TEST REPORT

Report Number: R15513446-E1

Applicant	:	Garmin International Inc. 1200 East 151St Street Olathe, KS 66062-3426, USA
Model	:	A04909
FCC ID	:	IPH-04909
IC	:	1792A-04909
EUT Description	:	Extremity Worn Digital Transceiver
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C: 2024 RSS-210 ISSUE 11: 2024 RSS-GEN ISSUE 5 + A1 + A2: 2021

Date Of Issue:
2025-01-17

Prepared by:
UL LLC
12 Laboratory Dr.
Research Triangle Park, NC 27709 U.S.A.
TEL: (919) 549-1400

ACCREDITED
CERT #0751.06

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
v1	2024-12-17	Initial Issue	Chandler Stanley
V2	2025-01-17	Revised EUT description	Chandler Stanley

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151St Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Extremity Worn Digital Transceiver

MODEL: A04909

SERIAL NUMBER: 3493239303, 3493239060, 3493238982

SAMPLE RECEIPT DATE: 2024-10-21

DATE TESTED: 2024-10-22 to 2024-11-05

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C: 2024	
ISED RSS-210 Issue 11:2024	Refer to Section 3
ISED RSS-GEN Issue 5 + A1 + A2: 2021	

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
For UL LLC By:

Brian Kiewra
Engineer
Consumer, Medical and IT Segment
UL LLC

Prepared By:

Chandler Stanley
Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- ANSI C63.10-2020
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- RSS-GEN Issue 5 + A1 + A2: 2021
- RSS-210 Issue 11:2024

3. SUMMARY OF TEST RESULTS

Requirement Description	Requirement Clause Number	Result	Remarks
Occupied Bandwidth	FCC §15.215 (c) RSS-Gen 6.7	Compliant	None
Fundamental Measurements.	FCC §15.225 (a-d) FCC §15.209 (d) IC RSS-210, Annex B.6 IC RSS-GEN, Section 8.9 (Transmitter)		
Tx Spurious Emissions			
Frequency Stability	FCC §15.225 (e) RSS-210, Annex B.6		
AC Mains Line Conducted Emissions	FCC §15.207 IC RSS-GEN, Section 8.8		

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, Certificate Number #0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U_{Lab}
Radio Frequency (Spectrum Analyzer)	419.38 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is an extremity worn digital transceiver with BT, BLE, ANT+, 802.11b/g/n 2.4GHz WLAN, NFC, and Global Navigation Satellite System (GNSS) receiver. This report covers the full testing of the NFC radio.

6.2. MAXIMUM ELECTRIC FIELD STRENGTH

The transmitter has a maximum peak radiated electric field strength as follows:

Fundamental Frequency (MHz)	E-Field (dBuV/m)
13.56	29.72

6.3. SOFTWARE AND FIRMWARE

The software version installed during testing was 3.51.

6.4. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated under three orthogonal orientations X, Y, and Z. The Y orientation was determined to be the worst-case orientation. Therefore, all final radiated testing was performed with the EUT in the Y orientation.

In addition, Type A, B, and F with and without a tag were investigated to determine the worst case based on the highest power and spurious emissions. Type A with a tag was determined to be the worst case and therefore selected for all final tests.

The distance between the EUT and NFC reader was also investigated, and the worst-case condition occurs when the NFC reader and EUT are separated by 3cm; therefore, all final radiated testing was performed with the EUT and NFC reader separated by 3cm.

6.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
NFC Reader	Synnix Technology Co.	CL-2100R	NFCREAD#1	NA
Laptop	Lenovo	T14	PF4FKVY8	NA
Laptop Charger	Lenovo	ADLX65YCC2D	NA	NA
AC Adaptor	Sony	XQZ-UC11-010-236-21	32223W09205418	NA

I/O CABLES

I/O Cable List						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	Proprietary	1	4 pin Proprietary	Non-Shielded	<3m	Used for charging only

SETUP DIAGRAM

Please refer to R15513446-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Common Equipment					
Conducted Room 1					
90411	Spectrum Analyzer	Keysight Technologies	N9030A	2024-08-01	2025-08-01
207726	Temp/Humid Chamber	Thermotron	SM-32-8200	2024-01-12	2025-01-12
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA
Additional Equipment used					
24962	Near Field Probe Kit	EMC Test Systems	7405	NA	NA

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
0.009-30MHz					
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-02
30-1000 MHz					
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-30	2026-01-30
Gain-Loss Chains					
91974	Gain-loss string: 0.009-30MHz	Various	Various	2024-05-08	2025-05-08
91976	Gain-loss string: 25-1000MHz	Various	Various	2024-05-08	2025-05-08
Receiver & Software					
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-03-05	2025-03-05
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
241205	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2024-04-04	2025-04-04
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2024-08-01	2025-08-01
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2024-08-01	2025-08-01
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2024-04-04	2025-04-04
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Miscellaneous					
84681	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2024-04-04	2025-04-04

8. 20dB and 99% BANDWIDTH

LIMITS

§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.

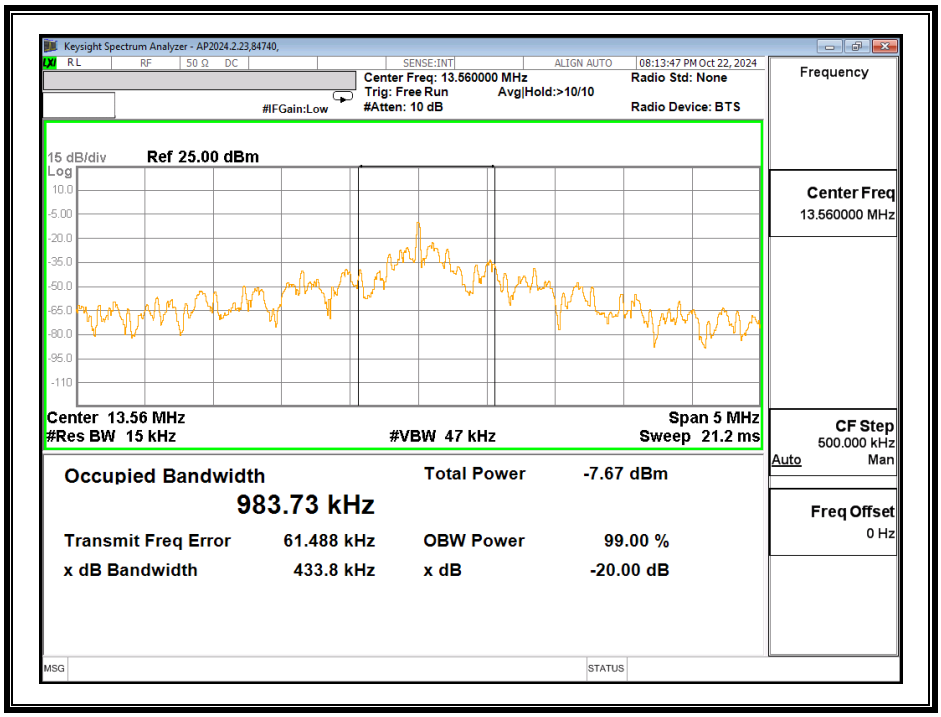
TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1-5% of the 20dB bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

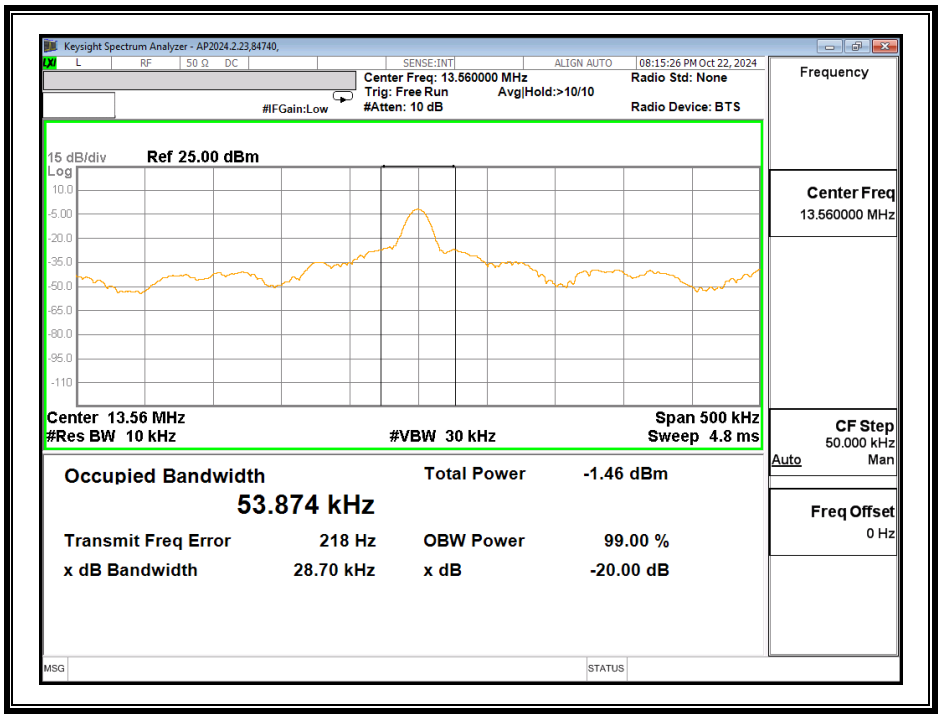
RESULTS – TAG ON

Mode	Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (MHz)
Type A	13.56	433.8	0.98373
Type B	13.56	28.7	0.053874
Type F	13.56	1093	1.7428

8.1. Type A (CE Mode)

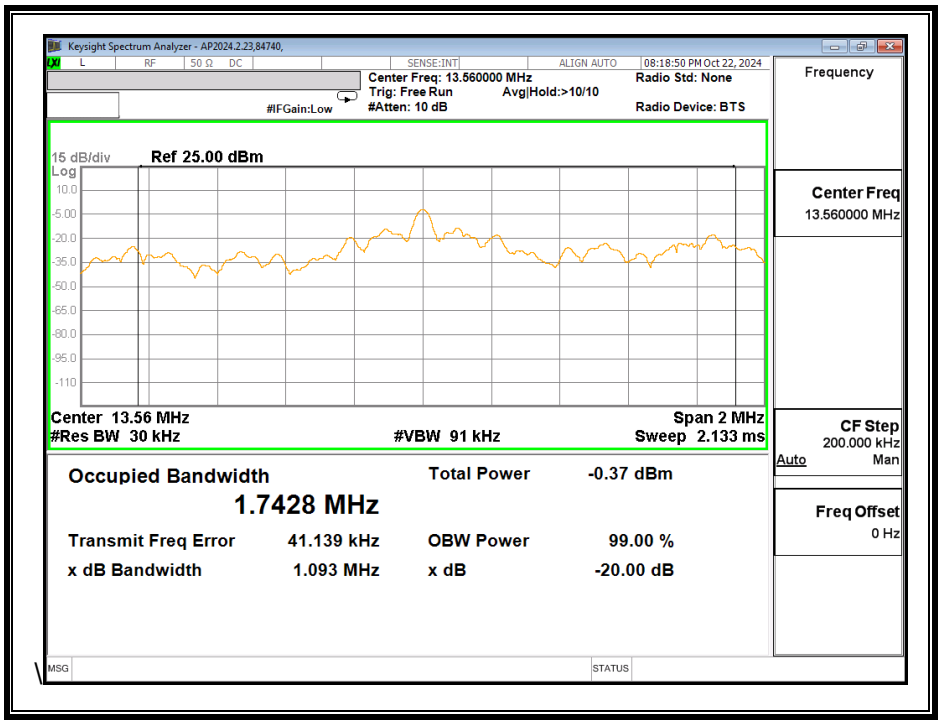


8.2. Type B (CE Mode)



Note: Because the measured signal is CW or CW-like, adjusting the RBW per C63.10 would not be practical since the measured bandwidth will always follow the RBW.

8.3. Type F (CE Mode)



9. RADIATED EMISSION TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMIT

FCC §15.225
IC RSS-210, Annex B.6
IC RSS-GEN, Section 8.9 (Transmitter)

(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.

(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.

(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.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.
§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the filed strength from uV/m to dBuV/m is:
Limit (dBuV/m) = 20 log limit (uV/m)

In addition:
§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.10 - 2020

The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 13.56 MHz; therefore, the frequency range was investigated from 9kHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

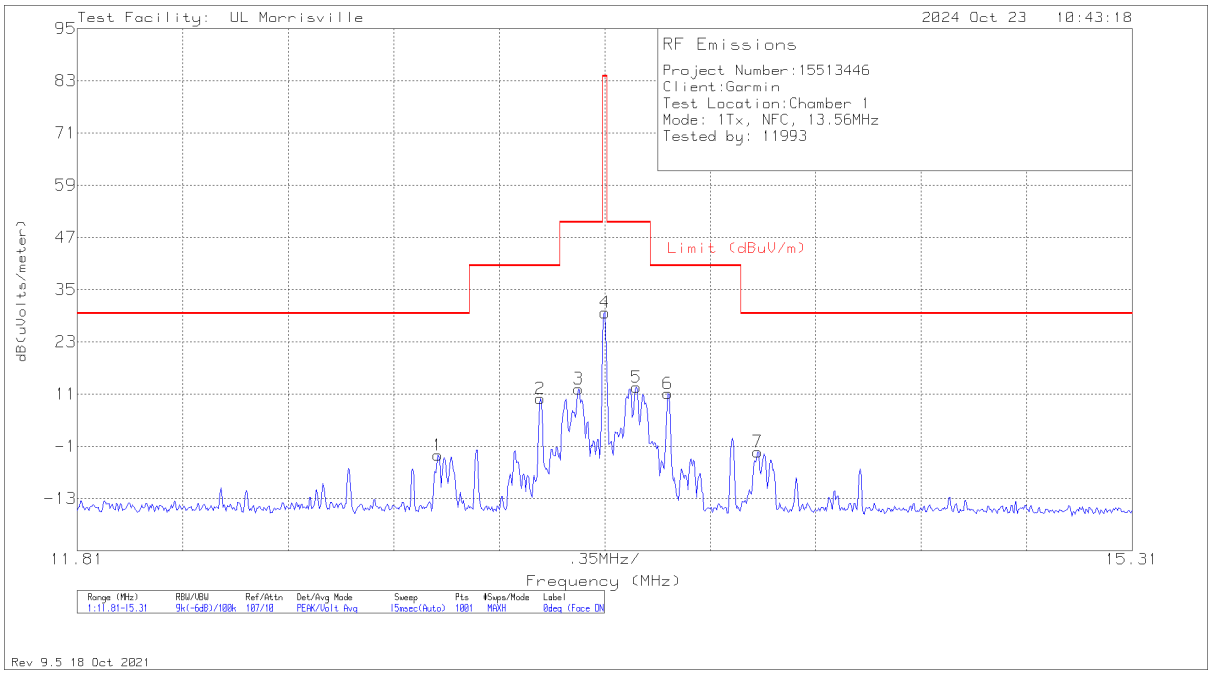
Note: For all Below 30MHz test data, all measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance)

RESULTS

9.2. FUNDAMENTAL AND SPURIOUS EMISSIONS (<30MHz)

9.2.1. TYPE A, TAG ON

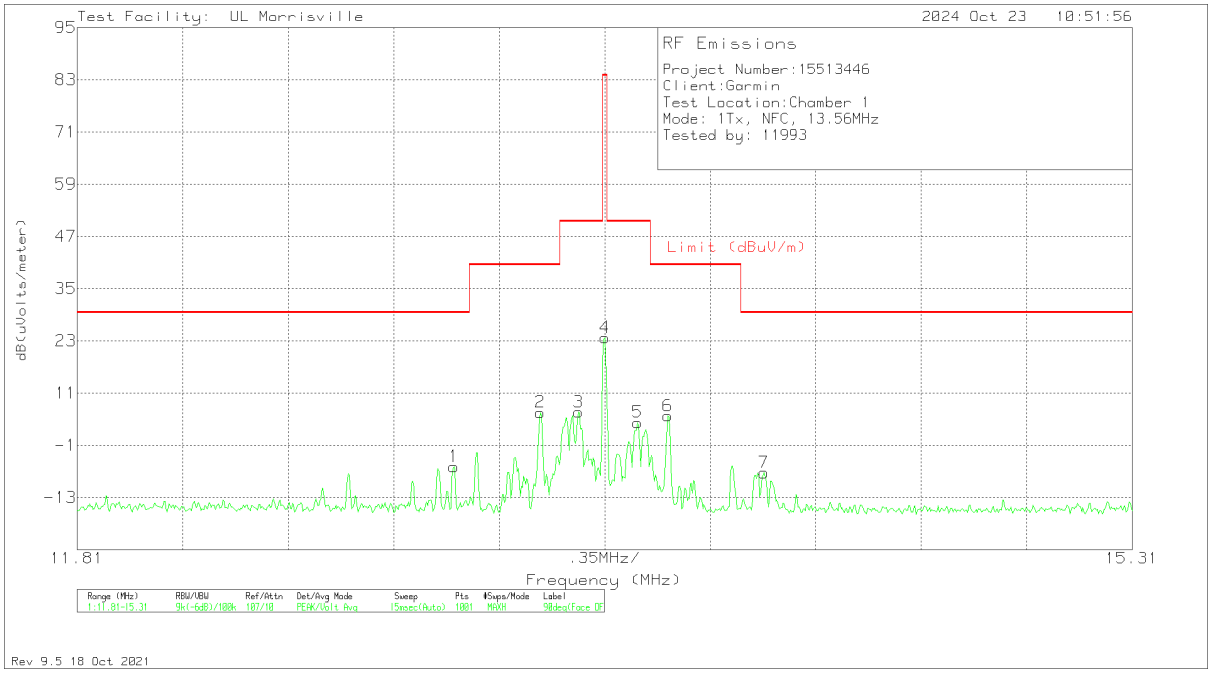
FUNDAMENTAL



ANTENNA FACE ON

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	13.007	26.54	Pk	9.8	.6	-40	-3.06	29.5	-32.56	163	0 degs
2	13.3465	39.57	Pk	9.8	.6	-40	9.97	40.5	-30.53	163	0 degs
3	13.4725	41.79	Pk	9.8	.6	-40	12.19	50.5	-38.31	163	0 degs
4	13.56	59.32	Pk	9.8	.6	-40	29.72	84	-54.28	163	0 degs
5	13.665	42.14	Pk	9.8	.6	-40	12.54	50.5	-37.96	163	0 degs
6	13.77	40.79	Pk	9.7	.6	-40	11.09	40.5	-29.41	163	0 degs
7	14.0675	27.42	Pk	9.7	.6	-40	-2.28	29.5	-31.78	163	0 degs

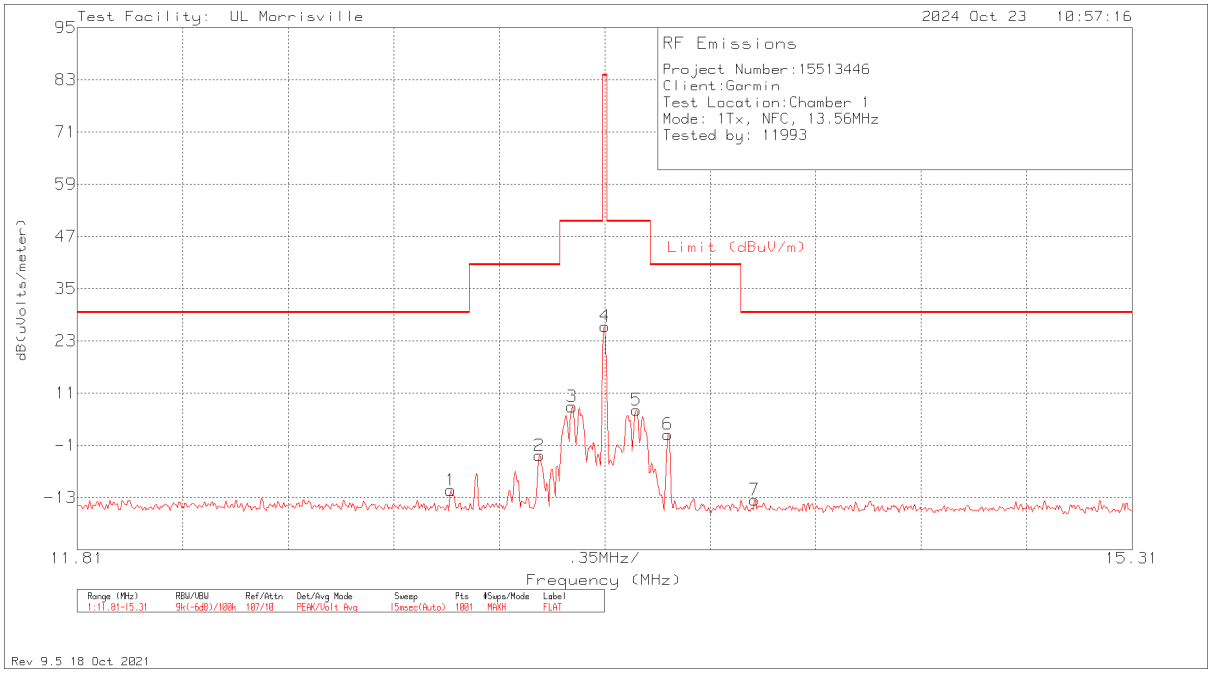
Pk - Peak detector



ANTENNA FACE OFF

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	13.0595	23.7	Pk	9.8	.6	-40	-5.9	29.5	-35.4	70	90 degs
2	13.3465	36.16	Pk	9.8	.6	-40	6.56	40.5	-33.94	70	90 degs
3	13.4725	36.23	Pk	9.8	.6	-40	6.63	50.5	-43.87	70	90 degs
4	13.56	53.32	Pk	9.8	.6	-40	23.72	84	-60.28	70	90 degs
5	13.6685	33.85	Pk	9.8	.6	-40	4.25	50.5	-46.25	70	90 degs
6	13.77	35.45	Pk	9.7	.6	-40	5.75	40.5	-34.75	70	90 degs
7	14.0885	22.41	Pk	9.7	.6	-40	-7.29	29.5	-36.79	70	90 degs

Pk - Peak detector

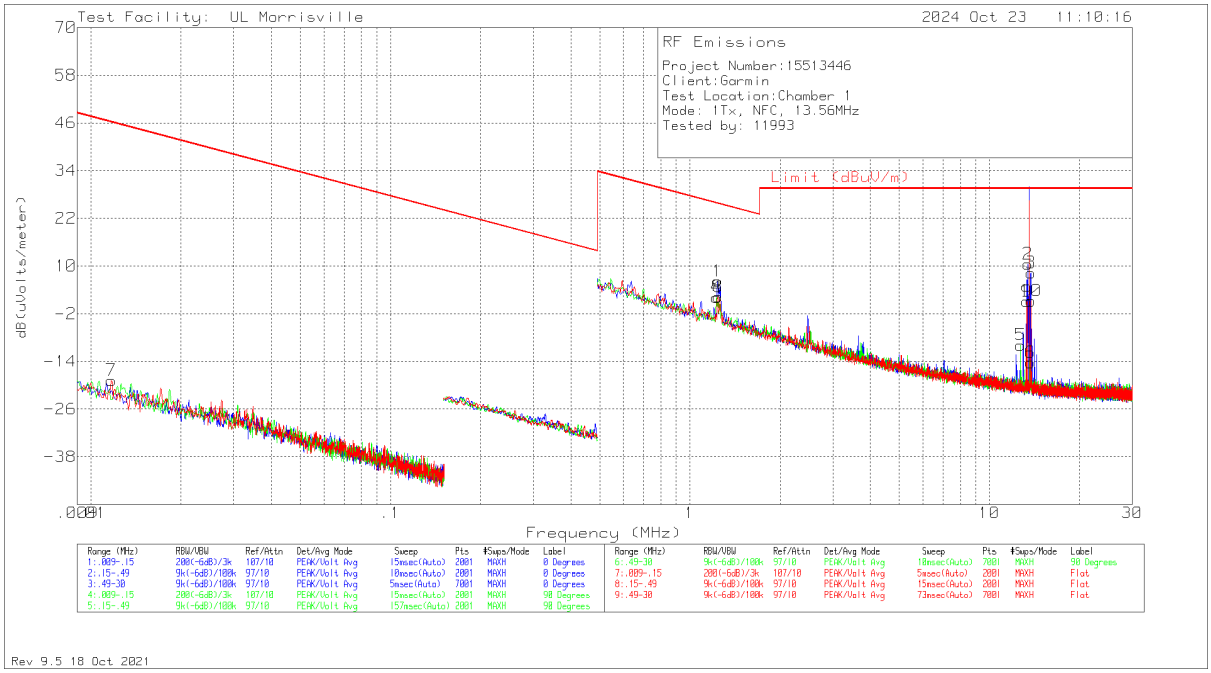


ANTENNA FACE FLAT

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	13.049	18.27	Pk	9.8	.6	-40	-11.33	29.5	-40.83	261	Flat
2	13.343	26.25	Pk	9.8	.6	-40	-3.35	40.5	-43.85	261	Flat
3	13.4515	37.49	Pk	9.8	.6	-40	7.89	50.5	-42.61	261	Flat
4	13.56	55.95	Pk	9.8	.6	-40	26.35	84	-57.65	261	Flat
5	13.665	36.72	Pk	9.8	.6	-40	7.12	50.5	-43.38	261	Flat
6	13.77	31.2	Pk	9.7	.6	-40	1.5	40.5	-39	261	Flat
7	14.057	16.15	Pk	9.7	.6	-40	-13.55	29.5	-43.05	261	Flat

Pk - Peak detector

SPURIOUS EMISSION – E FIELD

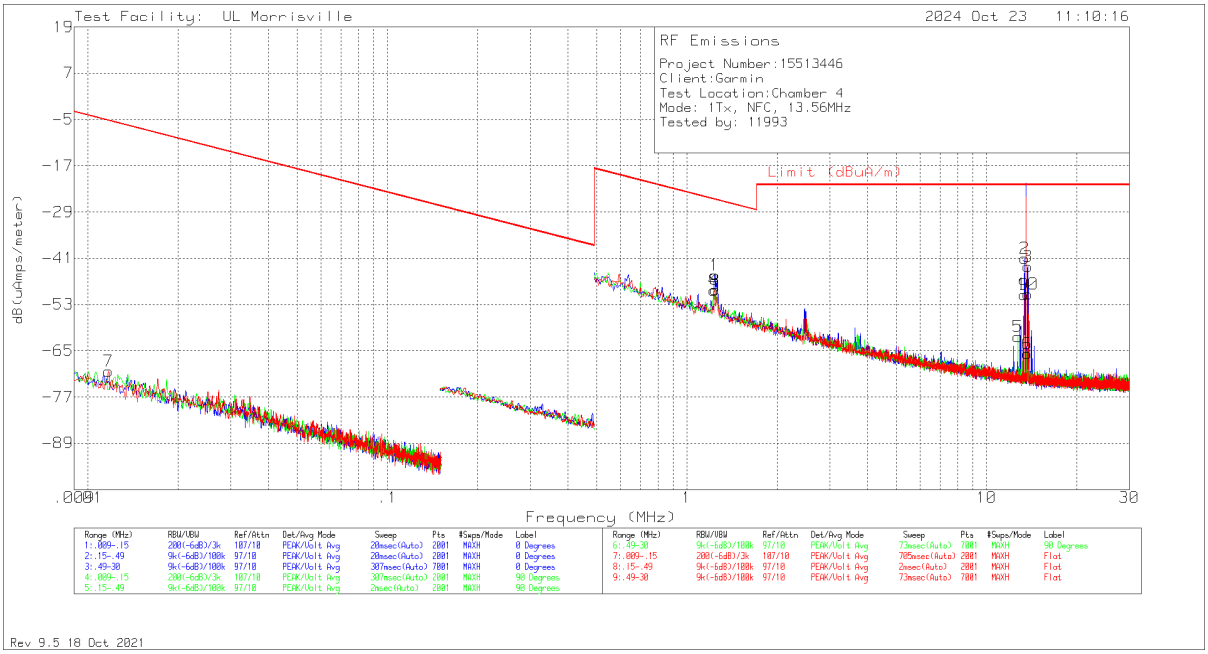


<30MHz SPURIOUS EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
7	.0117	43.61	Pk	17.5	.1	-80	-18.79	46.24	66.24	-65.03	0-360	Flat
4	1.2278	30.93	Pk	11	.2	-40	2.13	25.82	-	-23.69	0-360	90 degs
1	1.23623	34.96	Pk	11	.2	-40	6.16	25.76	-	-19.6	0-360	0 degs
8	1.24045	31.07	Pk	11	.2	-40	2.27	25.73	-	-23.46	0-360	Flat
5	12.71218	19.62	Pk	9.9	.6	-40	-9.88	29.54	-	-39.42	0-360	90 degs
9	13.3488	30.7	Pk	9.8	.6	-40	1.1	29.54	-	-28.44	0-360	Flat
2	13.43312	40.11	Pk	9.8	.6	-40	10.51	29.54	-	-19.03	0-360	0 degs
6	13.69873	15.33	Pk	9.8	.6	-40	-14.27	29.54	-	-43.81	0-360	90 degs
3	13.7704	38	Pk	9.7	.6	-40	8.3	29.54	-	-21.24	0-360	0 degs
10	13.7704	30.94	Pk	9.7	.6	-40	1.24	29.54	-	-28.3	0-360	Flat

Pk - Peak detector

SPURIOUS EMISSION – H FIELD



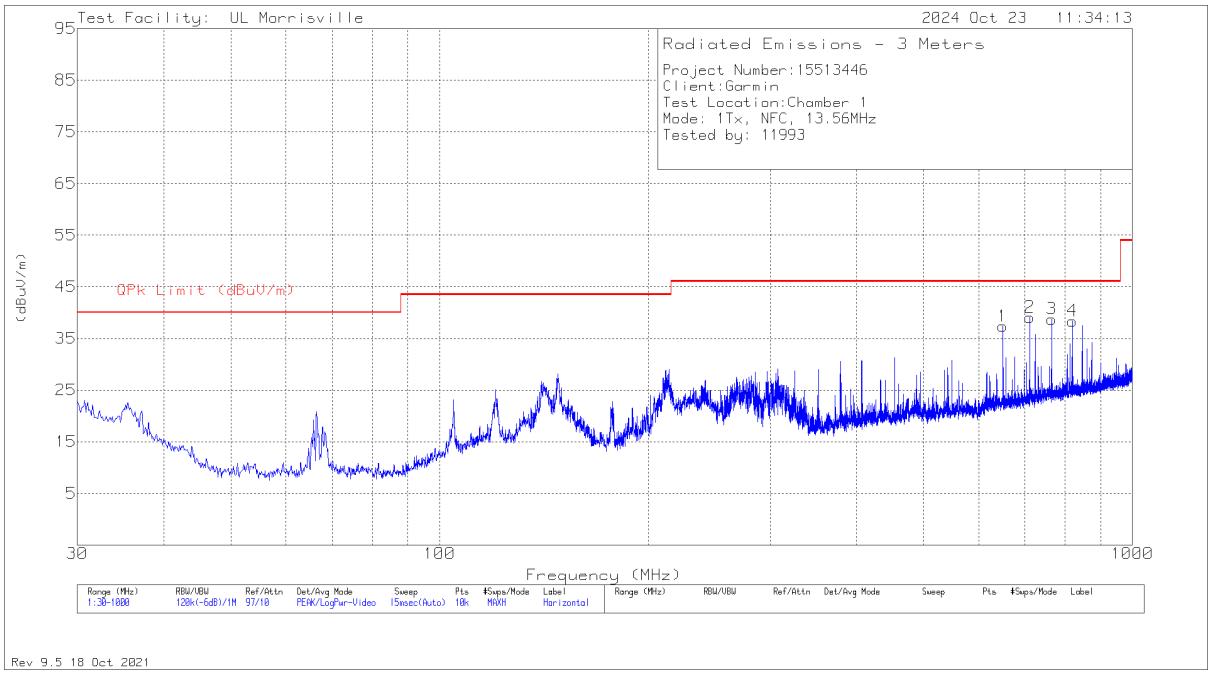
<30MHz SPURIOUS EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
7	.0117	43.61	Pk	-34	.1	-80	-70.29	-5.26	14.74	-65.03	0-360	Flat
4	1.2278	30.93	Pk	-40.5	.2	-40	-49.37	-25.68	-	-23.69	0-360	90 degs
1	1.23623	34.96	Pk	-40.5	.2	-40	-45.34	-25.74	-	-19.6	0-360	0 degs
8	1.24045	31.07	Pk	-40.5	.2	-40	-49.23	-25.77	-	-23.46	0-360	Flat
5	12.71218	19.62	Pk	-41.6	.6	-40	-61.38	-21.96	-	-39.42	0-360	90 degs
9	13.3488	30.7	Pk	-41.7	.6	-40	-50.4	-21.96	-	-28.44	0-360	Flat
2	13.43312	40.11	Pk	-41.7	.6	-40	-40.99	-21.96	-	-19.03	0-360	0 degs
6	13.69873	15.33	Pk	-41.7	.6	-40	-65.77	-21.96	-	-43.81	0-360	90 degs
3	13.7704	38	Pk	-41.8	.6	-40	-43.2	-21.96	-	-21.24	0-360	0 degs
10	13.7704	30.94	Pk	-41.8	.6	-40	-50.26	-21.96	-	-28.3	0-360	Flat

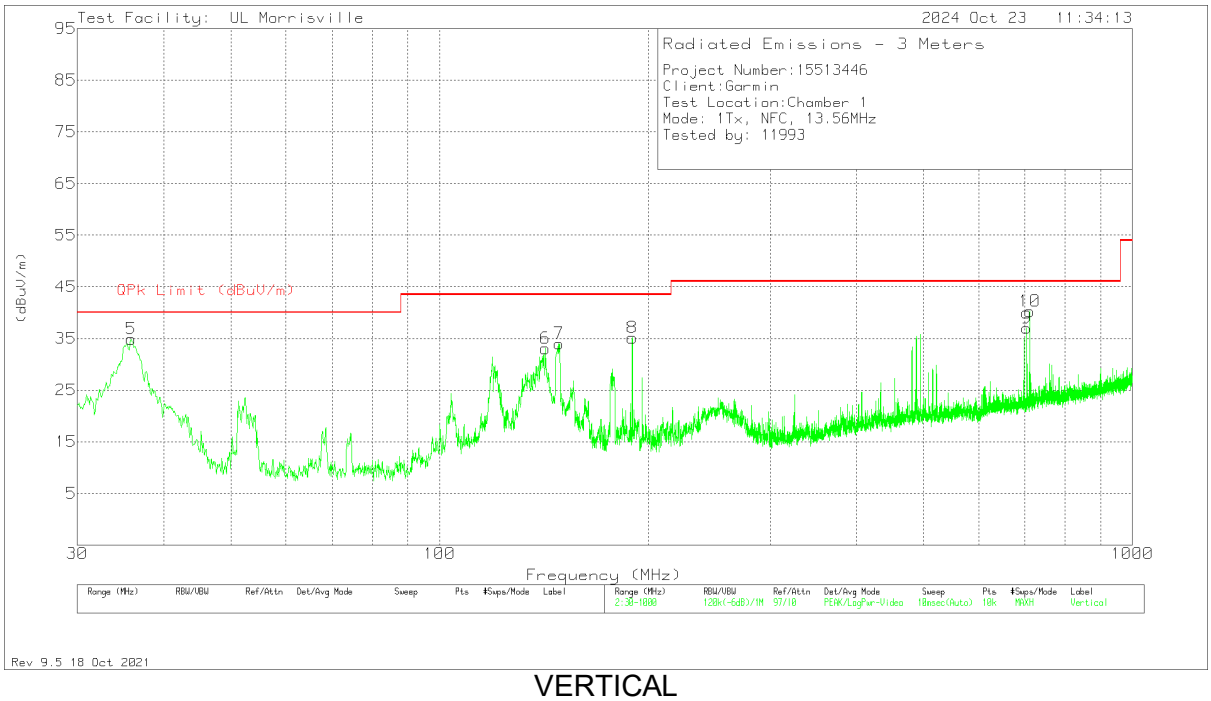
Pk - Peak detector

9.3. TX SPURIOUS EMISSION 30 TO 1000 MHz

9.3.1. TYPE A, WITH TAG



HORIZONTAL



VERTICAL

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	35.8767	39.17	Qp	22.8	-31.5	30.47	40	-9.53	144	103	V
6	142.229	44.27	Pk	19.3	-30.5	33.07	43.52	-10.45	0-360	100	V
7	148.922	45.31	Pk	18.8	-30.1	34.01	43.52	-9.51	0-360	100	V
8	189.856	47.23	Pk	17.9	-30	35.13	43.52	-8.39	0-360	100	V
1	649.83	39.37	Pk	25.9	-27.9	37.37	46.02	-8.65	0-360	100	H
9	704.053	38.62	Pk	26.4	-28	37.02	46.02	-9	0-360	100	V
2	711.328	40.6	Pk	26.5	-28	39.1	46.02	-6.92	0-360	100	H
10	711.3208	36.8	Qp	26.5	-28	35.3	46.02	-10.72	262	108	V
3	765.551	39.77	Pk	27.1	-28.1	38.77	46.02	-7.25	0-360	100	H
4	819.871	38.09	Pk	27.9	-27.6	38.39	46.02	-7.63	0-360	100	H

Pk - Peak detector
Qp - Quasi-Peak detector

10. FREQUENCY STABILITY

LIMIT

§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.

IC RSS-210, Annex B.6
Carrier frequency stability shall be maintained to ±0.01% (±100 ppm).

TEST PROCEDURE

ANSI C63.10-2020 Clause 6.8

RESULTS

No non-compliance noted.

Nominal/High Voltage: 5.5Vdc.

10.1. TYPE A, WITH TAG

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(Vdc)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
5.50	50	13.5595032	0.276	13.5595236	-1.234	13.5595265	-1.443	13.5595299	-1.698	± 100
5.50	40	13.5595114	-0.335	13.5595037	0.233	13.5595031	0.277	13.5595026	0.320	± 100
5.50	30	13.5595129	-0.439	13.5595107	-0.281	13.5595091	-0.159	13.5595078	-0.065	± 100
5.50	***20***	***13.5595069***	***0.000***	***13.5595071***	***-0.018***	***13.5595071***	***-0.013***	***13.5595071***	***-0.013***	***± 100***
5.50	10	13.5595615	-4.030	13.5595458	-2.871	13.5595416	***-2.562***	13.5595385	-2.332	± 100
5.50	0	13.5595644	-4.241	13.5595626	-4.106	13.5595593	-3.867	13.5595571	-3.699	± 100
5.50	-10	13.5595658	-4.342	13.5595672	-4.445	13.5595667	-4.407	13.5595664	-4.390	± 100
5.50	-20	13.5595661	-4.364	13.5595665	-4.398	13.5595659	-4.348	13.5595652	-4.298	± 100
4.50	20	13.5595151	-0.603	13.5595104	-0.261	13.5595098	-0.217	13.5595094	-0.182	± 100

Tested by: 33499/84740 and 84740
Test date: 2024-10-30 and 2024-11-05

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

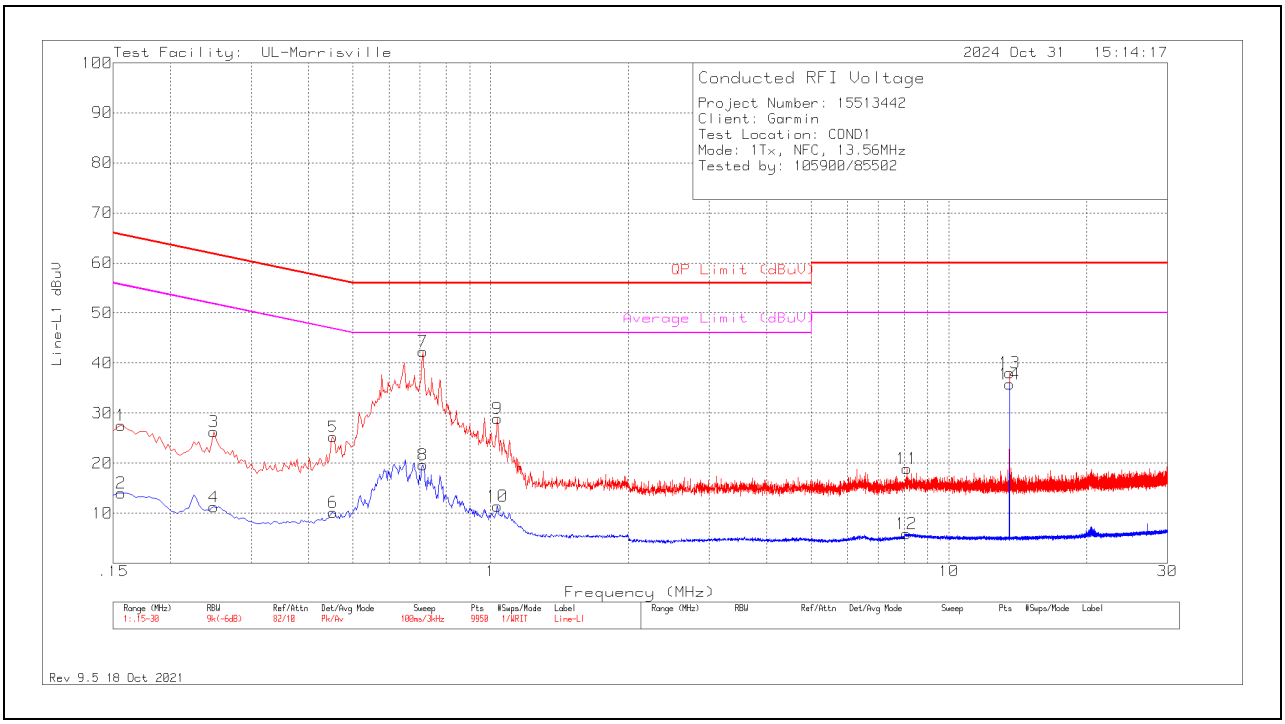
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

RESULTS

11.1. AC POWER LINE NORM

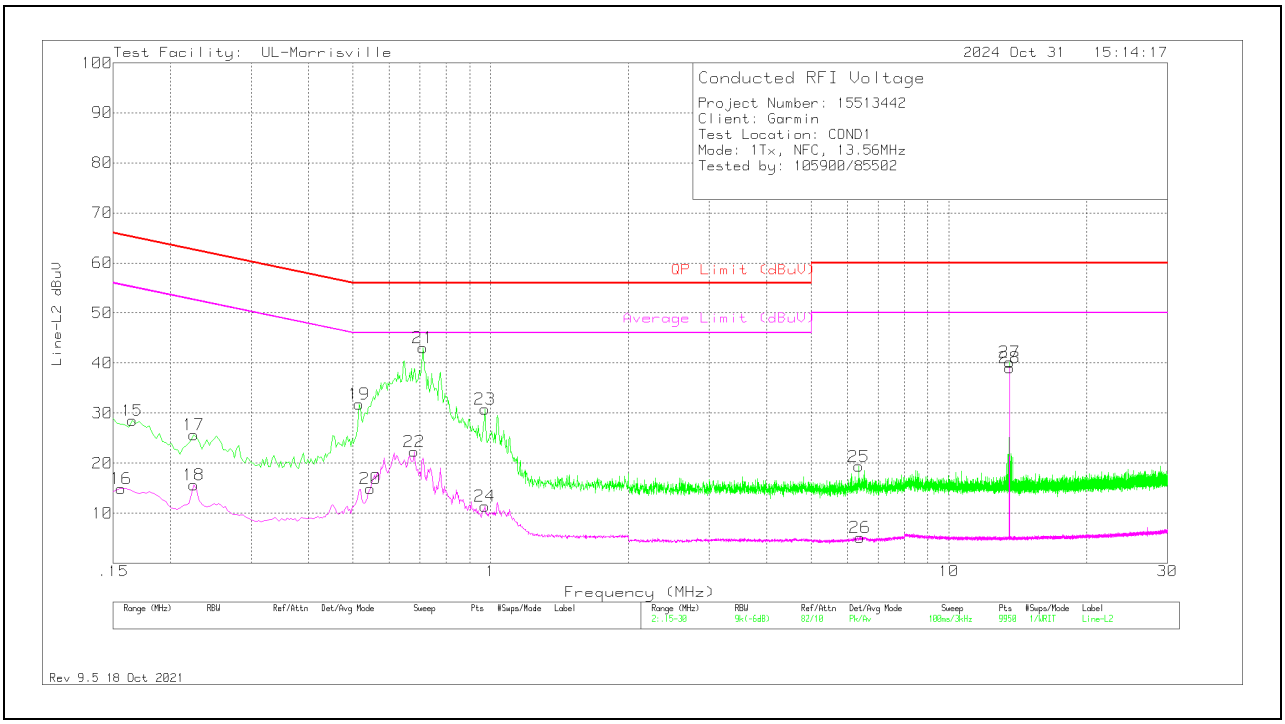
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.156	17.52	Pk	.2	9.8	27.52	65.67	-38.15	-	-
2	.156	4.01	Av	.2	9.8	14.01	-	-	55.67	-41.66
3	.249	16.39	Pk	.1	9.8	26.29	61.79	-35.5	-	-
4	.249	1.3	Av	.1	9.8	11.2	-	-	51.79	-40.59
5	.453	15.32	Pk	.1	9.8	25.22	56.82	-31.6	-	-
6	.453	.24	Av	.1	9.8	10.14	-	-	46.82	-36.68
7	.711	32.48	Pk	0	9.8	42.28	56	-13.72	-	-
8	.711	9.84	Av	0	9.8	19.64	-	-	46	-26.36
9	1.035	19.11	Pk	0	9.8	28.91	56	-27.09	-	-
10	1.035	1.59	Av	0	9.8	11.39	-	-	46	-34.61
12	8.082	-4.27	Av	.1	10	5.83	-	-	50	-44.17
11	8.094	8.76	Pk	.1	10	18.86	60	-41.14	-	-
13	13.56	27.93	Pk	.1	10	38.03	60	-21.97	-	-
14	13.56	25.66	Av	.1	10	35.76	-	-	50	-14.24

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
16	.156	4.94	Av	.2	9.8	14.94	-	-	55.67	-40.73
15	.165	18.48	Pk	.2	9.8	28.48	65.21	-36.73	-	-
17	.225	15.76	Pk	.1	9.8	25.66	62.63	-36.97	-	-
18	.225	5.69	Av	.1	9.8	15.59	-	-	52.63	-37.04
19	.516	21.96	Pk	0	9.8	31.76	56	-24.24	-	-
20	.546	5.05	Av	0	9.8	14.85	-	-	46	-31.15
22	.681	12.53	Av	0	9.8	22.33	-	-	46	-23.67
21	.711	33.28	Pk	0	9.8	43.08	56	-12.92	-	-
23	.972	21.01	Pk	0	9.8	30.81	56	-25.19	-	-
24	.972	1.63	Av	0	9.8	11.43	-	-	46	-34.57
25	6.357	9.33	Pk	.1	9.9	19.33	60	-40.67	-	-
26	6.402	-4.87	Av	.1	9.9	5.13	-	-	50	-44.87
27	13.56	30.05	Pk	.1	10	40.15	60	-19.85	-	-
28	13.56	28.98	Av	.1	10	39.08	-	-	50	-10.92

Pk - Peak detector
Av - Average detection

12. SETUP PHOTOS

Please refer to R15513446-EP1 for setup photos

END OF TEST REPORT