



REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 Part 15 Subpart C 15.249 & ISED 210

Report No.: ITRO67-U44B Rev A

Company: Itron, Inc.

Model Name: ERW-1350-001

REGULATORY COMPLIANCE TEST REPORT

Company Name: Itron, Inc.

Model Name: ERW-1350-001

To: FCC CFR 47 Part 15 Subpart C 15.249 & ISED 210

Test Report Serial No.: ITRO67-U44B Rev A

This report supersedes: NONE

Applicant: Itron, Inc
2401 North State St.
Waseca,
Minnesota 56093
United States of America

Issue Date: 4th September 2024

This Test Report is Issued Under the Authority of:

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MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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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 McInturf, 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 is widely recognized for its wireless testing and certification capabilities. In addition to being recognized for Testing and Certification under Phase 2 Mutual Recognition Agreements (MRA) with Canada, Europe, United Kingdom and Japan, our international recognition includes Conformity Assessment Body (CAB) designation status under agreements with Asia Pacific (APEC) MRA Phase 1 countries giving acceptance of MiCOM Labs test reports. 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>



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	9th August 2024	Draft report for client review.
Draft 2	21 st August 2024	Updated with client comments. Additional draft for review.
Rev A	4 th September 2024	Initial release

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

3. TEST RESULT CERTIFICATE

Manufacturer: Itron, Inc. 313 North Hwy 11. West Union, South Carolina 29696-2706 USA	Tested By: MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Model: ERW-1350-001	Telephone: +1 925 462 0304
Type Of Equipment: RF-based meter data collection solution	Fax: +1 925 462 0306
S/N's: 2935662-23	
Test Date(s): 2 nd – 3 rd , 8 th & 12 th July 2024	Website: www.micomlabs.com

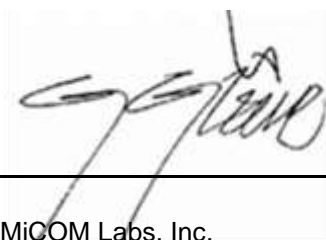
STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15 Subpart C 15.249 & ISED RSS-210	EQUIPMENT COMPLIES

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.

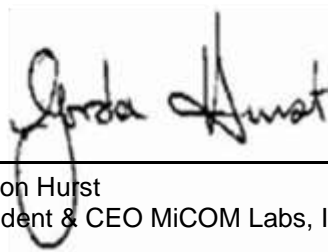
Notes:

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	KDB 558074 D01 v05r02	Apr 2019	Guidance for Compliance Measurements on Digital Transmission System, Frequency Hopping Spread Spectrum System, and Hybrid System Devices operating under section 15.247 of the FCC Rules.
II	A2LA	16th April 2024	R105 - Requirement's When Making Reference to A2LA Accreditation Status
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	FCC 47 CFR Part 15, Subpart B	Nov 2017	Title 47: Telecommunication PART 15—RADIO FREQUENCY DEVICES, SubPart B; Unintentional Radiators
VII	FCC 47 CFR Part 15.249	Apr 2020	Radio Frequency Devices; Subpart C – Intentional Radiators
VIII	FCC 47 CFR Part 15.247	Apr 2020	Radio Frequency Devices; Subpart C – Intentional Radiators
IX	FCC Public Notice DA 00-705	Mar 2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems
X	ICES-003	Issue 7; Oct 2020	Information Technology Equipment (Including Digital Apparatus)
XI	UKAS M3003	Edition 6 March 2024	The Expression of Uncertainty and Confidence in Measurements
XII	FCC 47 CFR Part 2.1033	Feb 2023	FCC requirements and rules regarding photographs and test setup diagrams.
XIII	UKAS LAB 12	Edition 4 April 2022	The Expression of Uncertainty in Testing
XIV	RSS-247 Issue 3	Aug 2023	Digital Transmission Systems (DTSSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices
XV	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.
XVI	RSS-210 Issue 11	June 2024	This Radio Standards Specification (RSS) sets out the certification requirements for several types of license-exempt radio apparatus. Radio apparatus covered by this standard are primarily low-power and are mainly used for consumer or commercial purposes.

4.2. Test and Uncertainty Procedure

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. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Itron, Inc. 100W - 500W RMT & Pit Module (ERW-1350-001) to FCC CFR 47 Part 15 Subpart C 15.249 & ISSED 210
Applicant:	Itron, Inc. 2401 North State St. Waseca Minnesota 56093 United States of America
Manufacturer:	Itron, Inc.
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	ITRO67-U44B
Date EUT received:	13 th June 2024
Standard(s) applied:	FCC CFR 47 Part 15 Subpart C 15.249 & ISSED 210
Dates of test (from - to):	2 nd – 3 rd , 8 th & 12 th July 2024
No of Units Tested:	1
Product Family Name:	100W – 500W RMT & Pit Module
Model(s):	ERW-1350-001, ERW-1650-001, ERW-1650-004, ERW-1650-008, ERW-1650-009
Location for use:	Indoors and Outdoors
Declared Frequency Range(s):	902 - 928 MHz;
Type of Modulation:	OOK
EUT Modes of Operation:	902 - 928 MHz: OOK – PL0
Declared Nominal Output Power (dBm):	- 7 dBm
Rated Input Voltage and Current:	6V _{DC} , 0.5A
Operating Temperature Range:	-40°C to +70°C
ITU Emission Designator:	OOK 127KL1D
Equipment Dimensions:	3.2 x 4.8 x 2.3 inches
Weight:	9.6 oz
Hardware Rev:	3
Software Rev:	CSL 10.0.15.0

5.2. Scope Of Test Program

Itron, Inc. ERW-1350-001

The scope of the test program was to test the Itron, Inc. 100W - 500W RMT & Pit Module (ERW-1350-001) configurations in the frequency ranges 902 - 928 MHz; for compliance against the following specification:

FCC CFR 47 Part 15 Subpart C 15.249

Radio Frequency Devices; Subpart C – Intentional Radiators

ISED RSS-210

This Radio Standards Specification (RSS) sets out the certification requirements for several types of license-exempt radio apparatus. Radio apparatus covered by this standard are primarily low-power and are mainly used for consumer or commercial purposes

The Itron, Inc. ERW-1350-001 is also marketed as the following Model Numbers per Manufacturer Declaration of Similarity (refer to Section 10 of this report).

ERW-1650-001
ERW-1650-004
ERW-1650-008
ERW-1650-009

5.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description	Mfr.	Model No.	Serial No.
EUT	RF-based meter data collection solution	Itron, Inc.	ERW-1350-001	2935662-23
Laptop Computer	Support	Lenovo	ThinkPad	N/A

5.4. Antenna Details

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
Integral	Itron, Inc.	Integral	PCB	2.23	-	360	-	902-928
External	Itron, Inc.	CFG-0900-003	¼ Wave Inverted F Antenna	4		360		910-940

BF Gain - Beamforming Gain
 Dir BW - Directional BeamWidth
 X-Pol - Cross Polarization

5.5. Cabling and I/O Ports

- NONE

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s)	Data Rate with Highest Power kBit/s	Channel Frequency (MHz)		
		Low	Mid	High
902 - 928 MHz				
OOK – PL0	16.38	908.00	916.00	923.8

5.7. Equipment Modifications

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

1. NONE

5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:

1. NONE

6. TEST SUMMARY

List of Measurements

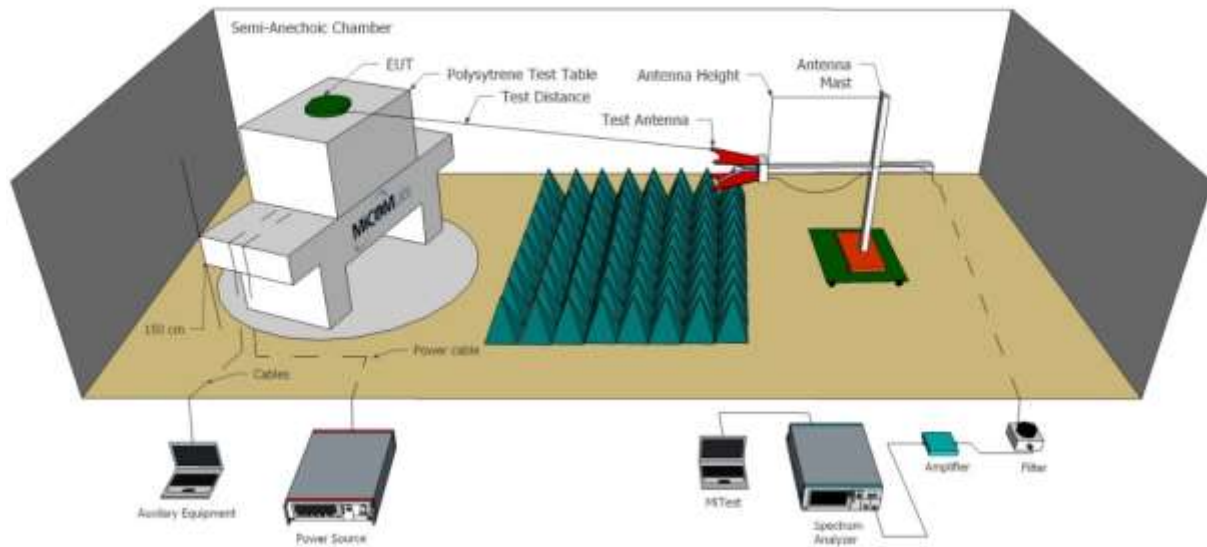
Test Header	Result	Data Link
Emissions	Complies	-
(1) Radiated Emissions	Complies	-
(i) Field Strength	Complies	View Data
(ii) TX Spurious Emissions	Complies	View Data

7. TEST EQUIPMENT CONFIGURATION(S)

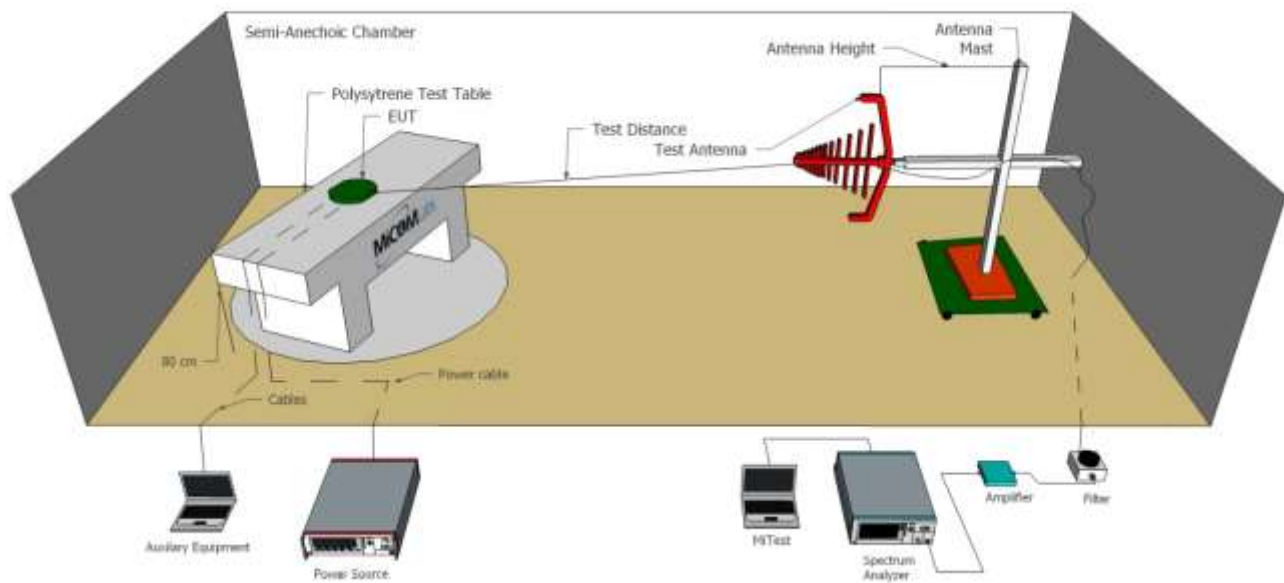
7.1. Radiated

Radiated emissions above and below 1GHz.

Radiated Emissions Above 1GHz Test Setup



Radiated Emissions Below 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
266	10 Hz to 50GHz MXA Signal Analyzer	Keysight	N9020B	MY60110791	25 Jul 2025
285	DC Power Supply	Keysight	E36155A	MY63000156	4 Dec 2024
298	3M Radiated Emissions Chamber Maintenance Check	MiCOM	3M Chamber	298	11 Oct 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
346	1.6 TO 10GHz High Pass Filter	EWT	EWT-57-0112	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 Oct 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
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
465	Low Pass Filter DC-	Mini-Circuits	NLP-1200+	VUU01901402	14 Sep 2024

	1000 MHz				
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 2025
578	DC Power Supply 0 - 60 V, 0 - 15 A	HP	6274B	2537A-08192	Not Required
87	Uninterruptible Power Supply	Falcon Electric	ED2000-1/2LC	F3471 02/01	Cal when used
CC05	Confidence Check	MiCOM	CC05	None	11 Nov 2024

8. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by [MiTest](#). [MiTest](#) is an automated test system developed by MiCOM Labs. [MiTest](#) is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.



The MiCOM Labs "[MiTest](#)" Automated Test System" (Patent Pending)

9. TEST RESULTS

9.1. Radiated Emissions

9.1.1. Radiated Emissions

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).

15.249 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz:

- (a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:
- (b) Fixed, point-to-point operation as referred to in this paragraph shall be limited to systems employing a fixed transmitter transmitting to a fixed remote location. Point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information are not allowed. Fixed, point-to-point operation is permitted in the 24.05-24.25 GHz band subject to the following conditions:
- (c) Field strength limits are specified at a distance of 3 meters.
- (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation. (1) The field strength of emissions in this band shall not exceed 2500 millivolts/meter. (2) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.001\%$ 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.
- (e) As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

Fundamental frequency	Field strength of fundamental (dBuV/m)	Field strength of harmonics (dBuV/m)
902-928 MHz	94	54

9.1.1.1. Field Strength

9.1.1.1.1. Internal Antenna

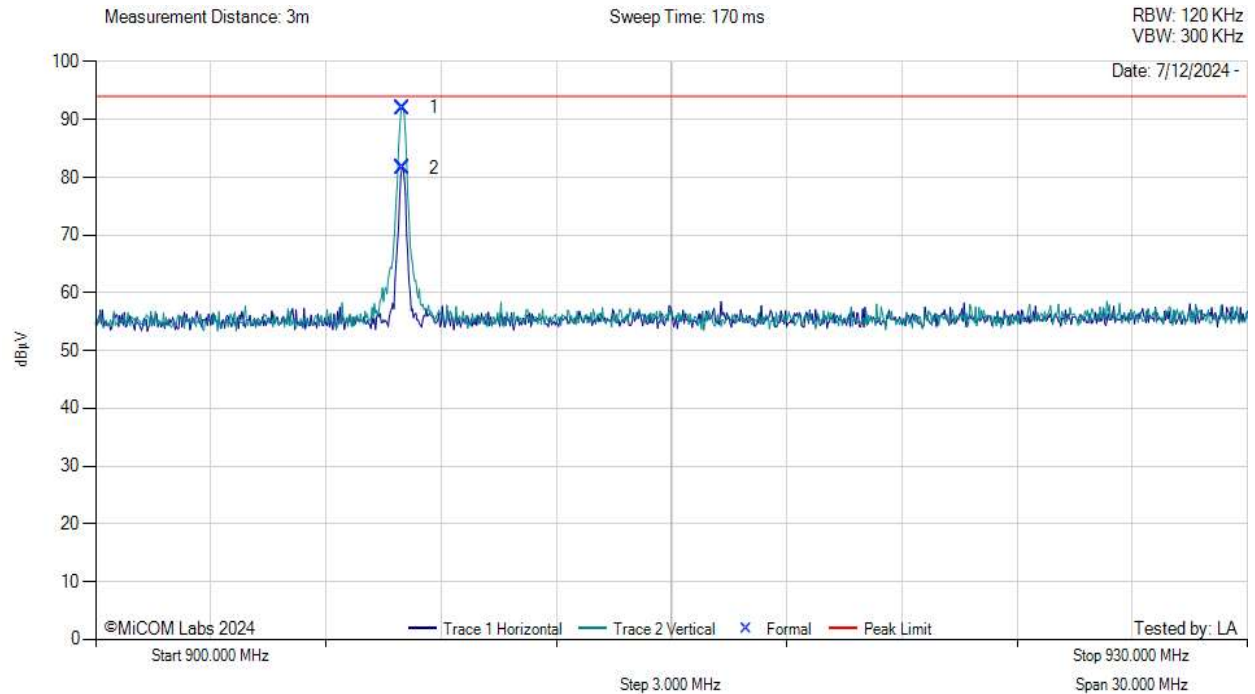
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	Internal	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.0	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	908.01	58.41	6.93	28.73	92.07	MaxP	Vertical	149	240	94.0	-1.9	Pass
2	908.01	47.96	6.93	28.73	81.62	MaxP	Horizontal	149	60	94.0	-12.4	Pass

Test Notes: SN: 2935662-23, FS OOK 908 MHz, 16.384kbps, Power Level 0

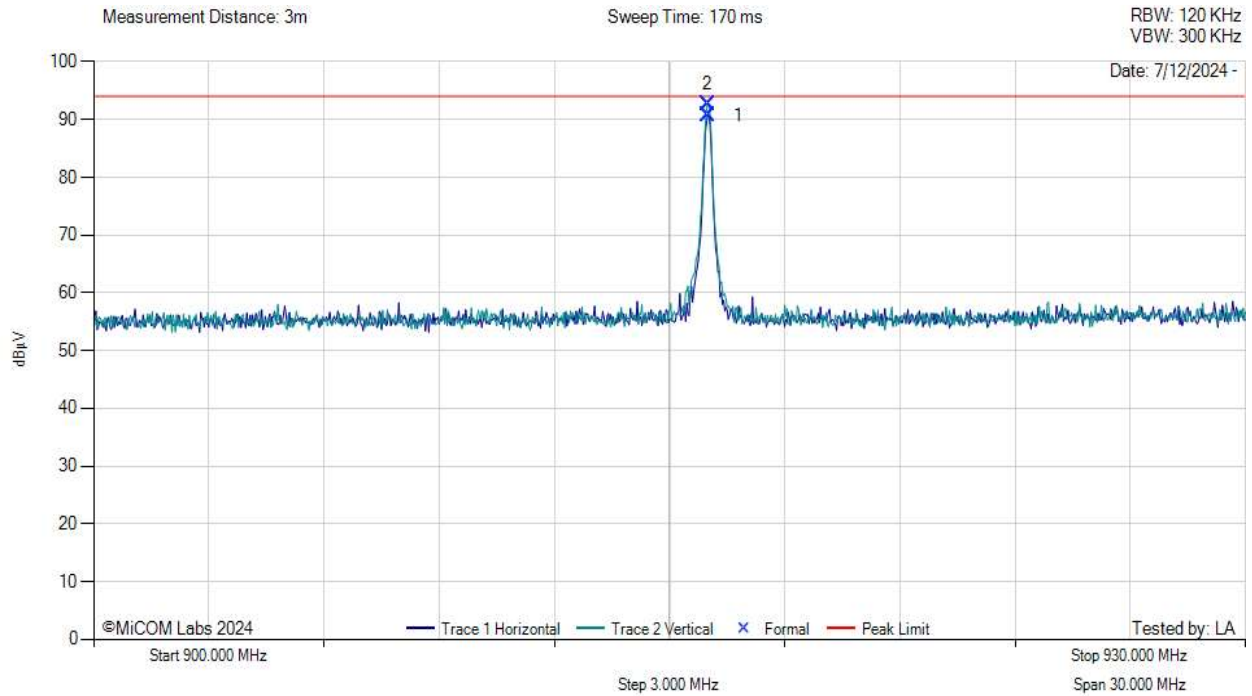
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	Internal	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.0	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	915.99	56.80	6.98	28.82	90.72	MaxP	Horizontal	148	-1	94.0	-3.3	Pass
2	915.99	58.87	6.98	28.82	92.67	MaxP	Vertical	148	239	94.0	-1.3	Pass

Test Notes: SN: 2935662-23, FS OOK 916 MHz, 16.384kbps, Power Level 0

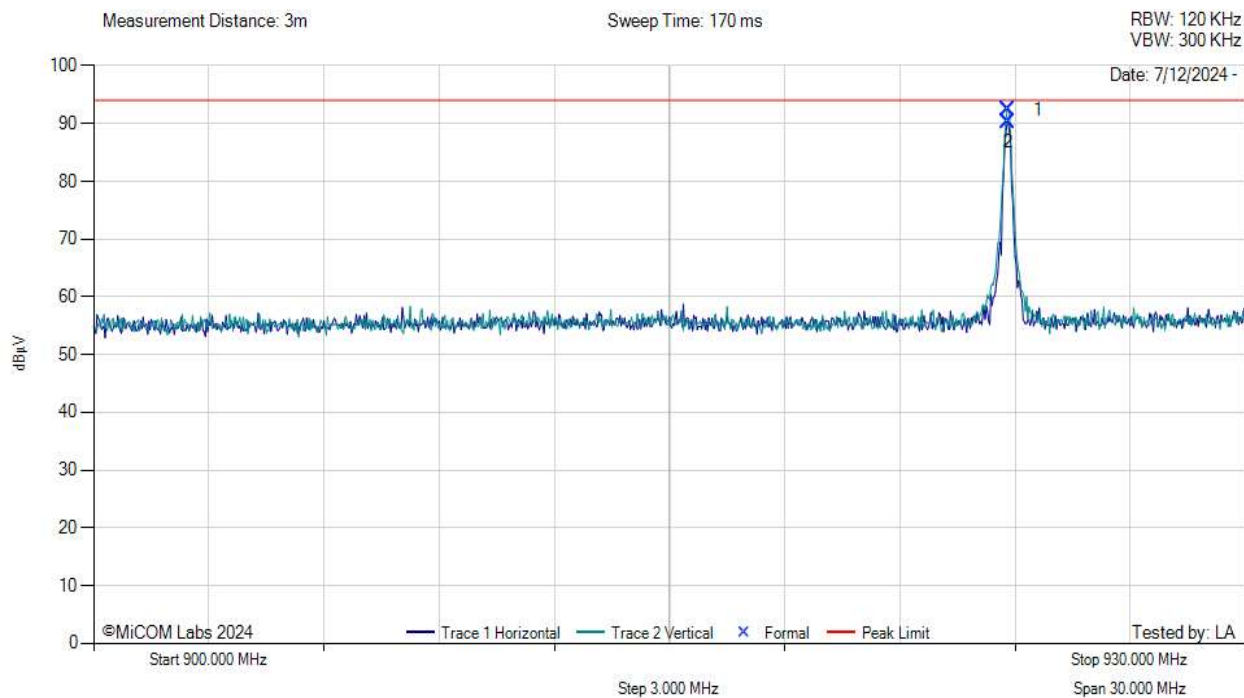
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	Internal	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.8	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	923.82	58.50	6.99	28.93	92.42	MaxP	Vertical	148	240	94.0	-1.6	Pass
2	923.82	56.39	6.99	28.93	90.30	MaxP	Horizontal	148	0	94.0	-3.7	Pass

Test Notes: SN: 2935662-23, FS OOK 23.8MHz, 16.384kbps, Power Level 0

9.1.1.1.2. External Antenna

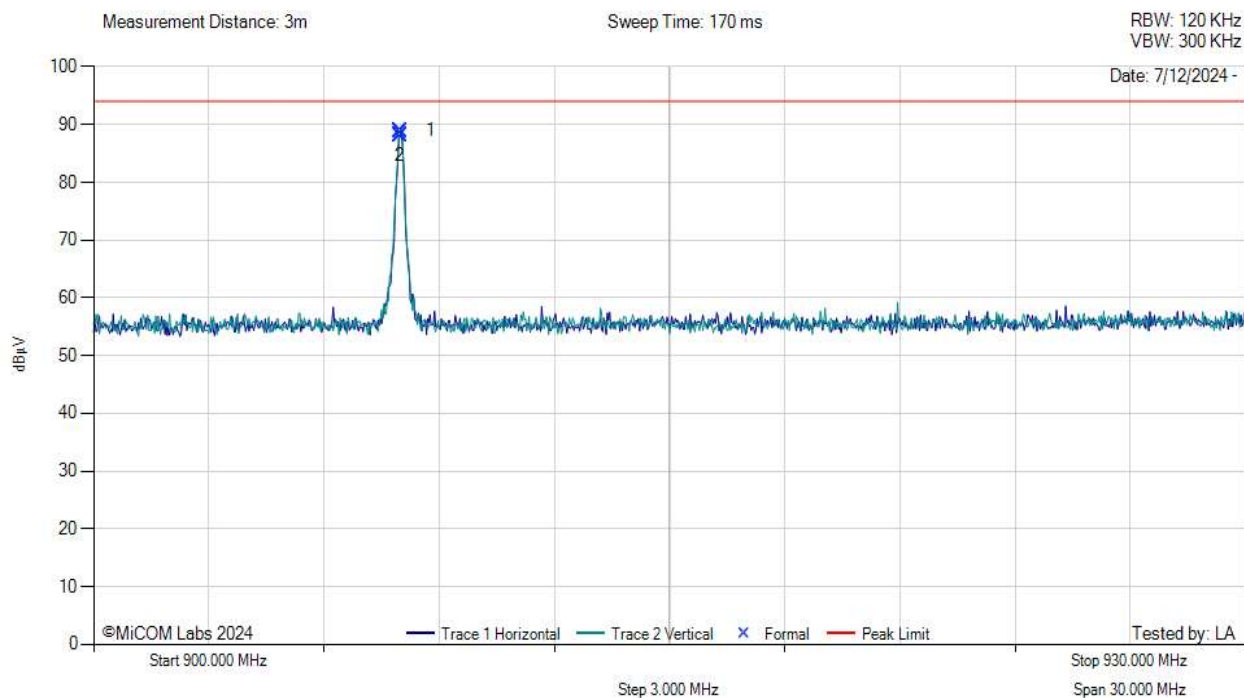
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.0	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	907.98	55.28	6.93	28.73	88.94	MaxP	Vertical	148	179	94.0	-5.1	Pass
2	907.98	54.51	6.93	28.73	88.17	MaxP	Horizontal	148	30	94.0	-5.8	Pass

Test Notes: SN: 2935662-23, FS OOK 908 MHz, 16.384kbps, Power Level 0

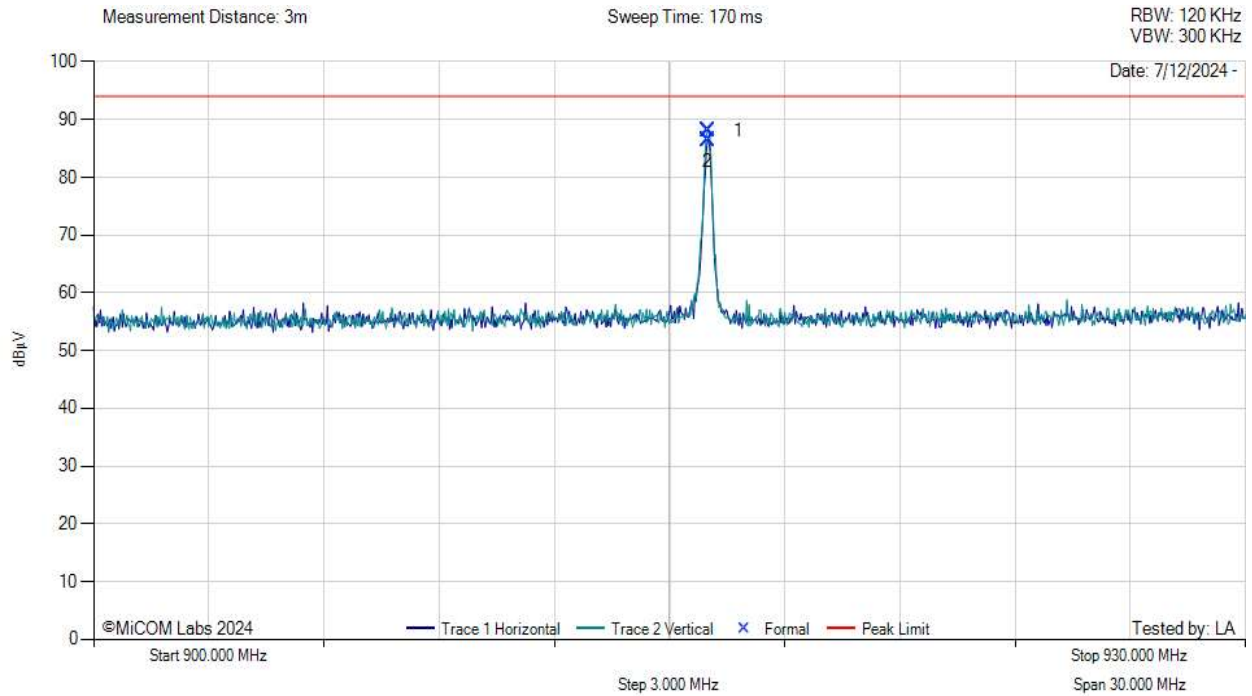
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.0	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	915.99	54.28	6.98	28.82	88.07	MaxP	Vertical	148	179	94.0	-5.9	Pass
2	915.99	52.60	6.98	28.82	86.39	MaxP	Horizontal	148	30	94.0	-7.6	Pass

Test Notes: SN: 2935662-23, FS OOK 916 MHz, 16.384kbps, Power Level 0

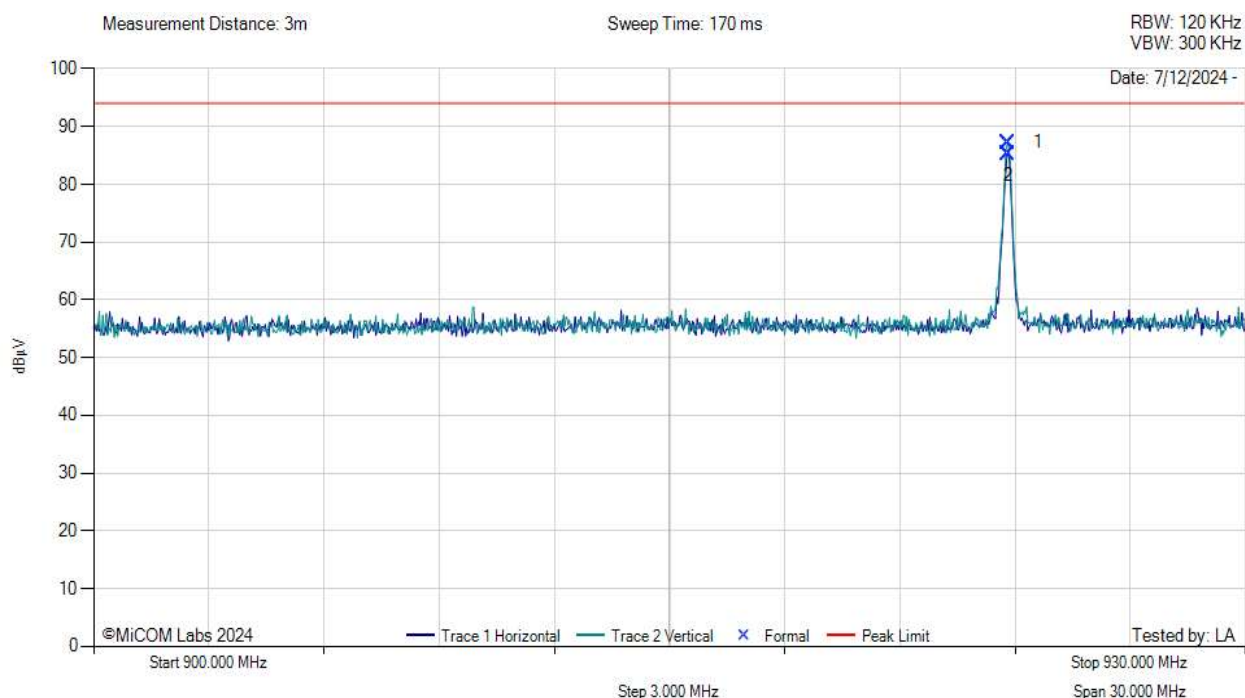
Equipment Configuration for 902-930MHz FIELD STRENGTH

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.8	Data Rate:	16.384 kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



902-930MHz Field Strength



900.00 - 930.00 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	923.82	53.28	6.99	28.93	87.20	MaxP	Vertical	148	179	94.0	-6.8	Pass
2	923.82	51.31	6.99	28.93	85.23	MaxP	Horizontal	148	30	94.0	-8.8	Pass

Test Notes: SN: 2935662-23, FS OOK 923.8 MHz, 16.384kbps, Power Level 0

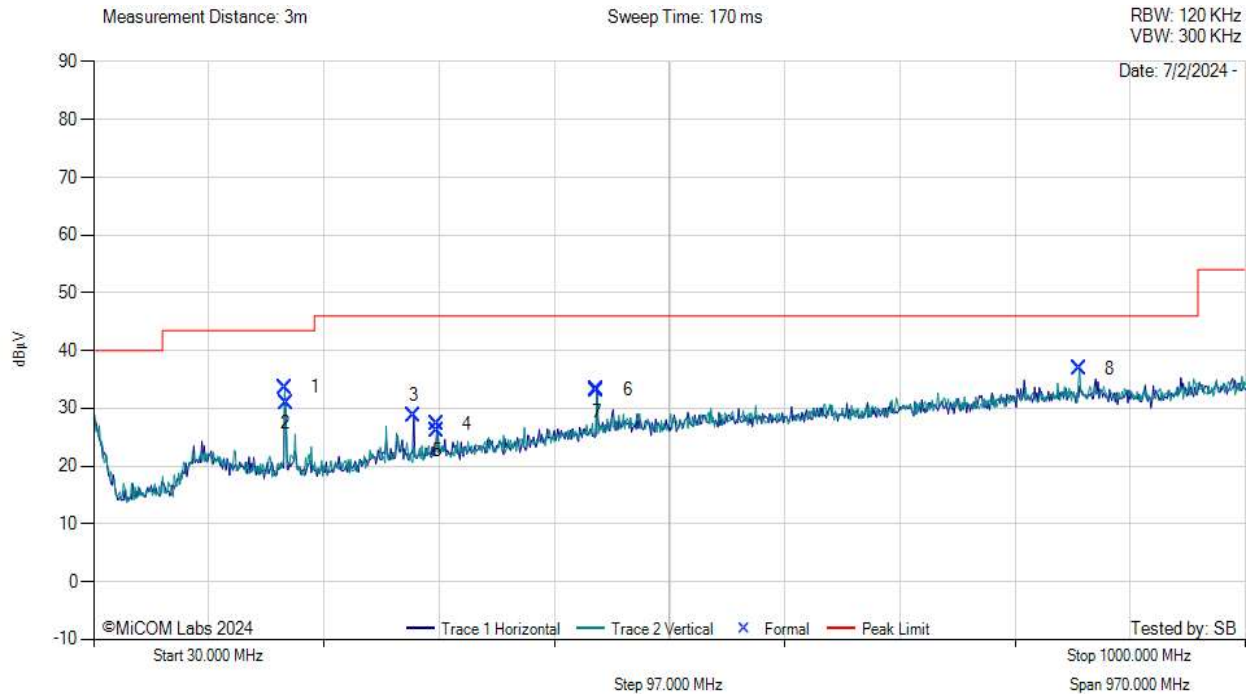
9.1.1.2. TX Spurious & Restricted Band Emissions 30MHz to 1GHz

9.1.1.2.1. OOK Power Level 0 (Internal Antenna)

Equipment Configuration for 30 MHz TO 1 GHz			
Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	SB



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	191.02	42.69	4.55	-13.60	33.64	NRB	Vertical	100	0	43.5	-9.9	Pass
2	191.73	40.00	4.55	-13.53	31.01	NRB	Horizontal	99	0	43.5	-12.5	Pass
3	299.66	34.94	5.00	-11.25	28.69	MaxP	Horizontal	100	120	46.0	-17.3	Pass
4	319.06	33.09	5.10	-10.93	27.26	NRB	Vertical	100	29	46.0	-18.7	Pass
5	319.06	32.07	5.10	-10.93	26.24	NRB	Horizontal	100	90	46.0	-19.8	Pass
6	453.89	35.45	5.55	-7.66	33.33	NRB	Horizontal	199	240	46.0	-12.7	Pass
7	453.89	35.09	5.55	-7.66	32.98	NRB	Vertical	199	119	46.0	-13.0	Pass
8	860.32	32.44	6.80	-2.30	36.94	NRB	Vertical	100	270	46.0	-9.1	Pass

Test Notes: SN: 2935662-23, OOK, 908 MHz, 16.38 kbps, Power Level 0

Non-Restrictive Band (NRB)

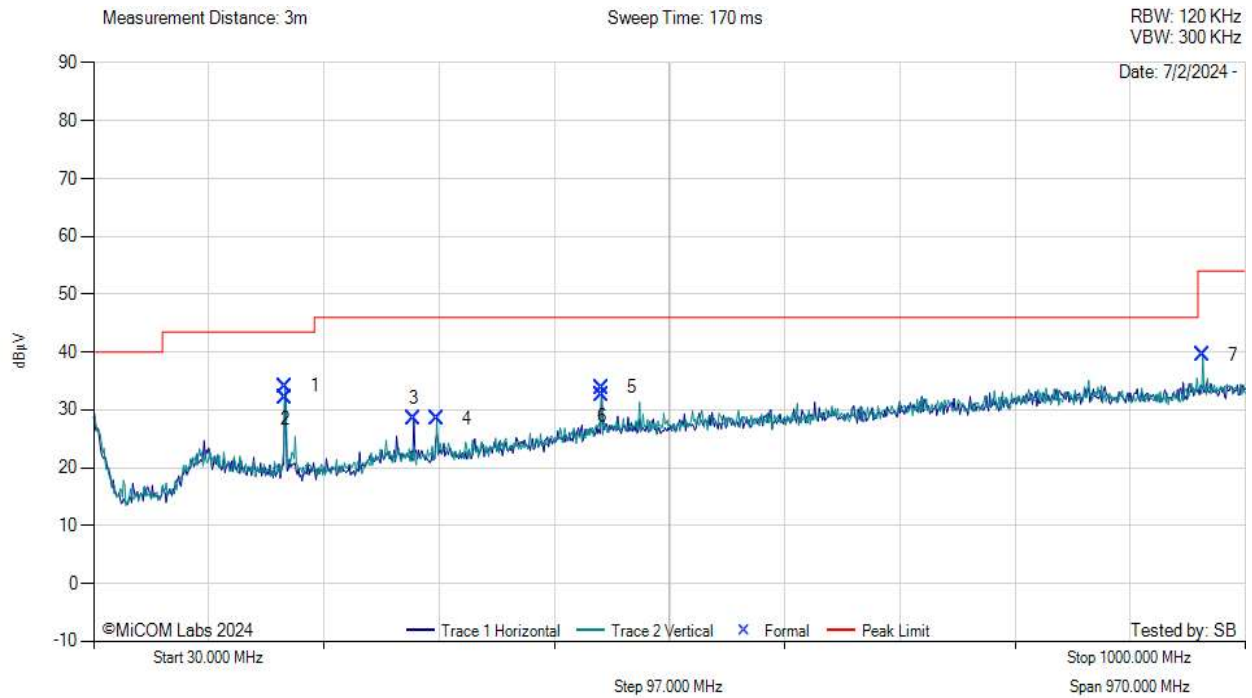
Equipment Configuration for 30 MHz TO 1 GHZ

Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	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	191.02	43.13	4.55	-13.60	34.08	NRB	Vertical	99	149	43.5	-9.4	Pass
2	191.02	41.12	4.55	-13.60	32.06	NRB	Horizontal	199	0	43.5	-11.4	Pass
3	299.66	34.69	5.00	-11.25	28.44	MaxP	Horizontal	99	60	46.0	-17.6	Pass
4	319.06	34.33	5.10	-10.93	28.50	NRB	Vertical	99	59	46.0	-17.5	Pass
5	457.77	35.78	5.56	-7.49	33.85	NRB	Horizontal	99	300	46.0	-12.2	Pass
6	457.77	34.49	5.56	-7.49	32.56	NRB	Vertical	199	90	46.0	-13.4	Pass
7	964.11	33.43	7.11	-1.09	39.45	MaxP	Vertical	99	149	54.0	-14.6	Pass

Test Notes: SN: 2935662-23, OOK, 916 MHz, 16.38 kbps, Power Level 0

Non-Restrictive Band (NRB)

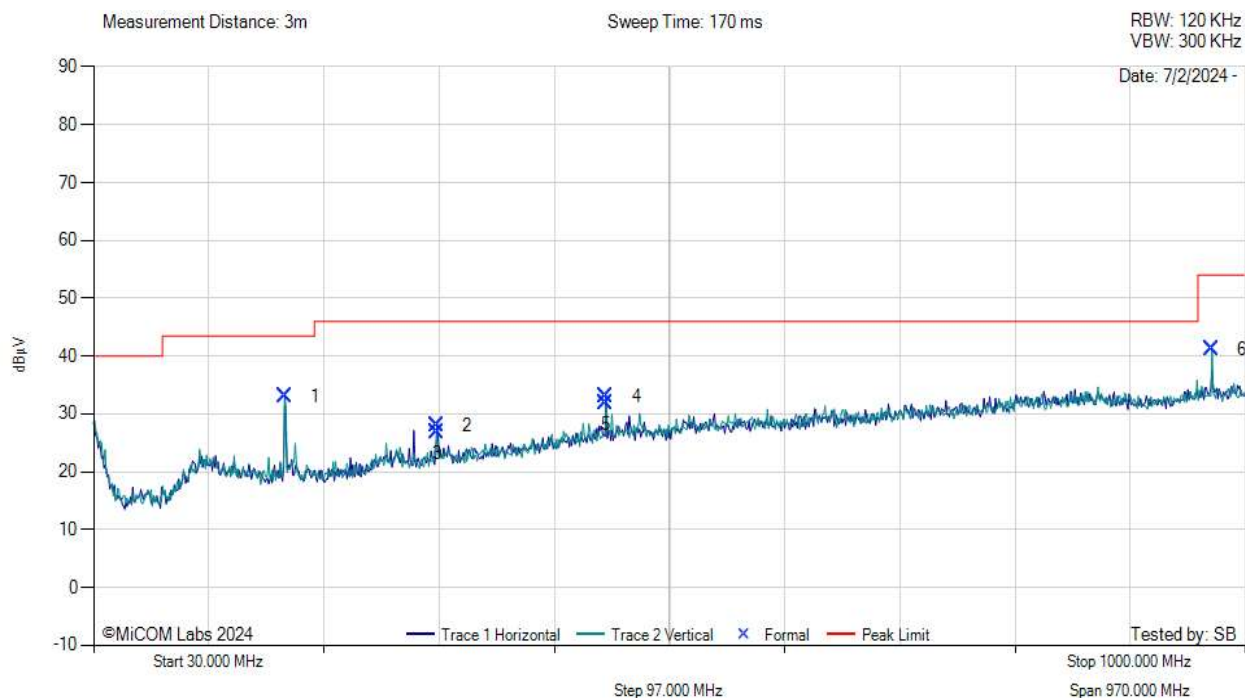
Equipment Configuration for 30 MHz TO 1 GHZ

Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.80	Data Rate:	16.384kbps
Power Setting:	Power Level 0	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	191.02	42.12	4.55	-13.60	33.07	NRB	Vertical	99	0	43.5	-10.4	Pass
2	319.06	33.78	5.10	-10.93	27.95	NRB	Horizontal	99	240	46.0	-18.0	Pass
3	319.06	32.59	5.10	-10.93	26.76	NRB	Vertical	99	119	46.0	-19.2	Pass
4	461.65	34.78	5.56	-7.36	32.98	NRB	Vertical	199	119	46.0	-13.0	Pass
5	461.65	33.59	5.56	-7.36	31.79	NRB	Horizontal	199	240	46.0	-14.2	Pass
6	971.87	35.07	7.14	-1.08	41.13	MaxP	Vertical	99	149	54.0	-12.9	Pass

Test Notes: SN: 2935662-23, OOK, 923.8 MHz, 16.38 kbps, Power Level 0

Non-Restrictive Band (NRB)

9.1.1.2.2. OOK Power Level 0 (External Antenna)

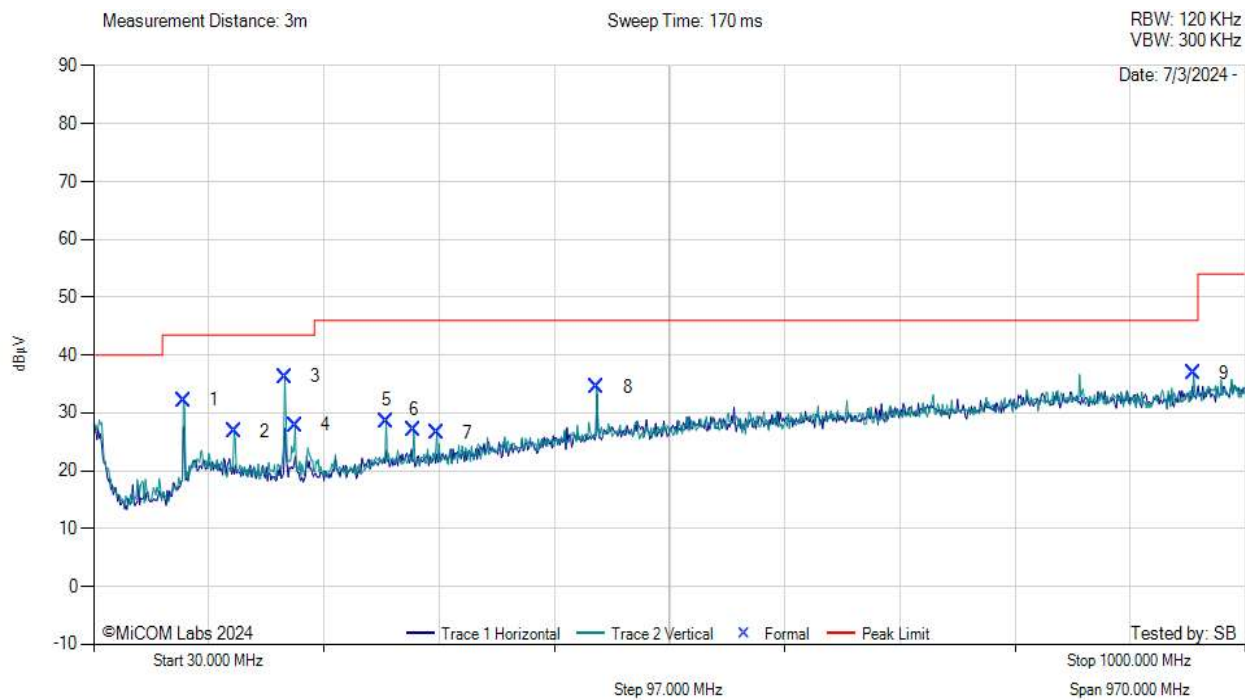
Equipment Configuration for 30 MHz TO 1 GHZ

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	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	105.66	41.74	4.12	-13.65	32.21	NRB	Vertical	100	179	43.5	-11.3	Pass
2	148.34	35.33	4.34	-12.79	26.88	NRB	Vertical	100	299	43.5	-16.6	Pass
3	191.02	45.31	4.55	-13.60	36.25	NRB	Vertical	100	209	43.5	-7.2	Pass
4	199.75	35.49	4.59	-12.16	27.92	NRB	Vertical	100	179	43.5	-15.6	Pass
5	276.38	34.99	4.90	-11.27	28.62	MaxP	Vertical	100	239	46.0	-17.4	Pass
6	299.66	33.27	5.00	-11.25	27.02	NRB	Vertical	100	209	46.0	-19.0	Pass
7	319.06	32.35	5.10	-10.93	26.53	NRB	Vertical	100	179	46.0	-19.5	Pass
8	453.89	36.57	5.55	-7.66	34.45	NRB	Vertical	199	0	46.0	-11.6	Pass
9	956.35	30.94	7.09	-1.19	36.84	NRB	Vertical	100	179	46.0	-9.2	Pass

Test Notes: SN: 2935662-23, OOK, 908 MHz, 16.384 kbps Power Level 0

Non-Restricted Band (NRB)

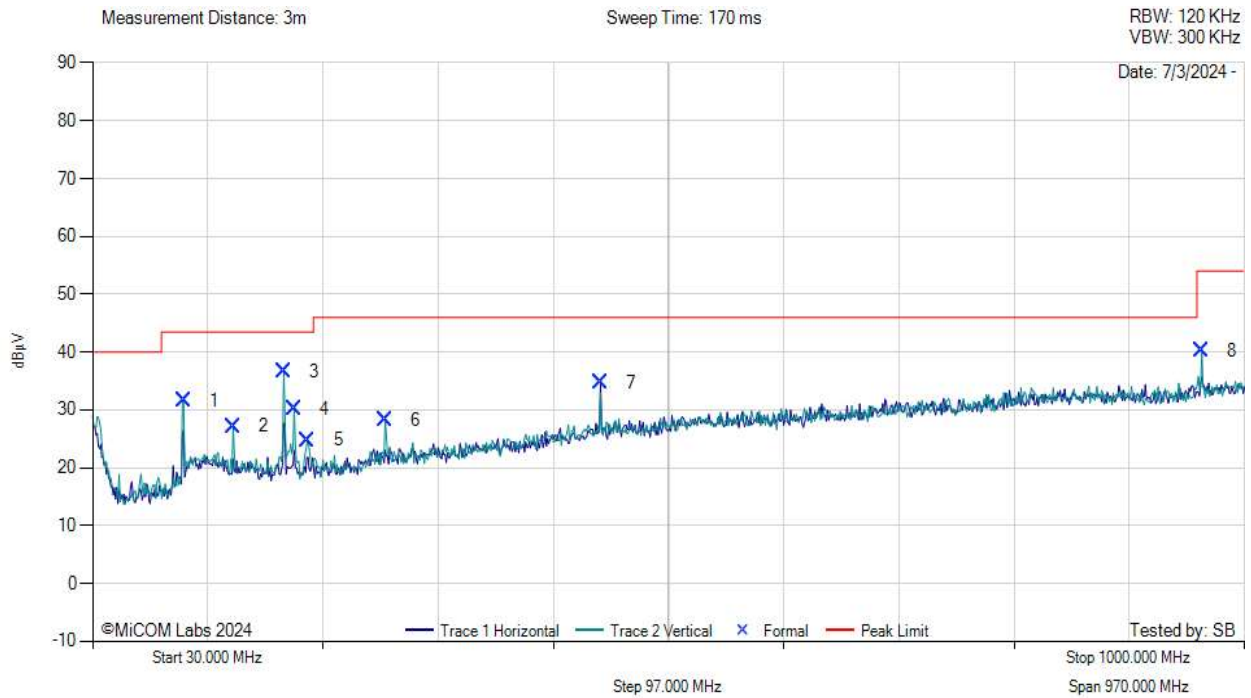
Equipment Configuration for 30 MHz TO 1 GHz

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	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	106.63	40.91	4.13	-13.43	31.61	NRB	Vertical	100	179	43.5	-11.9	Pass
2	148.34	35.61	4.34	-12.79	27.16	NRB	Vertical	100	299	43.5	-16.3	Pass
3	191.02	45.68	4.55	-13.60	36.63	NRB	Vertical	100	209	43.5	-6.9	Pass
4	199.75	37.80	4.59	-12.16	30.23	NRB	Vertical	100	209	43.5	-13.3	Pass
5	211.39	33.80	4.63	-13.69	24.74	NRB	Vertical	100	119	43.5	-18.8	Pass
6	276.38	34.67	4.90	-11.27	28.30	MaxP	Vertical	100	240	46.0	-17.7	Pass
7	457.77	36.58	5.56	-7.49	34.65	NRB	Horizontal	199	300	46.0	-11.3	Pass
8	964.11	34.14	7.11	-1.09	40.16	MaxP	Vertical	100	149	54.0	-13.8	Pass

Test Notes: SN: 2935662-23, OOK, 916 MHz, 16.384 kbps Power Level 0

Non Restricted Band (NRB)

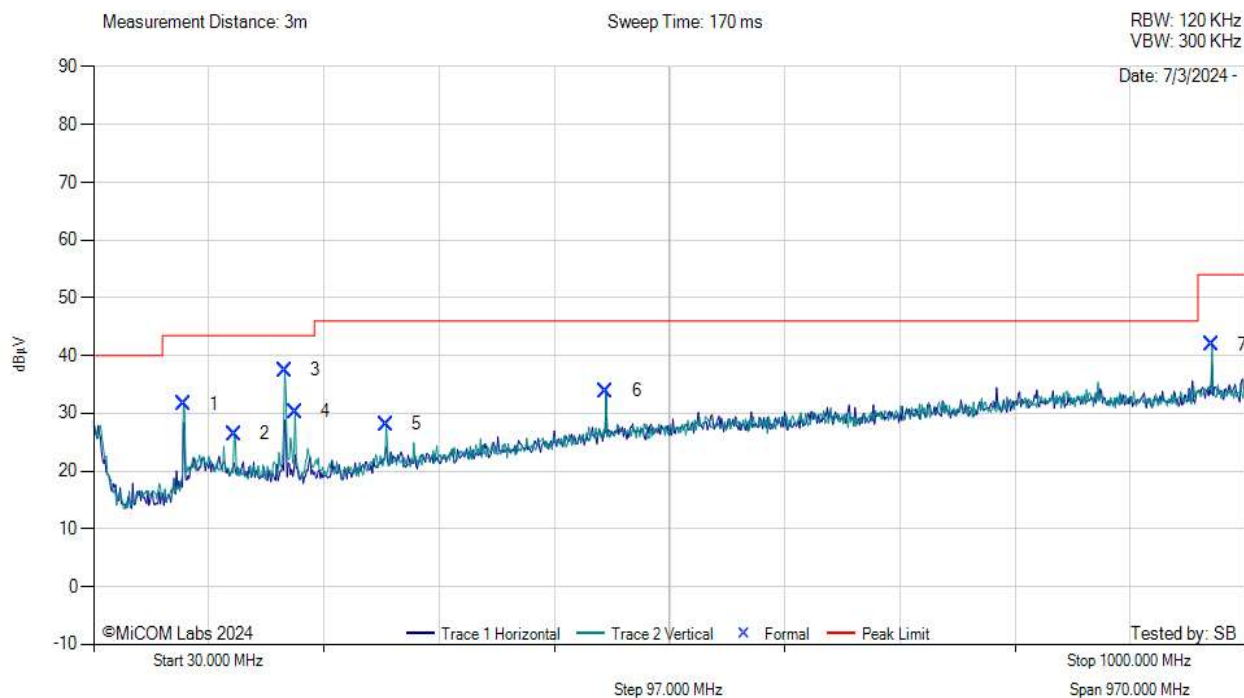
Equipment Configuration for 30 MHz TO 1 GHz

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.80	Data Rate:	16.384kbps
Power Setting:	Power Level 0	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	105.66	41.15	4.12	-13.65	31.62	NRB	Vertical	100	179	43.5	-11.9	Pass
2	148.34	34.87	4.34	-12.79	26.42	NRB	Vertical	100	299	43.5	-17.1	Pass
3	191.02	46.52	4.55	-13.60	37.47	NRB	Vertical	100	210	43.5	-6.0	Pass
4	199.75	37.87	4.59	-12.16	30.29	NRB	Vertical	100	210	43.5	-13.2	Pass
5	276.38	34.51	4.90	-11.27	28.14	MaxP	Vertical	100	239	46.0	-17.9	Pass
6	461.65	35.71	5.56	-7.36	33.91	NRB	Vertical	199	29	46.0	-12.1	Pass
7	971.87	35.86	7.14	-1.08	41.92	MaxP	Vertical	100	179	54.0	-12.1	Pass

Test Notes: SN: 2935662-23, OOK, 923.8 MHz, 16.384 kbps Power Level 0

Non-Restricted Band (NRB)

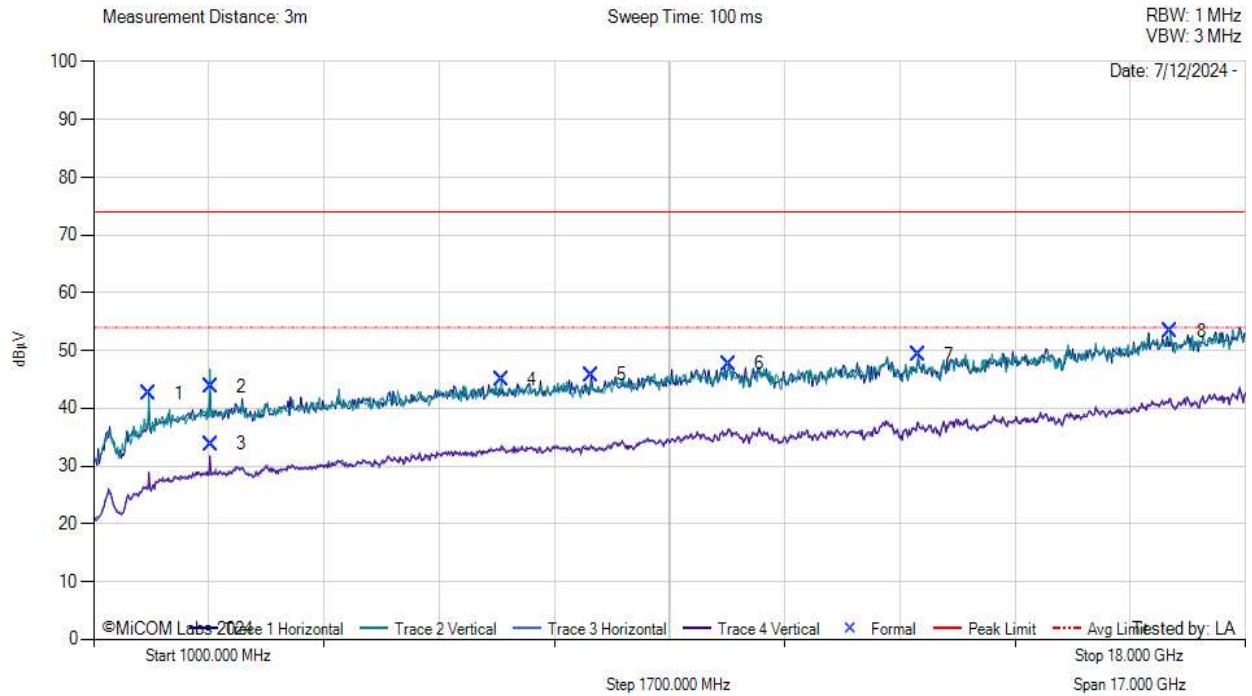
9.1.1.3. TX Spurious & Restricted Band Emissions 1GHz to 18GHz

9.1.1.3.1. OOK Power Level 0 (Internal Antenna)

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	LA



FCC Spurious 1 GHz -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	1816.00	55.34	1.73	30.49	42.62	MaxP	Vertical	199	0	74.0	-31.4	Pass
2	2724.07	53.46	2.07	-11.77	43.76	MaxP	Vertical	157	150	74.0	-30.2	Pass
3	2724.07	43.53	2.07	-11.77	33.83	AVG	Vertical	157	150	54.0	-20.2	Pass
4	7018.00	49.82	3.63	35.96	44.96	MaxP	Vertical	150	330	74.0	-29.0	Pass
5	8344.00	50.01	3.91	35.75	45.80	MaxP	Horizontal	150	210	74.0	-28.2	Pass
6	10367.00	47.80	4.31	37.52	47.67	MaxP	Vertical	199	0	74.0	-26.3	Pass
7	13172.00	50.27	5.37	38.98	49.22	MaxP	Vertical	150	330	74.0	-24.8	Pass
8	16895.00	47.49	6.49	41.69	53.40	MaxP	Vertical	150	89	74.0	-20.6	Pass

Test Notes: SN: 2935662-23, OOK 908 MHz, 16.384kbps, Power Level 0

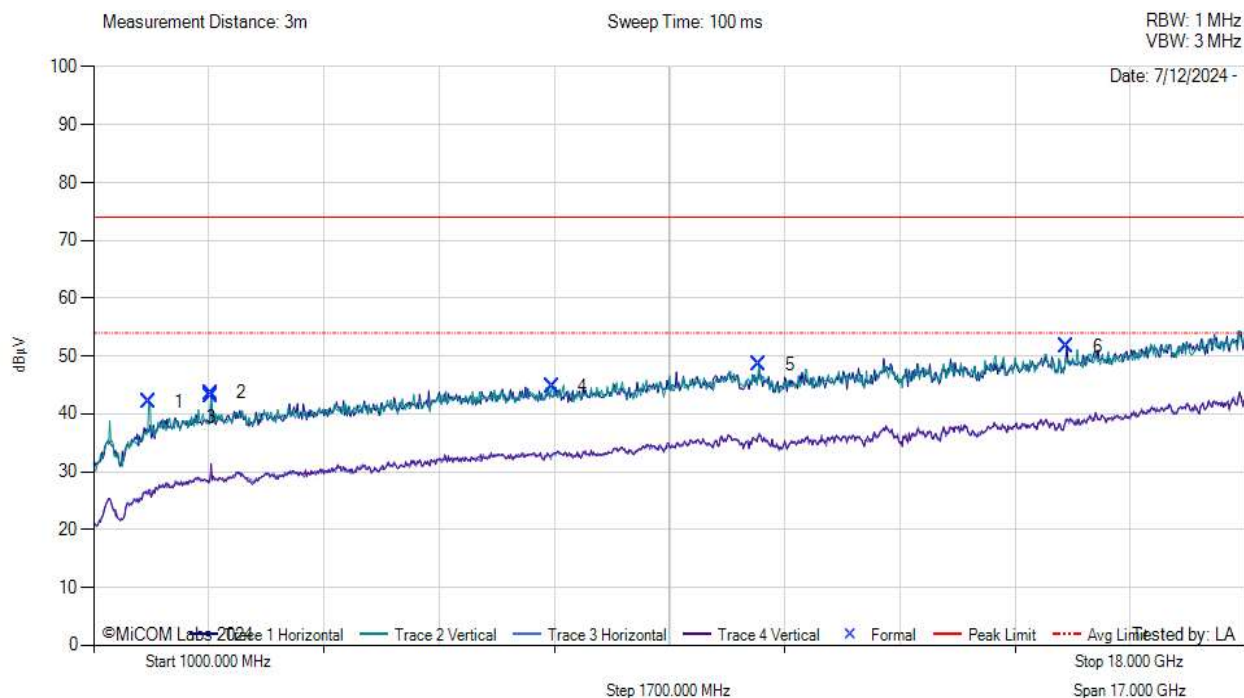
Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ

Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



FCC Spurious 1 GHz -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	1816.00	54.85	1.73	30.49	42.13	MaxP	Vertical	150	0	74.0	-31.9	Pass
2	2734.00	53.28	2.11	32.44	43.65	MaxP	Vertical	150	209	74.0	-30.4	Pass
3	2734.00	52.65	2.11	32.44	43.01	MaxP	Horizontal	199	300	74.0	-31.0	Pass
4	7766.00	48.72	3.73	35.86	44.64	MaxP	Vertical	199	240	74.0	-29.4	Pass
5	10826.00	48.13	4.91	37.76	48.49	MaxP	Vertical	199	240	74.0	-25.5	Pass
6	15365.00	49.59	5.59	40.01	51.69	MaxP	Horizontal	199	120	74.0	-22.3	Pass

Test Notes: SN: 2935662-23, OOK 916 MHz, 16.384kbps, Power Level 0

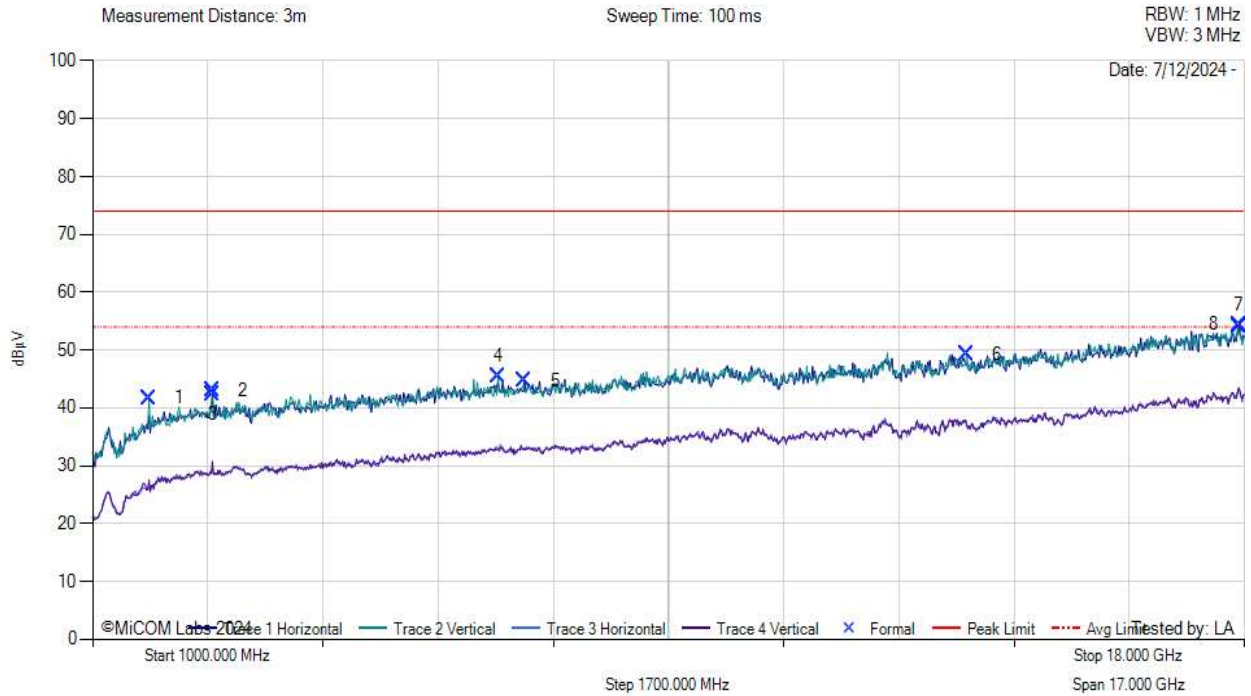
Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ

Antenna:	Integral	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.80	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	LA

Test Measurement Results



FCC Spurious 1 GHz -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	1833.00	54.34	1.75	30.60	41.75	MaxP	Vertical	150	0	74.0	-33.9	Pass
2	2768.00	52.56	2.16	32.47	42.97	MaxP	Vertical	149	239	74.0	-31.0	Pass
3	2768.00	51.98	2.16	32.47	42.40	MaxP	Horizontal	199	0	74.0	-31.6	Pass
4	6984.00	48.84	3.49	35.95	45.48	MaxP	Vertical	149	330	74.0	-28.5	Pass
5	7375.00	49.23	3.60	35.88	44.71	MaxP	Horizontal	149	300	74.0	-29.3	Pass
6	13903.00	51.59	5.25	39.14	49.30	MaxP	Vertical	149	149	74.0	-24.7	Pass
7	17915.00	46.27	6.67	41.55	54.22	MaxP	Horizontal	199	330	74.0	-19.8	Pass
8	17932.00	46.98	6.50	41.53	54.39	MaxP	Vertical	149	209	74.0	-19.6	Pass

Test Notes: SN: 2935662-23, OOK 923.8 MHz, 16.384kbps, Power Level 0

9.1.1.3.2. OOK Power Level 0 (External Antenna)

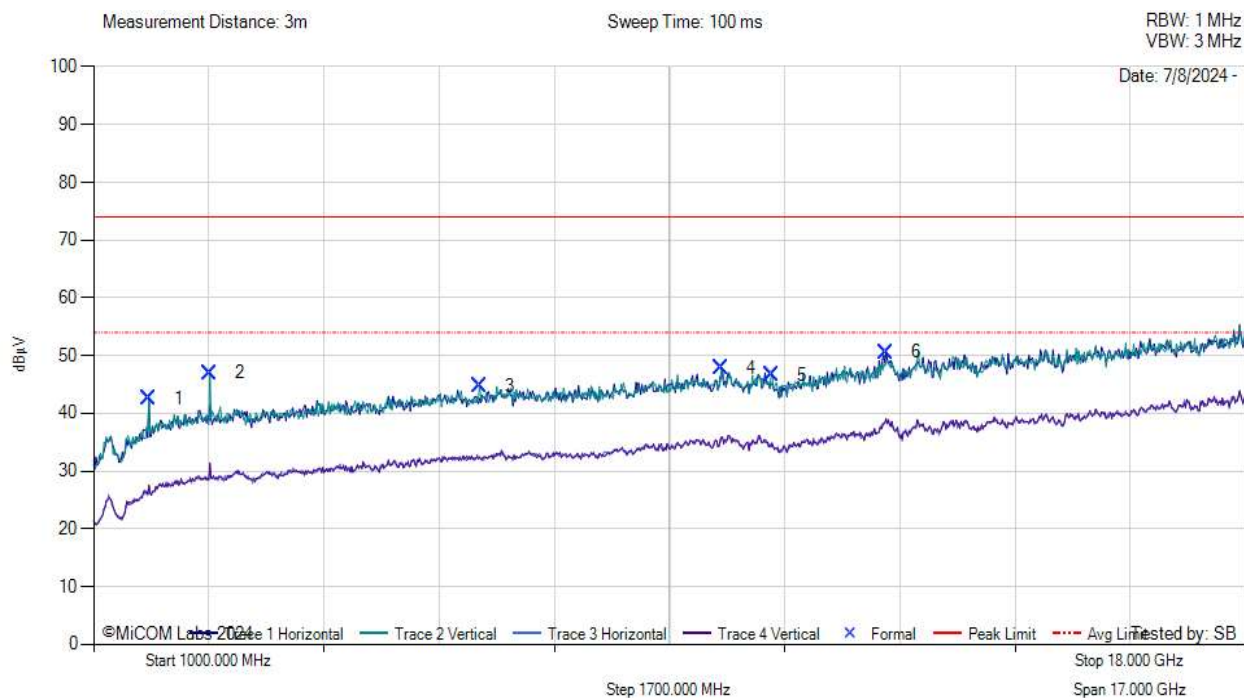
Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	908.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	SB

Test Measurement Results



FCC Spurious 1 GHz -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	1816.00	55.34	1.73	30.49	42.62	MaxP	Vertical	199	239	74.0	-31.4	Pass
2	2717.00	56.68	2.07	32.44	46.98	MaxP	Vertical	150	209	74.0	-27.0	Pass
3	6695.00	49.81	3.42	35.74	44.67	MaxP	Vertical	150	29	74.0	-29.3	Pass
4	10265.00	48.02	4.76	37.46	47.80	MaxP	Vertical	150	299	74.0	-26.2	Pass
5	11013.00	46.76	4.66	37.81	46.68	MaxP	Vertical	150	269	74.0	-27.3	Pass
6	12696.00	52.28	5.26	39.09	50.60	MaxP	Horizontal	150	30	74.0	-23.4	Pass

Test Notes: SN: 2935662-23, OOK, 908 MHz, 16.384 kbps, Power Level 0

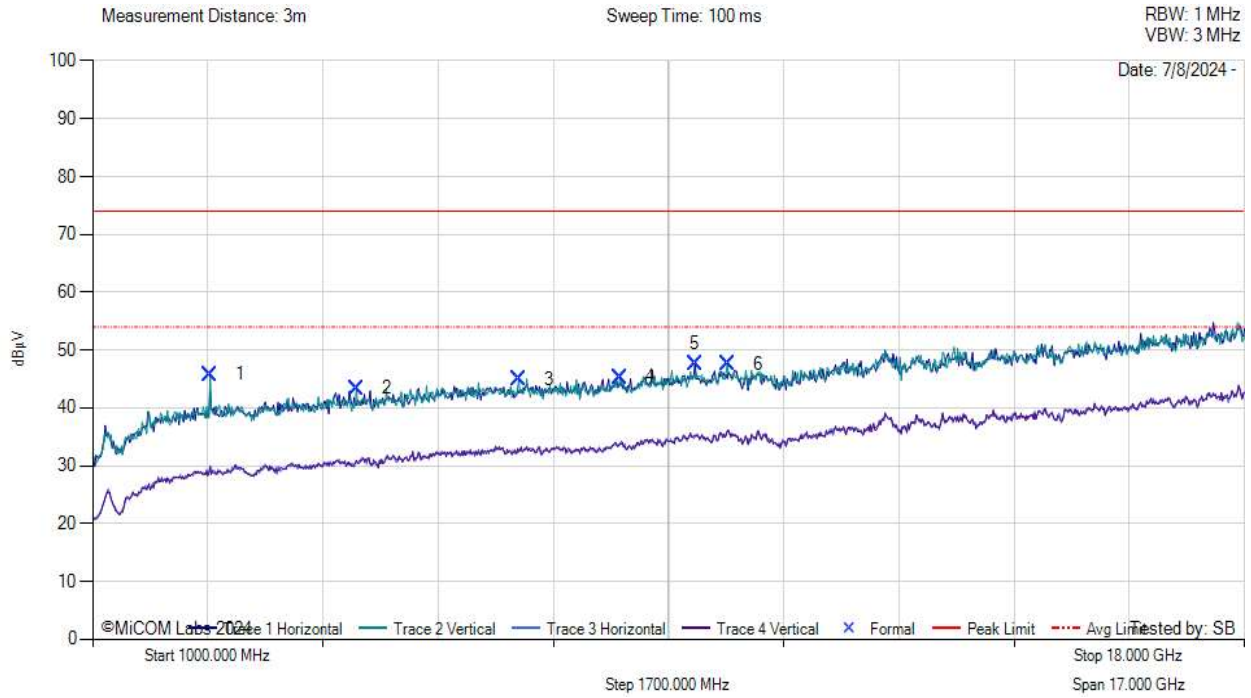
Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	916.00	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	SB

Test Measurement Results



FCC Spurious 1 GHz -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	2734.00	55.45	2.11	32.44	45.82	MaxP	Vertical	149	209	74.0	-28.2	Pass
2	4893.00	52.82	2.88	34.01	43.44	MaxP	Vertical	149	59	74.0	-30.6	Pass
3	7290.00	49.22	3.70	35.89	44.91	MaxP	Vertical	199	0	74.0	-29.1	Pass
4	8786.00	48.99	4.11	35.98	45.31	MaxP	Vertical	199	0	74.0	-28.7	Pass
5	9891.00	48.73	4.28	37.20	47.64	MaxP	Horizontal	149	270	74.0	-26.4	Pass
6	10367.00	47.68	4.31	37.52	47.55	MaxP	Vertical	199	149	74.0	-26.4	Pass

Test Notes: SN: 2935662-23, OOK, 916 MHz, 16.384 kbps, Power Level 0

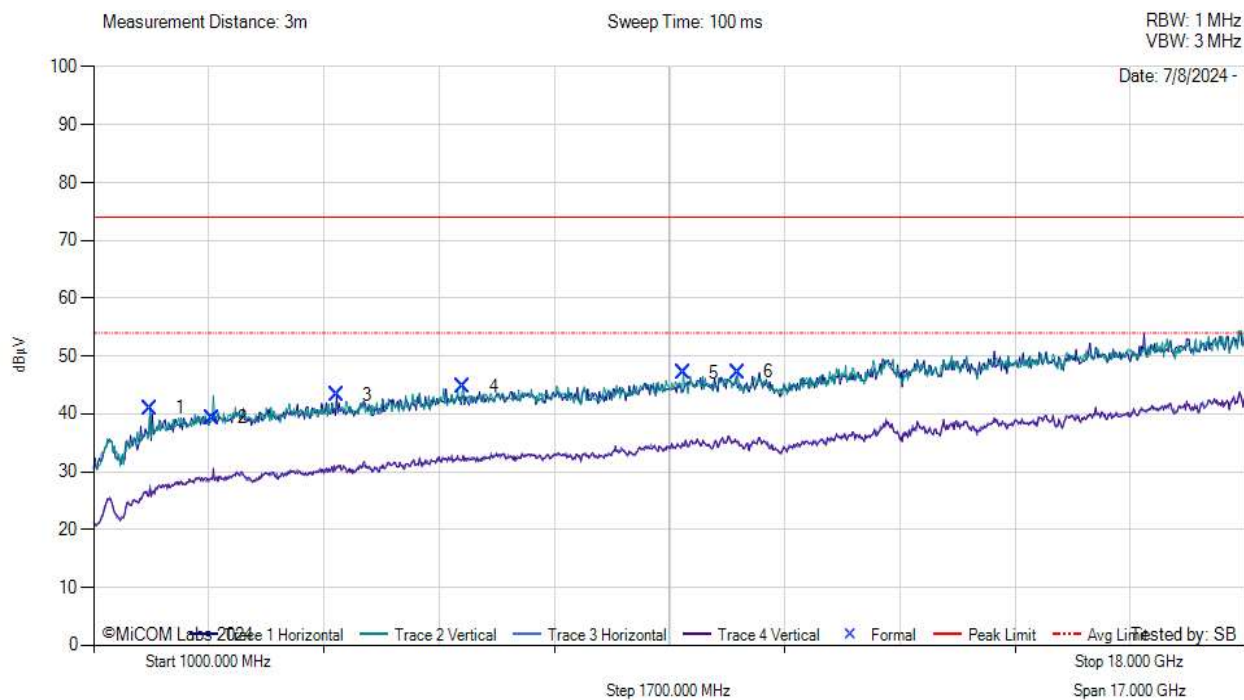
Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ

Antenna:	External	Variant:	100W & 500W RMT & Pit
Antenna Gain (dBi):	Not Applicable	Modulation:	OOK
Beam Forming Gain (Y):	Not Applicable	Duty Cycle (%):	99
Channel Frequency (MHz):	923.80	Data Rate:	16.384kbps
Power Setting:	Power Level 0	Tested By:	SB

Test Measurement Results



FCC Spurious 1 GHz -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	1833.00	53.57	1.75	30.60	40.98	MaxP	Vertical	199	239	74.0	-33.0	Pass
2	2751.00	48.95	2.11	32.45	39.33	MaxP	Vertical	199	210	74.0	-34.7	Pass
3	4587.00	52.69	2.79	33.98	43.34	MaxP	Horizontal	150	300	74.0	-30.7	Pass
4	6457.00	50.10	3.41	35.62	44.70	MaxP	Vertical	199	210	74.0	-29.3	Pass
5	9704.00	48.95	4.42	36.82	47.07	MaxP	Vertical	150	299	74.0	-26.9	Pass
6	10503.00	47.33	4.86	37.65	47.26	MaxP	Vertical	199	89	74.0	-26.7	Pass

Test Notes: SN: 2935662-23, OOK, 923.8 MHz, 16.384 kbps, Power Level 0

10. Manufacturer Declaration of Similarity



Itron, Inc.
 2401 N. State St.
 Waseca, MN 56093
 507-781-4300
 www.itron.com

August 14, 2024

Subject: Declaration of Similarity:
 FCC ID: EWQ24GW,
 ISED ID: 864D-24GW

Dear Sir or Madam,

We declare the product models listed below are electrically identical.

Product Information	
Marketing Name(s)	100W ERT Module 500W ERT Module
Description	Utility AMR device
Models(s)	ERW-1350-001 ERW-1650-001, ERW-1650-004, ERW-1650-008, ERW-1650-009

The differences between these variant models are

- Number of external ports, two or three, for metering connection
- Number of battery cells, two or four, to support field life desire

The differences of these variants does not affect any RF or EMC performance.

Sincerely,



Dan Bomsta
 Sr. Principal Regulatory Engineer
 507-781-4480
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 Itron, Inc.



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