



REGULATORY COMPLIANCE TEST REPORT

**FCC Part 15 Subpart C
ISED ICES-003**

Report No.: DIGI114-U1 Rev A

Company: Digi International Inc.

Model Name: HXGW900

REGULATORY COMPLIANCE TEST REPORT

Company: Digi International Inc.

Model Name: HXGW900

To: FCC Part 15 Subpart C & ISED ICES-003

Test Report Serial No.: DIGI114-U1 Rev A

This report supersedes: NONE

Applicant: Digi International Inc.
9350 Excelsior Blvd
Suite 700 Hopkins,
Minnesota 55432
USA.

Issue Date: 6th June 2024

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
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MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

Table of Contents

1. ACCREDITATION, LISTINGS & RECOGNITION	4
1.1. TESTING ACCREDITATION	4
1.2. RECOGNITION	5
1.3. PRODUCT CERTIFICATION	6
2. DOCUMENT HISTORY	7
3. TEST RESULT CERTIFICATE	8
4. REFERENCES AND MEASUREMENT UNCERTAINTY	9
4.1. Normative References	9
4.2. Test and Uncertainty Procedures	10
5. TEST SUMMARY	11
6. PRODUCT DETAILS AND TEST CONFIGURATIONS	12
6.1. Test Program Scope	12
6.2. EUT Details	13
6.3. External A.C/D.C. Power Adaptor	14
6.4. Antenna Details	14
6.5. Cabling and I/O Ports	14
6.6. Test Configurations	14
6.7. Equipment Details	15
6.8. Equipment Modifications	15
6.9. Deviations from the Test Standard	15
7. TEST RESULTS	16
7.1. Radiated Emissions	16

1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2017. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-01.pdf>



Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 28th day of February 2024.



Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2025

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

1.2. RECOGNITION

MiCOM Labs, Inc has widely recognized wireless testing and certification capabilities. In addition to being recognized for Testing and Certification under Phase 2 agreements with Canada, Europe, United Kingdom and Japan, our international recognition includes Conformity Assessment Body designation under Phase 1 agreements with APEC MRA countries. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	MRA Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Test Firm Designation#: US1084
Canada	Industry Canada (ISED)	FCB	APEC MRA 2	US0159 ISED#: 4143A
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	Japan MRA 2	RCB 210
	Japan Approvals Institute for Telecommunication Equipment (JATE)			
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA 2	NB 2280
United Kingdom	Department for Business, Energy & Industrial Strategy (BEIS)	AB	UK MRA 2	AB 2280
Mexico	Instituto Federal de Telecomunicaciones (IFT)	CAB	Mexico MRA 1	US0159
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)			
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)			
Singapore	Infocomm Development Authority (IDA)			
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)			
Vietnam	Ministry of Communication (MIC)			

TCB – Telecommunications Certification Bodies (TCB)

FCB – Foreign Certification Body

CAB – Conformity Assessment Body

NB – Notified Body

AB – Approved Body

MRA – Mutual Recognition Agreement

MRA Phase I - recognition for product testing

MRA Phase II – recognition for both product testing and certification

1.3. PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; <http://www.a2la.org/scopepdf/2381-02.pdf>



Accredited Product Certification Body

A2LA has accredited

MiCOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 Requirements for bodies certifying products, processes and services. This product certification body also meets the A2LA R322 – Specific Requirements – Notified Body Accreditation Requirements and A2LA R308 - Specific Requirements - ISO-IEC 17065 - Telecommunication Certification Body Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.



Presented this 28th day of February 2024.



Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2025

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)
Industry Canada – Certification Body, CAB Identifier – US0159
Europe – Notified Body (NB), NB Identifier - 2280
UK – Approved Body (AB), AB Identifier - 2280
Japan – Recognized Certification Body (RCB), RCB Identifier - 210

2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	23rd April 2024	Draft report for client review.
Rev A	6 th June 2024	Initial release of test report.

In the above table the latest report revision will replace all earlier versions.

3. TEST RESULT CERTIFICATE

Manufacturer: Digi International Inc.
9350 Excelsior Blvd
Suite 700 Hopkins, Minnesota 55432
USA

Tested By: MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
USA

Model: 55002183-01

Telephone: +1 925 462 0304

Equipment Type: LoRaWAN Gateway

Fax: +1 925 462 0306

S/N's: R233100014

Test Date(s): 13th November 2023

Website: www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC Part 15C, ISSED ICES-003	EQUIPMENT COMPLIES

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

1. This document reports conditions under which testing was conducted and the results of testing performed.
2. Details of test methods used have been recorded and kept on file by the laboratory.
3. Test results apply only to the item(s) tested.

Approved & Released for MiCOM Labs, Inc. by:



Graeme Grieve
Quality Manager MiCOM Labs, Inc.

Gordon Hurst
President & CEO MiCOM Labs, Inc.

4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	FCC 47 CFR Part 15	Apr 2020	Radio Frequency Devices; Subpart C – Intentional Radiators
II	ICES-003	Issue 7; Oct 2020	Information Technology Equipment (Including Digital Apparatus)
III	ANSI C63.10	2020	American National Standard for Testing Unlicensed Wireless Devices
IV	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
V	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
VI	M 3003	EDITION 5 Sept 2022	Expression of Uncertainty and Confidence in Measurements
VII	RSS-Gen Issue 5	Amendment 1,2 (Feb 2021)	General Requirements for Compliance of Radio Apparatus. With Amendments 1: March 2019 and 2: Feb 2021.
VIII	FCC 47 CFR Part 2.1033	May 2023	FCC requirements and rules regarding photographs and test setup diagrams.
IX	A2LA	22nd June 2022	R105 - Requirement's When Making Reference to A2LA Accreditation Status

4.2 Test and Uncertainty Procedures

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

5. TEST SUMMARY

List of Measurements

Test Header	Result	Data Link
Emissions	Complies	-
(1) Radiated Emissions	Complies	-
(i) TX Spurious & Restricted Band Emissions	Complies	View Data

6. PRODUCT DETAILS AND TEST CONFIGURATIONS

6.1. Test Program Scope

A Digi HX15 LoRaWAN Gateway was used as a representative host device containing the following 2 pre-certified radio modules;-

- 1) LoRa radio manufactured by Digi International Inc. Model HXGW900: FCC ID 2ANQY-HXGW900.
- 2) Quectel Wireless LTE module model EC21-A, EC21-A MINIPCIE: FCC ID XMR201606EC21A.

The scope of this test was to perform radiated emissions testing with both radio modules operating simultaneously to verify compliance with the following standards;-

FCC CFR 47 Part 15 Subpart C

Radio Frequency Devices; Subpart C – Intentional Radiators

ISED ICES-003

Information Technology Equipment (Including Digital Apparatus)

6.2. EUT Details

Detail	Description
Purpose:	Test of the Digi International Inc. HXGW900 for compliance to FCC CFR 47 Part 15 Subpart C and ISED ICES-003.
Applicant:	Digi International Inc. 9350 Excelsior Blvd Suite 700 Hopkins, Minnesota 55432 USA
Manufacturer:	Digi International Inc.
Test Laboratory:	MiCOM Labs, Inc. 575 Boulder Court, Pleasanton, California 94566, USA
Date EUT received:	1 st November 2023
Dates of test (from - to):	13 th November 2023
No of Units Tested:	One
Type of Equipment:	LoRaWAN Gateway
Model Name:	HXGW900
Model No.:	55002183-01
Equipment Secondary Function(s):	None
Construction/Location for Use:	Indoor
Software/Firmware Release:	Not Provided
Hardware Release:	55002186-01
Rated Input Voltage and Current:	5VDC 1A
Temperature:	Nominal: 20 °C Max: +80 °C Min: -20 °C
Equipment Dimensions:	4" (W) x 1" (H) x 6" (L)
Weight:	0.5 (lb)

6.3. External A.C/D.C. Power Adaptor

The Digi International Inc. HXGW900 is powered via AC/DC 5V Power Adapter.

AC/DC Adapter
CUI Inc. AC-DC Adapter Model: SM10-5 IP: 100-240 V _{AC} 50/60 Hz, 0.3 A OP: 5V _{DC} 2.0 A S/N:20234407

6.4. Antenna Details

No antennas were tested as part of this test program.

6.5. Cabling and I/O Ports

The following is a description of the cable and input / output ports available on the EUT;

Port Type	Max Cable Length	# of Ports	Screened	Conn Type	Data Type	Environment
dc Jack	<3m	1	No	--	--	Indoors
RF LTE DIV	<3m	1	Yes	SMA	Digital	Indoors
RF	<3m	1	Yes	SMA	Digital	Indoors
RF LTE Main	<3m	1	Yes	SMA	Digital	Indoors
Ethernet	>3m	1	No	RJ45	Digital	Indoors

6.6. Test Configurations

Below 1 GHz			Above 1 GHz		
Operational Mode(s)	Data Rate with Highest Power	Channel Frequency	Operational Mode(s)	Data Rate with Highest Power	Channel Frequency
LoRa	250 kbp/s	902.3	LoRa	250 kbp/s	902.3
LTE Band 1	Full RB	1950.0			
			LTE Band 5	Full RB	836.5

Note: Full Resource Blocks (RB)

6.7. Equipment Details

The following is a description of supporting equipment used during the test program.

Type (EUT/ Support)	Equipment Description (Including Brand Name)	Mfr.	Model No.	Serial No.
EUT	LoRaWAN Gateway	Digi International Inc.	55002183-01	R233100014

6.8. Equipment Modifications

The following modifications were required to bring the equipment into compliance:

1. None

6.9. Deviations from the Test Standard

No deviations from the test standard were required in order to complete the test program.

7. TEST RESULTS

7.1. Radiated Emissions

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions (Restricted Bands)			
Standard:	FCC CFR 47 Part 15 Subpart C ISCED ICES-003	Ambient Temp. (°C):	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	Rel. Humidity (%):	32 - 45
Standard Section(s):	15.205, 15.209, 15.247, Part 22, 24E, 27C ISCED ICES-003 Sect 1.4	Pressure (mBars):	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions (Restricted Bands)

Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned. Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Radiated Spurious and Band-Edge Measurement were per the Radiated Test Set-up specified in this document.

Orientation testing of the EUT was performed and the EUT standing upright was determined to be the worst case for Spurious and Band Edge emissions with the integral antennas attached.

Limits for Restricted Bands

Peak emission: 74 dBuV/m

Average emission: 54 dBuV/m

Average Measurements were performed following ANSI C63.10 section 11.12.2.5.2 Trace averaging across on and off times of the EUT transmissions followed by a duty cycle correction.

RMS detector used, DCCF of $10\log(1/D)$ where D is the Duty Cycle.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

$$FS = R + AF + CORR - FO$$

where:

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss

AG = Amplifier Gain

FO = Distance Falloff Factor

NFL = Notch Filter Loss or Waveguide Loss

Example:

Given receiver input reading of 51.5 dBmV; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength (FS) of the measured emission is:

$$FS = 51.5 + 8.5 + 1.3 - 26.0 + 1 = 36.3 \text{ dBmV/m}$$

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:

$$\text{Level (dBmV/m)} = 20 * \log(\text{level (mV/m)})$$

$$40 \text{ dBmV/m} = 100 \text{ mV/m}$$

$$48 \text{ dBmV/m} = 250 \text{ mV/m}$$

Restricted Bands of Operation (15.205)

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band			
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

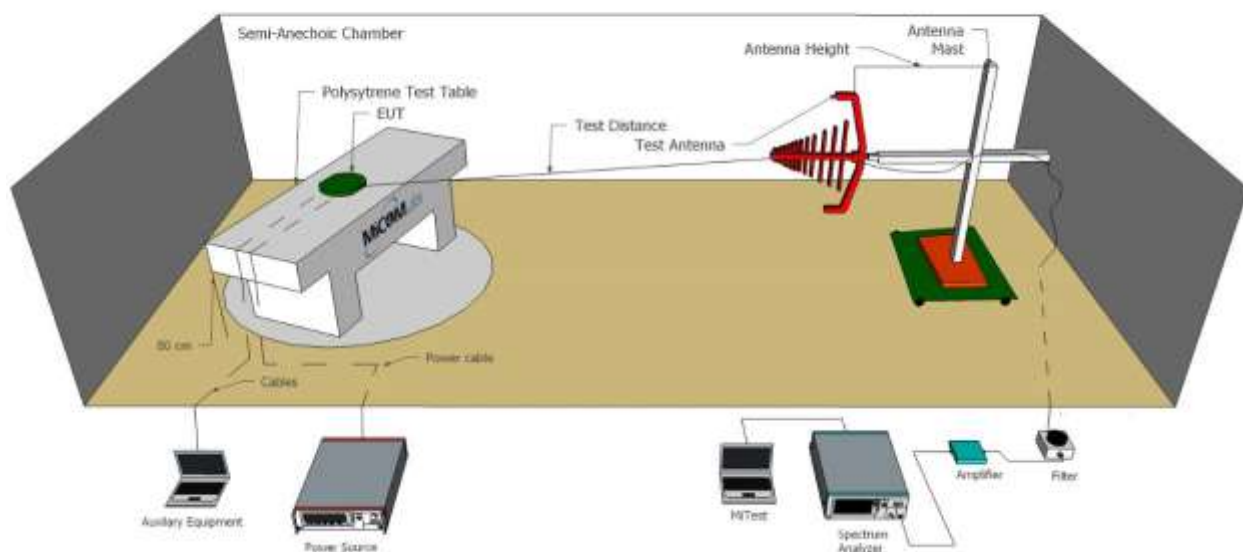
- (1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.
- (2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.
- (3) Cable locating equipment operated pursuant to §15.213.
- (4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.
- (5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.
- (6) Transmitters operating under the provisions of subparts D or F of this part.
- (7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.
- (8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).
- (9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

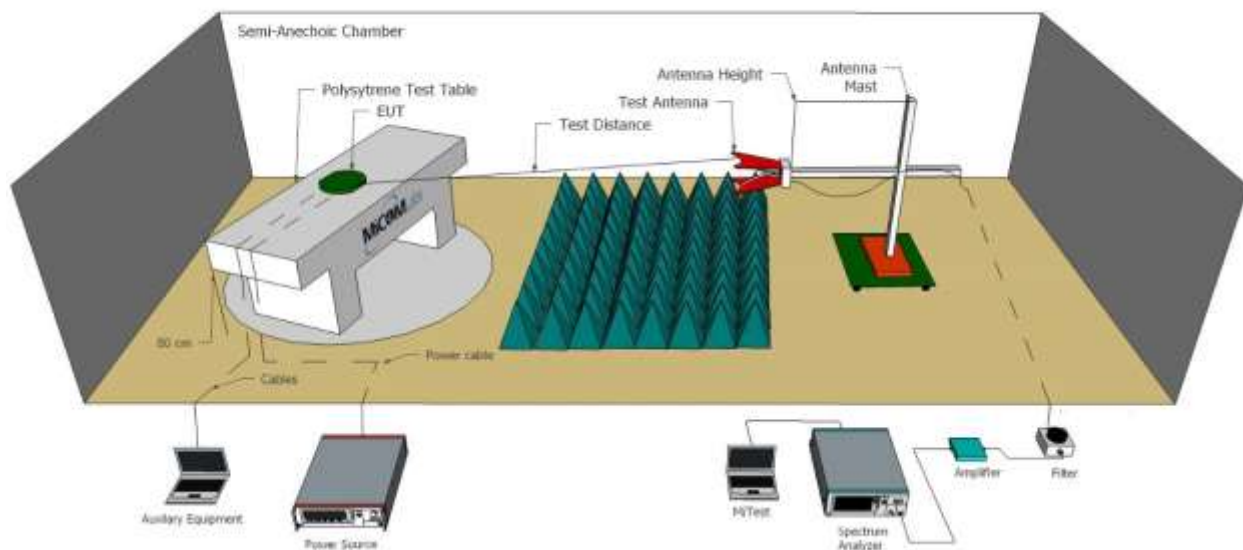
Test Equipment Utilized

Test Setup for Radiated Emissions for above and below 1 GHz

Radiated Emissions Below 1GHz Test Setup



Radiated Emissions Above 1GHz Test Setup



Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CU101	04R08507	Not Required
298	3M Radiated Emissions Chamber Maintenance Check	MiCOM	3M Chamber	298	11 May 2024
330	Variac 0-280 Vac	Staco Energy Co	3PN1020B	0546	Cal when used
336	Active loop Ant 10kHz to 30 MHz	EMCO	EMCO 6502	00060498	7 Dec 2024
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	5 Dec 2024
341	900MHz Notch Filter	EWT	EWT-14-0199	H1	13 Sep 2024
373	26III RMS Multimeter	Fluke	Fluke 26 series III	76080720	29 Sep 2024
377	Band Rejection Filter 5150 to 5880MHz	Microtronics	BRM50716	034	13 Sep 2024
396	2.4 GHz Notch Filter	Microtronics	BRM50701	001	13 Sep 2024
397	Amp 10 - 2500MHz	MiCOM Labs	Amp 10 - 2500 MHz	NA	27 Jul 2024
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	7 Dec 2024
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	2 Nov 2024
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
414	DC Power Supply 0-60V	HP	6274	1029A01285	Cal when used
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
416	Gigabit ethernet filter	ETS-Lingren	Gigafoil 260366	None	Not Required
447	MiTest Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0	447	Not Required
462	Schwarzbeck cable from Antenna to Amplifier.	Schwarzbeck	AK 9513	462	18 Sep 2024
463	Schwarzbeck cable from Amplifier to Bulkhead.	Schwarzbeck	AK 9513	463	18 Sep 2024
464	Schwarzbeck cable from Bulkhead to Receiver	Schwarzbeck	AK 9513	464	16 Sep 2024
480	Cable - Bulkhead to Amp	SRC Haverhill	157-3050360	480	18 Sep 2024
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-3050787	481	18 Sep 2024
510	Barometer/Thermometer	Digi Sense	68000-49	170871375	4 Jan 2026
554	Precision SMA Cable	Fairview Microwave	SCE18060101-400CM	554	18 Sep 2024
555	Rhode & Schwarz Receiver (Firmware Version : 3.10 SP1)	Rhode & Schwarz	ESW 44	101893	28 Jun 2024
87	Uninterruptible Power Supply	Falcon Electric	ED2000-1/2LC	F3471 02/01	Cal when used
CC05	Confidence Check	MiCOM	CC05	None	11 May 2024

30-1000 MHz

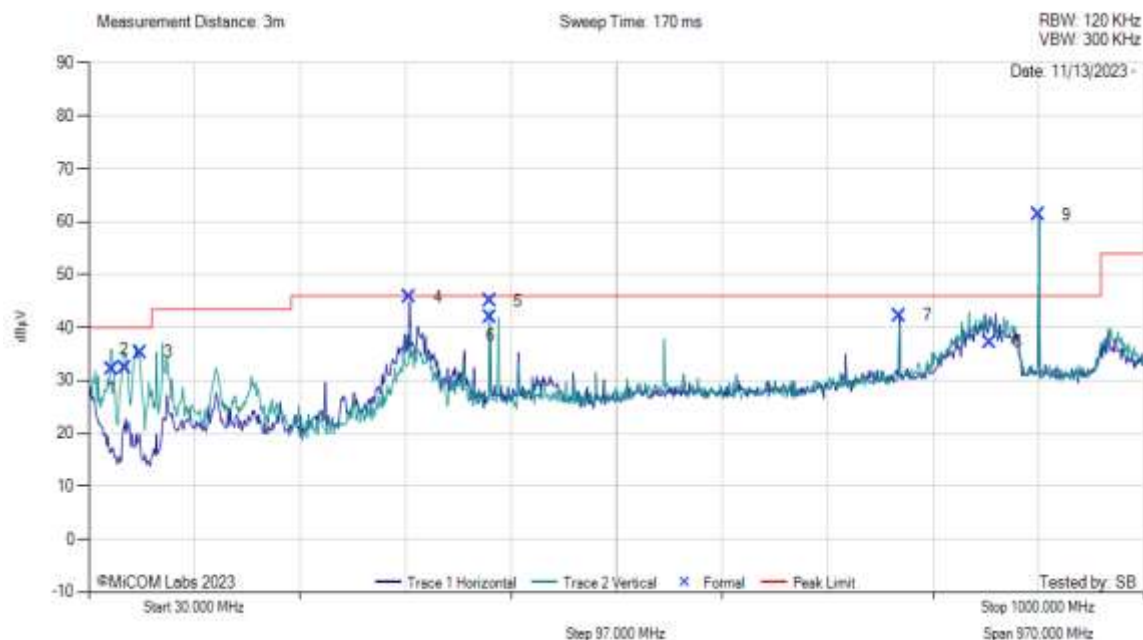
Equipment Configuration for 30 MHz To 1 GHz

Antenna:	Integral	Variant:	LORA / LTE
Antenna Gain (dBi):	Not Applicable	Modulation:	CSS / QPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.3 MHz / 1950.0 MHz	Data Rate:	--
Power Setting:	Max	Tested By:	SB

Test Measurement Results



30 MHz to 1 GHz



30.00 - 1000.00 MHz

Num	Frequency MHz	Raw dBμV	Cable Loss dB	AF dB/m	Level dBμV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBμV/m	Margin dB	Pass /Fail
1	51.79	44.63	3.73	-16.35	32.00	MaxQP	Vertical	104	270	40.0	-8.0	Pass
2	62.75	45.98	3.83	-17.42	32.40	MaxQP	Vertical	100	59	40.0	-7.6	Pass
3	77.21	48.71	3.94	-17.37	35.28	MaxQP	Vertical	132	214	40.0	-4.7	Pass
4	325.01	52.03	5.12	-11.36	45.79	MaxQP	Horizontal	99	185	46.0	-0.2	Pass
5	398.99	48.98	5.35	-9.26	45.07	MaxQP	Horizontal	102	342	46.0	-0.9	Pass
6	398.99	45.96	5.35	-9.26	42.05	MaxQP	Vertical	117	298	46.0	-4.0	Pass
7	775.02	39.64	6.58	-3.92	42.30	MaxQP	Horizontal	106	331	46.0	-3.7	Pass
8	857.70	33.70	6.79	-3.30	37.19	MaxQP	Horizontal	100	38	46.0	-8.8	Pass
9	903.00	56.97	6.93	27.93	61.28	Fundamental	Horizontal	99	30	--	--	Pass

Test Notes: 120VAC; LTE Radio & LORA radios active with continuous transmission. PSU:SM10-5 (3321HB) 100-240VAC CUI INC

1-18 GHz

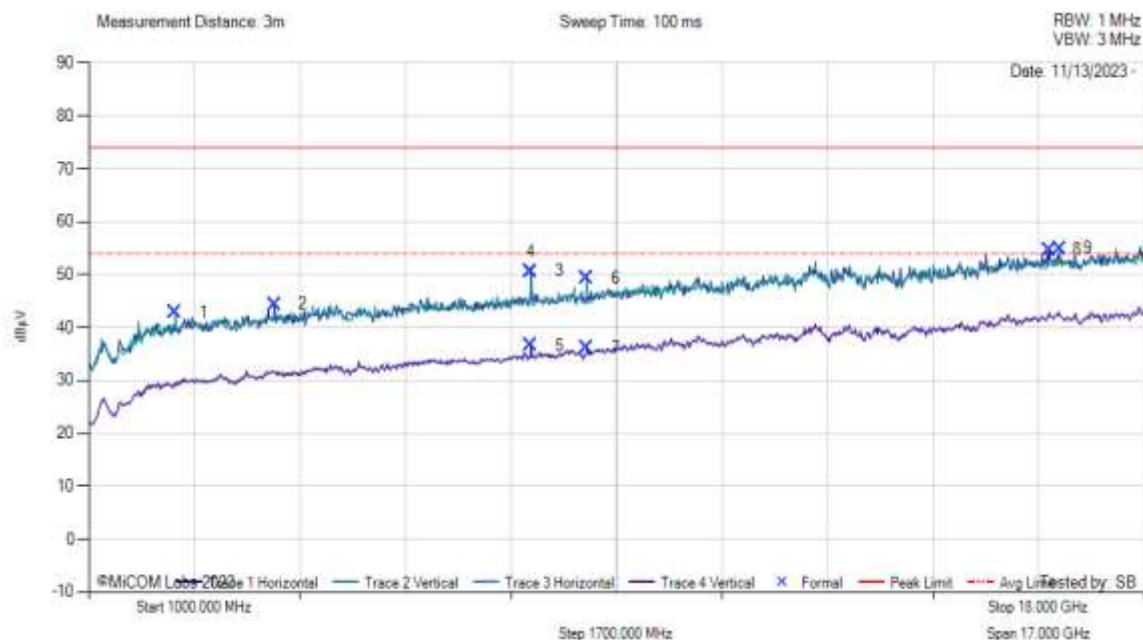
Equipment Configuration for 1 GHz To 18 GHz

Antenna:	Integral	Variant:	LORA / LTE
Antenna Gain (dBi):	Not Applicable	Modulation:	CSS / QPSK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	902.3 MHz / 836.5 MHz	Data Rate:	--
Power Setting:	Max	Tested By:	SB

Test Measurement Results



1 GHz to 18 GHz



1000.00 - 18000.00 MHz

Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	2394.00	53.17	1.96	32.08	42.89	MaxP	Vertical	100	299	74.0	-31.1	Pass
2	3992.00	53.43	2.52	33.94	44.38	MaxP	Horizontal	149	120	74.0	-29.6	Pass
3	8123.00	54.83	3.88	35.80	50.64	MaxP	Vertical	100	59	74.0	-23.4	Pass
4	8123.00	54.82	3.88	35.80	50.63	MaxP	Horizontal	100	30	74.0	-23.4	Pass
5	8123.00	40.88	3.88	35.80	36.69	AVG	Horizontal	100	30	54.0	-17.3	Pass
6	9024.00	53.24	4.13	35.90	49.36	MaxP	Vertical	100	179	74.0	-24.6	Pass
7	9024.00	40.06	4.13	35.90	36.19	AVG	Vertical	100	119	54.0	-17.8	Pass
8	16470.00	48.85	6.35	41.19	54.74	MaxP	Horizontal	199	0	74.0	-19.3	Pass
9	16640.00	49.84	6.08	41.14	54.92	MaxP	Vertical	100	269	74.0	-19.1	Pass

Test Notes: 120VAC; LTE Radio & LORA radios active with continuous transmission. PSU:SM10-5 (3321HB) 100-240VAC CUI INC



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