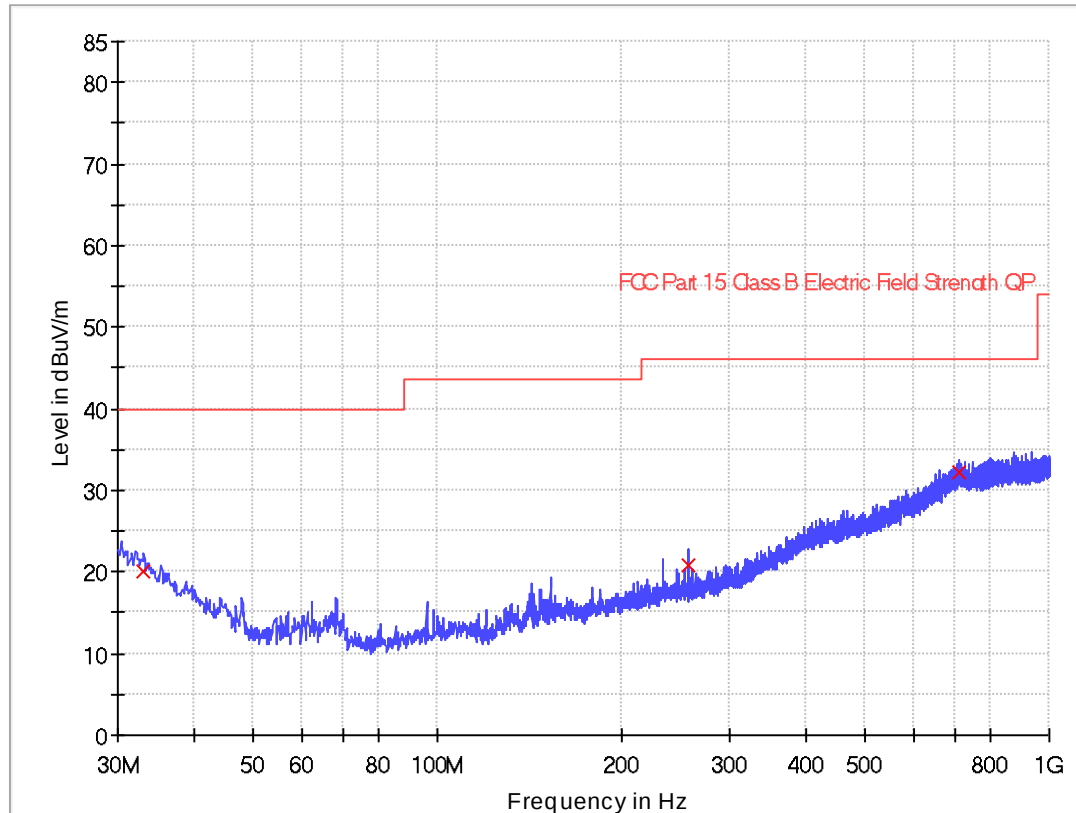
Model: CGM01

Worst Case Operating Mode:

Transmitting(2402MHz)

ANT Polarity: Vertical

FCC Part 15



Frequency (MHz)	Quasi Peak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
33.031250	20.1	1000.0	120.000	V	22.5	19.9	40.0
257.707500	20.8	1000.0	120.000	V	19.7	25.2	46.0
709.606250	32.3	1000.0	120.000	V	32.4	13.7	46.0

Remark:

1. Corr. (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
2. Quasi Peak (dBμV/m) = Corr. (dB/m) + Read Level (dBμV)
3. Margin (dB) = Limit Line (dBμV/m) – Level (dBμV/m)

4.1.4 Transmitter Spurious Emissions (Radiated)

Worst Case Radiated Emission
at
2402.000 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos. pdf.

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 21.2 dB

TEST PERSONNEL:

Sign on file

Terry Tang, Assistant Supervisor

Typed/Printed Name

Nov 28, 2025

Date

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

Model: CGM01

Worst Case Operating Mode:

Transmitting

Table 1

Radiated Emissions

(2402MHz)

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2402.000	101.4	36.7	28.1	92.8	114.0	-21.2
Horizontal	4804.000	52.8	36.7	35.5	51.6	74.0	-22.4

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Average Factor (-dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2402.000	101.4	36.7	28.1	48.6	44.2	94.0	-49.8
Horizontal	4804.000	52.8	36.7	35.5	48.6	3.0	54.0	-51.0

Notes: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5. All measurements were made in both horizontal and vertical directions. Only the worst direction of the test data is recorded in the report.

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

Model: CGM01

Worst Case Operating Mode:

Transmitting

Table 2

Radiated Emissions

(2426MHz)

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2426.000	100.3	36.7	28.1	91.7	114.0	-22.3
Horizontal	4882.000	53.0	36.7	35.5	51.8	74.0	-22.2

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Average Factor (-dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2426.000	100.3	36.7	28.1	48.6	43.1	94.0	-50.9
Horizontal	4882.000	53.0	36.7	35.5	48.6	3.2	54.0	-50.8

Notes: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5. All measurements were made in both horizontal and vertical directions. Only the worst direction of the test data is recorded in the report.

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

Model: CGM01

Worst Case Operating Mode:

Transmitting

Table 3

Radiated Emissions

(2480MHz)

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2480.000	99.7	36.7	28.1	91.1	114.0	-22.9
Horizontal	4960.000	53.4	36.7	35.5	52.2	74.0	-21.8

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB/m)	Average Factor (-dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	2480.000	99.7	36.7	28.1	48.6	42.5	94.0	-51.5
Horizontal	4960.000	53.4	36.7	35.5	48.6	3.6	54.0	-50.4

Notes: 1. Peak detector is used for the emission measurement.

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna is used for the emission over 1000MHz.

5. All measurements were made in both horizontal and vertical directions. Only the worst direction of the test data is recorded in the report.

4.2 Conducted Emission Configuration Photograph

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: conducted photos.pdf.

4.2.1 Conducted Emission

Worst Case Conducted Configuration
at
0.778000MHz

Judgement: Passed by 19.5dB margin

TEST PERSONNEL:

Sign on file

Terry Tang, Assistant Supervisor
Typed/Printed Name

Nov 29, 2025
Date

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 29, 2025

Model: CGM01

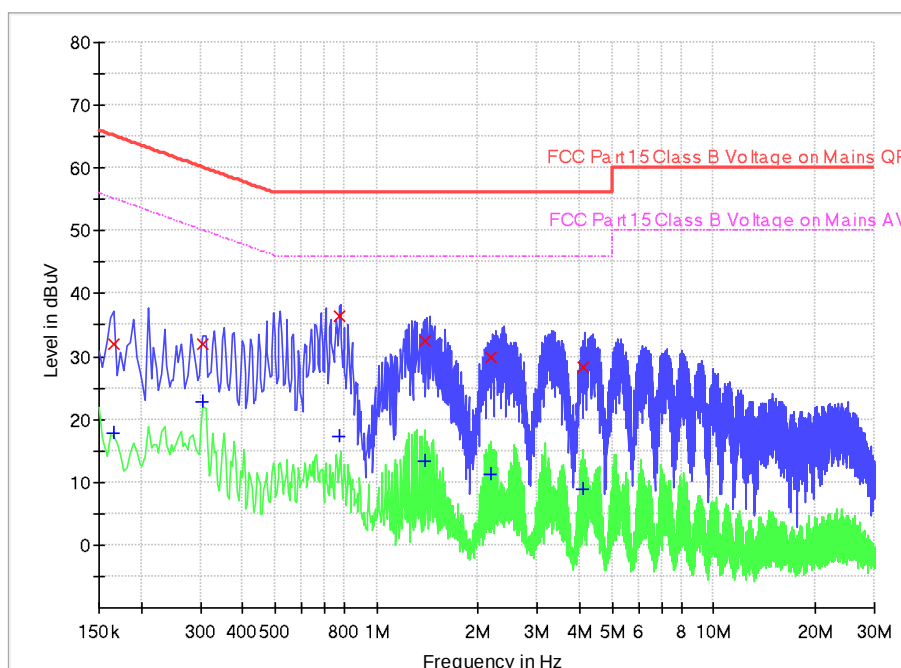
Worst Case Operating Mode: Transmittingr

Phase: Live

Graphic / Data Table

Conducted Emissions Pursuant to FCC 15.207: Emissions Requirement

Conducted Emission Test - FCC Part 15



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ)
0.166000	32.0	9.000	L1	9.6	33.2	65.2
0.306000	32.1	9.000	L1	9.6	28.0	60.1
0.778000	36.5	9.000	L1	9.6	19.5	56.0
1.386000	32.5	9.000	L1	9.6	23.5	56.0
2.186000	29.9	9.000	L1	9.6	26.1	56.0
4.114000	28.2	9.000	L1	9.7	27.8	56.0

Limit and Margin AV

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin - CAV (dB)	Limit - CAV (dB μ)
0.166000	17.9	9.000	L1	9.6	37.3	55.2
0.306000	22.8	9.000	L1	9.6	27.3	50.1
0.778000	17.4	9.000	L1	9.6	28.6	46.0
1.386000	13.3	9.000	L1	9.6	32.7	46.0
2.186000	11.1	9.000	L1	9.6	34.9	46.0
4.114000	8.9	9.000	L1	9.7	37.1	46.0

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 29, 2025

Model: CGM01

Worst Case Operating Mode: Transmitting

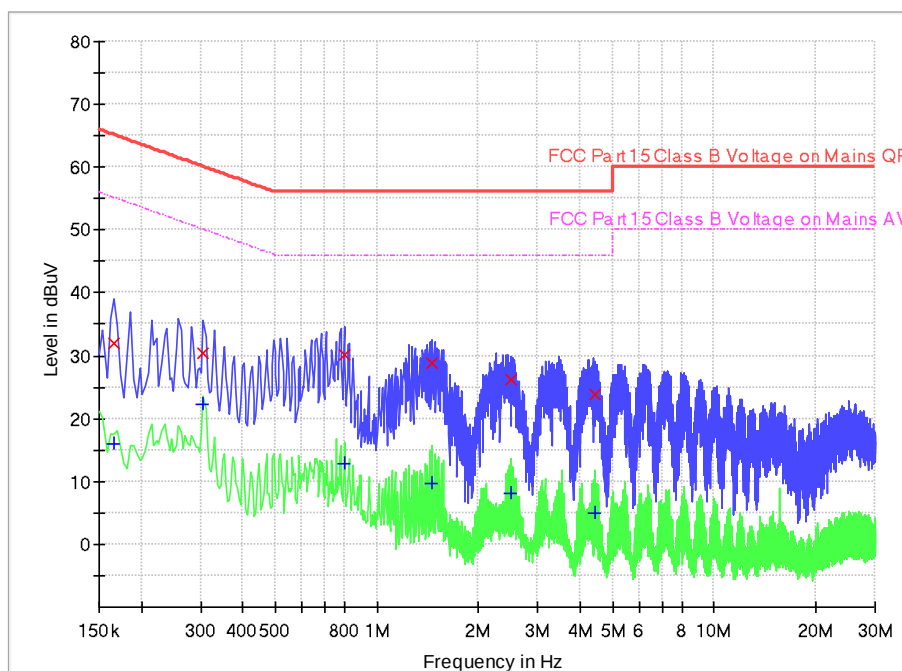
Phase: Neutral

Graphic / Data Table

Conducted Emissions

Pursuant to FCC 15.207: Emissions Requirement

Conducted Emission Test - FCC Part 15



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dB μ)
0.166000	31.9	9.000	N	9.8	33.3	65.2
0.306000	30.3	9.000	N	9.6	29.8	60.1
0.802000	30.2	9.000	N	9.5	25.8	56.0
1.458000	28.9	9.000	N	9.5	27.1	56.0
2.494000	26.2	9.000	N	9.6	29.8	56.0
4.446000	23.8	9.000	N	9.5	32.2	56.0

Limit and Margin AV

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin - CAV (dB)	Limit - CAV (dB μ)
0.166000	16.0	9.000	N	9.8	39.2	55.2
0.306000	22.3	9.000	N	9.6	27.8	50.1
0.802000	12.9	9.000	N	9.5	33.1	46.0
1.458000	9.6	9.000	N	9.5	36.4	46.0
2.494000	8.0	9.000	N	9.6	38.0	46.0
4.446000	5.0	9.000	N	9.5	41.0	46.0

5.0 Equipment Photographs

For electronic filing, the photographs of the tested EUT are saved with filename: external photos.pdf & internal photos.pdf.

6.0 Product Labelling

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

7.0 Technical Specifications

For electronic filing, the block diagram and schematics of the tested EUT are saved with filename: block.pdf and circuit.pdf respectively.

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

Applicant: Robotime C&C (Jiangsu) Co., Ltd.

Date of Test: Nov 28, 2025

Model: CGM01

9.0 Miscellaneous Information

This miscellaneous information includes details of the measured bandedge, 20dB Bandwidth, the test procedure and calculation of factor such as pulse desensitization.

9.1 Bandedge Plot

The test plots are attached as below. From the below plots, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Bandedge compliance is determined by applying marker-delta method, i.e. (Bandedge Plot).

(i) Lower channel 2402.000MHz:

$$\begin{aligned}\text{Peak Resultant field strength} &= \text{Fundamental emissions (peak value)} - \text{delta} \\ &\quad \text{from the bandedge plot} \\ &= 92.8\text{dB}\mu\text{V/m} - 49.8\text{dB} \\ &= 43.0\text{dB}\mu\text{V/m}\end{aligned}$$

$$\begin{aligned}\text{Average Resultant field strength} &= \text{Fundamental emissions (average value)} - \text{delta} \\ &\quad \text{from the bandedge plot} \\ &= 44.2\text{dB}\mu\text{V/m} - 49.8\text{dB} \\ &= -5.6\text{dB}\mu\text{V/m}\end{aligned}$$

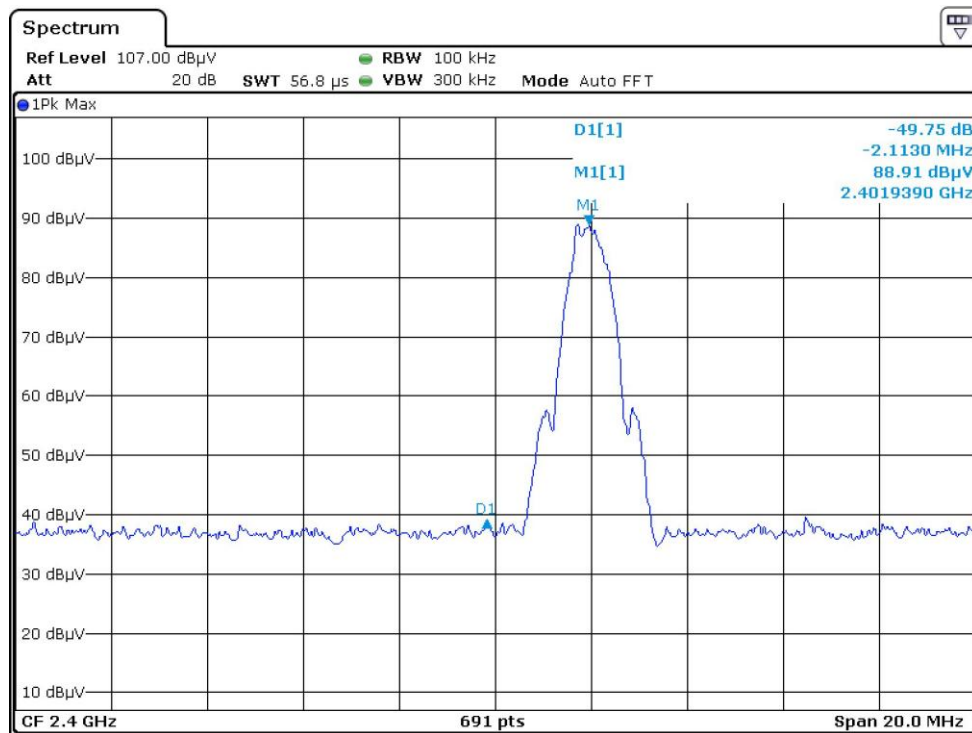
(ii) Upper channel 2480.000MHz:

$$\begin{aligned}\text{Peak Resultant field strength} &= \text{Fundamental emissions (peak value)} - \text{delta} \\ &\quad \text{from the bandedge plot} \\ &= 91.1\text{dB}\mu\text{V/m} - 52.4\text{dB} \\ &= 38.7\text{dB}\mu\text{V/m}\end{aligned}$$

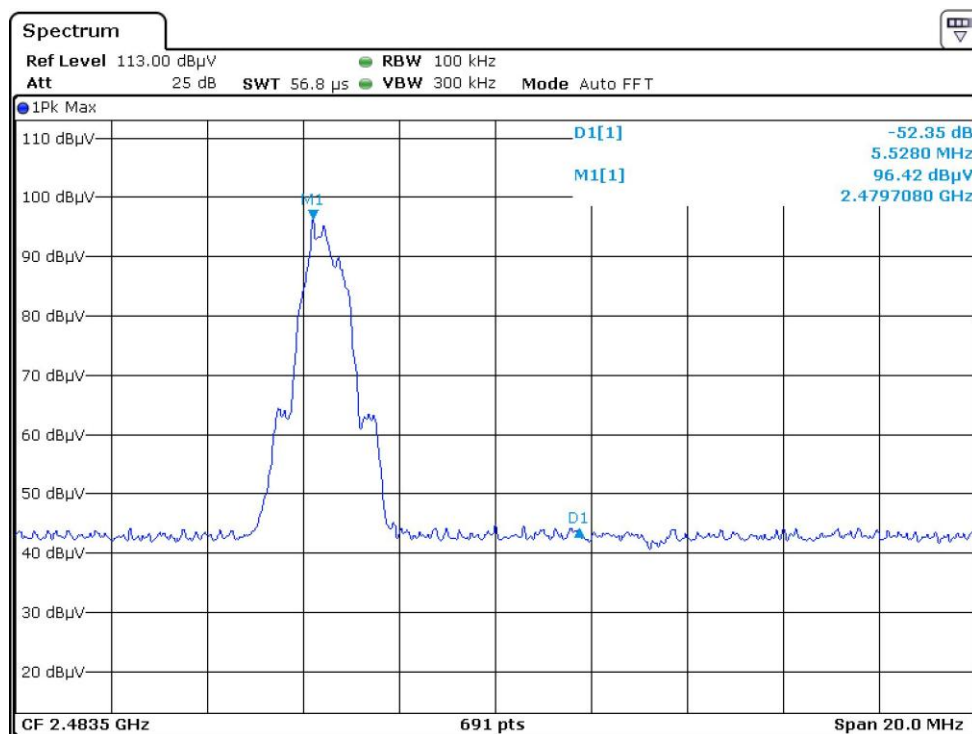
$$\begin{aligned}\text{Average Resultant field strength} &= \text{Fundamental emissions (average value)} - \text{delta} \\ &\quad \text{from the bandedge plot} \\ &= 42.5\text{dB}\mu\text{V/m} - 52.4\text{dB} \\ &= -9.9\text{dB}\mu\text{V/m}\end{aligned}$$

The resultant field strength meets the general radiated emission limit in section 15.209, which does not exceed 74dB μ v/m (Peak Limit) and 54dB μ v/m (Average Limit).

Lowest frequency Channel

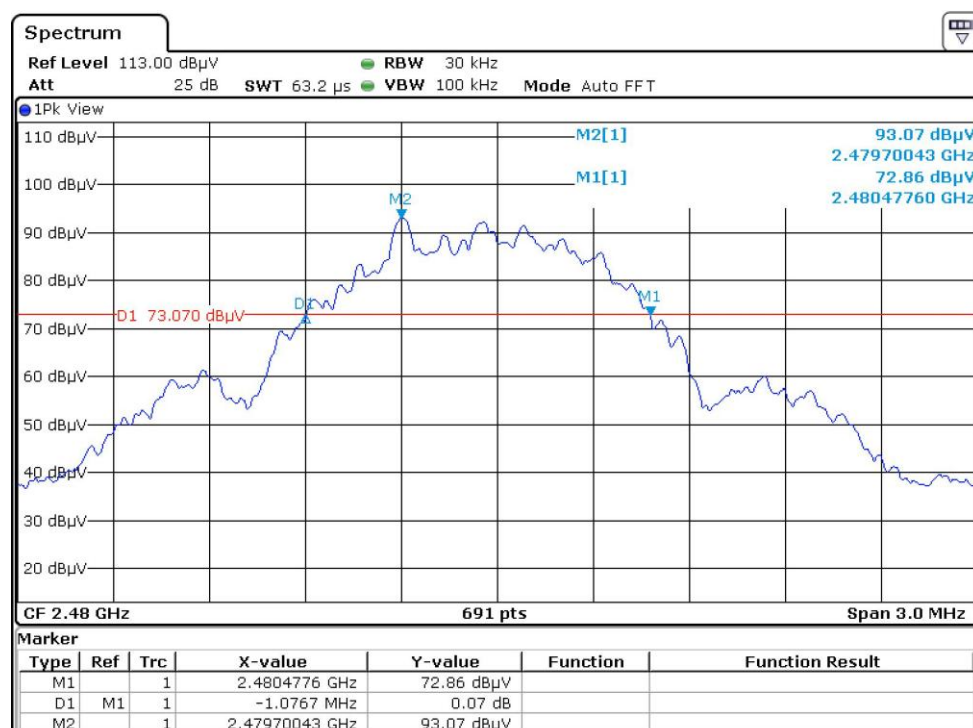
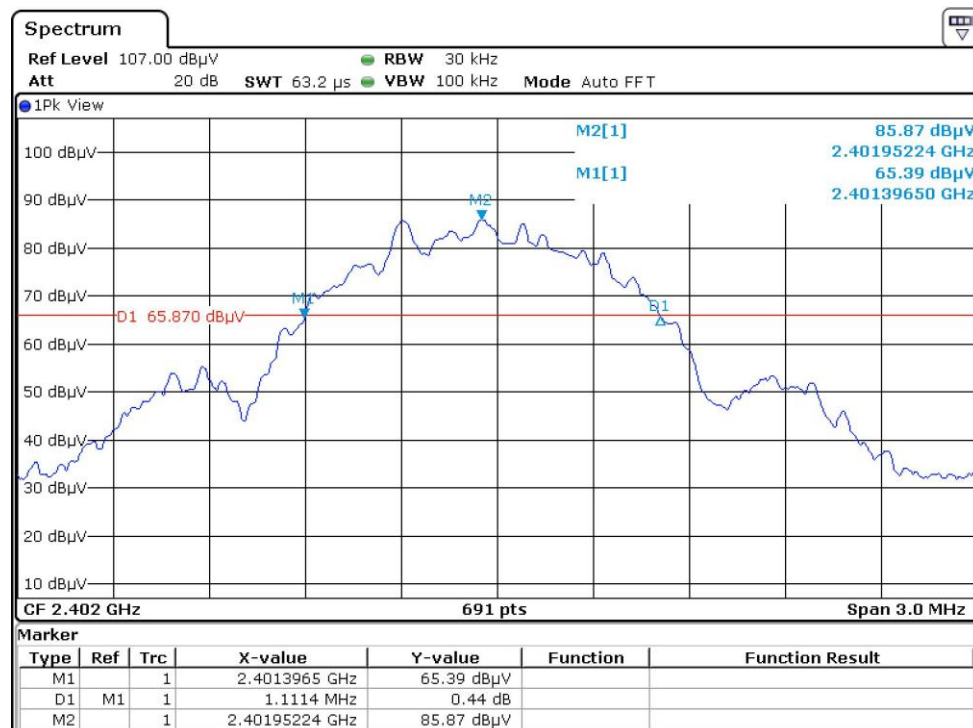


Highest frequency Channel



9.2 20dB bandwidth

Pursuant to FCC part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over excepted variations in temperature and supply voltage were considered. The test plots are reported as below.



9.3 Discussion of Pulse Desensitization

Pulse desensitivity is not applicable for this device. The effective period (T_{eff}) is approximately 0.2899ms for a digital "1" bit, as shown in the plots of Section 9.4. With a resolution bandwidth (3 dB) of 100 kHz, the pulse desensitivity factor was 0 dB.

9.4 Calculation of Average Factor

Averaging factor in dB = $20 \log (\text{duty cycle})$

The specification for output field strengths in accordance with the FCC rules specifies measurements with an average detector. During testing, a spectrum analyzer incorporating a peak detector was used. Therefore, a reduction factor can be applied to the resultant peak signal level and compared to the limit for measurement instrumentation incorporating an average detector.

The time period over which the duty cycle is measured is 100 milliseconds, or the repetition cycle, whichever is a shorter time frame. The worst case (highest percentage on) duty cycle is used for the calculation. The duty cycle is measured by placing the spectrum analyzer in zero scan (receiver mode) and linear mode at maximum bandwidth (3 MHz at 3 dB down) and viewing the resulting time domain signal output from the analyzer on a Tektronix oscilloscope. The oscilloscope is used because of its superior time base and triggering facilities.

The duty cycle is simply the on-time divided by the period:

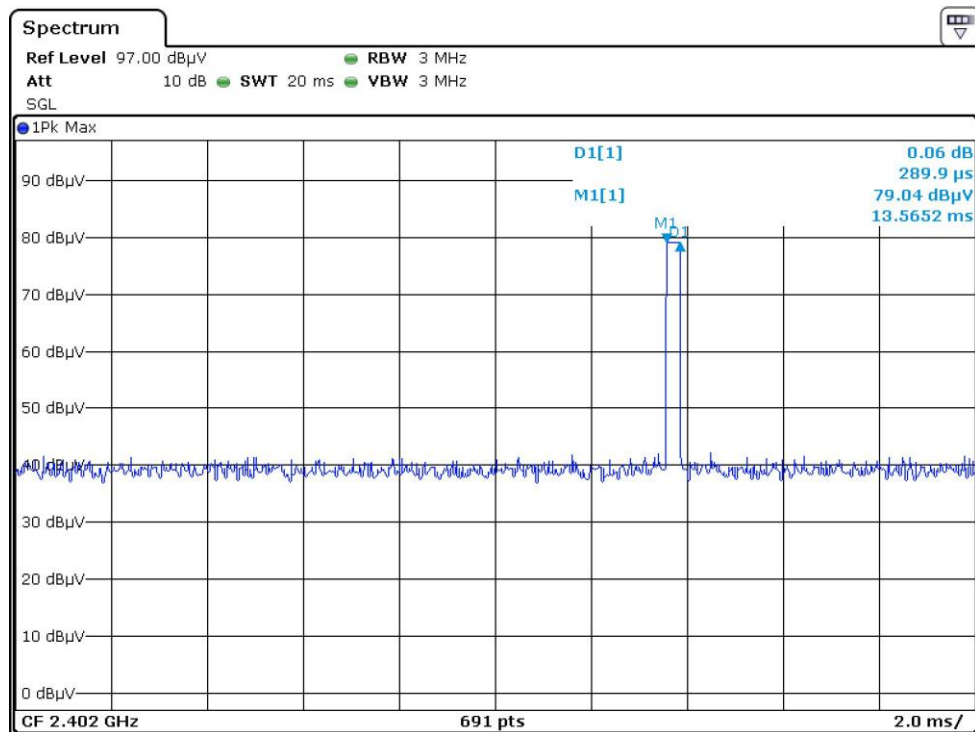
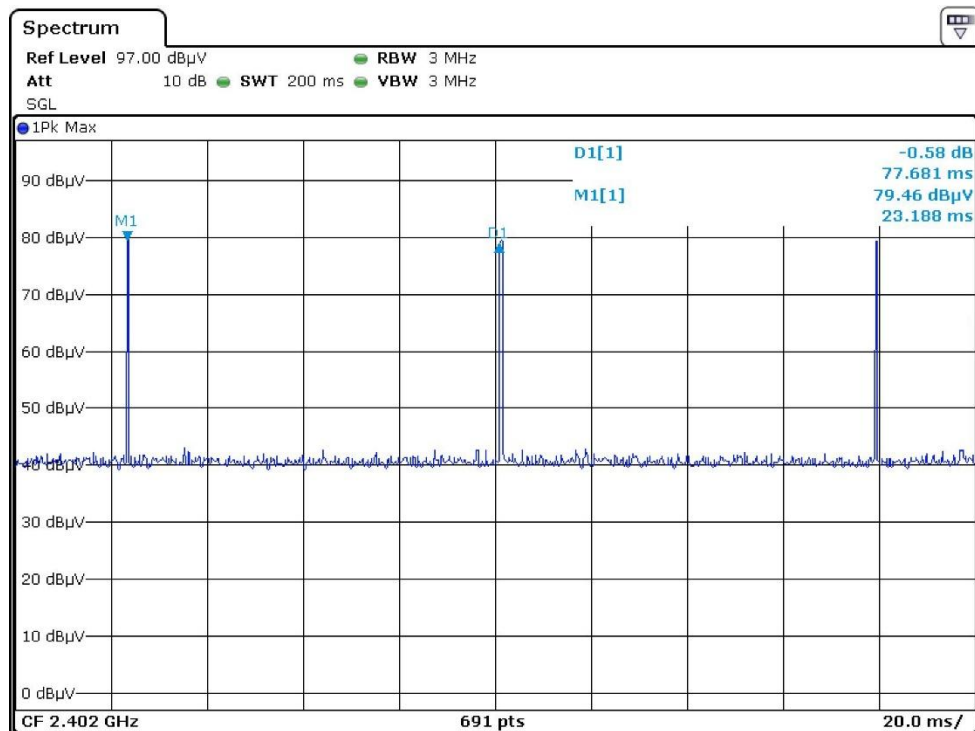
The duration of one cycle = 77.681ms

Effective period of the cycle = 0.2899ms

DC = $0.2899\text{ms} / 77.681\text{ms} = 0.0037$ or 0.37%

Therefore, the averaging factor is found by $20 \log_{10} (0.0037) = -48.6\text{dB}$

The test plots are attached as below.



9.5 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.10 - 2020.

The transmitting equipment under test (EUT) is placed on a wood turntable which is four feet in diameter and approximately 0.1 meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjust through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in section 9.4.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower.

Detector function for conducted emissions is in QP & AV mode and IFBW setting is 9 kHz from the frequency band 150 kHz to 30MHz.

9.5 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.10 - 2020.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. Above 1000 MHz, a resolution bandwidth of 1 MHz is used (RBW 3MHz used for fundamental emission).

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-13	BiConiLog Antenna	ETS	3142E	00217919	29-May-2025	29-May-2028
SZ185-04	EMI Receiver	R & S	ESR7	102466	1-Nov-2025	1-Nov-2026
SZ061-08	Horn Antenna	ETS	3115	00092347	13-Sep-2024	13-Sep-2027
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	5-May-2024	5-May-2027
SZ061-15	Double-Ridged Waveguide Horn Antenna	ETS	3116C-PA	00224718	14-Jun-2024	14-Jun-2027
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	1-Nov-2025	1-Nov-2026
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	21-Apr-2025	21-Apr-2026
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	12-Dec-2021	12-Dec-2026
SZ062-02	RF Cable	RADIAL	RG 213U	--	1-Nov-2025	1-May -2026
SZ062-05	RF Cable	RADIAL	0.04-26.5GHz	--	1-Nov-2025	1-May -2026
SZ062-12	RF Cable	RADIAL	0.04-26.5GHz	--	1-Nov-2025	1-May -2026
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	21-Apr-2025	21-Apr-2026
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	30-Jun-2025	30-Jun-2026
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	25-Apr-2025	25-Apr-2026
SZ188-03	Shielding Room	ETS	RFD-100	4100	20-Dec-2022	20-Dec-2025
SZ062-16	RF Cable	HUBER+SUHNER	CBL2-BN-1m	110127-2231000	30-Jun-2025	30-Jun-2026

***** End of Report*****