

ITRON, INC.

TEST REPORT

SCOPE OF WORK

RADIO TESTING – RIVA HW 4.2 FEM UPDATE C2PC (DSS)

REPORT NUMBER

106549247ATL-001

ISSUE DATE

09 June 2026

REVISED DATE

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Non-Specific Radio Report Shell Rev. January 2025

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RADIO TEST REPORT

Report Number: 106549247ATL-001

Project Number: G106549247

Report Issue Date: 09 June 2026

Model(s) Tested: G5R1

FCC ID: SK9G5R1

IC: 864G-G5R1

Standards: 47 CFR Part 15 Subpart C, 15.247
RSS-247, Issue 4
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024
+ Errata to C63.10a-2024

Test Location

Intertek
1950 Evergreen Blvd., Suite 100
Duluth, GA 30096 USA
FCC Designation: US1046
CAB Designator: US0128

Client

Itron Inc.
313 North Hwy 11
West Union, SC 29696-2706 USA

Report prepared by



Jeremy Pickens / Senior Staff Engineer

Report reviewed by



Uri Spector / Sr. EMC Staff Engineer

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1 Introduction and Conclusion

The tests indicated in Section 2 were performed on the product constructed as described in Section 4. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test Description	Test Specification		Result
		FCC	ISED	
5	20dB and 99% Bandwidth	15.247(a)(1)	RSS-247 S6.2.2.1	Compliant
6	Peak Output Power	15.247(b)(2)	RSS-247 S6.2.2.2	Compliant
NA	Carrier Frequency Separation	15.247(a)(1)	RSS-247 S6.2.1(b)	NS ¹
NA	Number of Hopping Channels	15.247(a)(1)(i)	RSS-247 S6.2.2.1	NS ¹
NA	Channel Dwell Time	15.247(a)(1)(i)	RSS-247 S6.2.2.1	NS ¹
7	Conducted Spurious Emissions / Band Edge	15.247(d)	RSS-247 S6.6	Compliant
8	Radiated Spurious Emissions	15.205(a), 15.209(a)	RSS-GEN S8.9-8.10	Compliant
NA	AC Conducted Emissions	15.207	RSS-GEN S8.8	NS ¹
NA	Antenna Requirement	15.203	RSS-GEN S6.8	Compliant

- 1) Not in the Scope of evaluation: The FEM update had no effect on the hopping parameters or AC conducted emissions.
- 2) The antenna is a PCB Embedded Antenna which is not removable by the end user.

3 Client Information

This evaluation was performed at the request of:

Client: Itron Inc.
313 North Hwy 11
West Union, SC 29696-2706 USA

Contact: Christopher O'Steen

Email: christopher.o'steen@itron.com

4 Description of Equipment Under Test and Variant Models

Manufacturer: Itron Inc.
313 North Hwy 11
West Union, SC 29696-2706 USA

Equipment Under Test			
Description	Manufacturer	Model Number	Serial Number
Electricity Meter Module	Itron, Inc.	G5R1	117000002710 ¹ 117000002778 ²

- 1) Antenna Port Conducted measurements
- 2) Radiated Spurious Emissions measurements

Receive Date:	15 April 2026
Received Condition:	Good
Type:	Production

Description of Equipment Under Test (provided by client)

The Itron G5R1 is an electricity metering module which includes a 902.3MHz to 927.6MHz transmitter as well as a 2.4GHz WLAN transceiver. The module operates on AC as well as DC voltage which is supplied by a host device.

Certification Purpose

Class 2 Permissive Change: Itron has added a new Front End Module (FEM) to the 900MHz radio. The 2.4GHz radio remained unchanged.

Radio/Receiver Characteristics	
Frequency Range / Number of Channels	FSK/100kbps: 902.3 – 926.9MHz, 83 Channels FSK/150kbps: 902.4 – 927.6MHz, 64 Channels GFSK/150kbps: 902.3 – 926.9MHz, 83 Channels GFSK/200kbps: 902.3 – 926.9MHz, 83 Channels GFSK/300kbps: 902.4 – 927.6MHz, 64 Channels OFDM/600kbps: 902.4 – 927.6MHz, 64 Channels DTS OFDM/1200kbps: 903.2 – 926.0MHz, 20 Channels ¹ DTS OFDM/2400kbps: 903.2 – 926.0MHz, 20 Channels ¹
Data Rate / Modulation Type(s)	FSK: 100kbps/150kbps GFSK: 150kbps/200kbps/300kbps OFDM: 600kbps/1200kbps/2400kbps
Channel Separation:	FSK: 150kbps / GFSK: 300kbps / OFDM: 600kbps (400kHz) FSK: 100kbps / GFSK: 150kbps/200kbps (300kHz) DTS OFDM: 1200kbps/2400kbps (1200kHz)
Maximum Conducted Output Power:	29.53dBm (0.897W)
Equipment Type	Single Module - Mobile
Antenna Type and Gain	PCB Embedded Slot Antenna (3.6dBi) <i>Note: Provided by Itron - Intertek takes no responsibility for the accuracy of this information</i>

- 1) Note the DTS operations results are reported in a separate test report.

Software

No.	Description of EUT Software
1	MPU Firmware: Rel 10.9.507

4.1 Justification

All testing performed in this report was for the 900MHz radio only.

For this evaluation, limited testing was performed to address the addition of a new Front End Module to the 900MHz radio. This report is specific to the FHSS operations.

For antenna port measurements, the G5R1 was directly connected to the test instruments using an FSL to SMA adapter cable. The module was powered by a regulated 24V DC supply and transmit test commands were sent via the WiFi interface to the radio.

For radiated emission measurements the DUT was placed on a non-conductive platform (80cm or 1.5meters depending on the frequency range). The EUT was tested at low, mid, and high channels with the module oriented in three different axes. The test modes for all modulations produced a 100% duty cycle. The worst-case data is reported.

Software Setting for Power: 30 dBm

The FSK 100kbps, GFSK 150kbps, and OFDM 600kbps data rates were used as worst-case modulations during radiated spurious emissions measurements.

4.2 Modifications Required for Compliance

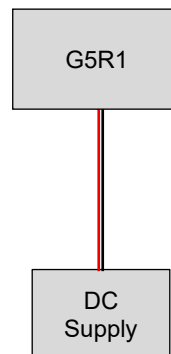
No modifications were made during compliance testing in order to bring the product into compliance.

4.3 Additions, Deviations and Exclusions from Standards

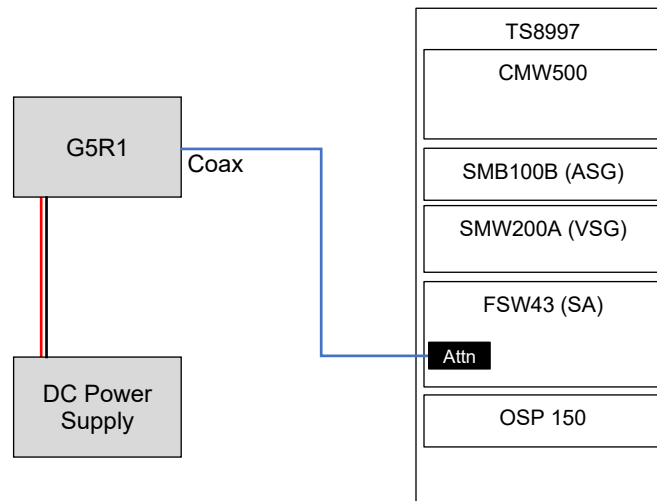
No additions, deviations or exclusion have been made from standard.

4.4 Method

Configuration as required by ANSI C63.10.

4.5 EUT Block Diagram – Radiated Measurements

4.6 EUT Block Diagram – Conducted Measurements



5 Bandwidth

5.1 Method

The procedures from ANSI C63.10 Clauses 6.9.2 and 6.9.3 were used to measure the 20dB and 99% Occupied Bandwidths.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

5.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026
213506-02	Huber+Suhner	RF Test Cable	Enviroflex 400	213506-02	VBV	VBV
213507-20	Tojoin	20dB SMA Attenuator	20dB	241123	VBV	VBV

Software Utilized

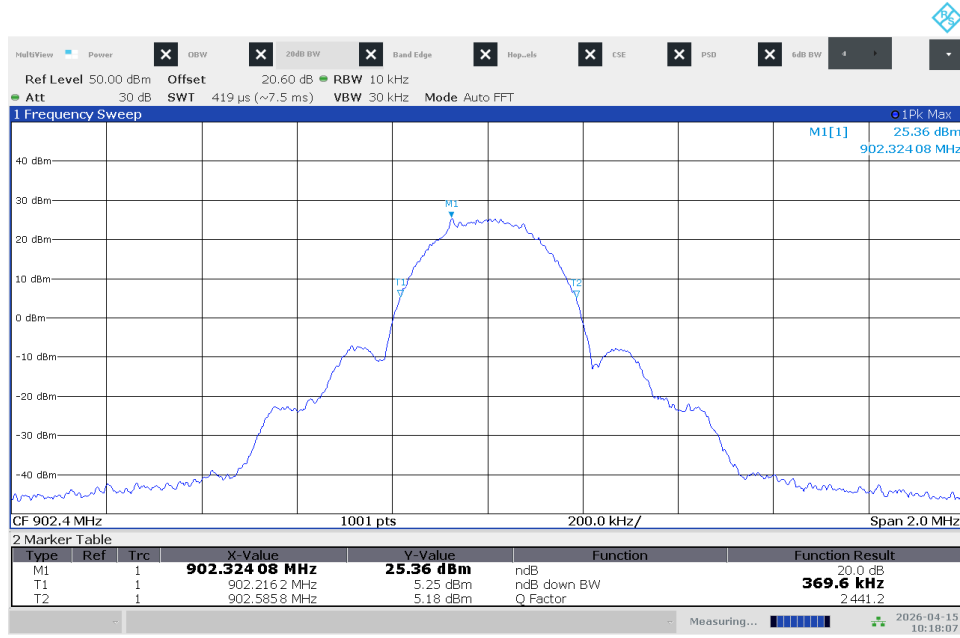
Name	Manufacturer	Version
RSCCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

5.3 Test Data

Modulation / Data Rate	Frequency (MHz)	20dB Bandwidth (kHz)	99% OBW (kHz)	Result
100kbps / FSK	902.3	130.87	117.498	Reported
100kbps / FSK	915.2	131.37	117.997	Reported
100kbps / FSK	926.9	130.37	117.729	Reported
150kbps / FSK	902.4	184.82	160.135	Reported
150kbps / FSK	915.2	185.31	160.281	Reported
150kbps / FSK	927.6	183.82	159.544	Reported
150kbps / GFSK	902.3	185.31	159.49	Reported
150kbps / GFSK	915.2	184.32	159.506	Reported
150kbps / GFSK	926.9	184.82	160.091	Reported
200kbps / GFSK	902.3	245.8	210.663	Reported
200kbps / GFSK	915.2	245.8	210.811	Reported
200kbps / GFSK	926.9	244.8	210.823	Reported
300kbps / GFSK	902.4	369.6	312.734	Reported
300kbps / GFSK	915.2	365.6	312.925	Reported
300kbps / GFSK	927.6	363.6	311.948	Reported
600kbps / OFDM	902.4	333.7	293.728	Reported
600kbps / OFDM	915.2	330.7	293.454	Reported
600kbps / OFDM	927.6	331.7	293.656	Reported

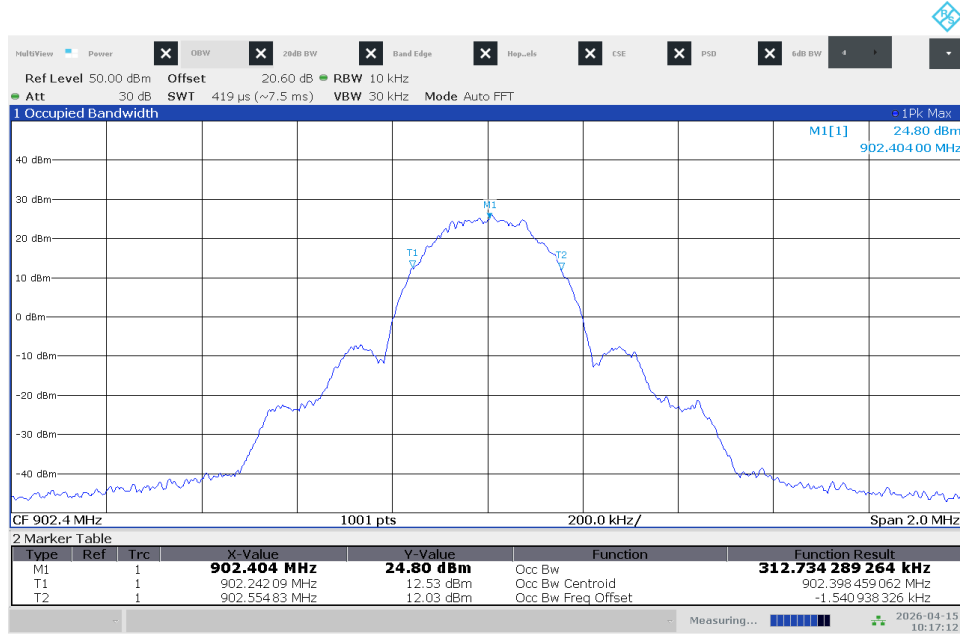
Sample Plots – 300kbps GFSK, Low Channel

20dB Bandwidth



10:18:07 AM 04/15/2026

99% Occupied Bandwidth



10:17:13 AM 04/15/2026

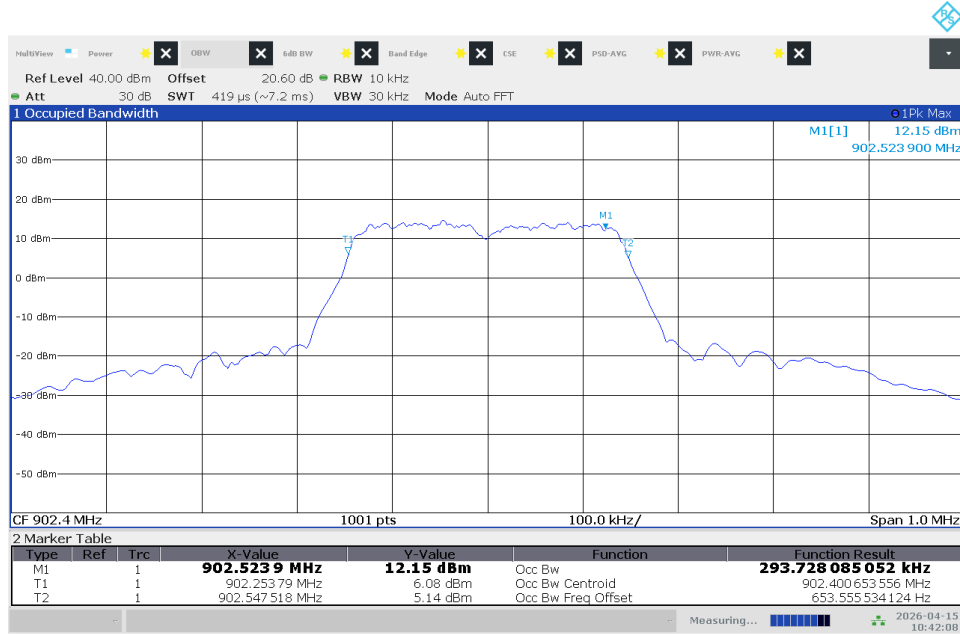
Sample Plots – 600kbps OFDM, Low Channel

20dB Bandwidth



10:58:46 AM 04/15/2026

99% Occupied Bandwidth



10:42:09 AM 04/15/2026

Test Personnel: Jeremy Pickens
 Supervising/Reviewing Engineer:
 (Where Applicable)
 Product Standard: ANSI C63.10
 Input Voltage: 24Vdc

Test Date: 15 April 2026
 Ambient Temperature: 21.4°C
 Relative Humidity: 41.4%
 Atmospheric Pressure: 97.9kPa

6 Peak Output Power

6.1 Method

The procedures from ANSI C63.10 Clause 7.8.5 were used to measure the peak output power.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

6.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026
213506-02	Huber+Suhner	RF Test Cable	Enviroflex 400	213506-02	VBV	VBV
213507-20	Tojoin	20dB SMA Attenuator	20dB	241123	VBV	VBV

Software Utilized

Name	Manufacturer	Version
RSCCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

6.3 Results

The sample tested was found to Comply.

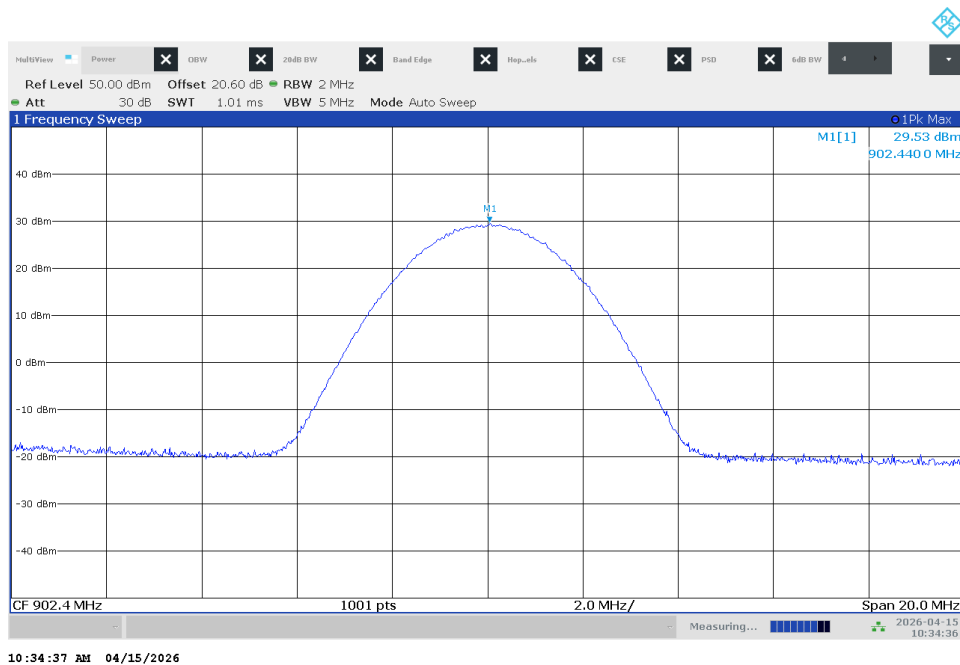
6.4 Test Data

Mode	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Result
100kbps / FSK	902.3	29.24	30	Pass
100kbps / FSK	915.2	29.00	30	Pass
100kbps / FSK	926.9	28.51	30	Pass
150kbps / FSK	902.4	29.05	30	Pass
150kbps / FSK	915.2	29.02	30	Pass
150kbps / FSK	927.6	28.48	30	Pass
150kbps / GFSK	902.3	29.13	30	Pass
150kbps / GFSK	915.2	29.03	30	Pass
150kbps / GFSK	926.9	28.63	30	Pass
200kbps / GFSK	902.3	29.10	30	Pass
200kbps / GFSK	915.2	29.10	30	Pass
200kbps / GFSK	926.9	28.55	30	Pass
300kbps / GFSK	902.4	29.21	30	Pass
300kbps / GFSK	915.2	29.03	30	Pass
300kbps / GFSK	927.6	28.51	30	Pass
600kbps / OFDM	902.4	29.53	30	Pass
600kbps / OFDM	915.2	29.52	30	Pass
600kbps / OFDM	927.6	29.28	30	Pass

Mode	Frequency (MHz)	Conducted Peak Power	Antenna Gain (dBi)	EIRP (dBm)	IC EIRP Limit (dBm)	Result
100kbps / FSK	902.3	29.24	3.6	32.84	36	Pass
100kbps / FSK	915.2	29.00	3.6	32.60	36	Pass
100kbps / FSK	926.9	28.51	3.6	32.11	36	Pass
150kbps / FSK	902.4	29.05	3.6	32.65	36	Pass
150kbps / FSK	915.2	29.02	3.6	32.62	36	Pass
150kbps / FSK	927.6	28.48	3.6	32.08	36	Pass
150kbps / GFSK	902.3	29.13	3.6	32.73	36	Pass
150kbps / GFSK	915.2	29.03	3.6	32.63	36	Pass
150kbps / GFSK	926.9	28.63	3.6	32.23	36	Pass
200kbps / GFSK	902.3	29.10	3.6	32.70	36	Pass
200kbps / GFSK	915.2	29.10	3.6	32.70	36	Pass
200kbps / GFSK	926.9	28.55	3.6	32.15	36	Pass
300kbps / GFSK	902.4	29.21	3.6	32.81	36	Pass
300kbps / GFSK	915.2	29.03	3.6	32.63	36	Pass
300kbps / GFSK	927.6	28.51	3.6	32.11	36	Pass
600kbps / OFDM	902.4	29.53	3.6	33.13	36	Pass
600kbps / OFDM	915.2	29.52	3.6	33.12	36	Pass
600kbps / OFDM	927.6	29.28	3.6	32.88	36	Pass

EIRP = Peak Power + Antenna Gain

Sample Plot



Test Personnel: Jeremy Pickens 
Supervising/Reviewing
Engineer:
(Where Applicable) _____
Product Standard: ANSI C63.10
Input Voltage: 24Vdc

Test Date: 15 April 2026

Ambient Temperature: 21.4°C

Relative Humidity: 41.4%

Atmospheric Pressure: 97.9kPa

7 Conducted Spurious Emissions / Band Edge

7.1 Method

The procedures from ANSI C63.10 Clause 6.10 and 7.8.7 were used to measure the conducted spurious emissions and allocated band edges.

The limit is 20 dB below the measured peak power in any 100kHz band.

TEST SITE: RF Bench

The RF bench consists of a Rohde & Schwarz TS8997 automated test system coupled with a temperature/humidity environmental chamber. Measurements are automated using the Rohde & Schwarz EMC32 test software. The TS8997 system houses a switch matrix (OSP), along with a spectrum analyzer, vector network analyzer, and analog signal generator.

7.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
212164	Temperature/Pressure/Humidity Sensor	Extech	SD700	109402	07/08/2025	07/08/2026
213500	Analog Signal Generator (8kHz-40GHz)	Rohde & Schwarz	SMB100B	106096	05/08/2025	05/08/2027
213502	Spectrum Analyzer (2Hz-43.5GHz)	Rohde & Schwarz	FSW43	102972	08/01/2024	08/01/2026
213506-02	Huber+Suhner	RF Test Cable	Enviroflex 400	213506-02	VBU	VBU
213507-20	Tojoin	20dB SMA Attenuator	20dB	241123	VBU	VBU

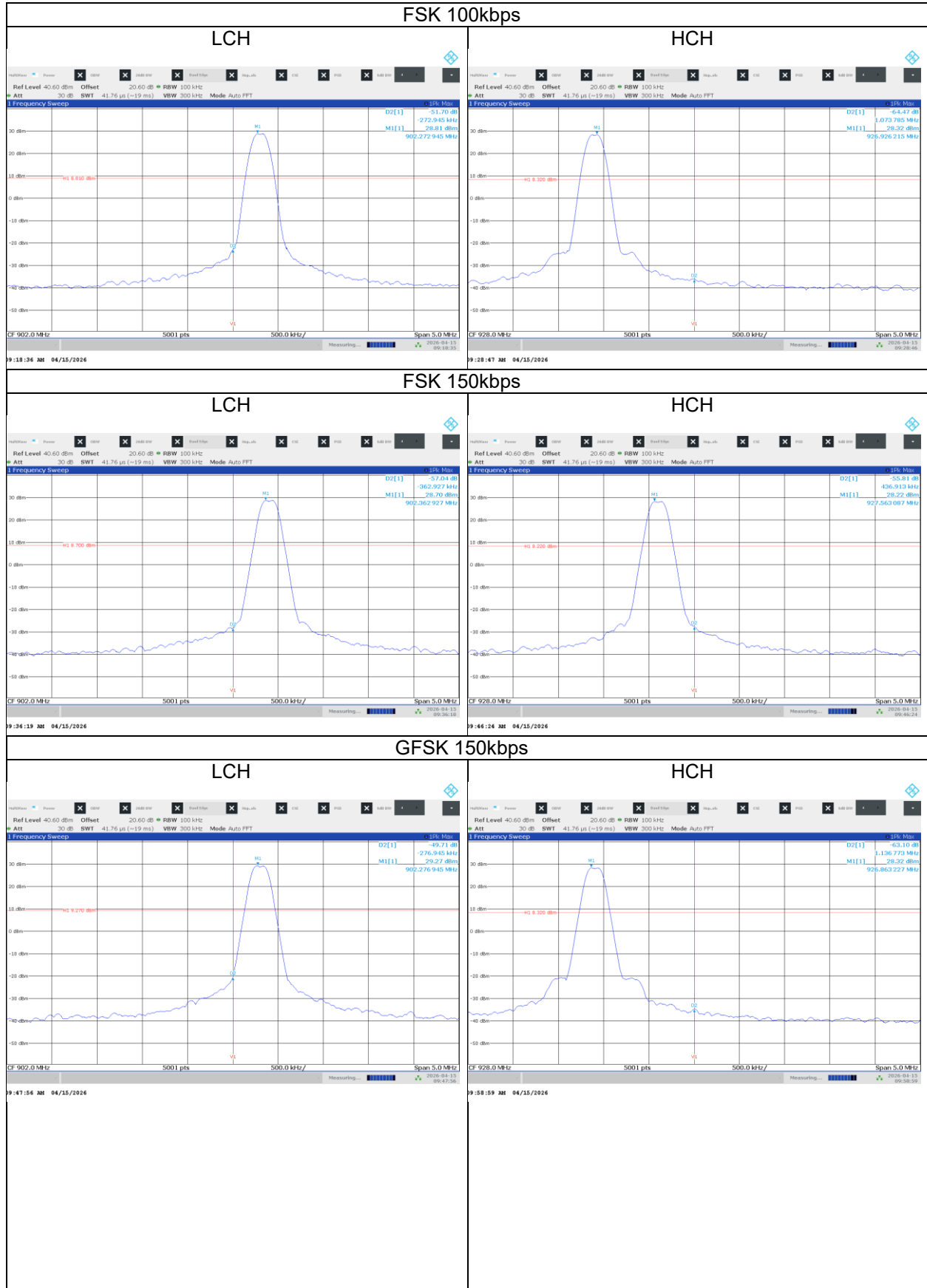
Software Utilized

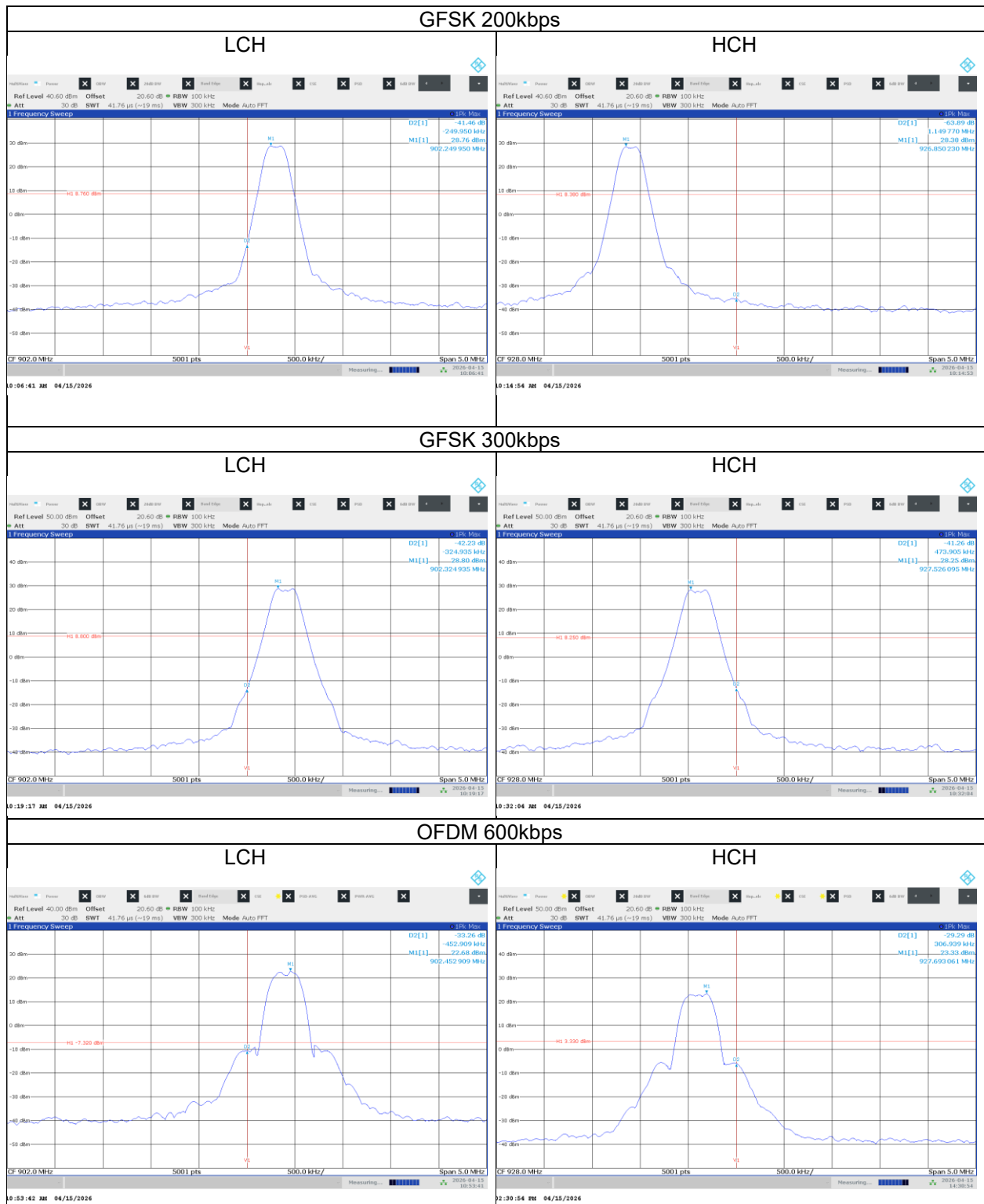
Name	Manufacturer	Version
RSCCommander	Rohde & Schwarz	2.4.2 64-bit (2023)

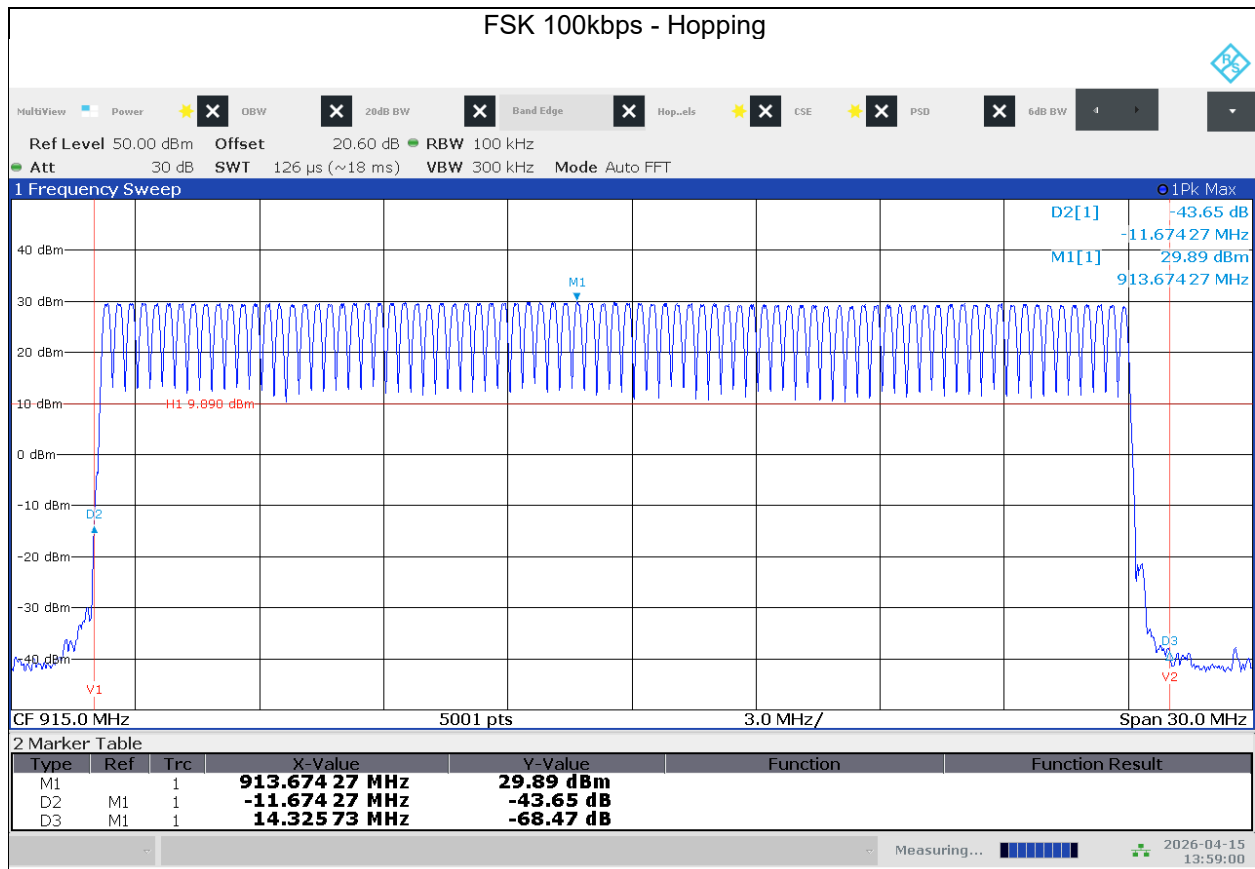
7.3 Results

The sample tested was found to Comply.

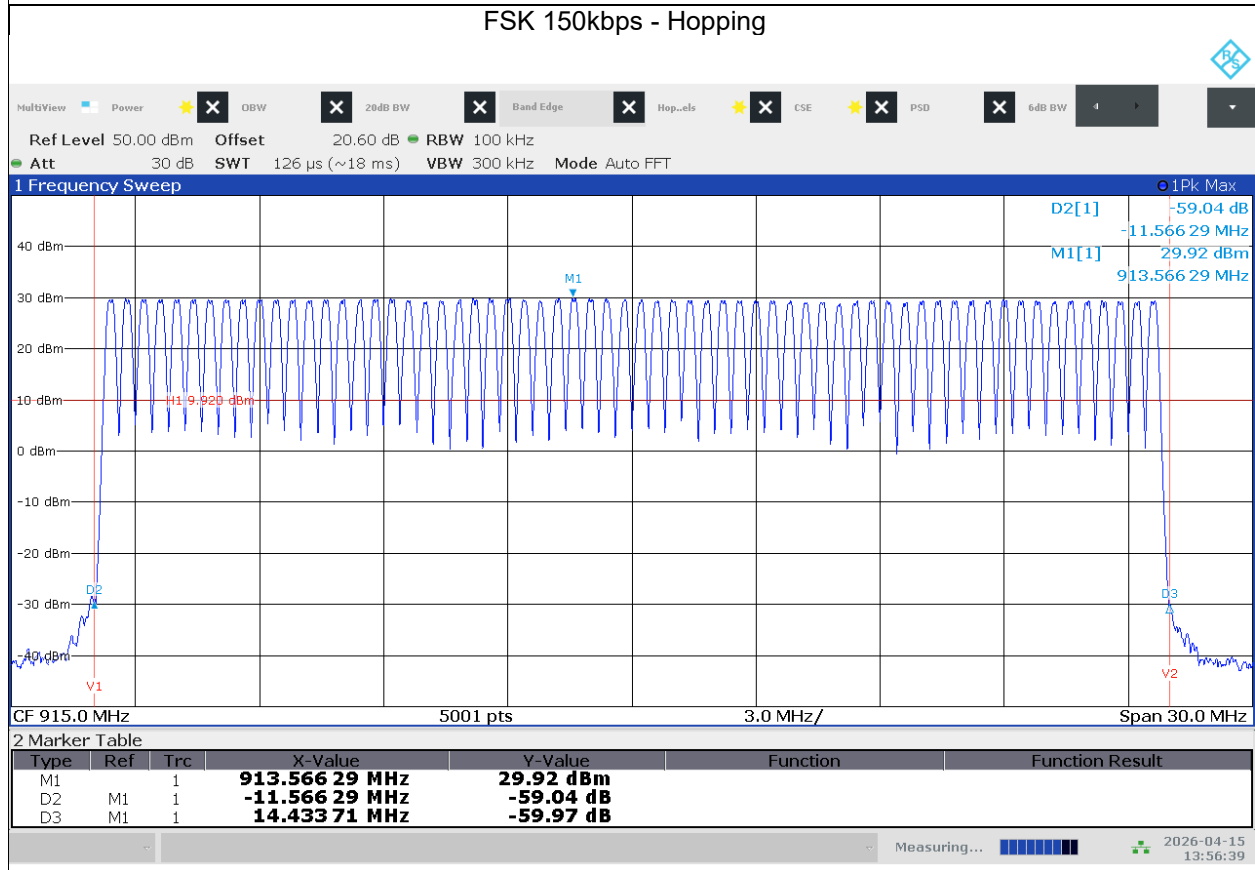
7.4 Plots – Band Edges





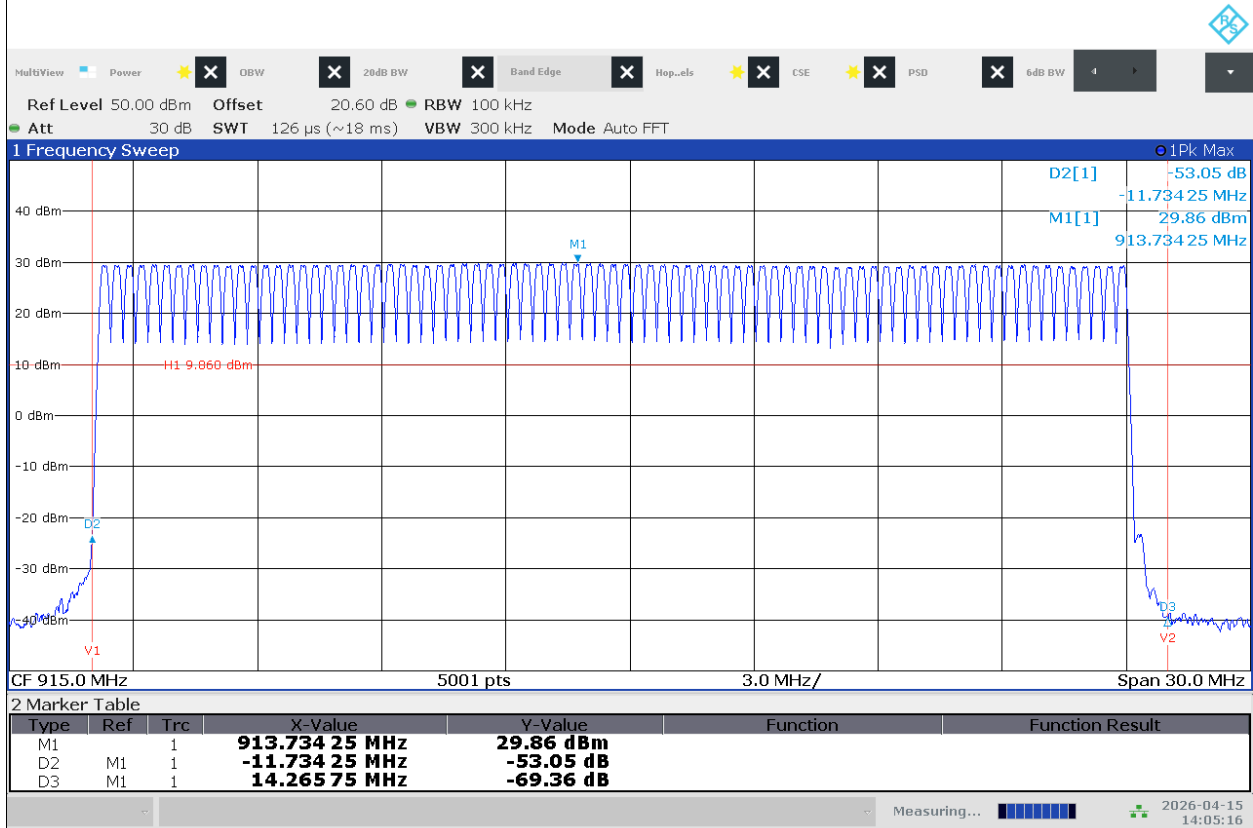


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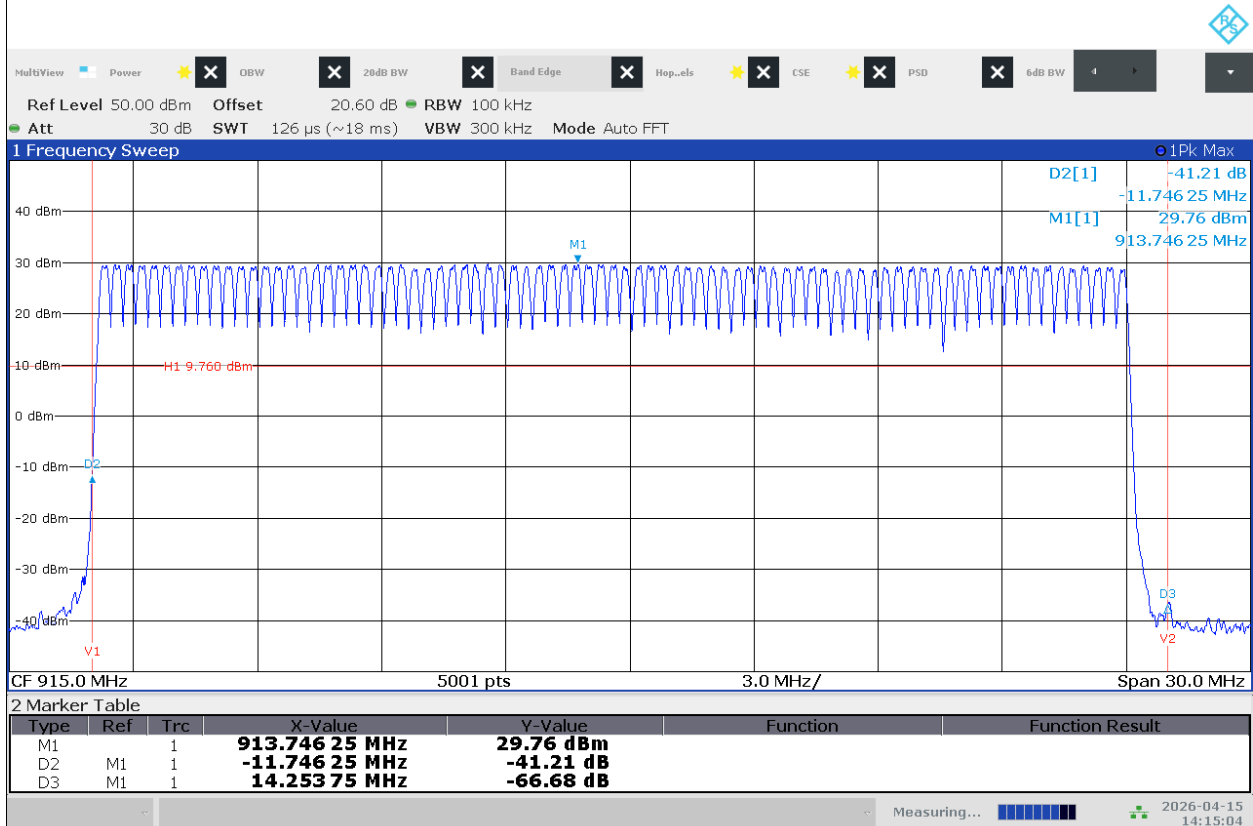
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GFSK 150kbps - Hopping



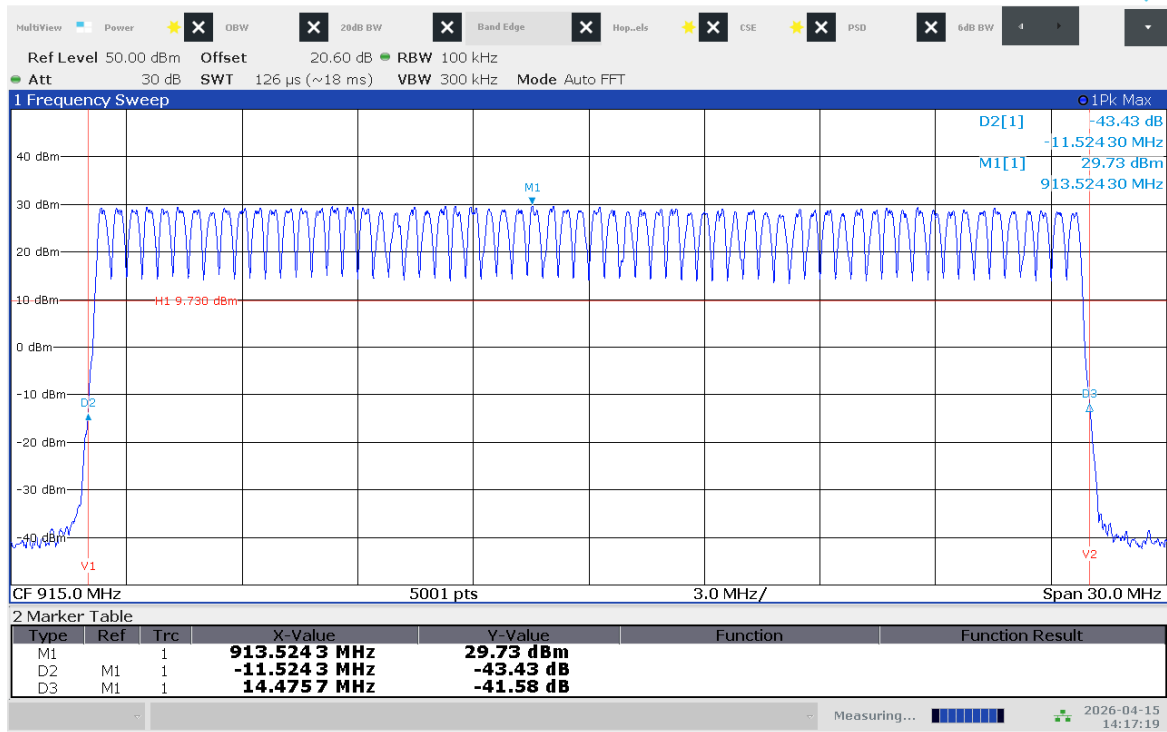
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GFSK 200kbps - Hopping



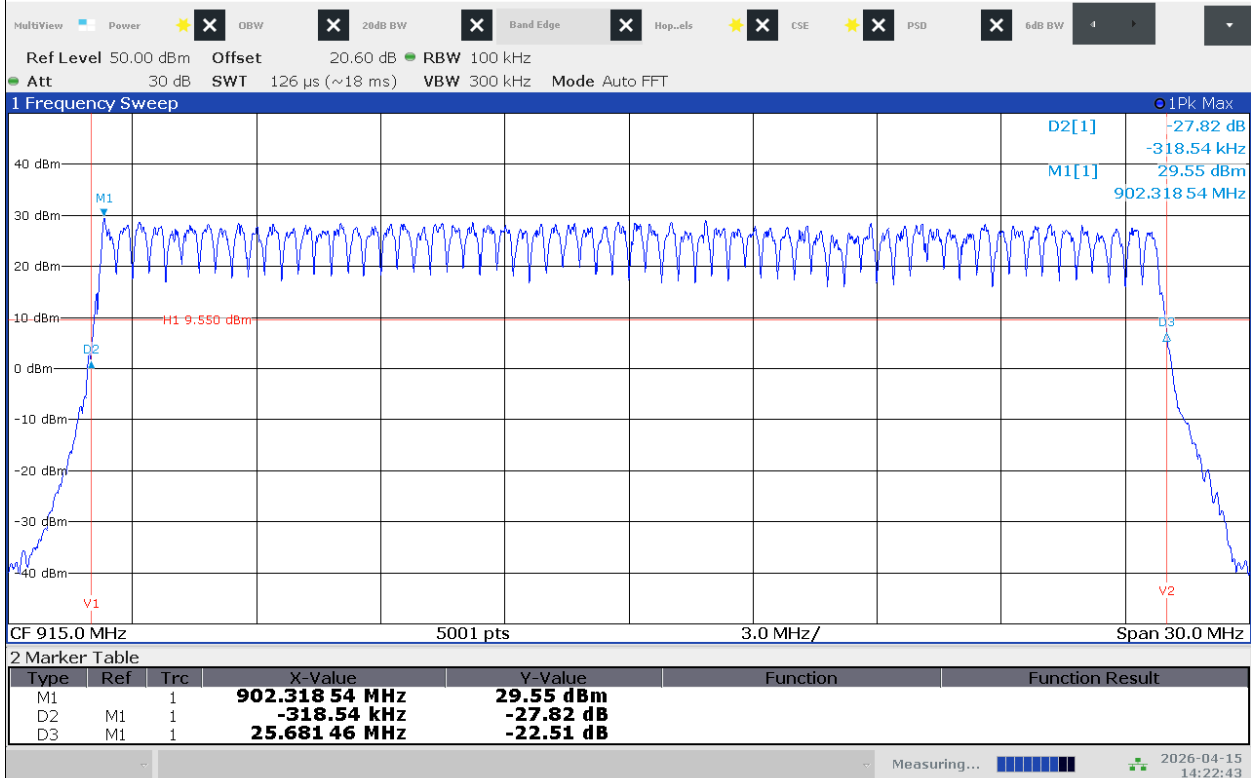
02:15:05 PM 04/15/2026

GFSK 300kbps - Hopping



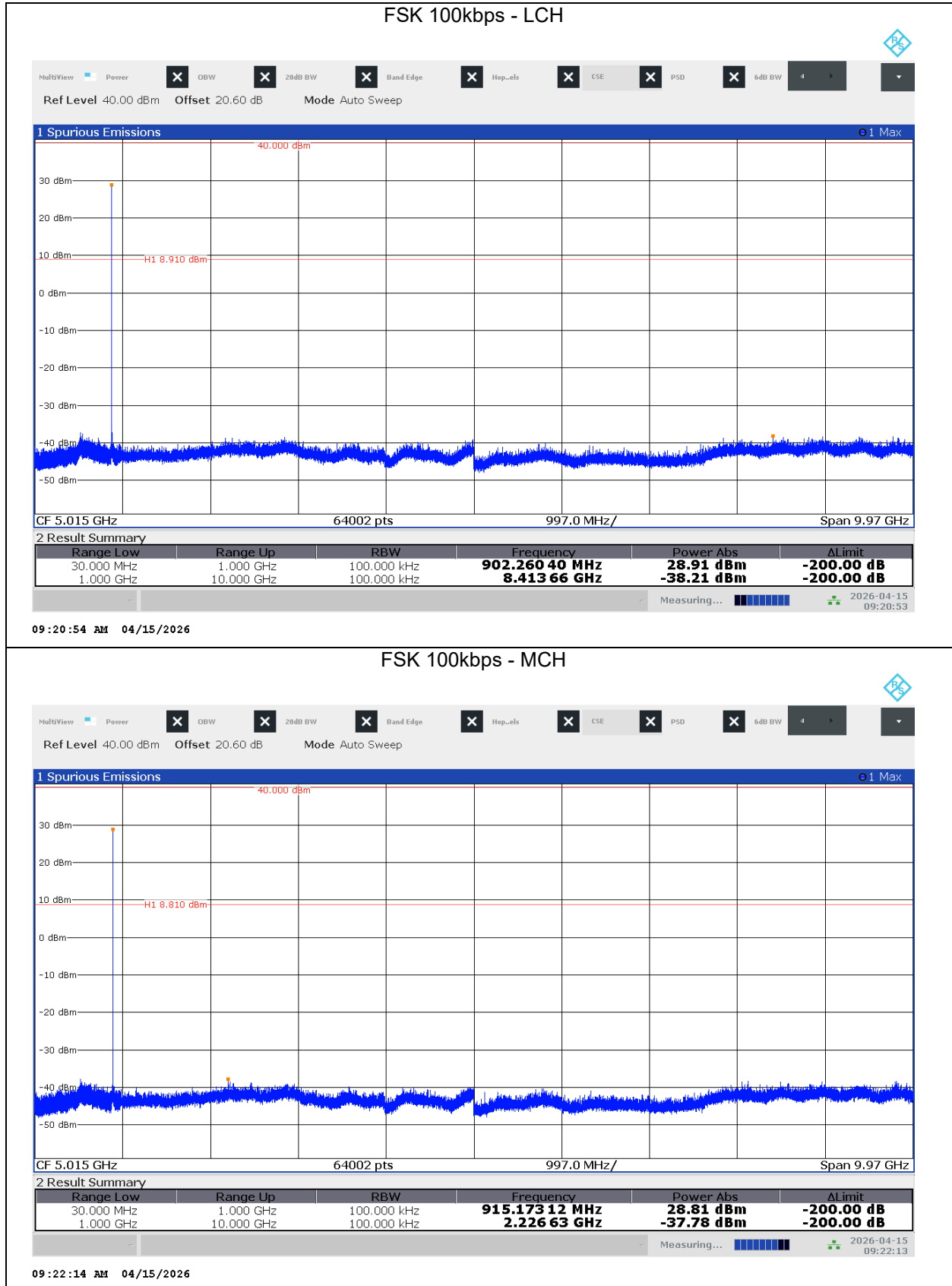
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OFDM 600kbps - Hopping

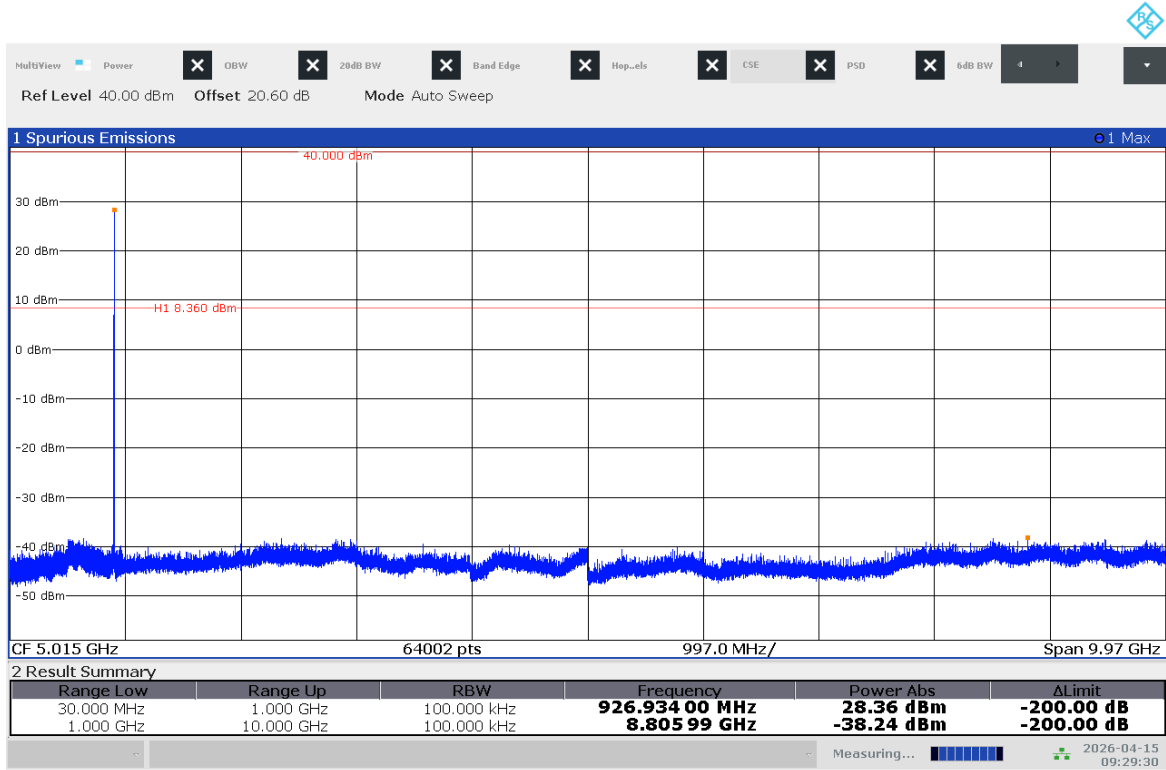


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7.5 Test Data – Conducted Spurious

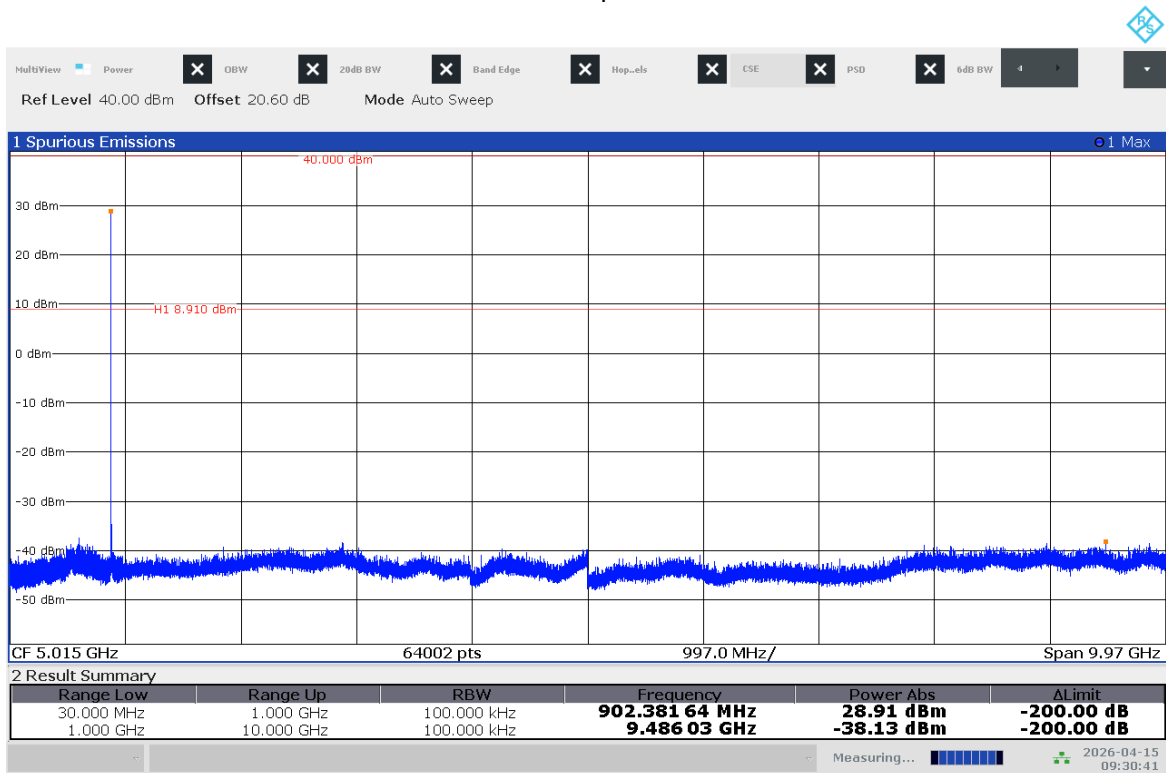


FSK 100kbps - HCH



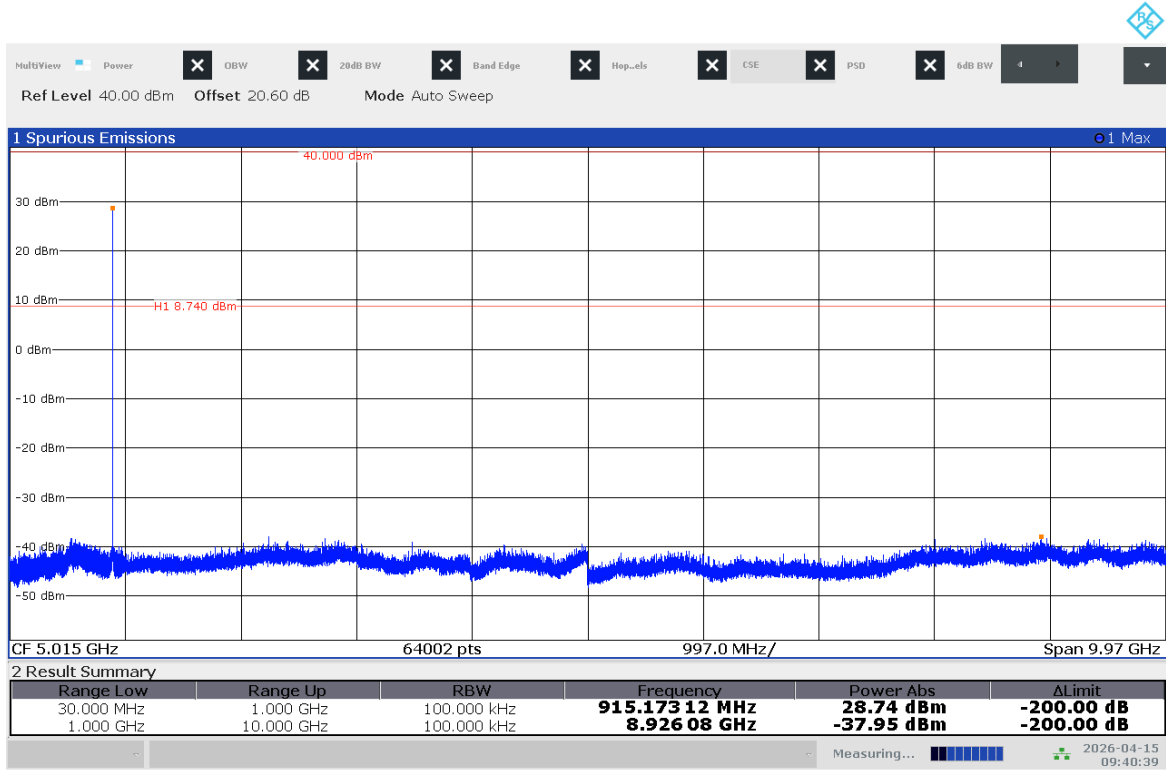
09:29:31 AM 04/15/2026

FSK 150kbps - LCH



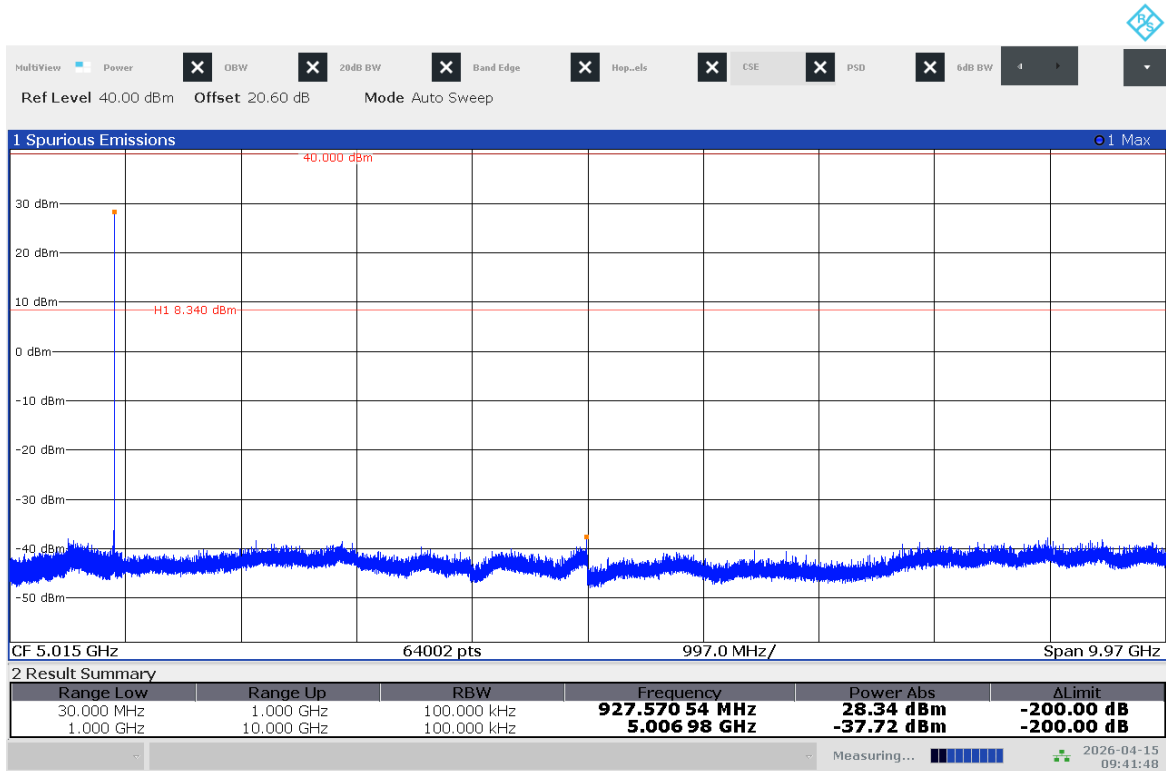
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FSK 150kbps - MCH



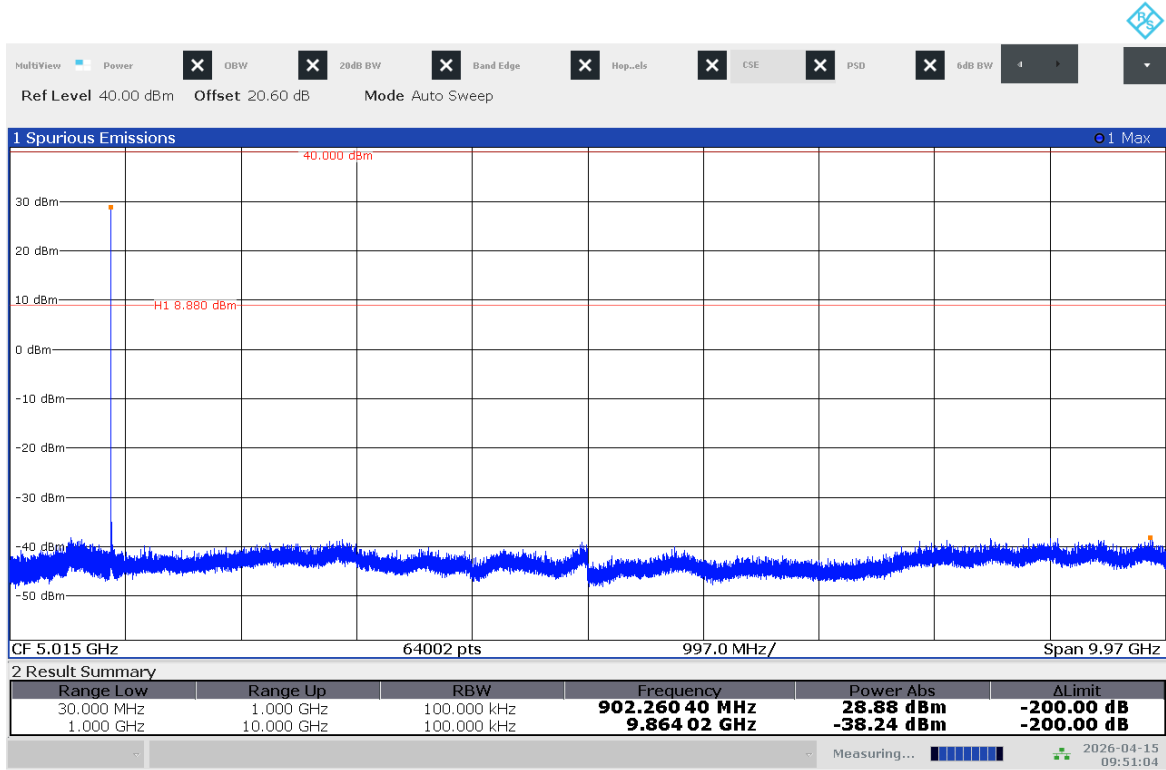
09:40:40 AM 04/15/2026

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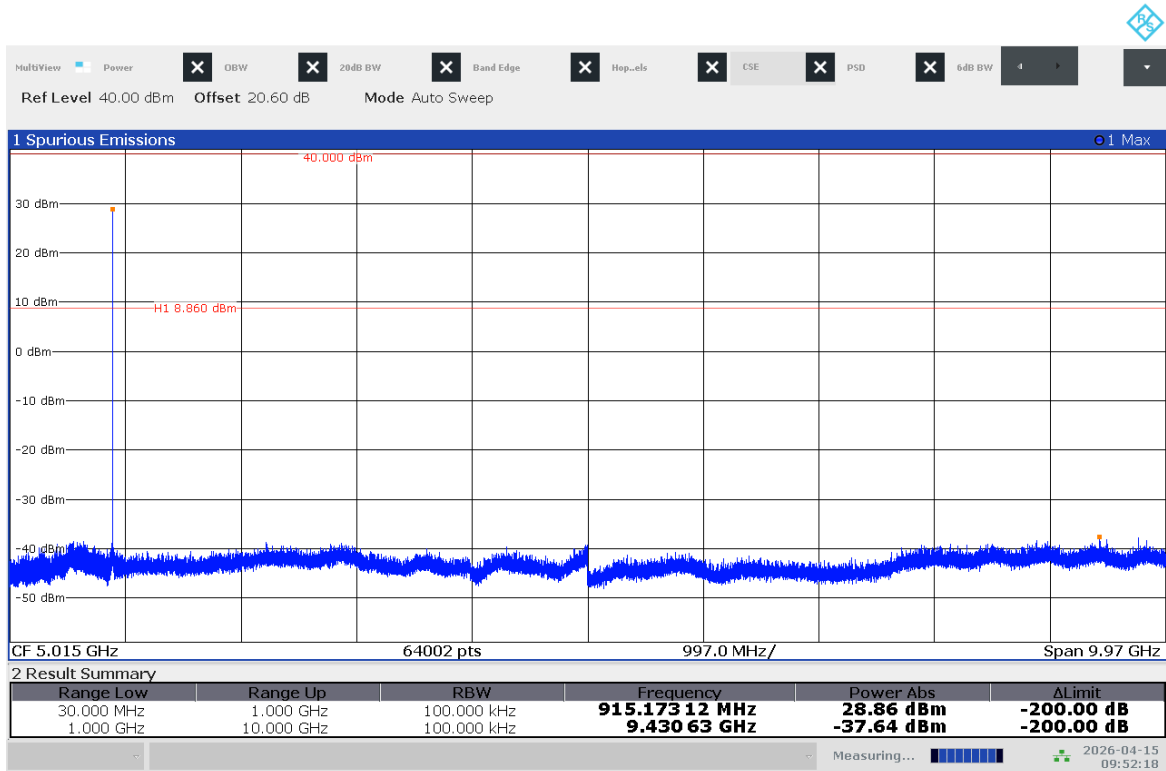


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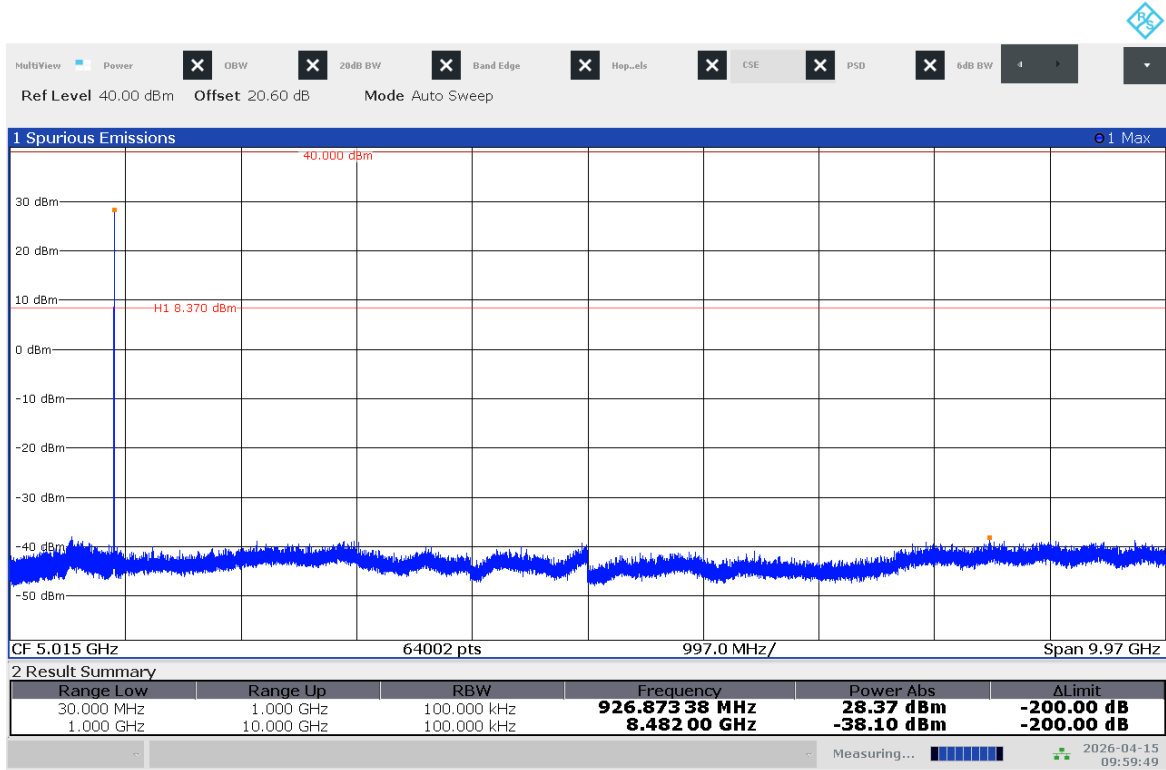
GFSK 150kbps - LCH



GFSK 150kbps - MCH

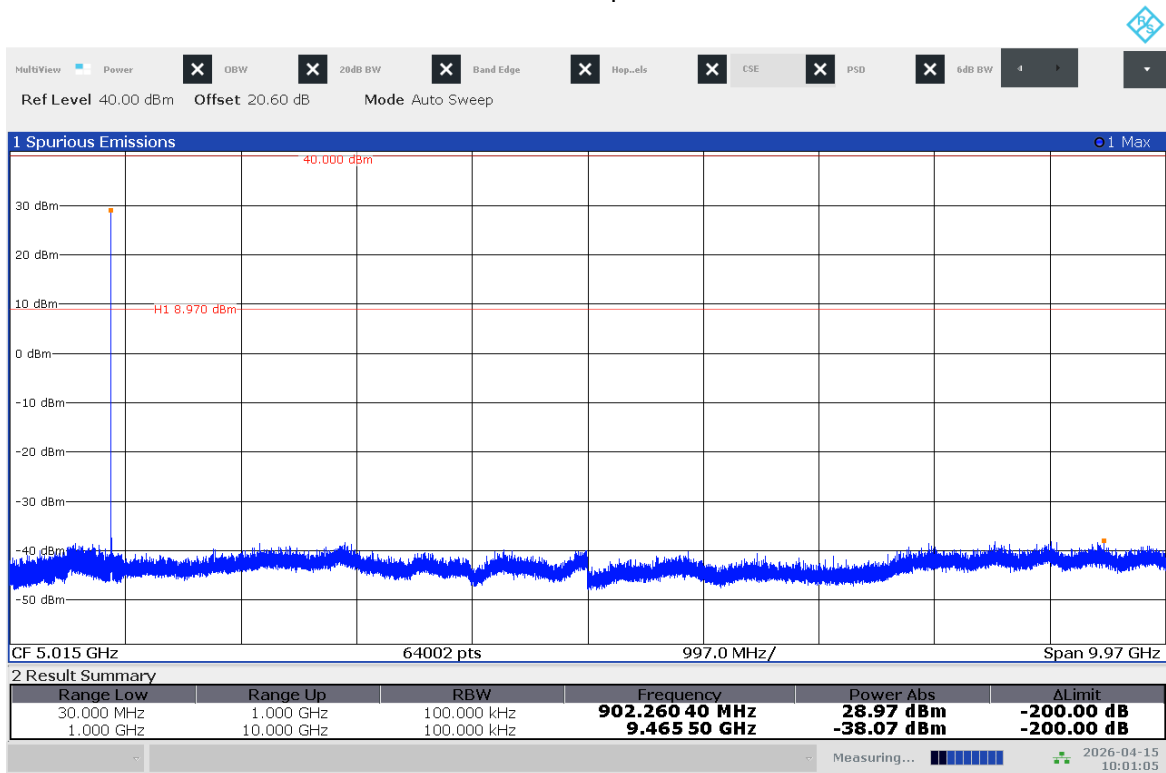


GFSK 150kbps - HCH



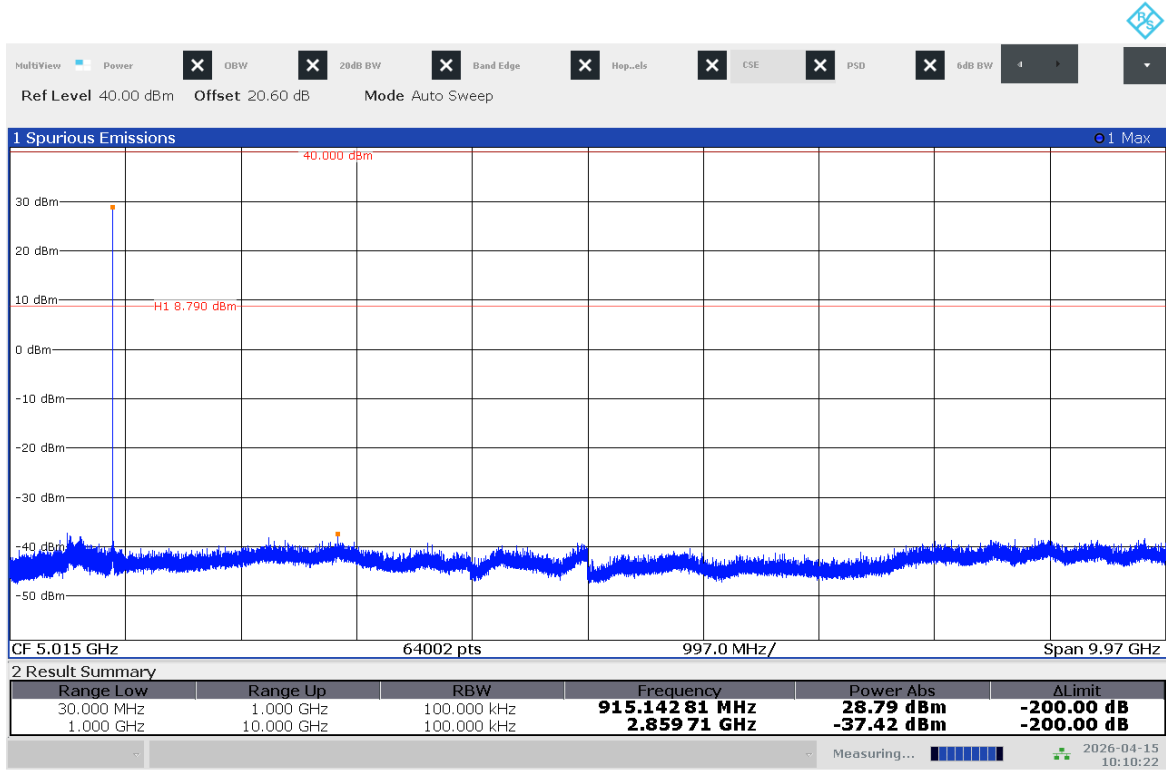
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GFSK 200kbps - LCH



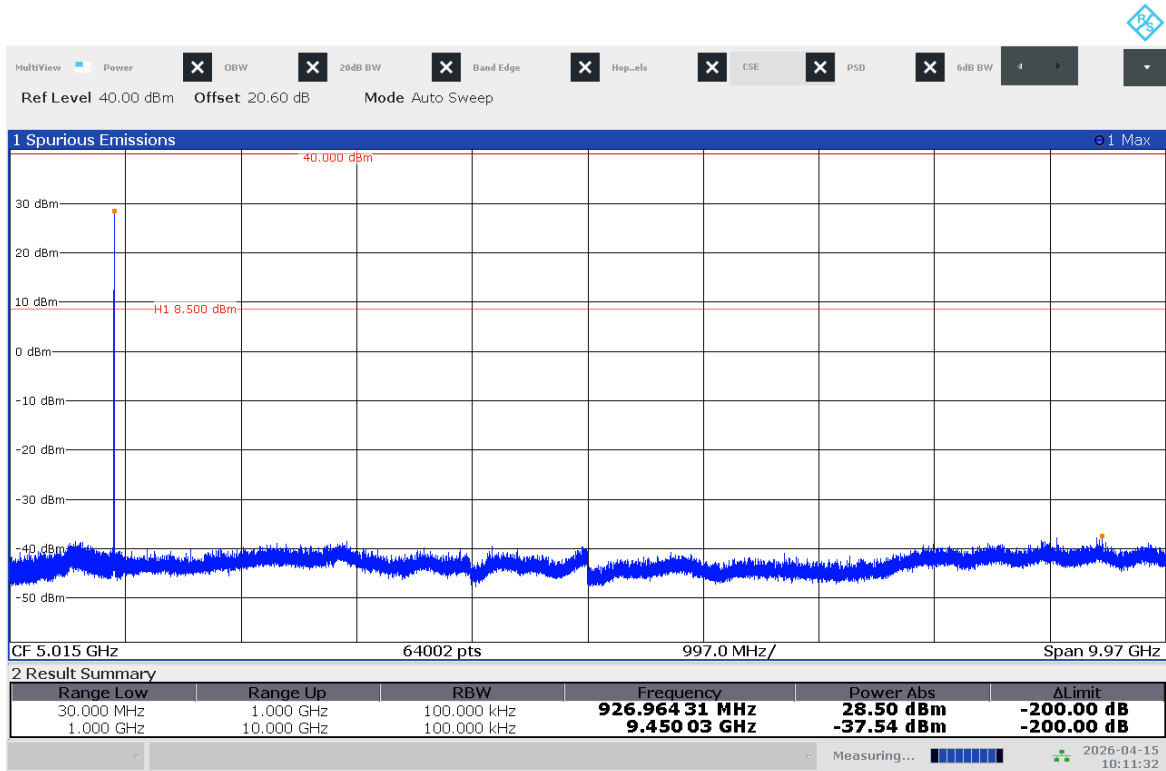
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GFSK 200kbps - MCH



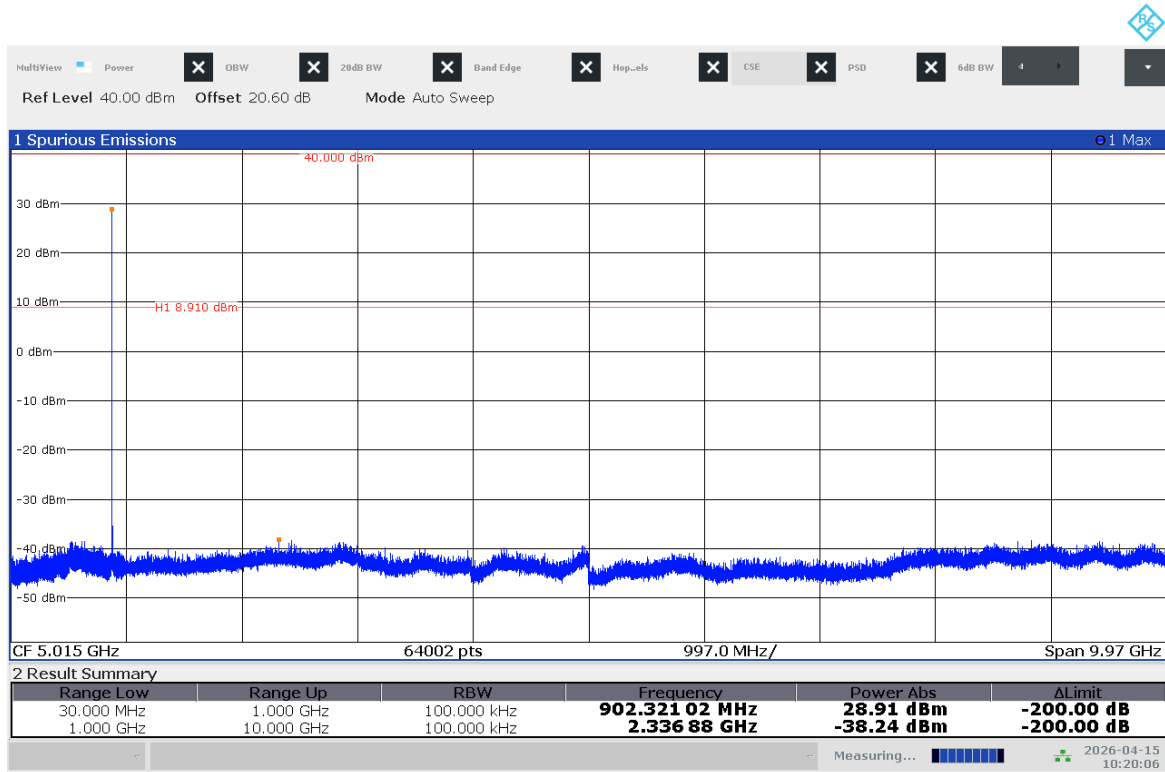
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GFSK 200kbps - HCH



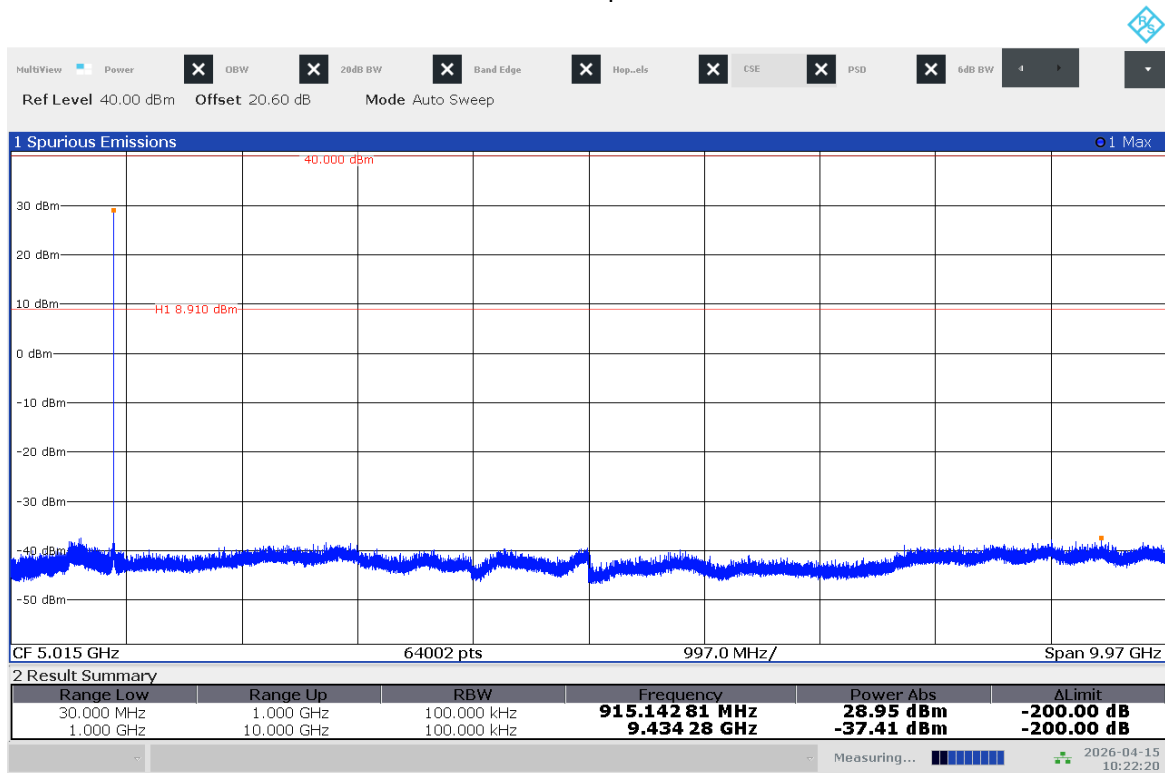
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GFSK 300kbps - LCH



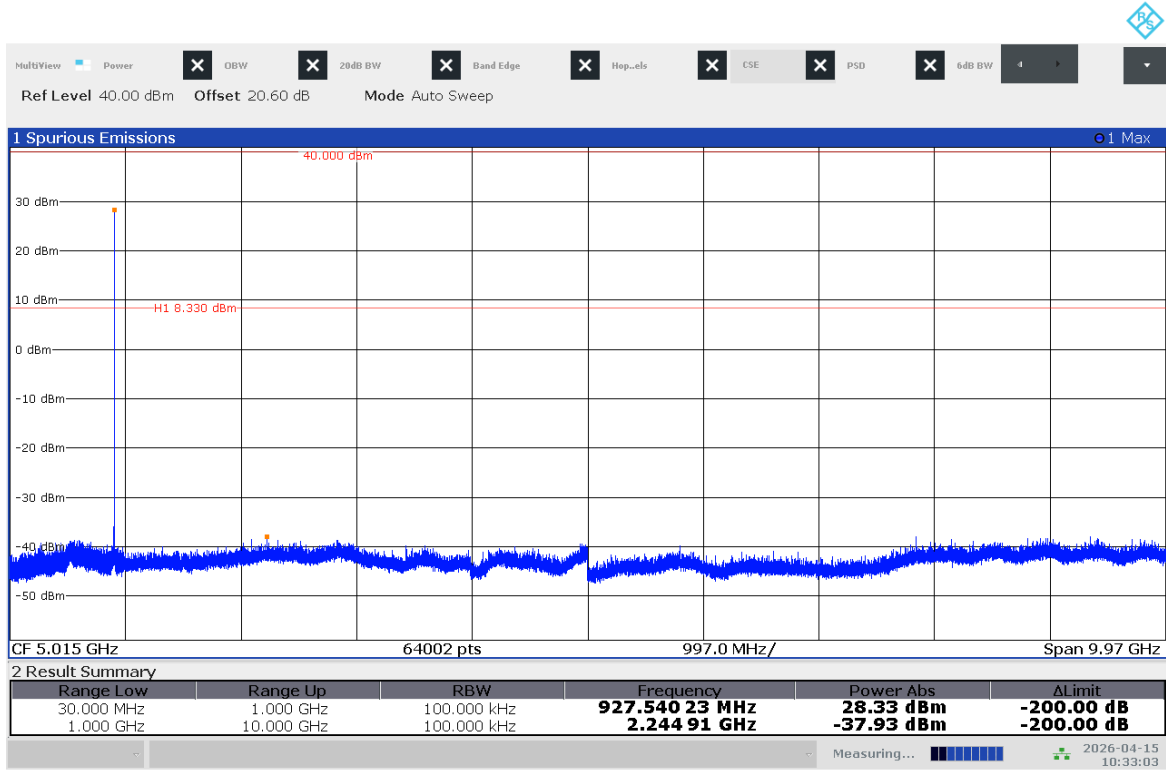
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GFSK 300kbps - MCH

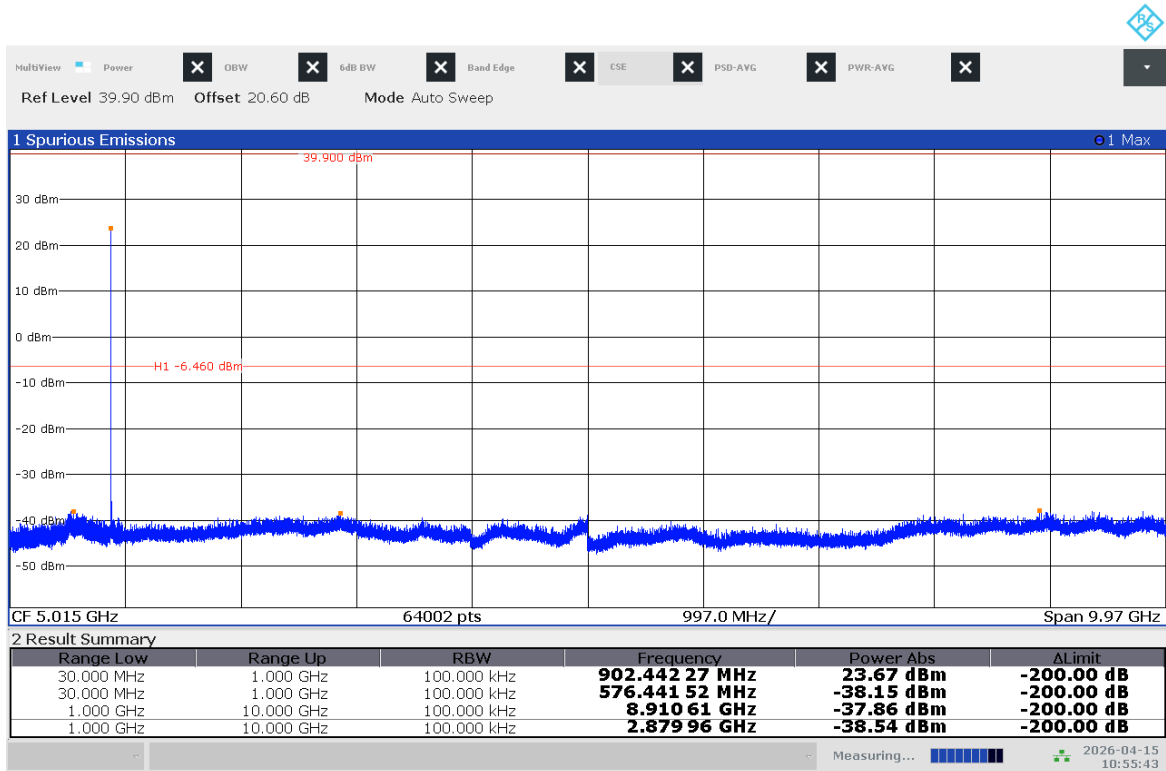


10:22:21 AM 04/15/2026

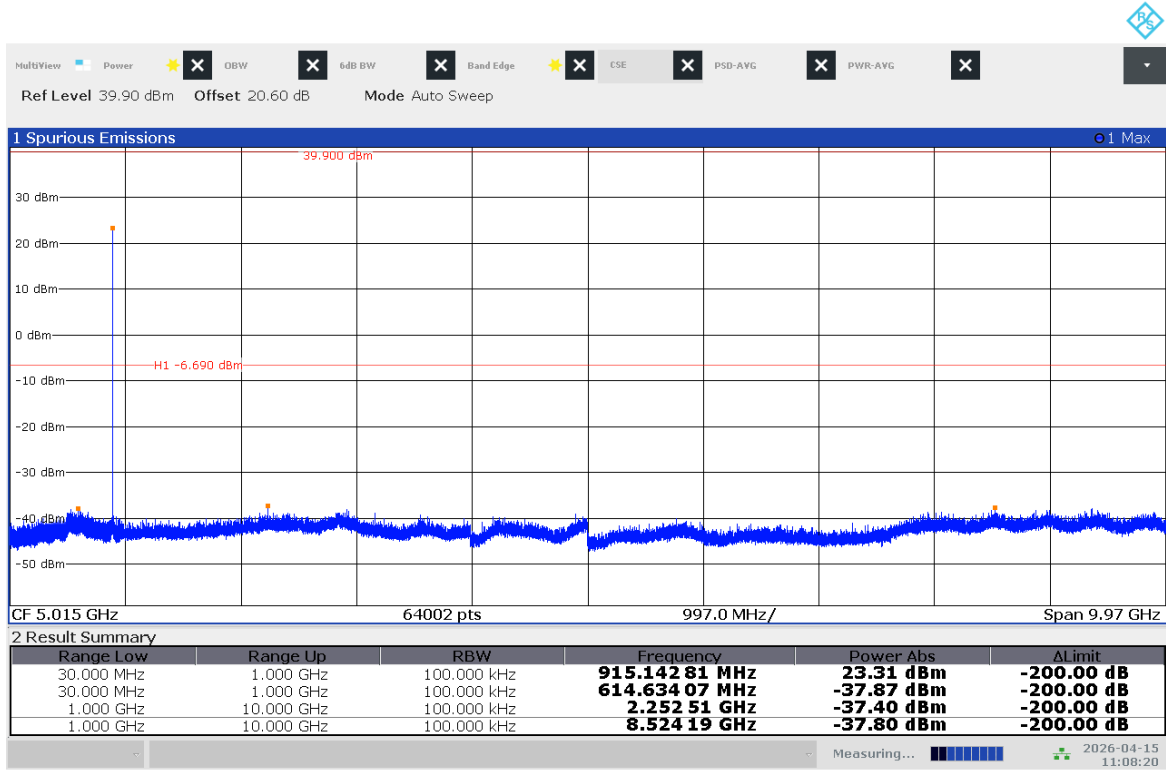
GFSK 300kbps - HCH



OFDM 600kbps - LCH

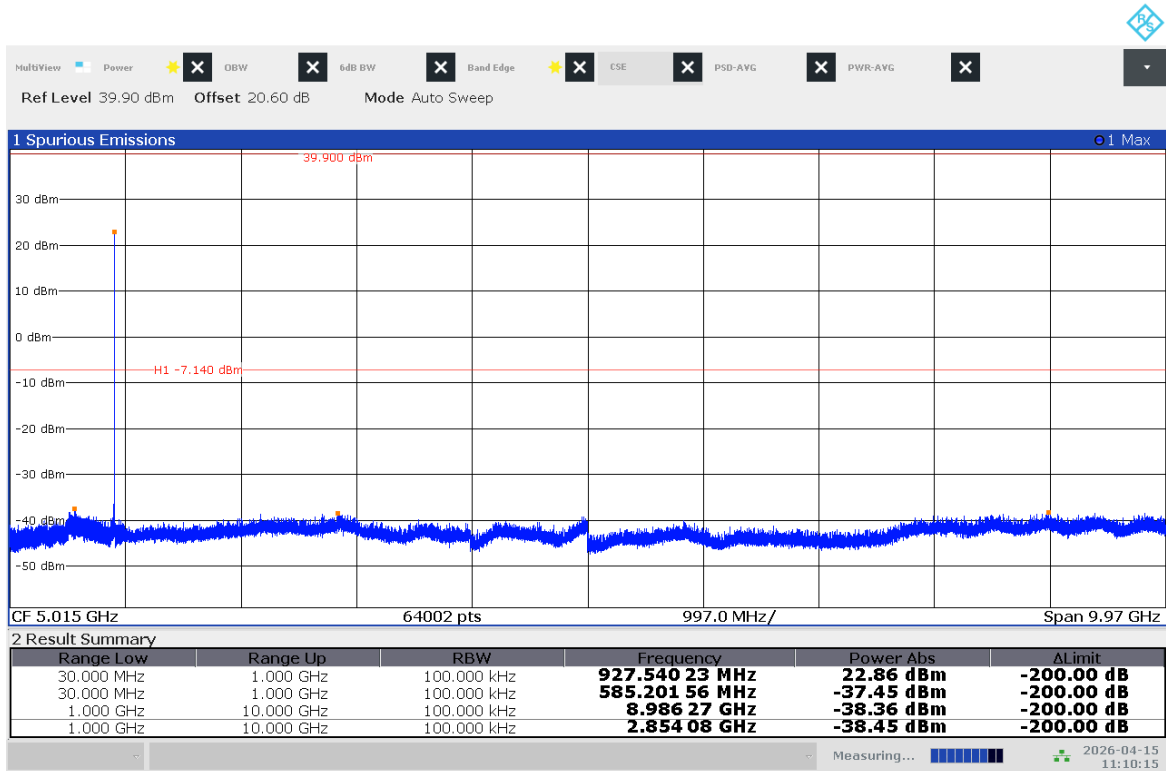


OFDM 600kbps - MCH



11:08:21 AM 04/15/2026

OFDM 600kbps - HCH



11:10:16 AM 04/15/2026

7.6 Tabular Data – Band Edges

Mode	TX Frequency (MHz)	Measured Frequency (MHz)	Measured Value (dBc)	Limit (dBc)	Margin (dB)	Result
FSK100k	902.3	902	-51.70	-20	-31.70	Pass
FSK100k	926.9	928	-64.47	-20	-44.47	Pass
FSK100k	Hopping – Low Channel	902	-43.65	-20	-23.65	Pass
FSK100k	Hopping – High Channel	928	-68.47	-20	-48.47	Pass
FSK150k	902.4	902	-57.04	-20	-37.04	Pass
FSK150k	927.6	928	-55.81	-20	-35.81	Pass
FSK150k	Hopping – Low Channel	902	-59.04	-20	-39.04	Pass
FSK150k	Hopping – High Channel	928	-59.97	-20	-39.97	Pass
GFSK150k	902.3	902	-49.71	-20	-29.71	Pass
GFSK150k	926.9	928	-63.10	-20	-43.10	Pass
GFSK150k	Hopping – Low Channel	902	-53.05	-20	-33.05	Pass
GFSK150k	Hopping – High Channel	928	-69.36	-20	-49.36	Pass
GFSK200k	902.3	902	-41.46	-20	-21.46	Pass
GFSK200k	926.9	928	-63.89	-20	-43.89	Pass
GFSK200k	Hopping – Low Channel	902	-41.21	-20	-21.21	Pass
GFSK200k	Hopping – High Channel	928	-66.68	-20	-46.68	Pass
GFSK300k	902.4	902	-42.23	-20	-22.23	Pass
GFSK300k	927.6	928	-41.26	-20	-21.26	Pass
GFSK300k	Hopping – Low Channel	902	-43.43	-20	-23.43	Pass
GFSK300k	Hopping – High Channel	928	-41.58	-20	-21.58	Pass
OFDM600k	902.4	902	-31.91	-20	-11.91	Pass
OFDM600k	927.6	928	-29.29	-20	-9.29	Pass
OFDM600k	Hopping – Low Channel	902	-27.82	-20	-7.82	Pass
OFDM600k	Hopping – High Channel	928	-22.51	-20	-2.51	Pass

Test Personnel: Jeremy Pickens 
Supervising/Reviewing Engineer:
(Where Applicable) _____
Product Standard: ANSI C63.10
Input Voltage: 24Vdc

Test Date: 15 April 2026

Ambient Temperature: 21.4°C
Relative Humidity: 41.4%
Atmospheric Pressure: 97.9kPa

8 Radiated Spurious Emissions / Restricted Frequency Bands

8.1 Method

Tests were performed in accordance with ANSI C63.10.

TEST SITE: 10 Meter Chamber

10 Meter Semi-Anechoic Chamber The test site for radiated emissions is located at 1950 Evergreen Blvd, Suite 100, Duluth, Georgia 30096. It is a 10-meter semi-anechoic chamber manufactured by Panashield. Embedded in the floor is a 3-meter diameter turntable.

Sample Calculation

The field strength was calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

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

Where

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

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned}FS &= 32 \text{ dB}\mu\text{V/m} \\RA &= 52.0 \text{ dB}\mu\text{V} \\CF &= 1.6 \text{ dB} \\AF &= 7.4 \text{ dB/m} \\AG &= 29.0 \text{ dB}\end{aligned}$$

To convert from dB μ V to μ V or mV the following was used

$$UF = 10^{(NF / 20)} \text{ where } UF = \text{Net Reading in } \mu\text{V}$$
$$NF = \text{Net Reading in dB}\mu\text{V}$$

Example

$$\begin{aligned}FS &= RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0 \text{ dB}\mu\text{V/m} \\UF &= 10^{(32 \text{ dB}\mu\text{V/m} / 20)} = 39.8 \mu\text{V/m}\end{aligned}$$

8.2 Test Equipment

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
200074	Preamplifier, 10 MHz to 2000 MHz	Mini-Circuits	ZKL-2	D052005	08/04/2025	08/04/2026
200162	EMI Receiver (20Hz-40GHz)	Rohde & Schwarz	ESU 40	100314	10/07/2025	10/07/2026
211262	Controller - Turntable and Mast	Sunol	SC99V	SC99V-1	VBU	VBU
211264	Mast - Antenna	Sunol	TWR95	NNN2	VBU	VBU
211386	Antenna, BiLog, 20-2000MHz	Chase	CBL6112B	2622	06/30/2025	06/30/2026
212166	Temperature/ Pressure/Humidity Sensor	Extech	SD700	110392	03/23/2026	03/23/2027
213073	Antenna positioning tower	Sunol	TLT2	040314-5	VBU	VBU
213103	1GHz High Pass Filter	Micro-Tronics	HPM50108	140	6/18/2025	6/18/2026
213370	10dB Attenuator <18GHz	Centric RF	C18N5W-10	C18N5W-10-2	05/05/2025	05/05/2026
213451	Omni -directional Comb Generator	Com-Power	CGO-520	281266	VBU	VBU
213453	Preamplifier 500MHz-18GHz	Com-Power	PAM-118A	18040030	10/20/2025	10/20/2026
BOX-HORN1	Antenna, Horn, <18 GHz	EMCO	3115	9512-4632	06/25/2025	06/25/2026
MM2	RF Coax Cable 9kHz-18GHz	Maury Microwave	UC-N-MM78	1514381	07/28/2025	07/28/2026
MM36	RF Coax Cable 9kHz-18GHz	Maury Microwave	UC-N-NM-36	16 32 10	06/18/2025	06/18/2026
MM12	RF Coax Cable 9kHz-18GHz	Fairview Microwave	SCE18110505-600CM	MM12	09/11/2025	09/11/2026
MP14	RF Coax Cable 9kHz-18GHz	Megaphase	EC29-N1N1-276-H	20938802	09/19/2025	09/19/2026
MP10	RF Coax Cable 9kHz-18GHz	Fairview Microwave	FMCA1282-394	MP10	06/18/2025	06/18/2026

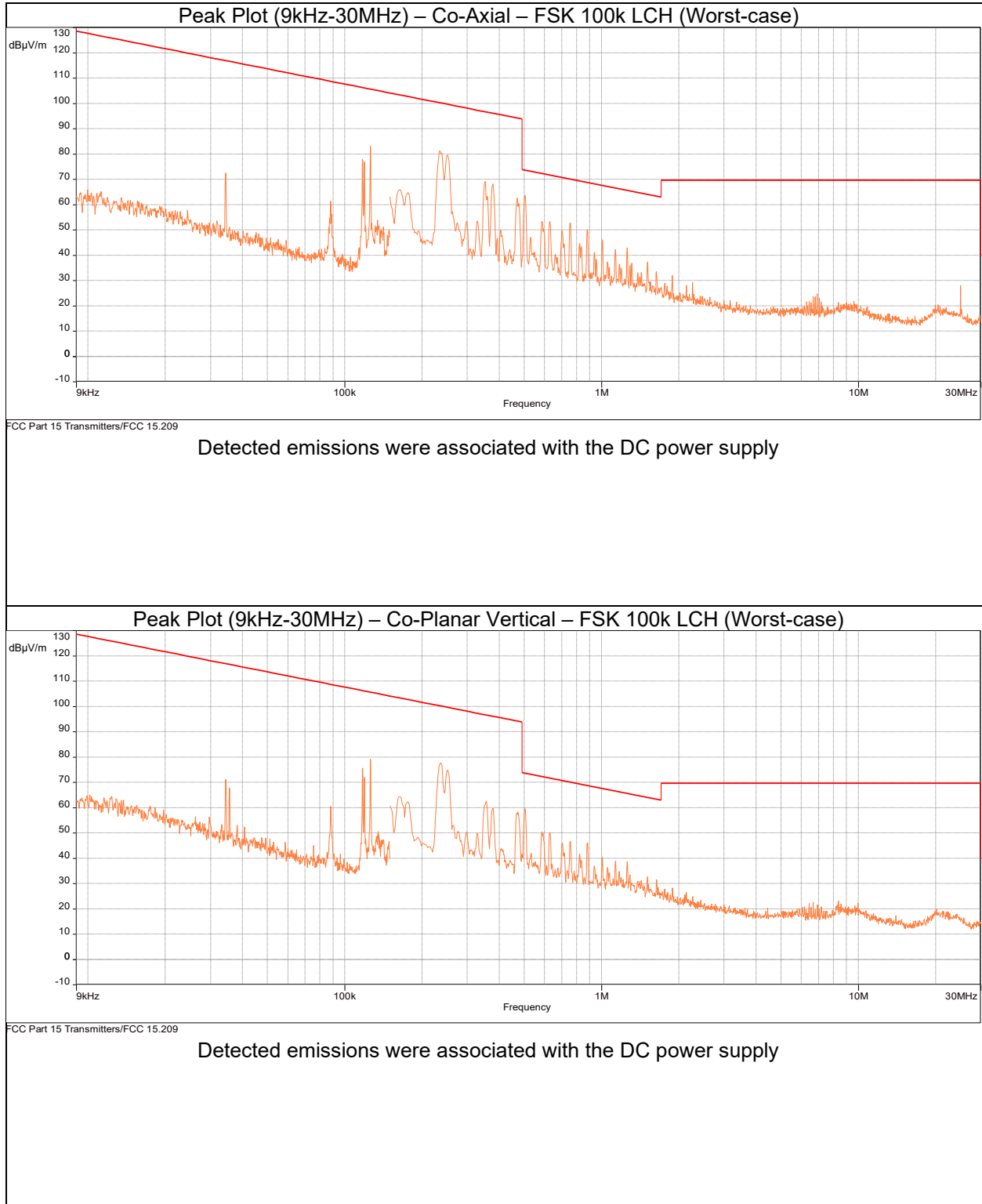
Software Utilized

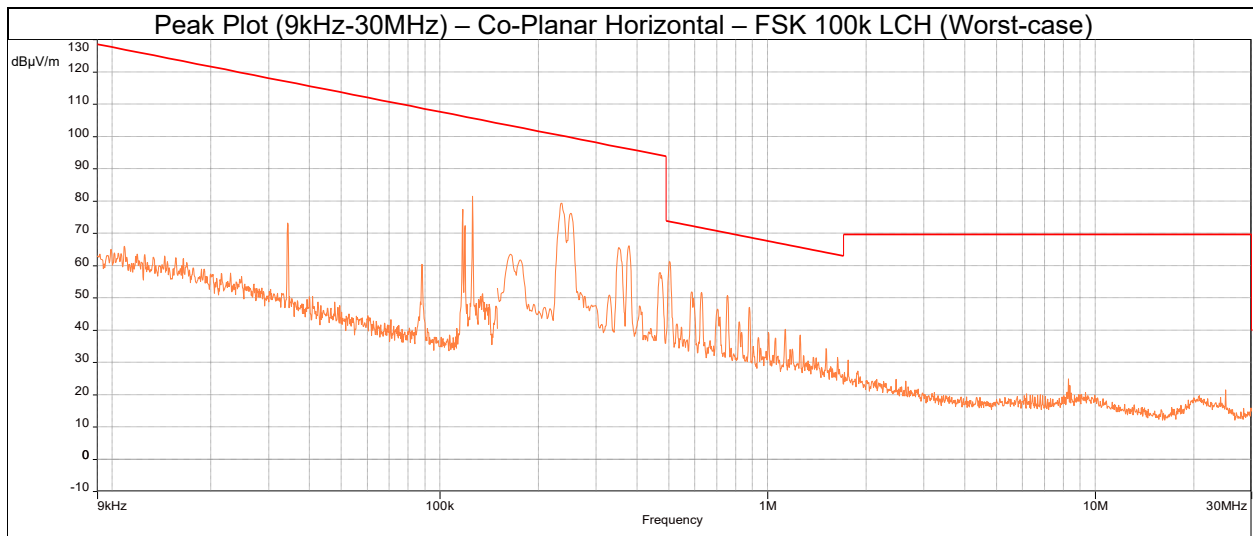
Name	Manufacturer	Version
BAT EMC	NEXIO	3.19.1.18

8.3 Results

The sample tested was found to Comply.

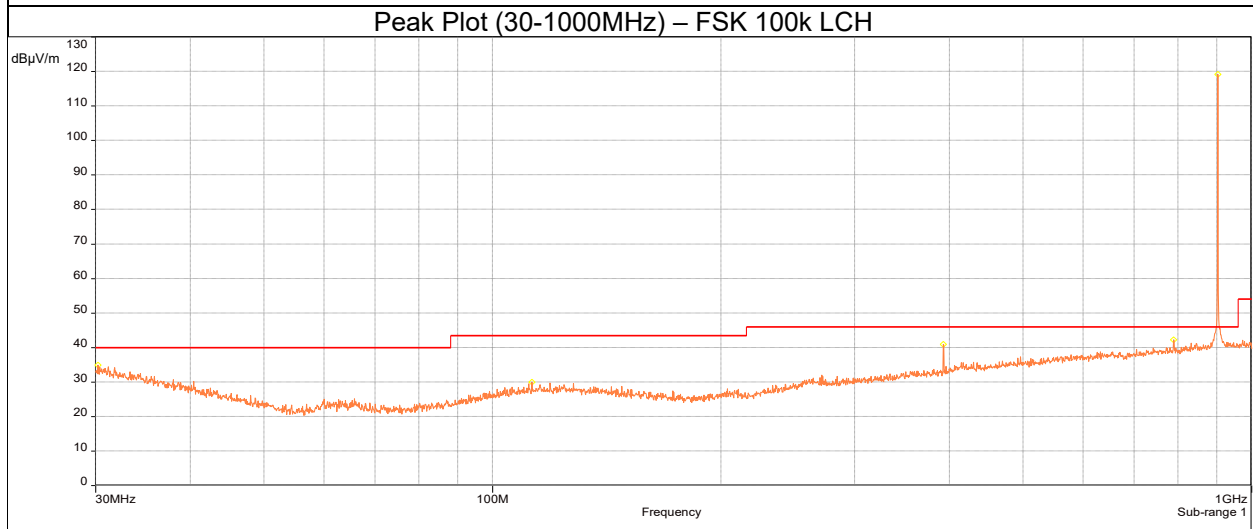
8.4 Plots/Data





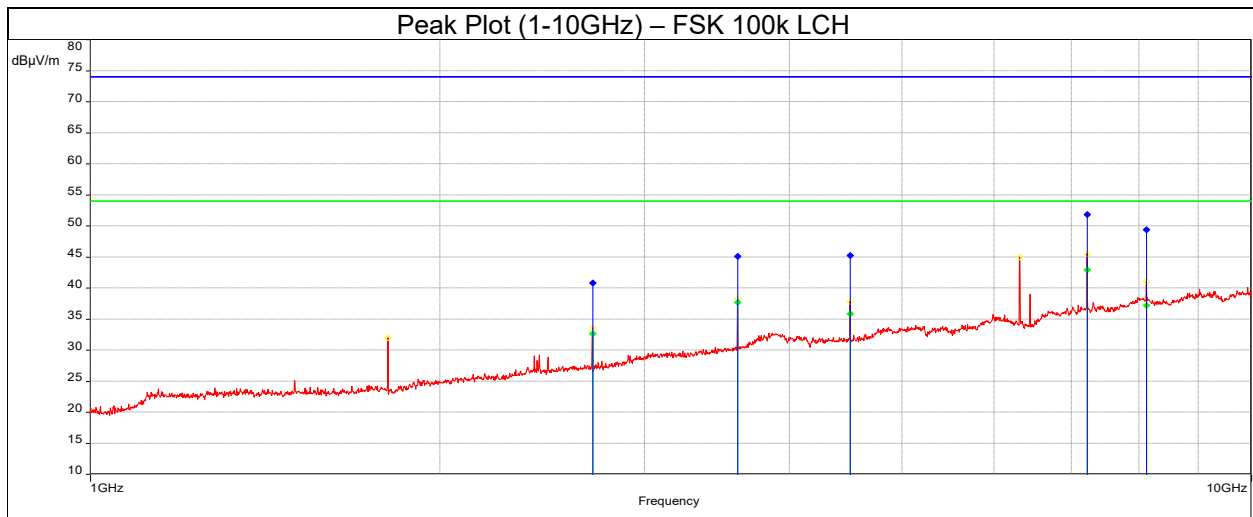
FCC Part 15 Transmitters/FCC 15.209

Detected emissions were associated with the DC power supply



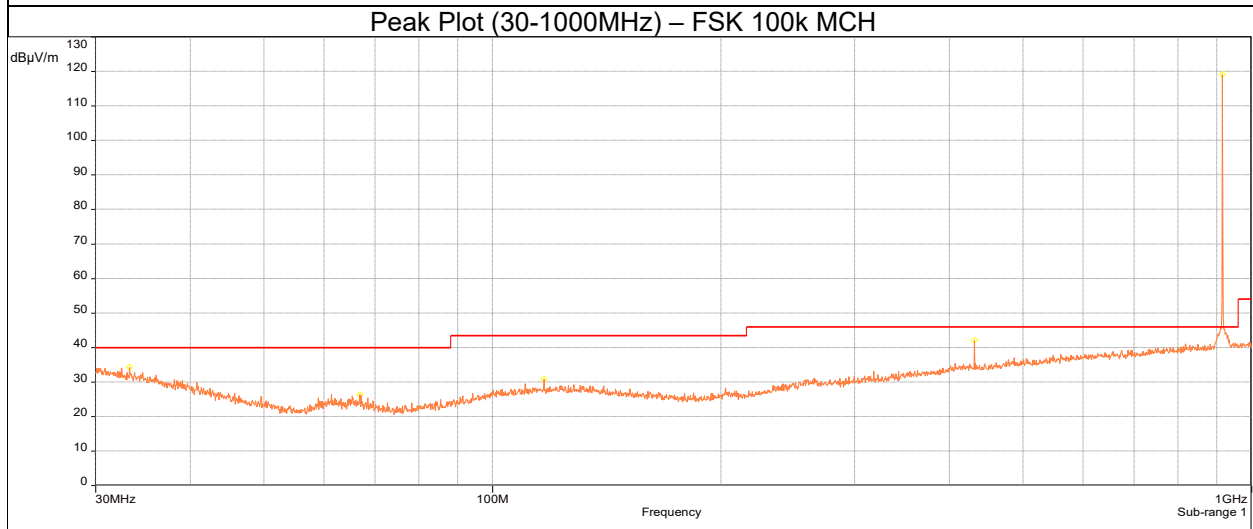
FCC Part 15 Transmitters/FCC 15.209

Note: Visible spurs (385MHz) were not located in restricted bands.



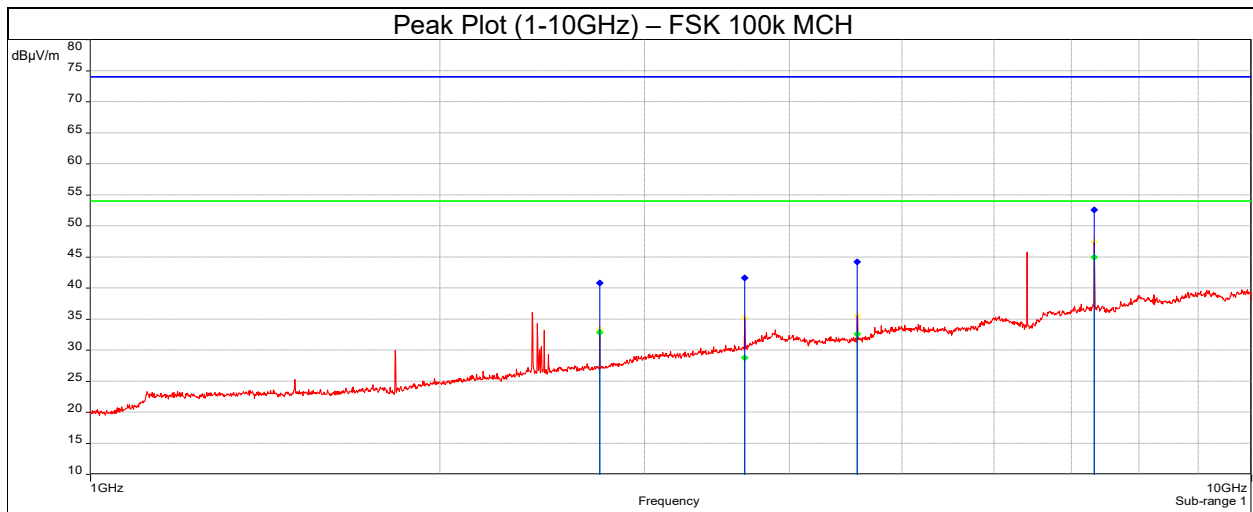
FCC Part 15 Transmitters/FCC 15.209

Note: Harmonics around 1800 and 6400MHz were not in restricted bands



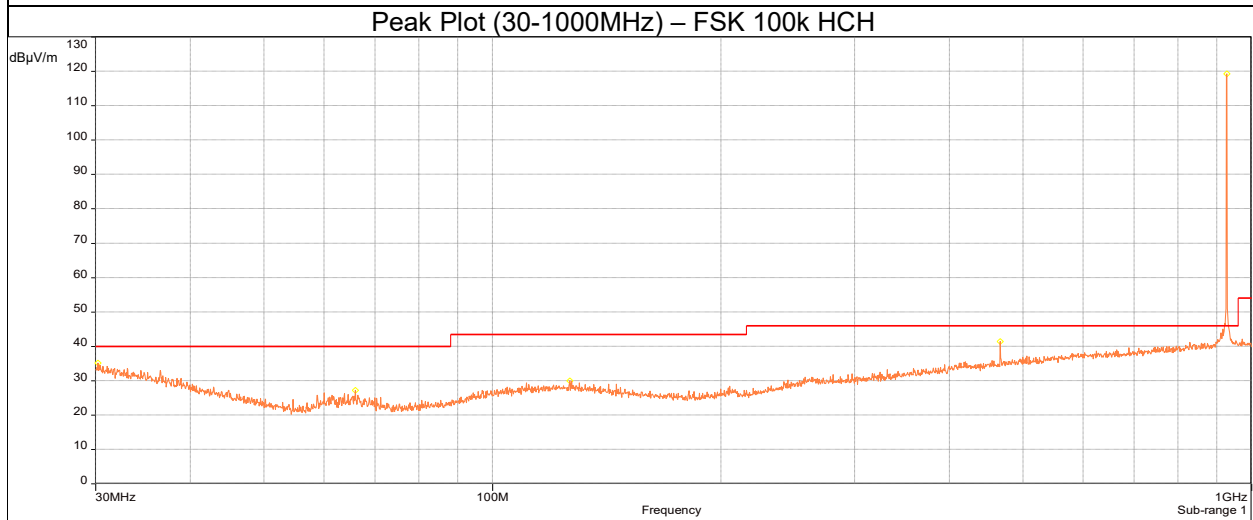
FCC Part 15 Transmitters/FCC 15.209

Note: Visible spurs (435MHz) were not located in restricted bands.



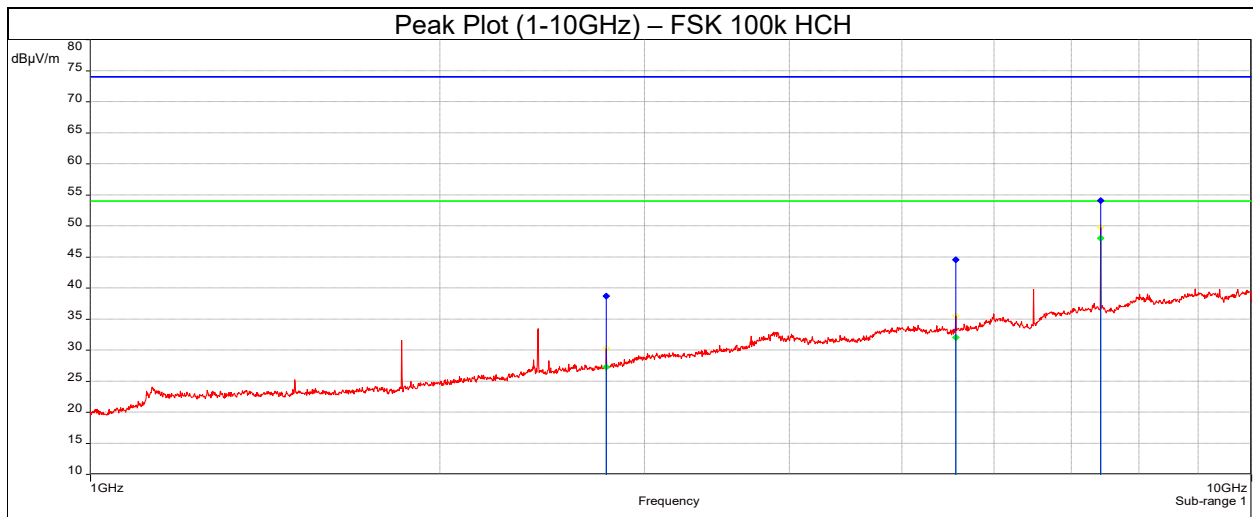
FCC Part 15 Transmitters/FCC 15.209

Note: Harmonics around 1800 and 6400MHz were not in restricted bands



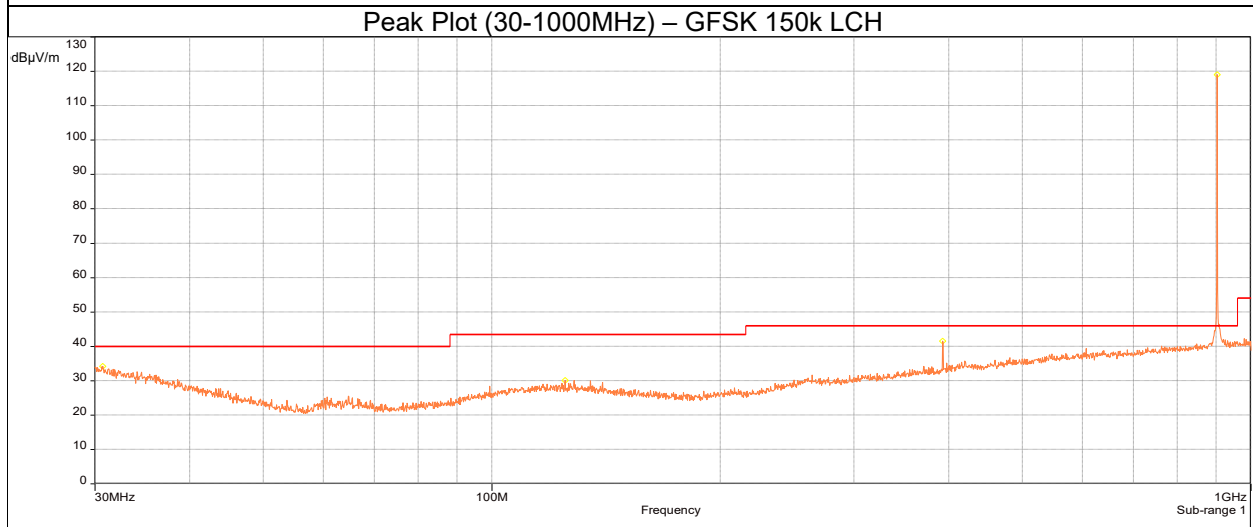
FCC Part 15 Transmitters/FCC 15.209

Note: Visible spurs (472MHz) were not located in restricted bands.



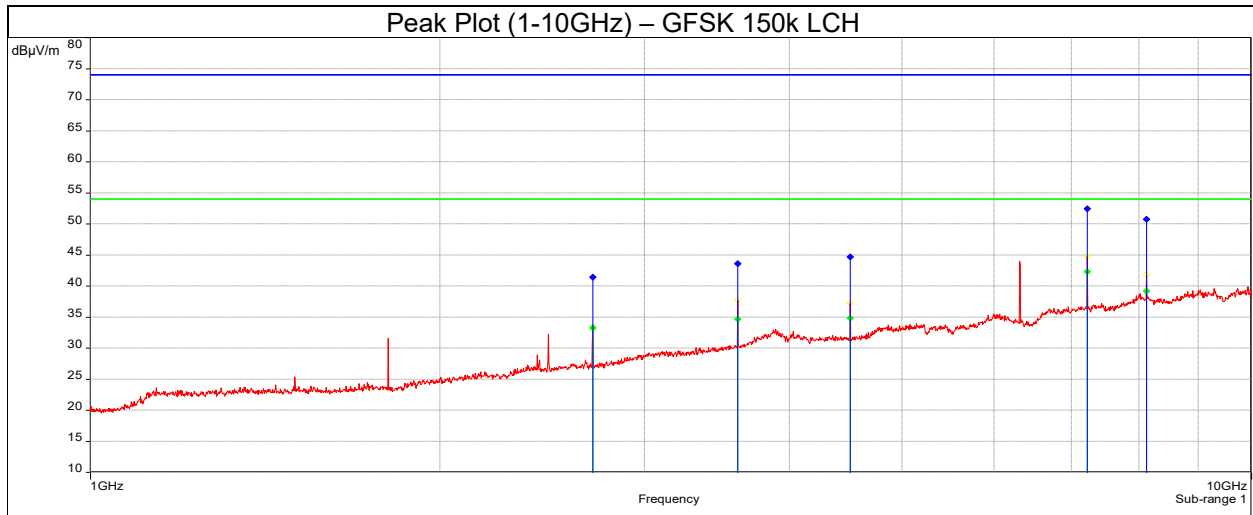
FCC Part 15 Transmitters/FCC 15.209

Note: Harmonics around 1800 and 6400MHz were not in restricted bands



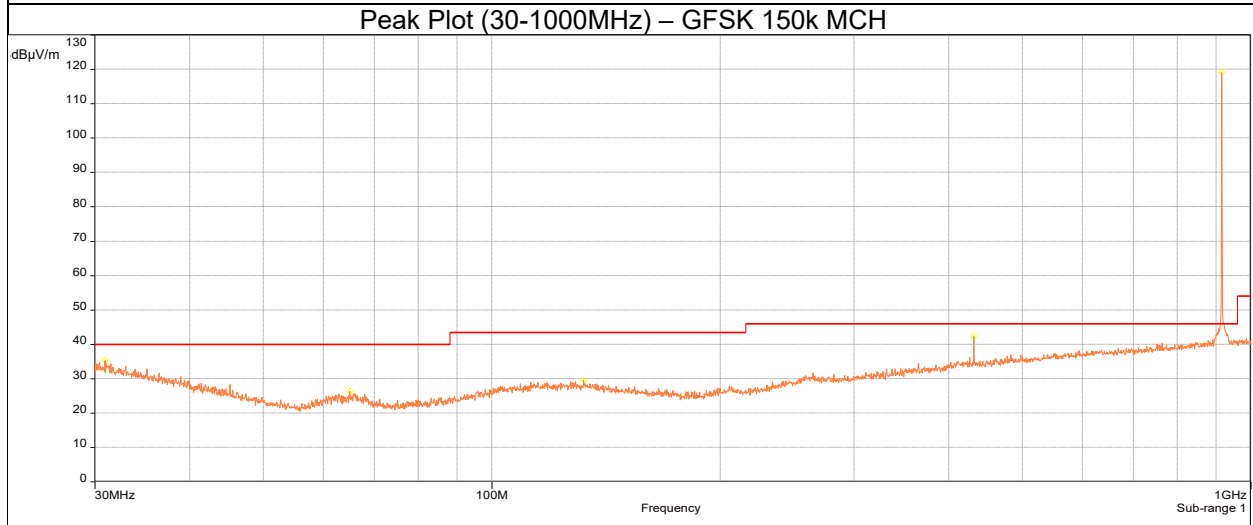
FCC Part 15 Transmitters/FCC 15.209

Note: Visible spurs were not located in restricted bands.



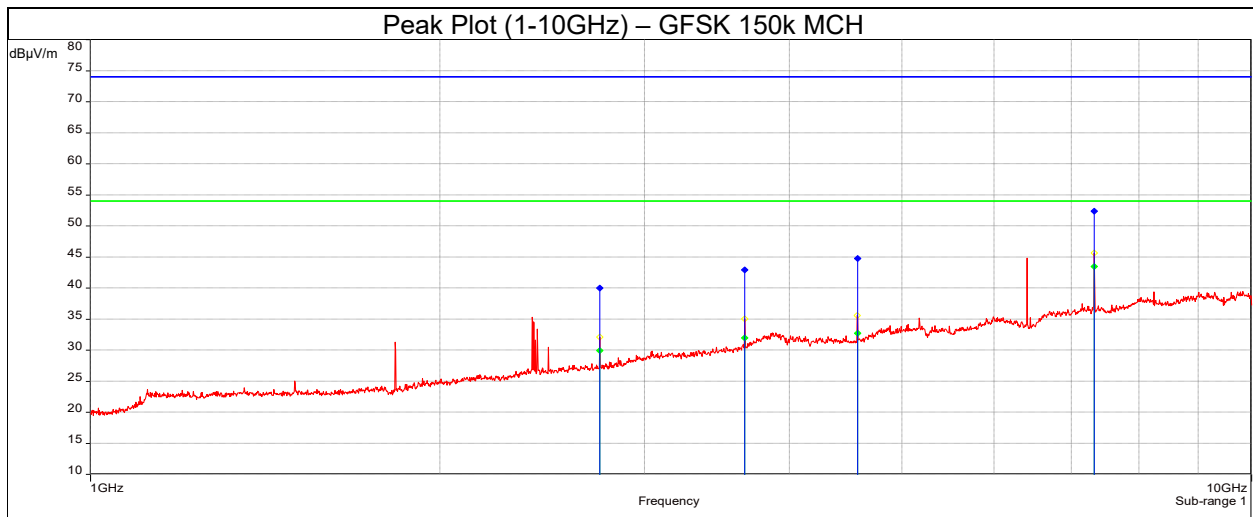
FCC Part 15 Transmitters/FCC 15.209

Note: Harmonics around 1800 and 6400MHz were not in restricted bands

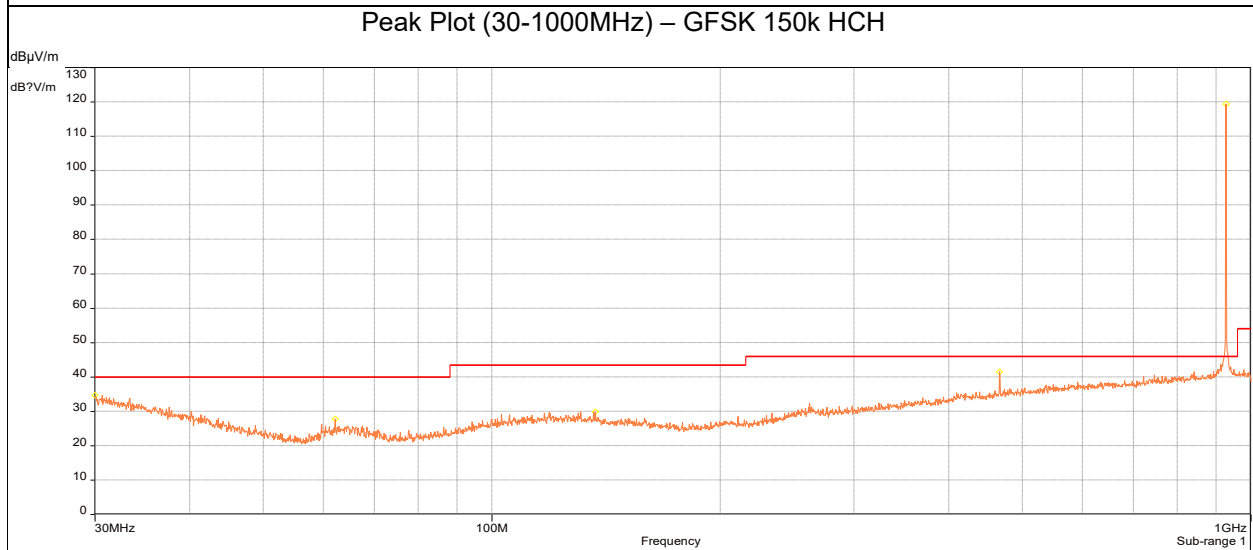


FCC Part 15 Transmitters/FCC 15.209

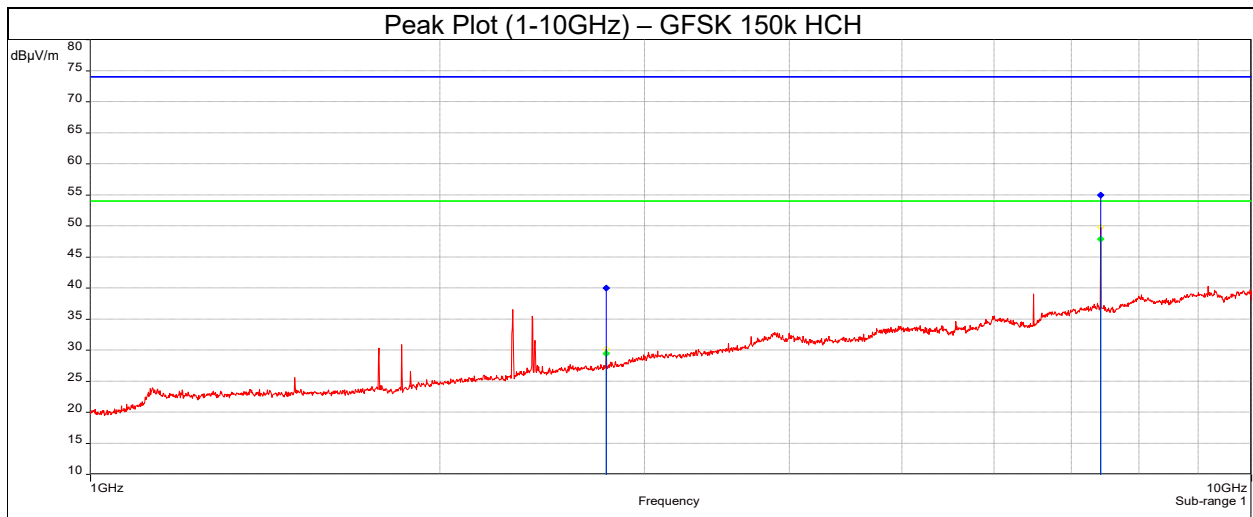
Note: Visible spurs were not located in restricted bands.



Note: Harmonics around 1800 and 6400MHz were not in restricted bands

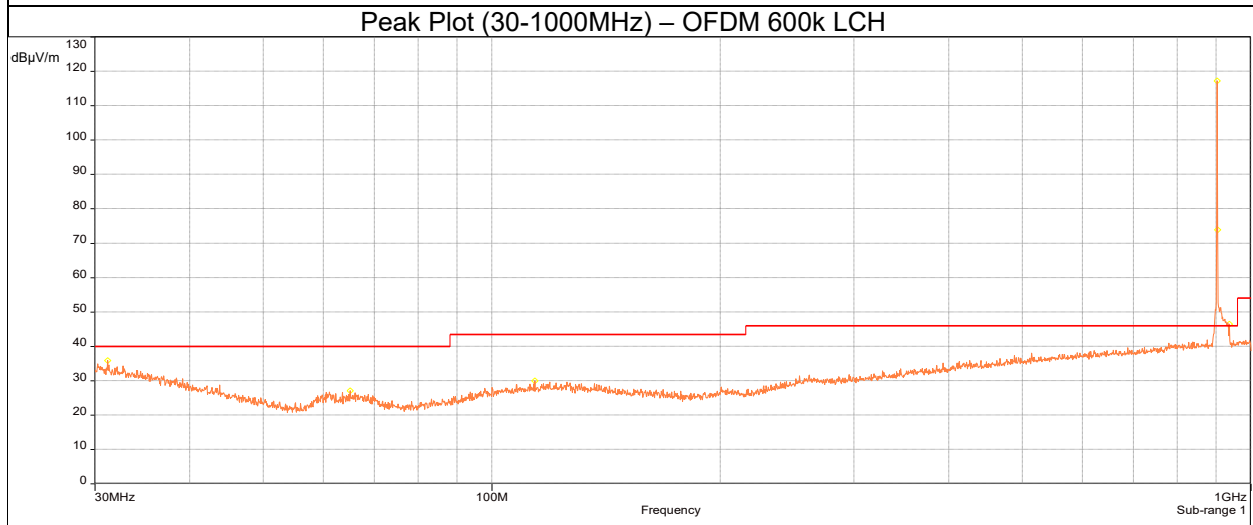


Note: Visible spurs were not located in restricted bands.

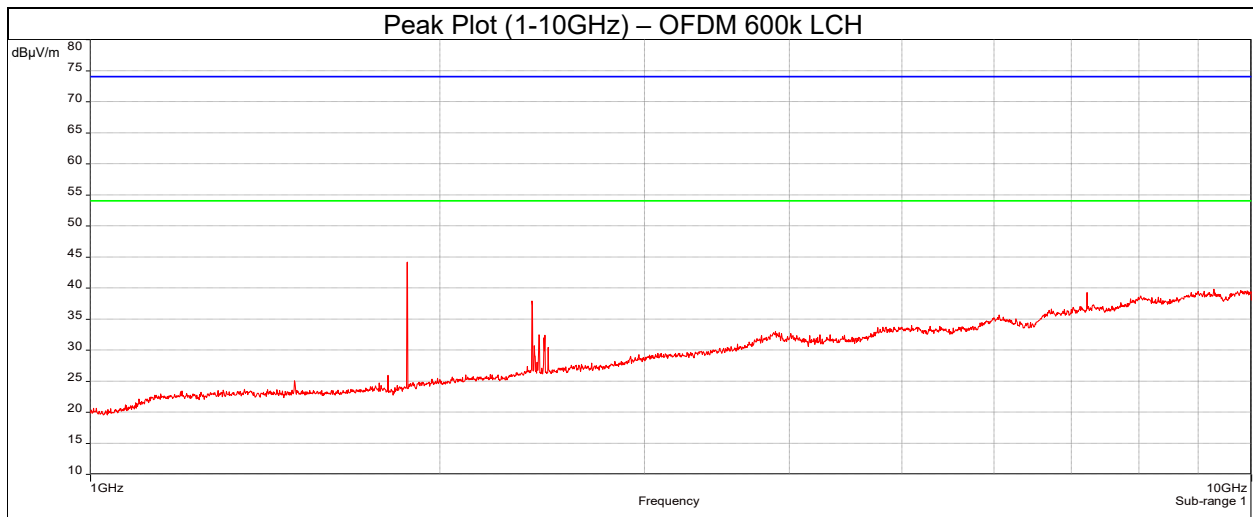


FCC Part 15 Transmitters/FCC 15.209

Note: Harmonics around 1800 and 6400MHz were not in restricted bands

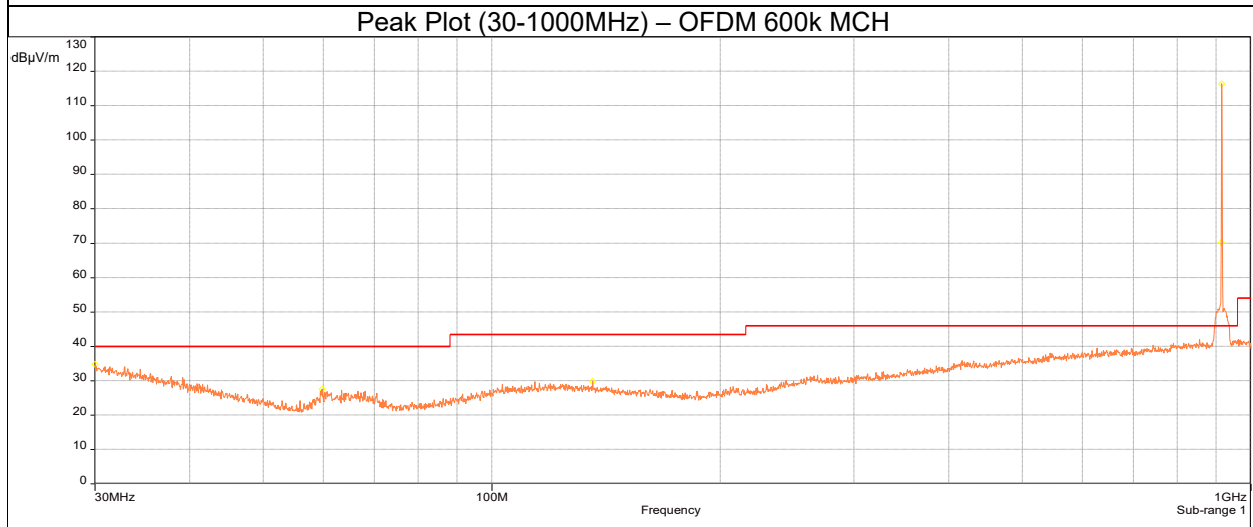


FCC Part 15 Transmitters/FCC 15.209

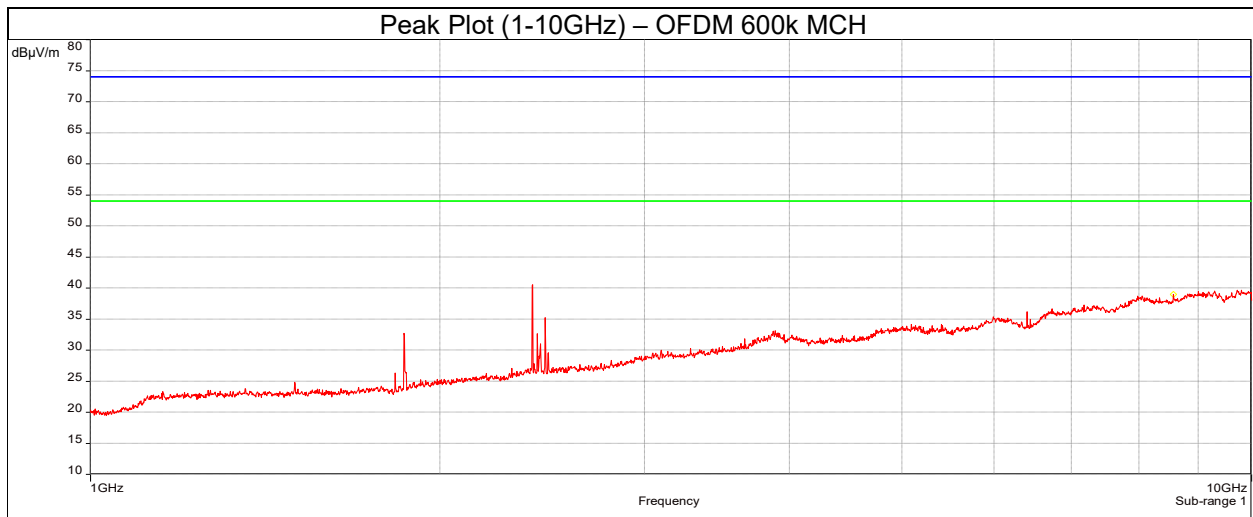


FCC Part 15 Transmitters/FCC 15.209

Note: Harmonic around 1800MHz was not in a restricted band – no other spurious emissions detected.
Emissions between 2.4 and 2.4835GHz were not associated with the 900MHz radio.

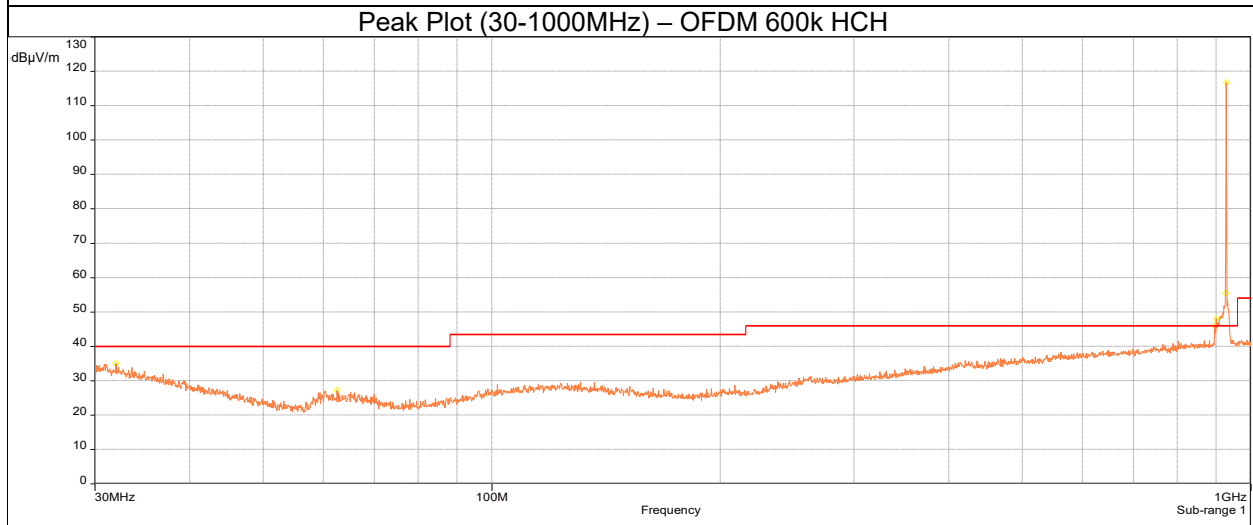


FCC Part 15 Transmitters/FCC 15.209

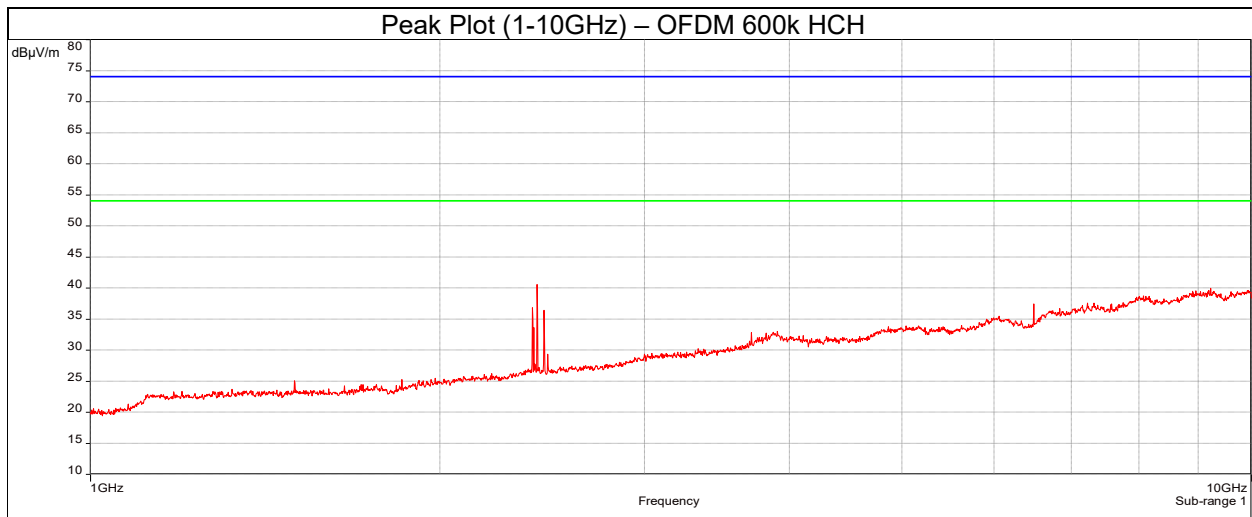


FCC Part 15 Transmitters/FCC 15.209

Note: Harmonic around 1800MHz was not in a restricted band – no other spurious emissions detected.
Emissions between 2.4 and 2.4835GHz were not associated with the 900MHz radio.



FCC Part 15 Transmitters/FCC 15.209



FCC Part 15 Transmitters/FCC 15.209

Note: Emissions between 2.4 and 2.4835GHz were not associated with the 900MHz radio.

Tabular Data - Peak

Peak

Frequency (MHz)	Peak Level (dBμV/m)	Peak Limit (dBμV/m)	Peak Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB/m)
FSK 100k - LCH								
2706.989	40.80	74	-33.20	140	2.00	Horizontal	1	-9.91
3609.100	45.08	74	-28.92	101	2.23	Horizontal	1	-7.70
4511.644	45.28	74	-28.72	198	1.82	Horizontal	1	-6.29
7218.617	51.87	74	-22.13	180	2.58	Vertical	1	-1.09
8120.949	49.41	74	-24.59	223	2.85	Vertical	1	0.46
FSK 100k - MCH								
2745.679	40.84	74	-33.16	136	1.14	Horizontal	1	-9.87
3660.801	41.62	74	-32.38	267	1.29	Horizontal	1	-7.44
4576.146	44.20	74	-29.80	281	1.23	Horizontal	1	-6.21
7321.810	52.62	74	-21.38	186	1.91	Vertical	1	-0.73
FSK 100k - HCH								
2780.619	38.70	74	-35.30	177	1.53	Horizontal	1	-9.73
5561.559	44.56	74	-29.44	98	1.62	Horizontal	1	-3.67
7415.415	54.08	74	-19.92	188	2.34	Vertical	1	-0.55
GFSK 150k - LCH								
2706.790	41.45	74	-32.55	140	1.21	Horizontal	1	-9.91
3609.350	43.61	74	-30.39	15	2.04	Horizontal	1	-7.70
4511.327	44.68	74	-29.32	194	1.34	Horizontal	1	-6.29
7218.100	52.48	74	-21.52	356	2.39	Horizontal	1	-1.09
8121.029	50.74	74	-23.26	183	2.60	Vertical	1	0.46
GFSK 150k - MCH								
2745.507	40.03	74	-33.97	301	1.87	Vertical	1	-9.87
3660.650	42.96	74	-31.04	109	1.51	Horizontal	1	-7.45
4576.176	44.78	74	-29.22	273	2.38	Horizontal	1	-6.21
7321.300	52.38	74	-21.62	200	2.17	Vertical	1	-0.73
GFSK 150k - HCH								
2780.787	40.03	74	-33.97	140	2.05	Horizontal	1	-9.73
7414.900	55.00	74	-19.00	190	2.96	Vertical	1	-0.55
OFDM 600k - LCH								
No spurious emissions detected								
OFDM 600k - MCH								
No spurious emissions detected								
OFDM 600k - HCH								
No spurious emissions detected								

Average								
Frequency (MHz)	AVG Level (dBµV/m)	AVG Limit (dBµV/m)	AVG Margin (dB)	Azimuth (°)	Height (m)	Polarity	RBW (MHz)	Correction (dB/m)
FSK 100k - LCH								
2706.989	32.65	54	-21.35	140	2.00	Horizontal	1	-9.91
3609.100	37.66	54	-16.34	101	2.23	Horizontal	1	-7.70
4511.644	35.89	54	-18.11	198	1.82	Horizontal	1	-6.29
7218.617	42.90	54	-11.10	180	2.58	Vertical	1	-1.09
8120.949	37.24	54	-16.76	223	2.85	Vertical	1	0.46
FSK 100k - MCH								
2745.679	32.88	54	-21.12	136	1.14	Horizontal	1	-9.87
3660.801	28.77	54	-25.23	267	1.29	Horizontal	1	-7.44
4576.146	32.58	54	-21.42	281	1.23	Horizontal	1	-6.21
7321.810	44.98	54	-9.02	186	1.91	Vertical	1	-0.73
FSK 100k - HCH								
2780.619	27.27	54	-26.73	177	1.53	Horizontal	1	-9.73
5561.559	32.02	54	-21.98	98	1.62	Horizontal	1	-3.67
7415.415	48.07	54	-5.93	188	2.34	Vertical	1	-0.55
GFSK 150k - LCH								
2706.790	33.29	54	-20.71	140	1.21	Horizontal	1	-9.91
3609.350	34.70	54	-19.30	15	2.04	Horizontal	1	-7.70
4511.327	34.83	54	-19.17	194	1.34	Horizontal	1	-6.29
7218.100	42.34	54	-11.66	356	2.39	Horizontal	1	-1.09
8121.029	39.18	54	-14.82	183	2.60	Vertical	1	0.46
GFSK 150k - MCH								
2745.507	29.93	54	-24.07	301	1.87	Vertical	1	-9.87
3660.650	31.97	54	-22.03	109	1.51	Horizontal	1	-7.45
4576.176	32.72	54	-21.28	273	2.38	Horizontal	1	-6.21
7321.300	43.47	54	-10.53	200	2.17	Vertical	1	-0.73
GFSK 150k - HCH								
2780.787	29.44	54	-24.56	140	2.05	Horizontal	1	-9.73
7414.900	47.88	54	-6.12	190	2.96	Vertical	1	-0.55
OFDM 600k - LCH								
No spurious emissions detected								
OFDM 600k - MCH								
No spurious emissions detected								
OFDM 600k - HCH								
No spurious emissions detected								

Test Personnel: Jeremy Pickens
 Supervising/Reviewing Engineer: _____
 (Where Applicable) _____
 Product Standard: ANSI C63.10
 Input Voltage: 24Vdc
 Pretest Verification w/ Ambient Signals or BB Source: BB

Test Date: 15-16 April 2026

v

Limit Applied: 15.209

Ambient Temperature: 21.2 – 23.8°C

Relative Humidity: 31.7 – 45.8%

Atmospheric Pressure: 98.1 – 98.4kPa

Deviations, Additions, or Exclusions: None

9 Measurement Uncertainty

Parameter	Expanded Uncertainty for Normal k factor equal to 2
Radio Frequency	0.07
Total RF Power (Conducted)	0.65
Power Density (Conducted)	0.65
RF Spurious (Conducted)	1.8 dB
Radiated Emissions (9kHz-30MHz)	4.7 dB
Radiated Emissions (30MHz-1GHz)	4.1 dB
Radiated Emissions (1GHz-18GHz)	4.5dB
Radiated Emissions (18GHz-40GHz)	4.7 dB
AC Line Conducted Emissions	2.8 dB
Temperature	0.7°
Humidity	3.9%

10 Revision History

Revision Level	Date	Prepared By	Reviewed By	Notes
0	09 June 2026	JOP	US	Original Issue

END OF REPORT