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07/09/2026

HID Global Corporation (US)
611 Center Ridge Drive
Austin, TX 78753
USA

Dear Erik Ray,

Enclosed is the EMC test report for compliance testing of HID Global Corporation (US), Color Card Printer, DTCii Plus, tested to the requirements of:

- Title 47 of the CFR, Part 15.225, Subpart C for Certification as an Intentional Radiator.
- RSS-210: Issue 11, License-Exempt Radio Apparatus: Category 1 Equipment

Thank you for using the services of Eurofins E&E North America. If you have any questions regarding these results or if we can be of further service to you, please feel free to contact me.

Sincerely,

Nancy LaBrecque
Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: WIRA138920-FCC-IC-HF – Rev 3

13.56MHz RFID
Test Report

for the

HID Global Corporation (US)
Color Card Printer, DTCii Plus (Model: DTCii Plus)

Tested under
the FCC Certification Rules
contained in
15.225 Subpart C and
RSS-210: Issue 11
for Intentional Radiators

Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab

Nancy LaBrecque
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
∅	February 5, 2026	Initial Issue.
1	05/20/2026	Customer Requested Changes.
2	06/11/2026	Editorial Updates
3	07/09/2026	TCB Comments

Executive Summary

A. Purpose of Test

An EMC evaluation was performed to determine compliance of the HID Global Corporation (US) Color Card Printer, DTCii Plus, with the requirements of Part 15, §15.225 and RSS-210 Issue 11, Annex B, B.6. All references are to the most current version of Title 47 of the Code of Federal Regulations and RSS-210 in effect. The following data is presented in support of the Certification of the Color Card Printer, DTCii Plus. HID Global Corporation (US) should retain a copy of this document which should be kept on file for at least two years after the manufacturing of the Color Card Printer, DTCii Plus, has been **permanently** discontinued.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, §15.225 and RSS-210, in accordance with HID Global Corporation (US), under purchase order number HID0308R1. All tests were conducted using measurement procedures ANSI C63.4-2014 and ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024.

FCC Reference	ISED Reference	Description	Compliance
Part 15 §15.203	---	Antenna Requirement	**Compliant**
Part 15 §15.207(a)	RSS-Gen (8.8)	Conducted Emission Limits	**Compliant**
Part 15 §15.215	---	20dB Occupied Bandwidth	**Compliant**
---	RSS-Gen (6.7)	99% Occupied Bandwidth	**Compliant**
Part 15 §15.225(a)	RSS-210 (B.6.a.i)	Field Strength emissions within the band 13.553 – 13.567 MHz	**Compliant**
Part 15 §15.225(b)	RSS-210 (B.6.a.ii)	Field Strength emissions within the band 13.410 – 13.553 MHz and 13.567 – 13.710 MHz	**Compliant**
Part 15 §15.225(c)	RSS-210 (B.6.a.iii)	Field Strength emissions within the band 13.110 – 13.410 MHz and 13.710 – 14.010 MHz	**Compliant**
Part 15 §15.225(d)	RSS-210 (B.6.a.iv)	Outside-Band Field Strength emissions per 15.209 - 13.110 – 14.010 MHz	**Compliant**
Part 15 §15.225(e)	RSS-210 (B.6.b)	Frequency Tolerance of the Carrier	**Compliant**

Table 1. Executive Summary

Equipment Configuration

A. Overview

Eurofins E&E North America was contracted by HID Global Corporation (US) to perform testing on the Color Card Printer, DTCii Plus.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the HID Global Corporation (US) Color Card Printer, DTCii Plus.

The results obtained relate only to the item(s) tested.

Product Name:	Color Card Printer, DTCii Plus	
Model(s) Tested:	DTCii Plus	
Model(s) Covered:	DTCii Plus	
Test Sample Number:	26099-11	
EUT Specifications:	Primary Power: 24VDC via AC / DC Power Adapter	
	Type of Modulation(s):	ASK
	Equipment Code:	DXX
	Maximum Fundamental Field Strength:	65.67dBuV/m
	Antenna Type:	loop
	EUT Frequency Ranges:	13.56MHz
Analysis:	The results obtained relate only to the item(s) tested.	
Environmental Test Conditions:	Temperature: 15-35º C	
	Relative Humidity: 30-60%	
	Barometric Pressure: 860-1060 mbar	
Evaluated by:	Bryan Taylor	
Sample Receive Date:	11/25/2025	
Test Start Date:	12/4/2025	
Test End Date:	12/12/2025	

Table 2. EUT Summary Table

B. References

CFR 47, Part 15, Subpart C	Federal Communication Commission, Code of Federal Regulations, Title 47, Part 15: General Rules and Regulations, Allocation, Assignment, and Use of Radio Frequencies
RSS-210 Issue 11	Licence-Exempt Radio Apparatus: Category I Equipment
ANSI C63.4:2017	Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical And Electronic Equipment in the Range of 9 kHz to 40 GHz
ISO/IEC 17025:2017	General Requirements for the Competence of Testing and Calibration Laboratories
ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024	American National Standard for Testing Unlicensed Wireless Devices

Table 3. References

C. Test Site

Eurofins MET Laboratories Inc. (Eurofins E&E North America) is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

All testing was performed at Eurofins E&E North America, 13501 McCallen Pass, Austin, TX 78753. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

ISED Lab Info:
CAB Identifier: US0004
Company Number: 2043D

FCC Lab Info:
Designation Number: US1127

Radiated Emissions measurements were performed in a 10 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at MET Laboratories.

Correlation between semi-anechoic chamber and OATS:

Two calibrated Loop antennas were used on an OATS. One antenna was driven by a signal generator with a known power. The receive antenna was initially placed 1m away from the transmit antenna. The two antennas were placed parallel to each other. The receive antenna was in turn connected to a calibrated spectrum analyzer. The emissions were swept from 9 kHz to 30 MHz. The receive antenna was then rotated 90 degrees and measurements re-taken. Additional measurements were taken when the receive antenna was placed at 3meters.
This same setup was taken to inside the semi-anechoic chamber and the measurements repeated.

The data was used to correlate the semi-anechoic chamber and OATS.

D. Measurement Uncertainty

Test Method	Typical Expanded Uncertainty	K	Confidence Level
RF Frequencies	±4.52 Hz	2	95%
RF Power Conducted Emissions	±2.97 dB	2	95%
RF Power Radiated Emissions	±2.95 dB	2	95%
Radiated Emissions, (30 MHz – 1 GHz)	±2.95	2	95%
Radiated Emissions, (1 GHz – 18 GHz)	±3.54	2	95%
Conducted Emission Voltage	±2.97	2	95%

Table 4. Uncertainty Calculations Summary

E. Description of Test Sample

The Color Card Printer, DTCii Plus is a modular, direct-to-card printer system designed to print and encode cards.

Configuration 1 (SN C4461124):
Input Hopper, Printer, Flipper, Mag Encoder, Contact Encoder, OMNIKEY 5122 Encoder

Test Configuration	Radio	Transmitters Onboard
Configuration 1	OMNIKEY 5122	13.56MHz
	Ribbon	13.56MHz

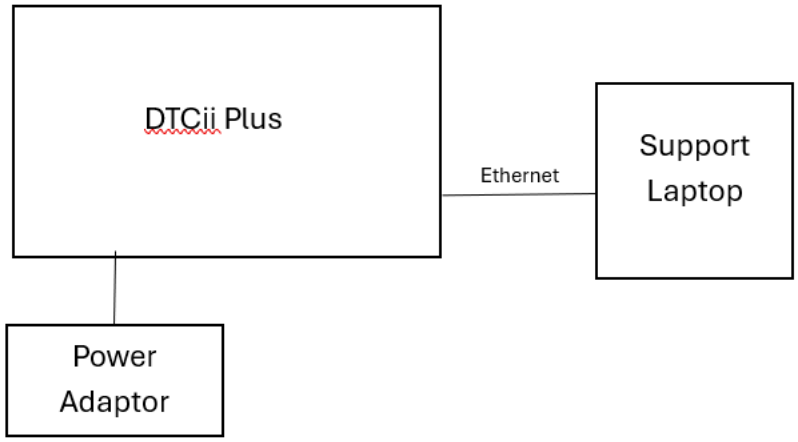


Figure 1. Block Diagram of Test Configuration

F. Equipment Configuration

The individual radios onboard were controlled by software on the support laptop. The software did not allow for adjusting of output power since that is at a fixed non-adjustable level.

G. Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Ref. ID	Name/Description	Manufacturer	Model Number	Customer Supplied Calibration Data
	Laptop Computer	Dell	Latitude	N/A

Table 5. Support Equipment

Ports and Cabling Information

Ref. Id	Port Name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Termination Box ID & Port Name
	Ethernet	Unshielded Network Cable	1	3	>3m	No	Laptop
	Power	DC Power Cable	2	2	2	No	AC outlet

Table 6. Ports and Cabling Information

H. Mode of Operation

The individual radios onboard were controlled by software on the support laptop. The software tools used were proprietary and provided by HID Global Corporation (US) for the sole purpose of controlling the radios during testing. The software did not allow for adjusting of output power since that is at a fixed non-adjustable level. The test tools used are as follows:

- Utility Commander – hdpx Agency edition v2.3
- SC Reader Radio Control Tool v4

I. Modifications

a) Modifications to EUT

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

J. Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to HID Global Corporation (US) upon completion of testing.

Antenna Requirements

§ 15.203 Antenna Requirement

Test Requirement: **§ 15.203:** An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

The structure and application of the EUT were analyzed to determine compliance with Section 15.203 of the Rules. Section 15.203 states that the subject device must meet at least one of the following criteria:

a.) Antenna must be permanently attached to the unit.

b.) Antenna must use a unique type of connector to attach to the EUT.

c.) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

Results: The Color Card Printer, DTCii Plus as evaluated, was compliant as the antennas were permanently attached.

Test Engineer(s): Bryan Taylor

Test Date(s): 12/8/2025

Conducted Emissions

§ 15.207(a) Conducted Emissions Limits

Test Requirement(s): **§ 15.207 (a):** For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dBμV)	
	Quasi-Peak	Average
* 0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

Table 7. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

Note: *Decreases with the logarithm of the frequency.

RSS-GEN (8.8) AC Power-Line Conducted Emissions Limits

Test Requirement(s): **RSS-GEN (8.8):** Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in the below figure, as measured using a 50 µH / 50 Ω line impedance stabilization network (LISN). This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in the below figure shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Frequency (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
* 0.15-0.5	66 to 56	56 to 46[1]
0.5-5	56	46
5-30	60	50

Table 8. AC Power Line Conducted Emissions Limits

Note: *Decreases with the logarithm of the frequency.

Test Procedure: The EUT was placed on a 0.8 m-high non-conducting table above a ground plane. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50 Ω/50 µH Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 "Procedures for Compliance Testing of Unlicensed Wireless Devices"*. The measurements were performed over the frequency range of 0.15 MHz to 30 MHz using a 50 Ω/50 µH LISN as the input transducer to an EMI receiver.

Test Results: The Color Card Printer, DTCii Plus was compliant with this requirement. Testing was performed on the AC input to an AC to DC power supply that was feeding the 12VDC to the Color Card Printer, DTCii Plus.

Test Engineer(s): Sergio Gutierrez

Test Date(s): 12/4/2025

Conducted Emissions Voltage Test Setup

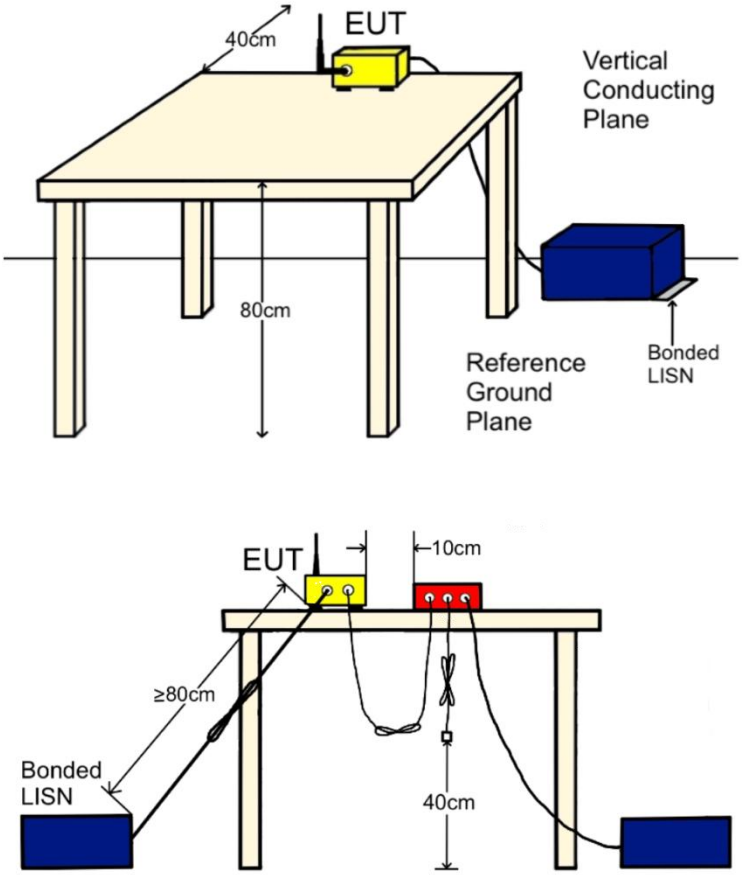
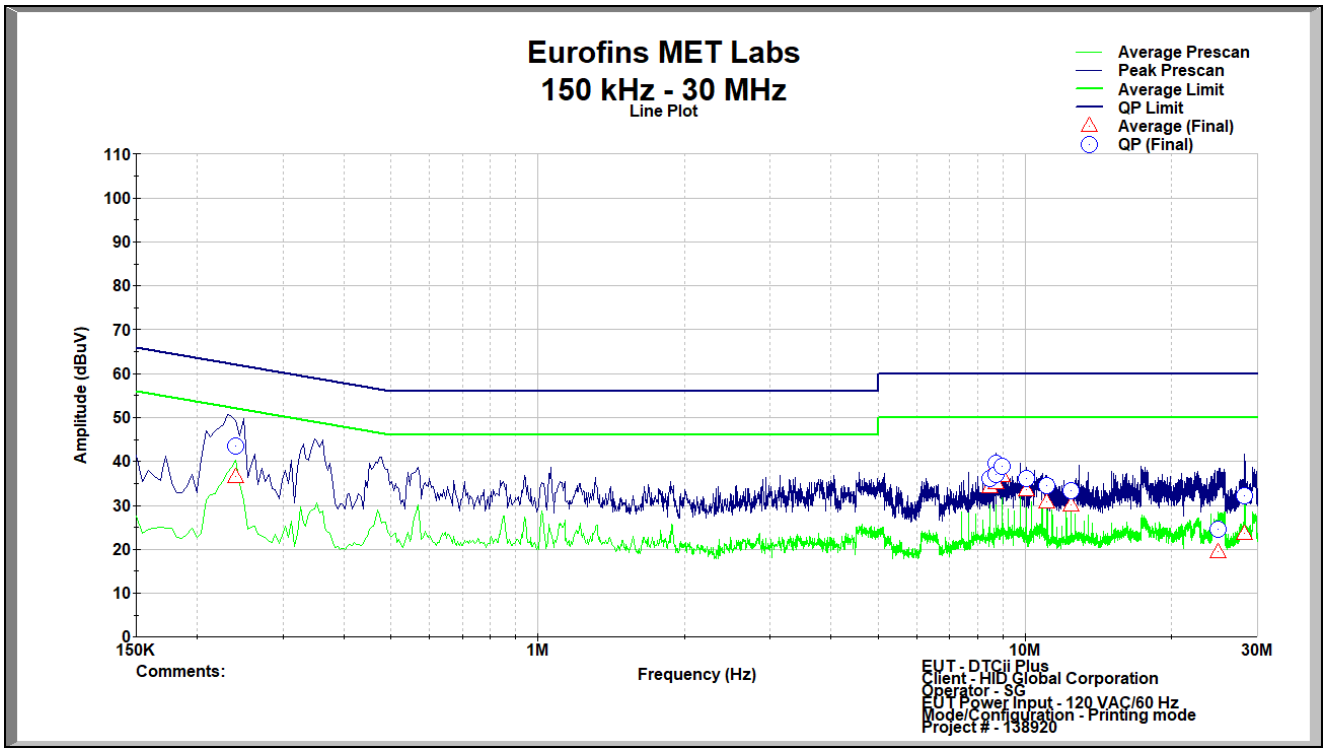


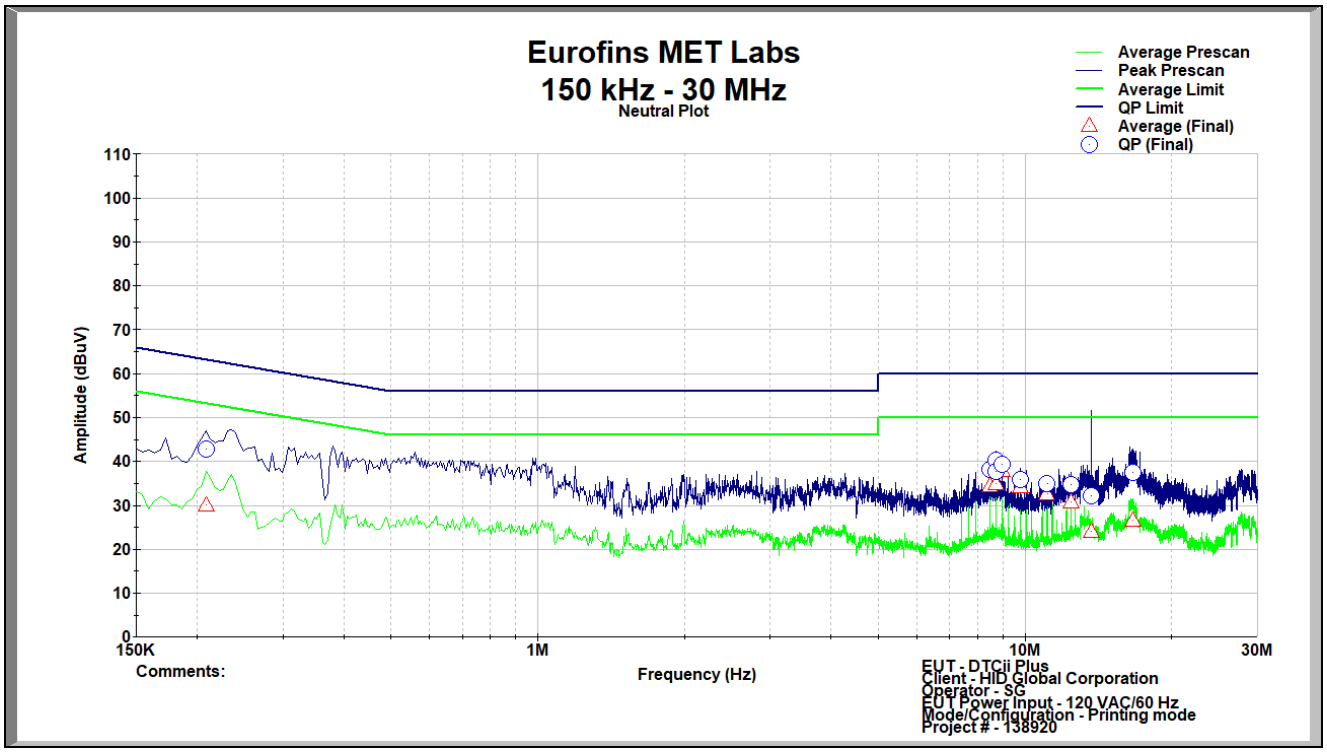
Figure 2. CEV Test Setup



Conducted Emissions, 15.207(a), Phase (Configuration 1)

Frequency (MHz)	Quasi-Peak (dBµV/m)	Quasi-Peak Limit (dBµV/m)	Quasi-Peak Margin (dB)	Average (dBµV/m)	Average Limit (dBµV/m)	Average Margin (dB)
0.24	43.566	63.429	19.863	36.517	53.429	16.912
8.46	36.072	60	23.928	34.239	50	15.761
8.726	39.665	60	20.335	39.021	50	10.979
8.73	37.131	60	22.869	35.071	50	14.929
8.991	38.814	60	21.186	36.851	50	13.149
10.046	36.195	60	23.805	33.511	50	16.489
11.103	34.556	60	25.444	30.827	50	19.173
12.428	33.242	60	26.758	30.062	50	19.938
24.921	24.567	60	35.433	19.551	50	30.449
28.158	32.091	60	27.909	23.561	50	26.439

Table 9. Conducted Emissions, 15.207(a), Phase, Test Results (Configuration 1)



Conducted Emissions, 15.207(a), Neutral (Configuration 1)

Frequency (MHz)	Quasi-Peak (dBµV)	Quasi-Peak Limit (dBµV)	Quasi-Peak Margin (dB)	Average (dBµV)	Average Limit (dBµV)	Average Margin (dB)
0.208	42.847	64.329	21.482	30.113	54.329	24.216
8.46	38.174	60	21.826	34.529	50	15.471
8.726	40.364	60	19.636	39.601	50	10.399
8.73	37.81	60	22.19	34.849	50	15.151
8.991	39.255	60	20.745	37.832	50	12.168
9.784	35.929	60	24.071	34.213	50	15.787
11.107	34.965	60	25.035	32.593	50	17.407
12.428	34.804	60	25.196	30.842	50	19.158
13.692	32.181	60	27.819	24.108	50	25.892
16.619	37.524	60	22.476	26.672	50	23.328

Table 10. Conducted Emissions, 15.207(a), Neutral, Test Results (Configuration 1)

Occupied Bandwidth Measurements

§ 15.215(c) 20 dB Occupied Bandwidth

Test Requirement(s): **§ 15.215 (c)** Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Procedure: The transmitter was on and transmitting at the highest output power. The bandwidth of the fundamental frequency was measured with the spectrum analyzer. Per ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 the RBW should be between 1% and 5% of the occupied bandwidth.

Test Results: The Color Card Printer, DTCii Plus was compliant with this requirement. The 20dB Bandwidth is shown on the plots on the following pages.

Test Engineer(s): Bryan Taylor

Test Date(s): 12/10/2025

RSS-GEN (6.7) 99% Occupied Bandwidth

Test Requirements: The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

Test Procedure: The EUT was on and transmitting at the highest output power. The bandwidth of the fundamental frequency was measured with the spectrum analyzer. Per ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 the RBW should be between 1% and 5% of the occupied bandwidth.

Test Results The Color Card Printer, DTCii Plus was compliant with this requirement. The 99% Bandwidth is shown on the plots on the following pages.

Test Engineer(s): Bryan Taylor

Test Date(s): 12/10/2025

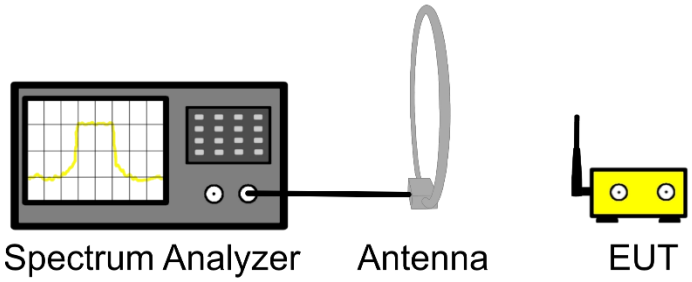


Figure 3. 20 dB Bandwidth and 99% Bandwidth Test Setup

Configuration Tested	Radio	Center Frequency (MHz)	20 dB Bandwidth	99% Bandwidth
Configuration 1	Ribbon	13.56MHz	67.3kHz	416.6kHz
Configuration 1	OMNIKEY 5122	13.56MHz	439.1kHz	565.7kHz

Table 11. Occupied Bandwidth Test Results (With Credential In Place)

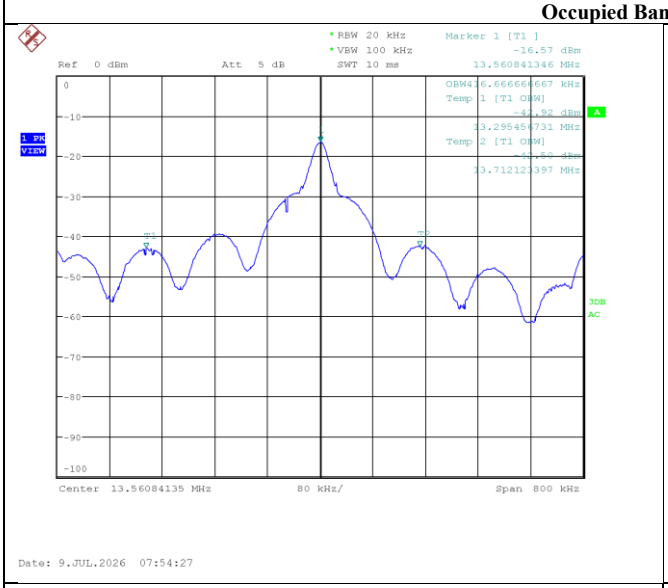
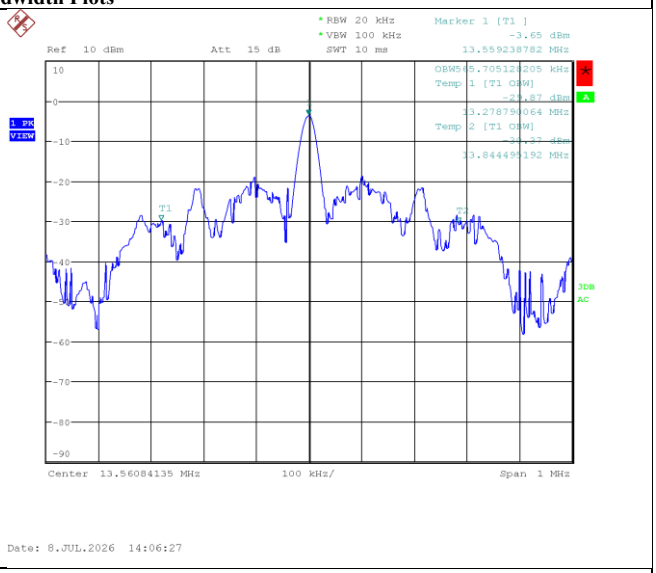
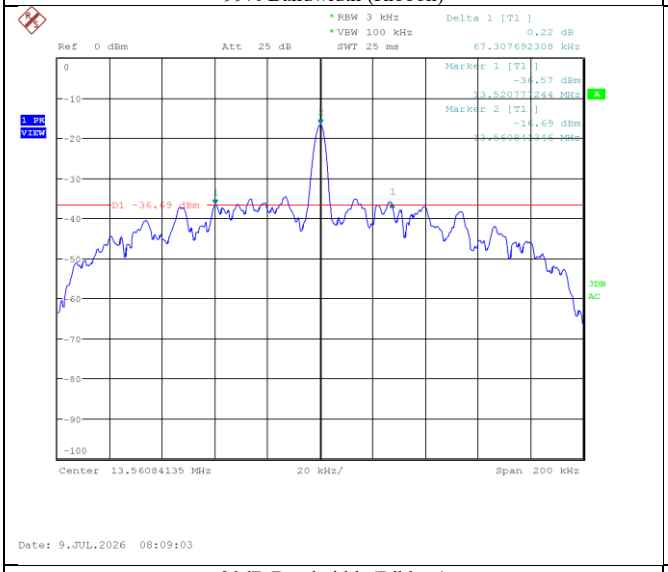
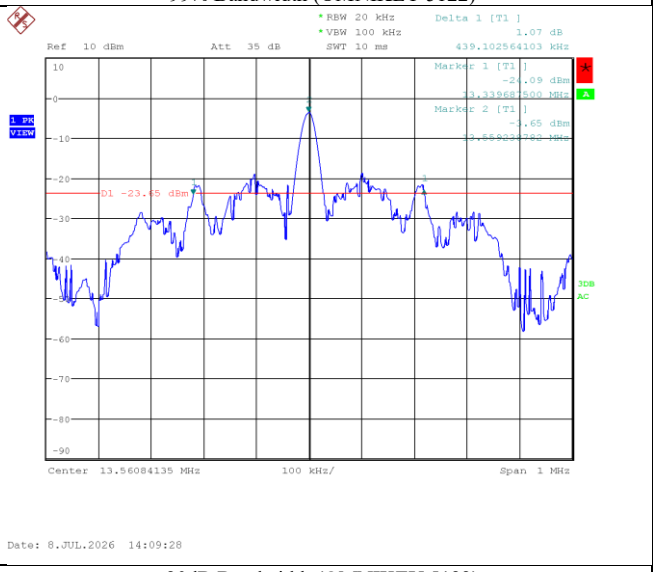
Occupied Bandwidth Plots	
	
99% Bandwidth (Ribbon)	99% Bandwidth (OMNIKEY 5122)
	
20dB Bandwidth (Ribbon)	20dB Bandwidth (OMNIKEY 5122)

Table 12. Occupied Bandwidth Test Results (With Credential In Place)

Configuration Tested	Radio	Center Frequency (MHz)	20 dB Bandwidth	99% Bandwidth
Configuration 1	Ribbon	13.56MHz	80.4kHz	422.0kHz
Configuration 1	OMNIKEY 5122	13.56MHz	475.9kHz	437.5kHz

Table 13. Occupied Bandwidth Test Results (Without Credential)

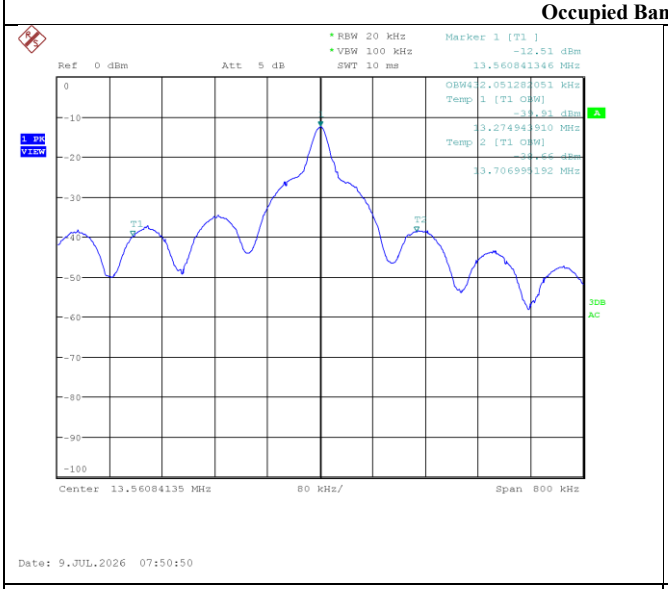
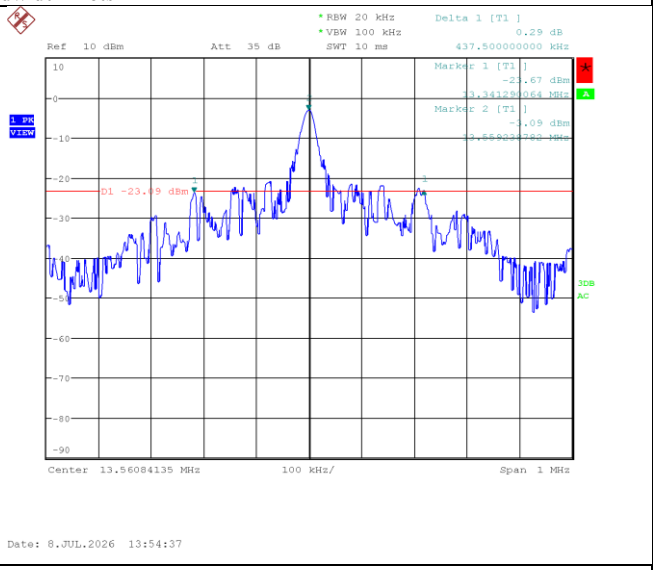
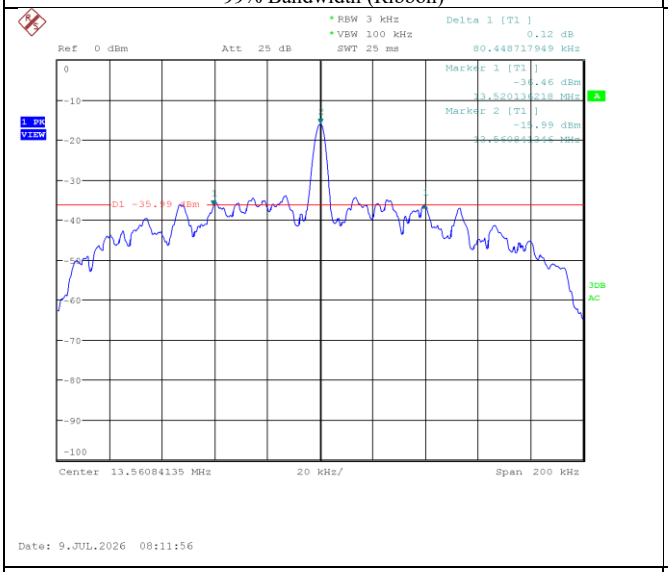
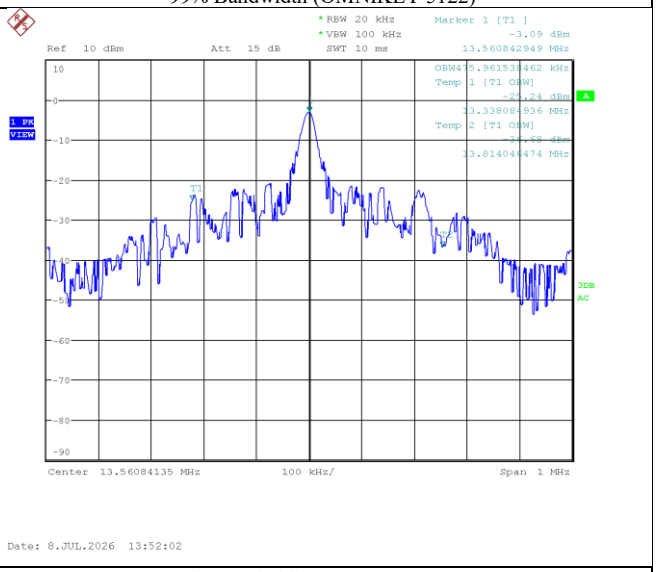
Occupied Bandwidth Plots	
	
99% Bandwidth (Ribbon)	99% Bandwidth (OMNIKEY 5122)
	
20dB Bandwidth (Ribbon)	20dB Bandwidth (OMNIKEY 5122)

Table 14. Occupied Bandwidth Test Results (Without Credential In Place)

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.225(a-d) Field Strength of Radiated Emissions

Test Requirement(s):

15.225 (a) The field strength of any emissions within the band 13.553 – 13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

15.225 (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

15.225 (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

15.225 (d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

RSS-210 (B.6.a(ii - iv)) Field Strength of Radiated Emissions

Test Requirement(s):

RSS-210 (B.6.a(i)) The field strength of any emissions within the band 13.553 – 13.567 MHz shall not exceed 15.848 mV/m (84 dBµV/m) at 30 meters.

RSS-210 (B.6.a(ii)) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 µV/m (50.5 dBµV/m) at 30 meters.

RSS-210 (B.6.a(iii)) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 µV/m (40.5 dBµV/m) at 30 meters.

RSS-210 (B.6.a(iv)) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in RSS-GEN Section 8.9.

Test Procedure:

The EUT was set to transmit and placed on a 0.8 m-high wooden stand inside a semi-anechoic chamber. The method of testing and test conditions of ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 were used. For measurements below 30 MHz a loop antenna placed 3m away from the unit was used. For measurements above 30 MHz a biconalog antenna placed 10 m away from the unit was used. Measurements below 30 MHz were conducted with the loop antenna at coaxial (parallel) and planar (perpendicular) orientations. Measurements above 30 MHz were conducted with the biconalog antenna in the vertical and horizontal polarizations. A peak detector was used to perform a pre-scan from 9 kHz to 10 times the fundamental frequency. Spurious emissions within 20 dB of the applicable limit were measured using a quasi-peak detector and recorded in the subsequent section. Peak emissions that were observed over the appliable limit were determined to be digital emissions subject to the requirements of FCC Part 15 Subpart B and ICES-003 subsection 6.2 for Class A devices.

The measurements were made at 3 m with the loop antenna (below 30MHz). They were then extrapolated to 30m or 300 m using the following correction factors which were applied to the limit.

40log (30/3) = 40 dB
40log (300/3) = 80 dB

The measurements made at 10 m with the biconilog antenna (above 30MHz) were then extrapolated to the 3m using the following correction factor.

20log (10/3) = +10.46 dB

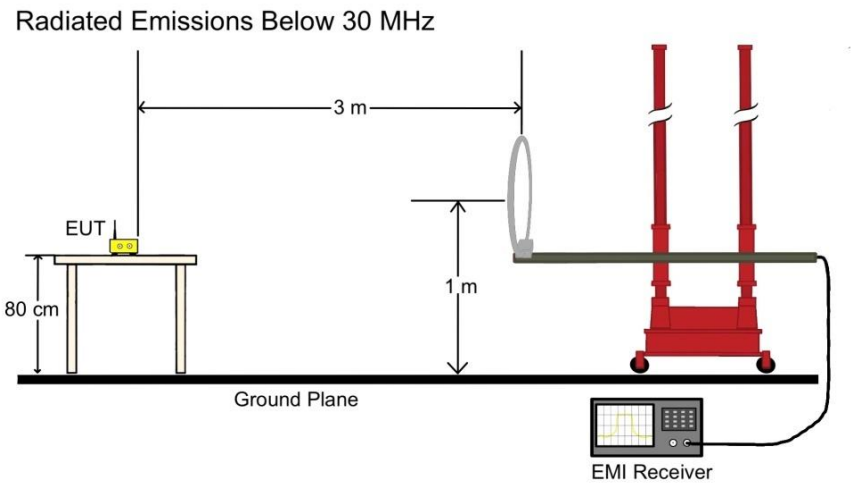


Figure 4: Radiated Emissions (Below 30MHz), Test Setup

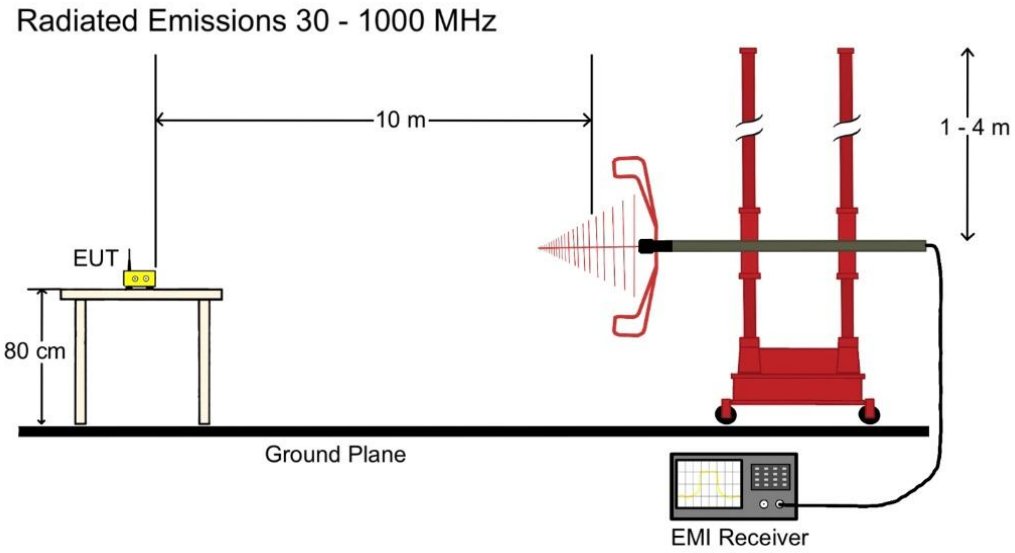


Figure 5. Radiated Emissions (Above 30MHz), Test Setup

Test Results: The Color Card Printer, DTCii Plus was compliant with the requirements of **§15.225(a - d)** and **RSS-210 RSS-210 (B.6.a(i, ii, iii, and iv))**.

Test Engineer(s): Bryan Taylor

Test Date(s): 12/8/2025 – 12/9/2025

Radiated Field Strength Test Results

Frequency [MHz]	Peak Level [dBµV/m] [1]	Limit [dBµV/m]	Margin [dB]	Correction [dB] [2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
13.241	17.54	80.50	62.96	10.62	V	180.3	1.00	9.000	Pass
13.281	16.86	80.50	63.64	10.62	H	160.3	1.00	9.000	Pass
13.533	17.89	90.50	72.61	10.61	V	282.6	1.00	9.000	Pass
13.560	61.09	124.00	62.91	10.61	H	135	1.00	9.000	Pass
13.560	65.67	124.00	58.33	10.61	V	326.6	1.00	9.000	Pass
13.682	17.36	90.50	73.14	10.60	V	217	1.00	9.000	Pass
13.821	17.42	80.50	63.08	10.60	V	335.9	1.00	9.000	Pass
13.929	18.07	80.50	62.43	10.59	H	252.5	1.00	9.000	Pass

Figure 6. Worst Case In-Band Field Strength, Ribbon

Frequency [MHz]	Peak Level [dBµV/m][1]	Limit [dBµV/m]	Margin [dB]	Correction [dB][2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.019	41.67	121.97	80.30	14.72	V	151	1.00	0.200	Pass
0.058	37.99	112.28	74.29	11.80	H	75	1.00	0.200	Pass
0.263	53.35	99.22	45.87	11.36	H	87.4	1.00	9.000	Pass
0.263	47.91	99.22	51.31	11.36	V	122.4	1.00	9.000	Pass
0.551	39.14	72.79	33.65	11.43	H	274.6	1.00	9.000	Pass
3.278	16.32	69.50	53.18	11.57	V	209.4	1.00	9.000	Pass
9.029	11.89	69.50	57.61	10.82	H	90.6	1.00	9.000	Pass

Figure 7. Worst Case Field Strength Below 30MHz, Ribbon

Frequency [MHz]	QPK Level [dBµV/m] [1]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB] [2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
31.200	27.74	29.55	1.81	-2.82	H	76	3.74	120.000	Pass
31.350	29.17	29.55	0.38	-3.14	V	22	3.75	120.000	Pass
55.830	22.29	29.55	7.26	-14.12	H	310.9	3.62	120.000	Pass
62.490	28.74	29.55	0.81	-13.73	V	76.2	2.73	120.000	Pass
88.000	19.46	33.07	13.61	-11.10	V	269.9	2.13	120.000	Pass
95.640	26.39	33.07	6.68	-9.81	V	203.7	1.45	120.000	Pass
145.140	24.92	33.07	8.15	-8.75	V	344.9	1.00	120.000	Pass

Figure 8. Worst Case Field Strength Above 30MHz, Ribbon

[1] This corrected level includes the factor shown in the "correction" column. The corrected level = Raw Reading + Correction Factor. The raw reading is not shown in the table above.
[2] This correction factor includes cable loss in dB, preamplifier gain in dB, and an electric field antenna factor in (dB/m).

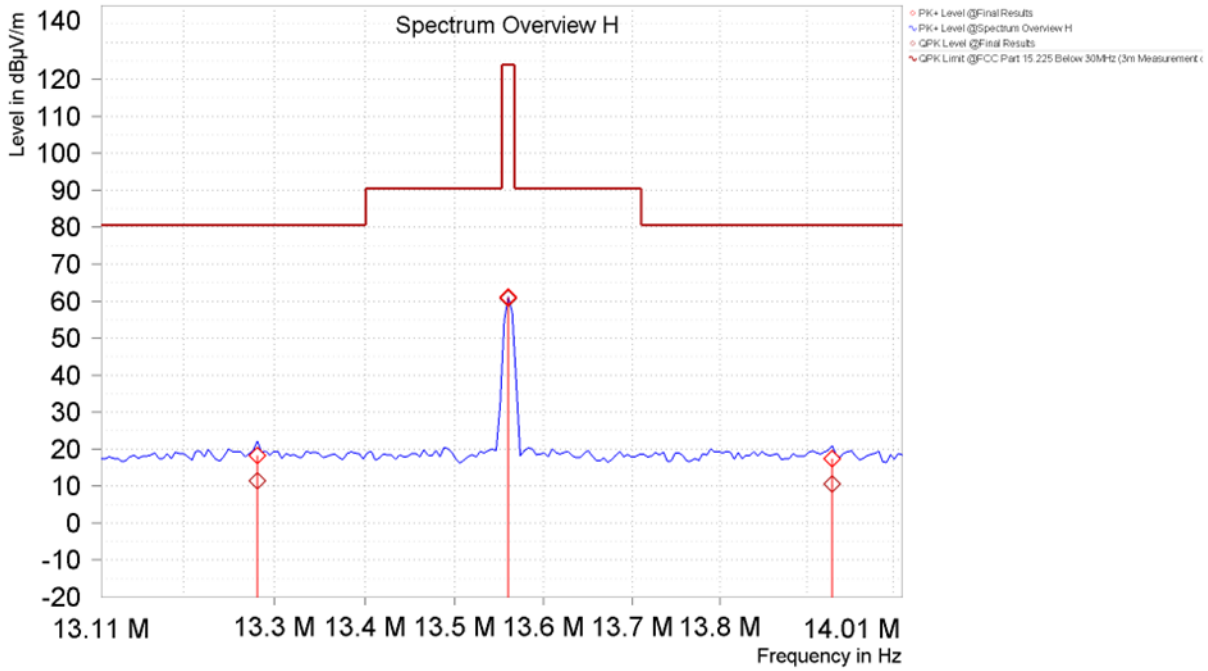


Figure 9. In-Band Emission Mask, Coplanar Loop, Ribbon

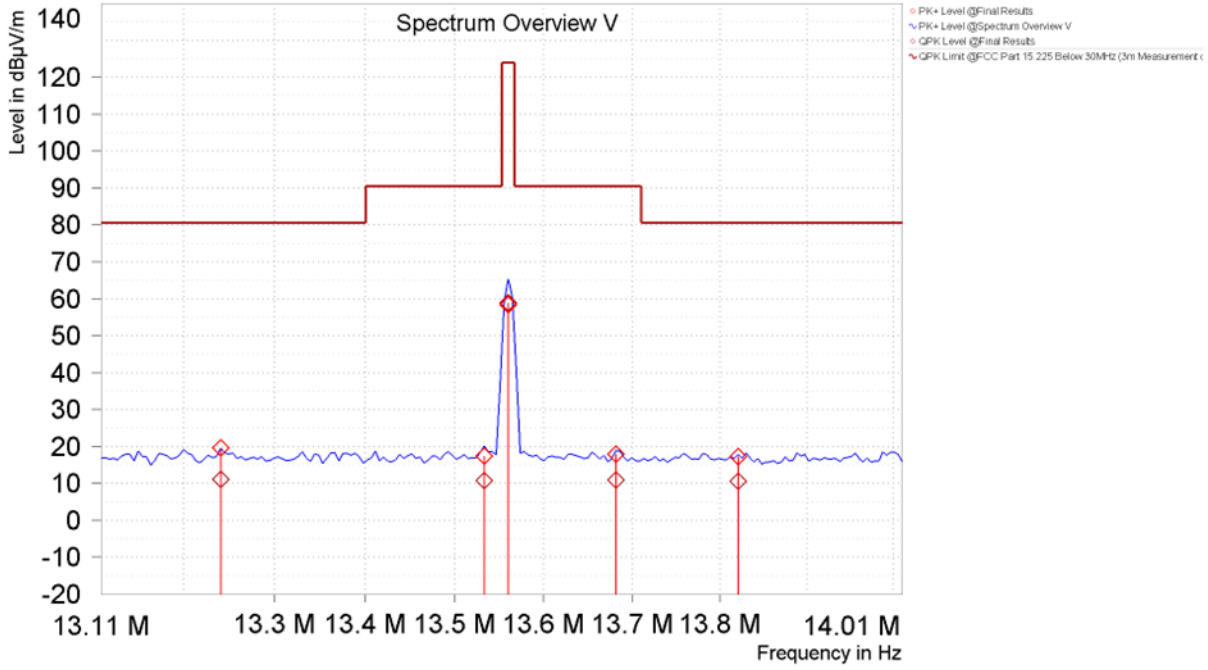


Figure 10. In-Band Emission Mask, Coaxial Loop, Ribbon

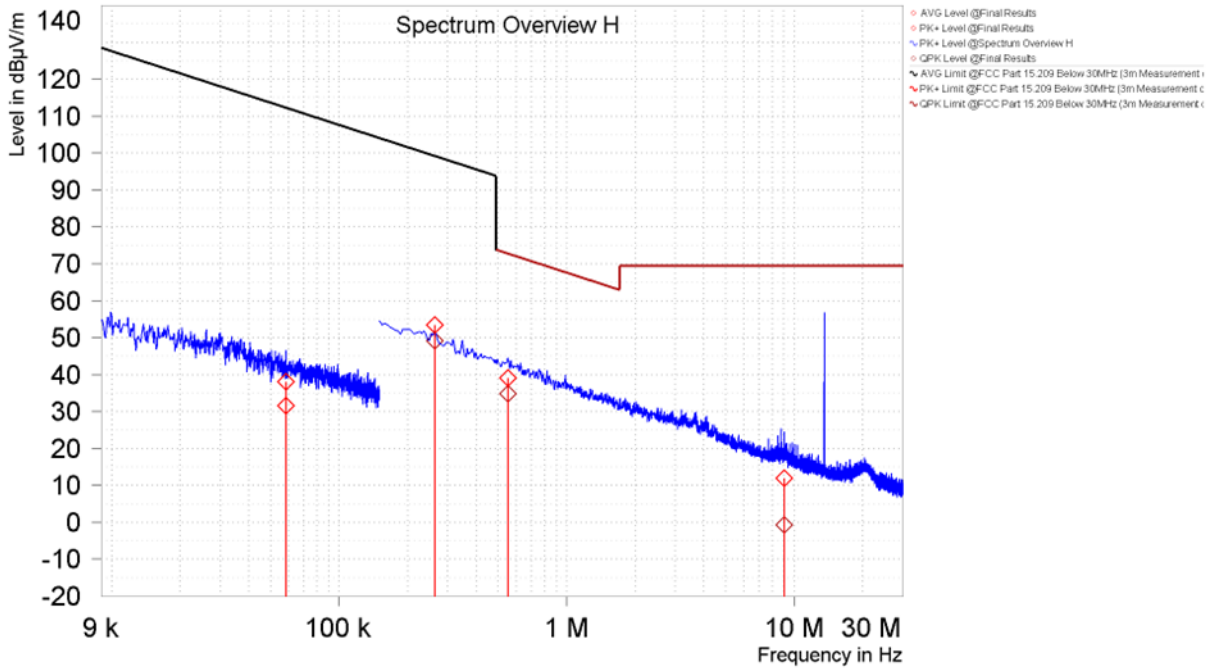


Figure 11. Out of Band Emissions Below 30MHz, Coplanar Loop, Ribbon

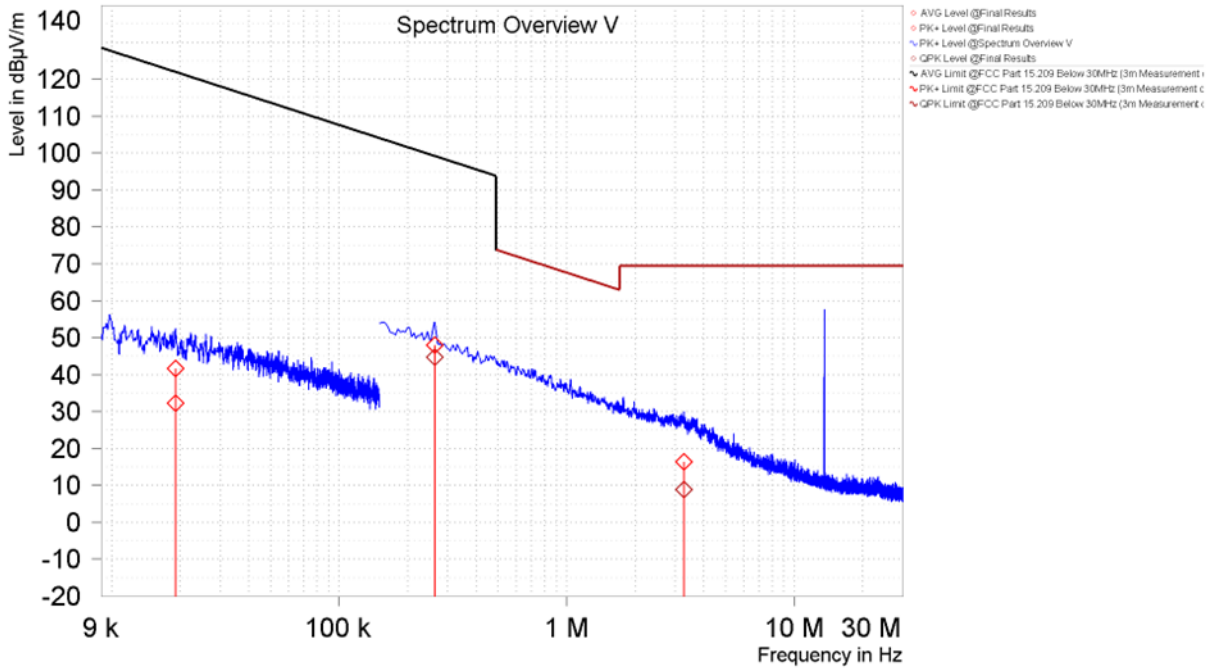


Figure 12. Out of Band Emissions Below 30MHz, Coaxial Loop, Ribbon

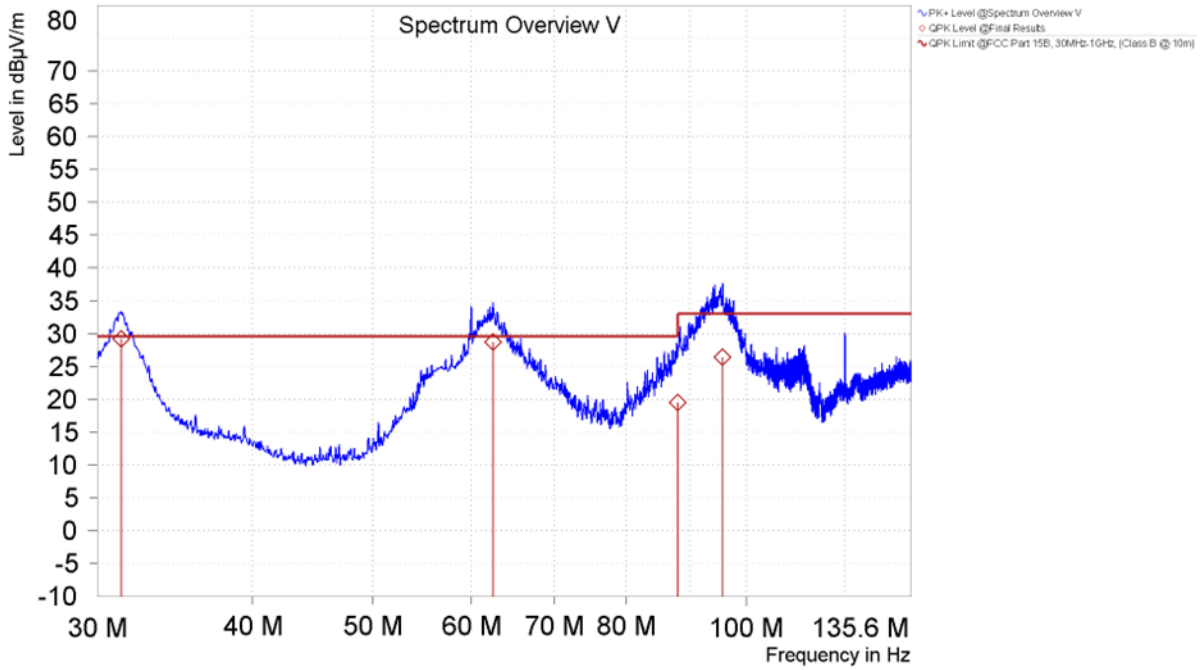


Figure 13. Out of Band Emissions Above 30MHz, Vertical Polarity, Ribbon

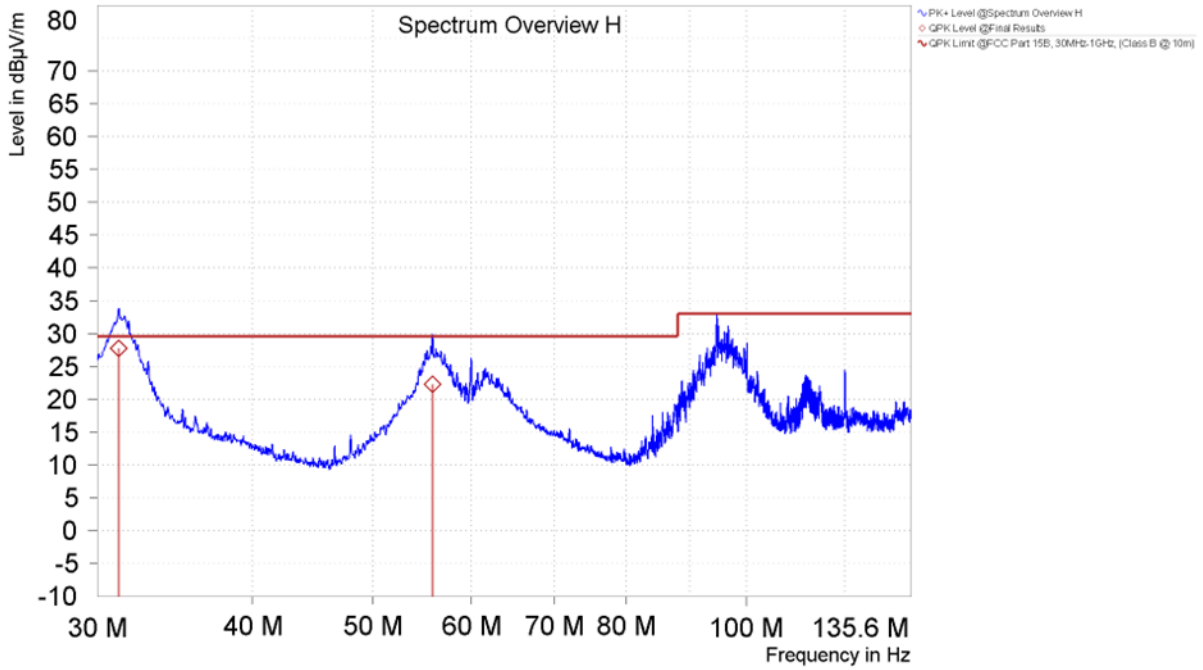


Figure 14. Out of Band Emissions Above 30MHz, Horizontal Polarity, Ribbon

Frequency [MHz]	Peak Level [dBµV/m] [3]	Limit [dBµV/m]	Margin [dB]	Correction [dB] [4]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
13.277	17.24	80.50	63.26	10.62	H	139.9	1.00	9.000	Pass
13.502	16.56	90.50	73.94	10.61	V	289.7	1.00	9.000	Pass
13.560	61.05	124.00	62.95	10.61	H	135	1.00	9.000	Pass
13.560	65.60	124.00	58.40	10.61	V	323.2	1.00	9.000	Pass
13.704	16.28	90.50	74.22	10.60	V	260.9	1.00	9.000	Pass
13.925	17.74	80.50	62.76	10.59	V	311.8	1.00	9.000	Pass

Figure 15. Worst Case In-Band Field Strength, Ribbon (No Credential)

Frequency [MHz]	Peak Level [dBµV/m][1]	Limit [dBµV/m]	Margin [dB]	Correction [dB][2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.022	48.50	120.90	72.40	14.31	V	189.8	1.00	0.200	Pass
0.150	54.34	104.08	49.74	11.26	H	96.9	1.00	9.000	Pass
0.263	54.22	99.22	45.00	11.36	V	151.7	1.00	9.000	Pass
0.591	42.10	72.17	30.07	11.32	H	139.8	1.00	9.000	Pass
2.945	31.36	69.50	38.14	11.62	V	341.1	1.00	9.000	Pass

Figure 16. Worst Case Field Strength Below 30MHz, Ribbon (No Credential)

Frequency [MHz]	QPK Level [dBµV/m] [1]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB] [2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
31.440	27.04	29.55	2.51	-3.20	V	329.5	3.87	120.000	Pass
31.500	28.17	29.55	1.38	-2.99	H	23.8	3.77	120.000	Pass
55.470	22.58	29.55	6.97	-14.05	H	120.2	4.00	120.000	Pass
61.890	28.86	29.55	0.69	-13.71	V	71.9	2.39	120.000	Pass
93.870	27.21	33.07	5.86	-10.18	V	224.9	1.37	120.000	Pass
96.870	22.11	33.07	10.96	-9.83	H	36.5	3.55	120.000	Pass
120.030	26.23	33.07	6.84	-7.67	V	250.7	0.99	120.000	Pass
145.020	25.05	33.07	8.02	-8.74	V	271.9	1.19	120.000	Pass

Figure 17. Worst Case Field Strength Above 30MHz, Ribbon (No Credential)

[3] This corrected level includes the factor shown in the "correction" column. The corrected level = Raw Reading + Correction Factor. The raw reading is not shown in the table above.
[4] This correction factor includes cable loss in dB, preamplifier gain in dB, and an electric field antenna factor in (dB/m).

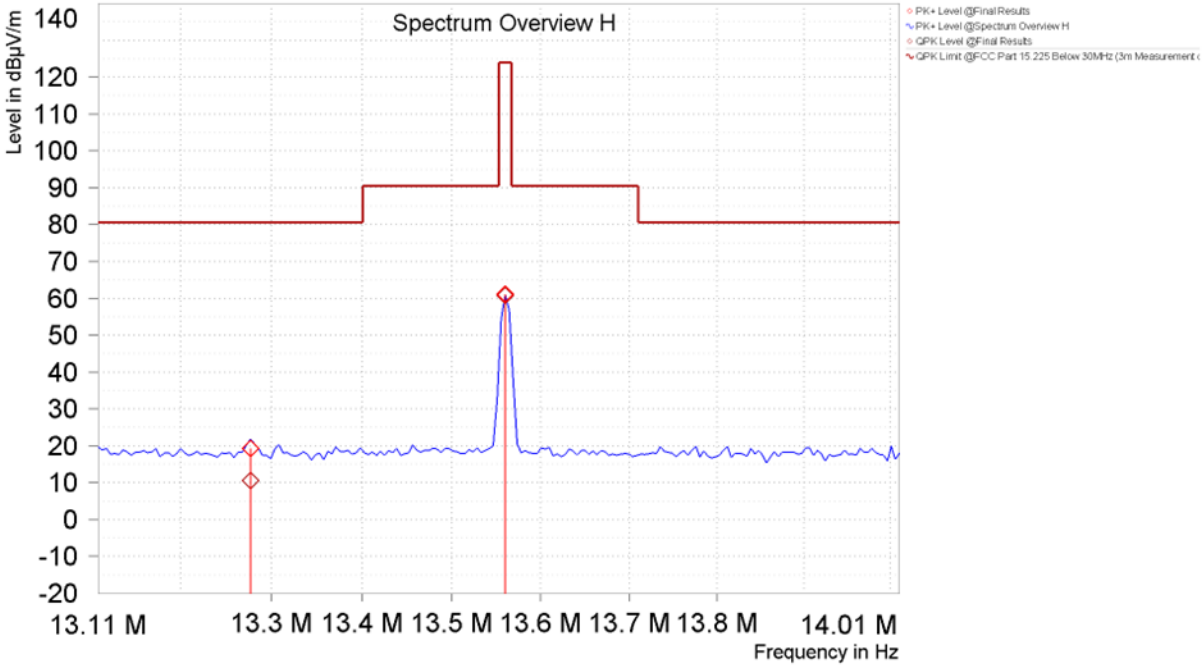


Figure 18. In-Band Emission Mask, Coplanar Loop, Ribbon (No Credential)

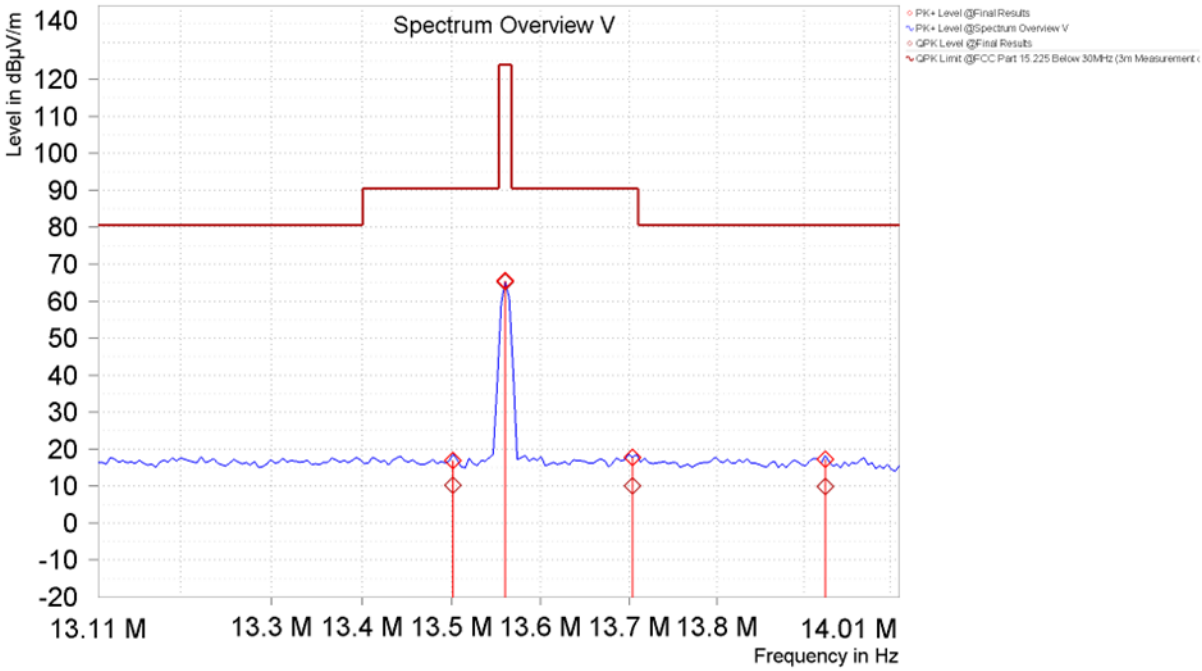


Figure 19. In-Band Emission Mask, Coaxial Loop, Ribbon (No Credential)

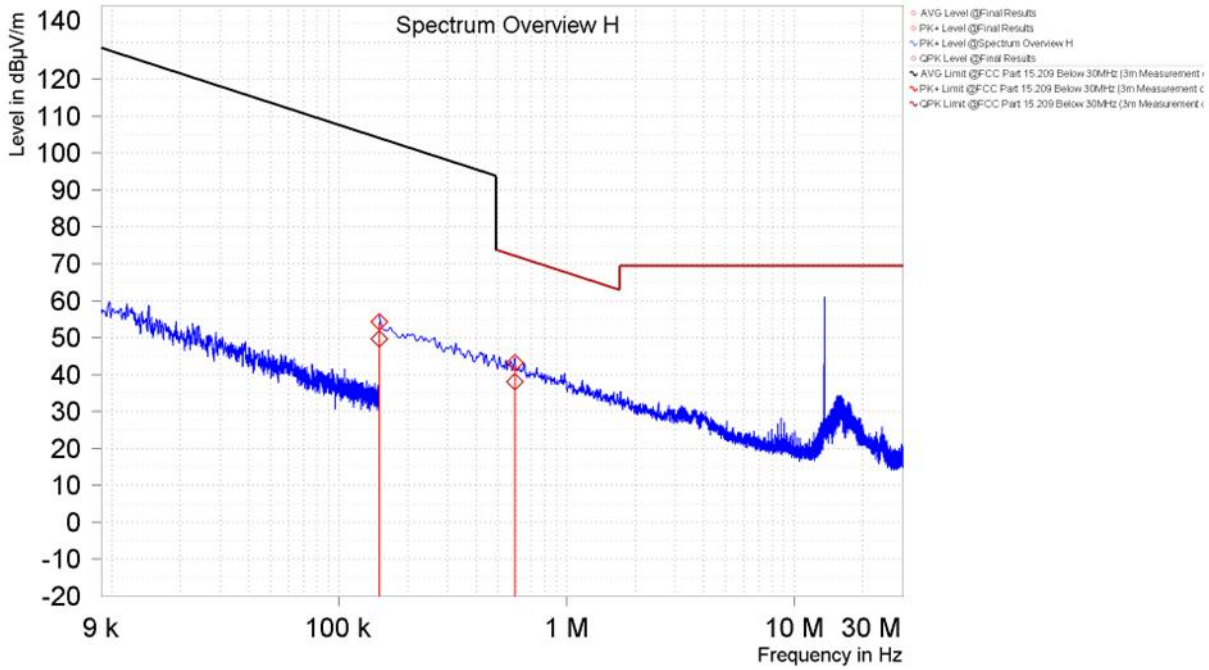


Figure 20. Out of Band Emissions Below 30MHz, Coplanar Loop, Ribbon (No Credential)

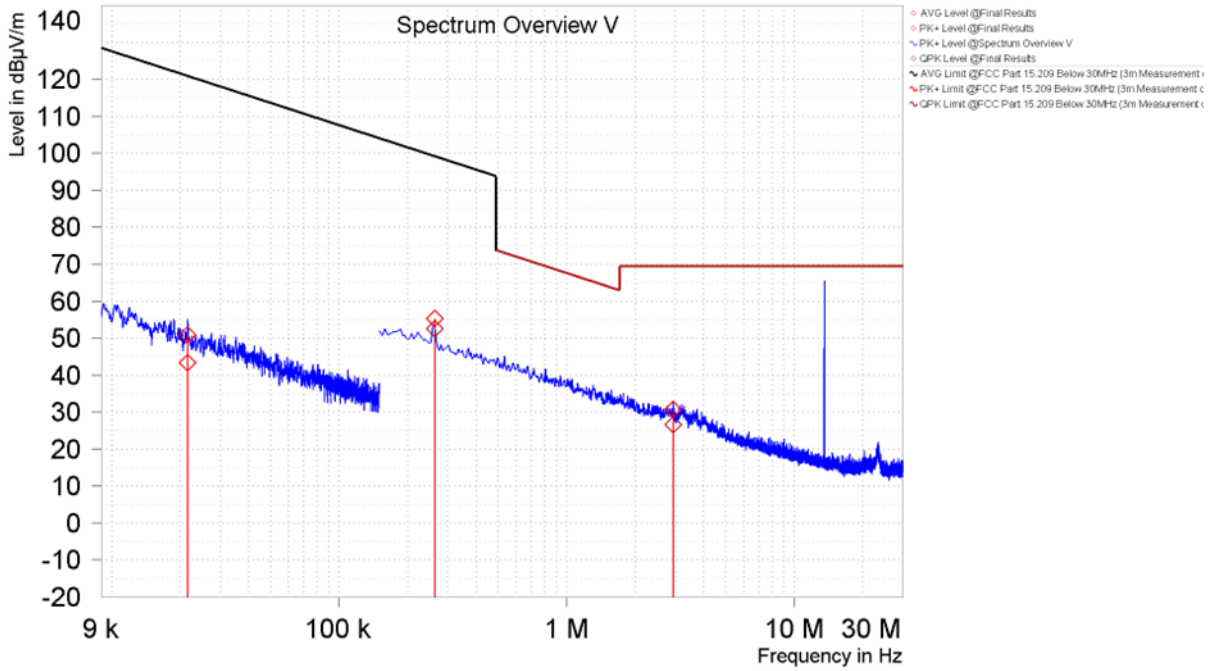


Figure 21. Out of Band Emissions Below 30MHz, Coaxial Loop, Ribbon (No Credential)

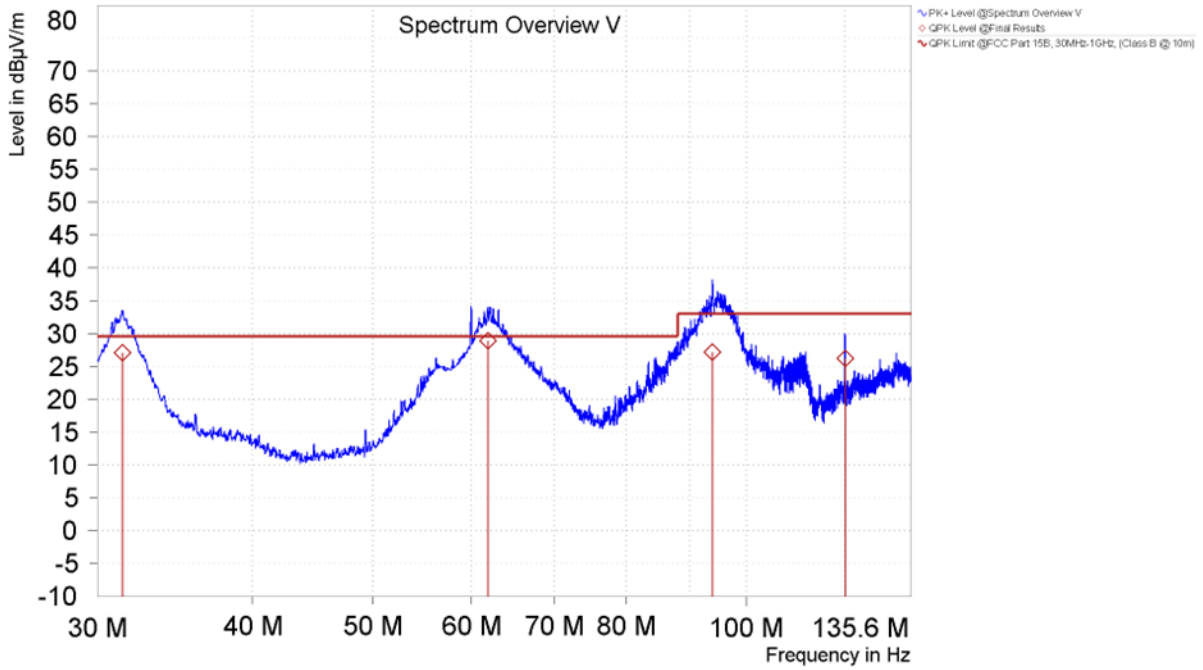


Figure 22. Out of Band Emissions Above 30MHz, Vertical Polarity, Ribbon (No Credential)

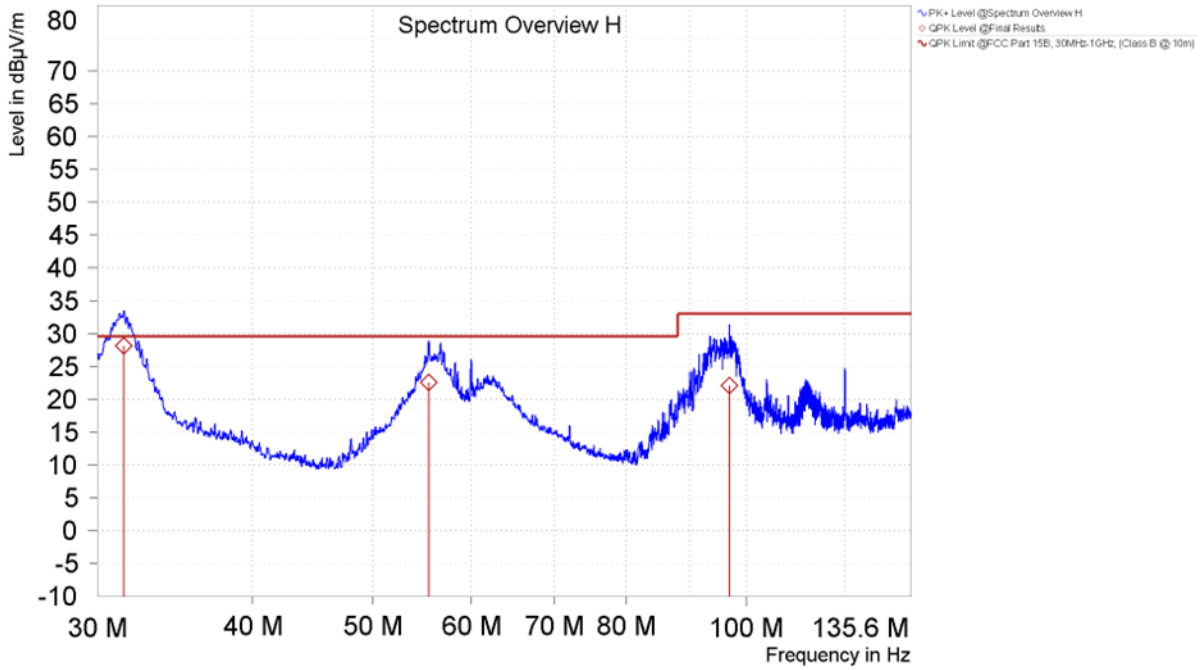


Figure 23. Out of Band Emissions Above 30MHz, Horizontal Polarity, Ribbon (No Credential)

Frequency [MHz]	Peak Level [dBµV/m] [5]	Limit [dBµV/m]	Margin [dB]	Correction [dB] [6]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
13.268	17.93	80.50	62.57	10.62	V	97.5	1.00	9.000	Pass
13.484	19.41	90.50	71.09	10.61	V	165.1	1.00	9.000	Pass
13.560	61.94	124.00	62.06	10.61	H	276.6	1.00	9.000	Pass
13.560	54.58	124.00	69.42	10.61	V	137.8	1.00	9.000	Pass
13.623	17.49	90.50	73.01	10.60	H	315	1.00	9.000	Pass
13.808	17.02	80.50	63.48	10.60	H	152.1	1.00	9.000	Pass

Figure 24. Worst Case In-Band Field Strength, 5122

Frequency [MHz]	Peak Level [dBµV/m][1]	Limit [dBµV/m]	Margin [dB]	Correction [dB][2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.012	57.51	125.79	68.28	17.75	H	89.9	1.00	0.200	Pass
0.263	56.13	99.22	43.09	11.36	H	116.1	1.00	9.000	Pass
0.263	55.47	99.22	43.75	11.36	V	167.8	1.00	9.000	Pass
0.695	41.97	70.77	28.79	11.46	V	285.2	1.00	9.000	Pass
4.146	28.14	69.50	41.36	11.65	V	-0.2	1.00	9.000	Pass
8.489	21.31	69.50	48.19	10.80	H	175.9	1.00	9.000	Pass

Figure 25. Worst Case Field Strength Below 30MHz, 5122

Frequency [MHz]	QPK Level [dBµV/m] [1]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB] [2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
31.260	26.68	29.55	2.87	-3.08	V	269.4	3.65	120.000	Pass
31.440	28.00	29.55	1.55	-2.96	H	56.9	3.97	120.000	Pass
55.890	22.15	29.55	7.40	-14.14	H	323.2	3.81	120.000	Pass
61.770	26.94	29.55	2.61	-13.74	V	7.3	2.08	120.000	Pass
93.510	27.96	33.07	5.11	-10.23	V	207.5	1.32	120.000	Pass
95.040	23.27	33.07	9.80	-10.26	H	24	3.60	120.000	Pass
120.000	26.66	33.07	6.41	-7.67	V	288.6	1.05	120.000	Pass

Figure 26. Worst Case Field Strength Above 30MHz, 5122

[5] This corrected level includes the factor shown in the "correction" column. The corrected level = Raw Reading + Correction Factor. The raw reading is not shown in the table above.
[6] This correction factor includes cable loss in dB, preamplifier gain in dB, and an electric field antenna factor in (dB/m).

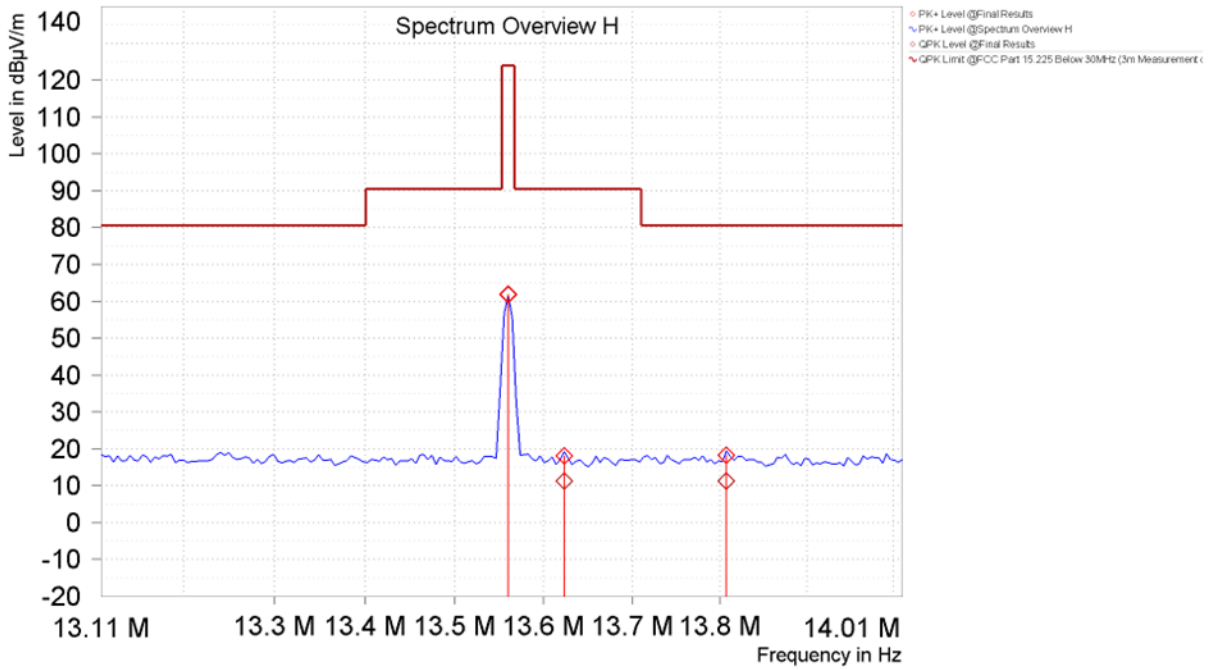


Figure 27. In-Band Emission Mask, Coplanar Loop, 5122

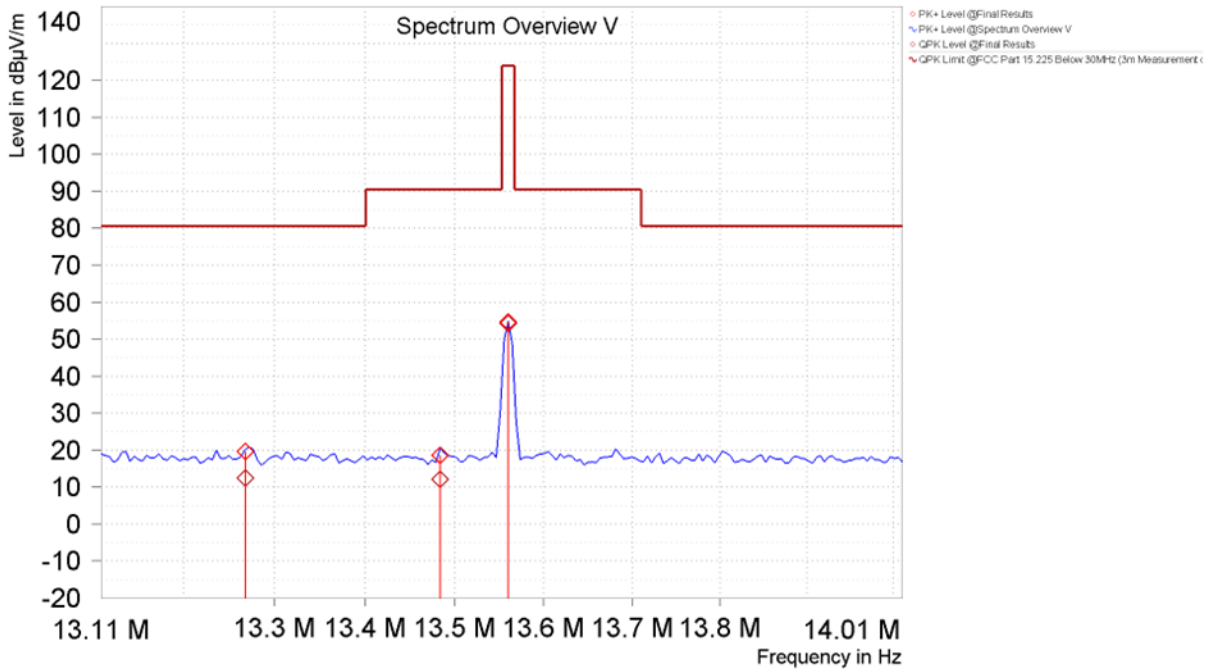


Figure 28. In-Band Emission Mask, Coaxial Loop, 5122

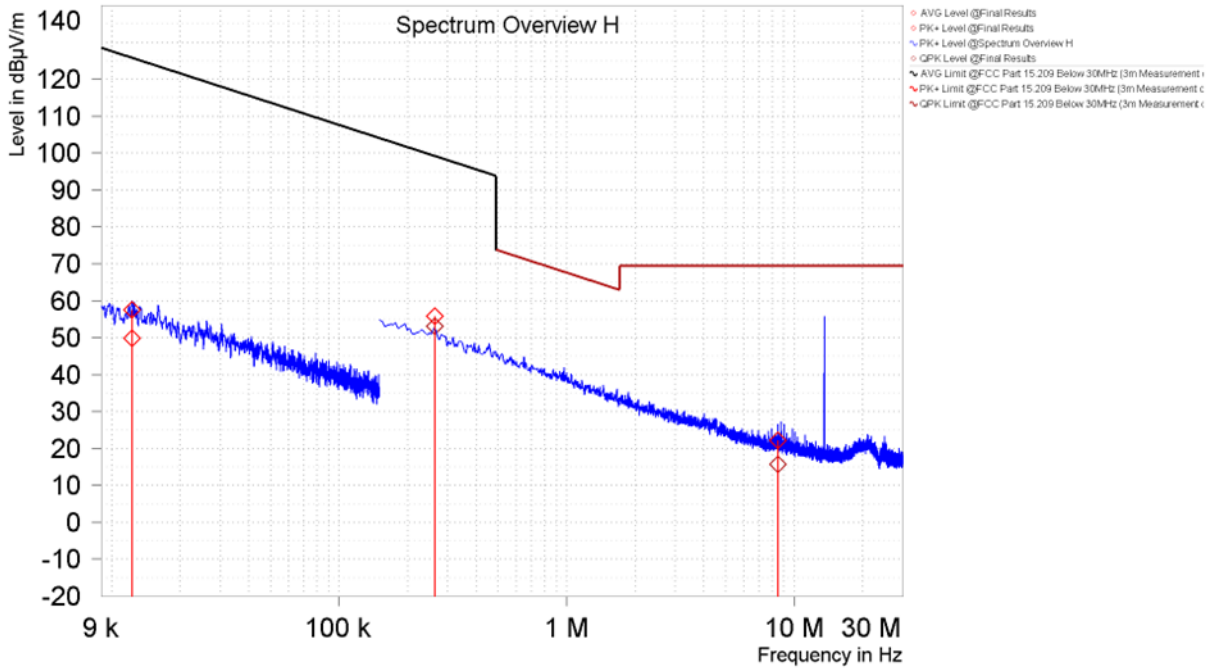


Figure 29. Out of Band Emissions Below 30MHz, Coplanar Loop, 5122

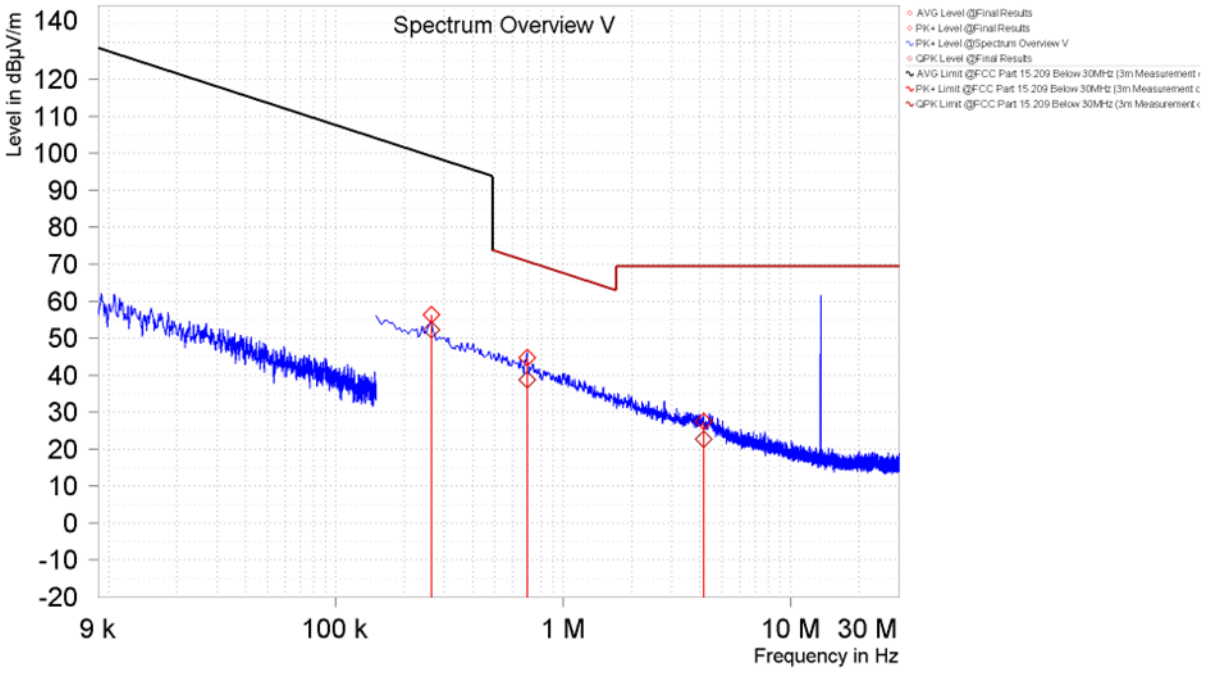


Figure 30. Out of Band Emissions Below 30MHz, Coaxial Loop, 5122

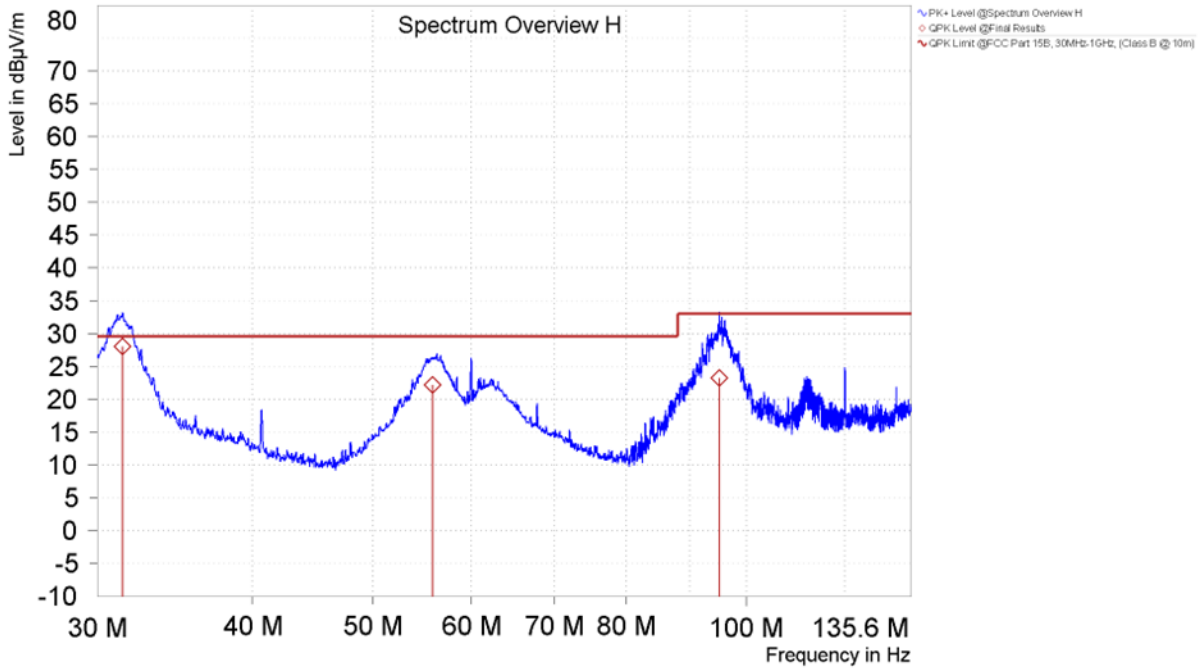


Figure 31. Out of Band Emissions Above 30MHz, Vertical Polarity, 5122

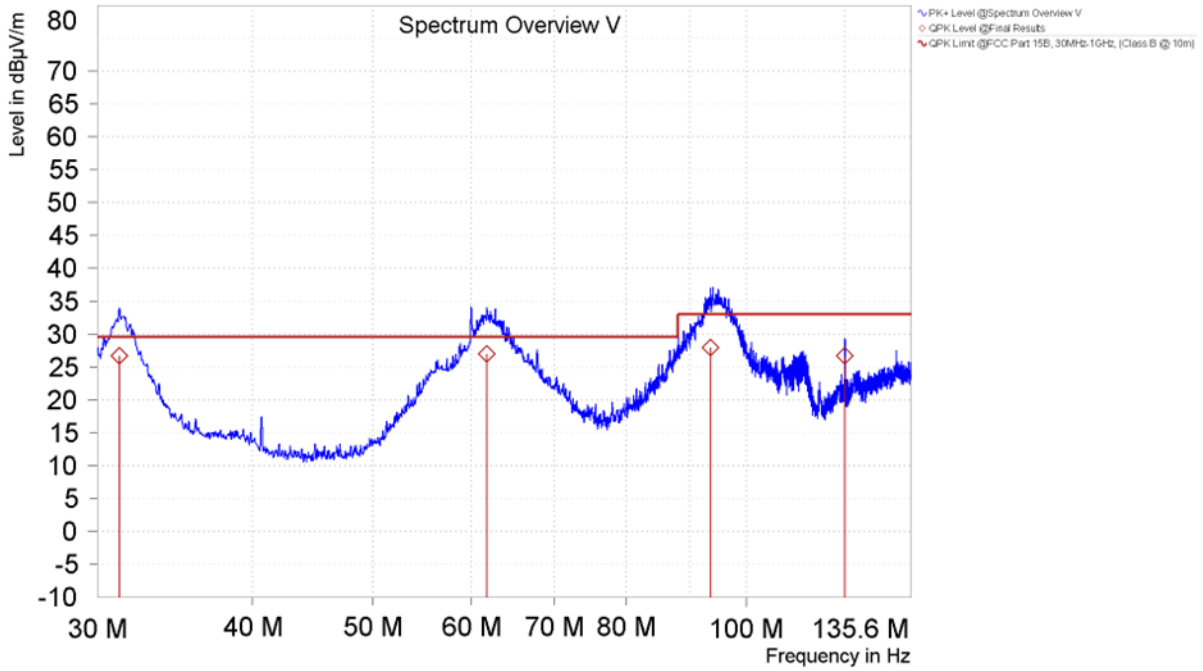


Figure 32. Out of Band Emissions Above 30MHz, Horizontal Polarity, 5122

Frequency [MHz]	Peak Level [dBµV/m] [7]	Limit [dBµV/m]	Margin [dB]	Correction [dB] [8]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
13.376	18.65	80.50	61.85	10.61	H	53.5	1.00	9.000	Pass
13.448	17.62	90.50	72.88	10.61	H	161.6	1.00	9.000	Pass
13.560	61.51	124.00	62.49	10.61	H	275.4	1.00	9.000	Pass
13.560	54.43	124.00	69.57	10.61	V	127.6	1.00	9.000	Pass
13.659	16.19	90.50	74.31	10.60	H	297.5	1.00	9.000	Pass
13.772	17.77	80.50	62.73	10.60	H	360	1.00	9.000	Pass

Figure 33. Worst Case In-Band Field Strength, 5122 (No Credential)

Frequency [MHz]	Peak Level [dBµV/m][1]	Limit [dBµV/m]	Margin [dB]	Correction [dB][2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
0.263	55.15	99.22	44.07	11.36	V	154.2	1.00	9.000	Pass
0.452	46.24	94.51	48.27	11.22	H	214	1.00	9.000	Pass
0.519	46.16	73.30	27.14	11.34	V	74	1.00	9.000	Pass
1.091	38.03	66.85	28.82	11.77	H	107	1.00	9.000	Pass
4.038	28.98	69.50	40.52	11.66	V	8.8	1.00	9.000	Pass
8.759	24.22	69.50	45.28	10.84	H	345.1	1.00	9.000	Pass

Figure 34. Worst Case Field Strength Below 30MHz, 5122 (No Credential)

Frequency [MHz]	QPK Level [dBµV/m] [1]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB] [2]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]	Result
31.170	27.71	29.55	1.84	-3.02	V	64.7	3.99	120.000	Pass
31.290	27.87	29.55	1.68	-2.87	H	65.7	3.96	120.000	Pass
55.500	23.36	29.55	6.19	-14.06	H	286	3.99	120.000	Pass
62.640	26.03	29.55	3.52	-13.74	V	205.8	1.64	120.000	Pass
88.000	19.23	33.07	13.84	-11.10	V	275.9	2.46	120.000	Pass
95.310	27.75	33.07	5.32	-9.84	V	221.8	1.13	120.000	Pass
120.000	26.68	33.07	6.39	-7.67	V	252.3	1.28	120.000	Pass
144.990	24.80	33.07	8.27	-8.74	V	228.6	1.22	120.000	Pass

Figure 35. Worst Case Field Strength Above 30MHz, 5122 (No Credential)

[7] This corrected level includes the factor shown in the "correction" column. The corrected level = Raw Reading + Correction Factor. The raw reading is not shown in the table above.
[8] This correction factor includes cable loss in dB, preamplifier gain in dB, and an electric field antenna factor in (dB/m).

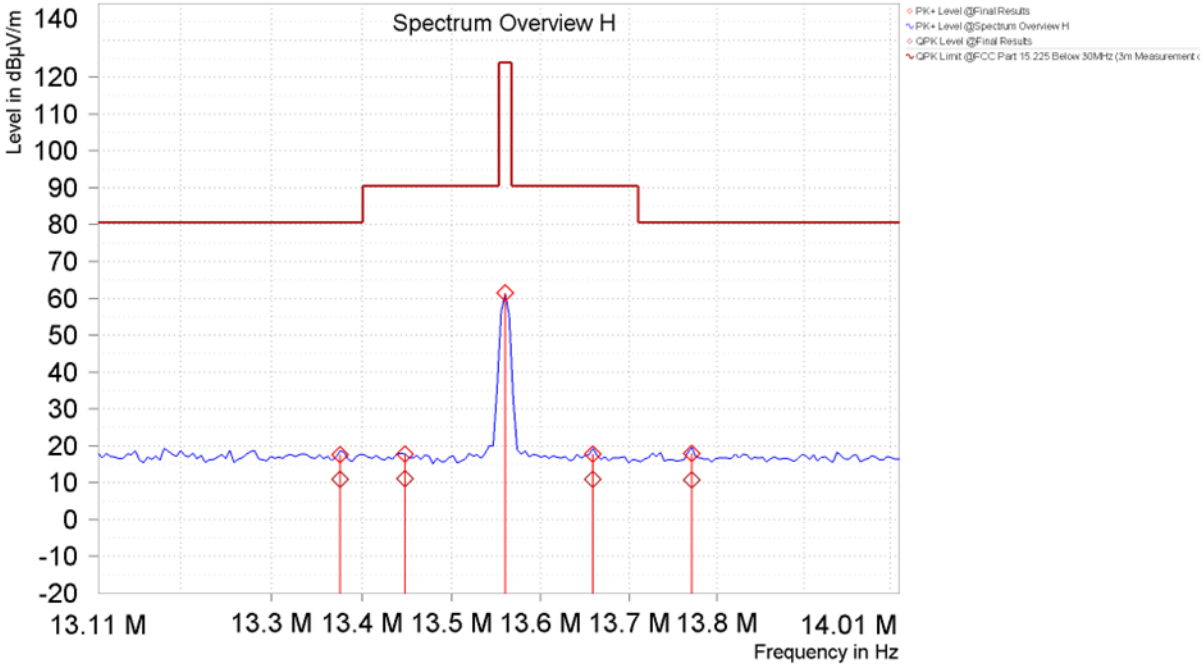


Figure 36. In-Band Emission Mask, Coplanar Loop, 5122 (No Credential)

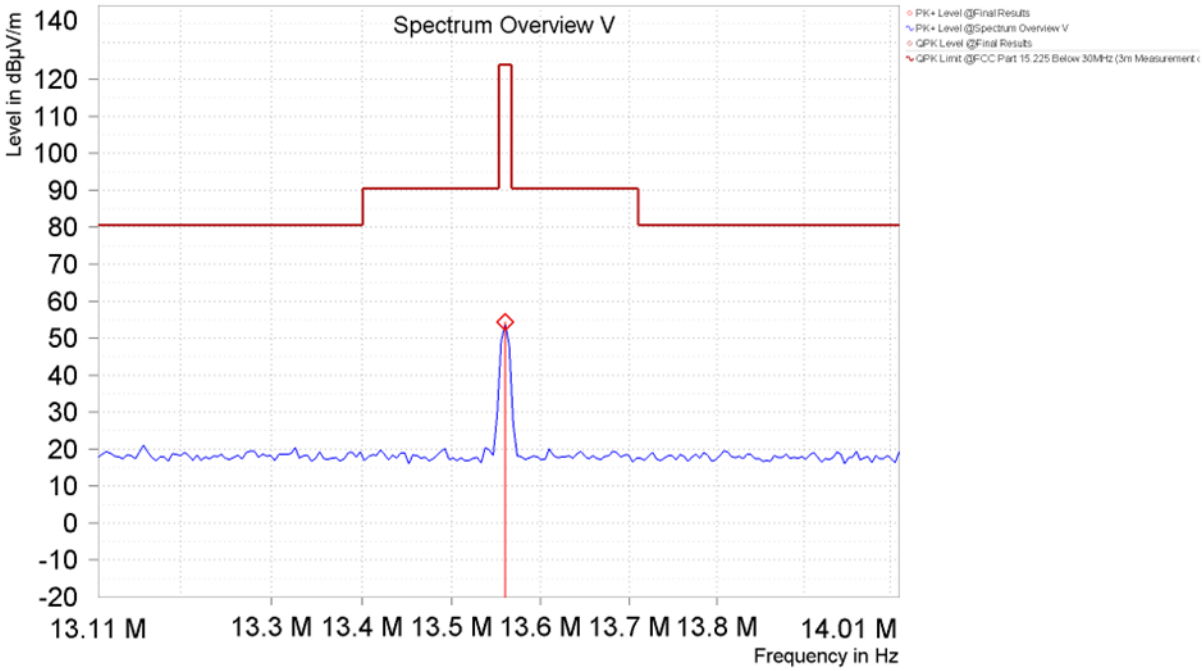


Figure 37. In-Band Emission Mask, Coaxial Loop, 5122 (No Credential)

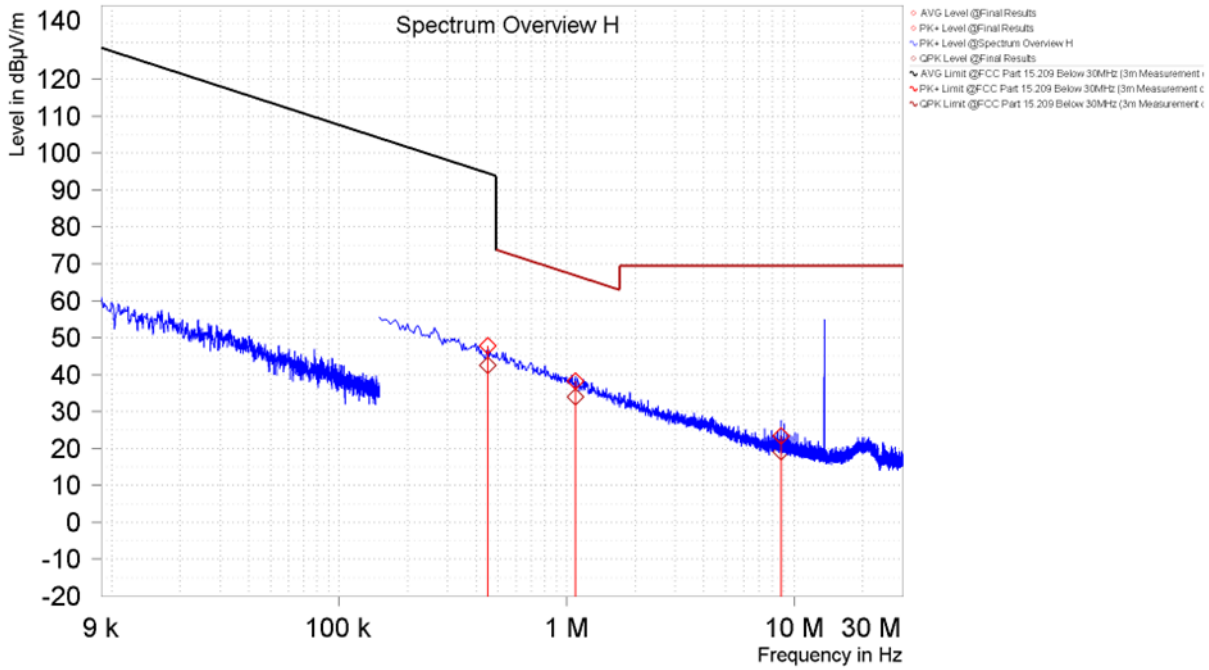


Figure 38. Out of Band Emissions Below 30MHz, Coplanar Loop, 5122 (No Credential)

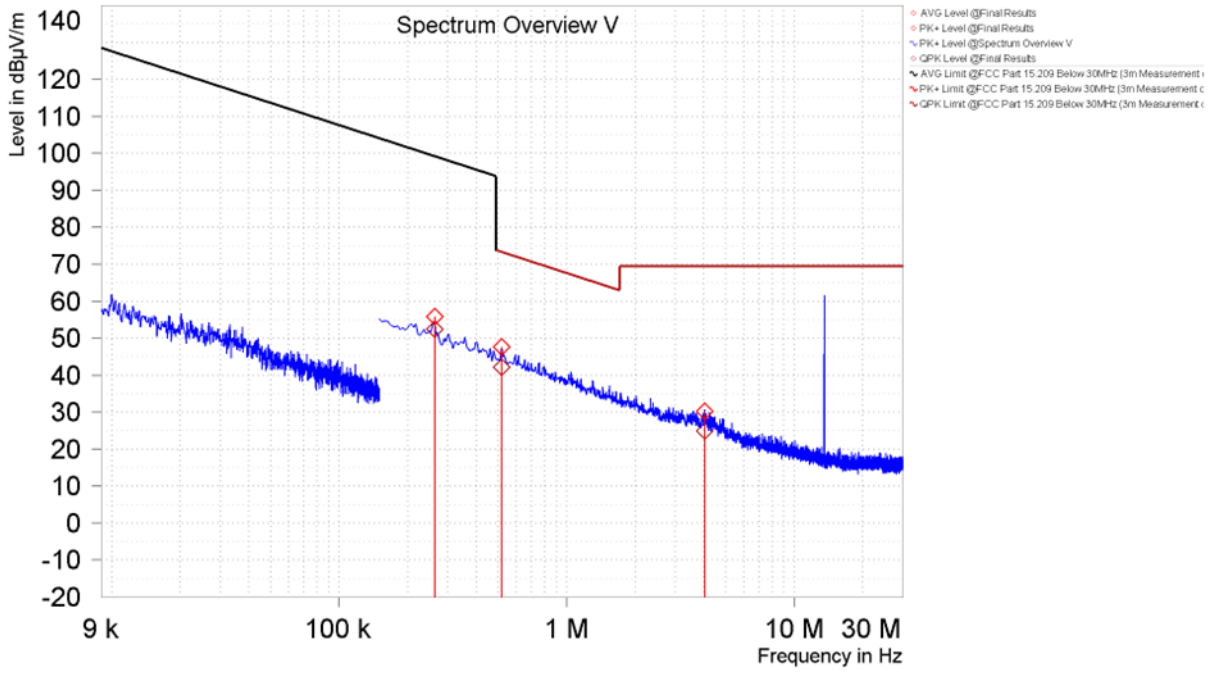


Figure 39. Out of Band Emissions Below 30MHz, Coaxial Loop, 5122 (No Credential)

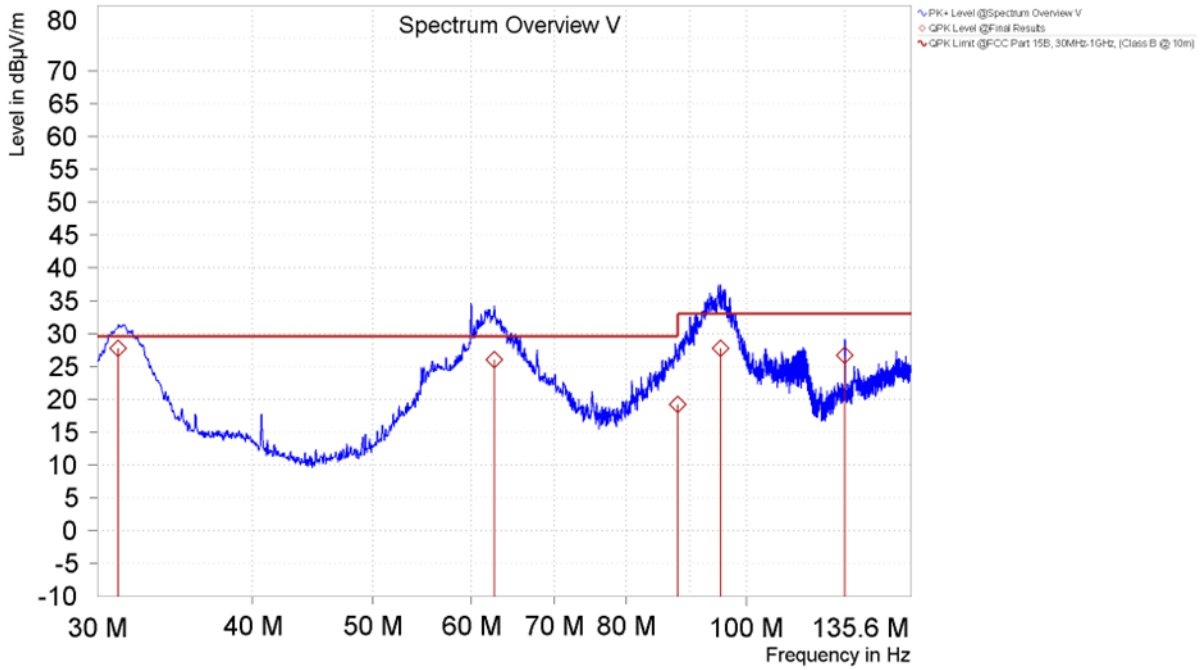


Figure 40. Out of Band Emissions Above 30MHz, Vertical Polarity, 5122 (No Credential)

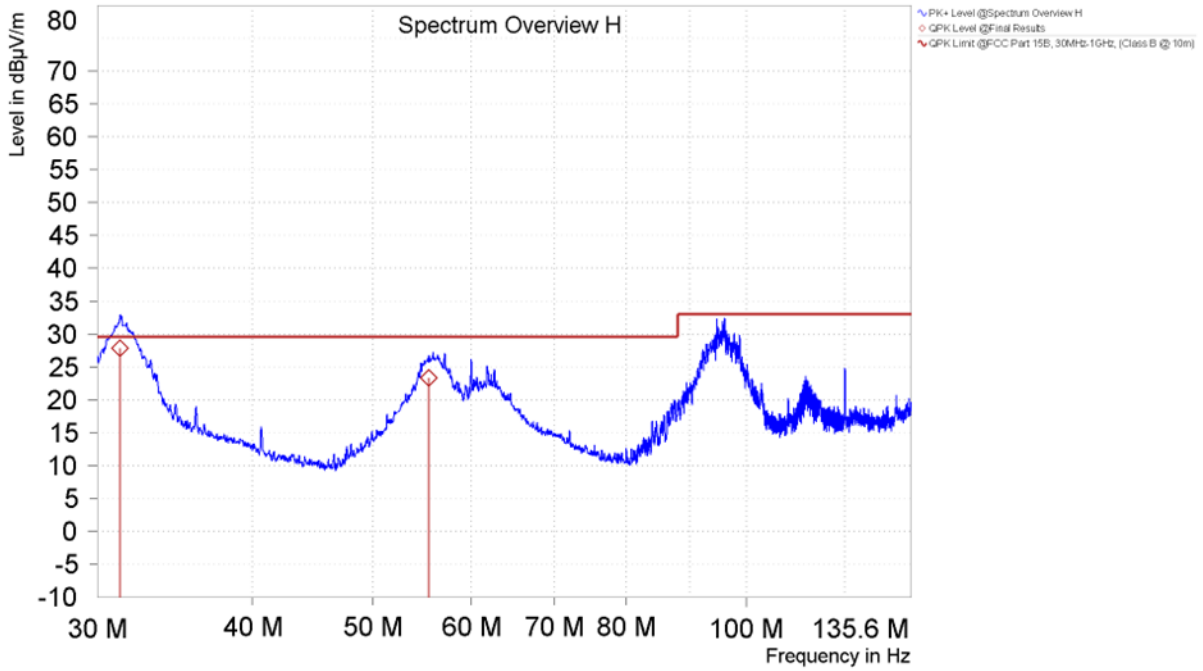


Figure 41. Out of Band Emissions Above 30MHz, Horizontal Polarity, 5122 (No Credential)

Electromagnetic Compatibility Criteria for Intentional Radiators

Frequency Stability

Test Requirement(s): **15.225(e)** The frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

RSS-210 (B.6.b) The frequency tolerance of the carrier signal shall be maintained within +/-0.01% (± 100 ppm) of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test Procedure: Measurements are in accordance with section 6.8 of ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024. The EUT was placed in the Environmental Chamber and allowed to reach desired temperature. A spectrum analyzer was connected to a magnetic field loop antenna and used to measure the frequency drift via a radiated path measurement. The EUT was set to transmit in the operating frequency range. Frequency drift was investigated for the extreme temperatures and nominal temperature, until the unit is stabilized then recorded the reading in tabular format with the temperature range of -20º to 50ºC.

Test Results: The Color Card Printer, DTCii Plus was compliant with Part 15.225 (e) and RSS-210 (B.6.b) requirement(s) of this section.

Test Engineer(s): Bryan Taylor

Test Date(s): 12/9/2025

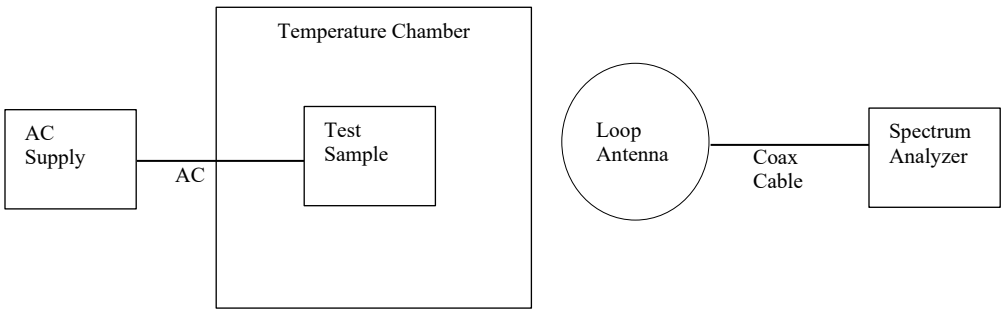


Figure 42. Temperature Stability Test Setup

Operating Freqeuncy:	13,560,000	Hz
Reference Voltage:	120	VAC
Deviation Limit:	0.01	%

Voltage %	Voltage (VAC)	Temp (°C)	Measured Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	Limit (%)
100%	120	-30	13,559,801	-199	-0.0015	0.01
100%	120	-20	13,559,773	-227	-0.0017	0.01
100%	120	-10	13,559,762	-238	-0.0018	0.01
100%	120	0	13,559,759	-241	-0.0018	0.01
100%	120	10	13,559,757	-243	-0.0018	0.01
100%	120	20	13,559,763	-237	-0.0017	0.01
100%	120	30	13,559,759	-241	-0.0018	0.01
100%	120	40	13,559,761	-239	-0.0018	0.01
100%	120	50	13,559,758	-242	-0.0018	0.01
115%	138	20	13,559,764	-236	-0.0017	0.01
85%	102	20	13,559,762	-238	-0.0018	0.01

Figure 43. Frequency Stability Test Results (Ribbon)

Operating Freqeuncy:	13,560,000	Hz
Reference Voltage:	120	VAC
Deviation Limit:	0.01	%

Voltage %	Voltage (VAC)	Temp (°C)	Measured Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	Limit (%)
100%	120	-30	13,559,833	-167	-0.0012	0.01
100%	120	-20	13,559,812	-188	-0.0014	0.01
100%	120	-10	13,559,802	-198	-0.0015	0.01
100%	120	0	13,559,773	-227	-0.0017	0.01
100%	120	10	13,559,763	-237	-0.0017	0.01
100%	120	20	13,559,761	-239	-0.0018	0.01
100%	120	30	13,559,757	-243	-0.0018	0.01
100%	120	40	13,559,760	-240	-0.0018	0.01
100%	120	50	13,559,762	-238	-0.0018	0.01
115%	138	20	13,559,765	-235	-0.0017	0.01
85%	102	20	13,559,768	-232	-0.0017	0.01

Figure 44. Frequency Stability Test Results (5122)

Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

MET Asset #	Description	Manufacturer	Model	Last Cal Date	Cal Due Date
1A1234	FSV Signal Analyzer	Rohde & Schwarz	FSV 40	03/13/2025	03/13/2026
1A1250	EMI Test Receiver	Rohde & Schwarz	ESW44	03/28/2025	03/28/2026
1A1176	Active Loop Antenna (9KHz-30MHz)	ETS-Lindgren	6502	08/22/2024	08/22/2026
1A1050	Bi-Log Antenna	Schaffner	CBL-6112D	03/05/2024	03/05/2026
1A1065	EMI Test Receiver	Rohde & Schwarz	ESCI	08/28/2025	08/28/2026
1A1177	Pulse Limiter	Rohde & Schwarz	ESH3Z2	12/11/2024	12/11/2025
3A3215	DC Milli-Ohm Meter	Valhalla	4150ATC	05/28/2025	05/28/2026
3A3377	Thermohygrometer with barometer	Omega	Q68706	03/31/2025	03/31/2026
1A1257	True-RMS Multimeter	Fluke	179	02/07/2025	02/07/2026
1A1123	LISN	TESEQ	NNB 51	12/11/2024	12/11/2025
1A1225	Environmental Chamber	Espec	EXP-2H/New	05/16/2025	05/16/2026
1A1099	Generator	Com-Power	CGO-51000	See Note	
1A1044	Generator	Com-Power	CG-520	See Note	
1A1073	Multi Device Controller	ETS	2090	See Note	
1A1074	System Controller	Panasonic	WV-CU101	See Note	
1A1080	Multi-Device	ETS	2090	See Note	

Table 15. Test Equipment List

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

End of Report