REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247

Report No.: ITRO67-U6 Rev B

Company: Itron, Inc

Model Name: ERG-5600-001

REGULATORY COMPLIANCE TEST REPORT

Company Name: Itron, Inc

Model Name: ERG-5600-001

To: FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247

Test Report Serial No.: ITRO67-U6 Rev B

This report supersedes: ITRO67-U6 Rev A

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

Issue Date: 21st August 2024

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
USA
Phone: +1 (925) 462-0304
Fax: +1 (925) 462-0306
www.micomlabs.com

ACCREDITED
TESTING CERT #2381.01

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 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 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

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	8th July 2024	Draft report for client review.
Rev A	18th July 2024	Initial release.
Rev B	21st August 2024	Update to the following: 1).. Emission Designator (page 11, Section 5.1 Technical Details) 2).. Modified reported total power (page 41, Section 9.1 Output Power, variant OOK - PL3 only

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:	RF-based meter data collection solution	**Telephone:**	+1 925 462 0304
Type Of Equipment:	ERG-5600-001	**Fax:**	+1 925 462 0306
S/N's:	Conducted: 2935662-08 Radiated: 2935662-02		
Test Date(s):	13th – 19th June 2024	**Website:**	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247	**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.

A2LA ACCREDITED
TESTING CERT #2381.01

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 15.247	Apr 2020	Radio Frequency Devices; Subpart C – Intentional Radiators
VIII	FCC Public Notice DA 00-705	Mar 2000	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems
IX	ICES-003	Issue 7; Oct 2020	Information Technology Equipment (Including Digital Apparatus)
X	UKAS M3003	Edition 6 March 2024	The Expression of Uncertainty and Confidence in Measurements
XI	RSS-247 Issue 3	Aug 2023	Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices
XII	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.
XIII	FCC 47 CFR Part 2.1033	Feb 2023	FCC requirements and rules regarding photographs and test setup diagrams.
XIV	UKAS LAB 12	Edition 4 April 2022	The Expression of Uncertainty in Testing

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.

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Itron, Inc 100G ERT® Module (ERG-5600-001) to FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247
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-U6
Date EUT received:	13th June 2024
Standard(s) applied:	FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247
Dates of test (from - to):	13th – 19th June 2024
No of Units Tested:	2
Product Family Name:	100G ERT Module
Model(s):	ERG-5600-001 ERG-5600-002 ERG-5600-003 ERG-5600-004 ERG-5600-009
Location for use:	Indoors and Outdoors
Declared Frequency Range(s):	902 - 928 MHz;
Type of Modulation:	GFSK, OOK
EUT Modes of Operation:	902 - 928 MHz: GFSK, 37.5kbps, DEV 16.4kHz (FHSS); GFSK, 37.5kbps, DEV 50kHz (FHSS); OOK - PL1; OOK - PL3;
Declared Nominal Output Power (dBm):	30
Rated Input Voltage and Current:	3.6VDC, 0.25A
Operating Temperature Range:	-40ºC to +70ºC
ITU Emission Designator:	GFSK 136KF1D OOK 132KL1D
Equipment Dimensions:	5.54 x 3.57 x 3.1
Weight:	0.85 LB
Hardware Rev:	3
Software Rev:	CSL 10.0.15.0

5.2. Scope Of Test Program

Itron, Inc ERG-5600-001

The scope of the test program was to test the Itron, Inc ERG-5600-001, 100G ERT® Module (ERG-5600-001) configurations in the frequency ranges 902 - 928 MHz; for compliance against the following specification:

FCC CFR 47 Part 15 Subpart C 15.247 & ISED RSS-247 (FHSS)
Radio Frequency Devices; Subpart C – Intentional Radiators

ISED RSS-247
Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and License-Exempt Local Area Network (LE-LEN) Devices

The Itron ERG-5600-001 is also marketed as the following Model Numbers per Manufacturer Declaration of Similarity (refer to Section 11 of this report).

ERG-5600-002
ERG-5600-003
ERG-5600-004
ERG-5600-009

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	ERG-5600-001	Conducted: 2935662-08 Radiated: 2935662-02
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

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

5.5. Cabling and I/O Ports

1. NONE

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s)	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
902 - 928 MHz				
GFSK, 37.5kbps, DEV 16.4kHz	37.5	903.00	915.00	926.80
GFSK, 37.5kbps, DEV 50kHz	37.5	903.00	915.00	926.80
OOK - PL1	16.38	903.00	915.00	926.80
OOK - PL3	16.38	903.00	915.00	926.80

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
20 dB & 99% Bandwidth	Complies	View Data
Frequency Hopping Tests	Complies	-
Number of Hopping Channels	Complies	View Data
Channel Separation	Complies	View Data
Output Power	Complies	View Data
Emissions	Complies	-
(1) Conducted Emissions	Complies	-
(i) Conducted Unwanted Spurious Emissions	Complies	View Data
(ii) Conducted Band-Edge Emissions	Complies	View Data
(2) Radiated Emissions	Complies	-
(i) TX Spurious & Restricted Band Emissions	Complies	View Data
(ii) RX Spurious Emissions	Complies	View Data

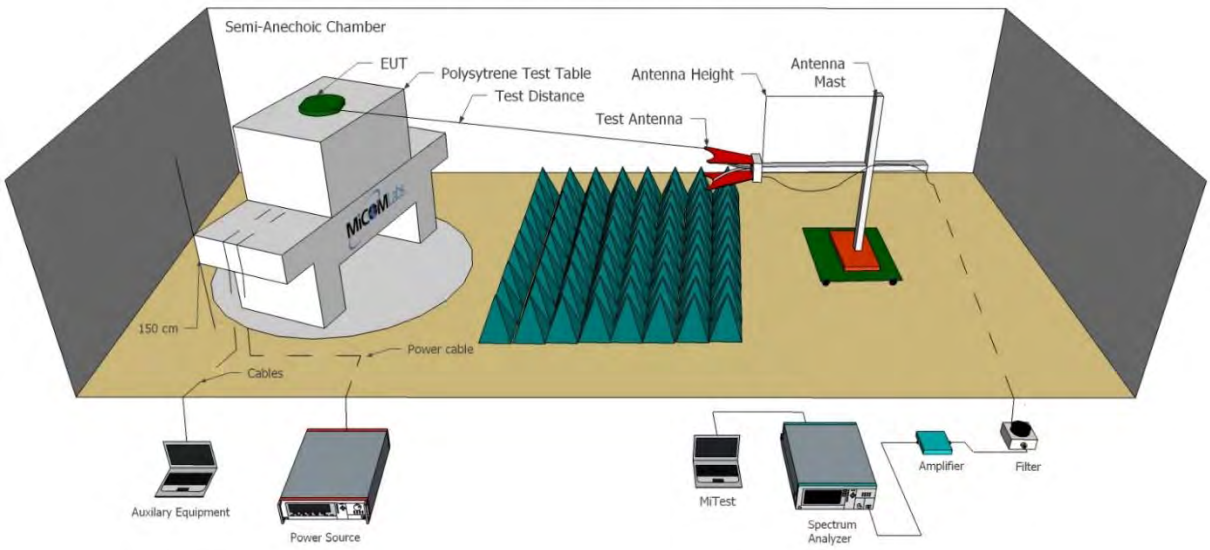
Note: Dwell Time and Channel Occupancy were not tested as part of this test program, these were declared for normal network operation by Itron. See Section 10 of this report for additional information.

7. TEST EQUIPMENT CONFIGURATION(S)

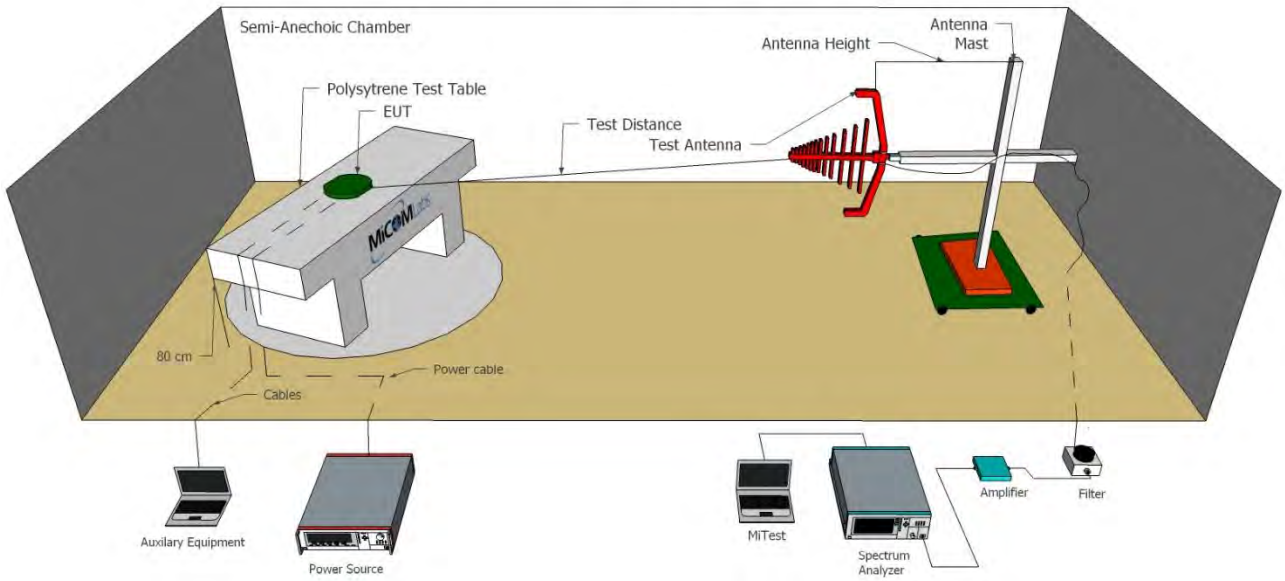
7.1. Radiated

Radiated emissions above and below 1GHz.

Radiated Emissions Above 1GHz Test Setup



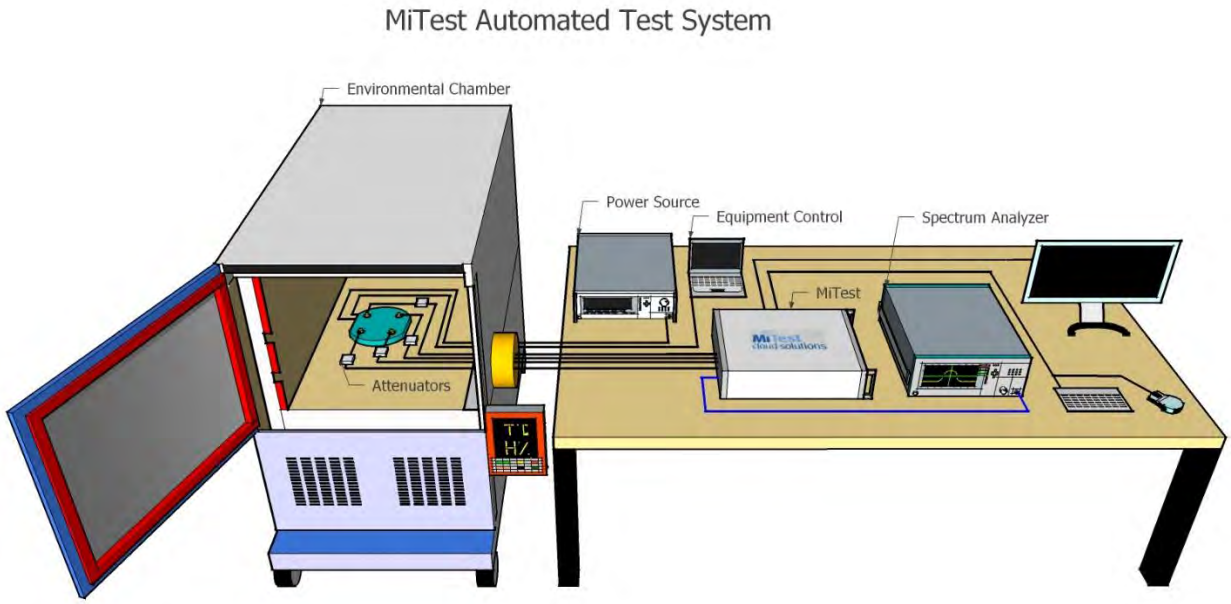
Radiated Emissions Below 1GHz Test Setup



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 Aug 2024

7.2. Conducted Test Setup



A full system calibration was performed on the test station and any resulting system losses (or gains) were considered in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
#3 SA	MiTest Box to SA	Fairview Microwave	SCA1814-0101-72	#3 SA	26 Oct 2024
#3P1	EUT to MiTest box port 1	Fairview Microwave	SCA1814-0101-72	#3P1	26 Oct 2024
#3P2	EUT to MiTest box port 2	Fairview Microwave	SCA1814-0101-72	#3P2	26 Oct 2024
#3P3	EUT to MiTest box port 3	Fairview Microwave	SCA1814-0101-72	#3P3	26 Oct 2024
#3P4	EUT to MiTest box port 4	Fairview Microwave	SCA1812-0101-72	#3P4	26 Oct 2024
249	Thermocouple; Resistance Thermometer	Thermotronics	GR2105-02	9340 #2	22 Mar 2025
266	10 Hz to 50GHz MXA Signal Analyzer	Keysight	N9020B	MY60110791	25 Jul 2025
285	DC Power Supply	Keysight	E36155A	MY63000156	4 Dec 2024
398	MiTest RF Conducted Test Software	MiCOM	MiTest ATS	Version 4.2.3.0	Not Required
405	DC Power Supply 0-60V	Agilent	6654A	MY4001826	Cal when used
408	USB to GPIB interface	National Instruments	GPIB-USB HS	14C0DE9	Not Required
441	USB Wideband Power Sensor	Boonton	55006	9179	4 Dec 2024
442	USB Wideband Power	Boonton	55006	9181	12 Dec 2024

	Sensor				
445	PoE Injector	D-Link	DPE-101GL	QTAH1E2000625	Not Required
461	Spectrum Analyzer	Agilent	E4440A	MY46185537	27 Sep 2024
493	USB Wideband Power Sensor	Boonton	55006	9634	8 Oct 2024
494	USB Wideband Power Sensor	Boonton	55006	9726	12 Dec 2024
510	Barometer/Thermometer	Digi Sense	68000-49	170871375	4 Jan 2026
512	MiTest Cloud Solutions RF Test Box	MiCOM	2nd Gen	512	24 Oct 2024
516	USB Wideband Power Sensor	Boonton	RTP5006	10511	4 Dec 2024
555	Rhode & Schwarz Receiver (Firmware Version : 3.10 SP1)	Rhode & Schwarz	ESW 44	101893	28 Jun 2025
75	Environmental Chamber	Thermatron	SE-300-2-2	27946	20 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. 20 dB & 99% Bandwidth

Conducted Test Conditions for 20 dB and 99% Bandwidth			
Standard:	FCC CFR 47:15.247 ISED RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	20 dB and 99 % Bandwidth	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.247 (a)(1)(i)/(ii) Section 5.1	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for 20 dB and 99% Bandwidth Measurement

The bandwidth at 20 dB and 99 % was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits for 20 dB and 99% Bandwidth

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

Equipment Configuration for 20 dB 99% Bandwidth			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 20 dB Bandwidth (MHz) Port(s)				20 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	MHz	MHz
903.0	0.068	--	--	--	0.068	0.068	0.5	-0.43
915.0	0.076	--	--	--	0.076	0.076	0.5	-0.42
926.8	0.065	--	--	--	0.065	0.065	0.5	-0.44

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
903.0	0.062	--	--	--	0.062		
915.0	0.065	--	--	--	0.065		
926.8	0.062	--	--	--	0.062		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 20 dB 99% Bandwidth			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 20 dB Bandwidth (MHz) Port(s)				20 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	MHz	MHz
903.0	0.136	--	--	--	0.136	0.136	0.5	-0.36
915.0	0.136	--	--	--	0.136	0.136	0.5	-0.36
926.8	0.142	--	--	--	0.142	0.142	0.5	-0.36

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
903.0	0.131	--	--	--	0.131		
915.0	0.131	--	--	--	0.131		
926.8	0.132	--	--	--	0.132		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 20 dB 99% Bandwidth			
Variant:	OOK - PL1	**Duty Cycle (%):**	100
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 20 dB Bandwidth (MHz) Port(s)				20 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	MHz	MHz
903.0	0.060	--	--	--	0.060	0.060	0.5	-0.44
915.0	0.061	--	--	--	0.061	0.061	0.5	-0.44
926.8	0.060	--	--	--	0.060	0.060	0.5	-0.44

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
903.0	0.124	--	--	--	0.124		
915.0	0.125	--	--	--	0.125		
926.8	0.123	--	--	--	0.123		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 20 dB 99% Bandwidth			
Variant:	OOK - PL3	**Duty Cycle (%):**	100
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured 20 dB Bandwidth (MHz) Port(s)				20 dB Bandwidth (MHz)		Limit	Lowest Margin
MHz	a	b	c	d	Highest	Lowest	MHz	MHz
903.0	0.062	--	--	--	0.062	0.062	0.5	-0.44
915.0	0.068	--	--	--	0.068	0.068	0.5	-0.43
926.8	0.061	--	--	--	0.061	0.061	0.5	-0.44

Test Frequency	Measured 99% Bandwidth (MHz) Port(s)				Maximum 99% Bandwidth (MHz)		
MHz	a	b	c	d			
903.0	0.127	--	--	--	0.127		
915.0	0.129	--	--	--	0.129		
926.8	0.127	--	--	--	0.127		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.2. Frequency Hopping Tests

Conducted Test Conditions for Frequency Hopping Measurements			
Standard:	FCC CFR 47:15.247 ISED RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Frequency Hopping Tests	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.247 (a)(1)(i)/(ii) Section 5.1	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References, FCC Public Notice DA 00-705		

Test Procedure for Frequency Hopping Measurements

These tests cover the following measurements:

i) channel separation
ii) channel occupancy
iii) dwell time
iv) number of hopping frequencies

Frequency hopping testing was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency or hopping mode.

Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits for Frequency Hopping Measurements

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(i) For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

(ii) Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

9.2.1. Number of Hopping Channels

Equipment Configuration for Number of Hopping Channels			
Variant:	37.5kbps, DEV 16.4kHz	**Antenna:**	Not Applicable
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Frequency Range (MHz)	Number of Hopping Channels	Limit (Minimum Required)	Pass / Fail
902.0-910.0	35	--	--
910.0-920.0	50	--	--
920.0-928.0	35	--	--
Total number of Hops	**120**	**50**	**Pass**

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Number of Hopping Channels			
Variant:	37.5kbps, DEV 50kHz	**Antenna:**	Not Applicable
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Frequency Range (MHz)	Number of Hopping Channels	Limit (Minimum Required)	Pass / Fail
902.0-910.0	35	--	--
910.0-920.0	50	--	--
920.0-928.0	35	--	--
Total number of Hops	**120**	**50**	**Pass**

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Number of Hopping Channels			
Variant:	OOK - PL1	**Antenna:**	Not Applicable
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Frequency Range (MHz)	Number of Hopping Channels	Limit (Minimum Required)	Pass / Fail
902.0-910.0	35	--	--
910.0-920.0	50	--	--
920.0-928.0	35	--	--
Total number of Hops	**120**	**50**	**Pass**

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Number of Hopping Channels			
Variant:	OOK - PL3	**Antenna:**	Not Applicable
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Frequency Range (MHz)	Number of Hopping Channels	Limit (Minimum Required)	Pass / Fail
902.0-910.0	35	--	--
910.0-920.0	50	--	--
920.0-928.0	35	--	--
Total number of Hops	**120**	**50**	**Pass**

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.2.2. Channel Separation

Equipment Configuration for Channel Separation			
Variant:	37.5kbps, DEV 16.4kHz	**Antenna:**	Not Applicable
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	199.148	0.068	Pass

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Channel Separation			
Variant:	37.5kbps, DEV 50kHz	**Antenna:**	Not Applicable
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	0.203	0.136	Pass

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Channel Separation			
Variant:	OOK - PL1	**Antenna:**	Not Applicable
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	201.403	0.060	Pass

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Channel Separation			
Variant:	OOK - PL3	**Antenna:**	Not Applicable
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
Duty Cycle (%):	100.0	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Center Frequency (MHz)	Chan Separation (MHz)	Limit (MHz)	Pass / Fail
915.0	196.894	0.061	Pass

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.3. Output Power

Conducted Test Conditions for Fundamental Emission Output Power			
Standard:	FCC CFR 47:15.247 ISED RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Output Power	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.247 (a)(1), (b)(1)/(2)/(3) Section 5.4	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Fundamental Emission Output Power Measurement

In the case of average power measurements an average power sensor was utilized.

For peak power measurements the spectrum analyzer built-in power function was used to integrate peak power over the 20 dB bandwidth.

Testing was performed under ambient conditions, nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured, summed (Σ) and reported.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.
Supporting Information
Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [10*Log10 ($10^{a/10}$ + $10^{b/10}$ + $10^{c/10}$ + $10^{d/10}$)]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

Limits for Fundamental Emission Output Power

(a) Operation under the provisions of this Section is limited to frequency hopping and digitally modulated intentional radiators that comply with the following provisions:

(1) Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following for frequency hopping systems:

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time

intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Equipment Configuration for Output Power Peak			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	2.23
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
903.0	24.18	--	--	--	24.18	30.00	-5.82	27.00
915.0	23.92	--	--	--	23.92	30.00	-6.08	27.00
926.8	23.41	--	--	--	23.41	30.00	-6.59	27.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

Equipment Configuration for Output Power Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	2.23
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
903.0	24.14	--	--	--	24.14	30.00	-5.86	27.00
915.0	24.01	--	--	--	24.01	30.00	-5.99	27.00
926.8	23.29	--	--	--	23.29	30.00	-6.71	27.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

Equipment Configuration for Output Power Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	2.23
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
903.0	4.07	--	--	--	4.07	30.00	-25.93	10.00
915.0	3.90	--	--	--	3.90	30.00	-26.10	10.00
926.8	3.58	--	--	--	3.58	30.00	-26.42	10.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

Equipment Configuration for Output Power Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	2.23
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Output Power (dBm) Port(s)				Calculated Total Power Σ Port(s)	Limit	Margin	EUT Power Setting
MHz	a	b	c	d	dBm	dBm	dB	
903.0	21.00	--	--	--	21.00	30.00	-13.19	27.00
915.0	19.93	--	--	--	19.93	30.00	-13.58	27.00
926.8	18.58	--	--	--	18.58	30.00	-14.97	27.00

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Measurement Uncertainty:	±1.33 dB

The above measurements are true pulse readings and therefore a Duty Cycling correction factor is not required.

9.4. Emissions

9.4.1. Conducted Emissions

Conducted Test Conditions for Transmitter Conducted Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.247 ISED RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Transmitter Conducted Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.247 (d) Section 5.5	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Transmitter Conducted Spurious and Band-Edge Emissions Measurement

Transmitter Conducted Spurious and Band-Edge emissions were measured at a limit of 30 dBc (average detector) or 20 dBc (peak detector) below the highest in-band spectral density measured with a spectrum analyzer connected to the antenna terminal. Measurements were made while EUT was operating in transmit mode of operation at the appropriate centre frequency closest to the band-edge. Emissions were maximized during the measurement and limits derived from the peak spectral power and drawn on each plot.

Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured separately. Testing was performed under ambient conditions at nominal voltage only.

Test configuration and setup used for the measurement was per the Conducted Test Set-up specified in this document.

Limits Transmitter Conducted Spurious and Band-Edge Emissions

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

9.4.1.1. Conducted Unwanted Spurious Emissions

Equipment Configuration for Unwanted Emissions Peak			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Unwanted Emissions Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
903.0	30.0 - 10000.0	-29.382	3.74						
915.0	30.0 - 10000.0	-30.072	3.74						
926.8	30.0 - 10000.0	-29.081	2.99						

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Unwanted Emissions Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Unwanted Emissions Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
903.0	30.0 - 10000.0	-29.852	3.71						
915.0	30.0 - 10000.0	-29.966	3.71						
926.8	30.0 - 10000.0	-29.270	2.75						

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Unwanted Emissions Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Unwanted Emissions Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
903.0	30.0 - 10000.0	-31.457	-12.92						
915.0	30.0 - 10000.0	-30.782	-12.70						
926.8	30.0 - 10000.0	-31.601	-13.17						

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Unwanted Emissions Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Frequency Range	Unwanted Emissions Peak (dBm)							
		Port a		Port b		Port c		Port d	
MHz	MHz	SE	Limit	SE	Limit	SE	Limit	SE	Limit
903.0	30.0 - 10000.0	-28.595	-0.07						
915.0	30.0 - 10000.0	-29.622	-0.25						
926.8	30.0 - 10000.0	-30.845	-1.71						

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.4.1.2. Conducted Band-Edge Emissions

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak

Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz
Band-Edge Frequency:	902.0 MHz
Test Frequency Range:	875.0 - 905.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-35.86	3.94	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz
Band-Edge Frequency:	902.0 MHz
Test Frequency Range:	875.0 - 905.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-33.87	3.92	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M1 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-33.08	-12.65	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Hopping) Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M1 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-21.89	0.33	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz
Band-Edge Frequency:	902.0 MHz
Test Frequency Range:	875.0 - 905.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-35.67	4.03	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz
Band-Edge Frequency:	902.0 MHz
Test Frequency Range:	875.0 - 905.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-35.00	3.92	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz
Band-Edge Frequency:	902.0 MHz
Test Frequency Range:	875.0 - 905.0 MHz

Port(s)	Band-Edge Markers and Limit			Revised Limit		Margin
	M1 Amplitude (dBm)	Plot Limit (dBm)	M2 Frequency (MHz)	Amplitude (dBm)	M2A Frequency (MHz)	(MHz)
a	-31.30	-12.60	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Low Band-Edge Emissions (Static) Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	903.0 MHz					
Band-Edge Frequency:	902.0 MHz					
Test Frequency Range:	875.0 - 905.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M1 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-21.47	0.30	902.80			-0.800

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-37.58	3.51	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-33.00	3.48	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-34.64	-12.30	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Hopping) Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-25.32	-0.47	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak			
Variant:	37.5kbps, DEV 16.4kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-34.68	3.70	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak			
Variant:	37.5kbps, DEV 50kHz	**Duty Cycle (%):**	100.0
Data Rate:	37.50 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-33.36	3.75	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak			
Variant:	OOK - PL1	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	OOK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-33.10	-12.50	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

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Equipment Configuration for Conducted Upper Band-Edge Emissions (Static) Peak			
Variant:	OOK - PL3	**Duty Cycle (%):**	100.0
Data Rate:	16.38 KBit/s	**Antenna Gain (dBi):**	Not Applicable
Modulation:	GFSK	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	BQ
Engineering Test Notes:			

Test Measurement Results

Channel Frequency:	926.8 MHz					
Band-Edge Frequency:	928.0 MHz					
Test Frequency Range:	925.0 - 950.0 MHz					
Port(s)	**Band-Edge Markers and Limit**			**Revised Limit**		**Margin**
	M3 Amplitude (dBm)	**Plot Limit (dBm)**	**M2 Frequency (MHz)**	**Amplitude (dBm)**	**M2A Frequency (MHz)**	**(MHz)**
a	-24.68	-0.59	927.00			-1.000

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-05 MEASUREMENT OF SPURIOUS EMISSIONS
Measurement Uncertainty:	<=40 GHz ±2.37 dB, > 40 GHz ±4.6 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.4.2. 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).

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

9.4.2.3.1. GFSK

Equipment Configuration for 30 MHZ TO 1 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	903.00	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**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	806.97	39.78	6.65	-2.92	43.51	NRB	Horizontal	100	90	--	--	Pass
2	806.97	38.19	6.65	-2.92	41.92	NRB	Vertical	100	90	--	--	Pass
3	868.08	43.50	6.83	-2.18	48.15	NRB	Horizontal	100	300	--	--	Pass
4	882.63	42.26	6.88	-2.23	46.90	NRB	Horizontal	100	330	--	--	Pass
5	903.00	53.84	6.93	28.70	58.92	Fundamental	Horizontal	199	90	--	--	Pass
6	975.38	34.80	7.17	-1.09	40.88	MaxQP	Horizontal	198	286	54.0	-13.1	Pass
7	998.96	44.00	7.23	-0.94	50.29	MaxQP	Horizontal	192	123	54.0	-3.7	Pass

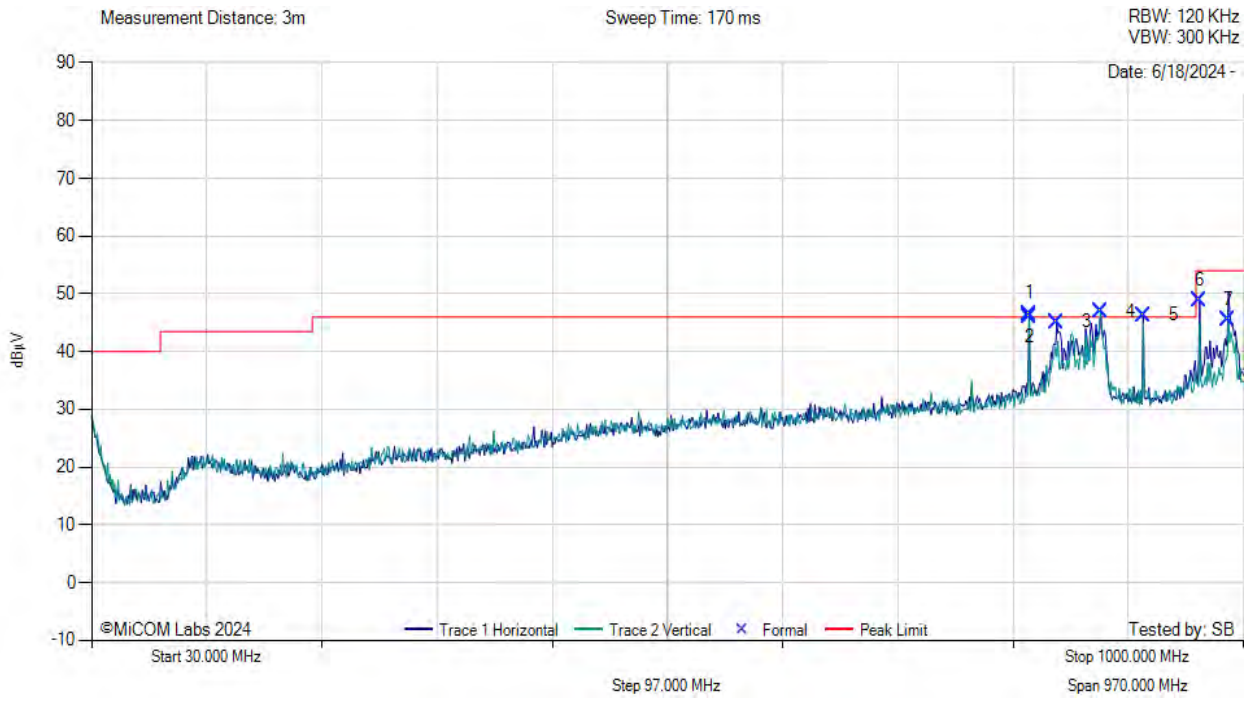
Test Notes: SN: 2935662-02, GFSK, 903 MHz, 37.5 kbps, Power Level 3

Non Restrictive Band (NRB)

Equipment Configuration for 30 MHZ TO 1 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	915.00	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**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	819.58	42.53	6.69	-2.67	46.55	NRB	Horizontal	100	120	--	--	Pass
2	819.58	42.02	6.69	-2.67	46.04	NRB	Vertical	100	120	--	--	Pass
3	842.86	40.74	6.75	-2.38	45.1	NRB	Horizontal	100	268	--	--	Pass
4	879.72	42.31	6.88	-2.23	46.96	NRB	Horizontal	100	300	--	--	Pass
5	915.00	41.13	6.98	-1.75	46.36	Fundamental	Horizontal	199	300	--	--	Pass
6	963.03	42.80	7.11	-1.09	48.82	MaxQP	Horizontal	194	115	54.0	-5.2	Pass
7	987.18	39.33	7.18	-1.00	45.52	MaxQP	Horizontal	198	268	54.0	-8.5	Pass

Test Notes: SN: 2935662-02, GFSK, 915 MHz, 37.5 kbps, Power Level 3

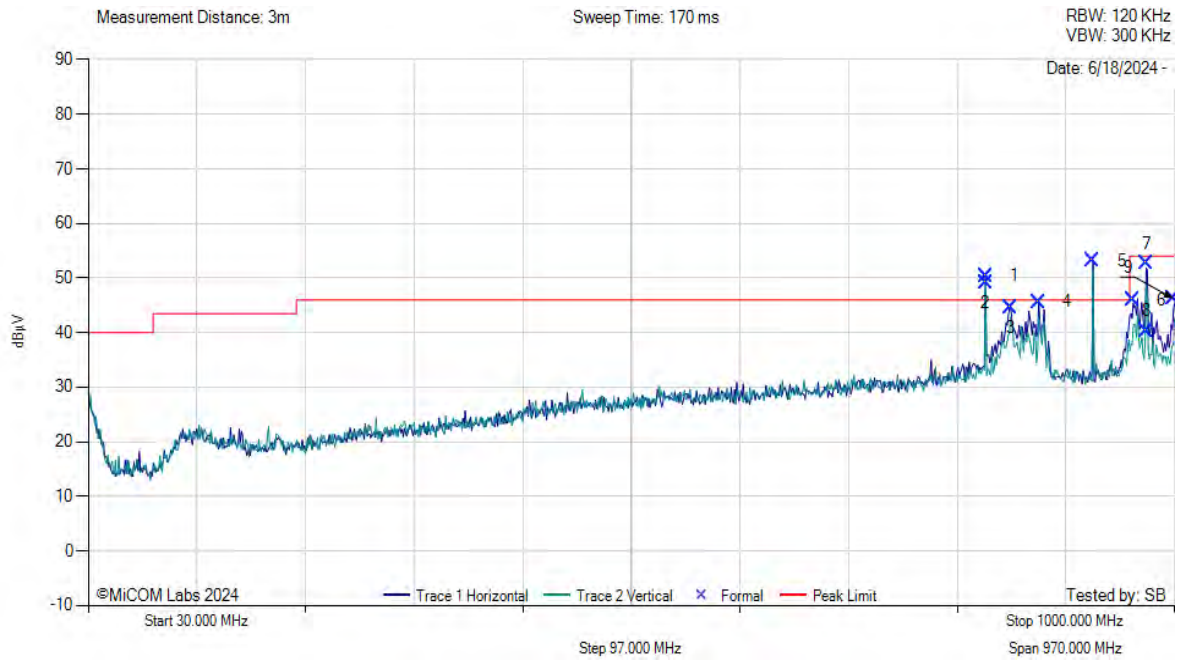
Non Restrictive Band (NRB)

Equipment Configuration for 30 MHZ TO 1 GHZ

Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	926.8	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**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	831.22	46.21	6.72	-2.57	50.37	NRB	Horizontal	100	300	--	--	Pass
2	831.22	44.97	6.72	-2.57	49.12	NRB	Vertical	100	300	--	--	Pass
3	853.53	40.08	6.79	-2.36	44.52	NRB	Horizontal	100	300	--	--	Pass
4	878.75	40.96	6.86	-2.20	45.63	NRB	Horizontal	100	270	--	--	Pass
5	926.80	47.75	7.00	-1.55	53.20	Fundamental	Horizontal	199	90	--	--	Pass
6	963.01	39.99	7.11	-1.09	46.01	MaxQP	Horizontal	199	123	54.0	-8.0	Pass
7	974.74	46.55	7.15	-1.09	52.61	MaxQP	Horizontal	199	115	54.0	-1.4	Pass
8	974.82	34.28	7.16	-1.09	40.34	MaxQP	Vertical	199	328	54.0	-13.7	Pass
9	999.16	39.95	7.23	-0.94	46.23	MaxQP	Horizontal	194	287	54.0	-7.8	Pass

Test Notes: SN: 2935662-02, GFSK, 926.8 MHz, 37.5 kbps, Power Level 3

Non Restrictive Band (NRB)

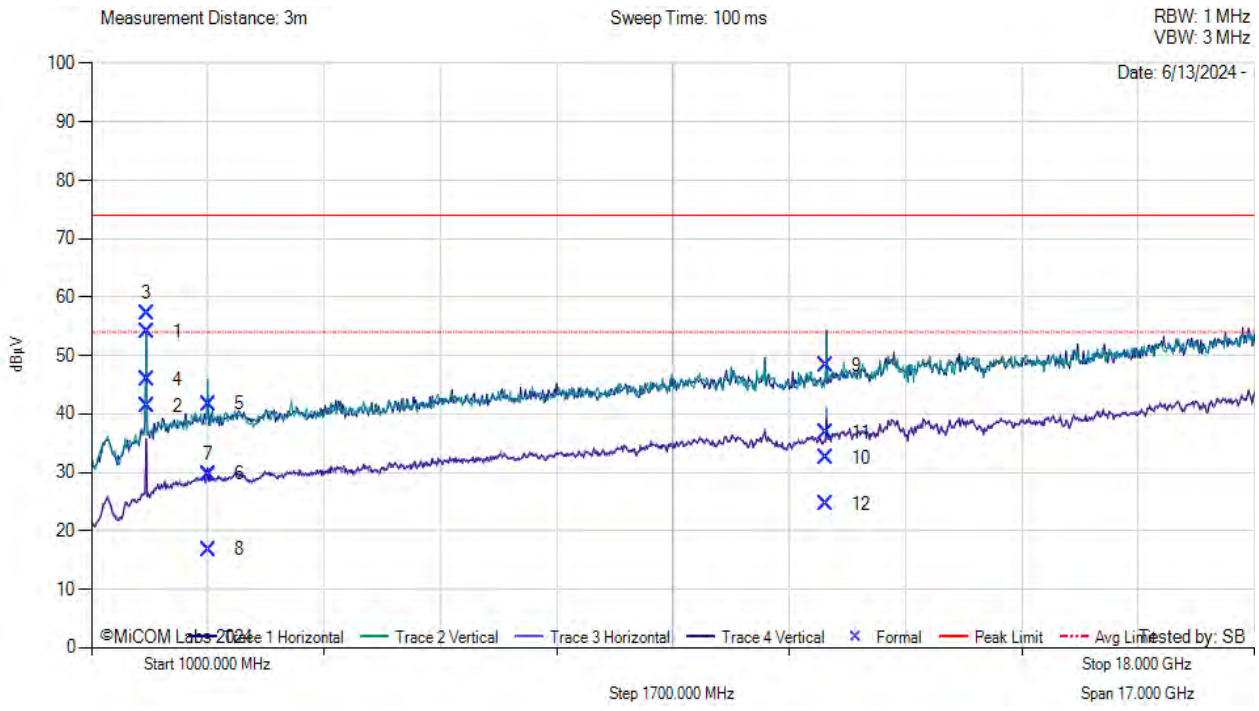
9.4.2.4. TX Spurious & Restricted Band Emissions 1GHz to 18GHz

9.4.2.4.1. GFSK

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	903.00	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**Tested By:**	SB

Test Measurement Results

FCC Spurious 1 GHz -18 GHz

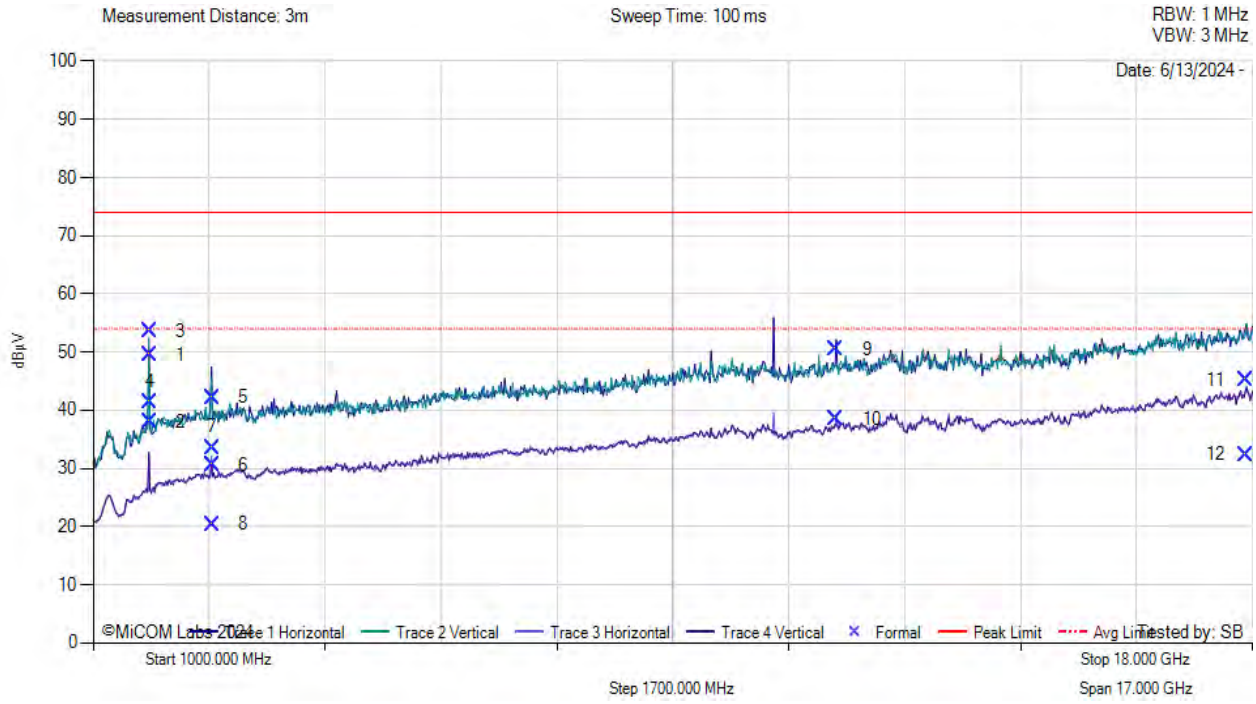


1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1806.07	66.86	1.71	-14.53	54.04	MaxP	Horizontal	198	33	74.0	-20.0	Pass
2	1806.07	54.24	1.71	-14.53	41.42	AVG	Horizontal	198	33	54.0	-12.6	Pass
3	1806.10	69.99	1.71	-14.53	57.17	MaxP	Vertical	155	111	74.0	-16.8	Pass
4	1806.10	58.77	1.71	-14.53	45.95	AVG	Vertical	155	111	54.0	-8.0	Pass
5	2709.07	51.44	2.07	-11.77	41.74	MaxP	Vertical	177	58	74.0	-32.3	Pass
6	2709.07	39.42	2.07	-11.77	29.72	AVG	Vertical	177	58	54.0	-24.3	Pass
7	2709.35	39.26	2.07	-11.77	29.56	MaxP	Horizontal	175	303	74.0	-44.4	Pass
8	2709.35	26.54	2.07	-11.77	16.84	AVG	Horizontal	175	303	54.0	-37.2	Pass
9	11738.95	49.82	5.02	-6.52	48.32	MaxP	Horizontal	175	325	74.0	-25.7	Pass
10	11738.95	34.04	5.02	-6.52	32.54	AVG	Horizontal	175	325	54.0	-21.5	Pass
11	11739.84	38.35	5.02	-6.52	36.85	MaxP	Vertical	161	311	74.0	-37.1	Pass
12	11739.84	26.02	5.02	-6.52	24.52	AVG	Vertical	161	311	54.0	-29.5	Pass
Test Notes: SN: 2935662-02, Power Level 3, GFSK,903MHz, 37.5 kbps												

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	915.00	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**Tested By:**	SB

Test Measurement Results

FCC Spurious 1 GHz -18 GHz

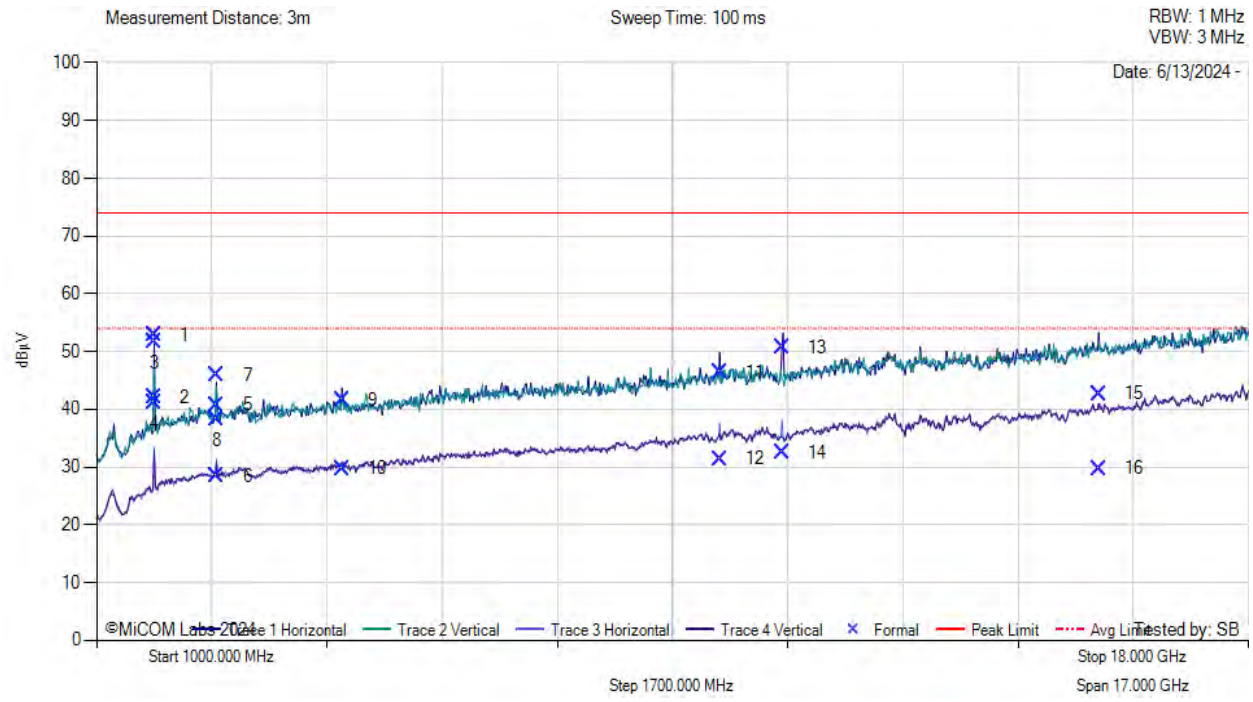


1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1829.93	62.14	1.75	-14.36	49.53	MaxP	Vertical	161	0	74.0	-24.5	Pass
2	1829.93	50.63	1.75	-14.36	38.02	AVG	Vertical	161	0	54.0	-16.0	Pass
3	1830.04	66.26	1.75	-14.36	53.65	MaxP	Horizontal	160	103	74.0	-20.4	Pass
4	1830.04	53.93	1.75	-14.36	41.32	AVG	Horizontal	160	103	54.0	-12.7	Pass
5	2744.93	51.82	2.11	-11.74	42.18	MaxP	Vertical	149	71	74.0	-31.8	Pass
6	2744.93	40.15	2.11	-11.74	30.52	AVG	Vertical	149	71	54.0	-23.5	Pass
7	2745.25	43.18	2.11	-11.74	33.55	MaxP	Horizontal	167	107	74.0	-40.5	Pass
8	2745.25	30.02	2.11	-11.74	20.39	AVG	Horizontal	167	107	54.0	-33.6	Pass
9	11895.59	51.71	4.96	-6.16	50.52	MaxP	Horizontal	184	2	74.0	-23.5	Pass
10	11895.59	39.72	4.96	-6.16	38.53	AVG	Horizontal	184	2	54.0	-15.5	Pass
11	17913.36	37.17	6.72	1.27	45.16	MaxP	Horizontal	154	249	74.0	-28.8	Pass
12	17913.36	24.43	6.72	1.27	32.42	AVG	Horizontal	154	249	54.0	-21.6	Pass
Test Notes: SN: 2935662-02, Power Level 3, GFSK,915MHz, 37,5 kbps												

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	GFSK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	926.8	**Data Rate:**	37.5kbps
Power Setting:	Power Level 3	**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	1853.51	65.29	1.72	-14.16	52.85	MaxP	Vertical	150	121	74.0	-21.2	Pass
2	1853.51	54.46	1.72	-14.16	42.01	AVG	Vertical	150	121	54.0	-12.0	Pass
3	1853.60	64.15	1.72	-14.16	51.71	MaxP	Horizontal	157	110	74.0	-22.3	Pass
4	1853.60	53.53	1.72	-14.16	41.09	AVG	Horizontal	157	110	54.0	-12.9	Pass
5	2780.34	50.40	2.13	-11.79	40.74	MaxP	Vertical	156	301	74.0	-33.3	Pass
6	2780.34	38.07	2.13	-11.79	28.41	AVG	Vertical	156	301	54.0	-25.6	Pass
7	2780.53	55.53	2.13	-11.79	45.87	MaxP	Horizontal	150	107	74.0	-28.1	Pass
8	2780.53	47.90	2.13	-11.79	38.24	AVG	Horizontal	150	107	54.0	-15.8	Pass
9	4633.83	51.08	2.80	-12.27	41.61	MaxP	Horizontal	189	311	74.0	-32.4	Pass
10	4633.83	39.24	2.80	-12.27	29.78	AVG	Horizontal	189	311	54.0	-24.2	Pass
11	10194.37	47.29	4.36	-5.22	46.43	MaxP	Horizontal	198	0	74.0	-27.6	Pass
12	10194.37	32.26	4.36	-5.22	31.40	AVG	Horizontal	198	0	54.0	-22.6	Pass
13	11122.30	51.85	4.51	-5.63	50.73	MaxP	Horizontal	150	5	74.0	-23.3	Pass
14	11122.30	33.61	4.51	-5.63	32.49	AVG	Horizontal	150	5	54.0	-21.5	Pass
15	15788.34	38.41	5.86	-1.59	42.69	MaxP	Horizontal	157	131	74.0	-31.3	Pass
16	15788.34	25.51	5.86	-1.59	29.78	AVG	Horizontal	157	131	54.0	-24.2	Pass

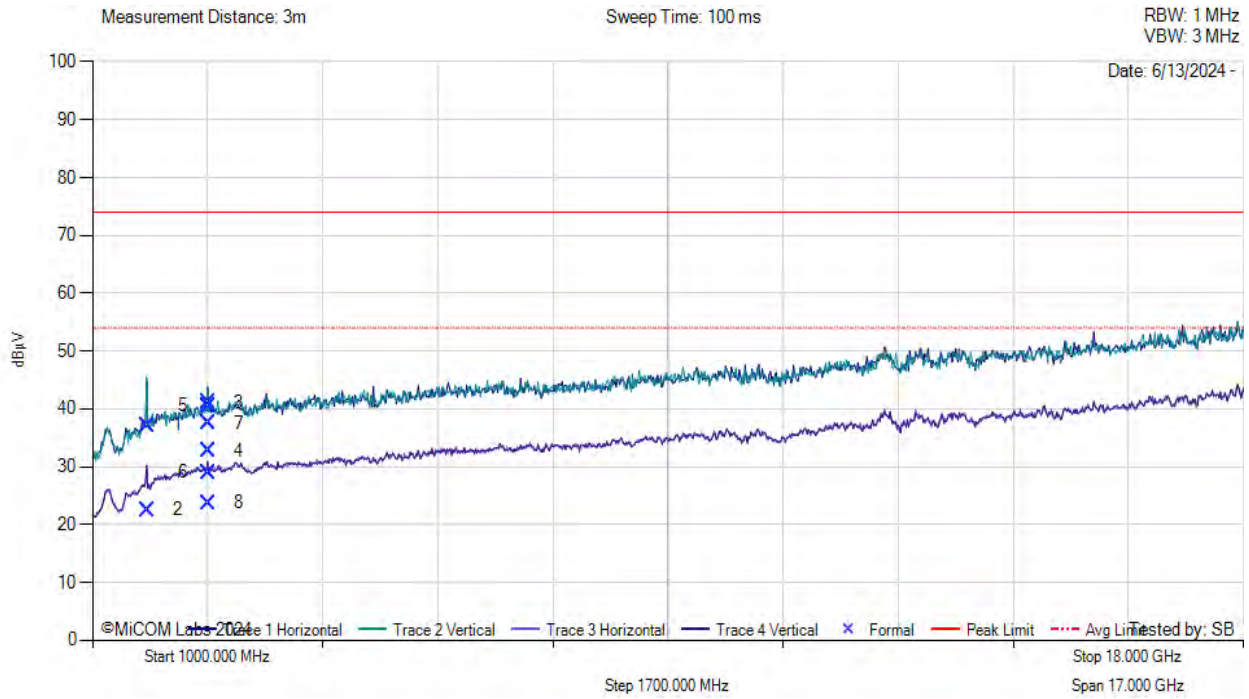
Test Notes: SN: 2935662-02, Power Level 3, GFSK,926.8 MHz, 37.5 kbps

9.4.2.4.2. OOK Power Level 3

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	OOK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	903.00	**Data Rate:**	16.384kbps
Power Setting:	Power Level 3	**Tested By:**	SB

Test Measurement Results

FCC Spurious 1 GHz -18 GHz



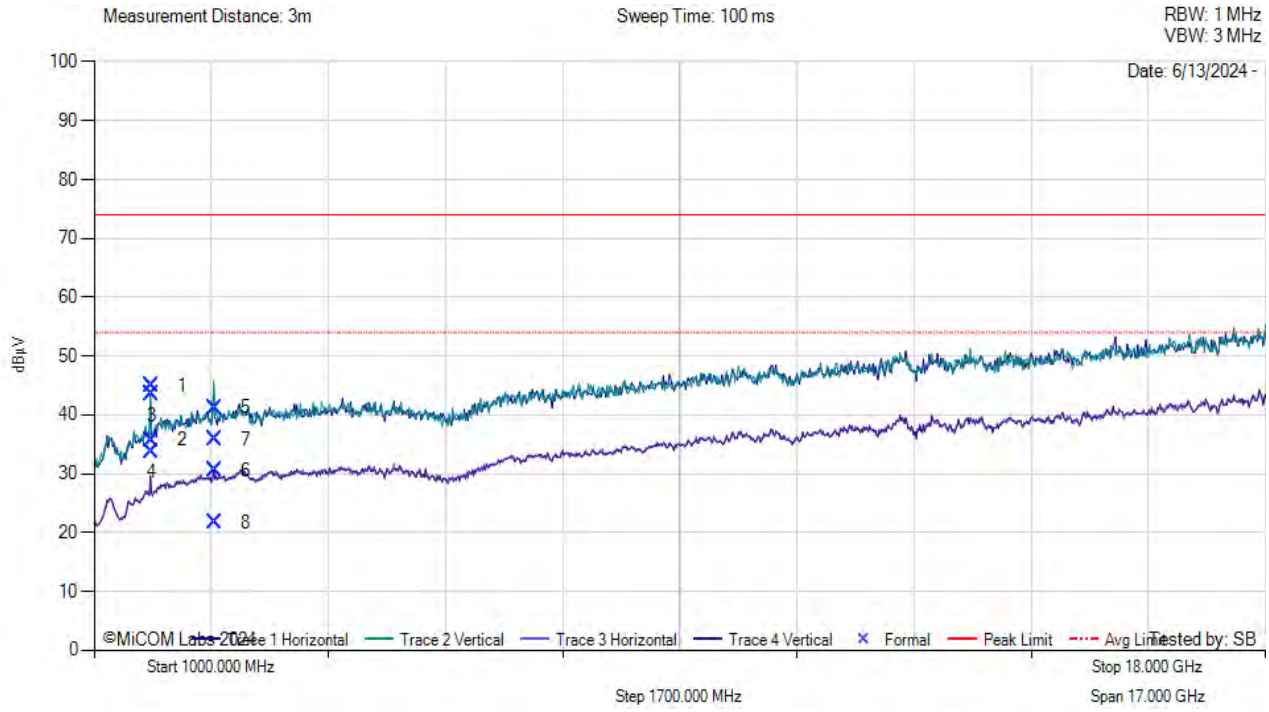
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	1805.89	50.00	1.71	-14.53	37.18	MaxP	Vertical	150	68	74.0	-36.8	Pass
2	1805.89	35.33	1.71	-14.53	22.51	AVG	Vertical	150	68	54.0	-31.5	Pass
3	2709.00	50.89	2.07	-11.77	41.19	MaxP	Vertical	149	342	74.0	-32.8	Pass
4	2709.00	42.37	2.07	-11.77	32.67	AVG	Vertical	149	342	54.0	-21.3	Pass
5	2709.07	50.25	2.07	-11.77	40.55	MaxP	Horizontal	172	308	74.0	-33.4	Pass
6	2709.07	38.75	2.07	-11.77	29.05	AVG	Horizontal	172	308	54.0	-24.9	Pass
7	2709.10	47.24	2.07	-11.77	37.54	MaxP	Horizontal	154	298	74.0	-36.5	Pass
8	2709.10	33.42	2.07	-11.77	23.72	AVG	Horizontal	154	298	54.0	-30.3	Pass

Test Notes: SN: 2935662-02, Power Level 3, OOK 903MHz, 16.384kbp

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	OOK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	915.00	**Data Rate:**	16.384kbps
Power Setting:	Power Level 3	**Tested By:**	SB

Test Measurement Results

FCC Spurious 1 GHz -18 GHz



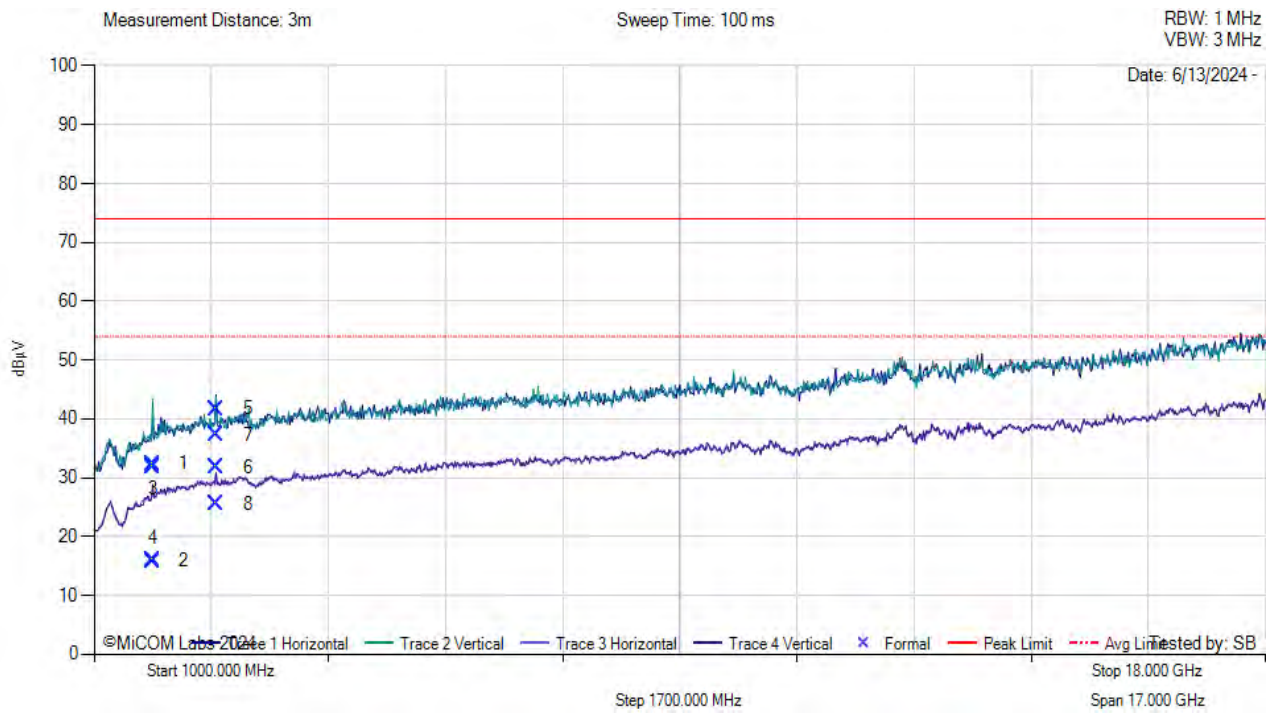
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	1829.99	57.60	1.75	-14.36	44.99	MaxP	Vertical	150	140	74.0	-29.0	Pass
2	1829.99	48.33	1.75	-14.36	35.71	AVG	Vertical	150	140	54.0	-18.3	Pass
3	1830.02	56.19	1.75	-14.36	43.58	MaxP	Horizontal	154	83	74.0	-30.4	Pass
4	1830.02	46.40	1.75	-14.36	33.79	AVG	Horizontal	154	83	54.0	-20.2	Pass
5	2744.94	50.88	2.11	-11.74	41.25	MaxP	Vertical	174	101	74.0	-32.7	Pass
6	2744.94	40.16	2.11	-11.74	30.53	AVG	Vertical	174	101	54.0	-23.5	Pass
7	2745.10	45.54	2.11	-11.74	35.91	MaxP	Horizontal	168	188	74.0	-38.1	Pass
8	2745.10	31.39	2.11	-11.74	21.76	AVG	Horizontal	168	188	54.0	-32.2	Pass

Test Notes: SN: 2935662-02, Power Level 3, OOK 915MHz, 16.384kbps

Equipment Configuration for FCC SPURIOUS 1 GHZ -18 GHZ			
Antenna:	Integral	**Variant:**	100G DM
Antenna Gain (dBi):	Not Applicable	**Modulation:**	OOK
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	926.80	**Data Rate:**	16.384kbps
Power Setting:	Power Level 3	**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	1853.44	44.79	1.71	-14.16	32.35	MaxP	Vertical	184	90	74.0	-41.6	Pass
2	1853.44	28.27	1.71	-14.16	15.83	AVG	Vertical	184	90	54.0	-38.2	Pass
3	1853.47	44.15	1.71	-14.16	31.71	MaxP	Horizontal	198	96	74.0	-42.3	Pass
4	1853.47	28.50	1.71	-14.16	16.06	AVG	Horizontal	198	96	54.0	-37.9	Pass
5	2780.35	51.35	2.13	-11.79	41.69	MaxP	Vertical	173	90	74.0	-32.3	Pass
6	2780.35	41.50	2.13	-11.79	31.84	AVG	Vertical	173	90	54.0	-22.2	Pass
7	2780.48	46.96	2.13	-11.79	37.30	MaxP	Horizontal	187	59	74.0	-36.7	Pass
8	2780.48	35.14	2.13	-11.79	25.48	AVG	Horizontal	187	59	54.0	-28.5	Pass

Test Notes: SN: 2935662-02, Power Level 3, OOK 926.8MHz, 16.384kbps

10. Manufacturer Dwell Time & Channel Occupancy Declaration

Note: Dwell Time and Channel Occupancy were not tested as part of this test program, these were declared for normal network operation by Itron in the following document provided as an exhibit in support of this test program.

"BPD Time of Use and Equal Usage" 800-0016 Version 06 Dated 29th November 2023

This document contains Dwell & Occupancy times as compliant for the following operation modes declared by the manufacturer for the Itron 100G ERT® Module in normal operation.

1) 100S Mode pages 7 to 9

2) Local Port Mode pages 10 to 12;

3) BACT Mode Pages P13 to P17,

4) EFC/ EFC + Mode P18 to 20.

5) INS Mode Pages 21 to 22.

11. Manufacturer Declaration of Similarity

Itron

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

June 28, 2024

Subject: Declaration of Similarity: EWQ100GTA, 864D-100GTA

Dear Sir or Madam,

We declare the product models listed below are electrically identical.

Product Information	
Marketing Name	100G ERT Module
Description	Gas utility AMR device
Models(s)	ERG-5600-001, ERG-5600-002, ERG-5600-003, ERG-5600-004, ERG-5600-009

The only difference between these variant models is the housing and the gas meter wriggler interface. The differences of these variants does not affect any RF or EMC performance.

Sincerely,

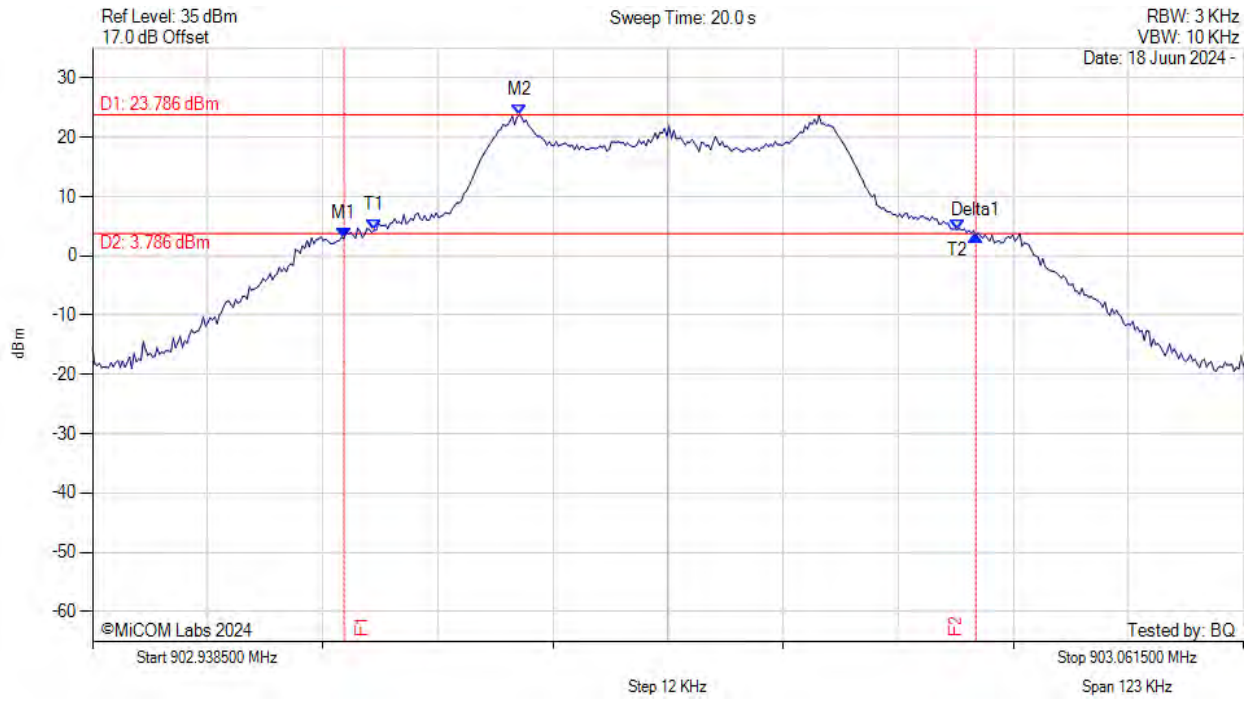
Dan Bomsta
Sr. Principal Regulatory Engineer
507-781-4480
dan.bomsta@itron.com
Itron, Inc.

A. APPENDIX - GRAPHICAL IMAGES

A.1. 20 dB & 99% Bandwidth

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 16.4kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

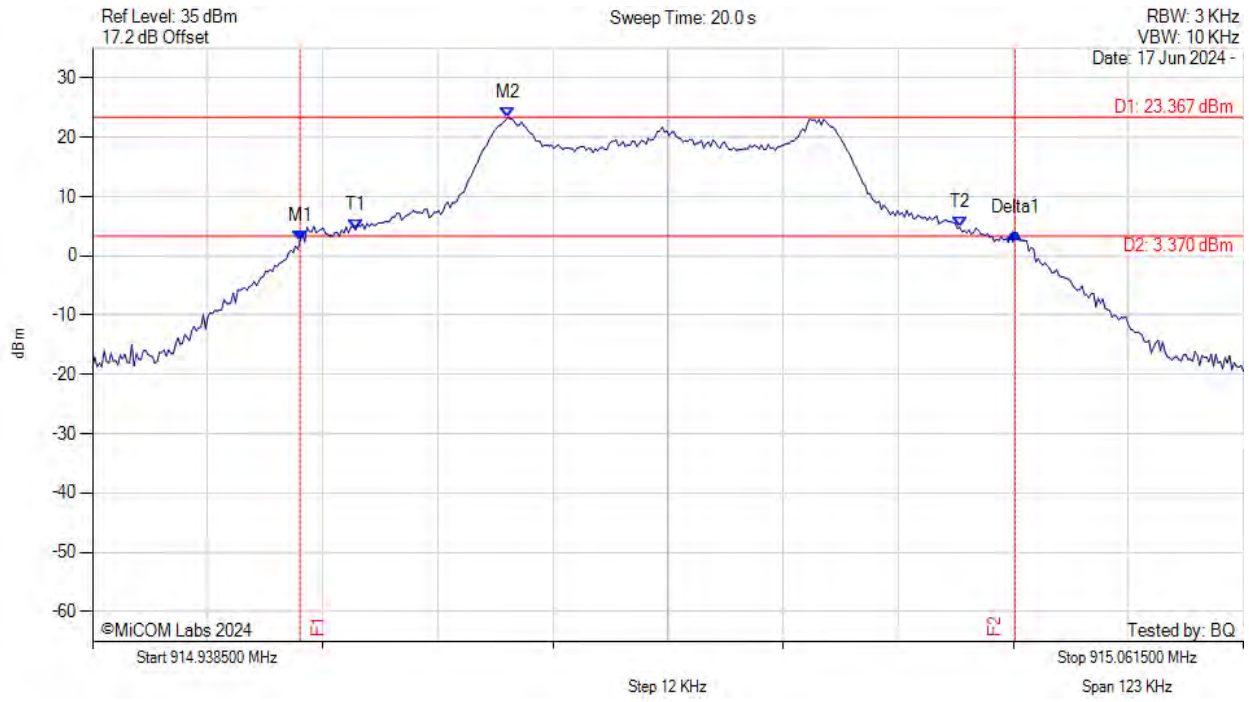


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.965 MHz : 2.960 dBm M2 : 902.984 MHz : 23.786 dBm Delta1 : 68 KHz : 0.478 dB T1 : 902.969 MHz : 4.339 dBm T2 : 903.031 MHz : 4.463 dBm OBW : 62 KHz	Measured 20 dB Bandwidth: 0.068 MHz Limit: 0.5 kHz Margin: -0.43 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

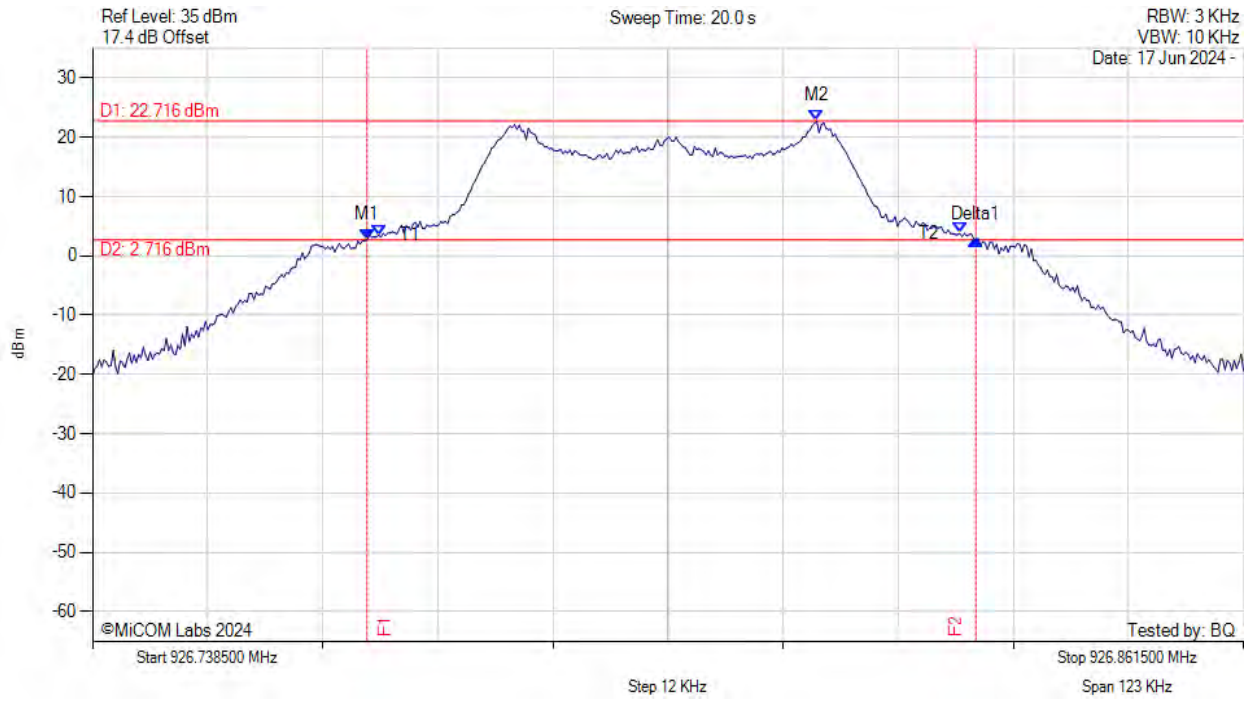


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 914.961 MHz : 2.548 dBm M2 : 914.983 MHz : 23.367 dBm Delta1 : 76 KHz : 1.291 dB T1 : 914.967 MHz : 4.402 dBm T2 : 915.031 MHz : 4.833 dBm OBW : 65 KHz	Measured 20 dB Bandwidth: 0.076 MHz Limit: 0.5 kHz Margin: -0.42 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 16.4kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

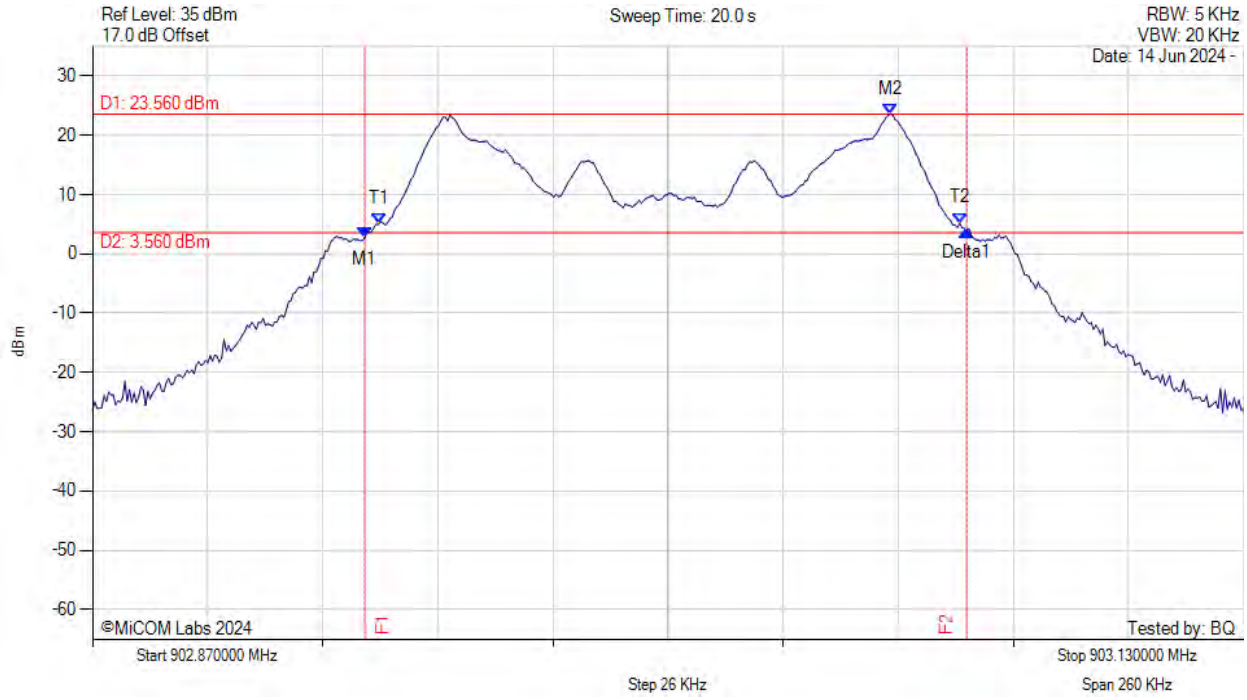


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 926.768 MHz : 2.694 dBm M2 : 926.816 MHz : 22.716 dBm Delta1 : 65 KHz : 0.057 dB T1 : 926.769 MHz : 3.503 dBm T2 : 926.831 MHz : 3.798 dBm OBW : 62 KHz	Measured 20 dB Bandwidth: 0.065 MHz Limit: 0.5 kHz Margin: -0.44 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 50kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

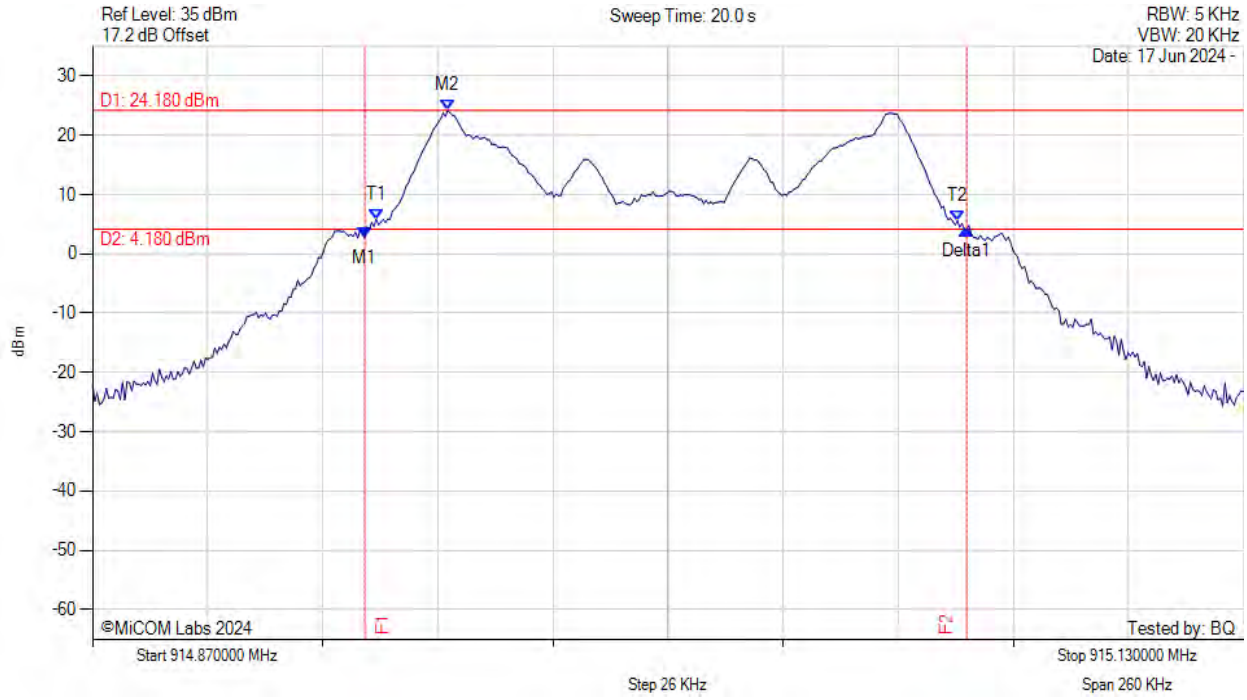


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.931 MHz : 2.747 dBm M2 : 903.050 MHz : 23.560 dBm Delta1 : 136 KHz : 1.125 dB T1 : 902.935 MHz : 4.998 dBm T2 : 903.066 MHz : 5.183 dBm OBW : 131 KHz	Measured 20 dB Bandwidth: 0.136 MHz Limit: 0.5 kHz Margin: -0.36 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

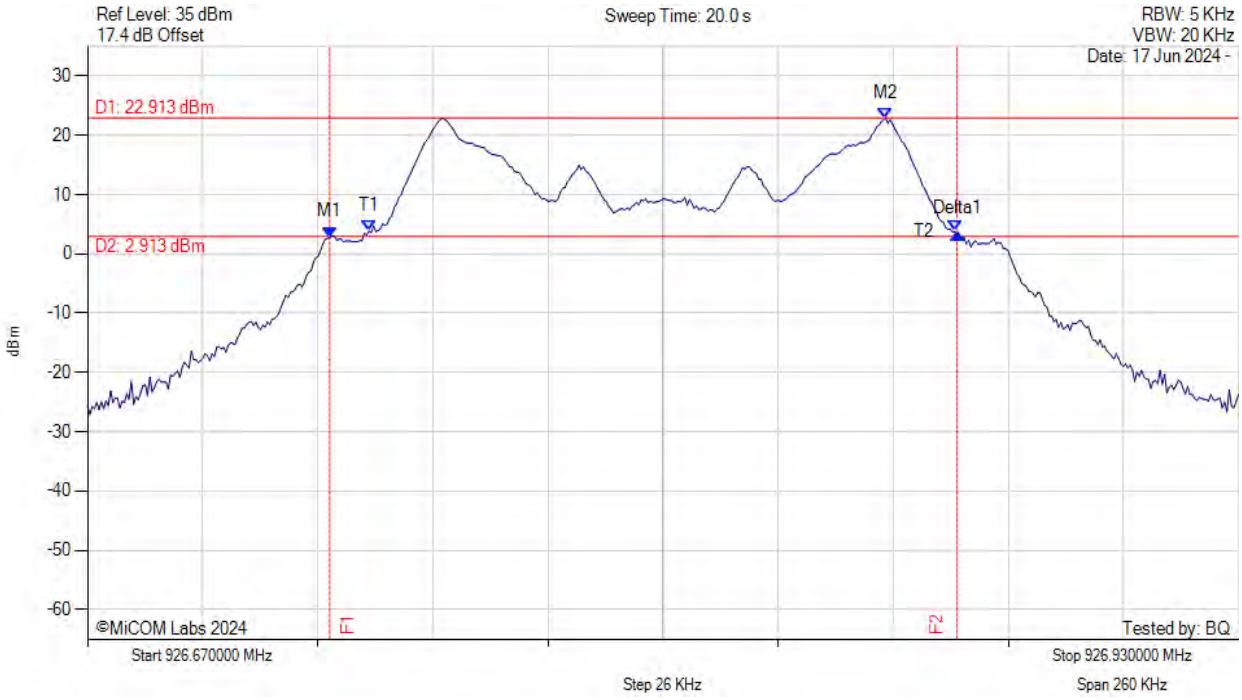


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 914.931 MHz : 2.761 dBm M2 : 914.950 MHz : 24.180 dBm Delta1 : 136 KHz : 1.348 dB T1 : 914.934 MHz : 5.797 dBm T2 : 915.065 MHz : 5.596 dBm OBW : 131 KHz	Measured 20 dB Bandwidth: 0.136 MHz Limit: 0.5 kHz Margin: -0.36 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant:37.5kbps, DEV 50kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

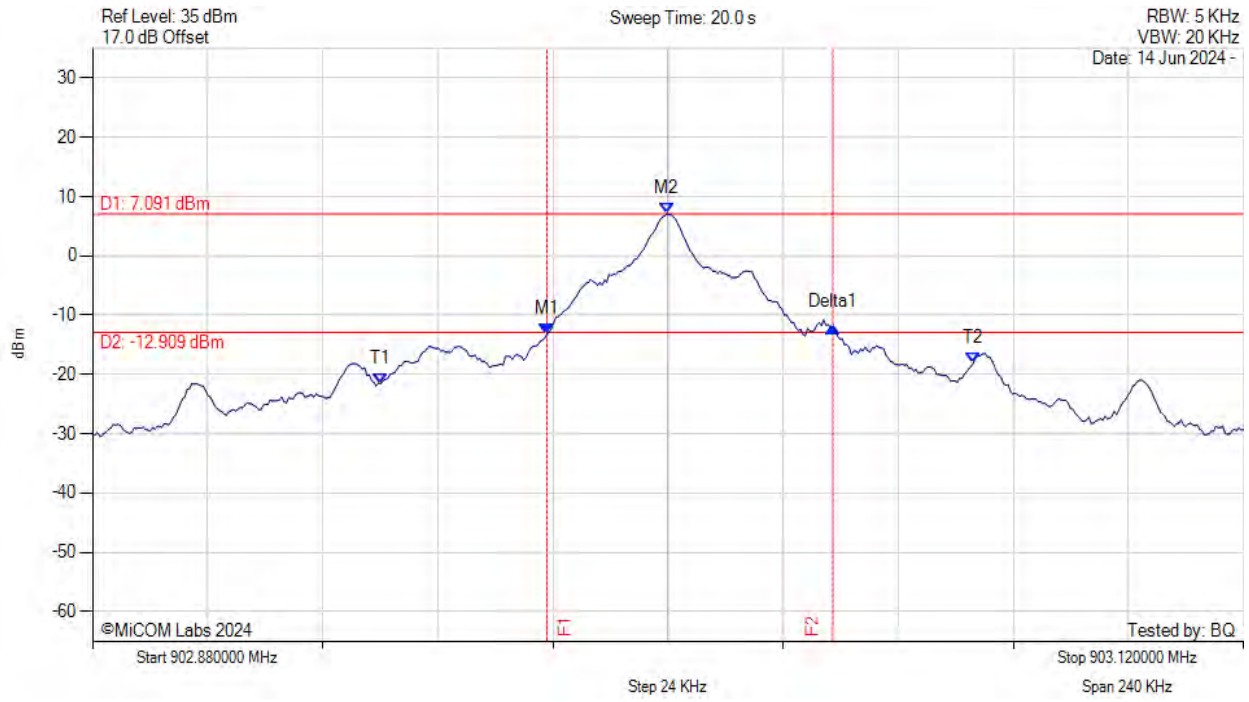


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 926.725 MHz : 2.828 dBm M2 : 926.850 MHz : 22.913 dBm Delta1 : 142 KHz : 0.673 dB T1 : 926.734 MHz : 3.847 dBm T2 : 926.866 MHz : 3.790 dBm OBW : 132 KHz	Measured 20 dB Bandwidth: 0.142 MHz Limit: 0.5 kHz Margin: -0.36 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL1, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

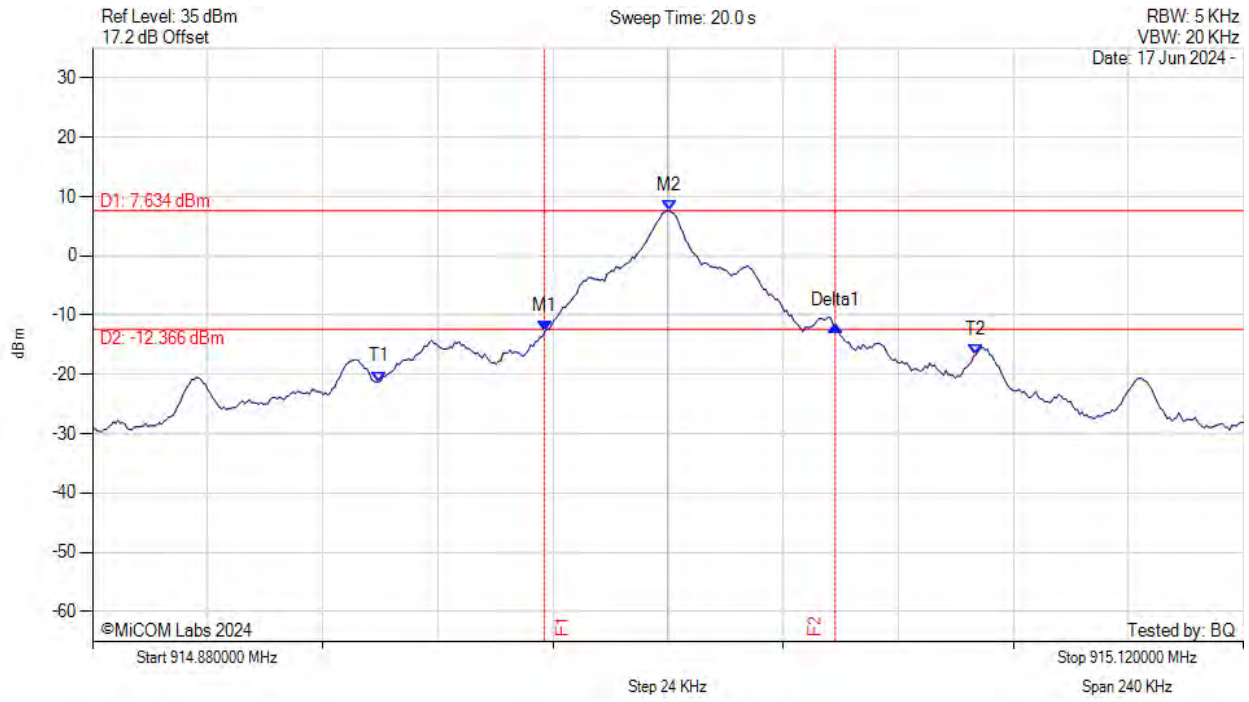


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.975 MHz : -13.167 dBm M2 : 903.000 MHz : 7.091 dBm Delta1 : 60 KHz : 1.070 dB T1 : 902.940 MHz : -21.524 dBm T2 : 903.064 MHz : -17.983 dBm OBW : 124 KHz	Measured 20 dB Bandwidth: 0.060 MHz Limit: 0.5 kHz Margin: -0.44 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

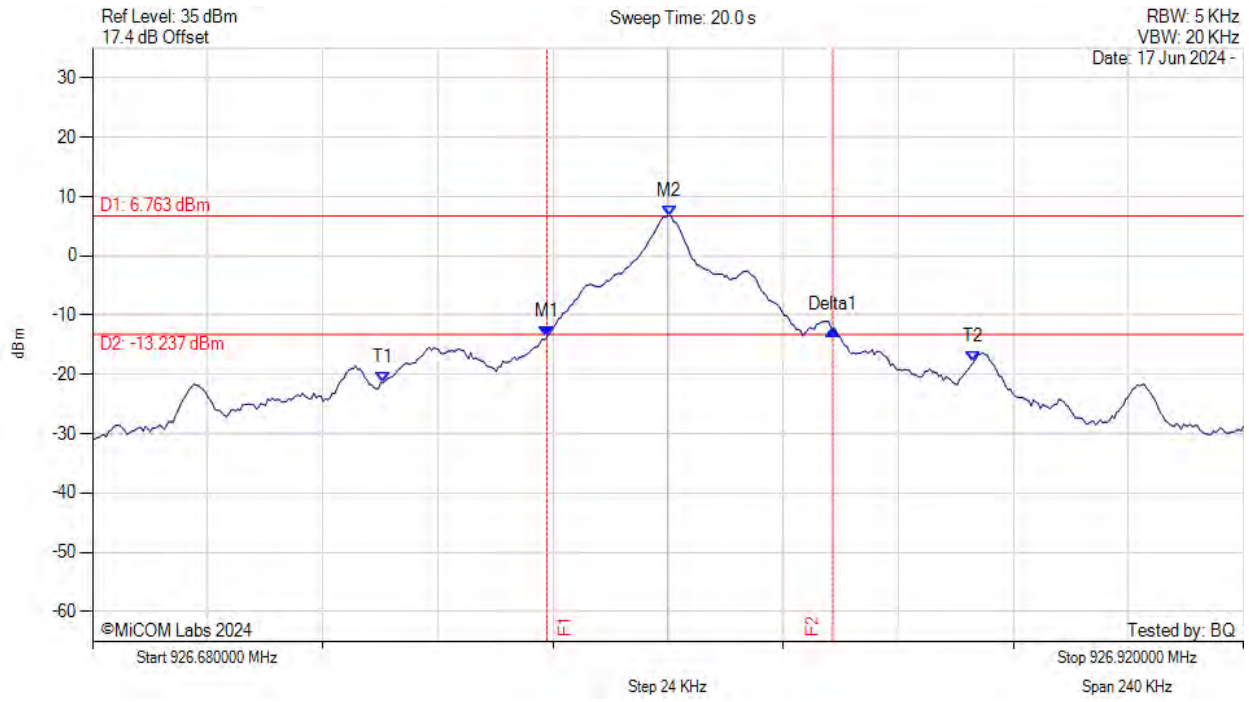


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 914.974 MHz : -12.769 dBm M2 : 915.000 MHz : 7.634 dBm Delta1 : 61 KHz : 0.976 dB T1 : 914.940 MHz : -21.245 dBm T2 : 915.064 MHz : -16.661 dBm OBW : 125 KHz	Measured 20 dB Bandwidth: 0.061 MHz Limit: 0.5 kHz Margin: -0.44 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL1, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

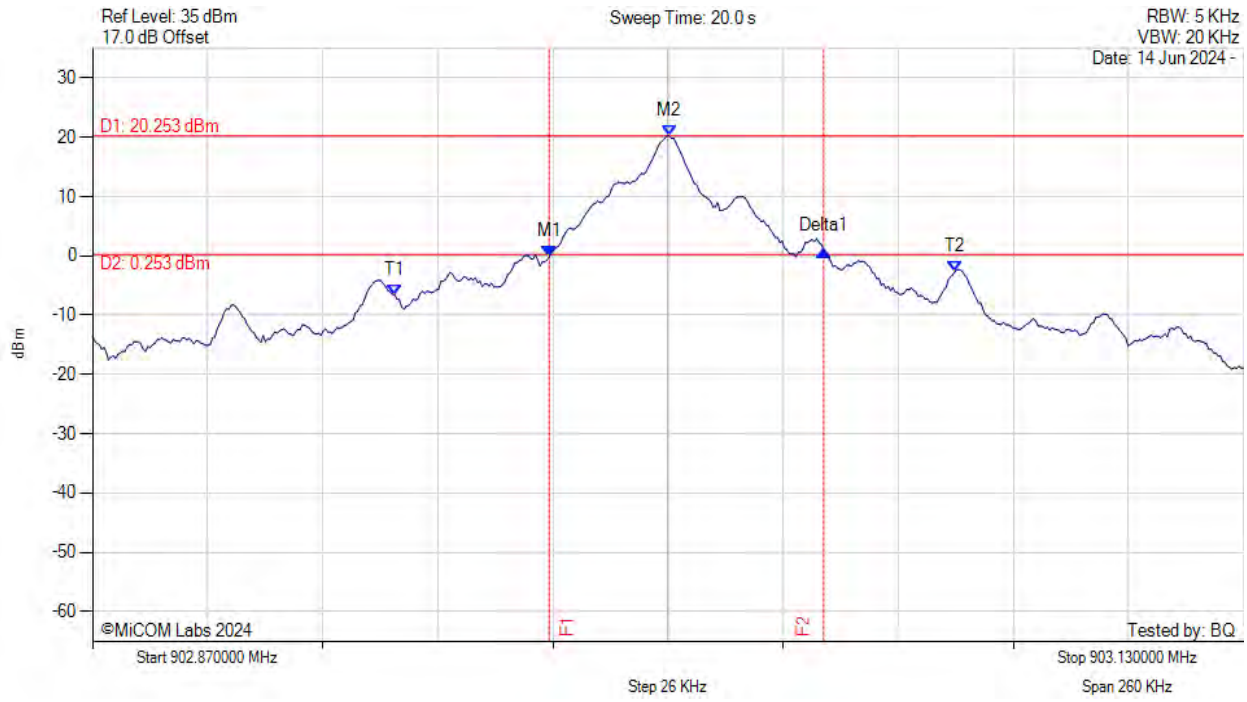


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 926.775 MHz : -13.657 dBm M2 : 926.800 MHz : 6.763 dBm Delta1 : 60 KHz : 1.267 dB T1 : 926.741 MHz : -21.406 dBm T2 : 926.864 MHz : -17.906 dBm OBW : 123 KHz	Measured 20 dB Bandwidth: 0.060 MHz Limit: 0.5 kHz Margin: -0.44 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

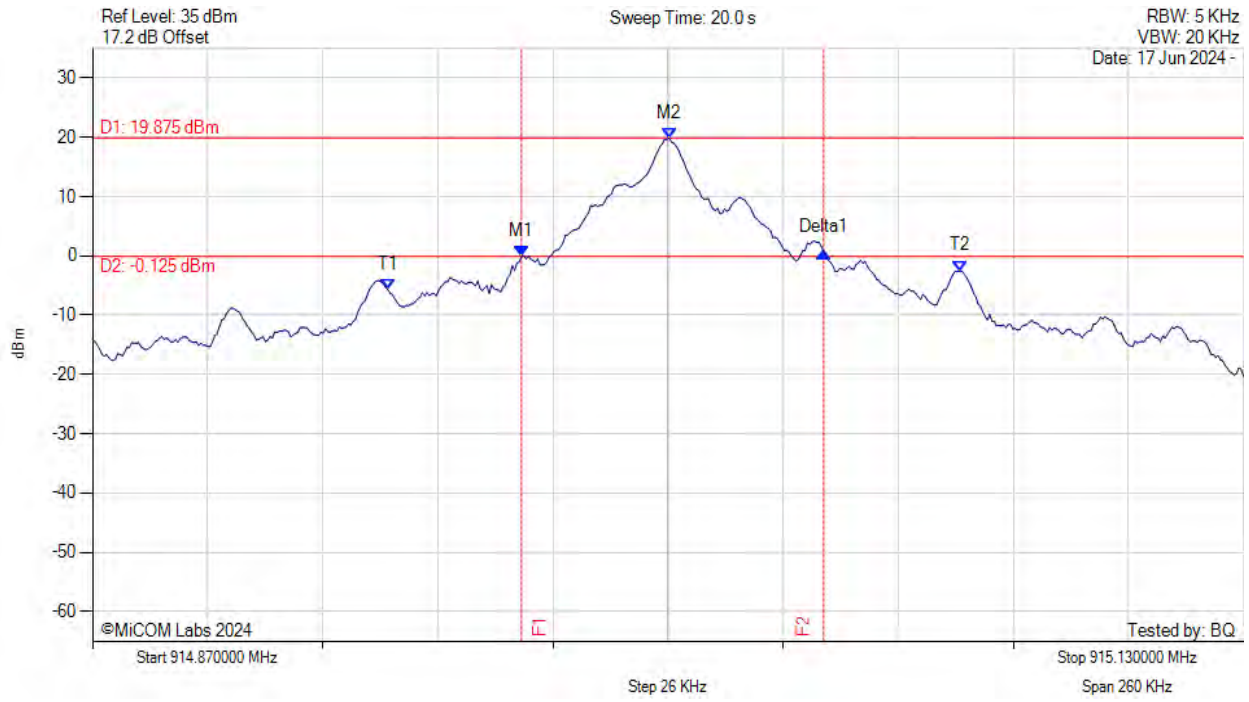


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 902.973 MHz : -0.182 dBm M2 : 903.000 MHz : 20.253 dBm Delta1 : 62 KHz : 0.999 dB T1 : 902.938 MHz : -6.541 dBm T2 : 903.065 MHz : -2.565 dBm OBW : 127 KHz	Measured 20 dB Bandwidth: 0.062 MHz Limit: 0.5 kHz Margin: -0.44 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

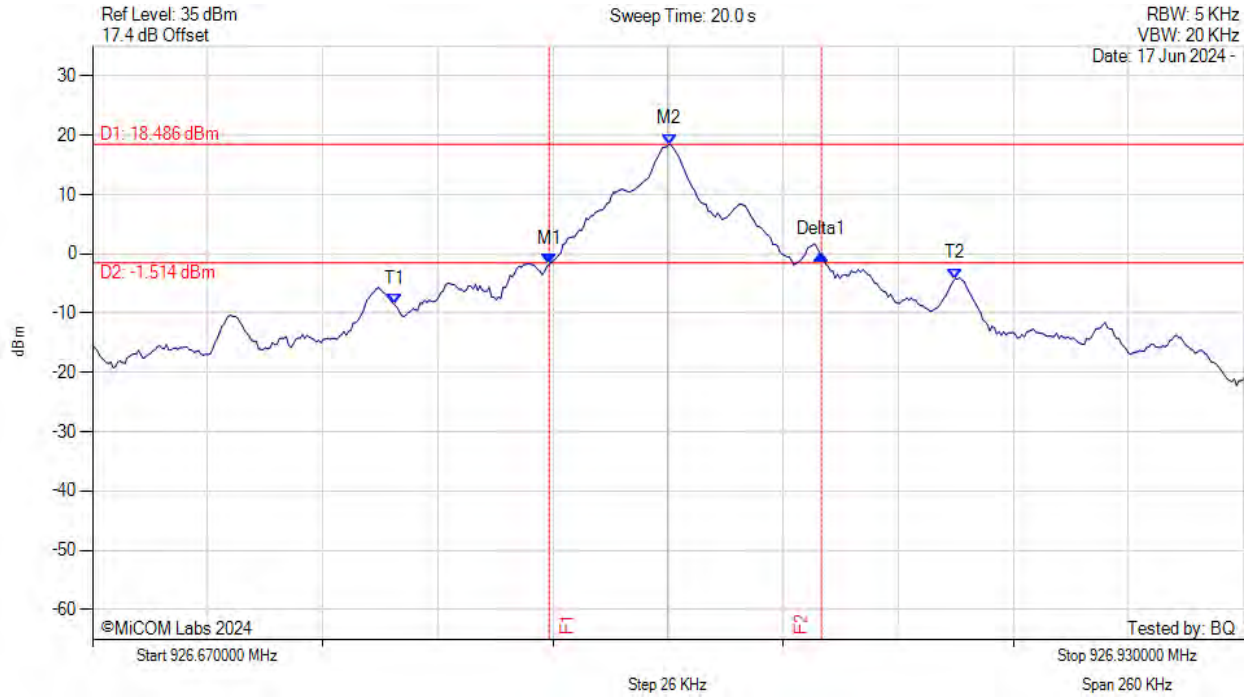


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 914.967 MHz : -0.157 dBm M2 : 915.000 MHz : 19.875 dBm Delta1 : 68 KHz : 0.818 dB T1 : 914.937 MHz : -5.669 dBm T2 : 915.066 MHz : -2.527 dBm OBW : 129 KHz	Measured 20 dB Bandwidth: 0.068 MHz Limit: 0.5 kHz Margin: -0.43 MHz

back to matrix

20 dB 99% BANDWIDTH

Variant: OOK - PL3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = MAX HOLD	M1 : 926.773 MHz : -1.799 dBm M2 : 926.800 MHz : 18.486 dBm Delta1 : 61 KHz : 1.666 dB T1 : 926.738 MHz : -8.599 dBm T2 : 926.865 MHz : -4.184 dBm OBW : 127 KHz	Measured 20 dB Bandwidth: 0.061 MHz Limit: 0.5 kHz Margin: -0.44 MHz

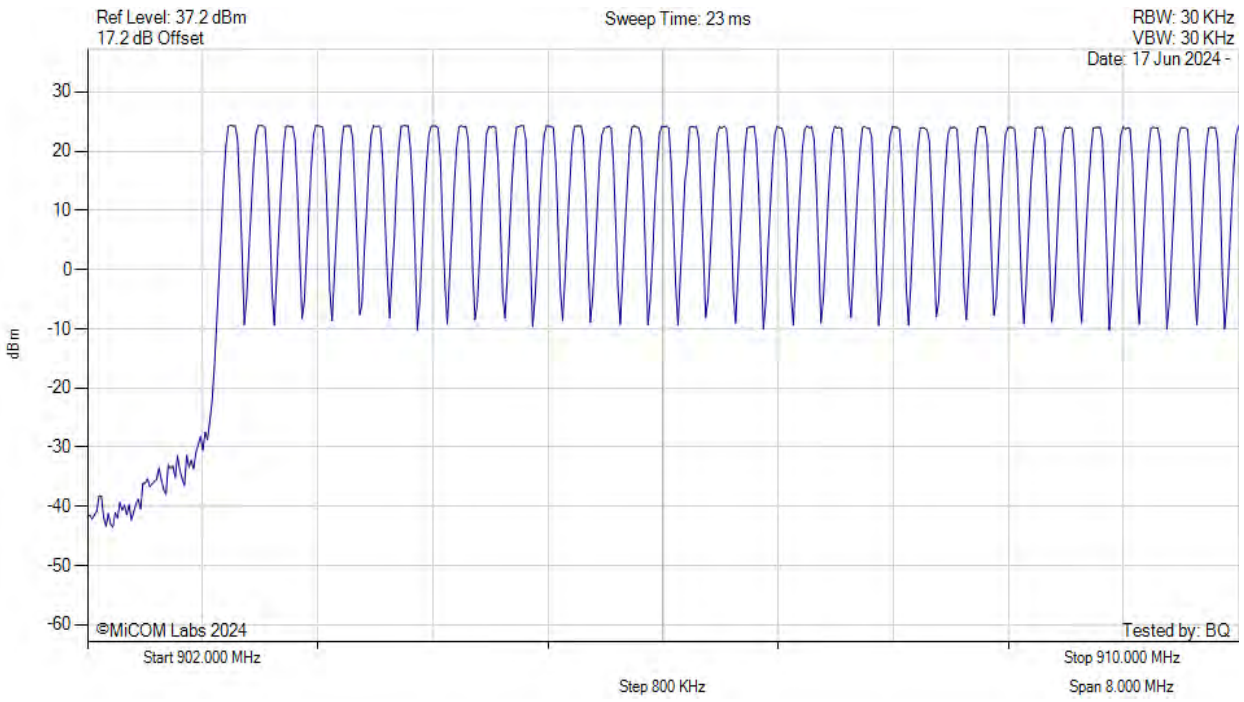
back to matrix

A.2. Frequency Hopping Tests

A.2.1. Number of Hopping Channels

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

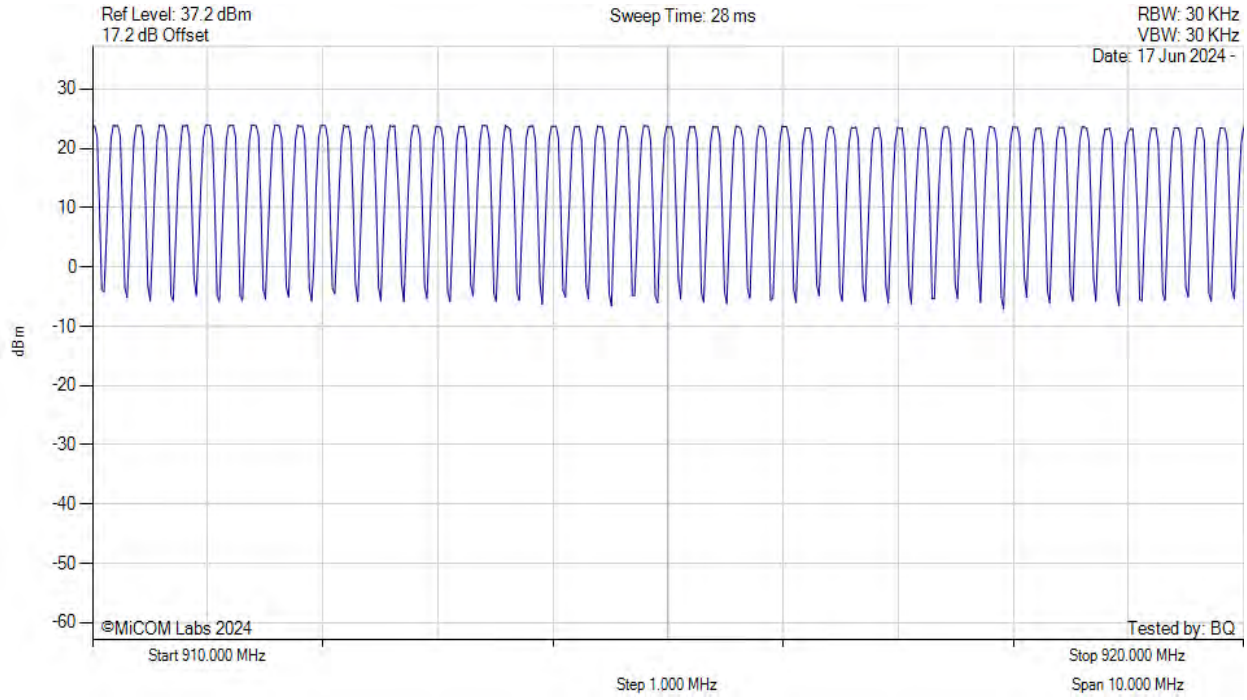


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

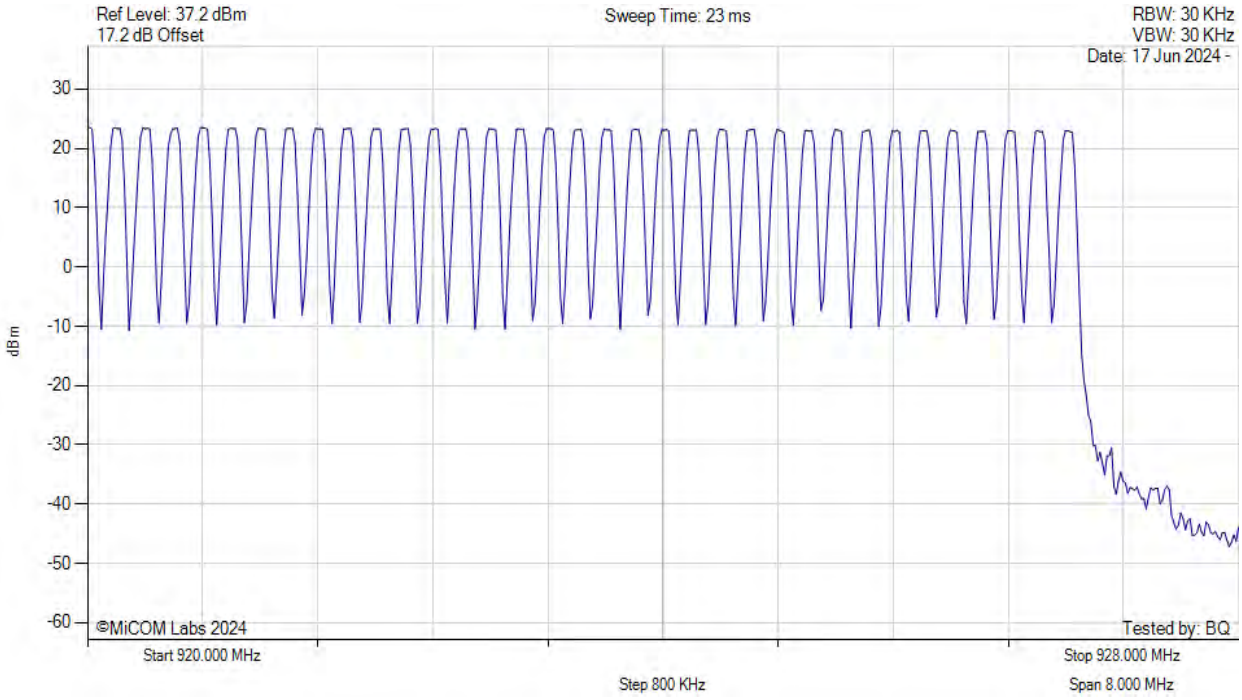


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

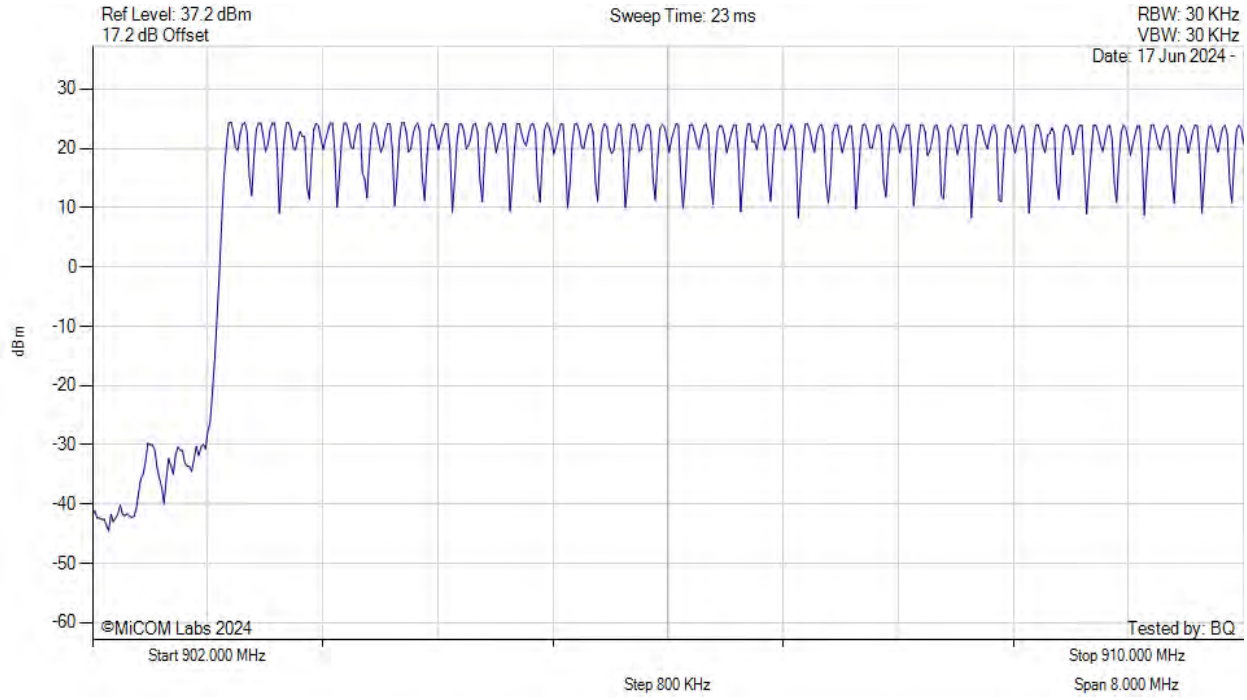


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

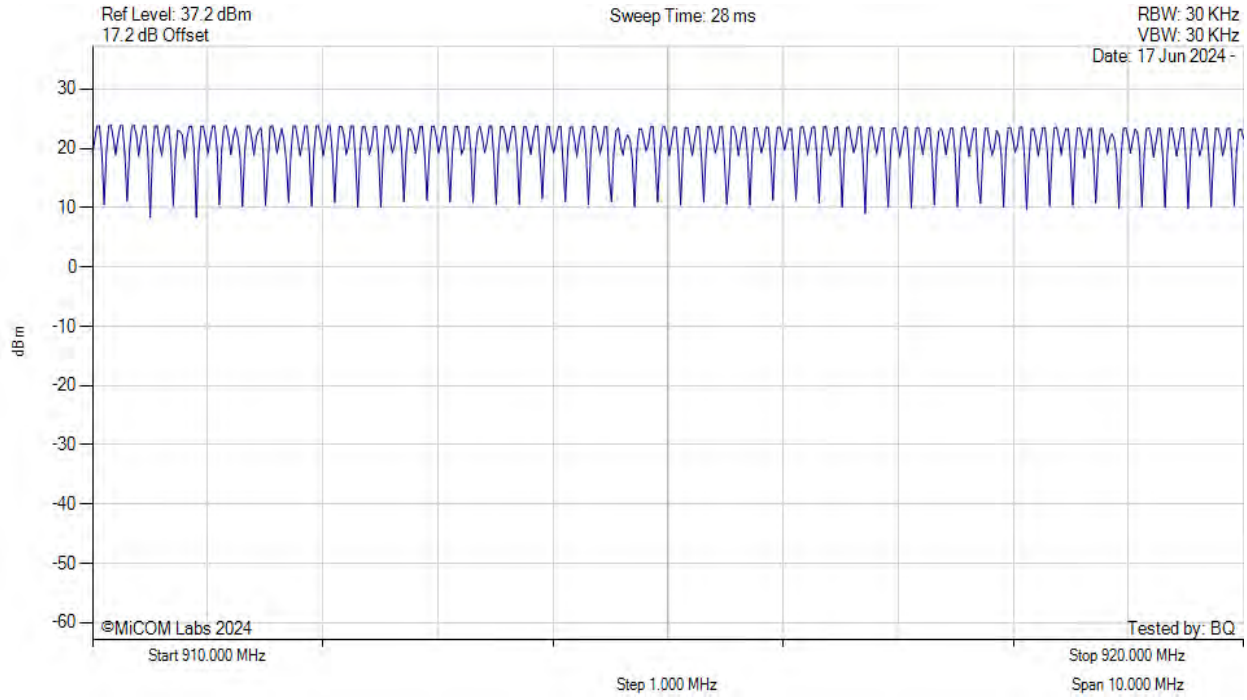


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

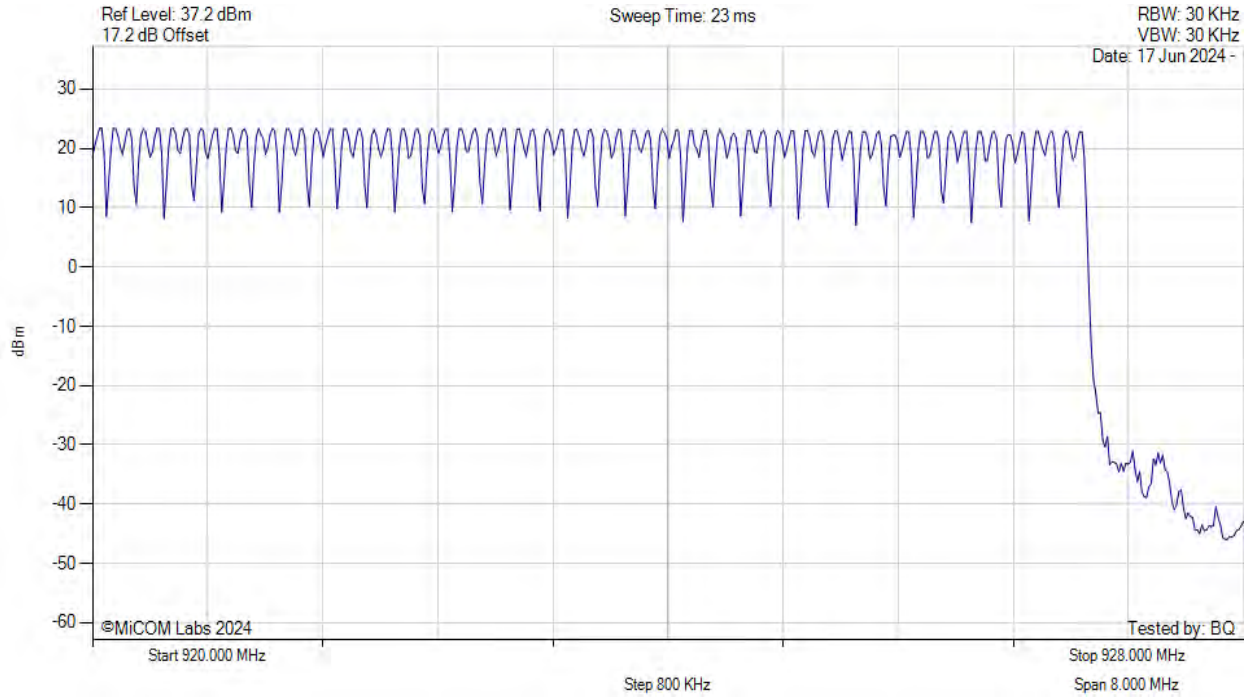


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

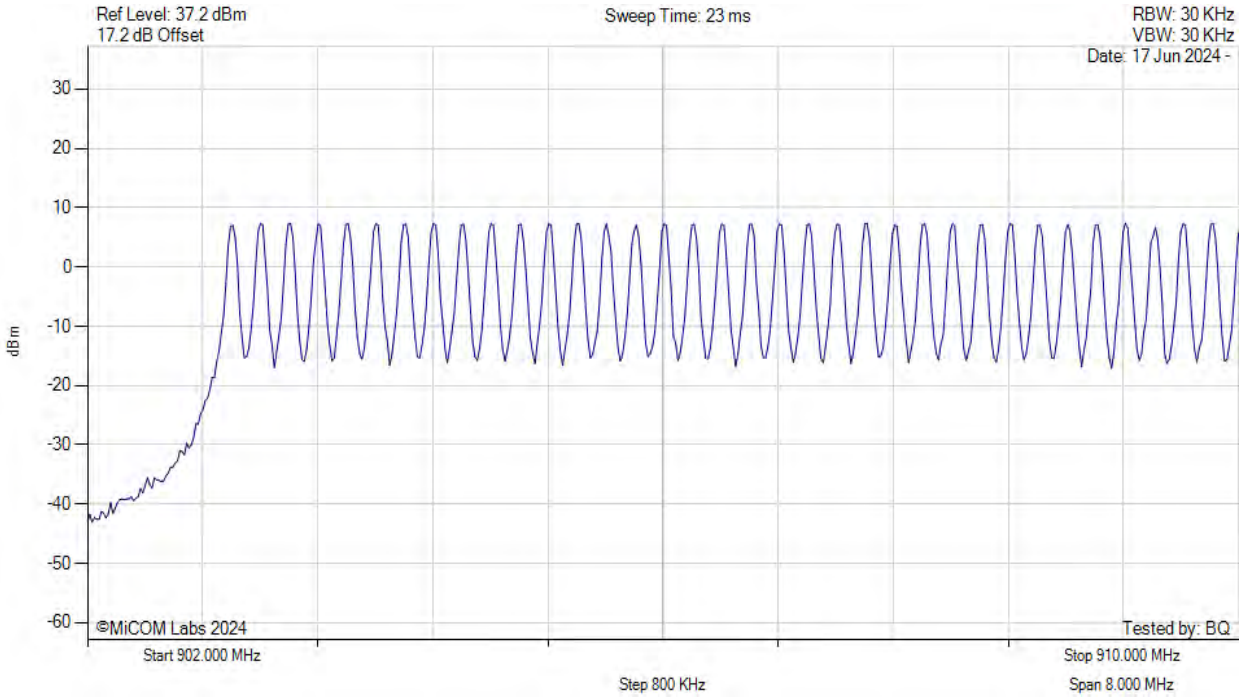


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

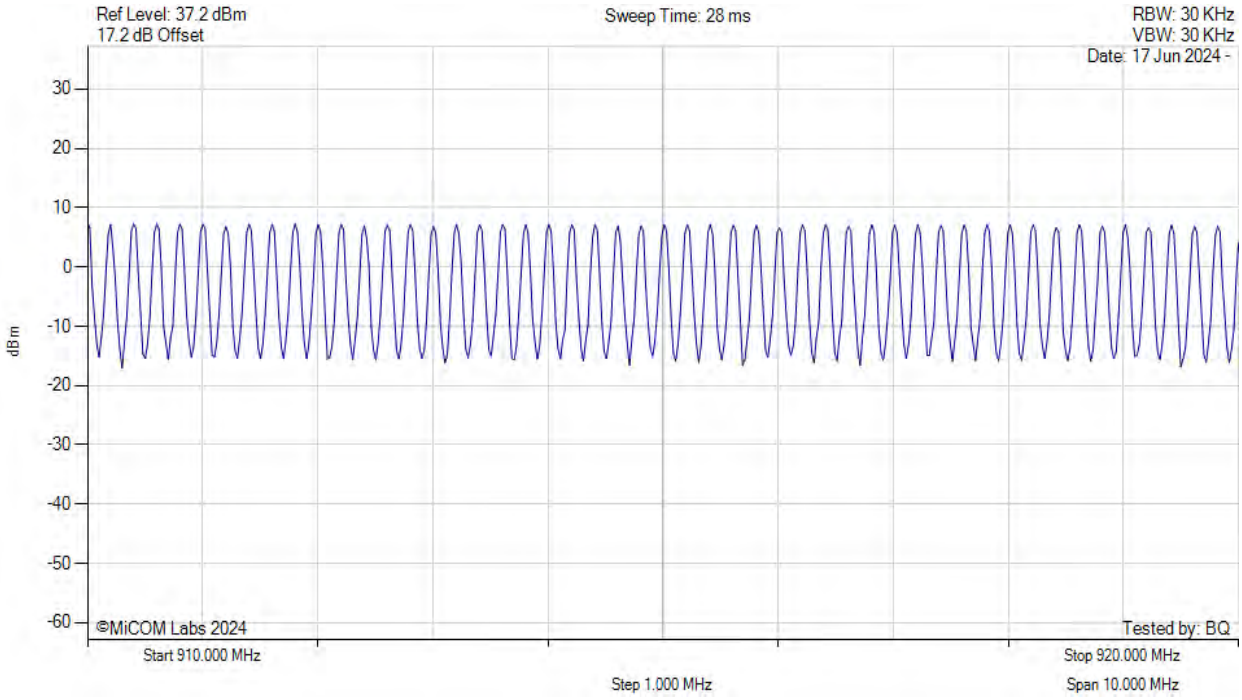


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

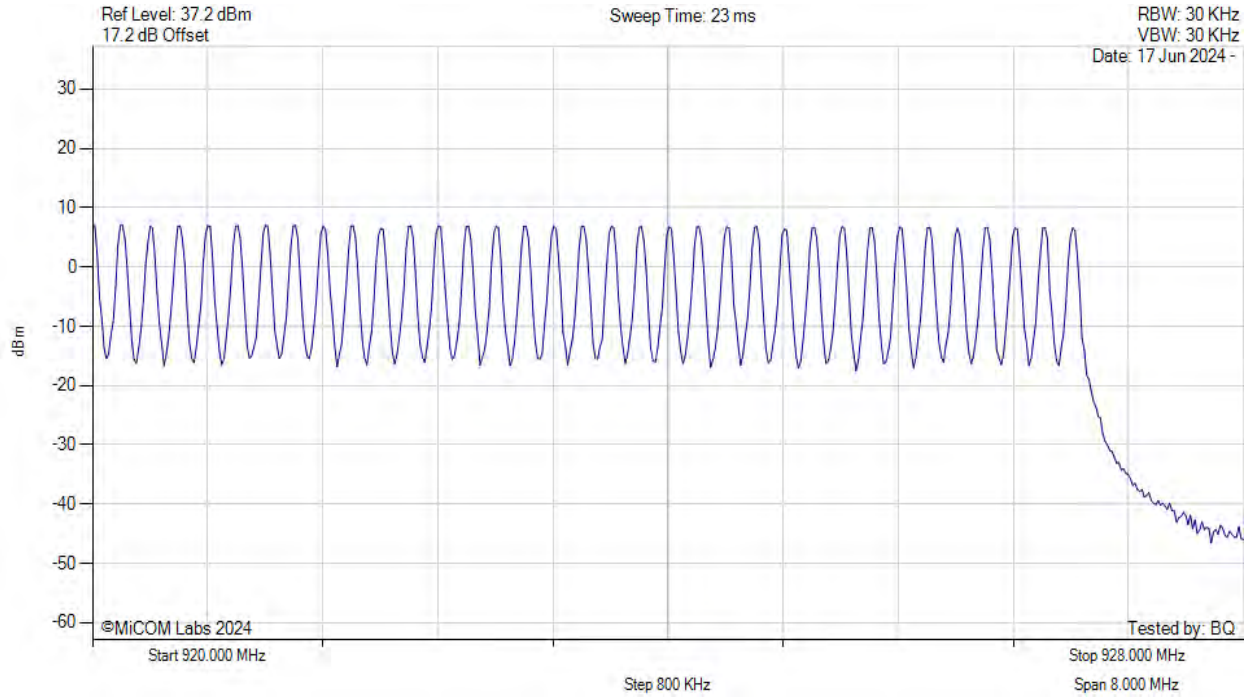


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

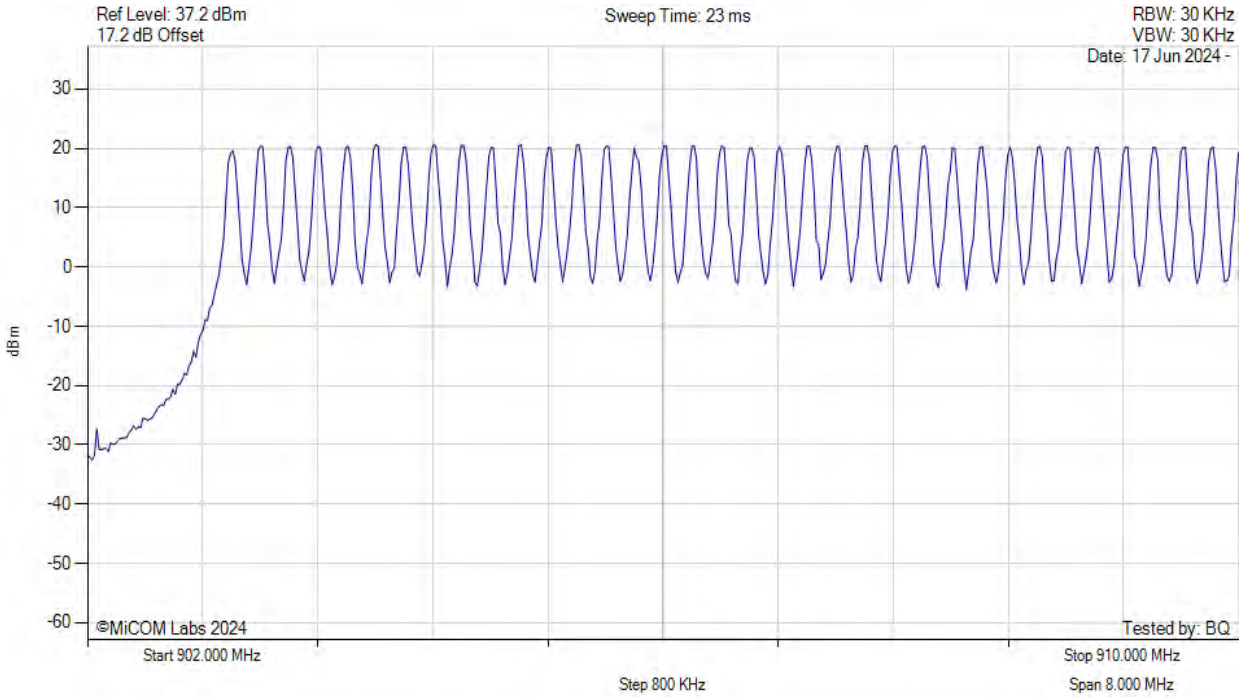


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

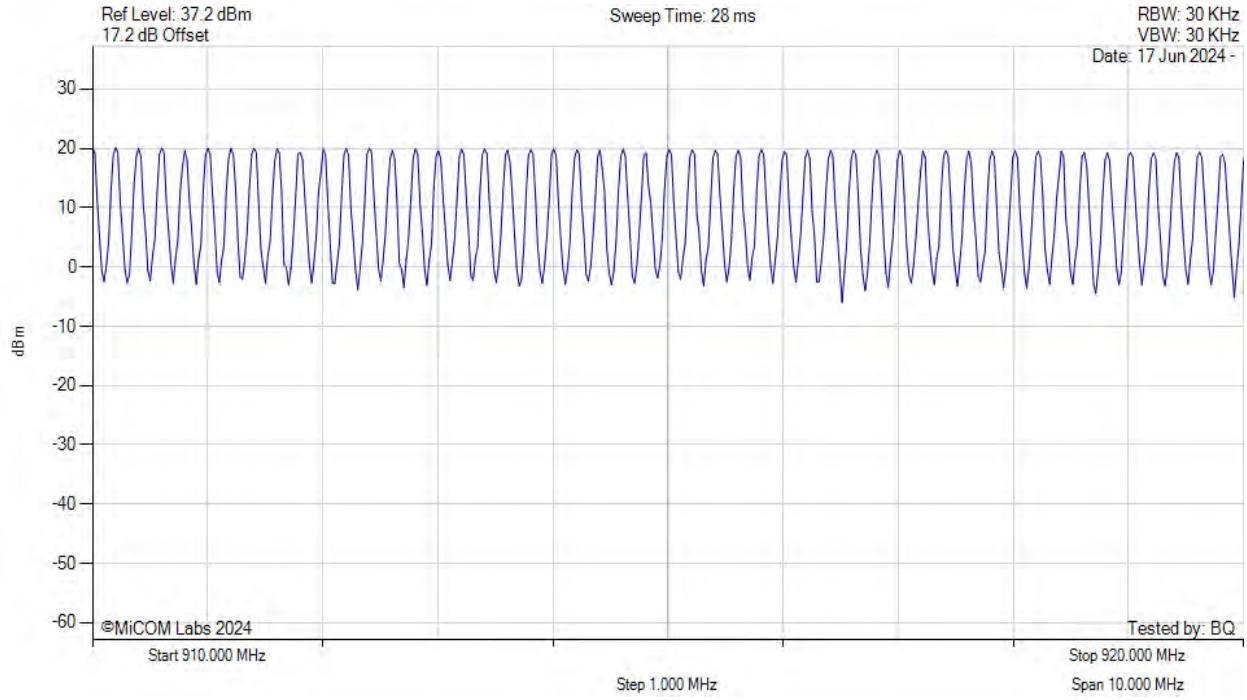


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

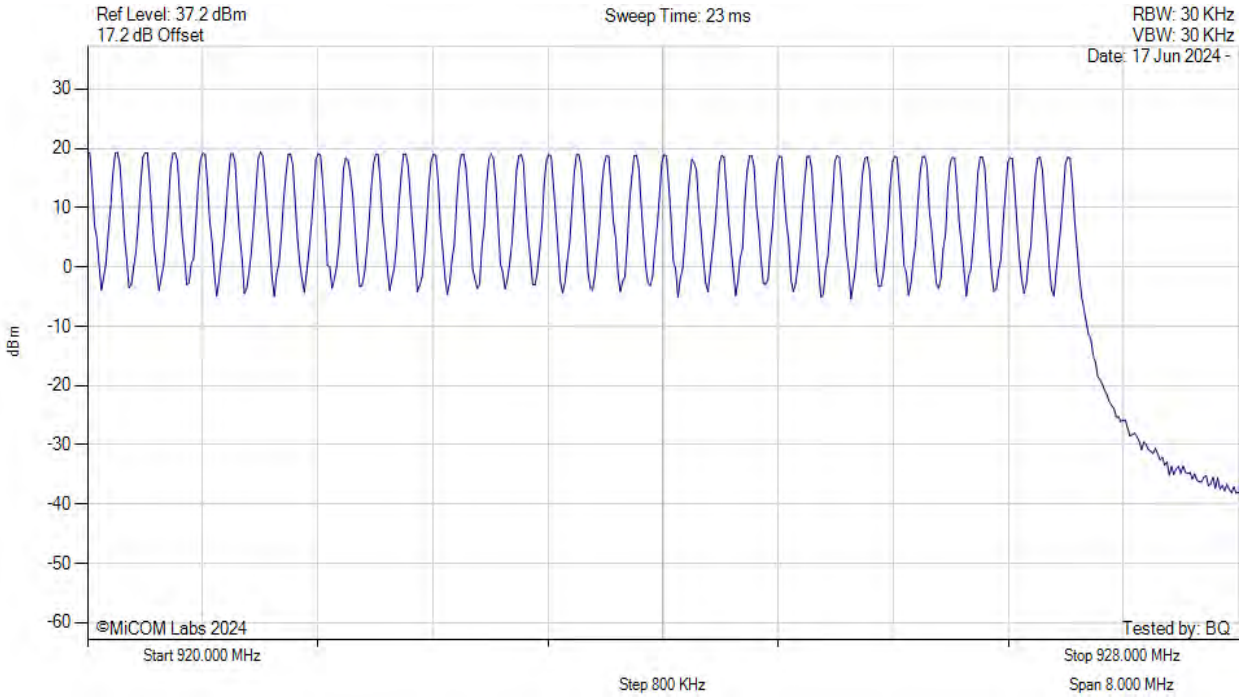


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

back to matrix

NUMBER OF HOPPING CHANNELS

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW		Channel Frequency: 915.00 MHz

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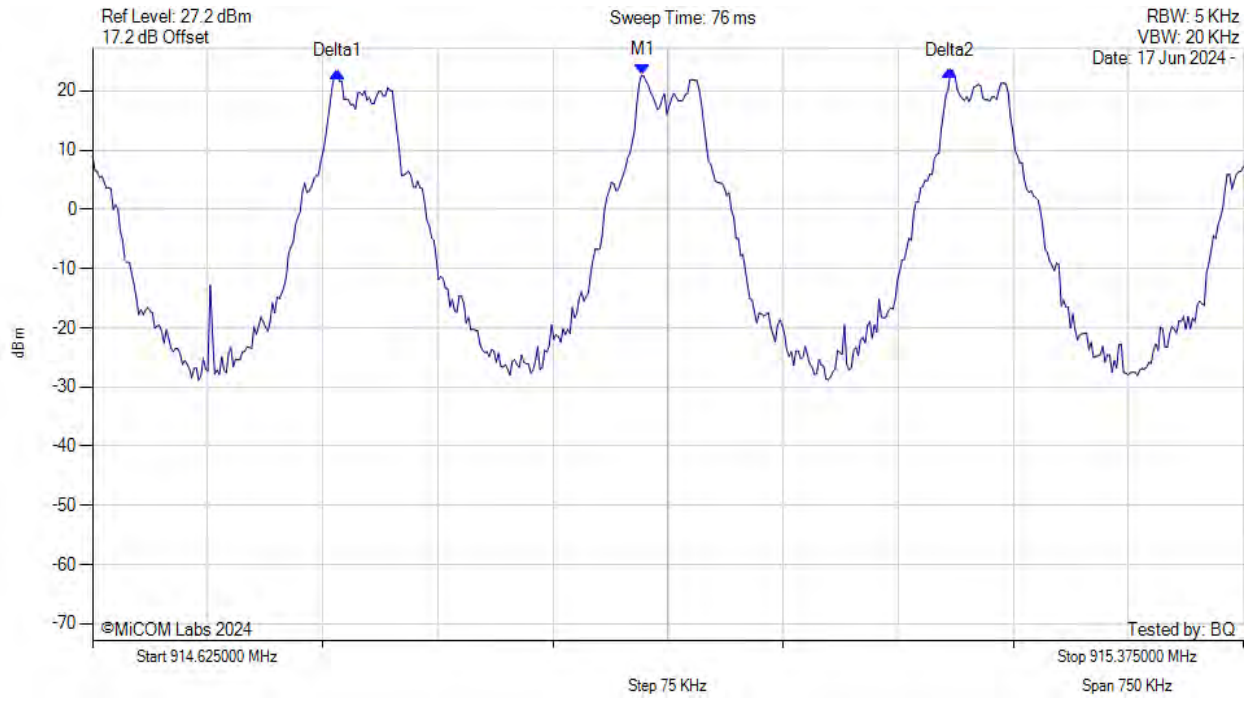
A.2.2. Channel Separation

CHANNEL SEPARATION

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 914.983 MHz : 22.634 dBm Delta1 : -199148 Hz : 0.616 dB Delta2 : 200 KHz : 0.844 dB	Channel Frequency: 915.00 MHz

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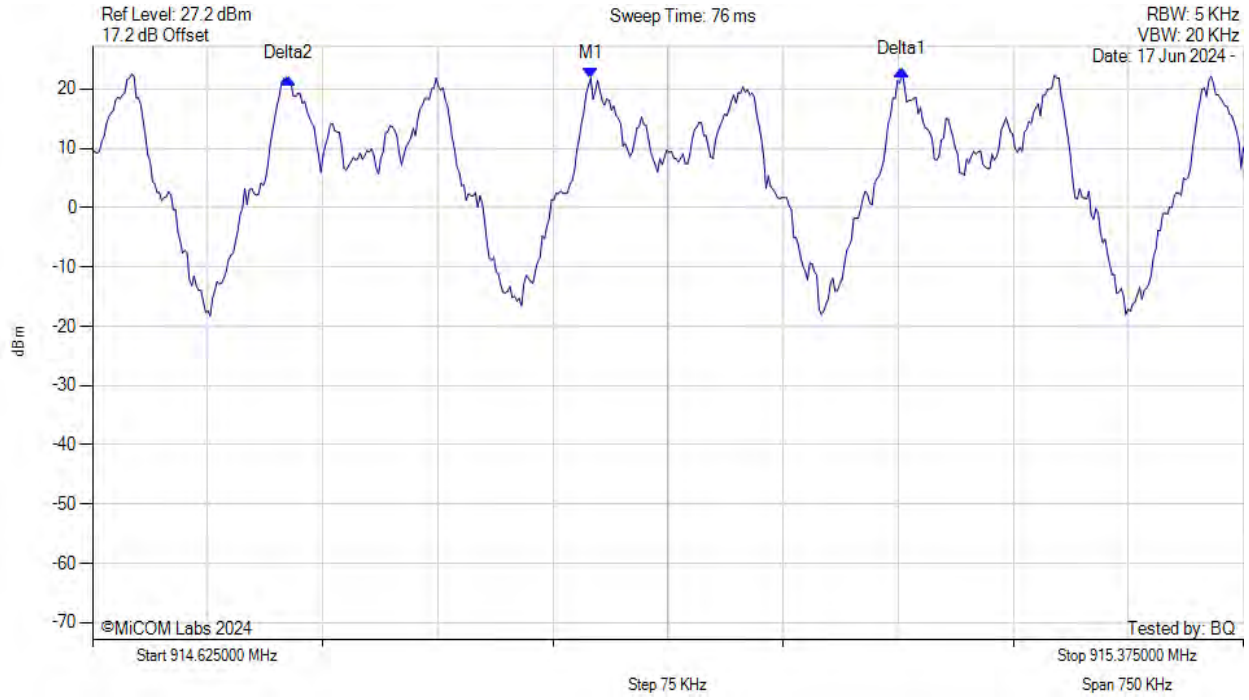
CHANNEL SEPARATION

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

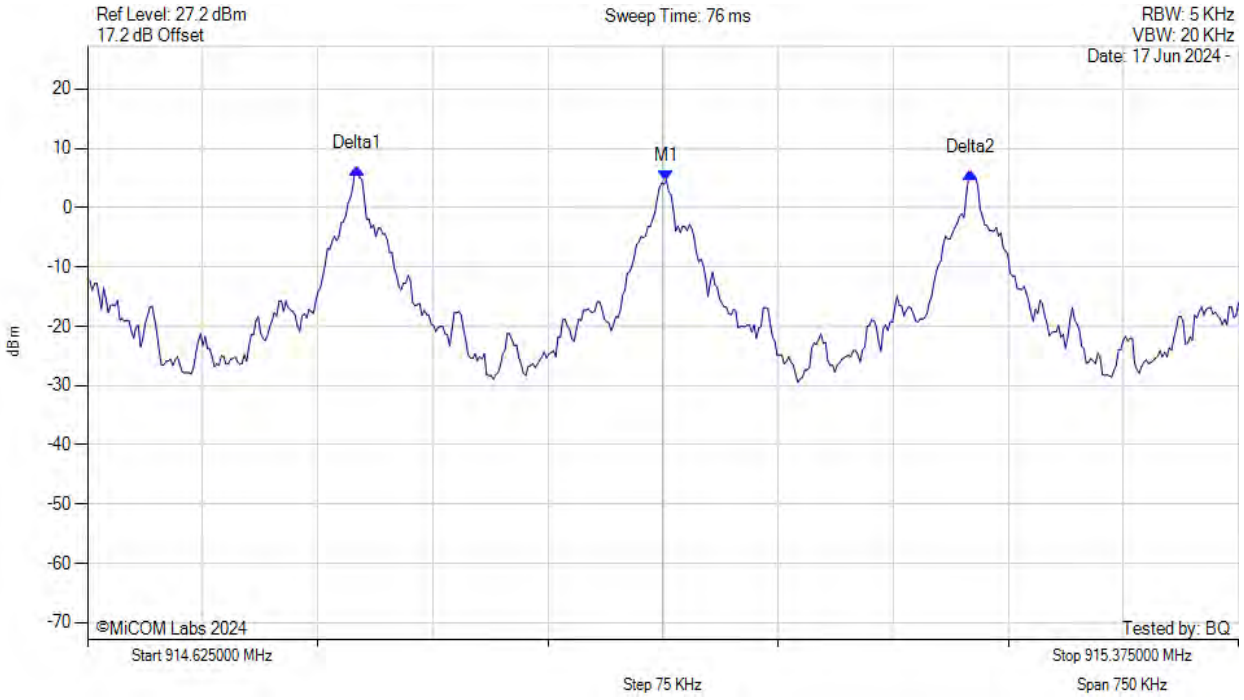


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = MAX HOLD	M1 : 914.950 MHz : 21.843 dBm Delta1 : 203 KHz : 1.409 dB Delta2 : -196894 Hz : -0.033 dB	Channel Frequency: 915.00 MHz

back to matrix

CHANNEL SEPARATION

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

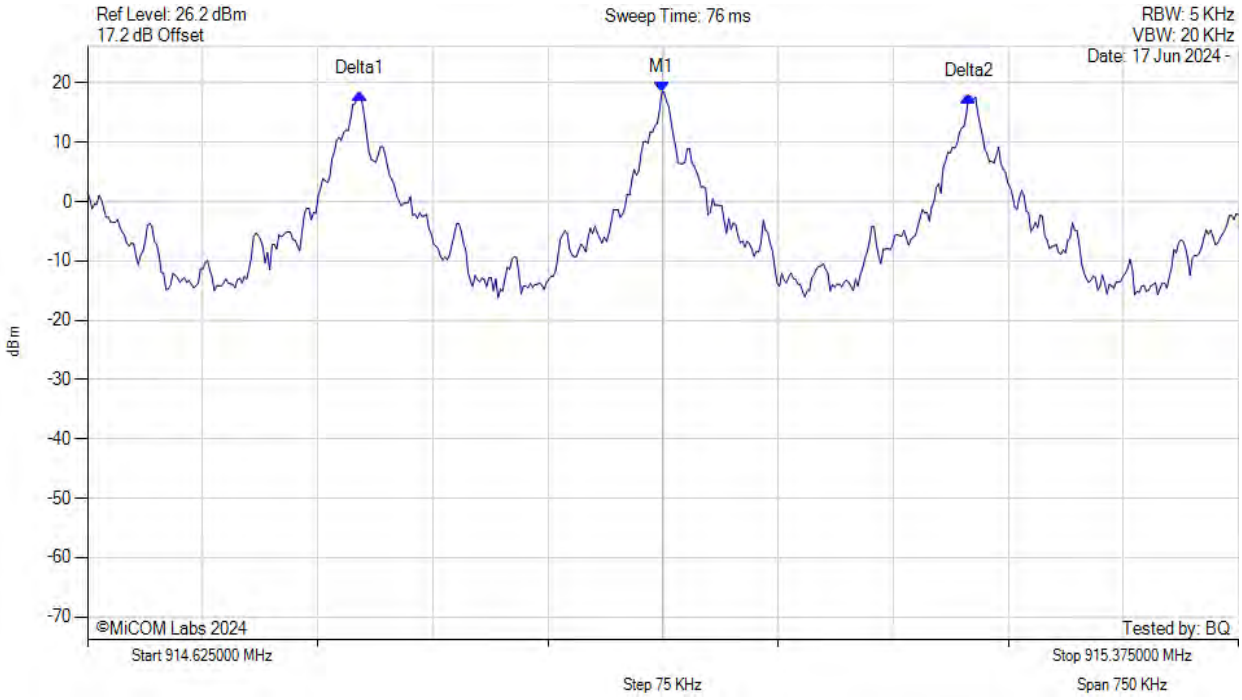


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 915.002 MHz : 4.552 dBm Delta1 : -201403 Hz : 2.036 dB Delta2 : 198 KHz : 1.348 dB	Channel Frequency: 915.00 MHz

back to matrix

CHANNEL SEPARATION

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 20 Trace Mode = VIEW	M1 : 914.999 MHz : 18.455 dBm Delta1 : -196894 Hz : -0.329 dB Delta2 : 200 KHz : -0.704 dB	Channel Frequency: 915.00 MHz

back to matrix

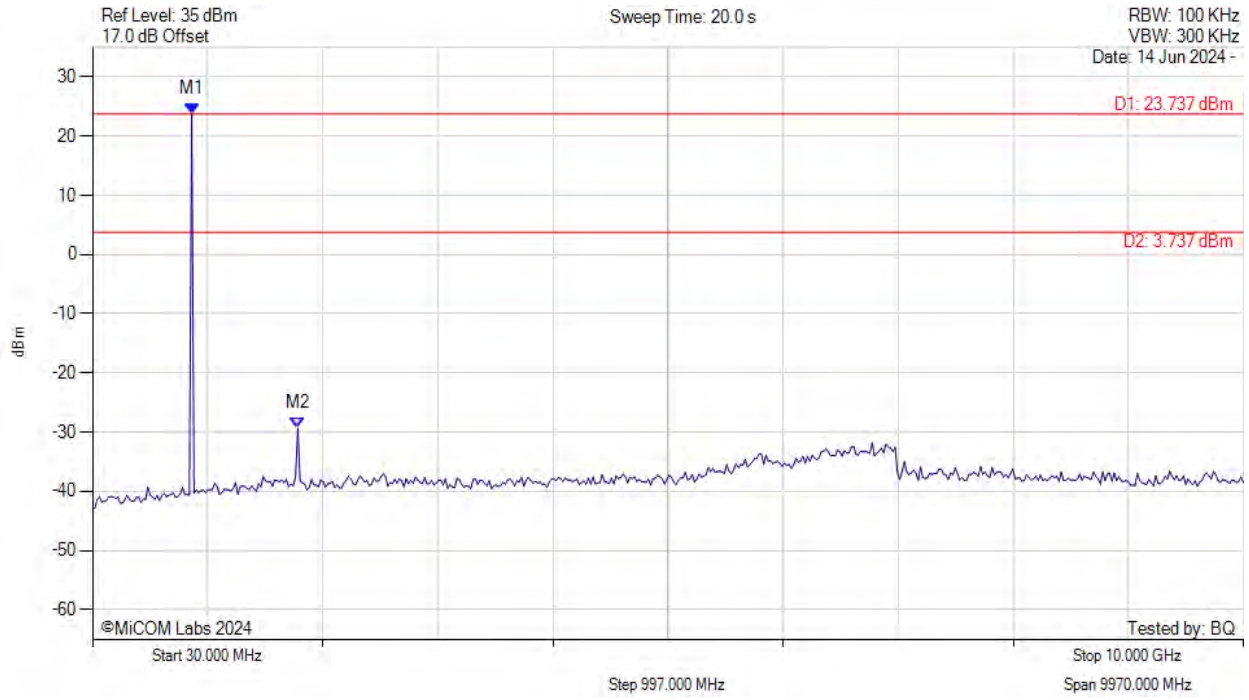
A.3. Emissions

A.3.1. Conducted Emissions

A.3.1.1. Conducted Unwanted Spurious Emissions

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

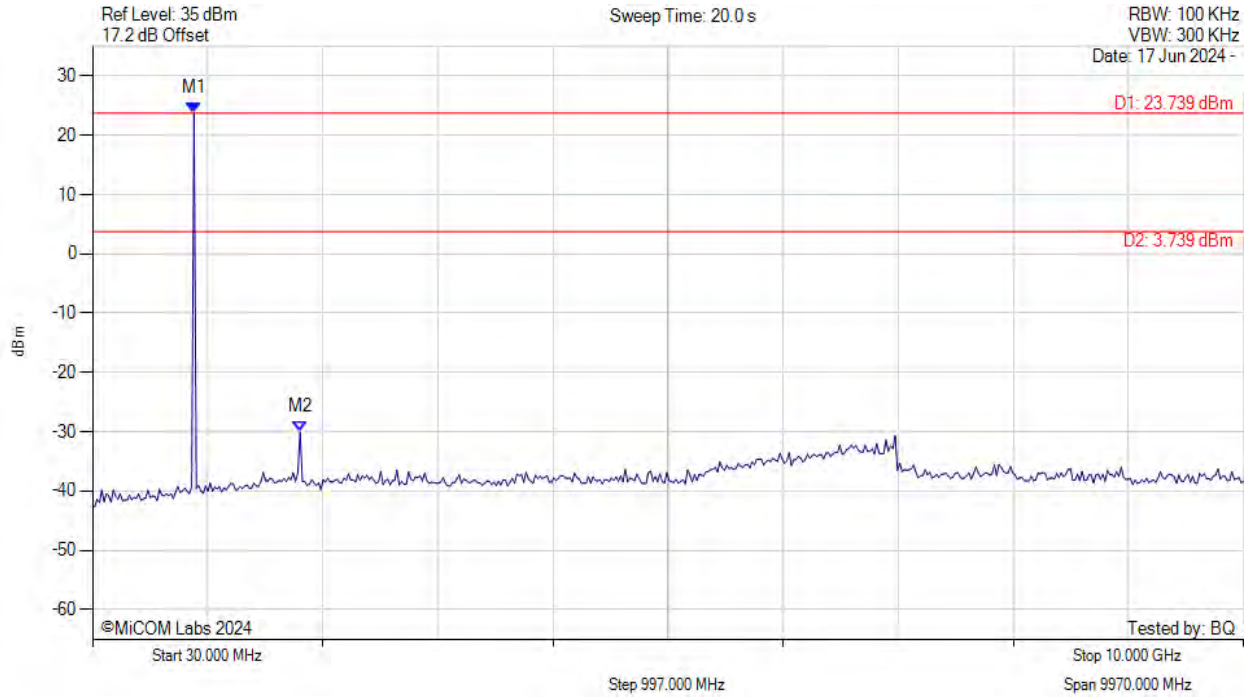


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 889.138 MHz : 23.737 dBm M2 : 1808.216 MHz : -29.382 dBm	Limit: 3.74 dBm Margin: -33.12 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

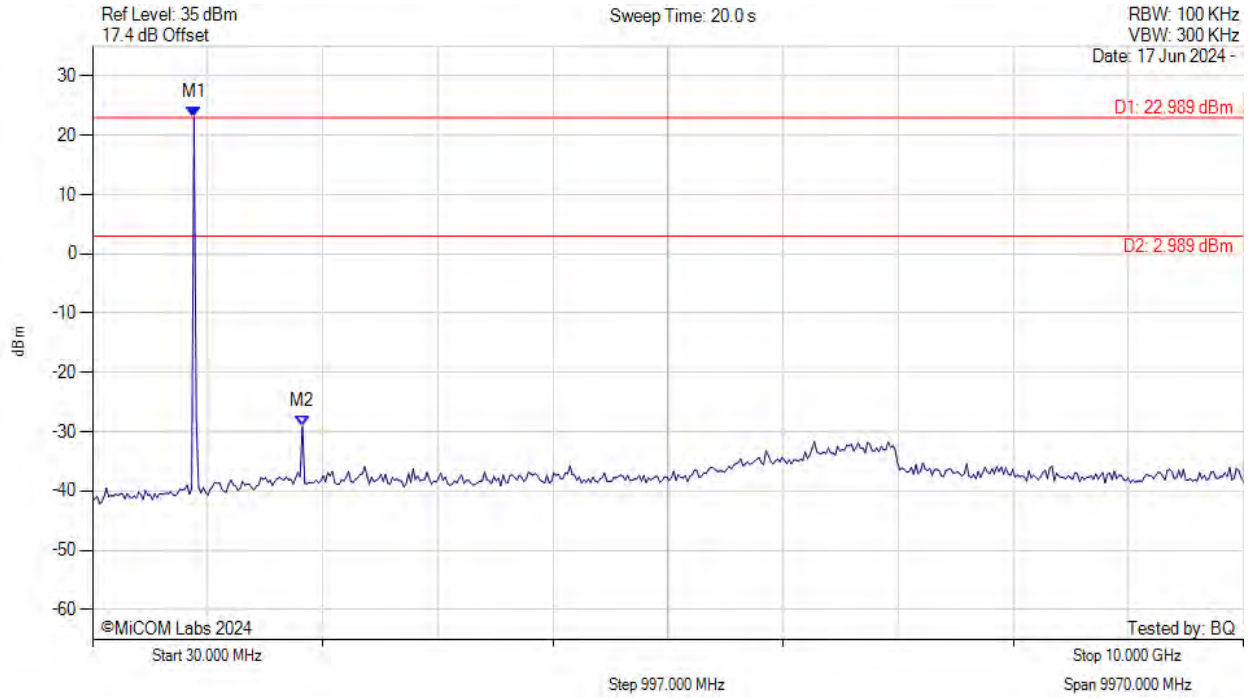


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 23.739 dBm M2 : 1828.196 MHz : -30.072 dBm	Limit: 3.74 dBm Margin: -33.81 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

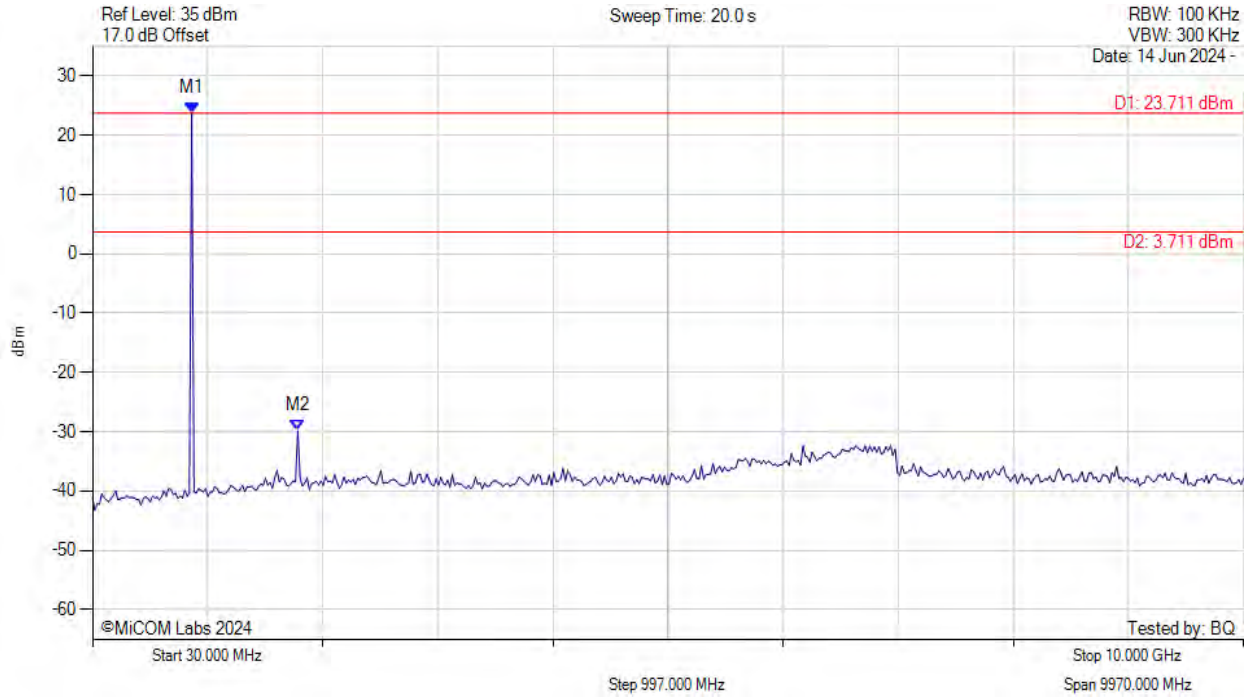


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 22.989 dBm M2 : 1848.176 MHz : -29.081 dBm	Limit: 2.99 dBm Margin: -32.07 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

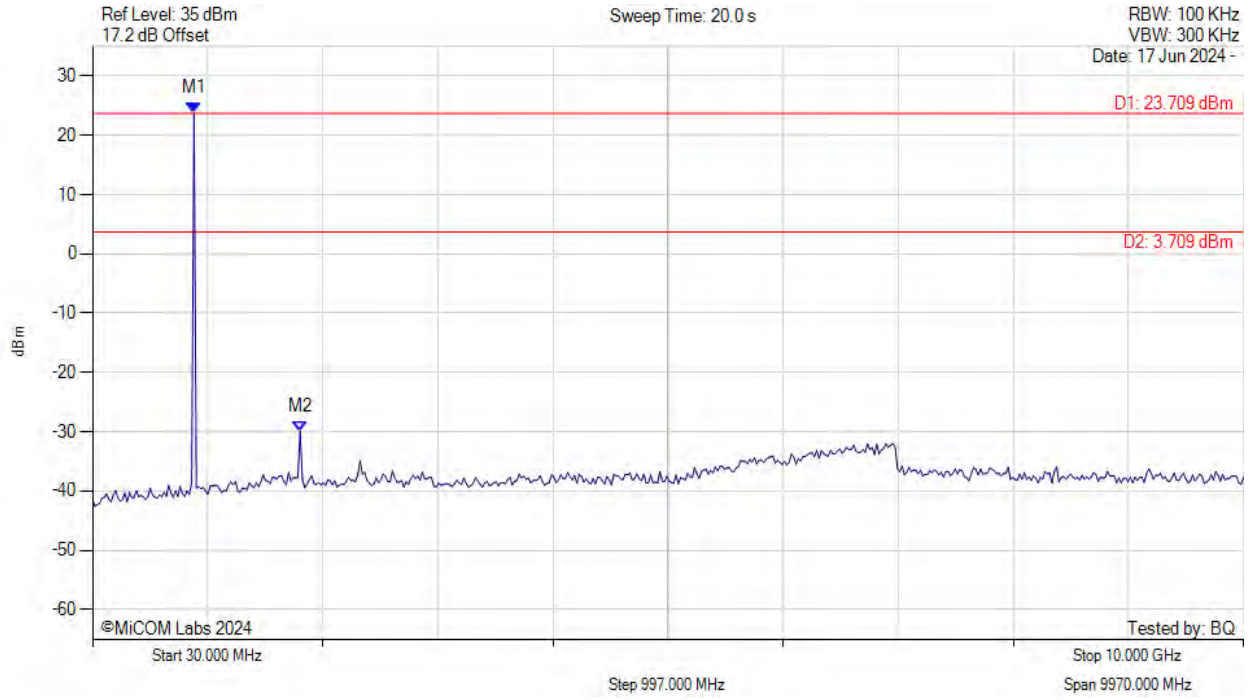


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 889.138 MHz : 23.711 dBm M2 : 1808.216 MHz : -29.852 dBm	Limit: 3.71 dBm Margin: -33.56 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

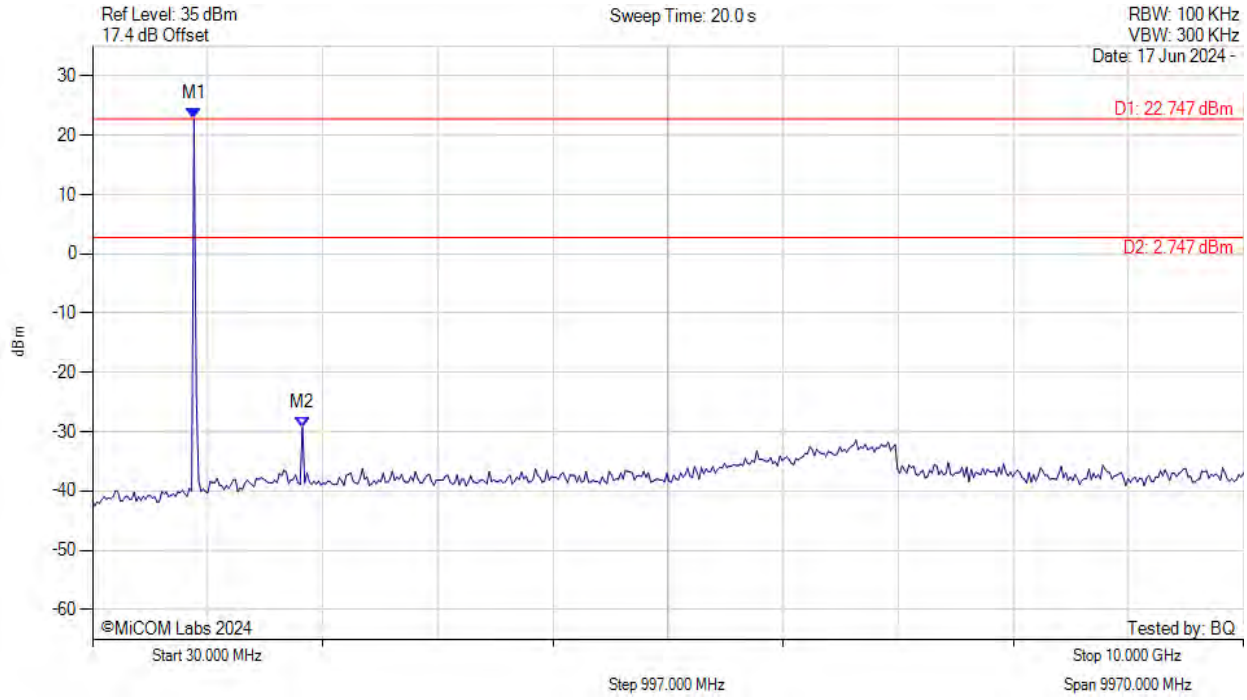


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 23.709 dBm M2 : 1828.196 MHz : -29.966 dBm	Limit: 3.71 dBm Margin: -33.68 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

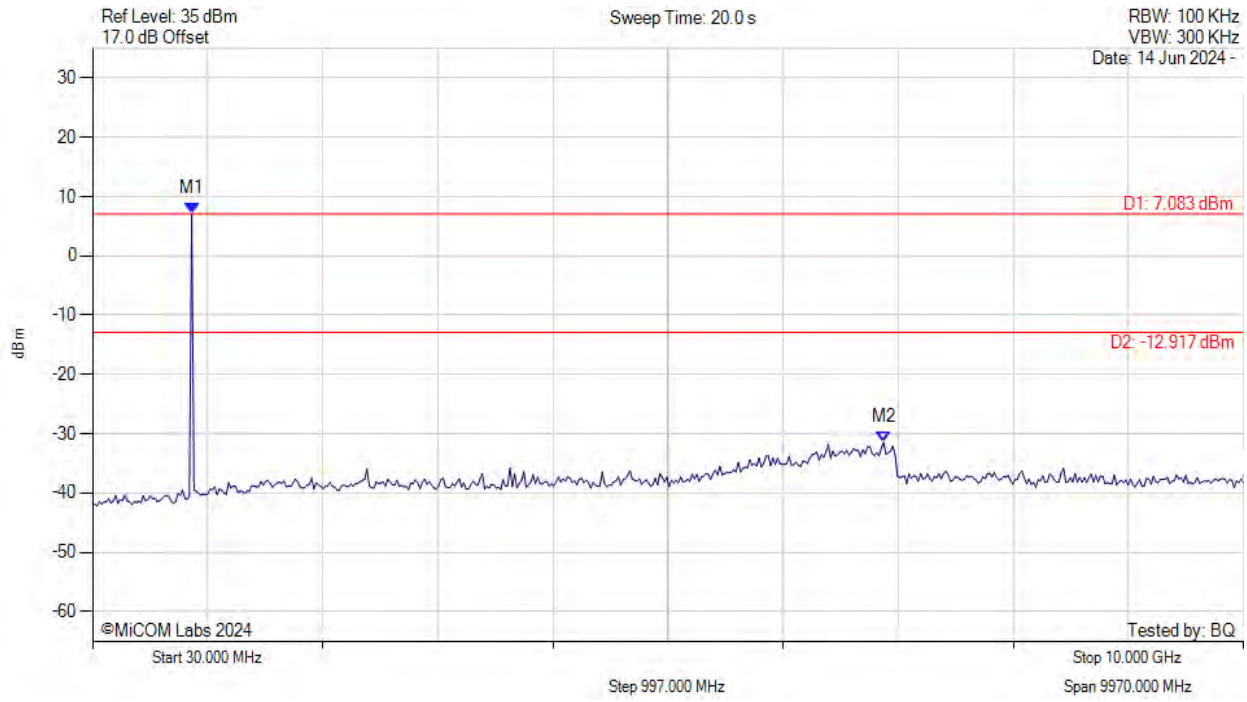


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 22.747 dBm M2 : 1848.176 MHz : -29.270 dBm	Limit: 2.75 dBm Margin: -32.02 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant: OOK - PL1, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

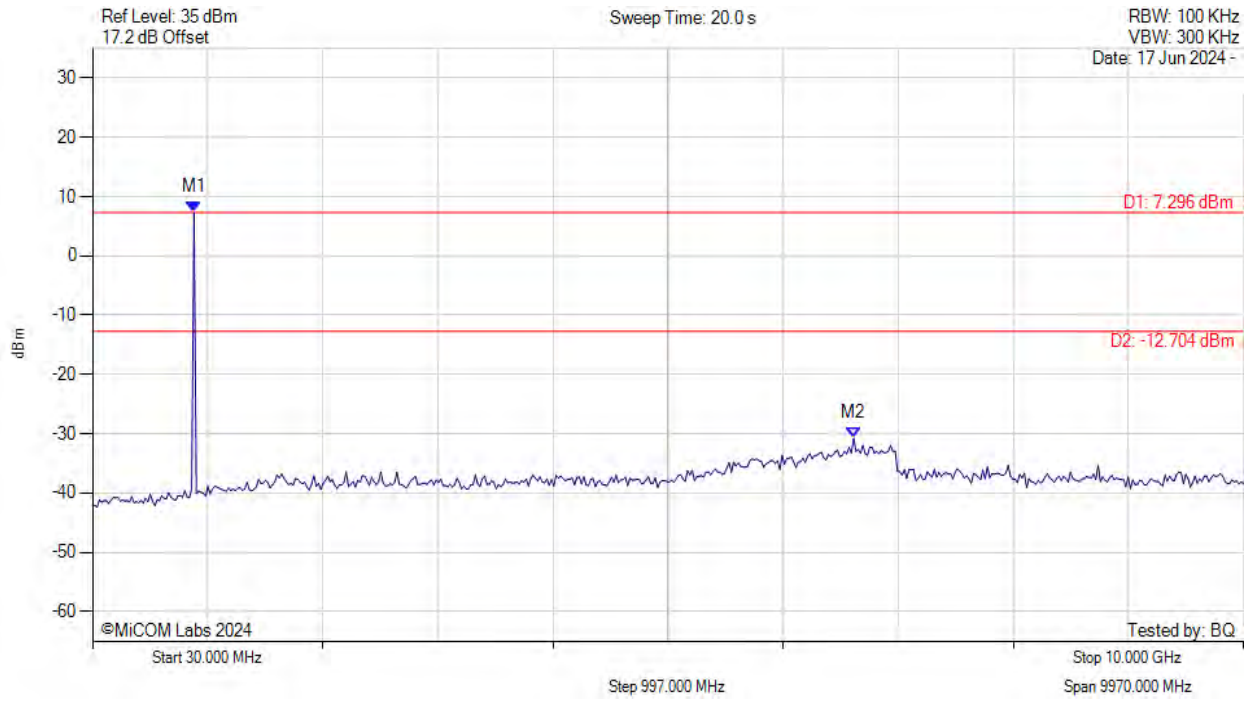


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 889.138 MHz : 7.083 dBm M2 : 6883.126 MHz : -31.457 dBm	Limit: -12.92 dBm Margin: -18.54 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant: OOK - PL1, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc

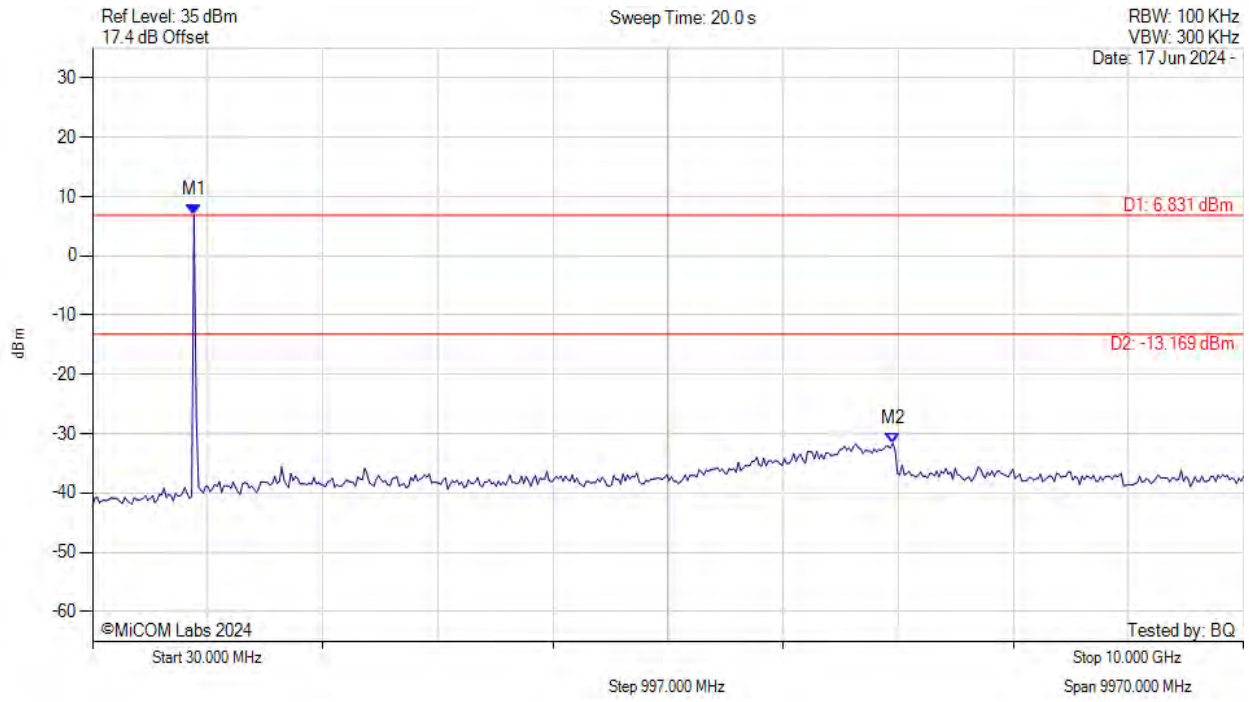


Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 7.296 dBm M2 : 6623.387 MHz : -30.782 dBm	Limit: -12.70 dBm Margin: -18.08 dB

back to matrix

UNWANTED EMISSIONS PEAK

Variant: OOK - PL1, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 6.831 dBm M2 : 6963.046 MHz : -31.601 dBm	Limit: -13.17 dBm Margin: -18.43 dB

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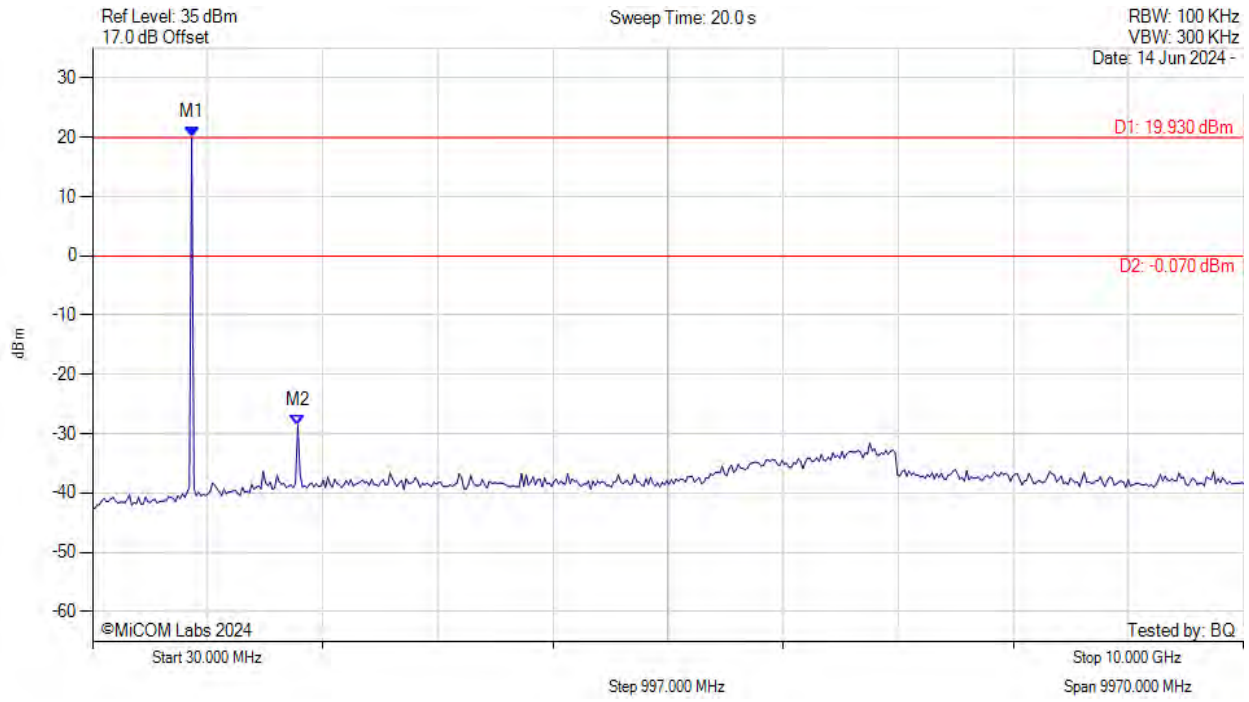
UNWANTED EMISSIONS PEAK

Variant: OOK - PL3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 889.138 MHz : 19.930 dBm M2 : 1808.216 MHz : -28.595 dBm	Limit: -0.07 dBm Margin: -28.52 dB

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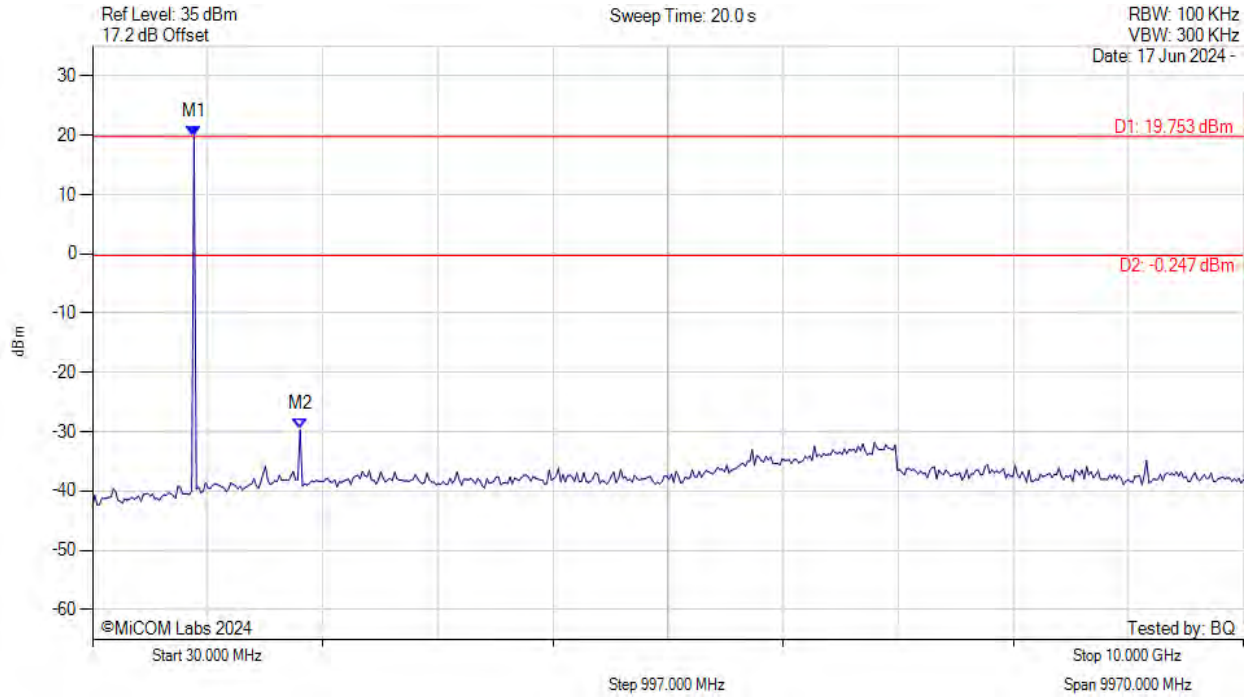
UNWANTED EMISSIONS PEAK

Variant: OOK - PL3, Channel: 915.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 19.753 dBm M2 : 1828.196 MHz : -29.622 dBm	Limit: -0.25 dBm Margin: -29.37 dB

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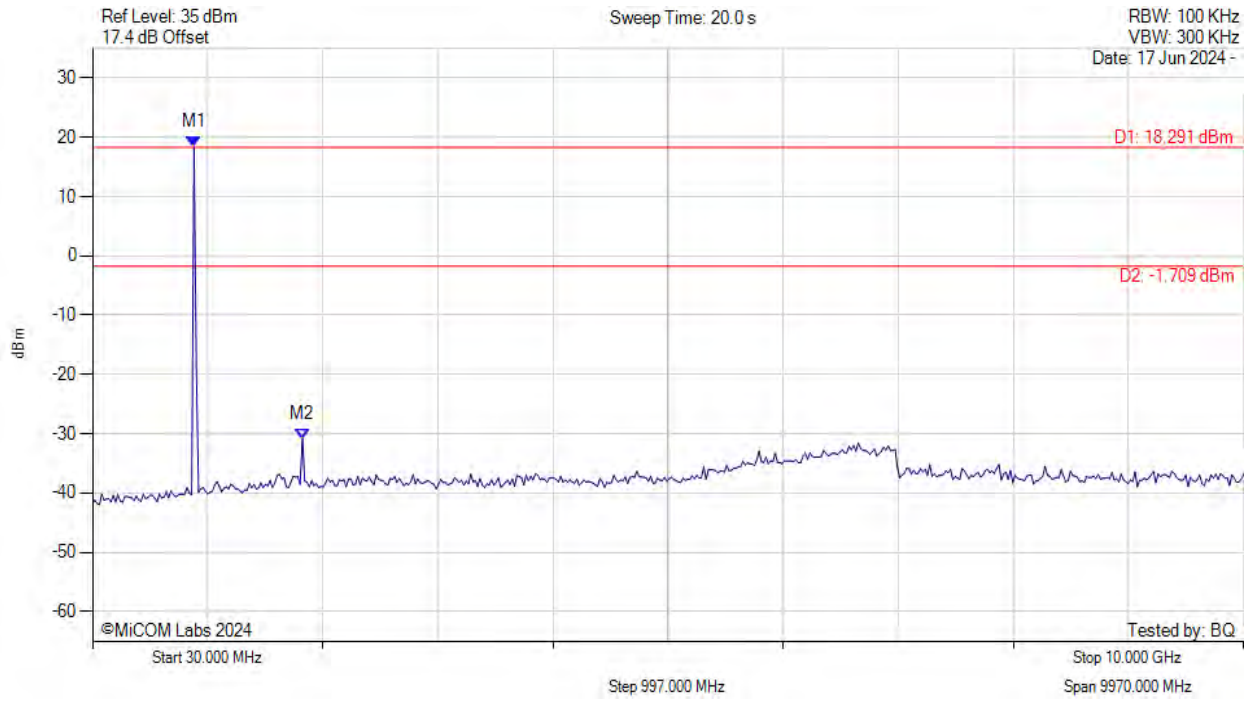
UNWANTED EMISSIONS PEAK

Variant: OOK - PL3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 909.118 MHz : 18.291 dBm M2 : 1848.176 MHz : -30.845 dBm	Limit: -1.71 dBm Margin: -29.13 dB

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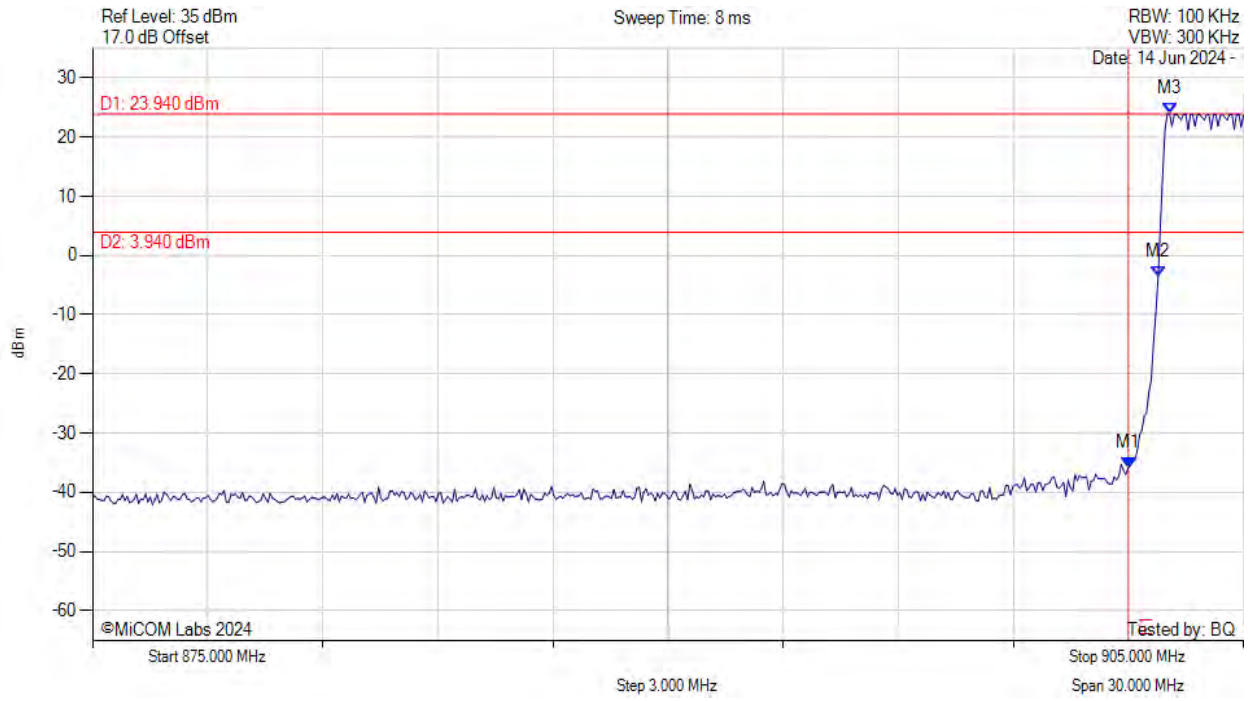
A.3.1.2. Conducted Band-Edge Emissions

CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -35.856 dBm M2 : 902.776 MHz : -3.664 dBm M3 : 903.076 MHz : 23.940 dBm	Channel Frequency: 903.00 MHz

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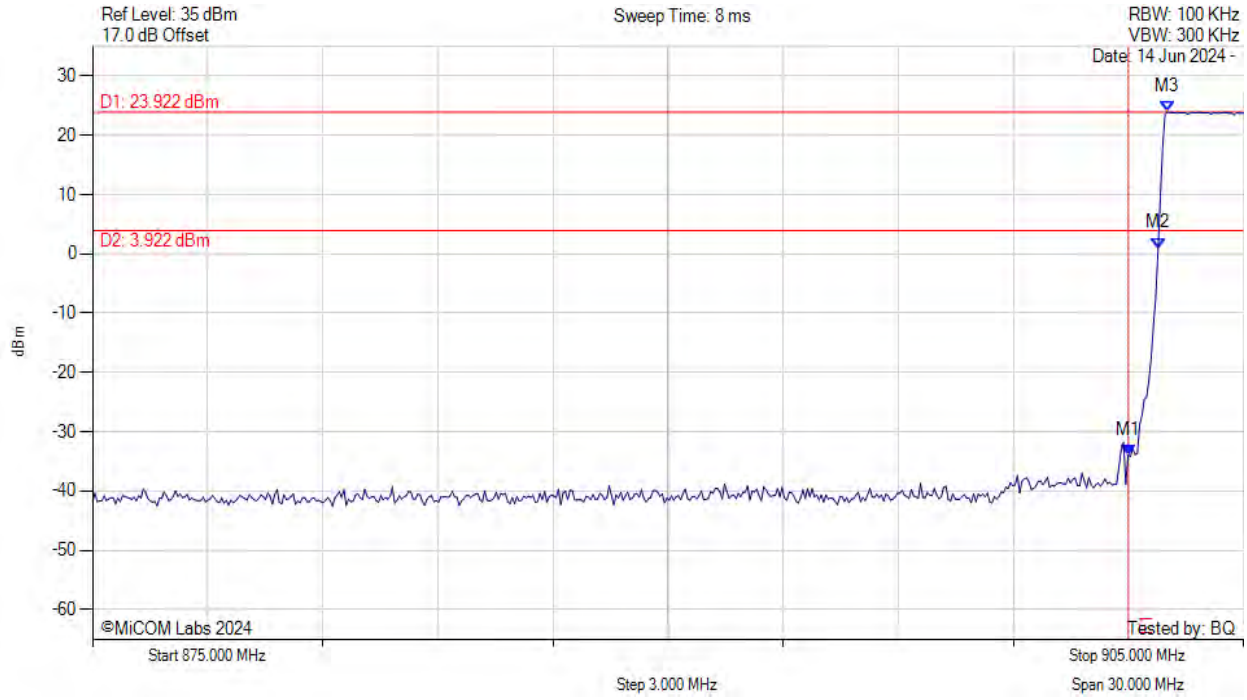
CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -33.871 dBm M2 : 902.776 MHz : 0.963 dBm M3 : 903.016 MHz : 23.922 dBm	Channel Frequency: 903.00 MHz

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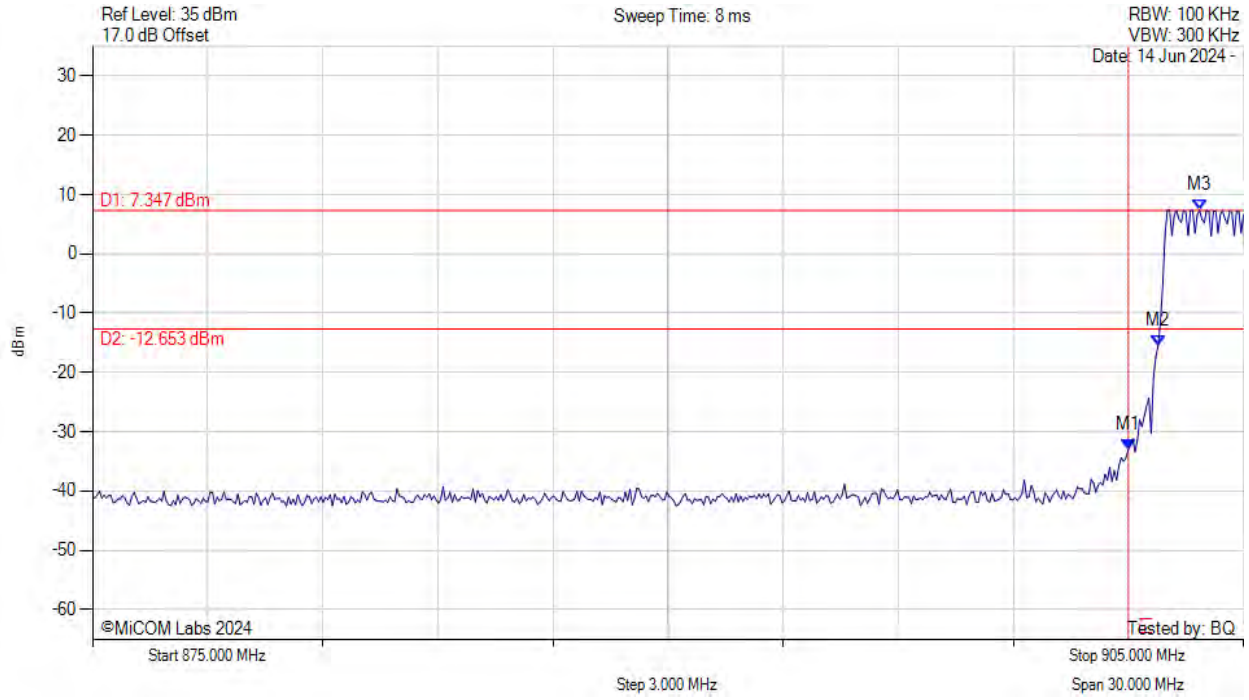
CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: OOK - PL1, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -33.078 dBm M2 : 902.776 MHz : -15.443 dBm M3 : 903.858 MHz : 7.347 dBm	Channel Frequency: 903.00 MHz

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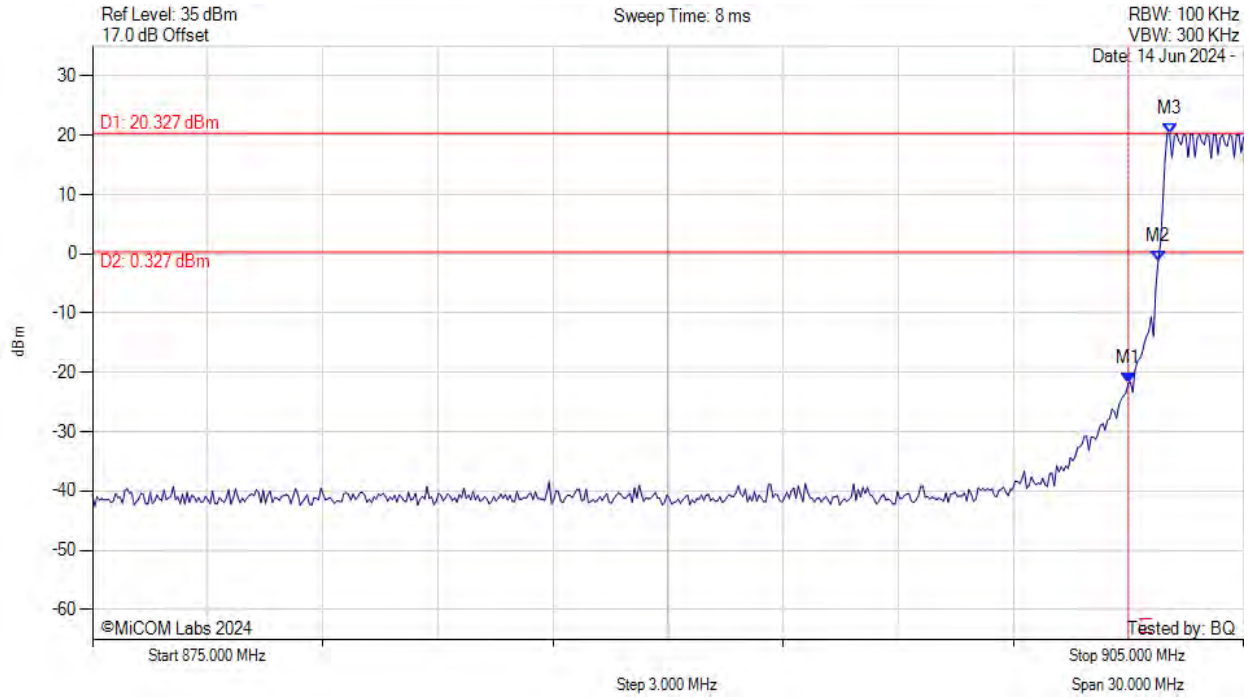
CONDUCTED LOW BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: OOK - PL3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -21.892 dBm M2 : 902.776 MHz : -1.156 dBm M3 : 903.076 MHz : 20.327 dBm	Channel Frequency: 903.00 MHz

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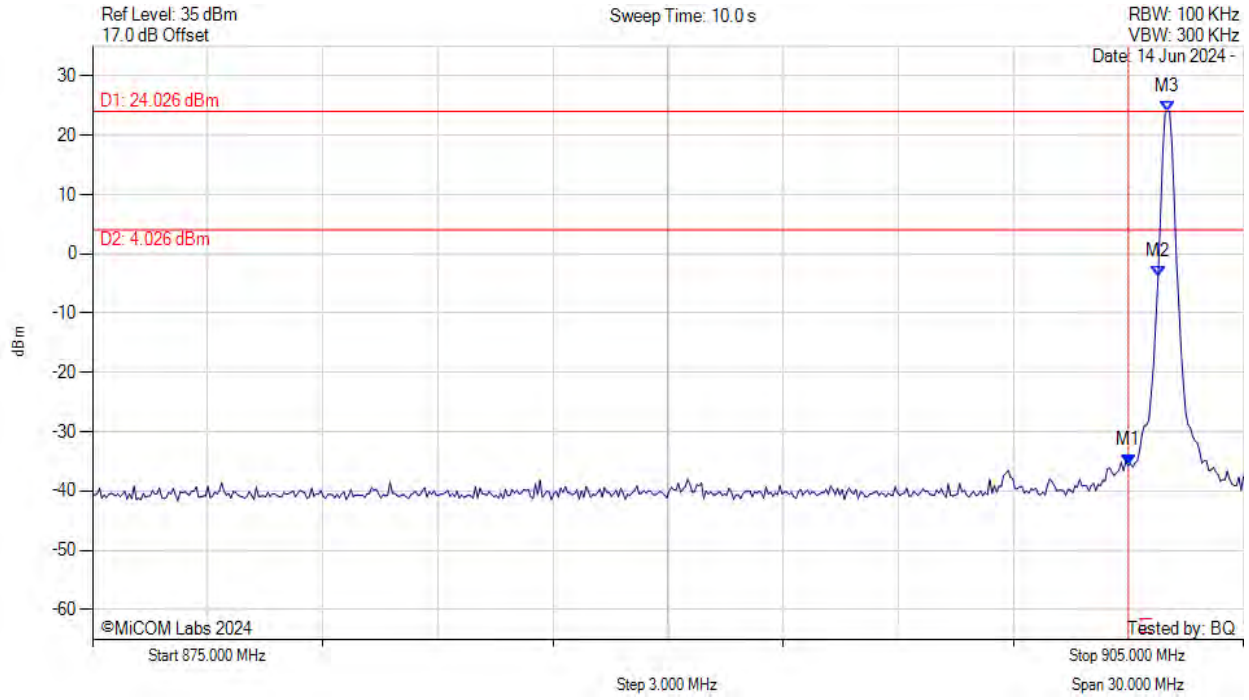
CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -35.669 dBm M2 : 902.776 MHz : -3.769 dBm M3 : 903.016 MHz : 24.026 dBm	Channel Frequency: 903.00 MHz

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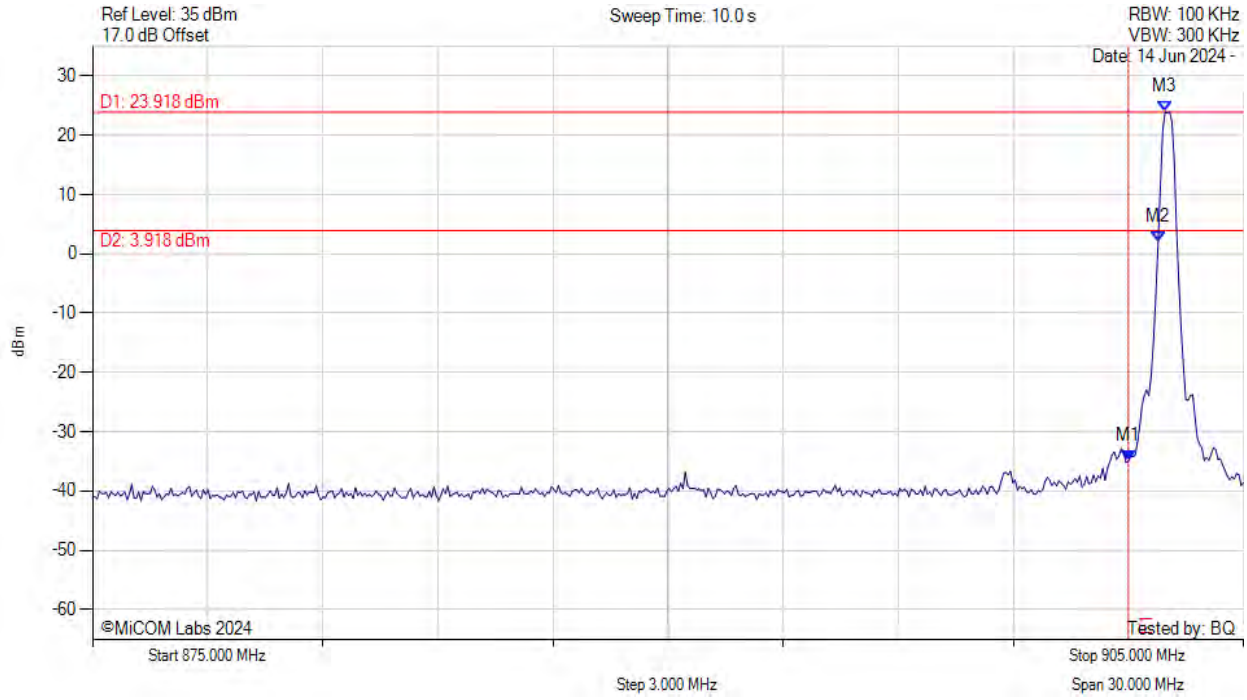
CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -34.995 dBm M2 : 902.776 MHz : 1.933 dBm M3 : 902.956 MHz : 23.918 dBm	Channel Frequency: 903.00 MHz

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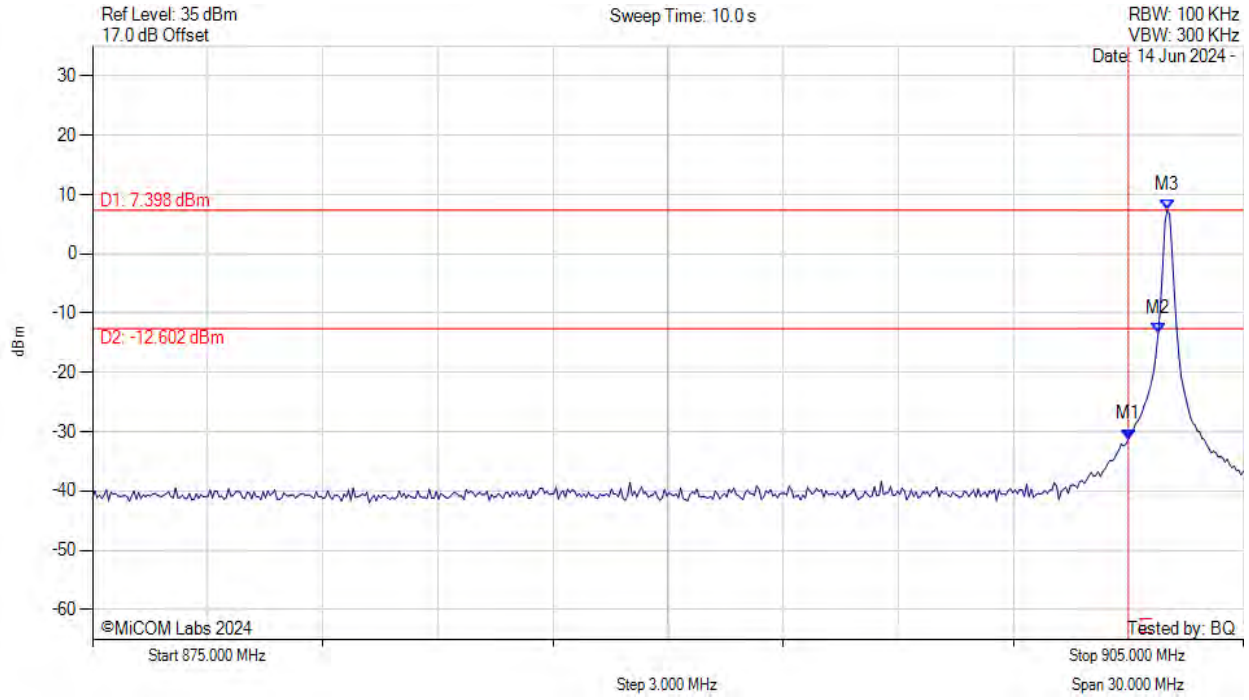
CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: OOK - PL1, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -31.296 dBm M2 : 902.776 MHz : -13.460 dBm M3 : 903.016 MHz : 7.398 dBm	Channel Frequency: 903.00 MHz

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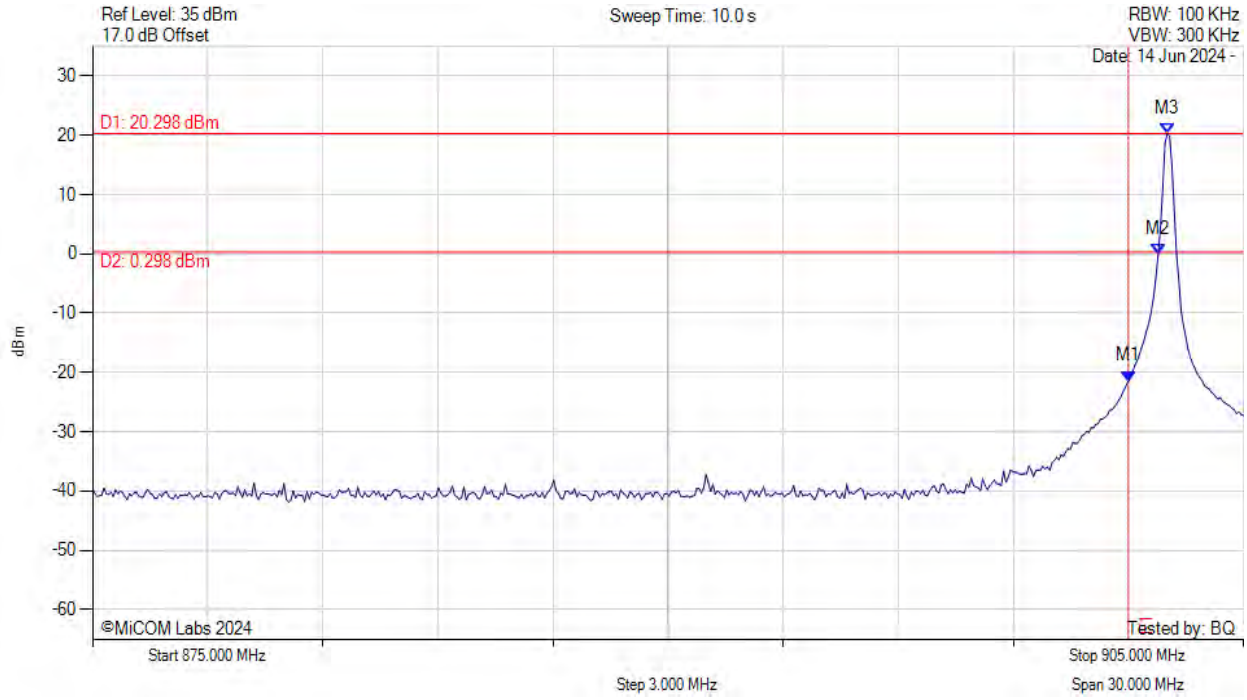
CONDUCTED LOW BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: OOK - PL3, Channel: 903.00 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 902.000 MHz : -21.471 dBm M2 : 902.776 MHz : -0.180 dBm M3 : 903.016 MHz : 20.298 dBm	Channel Frequency: 903.00 MHz

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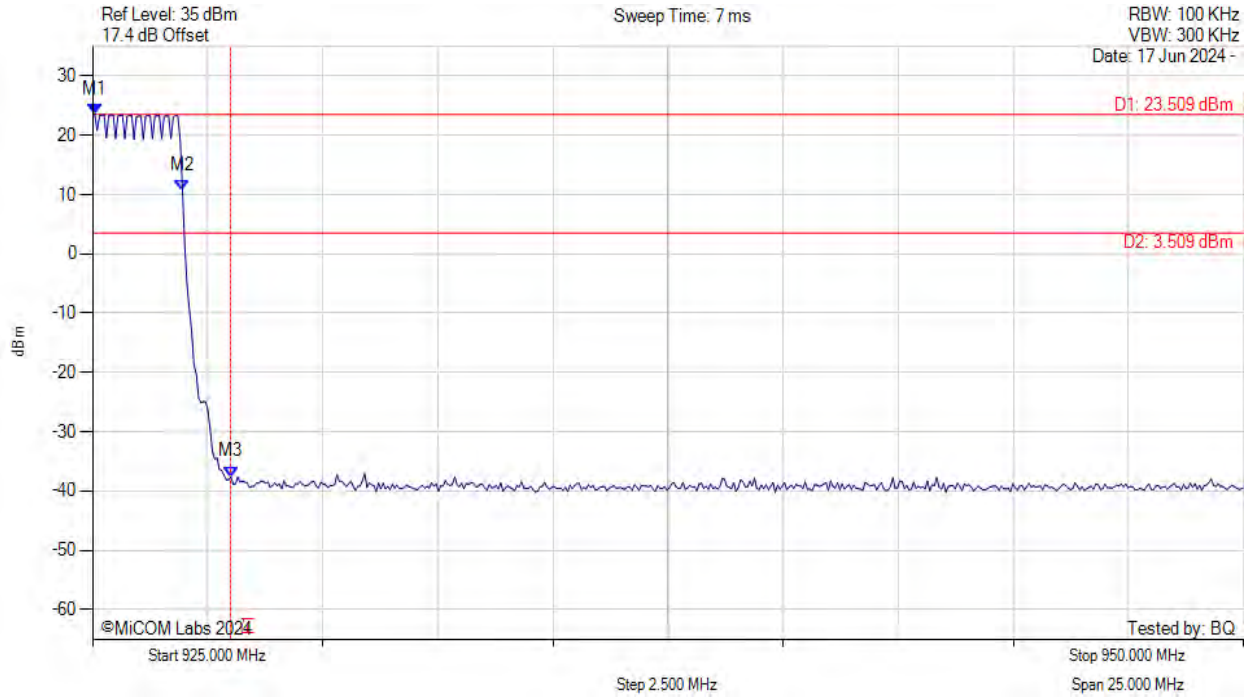
CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 925.050 MHz : 23.509 dBm M2 : 926.954 MHz : 10.719 dBm M3 : 928.000 MHz : -37.584 dBm	Channel Frequency: 926.80 MHz

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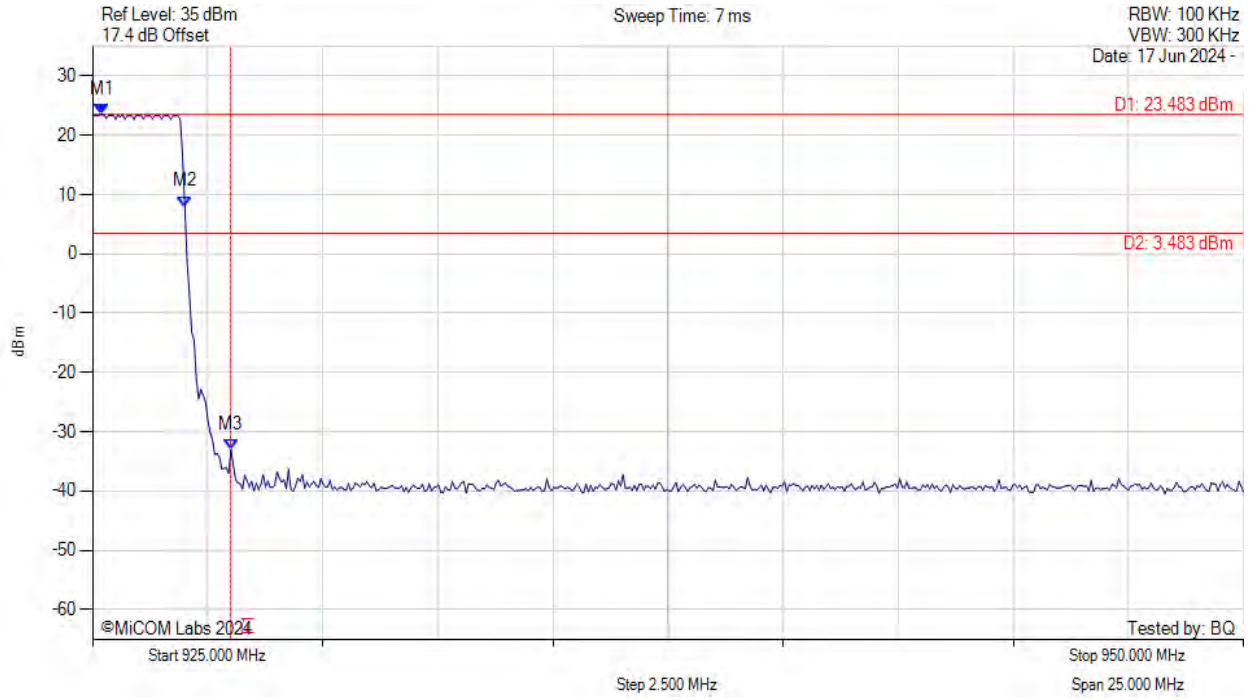
CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 925.200 MHz : 23.483 dBm M2 : 927.004 MHz : 7.972 dBm M3 : 928.000 MHz : -32.996 dBm	Channel Frequency: 926.80 MHz

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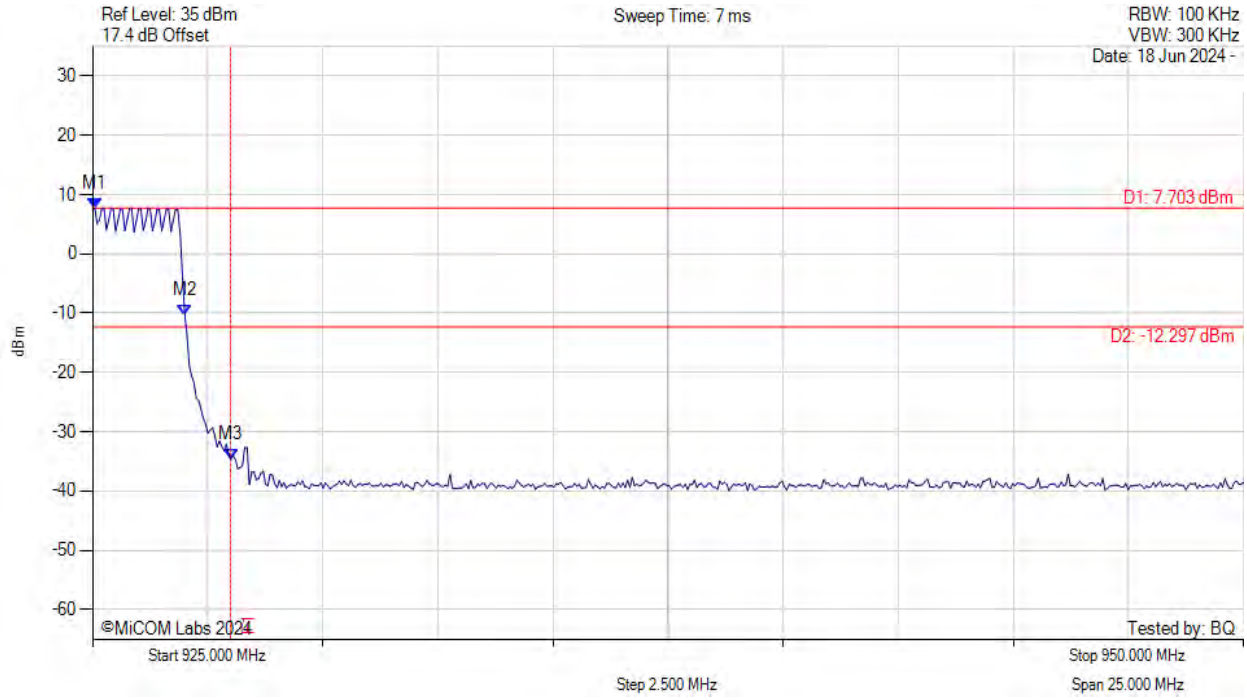
CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: OOK - PL1, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 925.050 MHz : 7.703 dBm M2 : 927.004 MHz : -10.275 dBm M3 : 928.000 MHz : -34.640 dBm	Channel Frequency: 926.80 MHz

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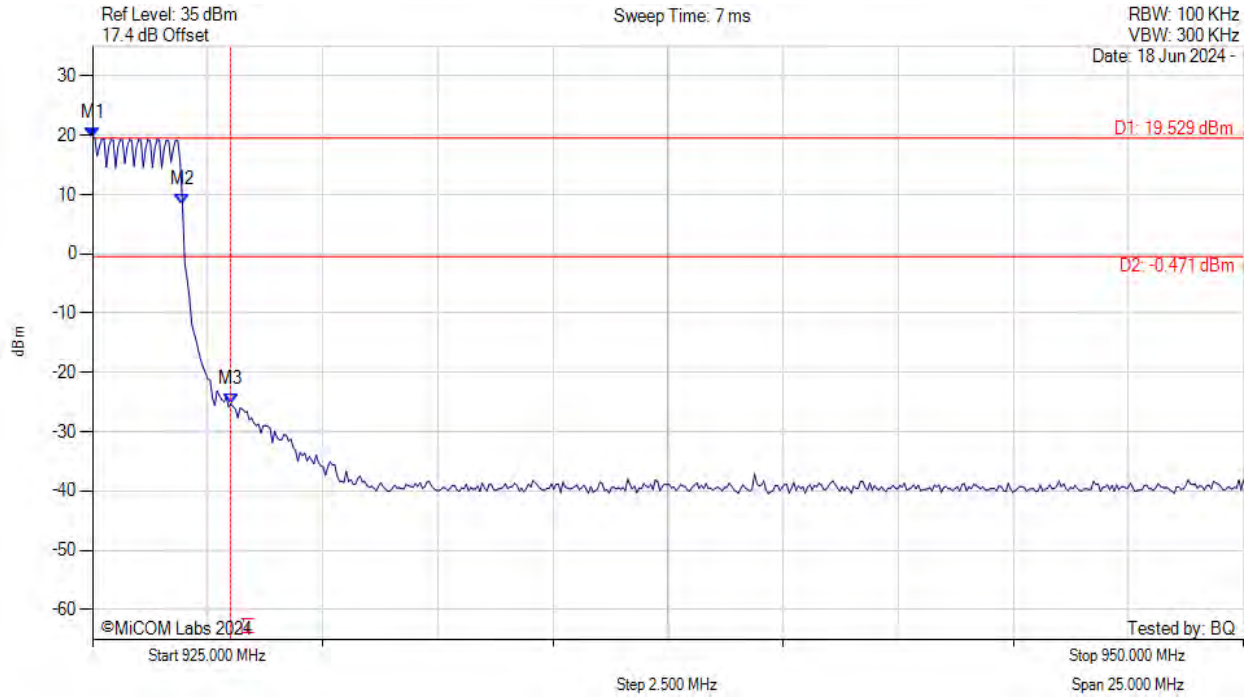
CONDUCTED UPPER BAND-EDGE EMISSIONS (HOPPING) PEAK

Variant: OOK - PL3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 925.000 MHz : 19.529 dBm M2 : 926.954 MHz : 8.386 dBm M3 : 928.000 MHz : -25.315 dBm	Channel Frequency: 926.80 MHz

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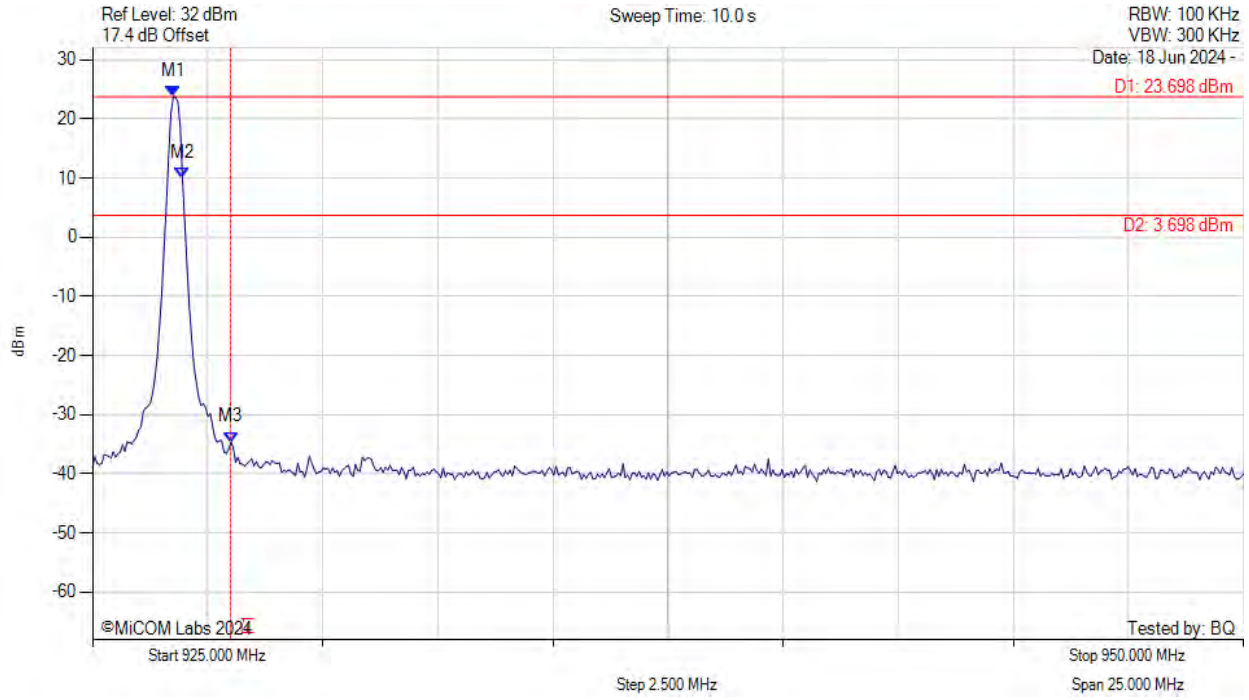
CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant:37.5kbps, DEV 16.4kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 926.754 MHz : 23.698 dBm M2 : 926.954 MHz : 9.914 dBm M3 : 928.000 MHz : -34.678 dBm	Channel Frequency: 926.80 MHz

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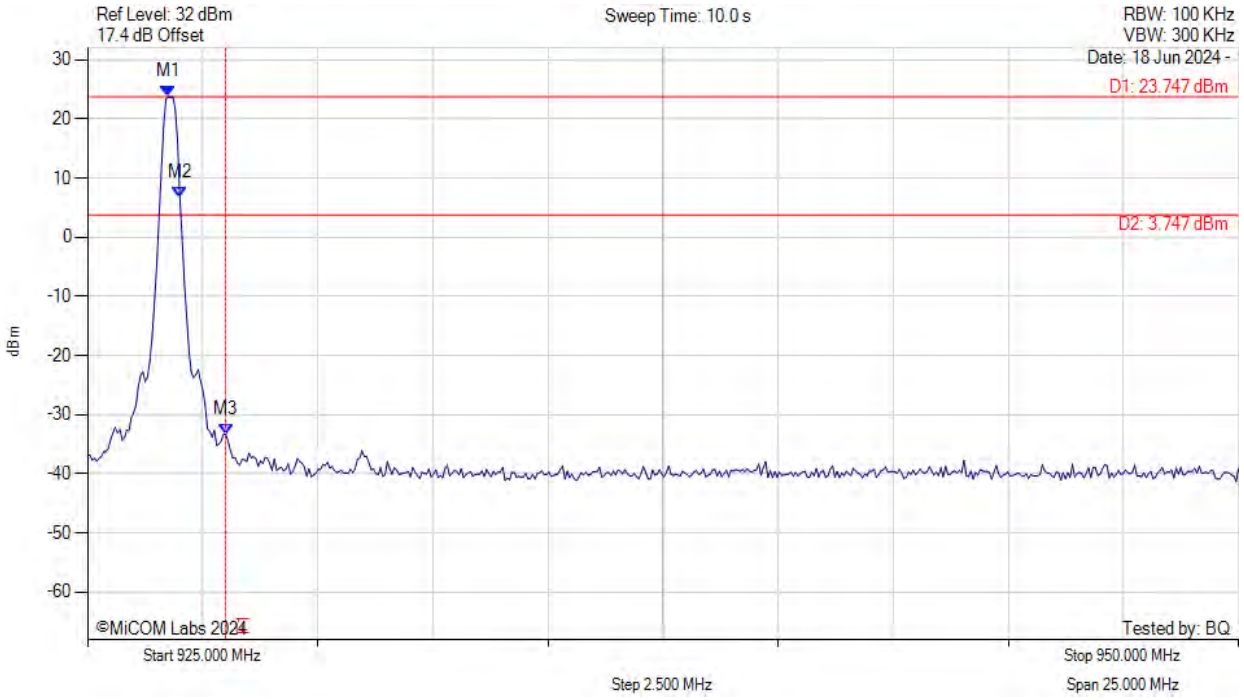
CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant:37.5kbps, DEV 50kHz, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 926.754 MHz : 23.747 dBm M2 : 927.004 MHz : 6.686 dBm M3 : 928.000 MHz : -33.358 dBm	Channel Frequency: 926.80 MHz

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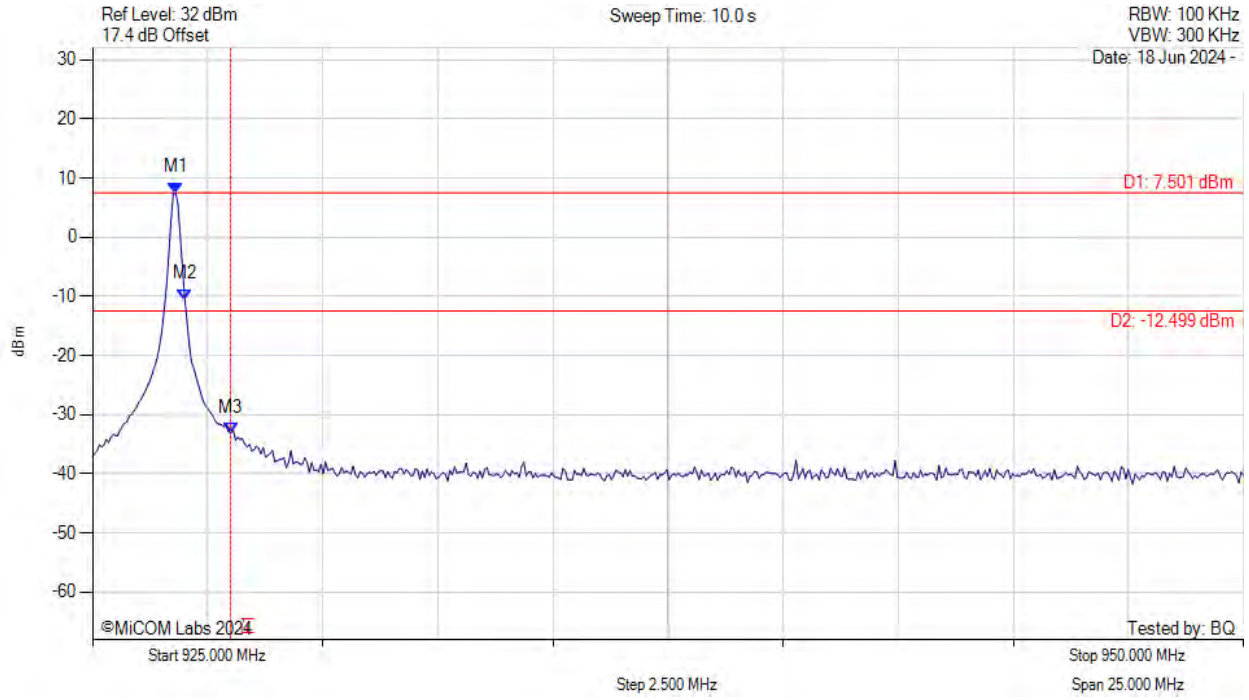
CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: OOK - PL1, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 926.804 MHz : 7.501 dBm M2 : 927.004 MHz : -10.540 dBm M3 : 928.000 MHz : -33.098 dBm	Channel Frequency: 926.80 MHz

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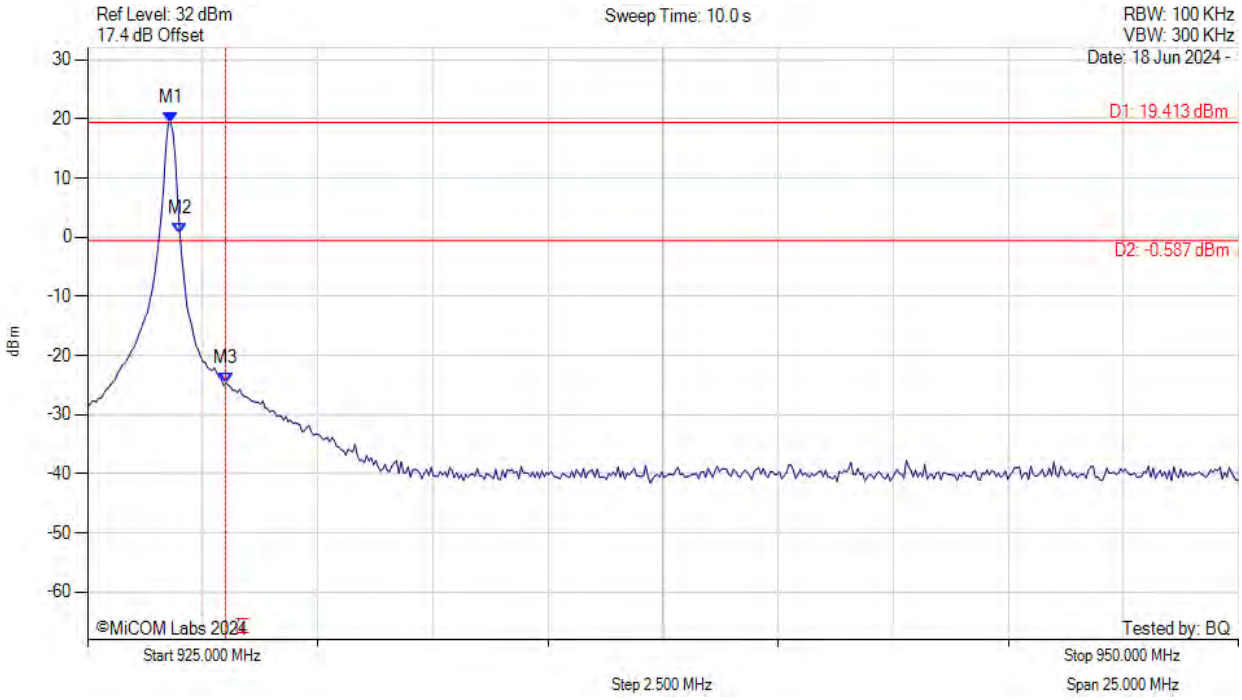
CONDUCTED UPPER BAND-EDGE EMISSIONS (STATIC) PEAK

Variant: OOK - PL3, Channel: 926.80 MHz, Chain a, Temp: 20, Voltage: 3.6 Vdc



Analyzer Setup	Marker:Frequency:Amplitude	Test Results
Detector = MAX PEAK Sweep Count = 0 RF Atten (dB) = 30 Trace Mode = VIEW	M1 : 926.804 MHz : 19.413 dBm M2 : 927.004 MHz : 0.577 dBm M3 : 928.000 MHz : -24.678 dBm	Channel Frequency: 926.80 MHz

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