

TEST REPORT

Report Number. : 14932130-E3V1

Applicant : WiTricity Corporation
57 Water Street
Watertown, MA, 02472
US

Model : WWA1101

FCC ID : Contains: XPYJODYW377
Contains: XMR201903EG25G

EUT Description : WallBox

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
FCC 47 CFR PART 15 SUBPART E
FCC 47 CFR PART 2, 22H, 24E, 27C, 90S

Date Of Issue:

2025-02-18

Prepared by:

UL VERIFICATION SERVICES

47173 Benicia Street

Fremont, CA 94538 U.S.A.

TEL: (510) 319-4000

FAX: (510) 661-0888



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-02-18	Initial Issue	---

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	4
2. TEST RESULT SUMMARY	5
3. TEST METHODOLOGY	7
4. FACILITIES AND ACCREDITATION	7
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	8
5.1. METROLOGICAL TRACEABILITY	8
5.2. DECISION RULES.....	8
5.3. MEASUREMENT UNCERTAINTY.....	8
5.4. SAMPLE CALCULATION	8
6. EQUIPMENT UNDER TEST	9
6.1. EUT DESCRIPTION	9
6.2. MAXIMUM OUTPUT POWER.....	9
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	9
6.4. SOFTWARE AND FIRMWARE.....	9
6.5. WORST-CASE CONFIGURATION AND MODE	10
6.6. DESCRIPTION OF TEST SETUP.....	11
7. MEASUREMENT METHOD.....	13
8. TEST AND MEASUREMENT EQUIPMENT	14
9. RADIATED TEST RESULTS.....	15
9.1. TRANSMITTER ABOVE 1 GHz	17
9.2. WORST CASE BELOW 30MHZ	19
9.3. WORST CASE BELOW 1 GHZ.....	20
9.4. WORST CASE 18-26 GHZ	22
9.5. WORST CASE 26-40 GHZ	24
10. SETUP PHOTOS.....	26

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: WiTricity Corporation
57 Water Street
Watertown, MA, 02472
US

EUT DESCRIPTION: Wallbox

MODEL: WWA1101

SERIAL NUMBER: WWA1101-10232520001000

SAMPLE RECEIPT DATE: 2023-10-20

DATE TESTED: 2023-12-14 to 2023-12-15

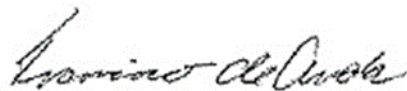
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C/E	Complies
FCC 47 CFR PART 2, 22H, 24E, 27C, 90S	Complies

UL Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

Approved & Released For
UL Verification Services Inc. By:



Francisco de Anda
Staff Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:



Henry Lau
Senior Project Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST RESULT SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

2.4 GHz

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Not Tested	ANSI C63.10 Section 11.6.
15.247 (a) (2)	6dB BW	Not Tested	None.
15.247 (b) (3)	Output Power	Not Tested	None.
See Comment	Average power	Not Tested	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	PSD	Not Tested	None.
15.247 (d)	Conducted Spurious Emissions	Not Tested	None.
15.209, 15.205	Radiated Emissions	Compliant	None.
15.207	AC Mains Conducted Emissions	Not Tested	Refer to 14932130-E1V1

5 GHz

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Not Tested	Per ANSI C63.10, Section 12.2.
See Comment	26dB BW/99% OBW	Not Tested	Per ANSI C63.10 Sections 6.9.2 and 6.9.3
15.407 (e)	6 dB BW	Not Tested	None.
15.407 (a) (1-4), (h) (1)	Output Power	Not Tested	None.
15.407 (a) (1-3, 5)	PSD	Not Tested	None.
15.209, 15.205, 15.407 (b)	Radiated Emissions	Compliant	None.
15.207	AC Mains Conducted Emissions	Not Tested	Refer to 14932130-E1V1.

LTE

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result	Remarks
Field Strength of Spurious Radiation	2.1053, 22.917 (a), 24.238 (a), 27.53 (h), 27.53 (m)(4) & (m) (6), 96.41(e) , 27.53 (g), 27.53 (c) (f), 27.53(a), 27.53(l), 90.543 (e)(f), 90.691 (a), 96.41(e)	RSS130§4.7 RSS132§5.5 RSS133§6.5.1 RSS139§6.6 RSS140§4.4 RSS192 §8.7.5 RSS195§5.6 & §5.6.2 RSS199§4.5	Complies	

3. TEST METHODOLOGY

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

- FCC CFR 47 Part 2
- FCC CFR 47 Part 15,
- KDB 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 662911 D01 v02r01,
- FCC KDB 905462 D02 v02/D03 v01r02/D06 v02
- FCC KDB 789033 D02 v02r01,
- FCC KDB 414788 D01 Radiated Test Site v01r01
- ANSI C63.10-2013,
- KDB 971168 D01 v03r01/D02 v02/r02
- FCC 47 CFR PART 22H, 24E, 27C, 90S

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, Certificate Number 0751.05, 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 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☐	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☐	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

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}
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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. EUT DESCRIPTION

The EUT is a Wallbox that contains 2 radios with BLE and 802.11b/g/n/ac/ax technology in the 2.4GHz & 5GHz bands and 1 radio with WWAN technology.

The EUT contains 2x radios with same FCC ID: XPYJODYW377 and 1 radio with FCC ID: XMR201903EG25

6.2. MAXIMUM OUTPUT POWER

Refer to module report FCC IDs: XPYJODYW377 & XMR201903EG25.

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Refer to module report FCC IDs: XPYJODYW377 & XMR201903EG25.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was:

WEVSE: 677
PPC: 0.8.8
MODS: 3.5.2

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 1Ghz and above 18GHz set to transmit at the channel with highest output power as worst-case scenario.

The EUT is intended to be used in one position

Worst-case data rates as provided by the client were:

BLE: 1Mbps

WLAN a :6mbps

WLAN n : MCS0(SISO), MCS8(MIMO)

WLAN ac, ax : MCS0

The following simulateneous TX combination of modes were tested for Radiated Spurious Emissions as worst-case ;

Test Case #	Radio	Mode	Frequency (MHz)
1	Radio 1	BLE + 2.4Ghz	BLE – Normal Operation 2.4 GHz – Normal Operation
	Radio 2	BLE + 5GHz	BLE – Normal Operation 5 GHz – 5300 MHz
	Radio 3	WWAN LTE	For Below 1GHz – B5 For Above 1GHz – B7

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number		FCC ID/DoC	Remarks
Router	Asus	90IG07B0-MU9B00	NBIG5H901754CW9		DoC	To link with the EUT and set channel
Laptop	Lenovo	20LT-S12D00	PF-1H0N0E		DoC	Programming router
AC/DC adapter	Lenovo	ADLX65YLC2D	8SSA19R16873L1CZ9AF09AB		DoC	LT power source
Wallbox	WiTricity	WWA1101	WWA1101-10232520001000		DoC	
Chargerpad	WiTricity	GWA1100	GWA11001023252000300		DpC	None
I/O CABLES (RF RADIATED/AC POWER LINE TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	3	AC	AC	1.5	Powers EUT, Router, and CMW500
2	DC/Data	1	DC	DC	2.5m – 9m	Powers Charging pad
3	DC	1	DC	DC	0.5 m	
4	RJ45	1	RJ45	RJ45	0.5 m	

TEST SETUP

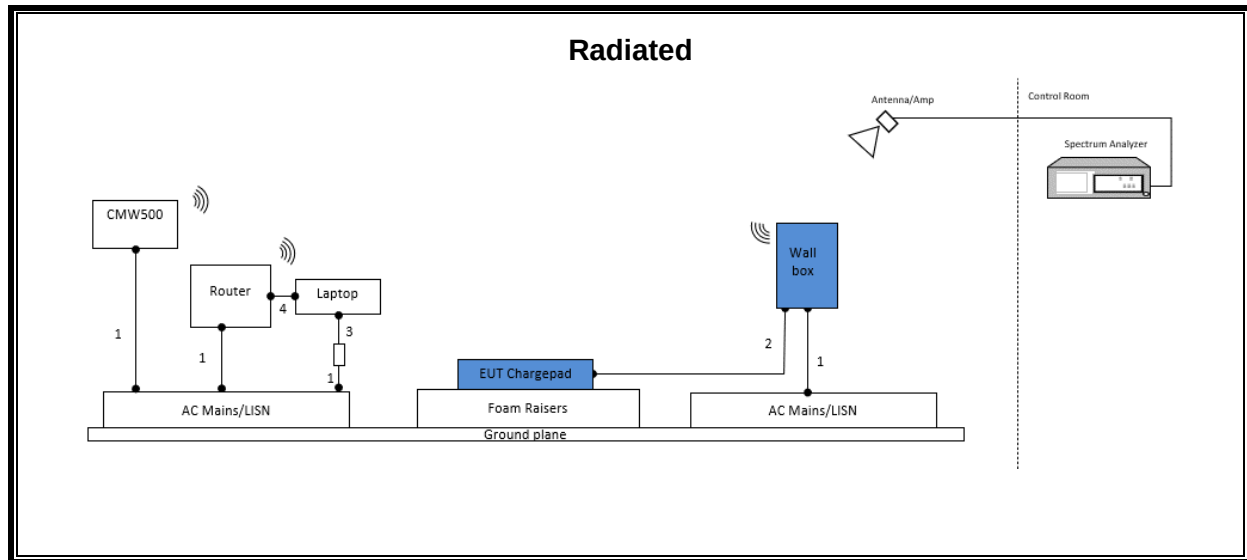
The WWAN Radio is linked to the CMW500.

WLAN 1 Radio is in normal operation transmitting 2.4GHz Wifi.

WLAN 2 Radio is connected to a router and laptop with multiple cmd prompts opened and pinging the EUT in the 5GHz band.

BLE is in normal operation and only used for EUT setup purposes.

SETUP DIAGRAMS



7. MEASUREMENT METHOD

Radiated emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4

8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
EMI Test Receiver	Rohde & Schwarz	ESW44	225683	2024-02-29
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB1	80813	2024-05-31
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	170650	2024-05-31
Amplifier, 9kHz-3GHz , 32dB gain 16dBm P1dB	Fairview Microwave	SLNA-030-32-30-SMA	197485	2024-05-31
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	200895	2024-12-31
RF Filter Box, 1-18GHz	UL EMC	N/A	199097	2024-05-31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2024-07-31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	2024-07-31
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81139	2024-08-31
RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	220194	2024-08-31
Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	81105	2024-08-31
RF Amplifier Assembly, 26-40GHz, 60dB Gain	AMPLICAL	AMP26G40-60	220193	2024-08-31
Filter, BRF, 824-849MHz, 6GHz Max Rated	Micro-Tronics	BRM20026	208959	2024-10-31
Filter, BRF 2400-2500MHz	Micro-Tronics	BRM50702	207303	2024-09-15
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Rev 9.5, 19 May, 2023	

9. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209 -Restricted bands

FCC §15.407(b)(1-3) -Un-Restricted bands

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	2400/F(kHz) @ 300 m	-
0.490-1.705	24000/F(kHz) @ 30 m	-
1.705 - 30	30 @ 30m	-
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27.53

LIMIT

FCC: §22.917(a), §24.238(a), §27.53 (g), (h)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

FCC: §27.53 (Band 13)

(c) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. (-70 dBW/MHz = -40dBm/MHz).

FCC: §27.53 (m) (Band 41)

At least $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

The limits from 15.205/209/407 are worst case therefore results were compared to those limits.

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02/r02

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

For final measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 1GHz and 18GHz to 40 GHz is investigated with the transmitter set to transmit at the channel with highest output power as worst-case scenario. 1GHz to 18GHz was set to the lowest, middle, and highest channels in the 5 GHz bands.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

KDB 414788 Open Field Site(OFS) and Chamber Correlation Justification

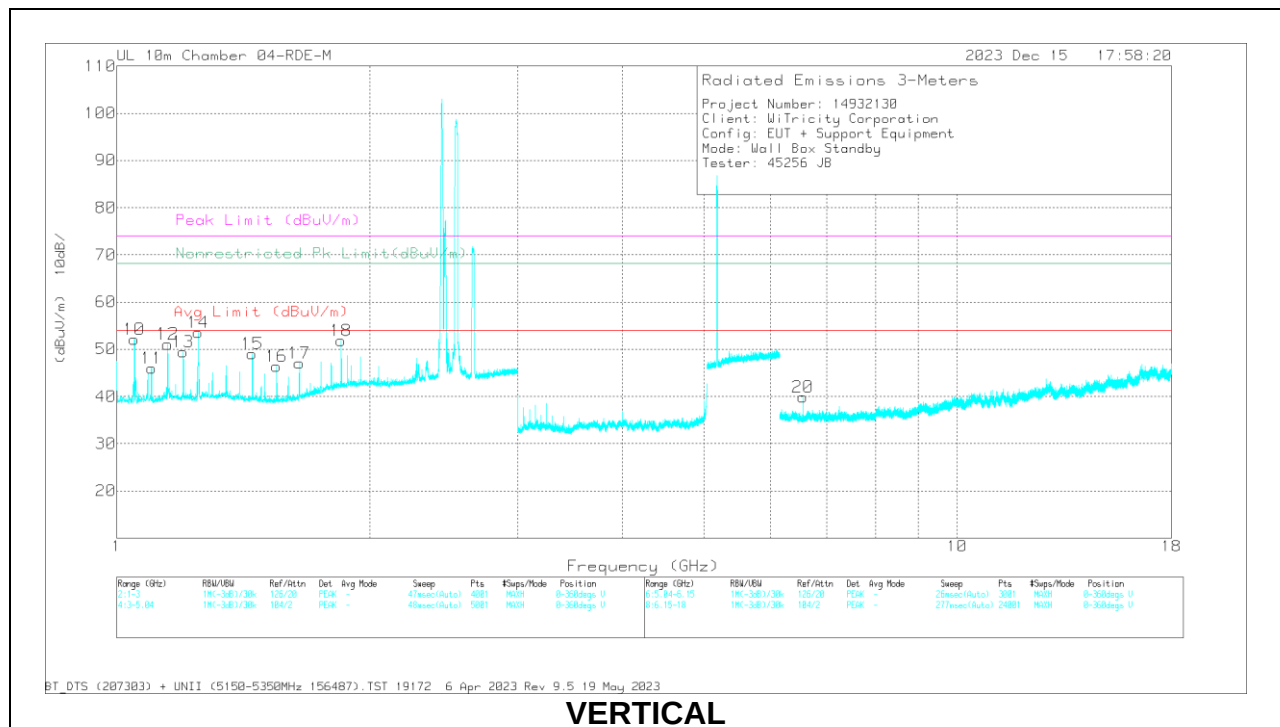
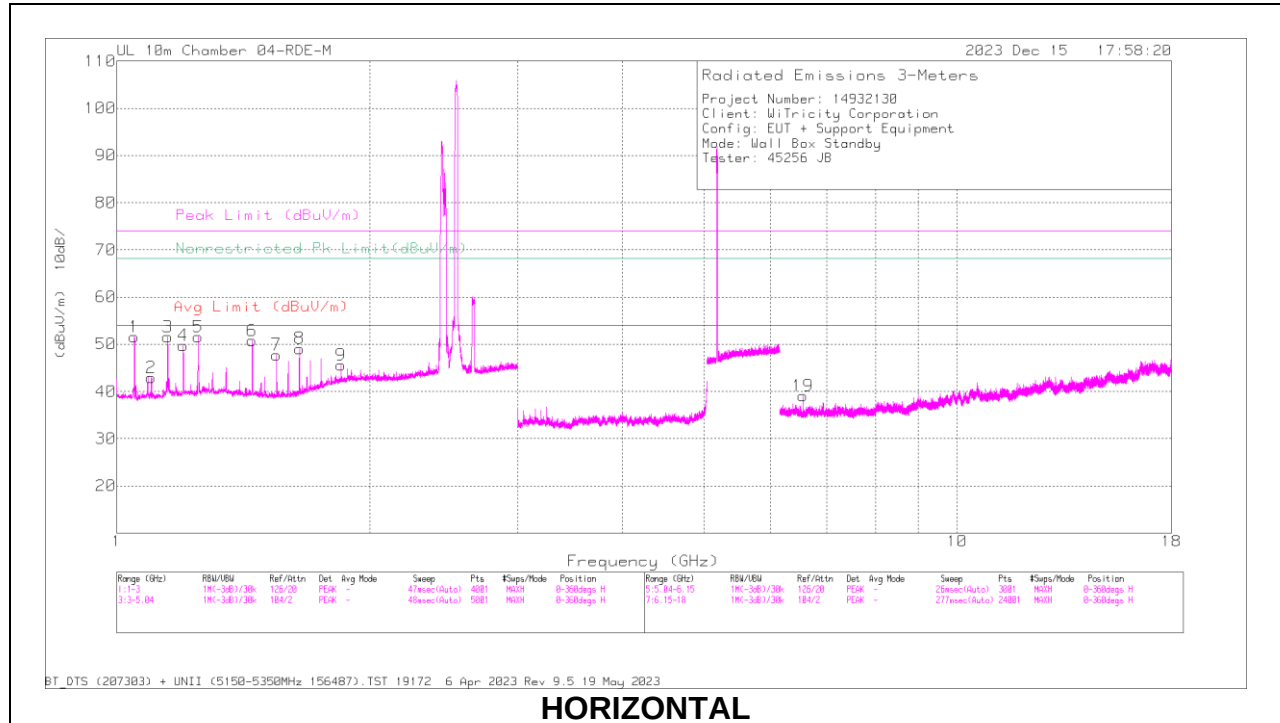
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

NOTE: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table), using the free space impedance of 377 Ohms. For example, the measurement at frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to $Y - 51.5 = Z$ dBuA/m, which has the same margin, W dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

9.1. TRANSMITTER ABOVE 1 GHz

HARMONICS AND SPURIOUS EMISSIONS

RESULTS



RADIATED EMISSIONS

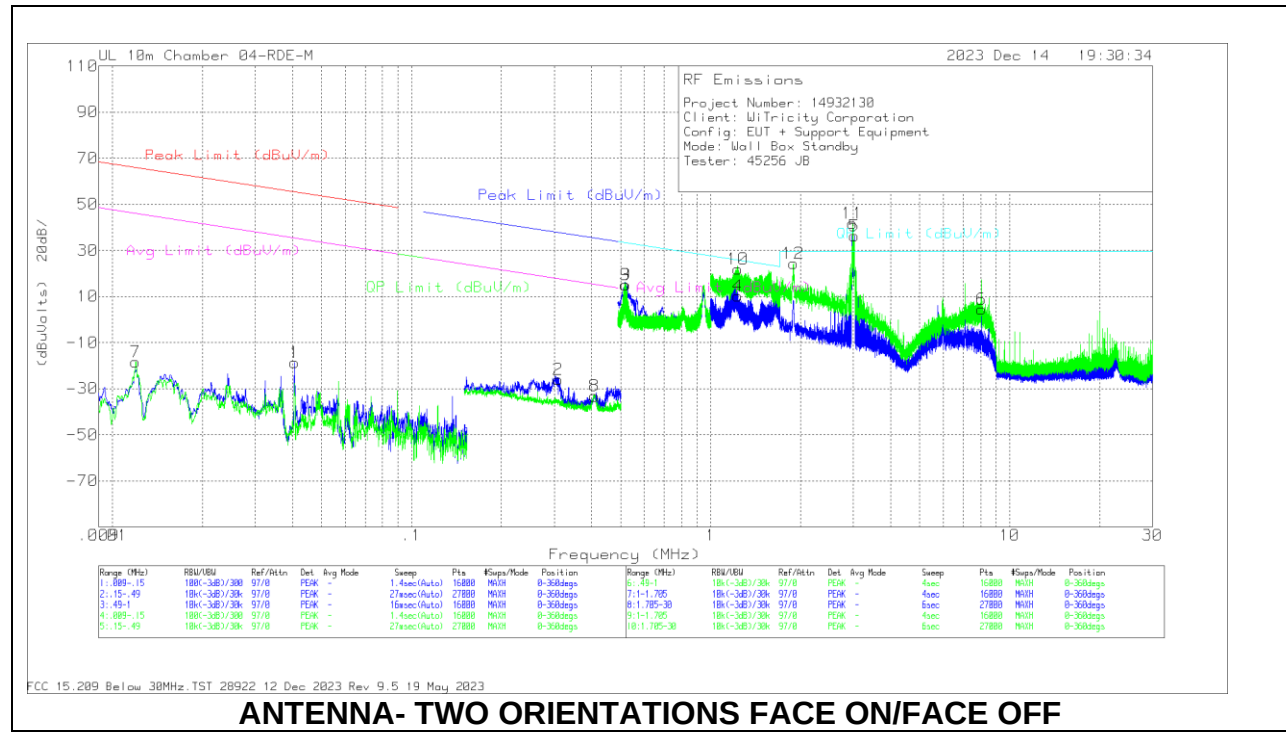
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	200895 ACF 3m (dB/m)	CBL/AMP	BRF (5.15-5.35GHz) (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Nonrestricted Pk Limit(dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
8	1.649802	61.95	PK-U	28.5	-35.4	.1	55.15	-	-	-	-	68.2	-13.05	300	110	H
9	1.849205	58.3	PK-U	30.9	-35.4	.1	53.9	-	-	-	-	68.2	-14.3	198	370	H
1	*1.049964	63.48	PK-U	27.6	-36	.1	55.18	-	-	74	-18.82	-	-	8	120	H
	*1.049935	58.65	ADR	27.6	-36	.1	50.35	53.97	-3.62	-	-	-	-	8	120	H
2	*1.099835	59.99	PK-U	27.8	-35.8	.1	52.09	-	-	74	-21.91	-	-	286	203	H
	*1.099974	50.09	ADR	27.8	-35.8	.1	42.19	53.97	-11.78	-	-	-	-	286	203	H
3	*1.149762	64.17	PK-U	28.2	-35.6	.1	56.87	-	-	74	-17.13	-	-	309	125	H
	*1.149941	55.11	ADR	28.2	-35.6	.1	47.81	53.97	-6.16	-	-	-	-	309	125	H
4	*1.200241	61.25	PK-U	28.5	-35.5	.1	54.35	-	-	74	-19.65	-	-	251	187	H
	*1.199974	55.53	ADR	28.5	-35.5	.1	48.63	53.97	-5.34	-	-	-	-	251	187	H
5	*1.249872	62.75	PK-U	28.6	-35.6	.1	55.85	-	-	74	-18.15	-	-	309	111	H
	*1.24997	57.97	ADR	28.6	-35.6	.1	51.07	53.97	-2.9	-	-	-	-	309	111	H
6	*1.45005	62.35	PK-U	28.2	-35.5	.1	55.15	-	-	74	-18.85	-	-	275	106	H
	*1.450065	57.36	ADR	28.2	-35.5	.1	50.16	53.97	-3.81	-	-	-	-	275	106	H
7	*1.550012	60.88	PK-U	27.8	-35.5	.1	53.28	-	-	74	-20.72	-	-	299	98	H
	*1.550021	53.92	ADR	27.8	-35.5	.1	46.32	53.97	-7.65	-	-	-	-	299	98	H
17	1.650117	60.2	PK-U	28.5	-35.4	.1	53.4	-	-	-	-	68.2	-14.8	335	115	V
18	1.849743	61.9	PK-U	30.9	-35.4	.1	57.5	-	-	-	-	68.2	-10.7	250	102	V
10	*1.049943	63.81	PK-U	27.6	-36	.1	55.51	-	-	74	-18.49	-	-	301	123	V
	*1.049996	59.65	ADR	27.6	-36	.1	51.35	53.97	-2.62	-	-	-	-	301	123	V
11	*1.099535	59.66	PK-U	27.8	-35.8	.1	51.76	-	-	74	-22.24	-	-	256	237	V
	*1.099967	50.24	ADR	27.8	-35.8	.1	42.34	53.97	-11.63	-	-	-	-	256	237	V
12	*1.149974	63.45	PK-U	28.2	-35.6	.1	56.15	-	-	74	-17.85	-	-	282	126	V
	*1.149963	57.71	ADR	28.2	-35.6	.1	50.41	53.97	-3.56	-	-	-	-	282	126	V
13	*1.199989	62.07	PK-U	28.5	-35.5	.1	55.17	-	-	74	-18.83	-	-	248	175	V
	*1.199946	56.43	ADR	28.5	-35.5	.1	49.53	53.97	-4.44	-	-	-	-	248	175	V
14	*1.250244	65	PK-U	28.6	-35.6	.1	58.1	-	-	74	-15.9	-	-	246	123	V
	*1.250028	61.09	ADR	28.6	-35.6	.1	54.19	-	-	-	-	-	-	246	123	V
15	*1.449953	62.46	PK-U	28.2	-35.5	.1	55.26	-	-	74	-18.74	-	-	270	100	V
	*1.450023	57.06	ADR	28.2	-35.5	.1	49.86	53.97	-4.11	-	-	-	-	270	100	V
16	*1.54958	60.5	PK-U	27.8	-35.5	.1	52.9	-	-	74	-21.1	-	-	355	105	V
	*1.550008	53.45	ADR	27.8	-35.5	.1	45.85	53.97	-8.12	-	-	-	-	355	105	V
19	6.554948	50.78	PK-U	35.6	-38.4	0	47.98	-	-	-	-	68.2	-20.22	169	208	H
20	6.555026	51.25	PK-U	35.6	-38.4	0	48.45	-	-	-	-	68.2	-19.75	360	193	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

Emissions are not from the Radio.

9.2. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna 170013 dBuV	Cbl (dB)	Distance Correction 3m to 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	PK Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Face
1	.0406	34.35	Pk	57.3	-30.2	-80	-18.55	55.4	-73.95	-	-	0-360	On
2	.3097	27.99	Pk	56.3	-30.3	-80	-26.01	37.79	-63.8	17.79	-43.8	0-360	On
7	.012	31.12	Pk	60.1	-29.5	-80	-18.28	66.02	-84.3	-	-	0-360	Off
8	.4095	21	Pk	56.2	-30.4	-80	-33.2	35.36	-68.56	15.36	-48.56	0-360	Off

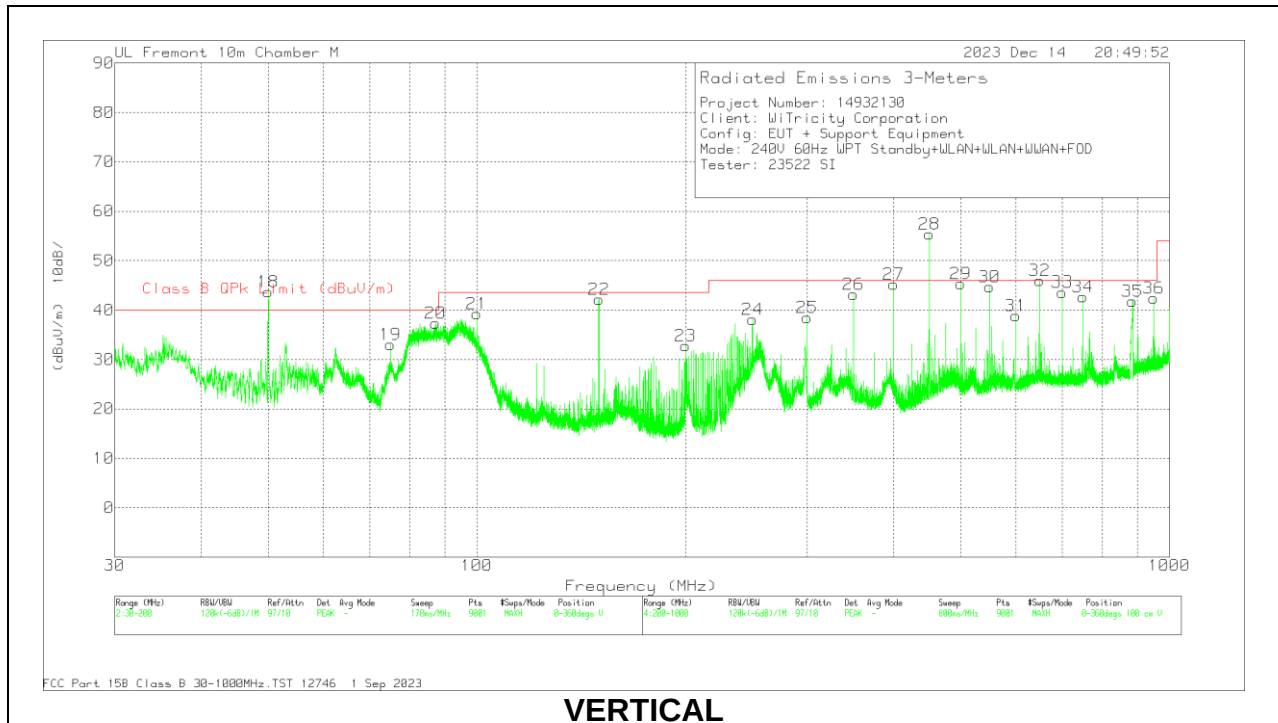
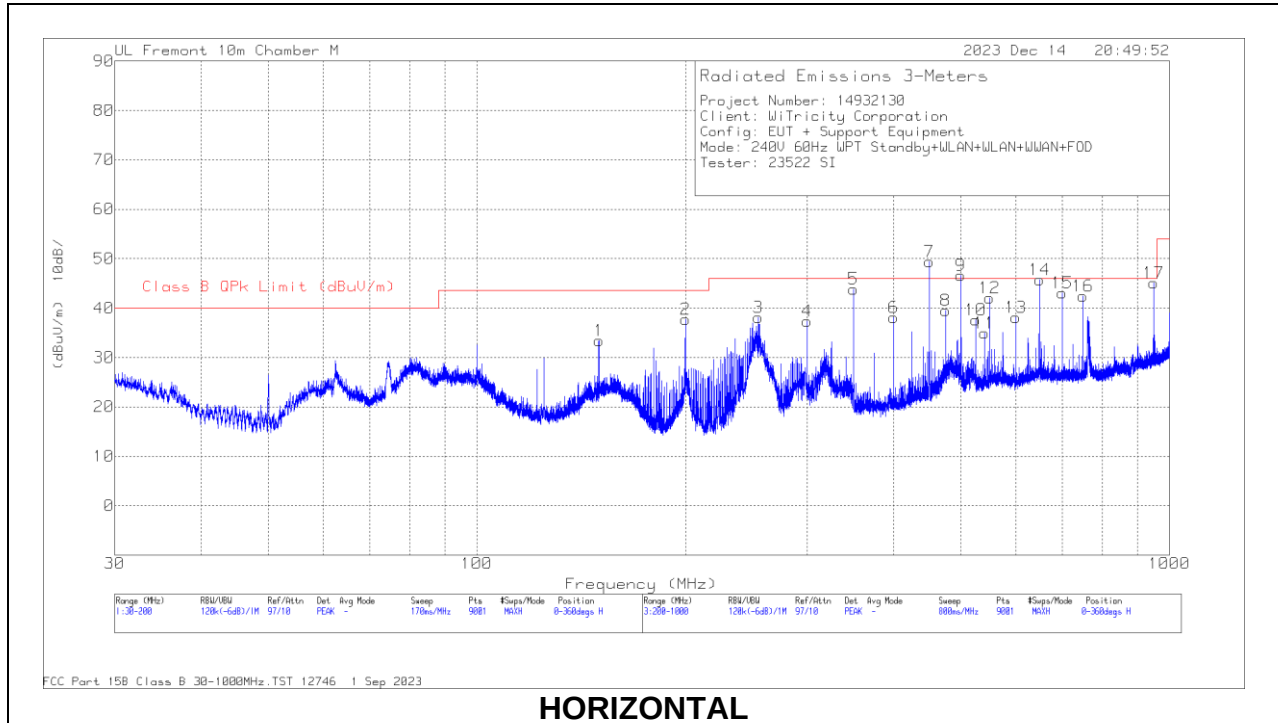
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna 170013 dBuV	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Face
3	.5187	28.97	Pk	56.3	-30.2	-40	15.07	33.31	-18.24	0-360	On
9	.5205	29.01	Pk	56.3	-30.2	-40	15.11	33.28	-18.17	0-360	Off

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna 170015 dBuV	Cbl (dB)	Dist Corr 30m	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Face
4	1.2333	34.78	Pk	45.6	-30.2	-40	10.18	25.8	-15.62	0-360	On
5	3.0213	67.94	Pk	38.7	-30.4	-40	36.24	-	-	0-360	On
6	8.0391	39.7	Pk	34.7	-29.8	-40	4.6	29.5	-24.9	0-360	On
10	1.2343	46.52	Pk	45.6	-30.2	-40	21.92	25.8	-3.88	0-360	Off
11	2.9867	73.31	Pk	38.8	-30.4	-40	41.71	-	-	0-360	Off
12	1.8905	52.43	Pk	42.1	-30.3	-40	24.23	29.5	-5.27	0-360	Off

Pk - Peak detector
Marker 5 and 11 is the 3MHz FOD signal from the support equipment.

9.3. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80813 ACF (dB/m)	Cbl (dB)	Corrected Reading (dBuV/m)	Class B QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	150.002	44.09	Pk	18.5	-29.2	33.39	43.52	-10.13	0-360	100	H
2	200	47.83	Pk	18.6	-28.7	37.73	43.52	-5.79	0-360	100	H
18	49.9992	59.36	Qp	14.1	-29.8	43.66	-	-	19	103	V
19	74.9936	48.36	Pk	13.9	-29.2	33.06	40	-6.94	0-360	100	V
20	87.1959	53.42	Pk	13.3	-29.4	37.32	40	-2.68	0-360	100	V
21	100.003	52.25	Pk	16.3	-29.3	39.25	43.52	-4.27	0-360	100	V
22	150.002	52.85	Pk	18.5	-29.2	42.15	43.52	-1.37	0-360	100	V
23	199.982	42.85	Pk	18.6	-28.7	32.75	43.52	-10.77	0-360	100	V
3	255.111	49.39	Pk	17.3	-28.6	38.09	46.02	-7.93	0-360	100	H
4	299.911	46.54	Pk	19.2	-28.4	37.34	46.02	-8.68	0-360	100	H
5	349.956	52.09	Pk	20	-28.2	43.89	46.02	-2.13	0-360	100	H
6	400	45.27	Pk	21.2	-28.3	38.17	46.02	-7.85	0-360	199	H
7	449.986	56.64	Qp	22.7	-28.1	51.24	-	-	13	106	H
8	475.023	43.87	Pk	23.5	-27.9	39.47	46.02	-6.55	0-360	100	H
9	499.993	51.89	Qp	23.6	-27.8	47.69	-	-	26	99	H
10	524.978	41.91	Pk	23.7	-28	37.61	46.02	-8.41	0-360	100	H
11	541.067	38.78	Pk	23.9	-27.7	34.98	46.02	-11.04	0-360	100	H
12	549.956	46.09	Pk	24	-28	42.09	46.02	-3.93	0-360	100	H
13	600.001	41.75	Pk	24.2	-27.8	38.15	46.02	-7.87	0-360	100	H
14	649.956	47.7	Pk	25.6	-27.6	45.7	46.02	-32	0-360	100	H
15	700.001	44.49	Pk	26.1	-27.5	43.09	46.02	-2.93	0-360	100	H
16	750.045	42.99	Pk	26.5	-27	42.49	46.02	-3.53	0-360	100	H
17	950.045	41.89	Pk	28.4	-25.2	45.09	46.02	-93	0-360	100	H
24	249.956	49.44	Pk	17.4	-28.7	38.14	46.02	-7.88	0-360	100	V
25	300	47.69	Pk	19.2	-28.4	38.49	46.02	-7.53	0-360	100	V
26	349.956	51.37	Pk	20	-28.2	43.17	46.02	-2.85	0-360	100	V
27	400	52.27	Pk	21.2	-28.3	45.17	46.02	-85	0-360	100	V
28	449.995	60.72	Qp	22.7	-28.1	55.32	-	-	17	102	V
29	500	49.57	Pk	23.6	-27.8	45.37	46.02	-65	0-360	100	V
30	549.956	48.77	Pk	24	-28	44.77	46.02	-1.25	0-360	100	V
31	600.001	42.5	Pk	24.2	-27.8	38.9	46.02	-7.12	0-360	100	V
32	649.981	49	Qp	25.6	-27.6	47	-	-	20	99	V
33	700.001	45.04	Pk	26.1	-27.5	43.64	46.02	-2.38	0-360	100	V
34	749.956	43.19	Pk	26.5	-27	42.69	46.02	-3.33	0-360	100	V
35	885.068	39.88	Pk	28	-26.1	41.78	46.02	-4.24	0-360	199	V
36	950.045	39.29	Pk	28.4	-25.2	42.49	46.02	-3.53	0-360	100	V

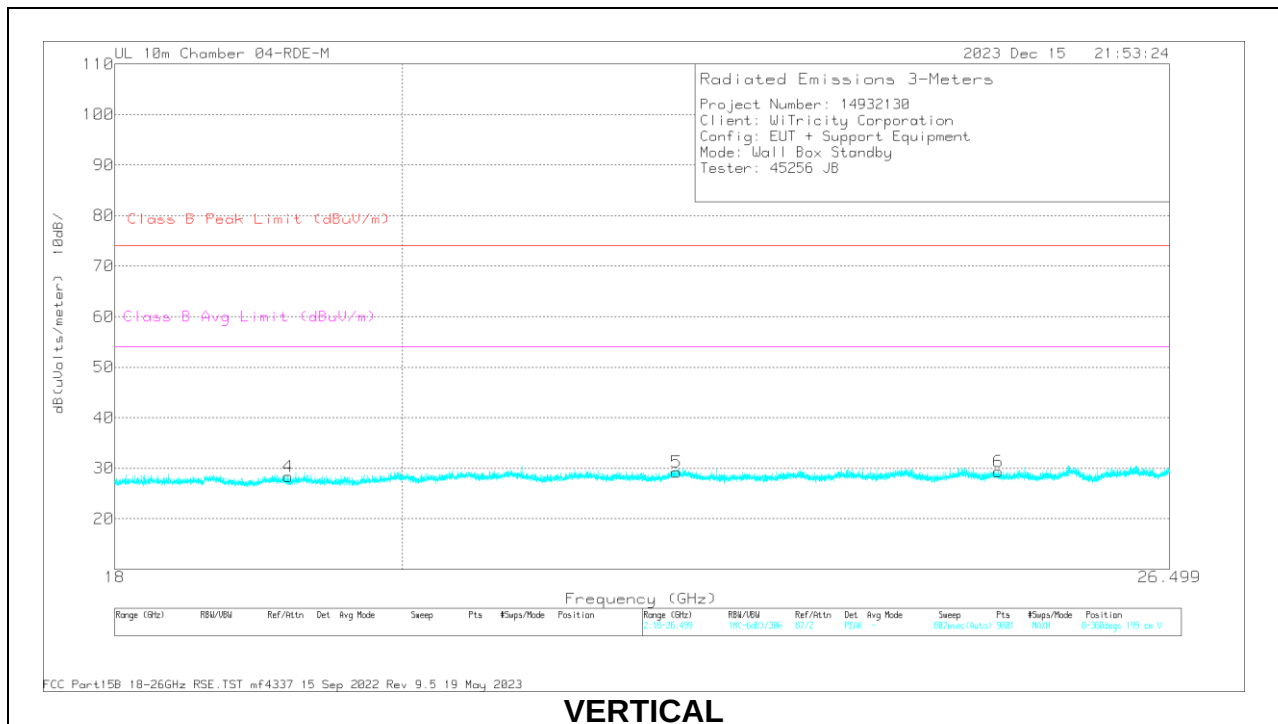
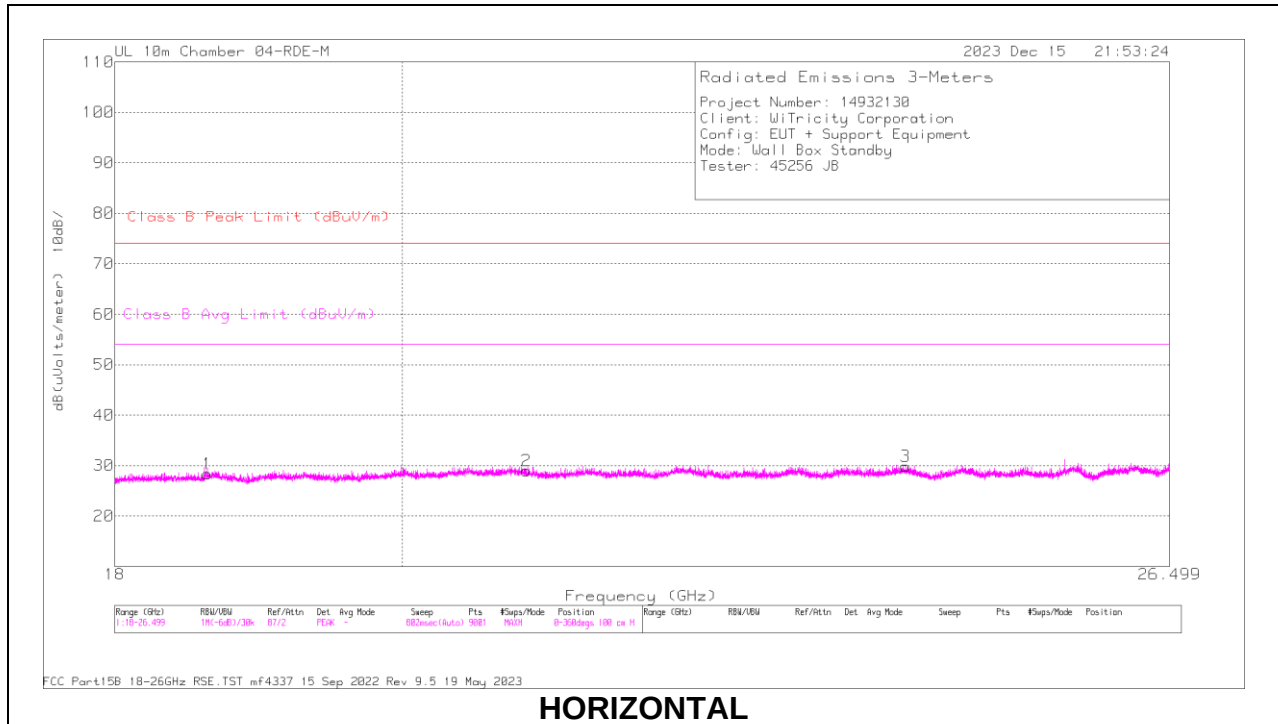
Pk - Peak detector

Qp - Quasi-Peak detector

All Emissions are not from the radio.

9.4. WORST CASE 18-26 GHZ

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION)



18 – 26GHz Data

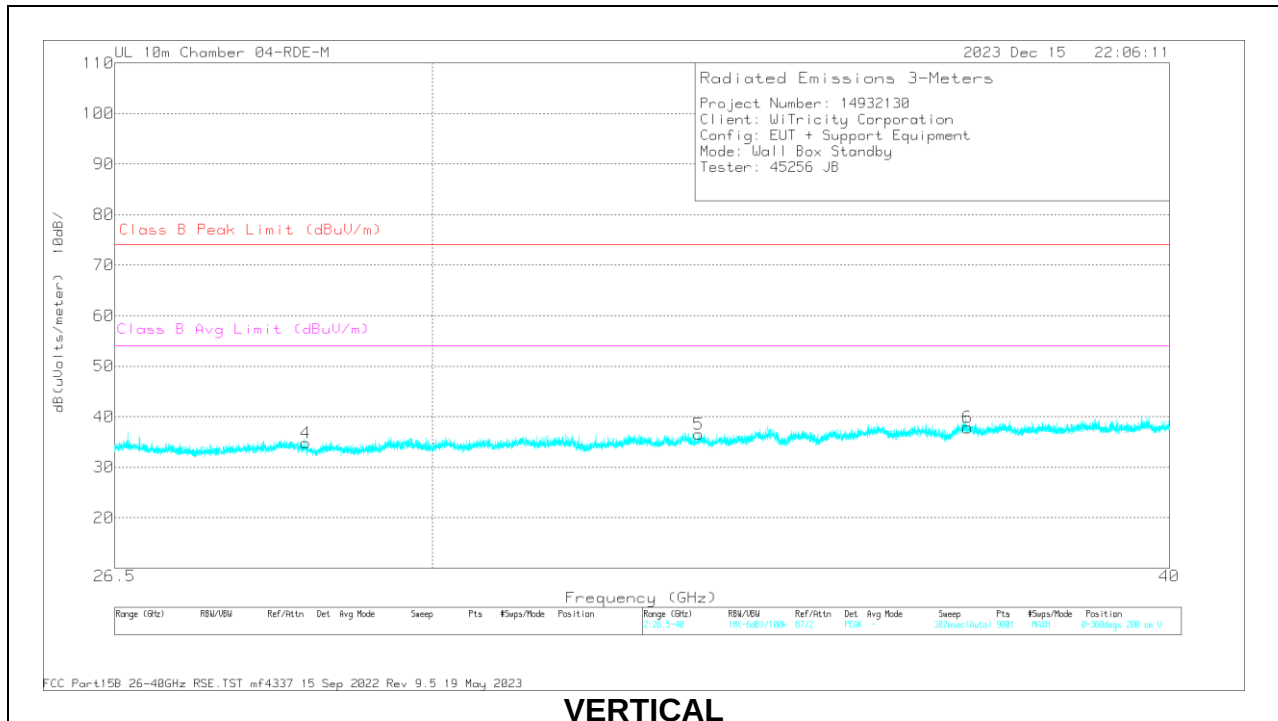
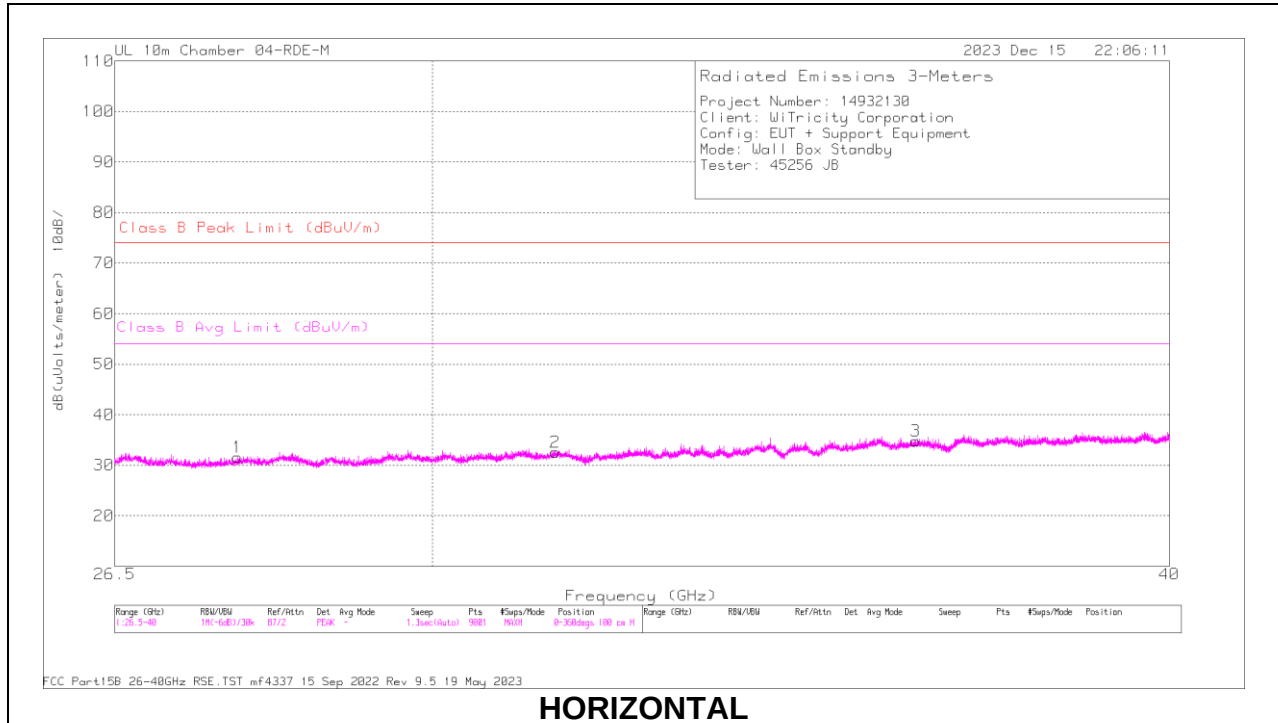
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	172362 ACF (dB/m) 3mH	Filter	Cable (dB)	Cable (dB)	Corrected Reading dB(uVolts/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	18.620427	45.39	Pk	32.3	-65.8	4.6	11.9	28.39	74	-45.61	54	-25.61	0-360	100	H
2	20.93121	42.63	Pk	32.8	-64.1	4.9	12.7	28.93	74	-45.07	54	-25.07	0-360	200	H
3	24.054119	42.85	Pk	33.5	-65.5	5.3	13.7	29.85	74	-44.15	54	-24.15	0-360	100	H
4	19.184194	45.09	Pk	32.4	-65.9	4.7	12.1	28.39	74	-45.61	54	-25.61	0-360	199	V
5	22.117292	43.27	Pk	33.2	-65.4	5	13.1	29.17	74	-44.83	54	-24.83	0-360	199	V
6	24.885132	41.29	Pk	33.8	-65.1	5.4	13.9	29.29	74	-44.71	54	-24.71	0-360	100	V

Pk - Peak detector

No emissions were found

9.5. WORST CASE 26-40 GHZ

SPURIOUS EMISSIONS 26-40 GHz (WORST-CASE CONFIGURATION)



26 – 40GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	172368 ACF (dB/m) 3mH	Cable (dB)	Cable ((dB)	Filter	Corrected Reading dB(uVolts/meter)	Peak Limit (dBuV/m)	PK Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	27.802	44.24	Pk	35.8	5.7	14.8	-69	31.54	74	-42.46	54	-22.46	0-360	199	H
2	31.4755	42.73	Pk	36.9	6.1	15.8	-69	32.53	74	-41.47	54	-21.47	0-360	100	H
3	36.2275	46.36	Pk	37.8	6.6	17.2	-73.2	34.76	74	-39.24	54	-19.24	0-360	100	H
4	28.549	45.36	Pk	36.3	5.8	15	-67.7	34.76	74	-39.24	54	-19.24	0-360	100	V
5	33.283	49.12	Pk	37.1	6.2	16.3	-72.2	36.52	74	-37.48	54	-17.48	0-360	200	V
6	36.9655	47.24	Pk	38.1	6.6	17.4	-71.5	37.84	74	-36.16	54	-16.16	0-360	100	V

Pk - Peak detector
No Emissions are found.

END OF TEST REPORT