TEST REPORT

Report Number: 14749497-E1V2

Applicant	:	eero LLC 660 3rd Street 4th Floor San Francisco, CA 94107, U.S.A.
Model	:	V010001
Brand	:	eero
FCC ID	:	2AEM4-711917312
IC	:	20631-711917312
EUT Description	:	Wireless Access Point
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 3 ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2023-09-06

Prepared by:
UL VERIFICATION SERVICES INC.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888

ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-08-16	Initial Issue	---
V2	2023-09-06	Updated Section 6.6 info, updated RSS 247 to issue 3.	Tina Chu

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

TABLE OF CONTENTS

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	eero LLC 660 3rd Street 4th Floor San Francisco, CA 94107, U.S.A.
EUT DESCRIPTION:	Wireless Access Point
MODEL:	V010001
BRAND:	eero
SERIAL NUMBER:	Radiated: GGB2-1E06-3237-0089, GGB2-1E04-3062-004P, GGB2-1E08-3287-0037 Conducted: GGB2-IE04-3057-00DA, GGB2-1E06-3237-OOBQ
SAMPLE RECEIPT DATE:	2023-04-05
DATE TESTED:	2023-04-10 TO 2023-08-09

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC 47 CFR Part 15 Subpart C	Complies
ISED RSS-247 Issue 3	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

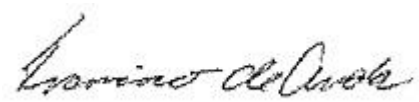
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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.

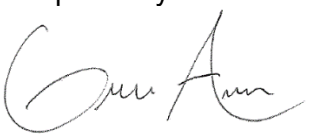
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

Approved & Released For
UL Verification Services Inc. By:



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

Prepared By:



Gerardo Abrego
Test Engineer
Consumer Technology Division
UL Verification Services Inc.

Reviewed By:

Tina Chu
Senior Project Engineer
Consumer Technology Division
UL Verification Services Inc.

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data provided by the customer:

1) Antenna gain and type (see section 6.3)
2) Cable Loss (see section 6.3)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Complies	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Complies	None.
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 5.2 (b)	PSD	Complies	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Complies	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Complies	None.

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 3.

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, U.S.A	US0104	2324A	550739
☐	Building 2: 47266 Benicia Street Fremont, CA 94538, U.S.A			
☒	Building 4: 47658 Kato Rd Fremont, CA 94538, U.S.A			

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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)	141.16 Hz
Occupied Bandwidth	1.22%
Power Spectral Density	2.47 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB (PK) / 0.45 dB (AV)
Unwanted Emissions, Conducted	1.94 dB
Worst Case Conducted Disturbance, 9kHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
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
Time Domain Measurements	3.39%
Temperature	0.57˚C
Humidity	3.39%
DC Supply Voltages	0.57%

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

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a low power indoor Access Point that supports 802.11 a/b/g/n/ac/ax/be 2.4G DTS/ 5G UNII band 1 and band 3 Wifi, BLE 1Mbps/2Mbps and 802.15.4 technologies.

This report covers the BLE technology only.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE	19.58	90.78

6.3. DESCRIPTION OF AVAILABLE ANTENNAS AND CABLE LOSS

The antenna(s) gain and type, cable loss as provided by the manufacturer' are as follows:

The radio utilizes a Flex PCB antenna, with a maximum gain of 5 dBi.

Cable loss: 1dB

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 2023-03-30T01.

The test utility software used during testing was QRCT4 version 4.0.81.1.

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low, middle, and high channels.

The EUT can only be setup in desktop orientation; therefore, all radiated testing was performed with the EUT in desktop orientation.

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

BLE (1Mbps): 1Mbps
BLE (2Mbps): 2 Mbps

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
EUT AC/DC Adapter (Luxshare)	eero	C310011	NA	DoC
EUT AC/DC Adapter (Foxlink)	eero	C310011	NA	DoC
Laptop	Lenovo	ThinkPad P15s Gen 2	PF-2YV2K6	DoC
Laptop AC/DC Adapter	Lenovo	ADLX65Y	8SSA10R16875C1SG09PRSHT	DoC
Laptop	Lenovo	ThinkPadT460	PC0JJLUT	DoC
Laptop AC/DC Adapter	Lenovo	A-17-065N2A	8SSA10J20161C1SG8720X55 Rev:000	DoC
Switch	Netgear	XS505M	6H11197M00054	DoC

I/O CABLES (CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	2-Prong	Un-shielded	1	AC Mains to LT AC/DC Adapter
2	DC	1	Barrel	Un-shielded	1.5	AC/DC Adapter to Laptop
3	Ethernet	1	RJ45	Un-shielded	1	Laptop to EUT
4	DC	1	Barrel	Un-shielded	1.5	AC/DC Adapter to EUT
5	SMA	1	SMA	Un-shielded	0.1	EUT to Spectrum Analyzer
6	AC	1	3-Prong	Un-shielded	1.5	AC Mains to Spectrum Analyzer

I/O CABLES (RADIATED TEST EMISSIONS)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
3	AC	1	2-Prong	Un-shielded	2	AC Mains to Switch
4	DC	1	Barrel	Un-shielded	1.5	AC/DC Adapter to EUT
5	I/O	4	RJ45	Un-shielded	>3 meter	EUT to Switch /Laptop. One cable connected to switch is <3 meter for 30MHz to 1GHz test.
6	AC	1	3-Prong	Un-shielded	1.5	AC Mains to Spectrum Analyzer

I/O CABLES (AC POWER LINE EMISSIONS)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
3	AC	1	2-Prong	Un-shielded	2	AC Mains to Switch
4	DC	1	Barrel	Un-shielded	1.5	AC/DC Adapter to EUT
5	I/O	5	RJ45	Un-shielded	>3 meter	EUT to Switch, Laptop to Switch

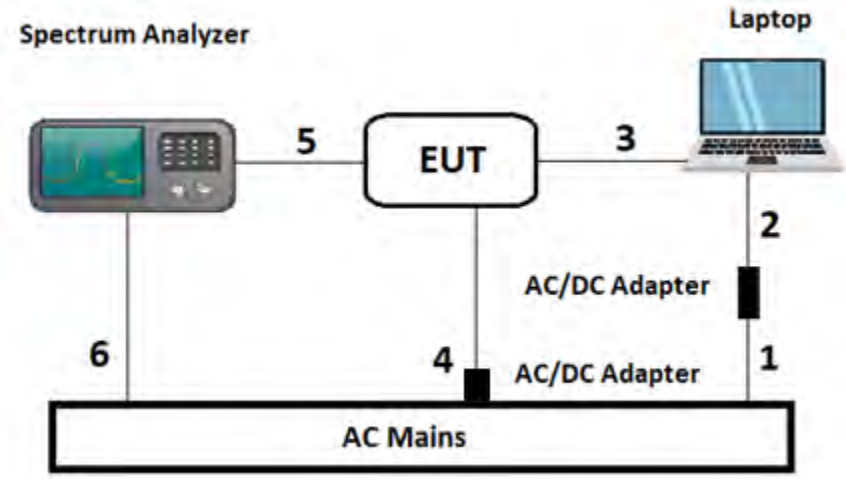
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

TEST SETUP

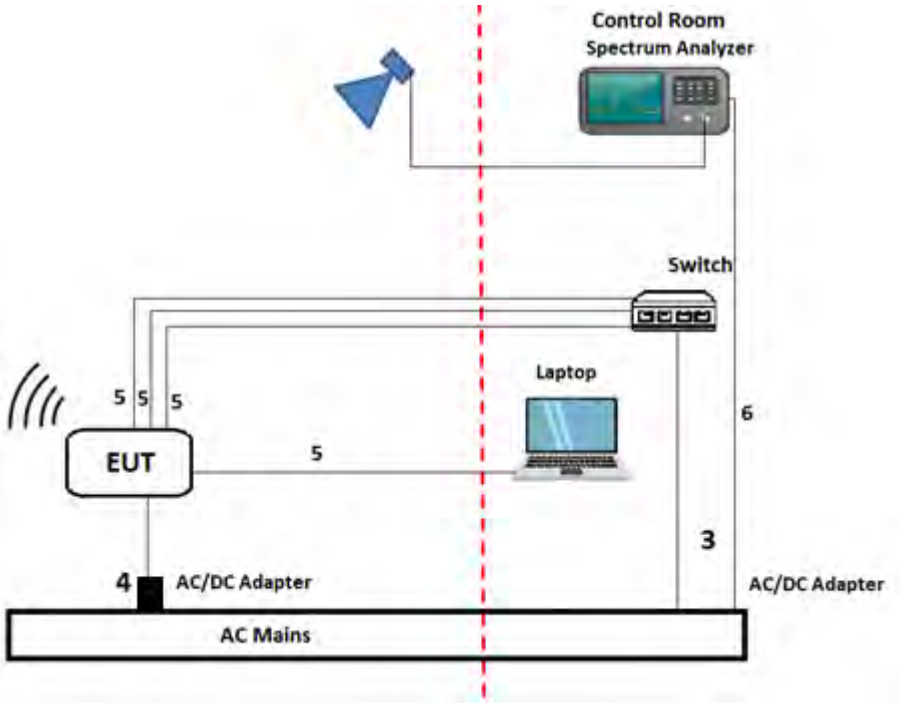
The EUT is powered by AC/DC adapter and connected to support equipment, and the radio is exercised remotely by command prompt GUI test utility software via ethernet.

SETUP DIAGRAMS

Conducted

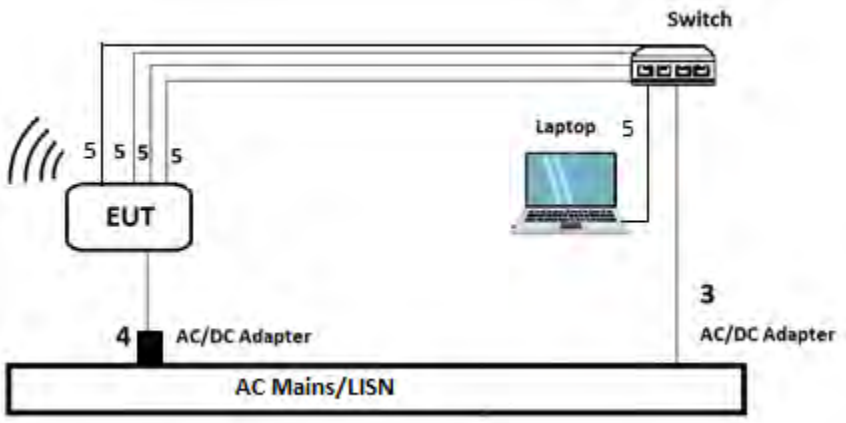


Radiated Emissions



UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

AC Power Line Emissions



UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

7. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10 Section 11.6.

6 dB BW: ANSI C63.10 Subclause -11.8.1 RBW ≥ DTS BW

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter
Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10 Subclause -11.10.2 Method PKPSD (peak PSD)

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

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

Conducted emissions in restricted frequency bands: ANSI C63.10 Subclause -11.12.2

Band-edge: ANSI C63.10 Subclause -11.13.3.2 Integration method -Peak detection

Band-edge: ANSI C63.10 Subclause -11.13.3.4 Integration method -Trace averaging across ON and OFF times DC correction

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

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

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	219908	2024-05-31	2023-05-31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	219910	2024-05-31	2023-05-31
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB1	80293	2024-04-30	2023-04-11
Amplifier,9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	170647	2023-11-11	2022-11-11
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	222741	2023-08-31	2022-08-31
RF Filter Box, 1-18GHz	UL-FR1	n/a	171875	2023-11-10	2022-11-10
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230547	2024-02-29	2023-02-15
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	199659	2023-12-06	2022-12-06
Amplifier 18-26.5GHz, +5Vdc, -54dBm P1dB	AMPLICAL	AMP18G26.5-60	234683	2024-03-29	2023-03-18
Antenna, Horn 26.5 to 40GHz	ARA	MWH-2640/B	199661	2023-12-06	2022-12-06
Amplifier 26-40GHz +5Vdc, -62dBm P1dB	AMPLICAL	AMP26G40-60	234684	2024-03-29	2023-03-18
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	225688 (chamber k)	2024-02-29	2023-02-14
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	125178	2024-02-29	2023-02-06
10dB Fixed Attenuator, up to 26GHz	Pasternack Enterprises	PE7087-10	236189	Verified/characterized before use	
Power Meter, P-series single channel	Keysight Technologies Inc	N1921A	81319	2024-01-25	2023-01-25
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1911A	90718	2024-01-31	2023-01-31
AC Line Conducted					
LISN	Fischer Custom Communications, Inc	FCC-LISN-50/250-25-2-01-480V	175765	2024-01-31	2023-01-27
EMI TEST RECEIVER	Rohde & Schwarz	ESR	93091	2024-02-29	2023-02-20
Transient Limiter	TE	TBFL1	207996	2023-07-31	2022-07-15
UL TEST SOFTWARE LIST					
Radiated Software	UL	UL EMC	Ver 2023-01-18, 2023-03-03, 2023-05-01		
Antenna Port Software	UL	UL RF	Ver 2022-08-16		
AC Line Conducted Software	UL	UL EMC	Rev 9.5, 2022-02-17		

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

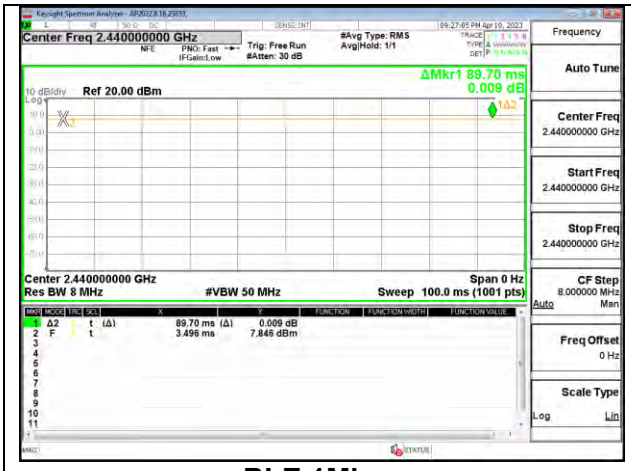
None; for reporting purposes only.

PROCEDURE

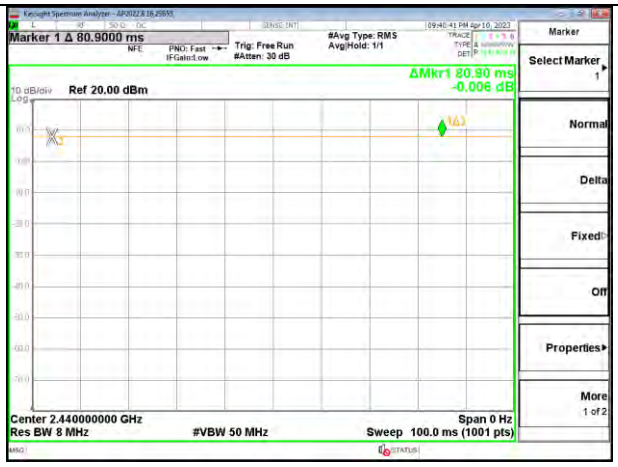
KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
BLE 1Mbps	89.700	89.700	1.000	100.00	0.00	0.010
BLE 2Mbps	80.900	80.900	1.000	100.00	0.00	0.010



BLE 1Mbps



BLE 2Mbps

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2. 99% BANDWIDTH

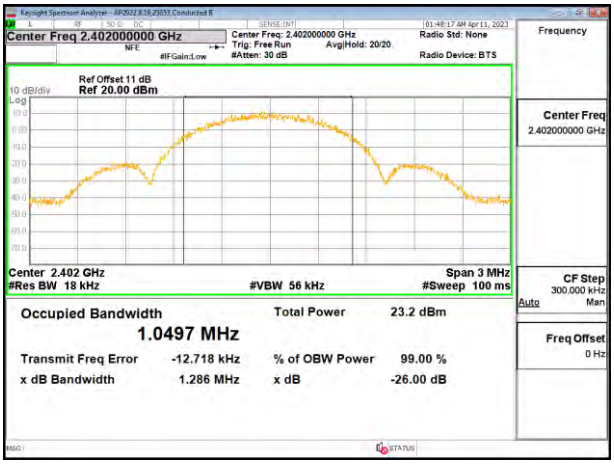
LIMITS

None; for reporting purposes only.

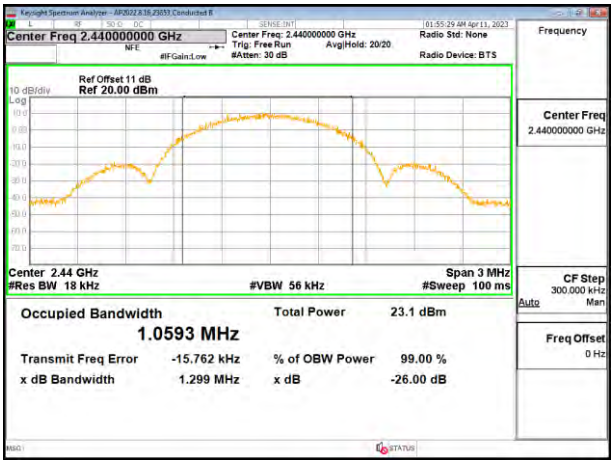
RESULTS

9.2.1. BLE (1Mbps)

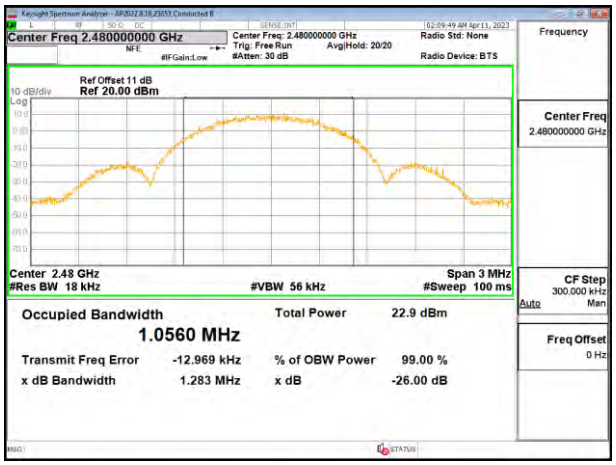
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0497
Middle	2440	1.0593
High	2480	1.0560



LOW CHANNEL



MID CHANNEL

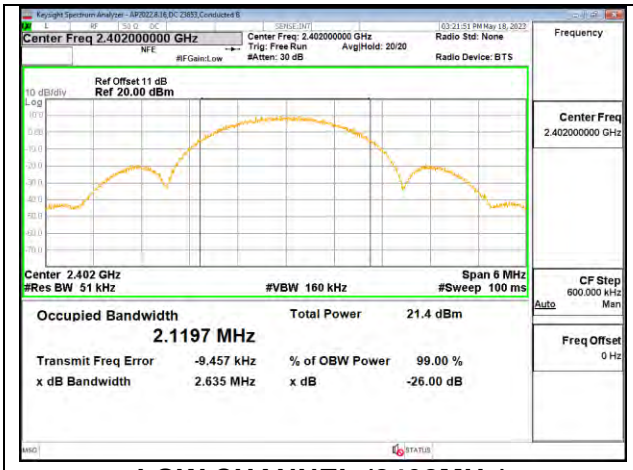


HIGH CHANNEL

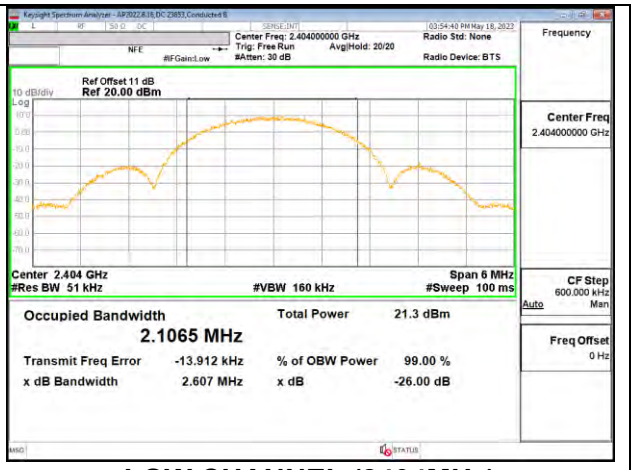
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.2.2. BLE (2Mbps)

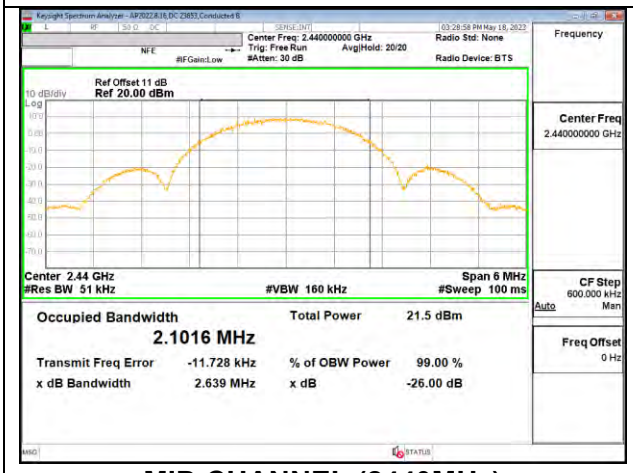
Frequency (MHz)	99% Bandwidth (MHz)
2402	2.1197
2404	2.1065
2440	2.1016
2478	2.1114
2480	2.1143



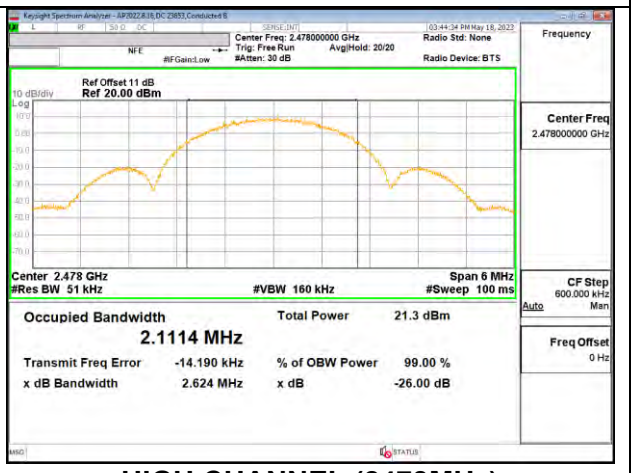
LOW CHANNEL (2402MHz)



LOW CHANNEL (2404MHz)

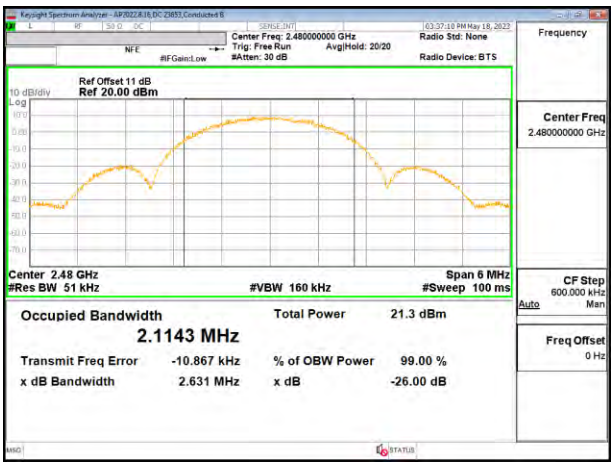


MID CHANNEL (2440MHz)



HIGH CHANNEL (2478MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888



HIGH CHANNEL (2480MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

RSS-247 5.2 (a)

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

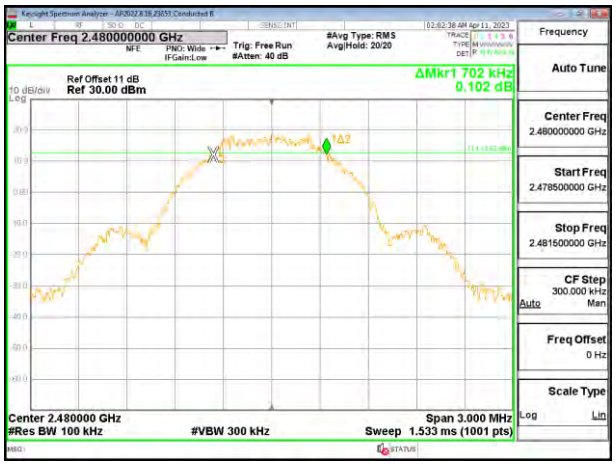
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.3.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.7140	0.5
Middle	2440	0.7170	0.5
High	2480	0.7020	0.5

LOW CHANNEL

MID CHANNEL

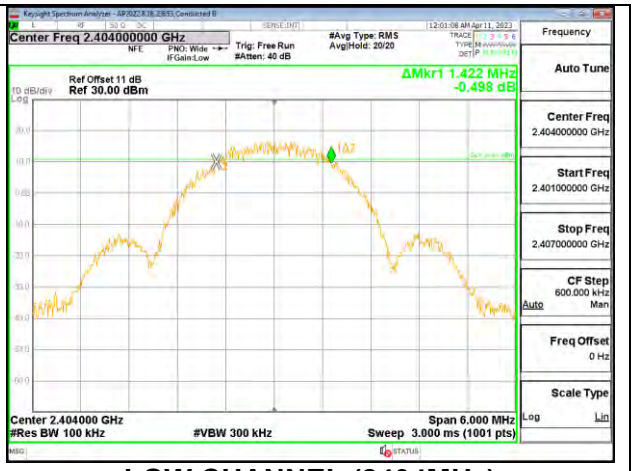


HIGH CHANNEL

9.3.2. BLE (2Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.3860	0.5
Low	2404	1.4220	0.5
Middle	2440	1.4340	0.5
High	2478	1.2600	0.5
High	2480	1.4340	0.5

LOW CHANNEL (2402MHz)

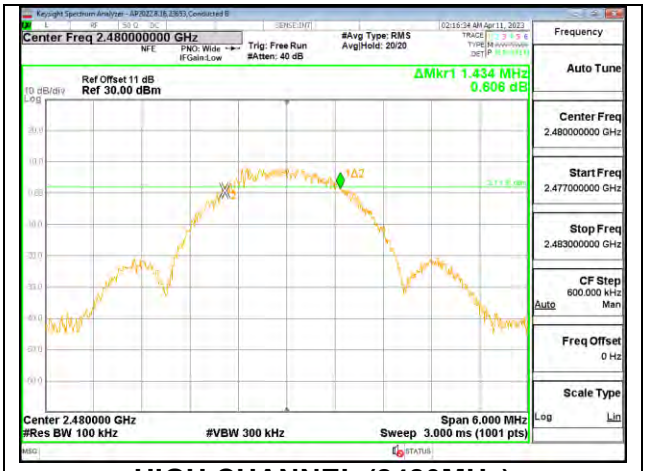


LOW CHANNEL (2404MHz)

MID CHANNEL

HIGH CHANNEL (2478MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888



HIGH CHANNEL (2480MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband power sensor. Peak output power was read directly from power meter.

RESULTS

9.4.1. BLE (1Mbps)

Tested By:	23653 DC
Date:	2023-08-10

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	16.1	30	-13.90
Middle	2440	16.66	30	-13.34
High	2480	19.35	30	-10.65

9.4.2. BLE (2Mbps)

Tested By:	23653 DC
Date:	2023-08-10

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.05	30	-12.95
Low	2404	17.19	30	-12.81
Middle	2440	19.58	30	-10.42
High	2478	19.55	30	-10.45
High	2480	11.97	30	-18.03

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The power output was measured on the EUT antenna port using SMA cable with 10dB attenuator connected to a power meter via wideband power sensor. Gated average output power was read directly from power meter.

RESULTS

9.5.1. BLE (1Mbps)

Tested By:	23653 DC
Date:	2023-08-10

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	15.94
Middle	2440	16.53
High	2480	19.24

9.5.2. BLE (2Mbps)

Tested By:	23653 DC
Date:	2023-08-10

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	16.89
Low	2404	17.02
Middle	2440	19.49
High	2478	19.45
High	2480	11.65

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

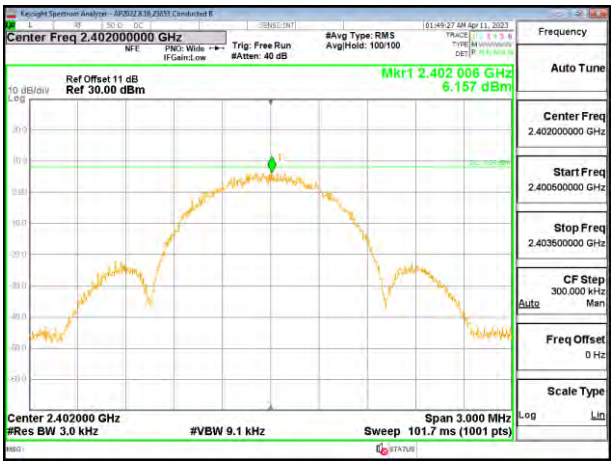
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

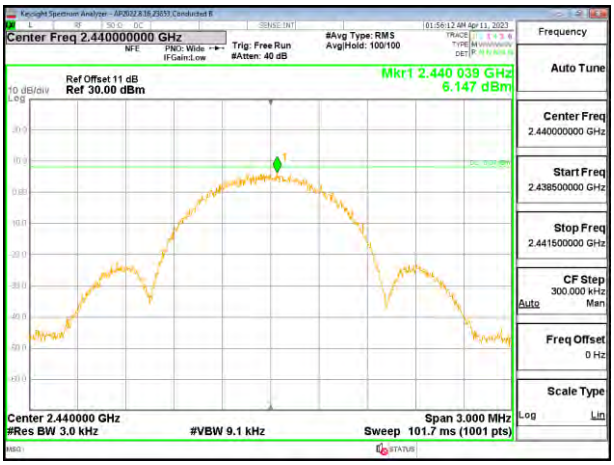
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.6.1. BLE (1Mbps)

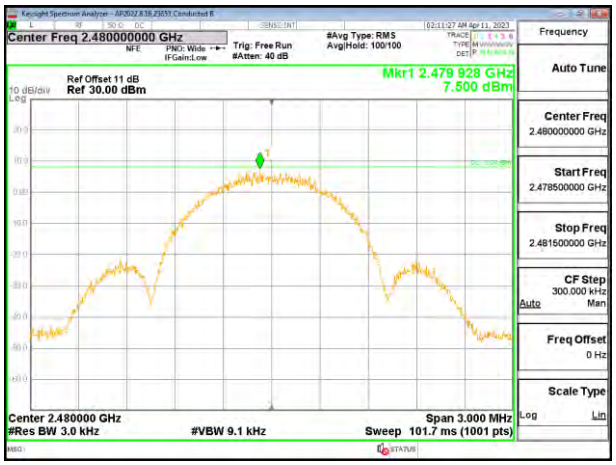
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	6.16	8	-1.84
Middle	2440	6.15	8	-1.85
High	2480	7.50	8	-0.50



LOW CHANNEL



MID CHANNEL

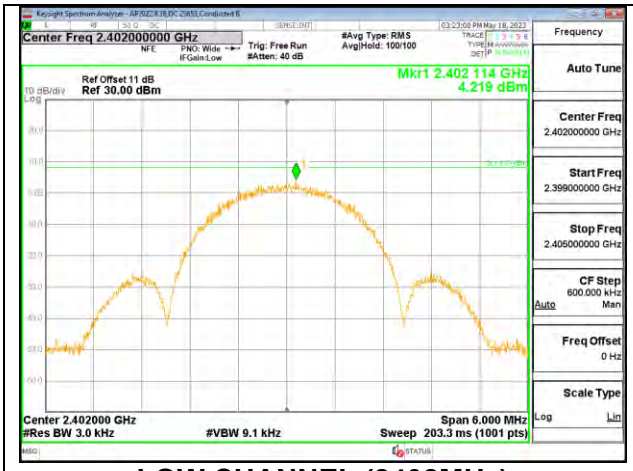


HIGH CHANNEL

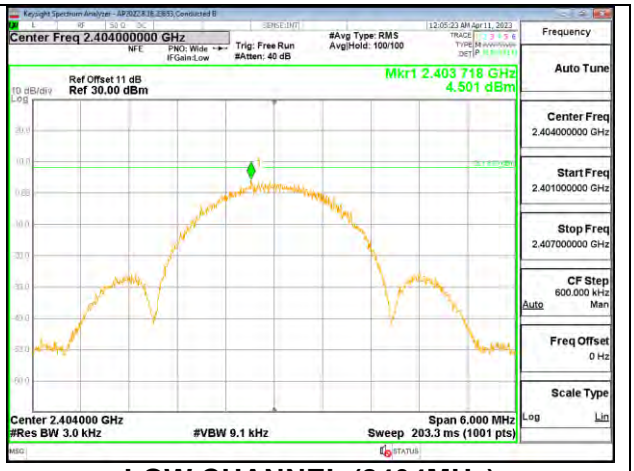
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.6.2. BLE (2Mbps)

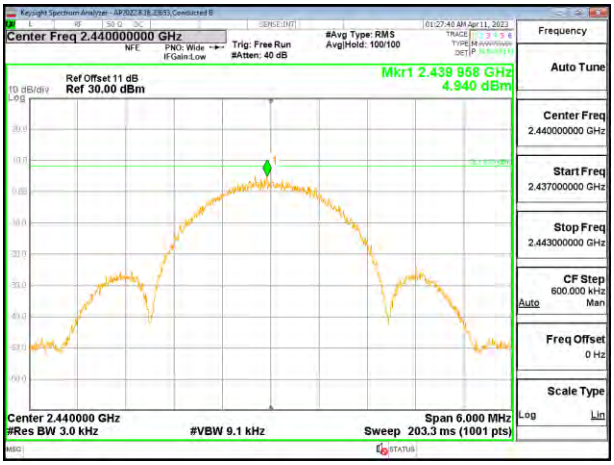
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	4.22	8	-3.78
Low	2404	4.50	8	-3.50
Middle	2440	4.94	8	-3.06
High	2478	3.76	8	-4.24
High	2480	-3.51	8	-11.51



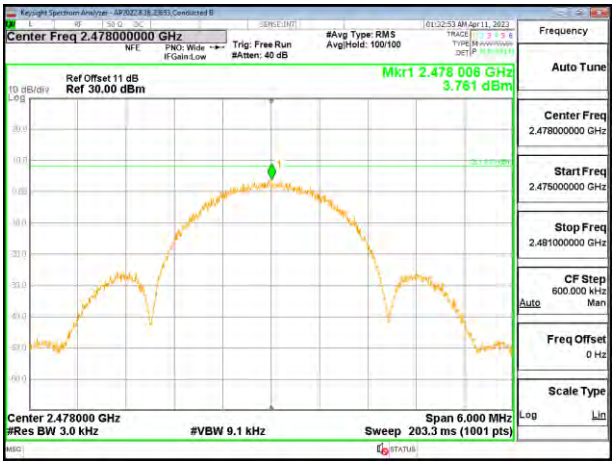
LOW CHANNEL (2402MHz)



LOW CHANNEL (2404MHz)

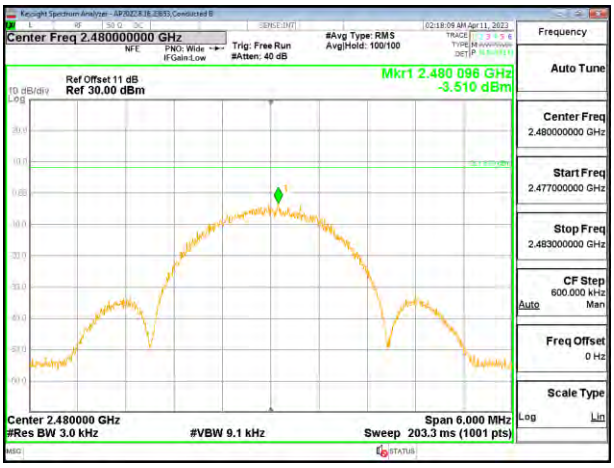


MID CHANNEL



HIGH CHANNEL (2478MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888



HIGH CHANNEL (2480MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

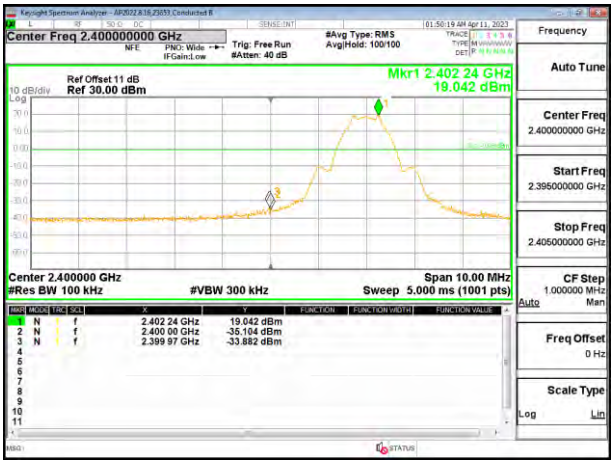
RSS-247 5.5

Output power was measured based on the use of a peak measurement; therefore, the required attenuation is 20 dBc.

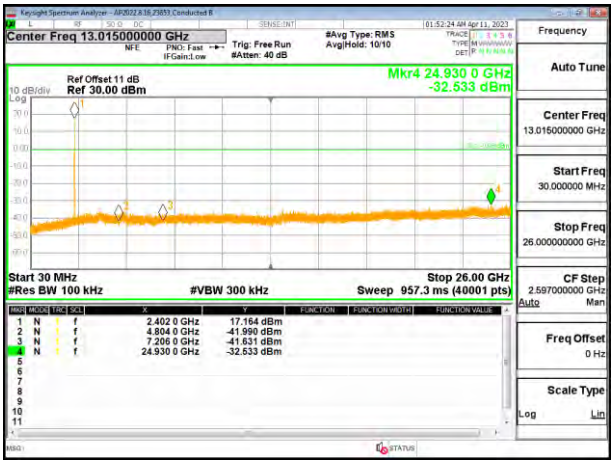
RESULTS

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

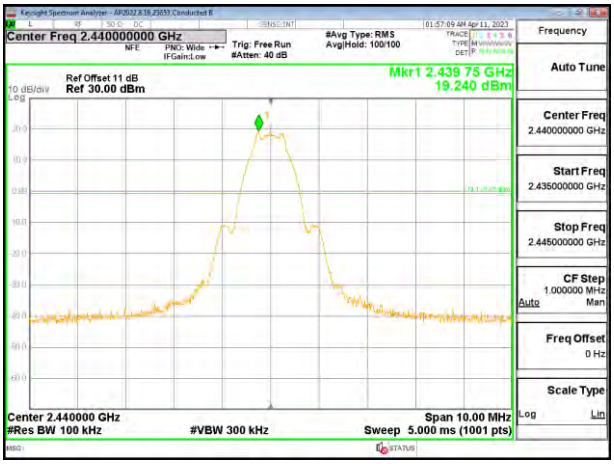
9.7.1. BLE (1Mbps)



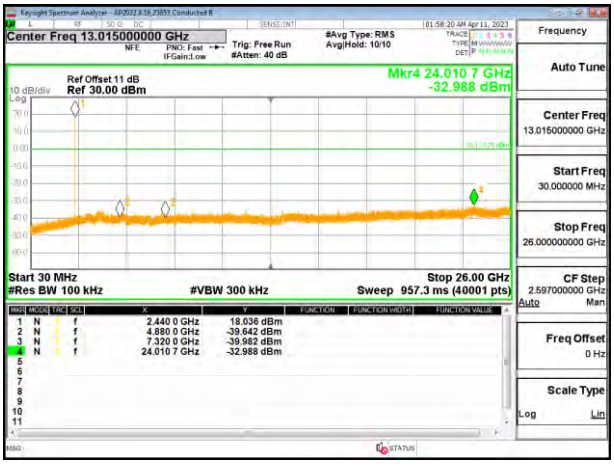
LOW CHANNEL BANDEDGE



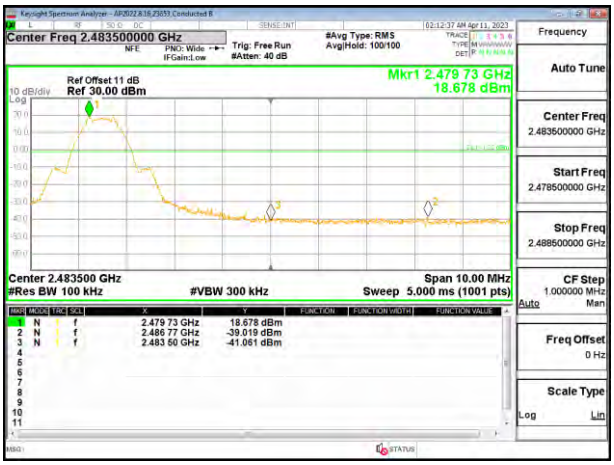
OUT-OF-BAND LOW CHANNEL



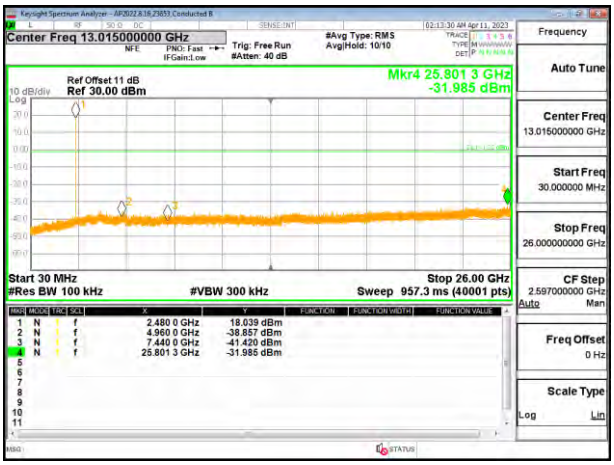
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



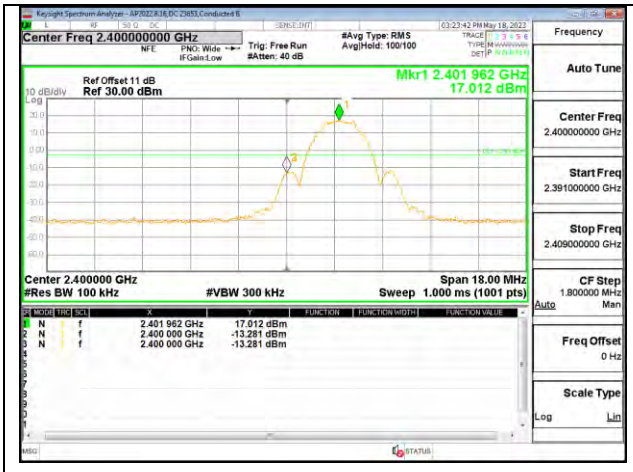
HIGH CHANNEL BANDEDGE



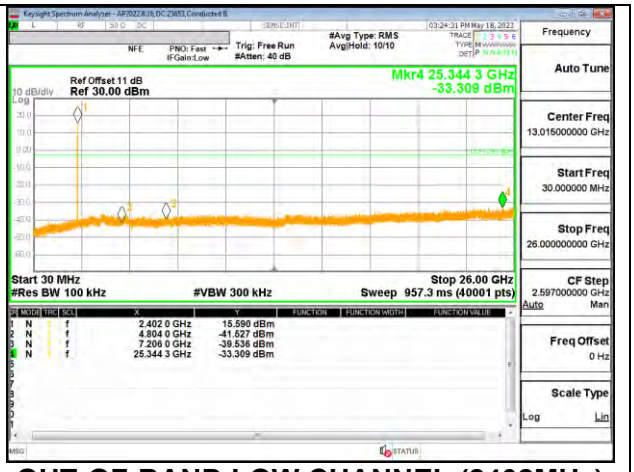
OUT-OF-BAND HIGH CHANNEL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

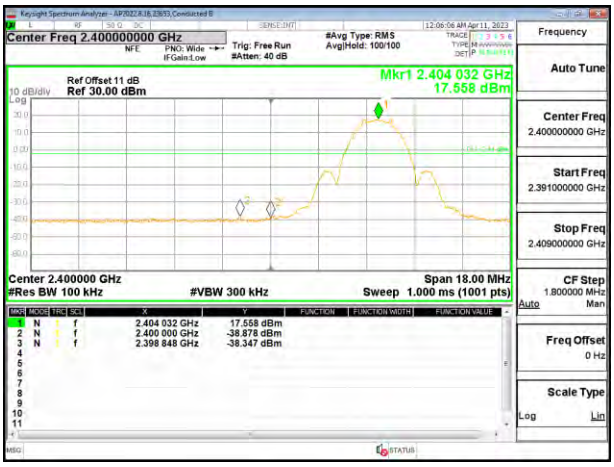
9.7.2. BLE (2Mbps)



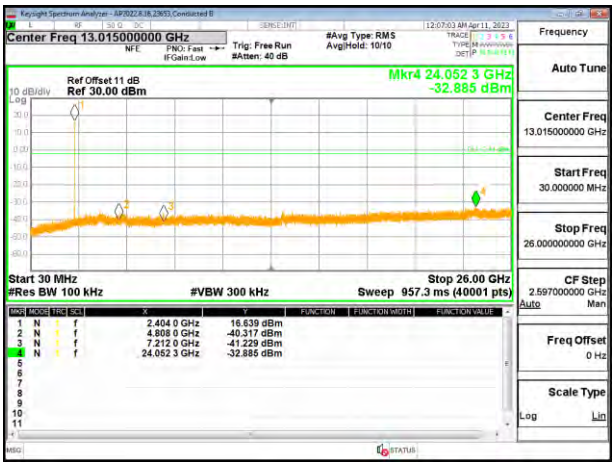
LOW CHANNEL BANDEDGE (2402MHz)



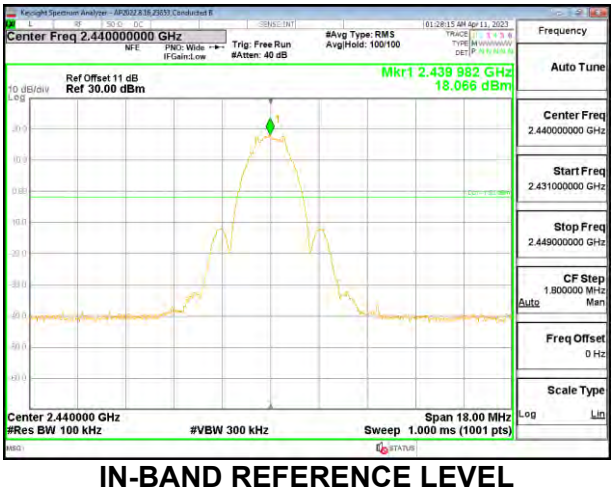
OUT-OF-BAND LOW CHANNEL (2402MHz)



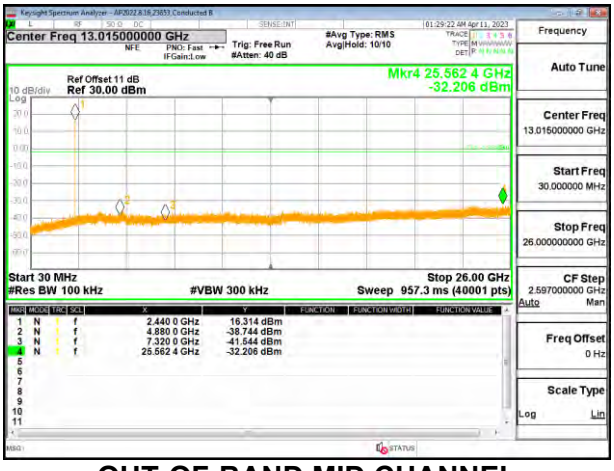
LOW CHANNEL BANDEDGE (2404MHz)



OUT-OF-BAND LOW CHANNEL (2404MHz)

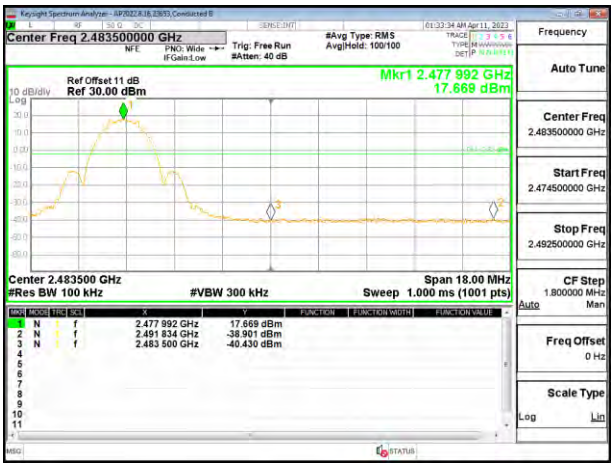


IN-BAND REFERENCE LEVEL

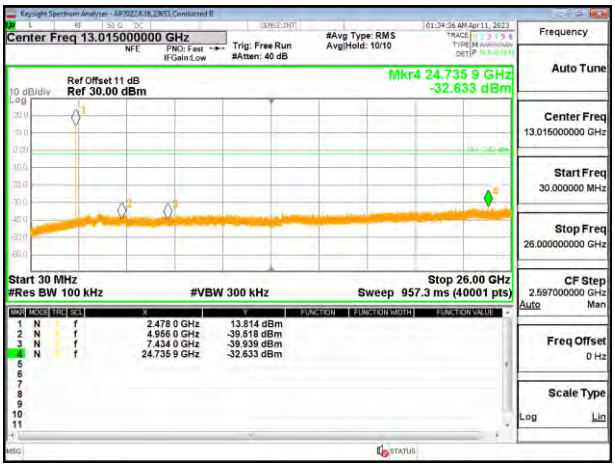


OUT-OF-BAND MID CHANNEL

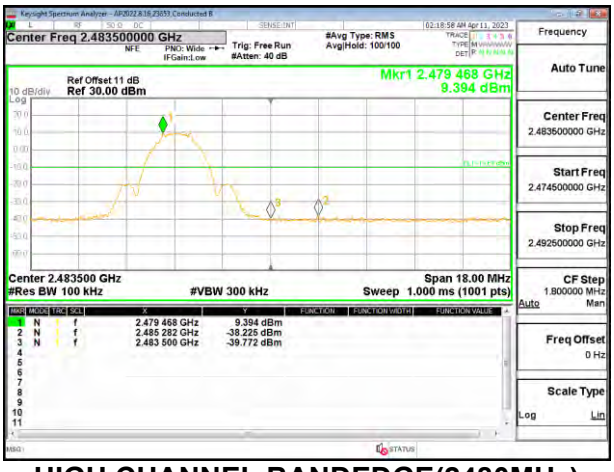
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888



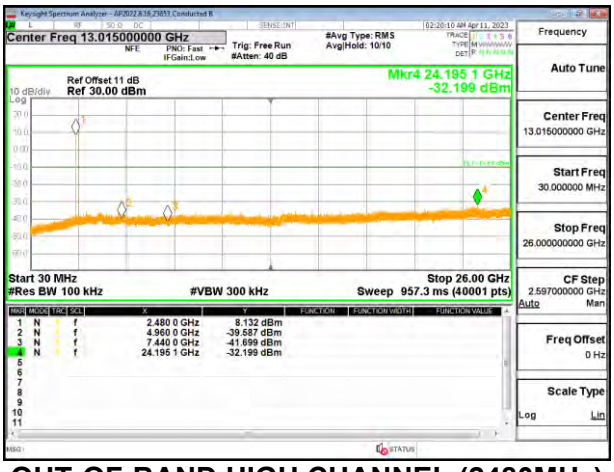
HIGH CHANNEL BANDEDGE(2478MHz)



OUT-OF-BAND HIGH CHANNEL (2478MHz)



HIGH CHANNEL BANDEDGE(2480MHz)



OUT-OF-BAND HIGH CHANNEL (2480MHz)

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

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 1 GHz to 18 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz and above 18GHz emissions, the channel with the highest output power was tested.

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.

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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. Blue color trace on plots: Parallel orientation. Green color trace on plots: Perpendicular orientation.

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.

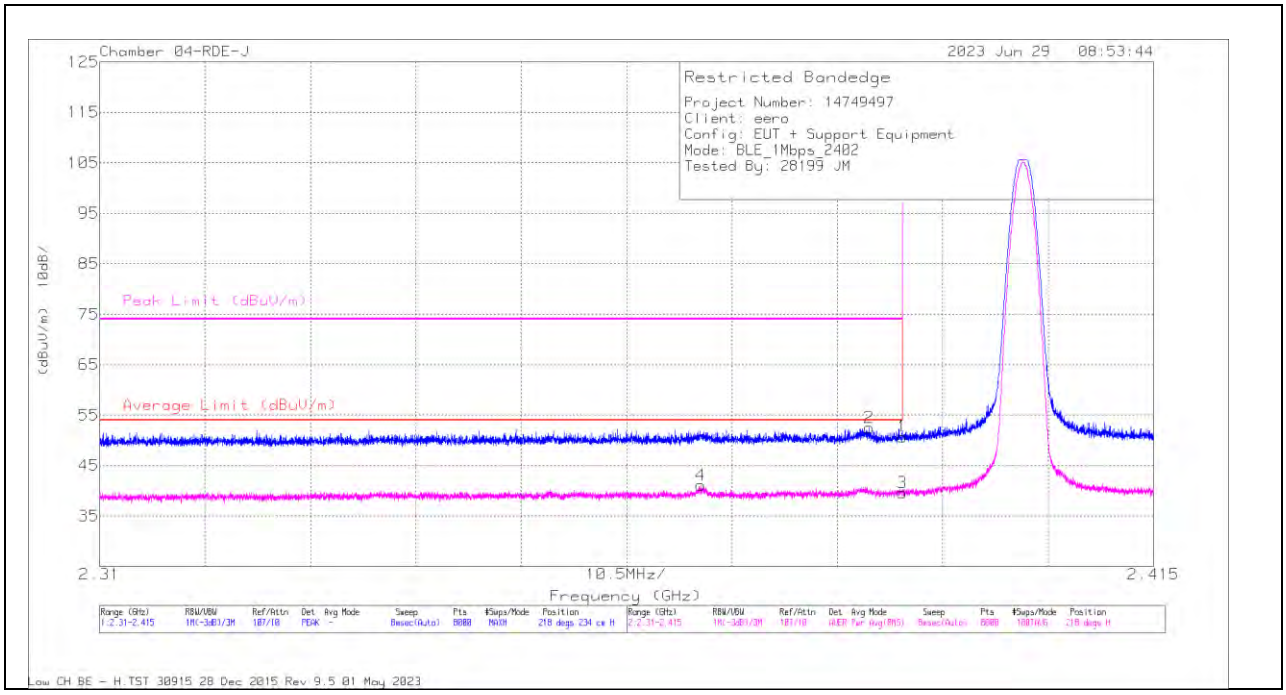
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



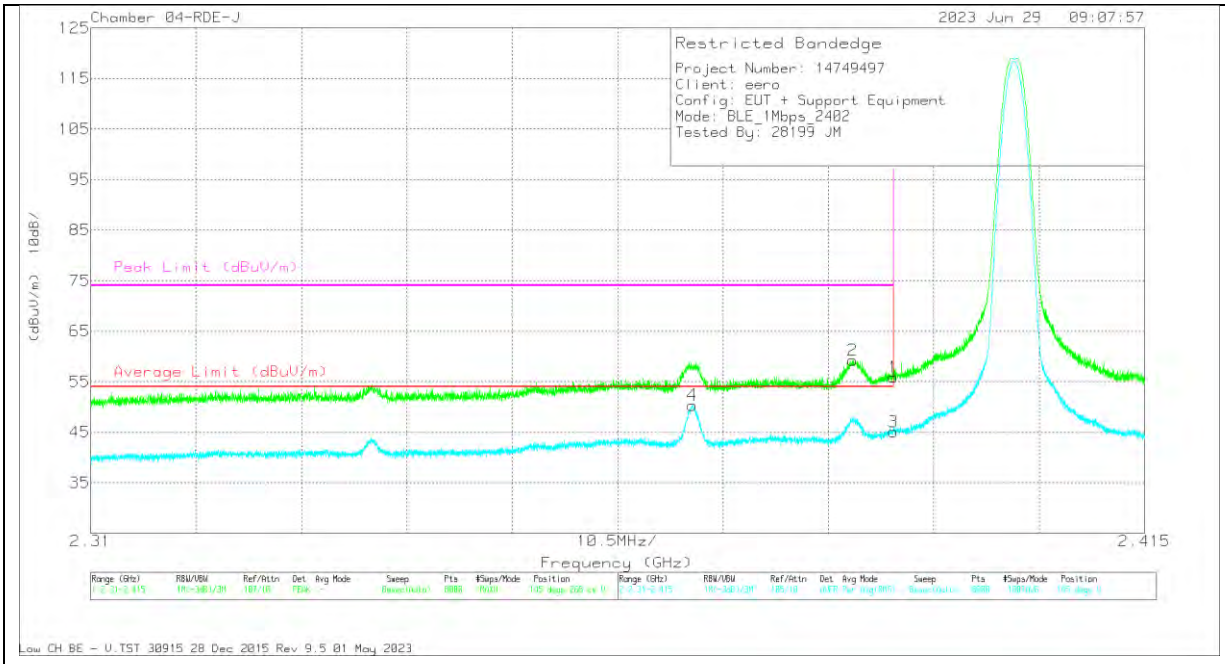
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.73	Pk	32	-18	50.73	-	-	74	-23.27	218	234	H
2	* 2.386701	38.57	Pk	32	-18	52.57	-	-	74	-21.43	218	234	H
3	* 2.39	25.62	RMS	32	-18	39.62	54	-14.38	-	-	218	234	H
4	* 2.369859	27.26	RMS	31.9	-18.1	41.06	54	-12.94	-	-	218	234	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

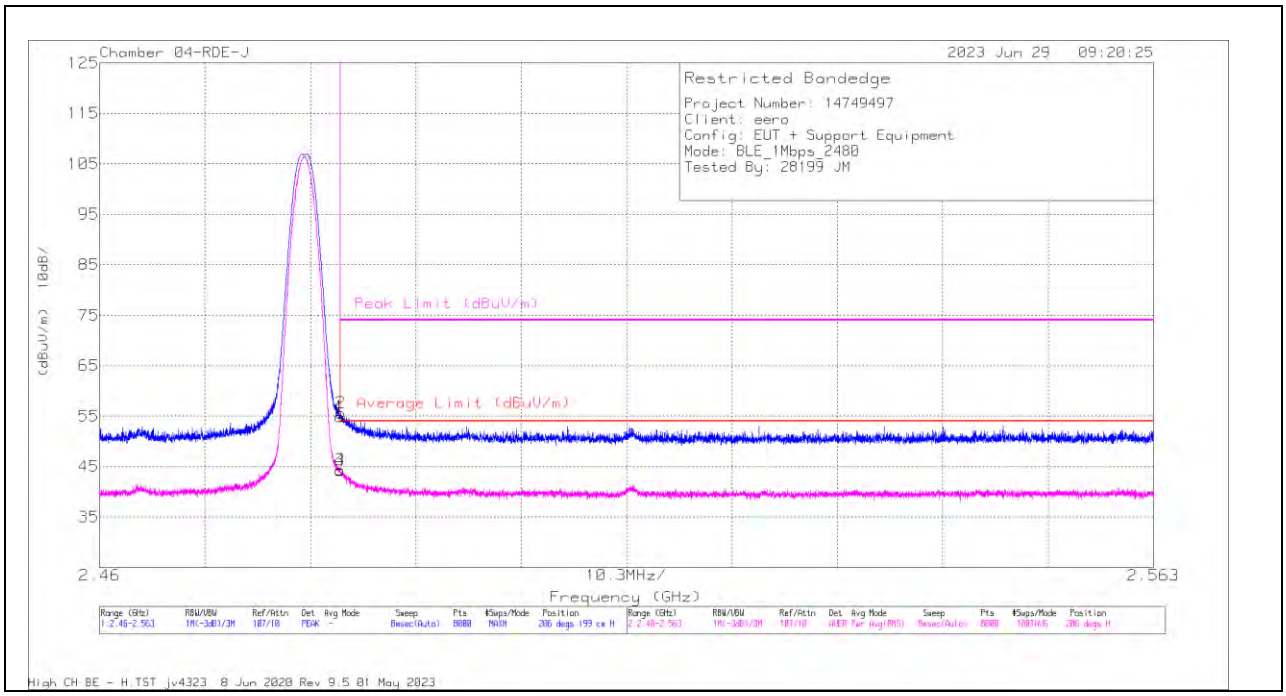
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	41.87	Pk	32	-18	55.87	-	-	74	-18.13	145	268	V
2	* 2.38594	45.38	Pk	32	-18.1	59.28	-	-	74	-14.72	145	268	V
3	* 2.39	31.11	RMS	32	-18	45.11	54	-8.89	-	-	145	268	V
4	* 2.369925	36.55	RMS	31.9	-18.1	50.35	54	-3.65	-	-	145	268	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



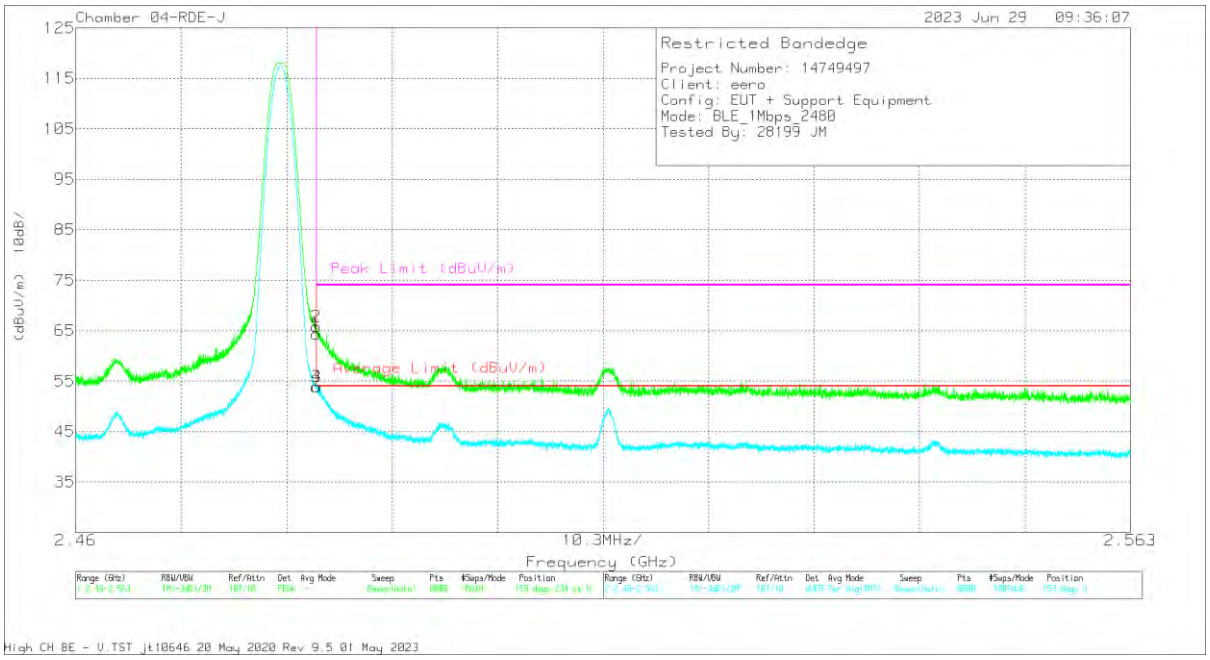
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	40.57	Pk	32.2	-17.9	54.87	-	-	74	-19.13	206	199	H
2	* 2.483552	41.22	Pk	32.2	-17.8	55.62	-	-	74	-18.38	206	199	H
3	* 2.4835	29.98	RMS	32.2	-17.9	44.28	54	-9.72	-	-	206	199	H
4	* 2.483501	29.85	RMS	32.2	-17.8	44.25	54	-9.75	-	-	206	199	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

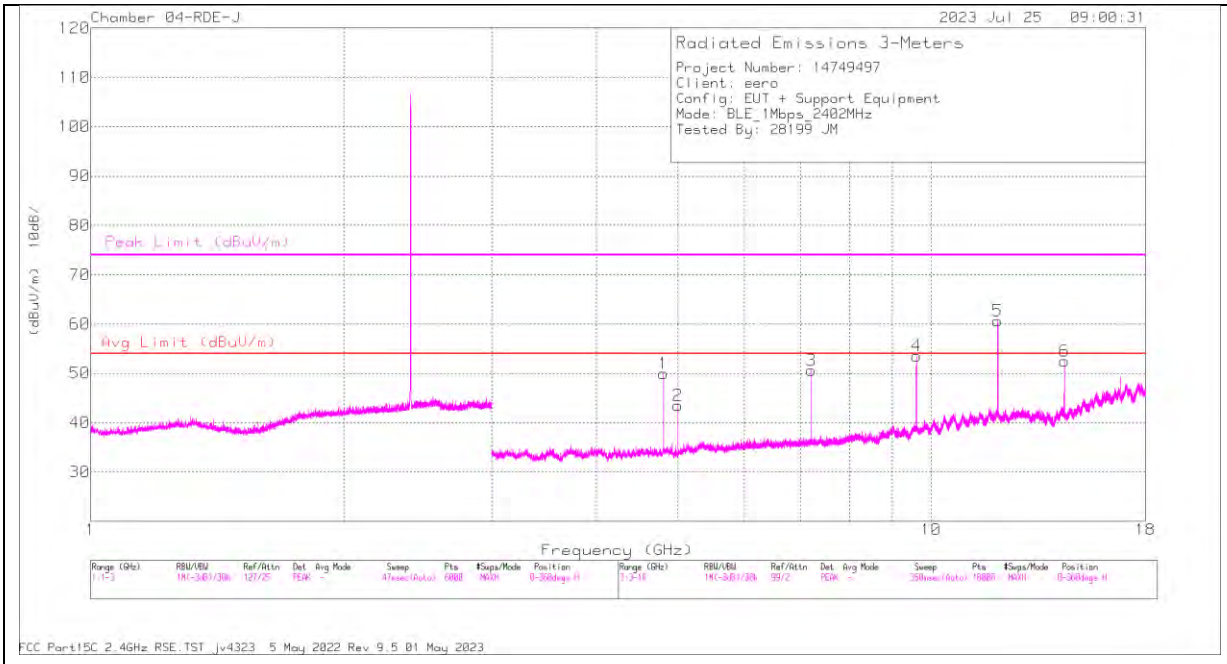
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	50	Pk	32.2	-17.9	64.3	-	-	74	-9.7	159	234	V
2	* 2.483513	51.36	Pk	32.2	-17.8	65.76	-	-	74	-8.24	159	234	V
3	* 2.4835	39.58	RMS	32.2	-17.9	53.88	54	-.12	-	-	159	234	V
4	* 2.483565	39.51	RMS	32.2	-17.8	53.91	54	-.09	-	-	159	234	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

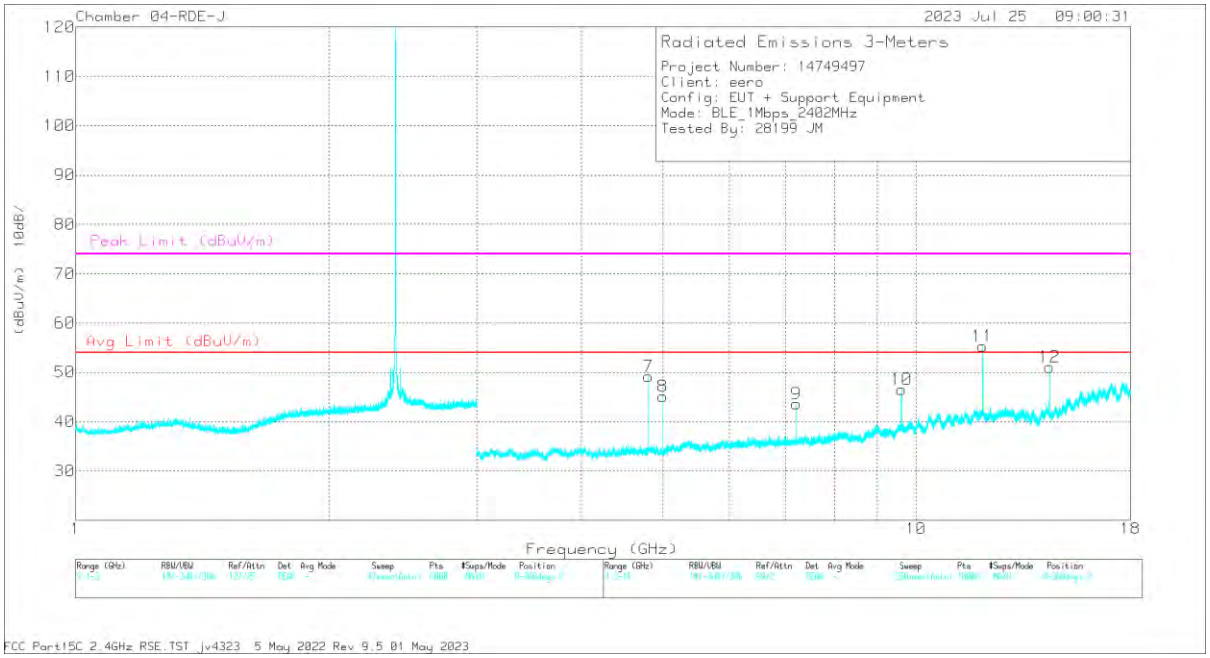
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

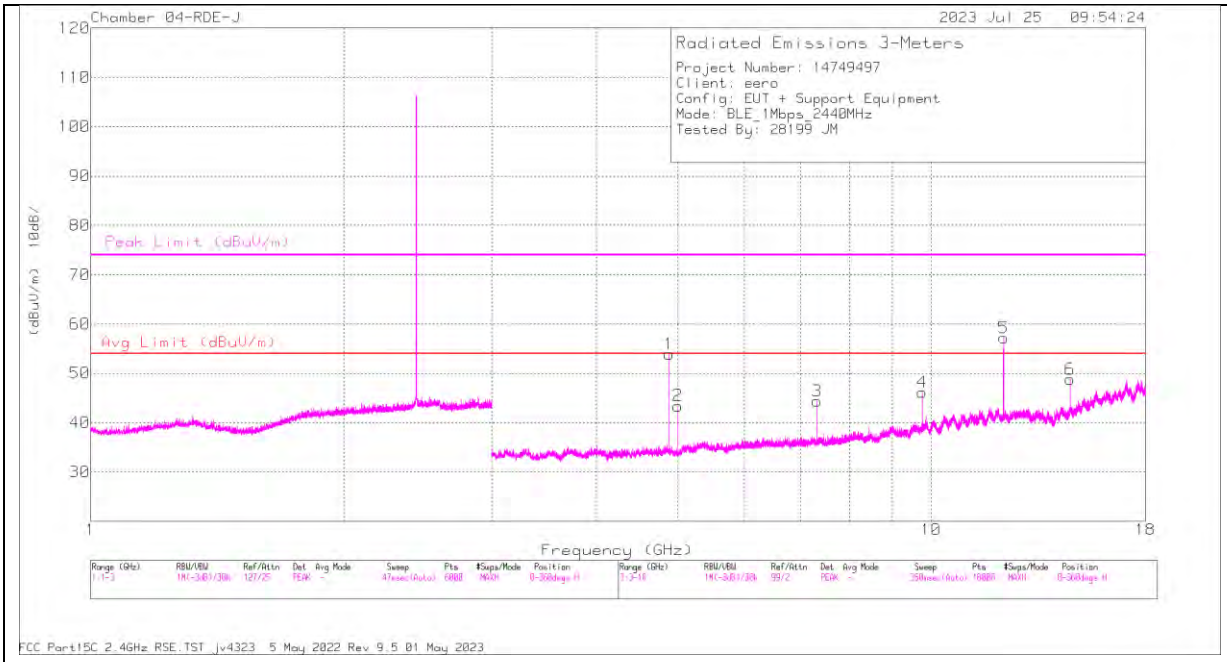
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.804362	66.79	PK2	34	-45	55.79	-	-	74	-18.21	208	326	H
	* 4.804293	62.81	MAv1	34	-45	51.81	54	-2.19	-	-	208	326	H
2	* 4.999902	59.92	PK2	34.2	-44.8	49.32	-	-	74	-24.68	60	102	H
	* 5.000083	54.55	MAv1	34.2	-44.8	43.95	54	-10.05	-	-	60	102	H
3	7.206069	57.33	Pk	35.8	-42.5	50.63	-	-	-	-	0-360	200	H
4	9.608703	57.11	Pk	36.7	-40.3	53.51	-	-	-	-	0-360	200	H
5	* 12.011179	58.69	PK2	38.7	-38.9	58.49	-	-	74	-15.51	208	192	H
	* 12.008778	51.67	MAv1	38.7	-38.9	51.47	54	-2.53	-	-	208	192	H
6	14.410639	52.65	Pk	39.3	-39.5	52.45	-	-	-	-	0-360	200	H
7	* 4.803424	64.44	PK2	34	-45.1	53.34	-	-	74	-20.66	260	242	V
	* 4.804187	59.75	MAv1	34	-45	48.75	54	-5.25	-	-	260	242	V
8	* 5.000035	60.28	PK2	34.2	-44.8	49.68	-	-	74	-24.32	81	105	V
	* 5.000029	55.5	MAv1	34.2	-44.8	44.9	54	-9.1	-	-	81	105	V
9	7.204402	50.34	Pk	35.8	-42.5	43.64	-	-	-	-	0-360	101	V
10	9.608703	50.18	Pk	36.7	-40.3	46.58	-	-	-	-	0-360	200	V
11	* 12.008737	55.79	PK2	38.7	-38.9	55.59	-	-	74	-18.41	246	288	V
	* 12.011065	47.11	MAv1	38.7	-38.9	46.91	54	-7.09	-	-	246	288	V
12	14.413139	51.45	Pk	39.3	-39.7	51.05	-	-	-	-	0-360	101	V

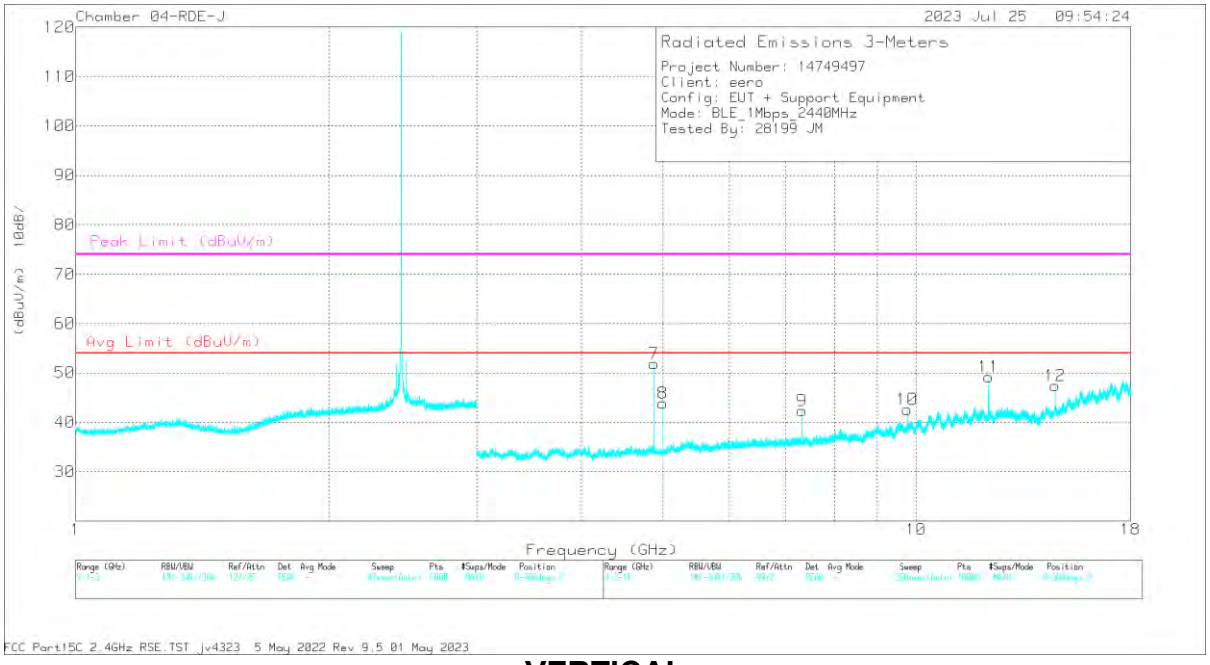
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

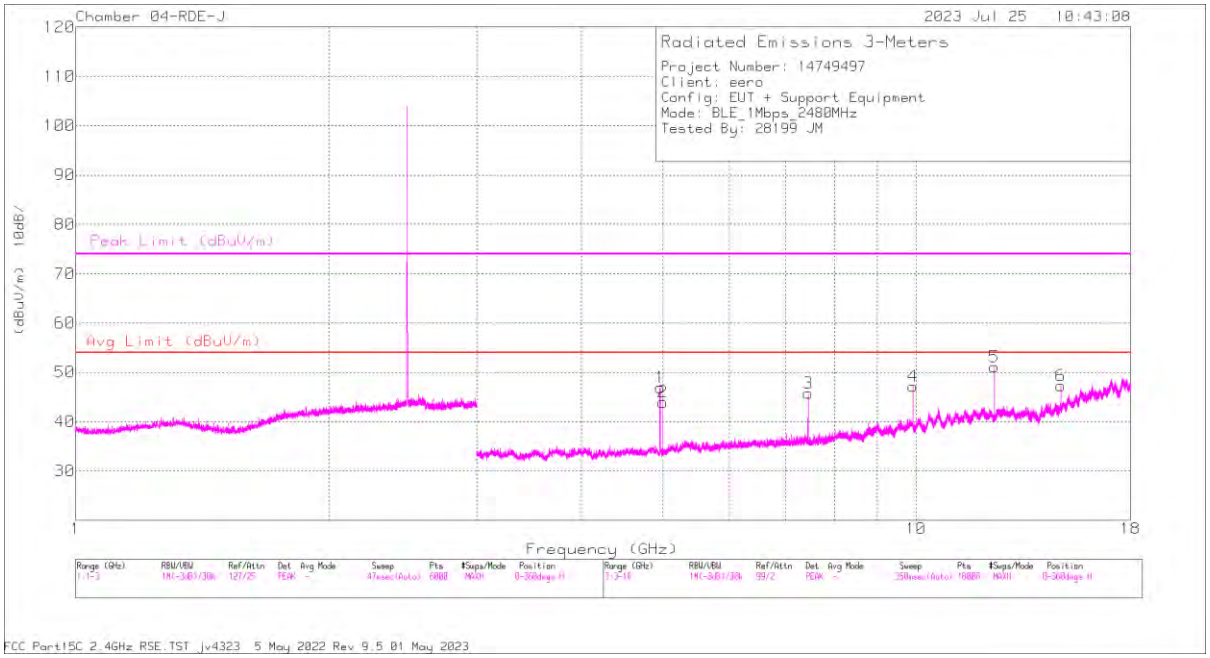
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.879477	65.77	PK2	34	-44.6	55.17	-	-	74	-18.83	244	323	H
	* 4.879729	61.86	MAv1	34	-44.6	51.26	54	-2.74	-	-	244	323	H
2	* 5.000112	54.03	Pk	34.2	-44.8	43.43	-	-	74	-30.57	0-360	101	H
3	* 7.31913	59.58	PK2	35.8	-42.4	52.98	-	-	74	-21.02	150	220	H
	* 7.319211	52.41	MAv1	35.8	-42.4	45.81	54	-8.19	-	-	150	220	H
4	9.759545	50.27	Pk	36.8	-40.9	46.17	-	-	-	-	0-360	200	H
5	* 12.198767	59.83	PK2	38.8	-39.6	59.03	-	-	74	-14.97	233	287	H
	* 12.198686	53.3	MAv1	38.8	-39.6	52.5	54	-1.5	-	-	233	287	H
6	14.638985	48.64	Pk	39.4	-39.2	48.84	-	-	-	-	0-360	200	H
7	* 4.880426	64.84	PK2	34	-44.6	54.24	-	-	74	-19.76	264	167	V
	* 4.880145	60.57	MAv1	34	-44.6	49.97	54	-4.03	-	-	264	167	V
8	* 5.000103	60.31	PK2	34.2	-44.8	49.71	-	-	74	-24.29	80	106	V
	* 5.000032	55.72	MAv1	34.2	-44.8	45.12	54	-8.88	-	-	80	106	V
9	* 7.319409	48.94	Pk	35.8	-42.4	42.34	-	-	74	-31.66	0-360	101	V
10	9.758712	46.69	Pk	36.8	-40.9	42.59	-	-	-	-	0-360	200	V
11	* 12.200875	54.12	PK2	38.8	-39.6	53.32	-	-	74	-20.68	285	121	V
	* 12.20096	44.3	MAv1	38.8	-39.6	43.5	54	-10.5	-	-	285	121	V
12	14.638985	47.2	Pk	39.4	-39.2	47.4	-	-	-	-	0-360	200	V

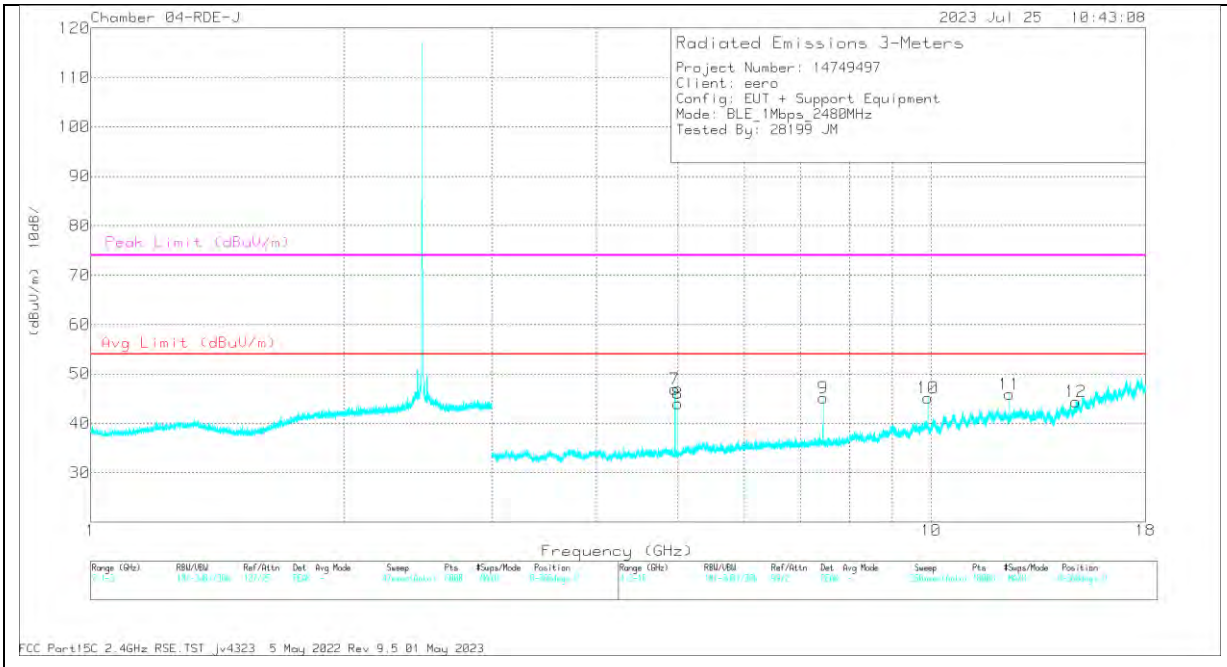
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average
Marker 1, 3, 5, 7, 8, 11 are chosen as the 6 worst cases.

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.960397	64.83	PK2	34.1	-44.6	54.33	-	-	74	-19.67	215	368	H
	* 4.959776	60.69	MAv1	34.1	-44.6	50.19	54	-3.81	-	-	215	368	H
2	* 4.999279	54.54	Pk	34.2	-44.8	43.94	-	-	74	-30.06	0-360	101	H
3	* 7.440735	57.84	PK2	35.8	-42.2	51.44	-	-	74	-22.56	177	235	H
	* 7.440555	50.37	MAv1	35.8	-42.2	43.97	54	-10.03	-	-	177	235	H
4	9.920388	50.23	Pk	37	-40	47.23	-	-	-	-	0-360	200	H
5	* 12.401071	58.86	PK2	38.9	-39.7	58.06	-	-	74	-15.94	175	200	H
	* 12.40104	52.86	MAv1	38.9	-39.7	52.06	54	-1.94	-	-	175	200	H
6	14.878165	47.45	Pk	39.7	-39.8	47.35	-	-	-	-	0-360	101	H
7	* 4.960347	63.05	PK2	34.1	-44.6	52.55	-	-	74	-21.45	286	107	V
	* 4.960211	57.6	MAv1	34.1	-44.6	47.1	54	-6.9	-	-	286	107	V
8	* 4.999279	54.55	Pk	34.2	-44.8	43.95	-	-	74	-30.05	0-360	200	V
9	* 7.440639	57.87	PK2	35.8	-42.2	51.47	-	-	74	-22.53	246	187	V
	* 7.439436	49.99	MAv1	35.8	-42.1	43.69	54	-10.31	-	-	246	187	V
10	9.918721	48.07	Pk	37	-39.9	45.17	-	-	-	-	0-360	200	V
11	* 12.398726	57.75	PK2	38.9	-39.4	57.25	-	-	74	-16.75	223	273	V
	* 12.398733	50.68	MAv1	38.9	-39.4	50.18	54	-3.82	-	-	223	273	V
12	14.881499	44.58	Pk	39.7	-39.9	44.38	-	-	-	-	0-360	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average
Marker 1, 3, 5, 7, 9, 11 are chosen as the 6 worst cases.

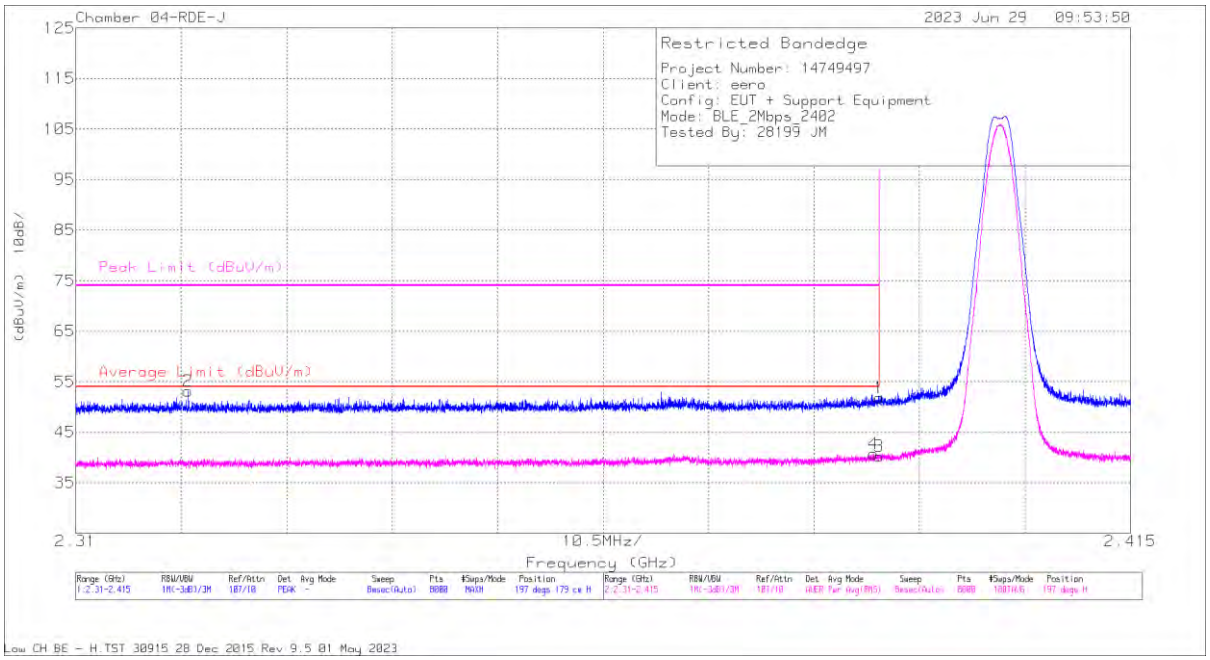
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

RADIATED EMISSIONS

10.2.2. BLE (2Mbps)

BANDEDGE (LOW CHANNEL 2402MHz)

HORIZONTAL RESULT



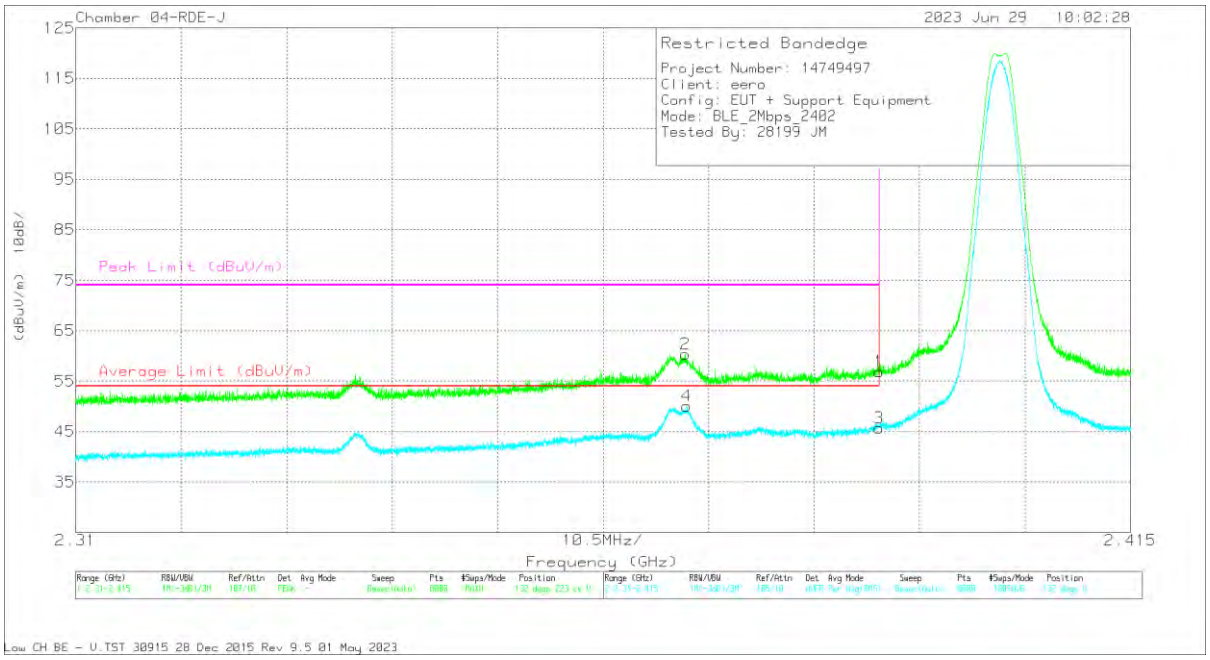
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.74	Pk	32	-18	51.74	-	-	74	-22.26	197	179	H
2	* 2.321158	39.46	Pk	31.8	-18.1	53.16	-	-	74	-20.84	197	179	H
3	* 2.39	26.19	RMS	32	-18	40.19	54	-13.81	-	-	197	179	H
4	* 2.389445	26.73	RMS	32	-18	40.73	54	-13.27	-	-	197	179	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

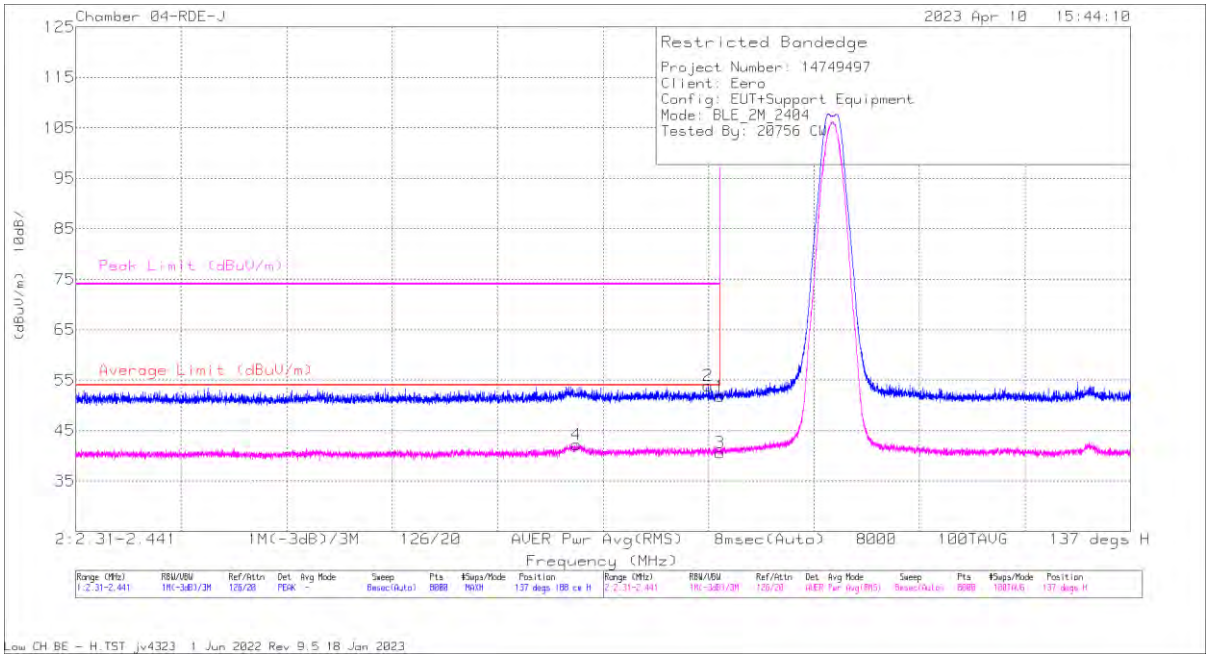
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.92	Pk	32	-18	56.92	-	-	74	-17.08	132	223	V
2	* 2.370673	46.47	Pk	31.9	-18	60.37	-	-	74	-13.63	132	223	V
3	* 2.39	31.65	RMS	32	-18	45.65	54	-8.35	-	-	132	223	V
4	* 2.370844	36.11	RMS	31.9	-18	50.01	54	-3.99	-	-	132	223	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (LOW CHANNEL 2404MHz)

HORIZONTAL RESULT



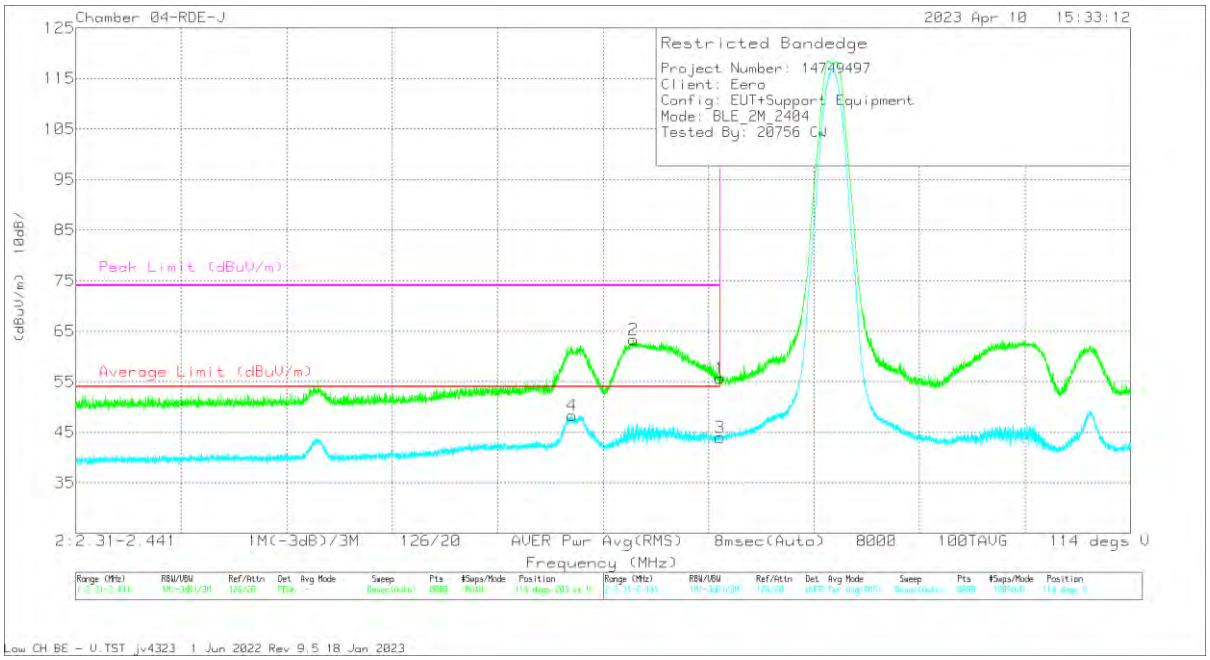
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2390	55.47	Pk	32	-35.7	51.77	-	-	74	-22.23	137	188	H
2	* 2388.511	57.56	Pk	32	-35.7	53.86	-	-	74	-20.14	137	188	H
3	* 2390	44.3	RMS	32	-35.7	40.6	54	-13.4	-	-	137	188	H
4	* 2372.151	45.96	RMS	31.9	-35.6	42.26	54	-11.74	-	-	137	188	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

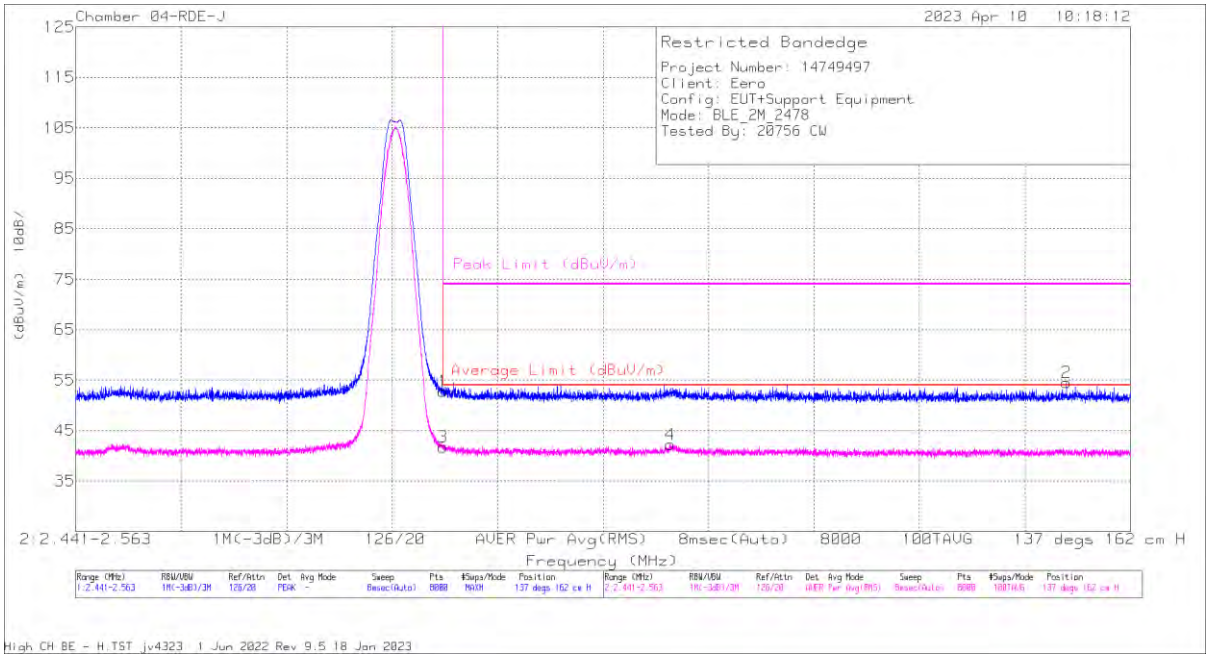
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2390	59.28	Pk	32	-35.7	55.58	-	-	74	-18.42	114	203	V
2	* 2379.258	67.07	Pk	32	-35.7	63.37	-	-	74	-10.63	114	203	V
3	* 2390	47.64	RMS	32	-35.7	43.94	54	-10.06	-	-	114	203	V
4	* 2371.61	52.04	RMS	31.9	-35.6	48.34	54	-5.66	-	-	114	203	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (HIGH CHANNEL 2478MHz)

HORIZONTAL RESULT



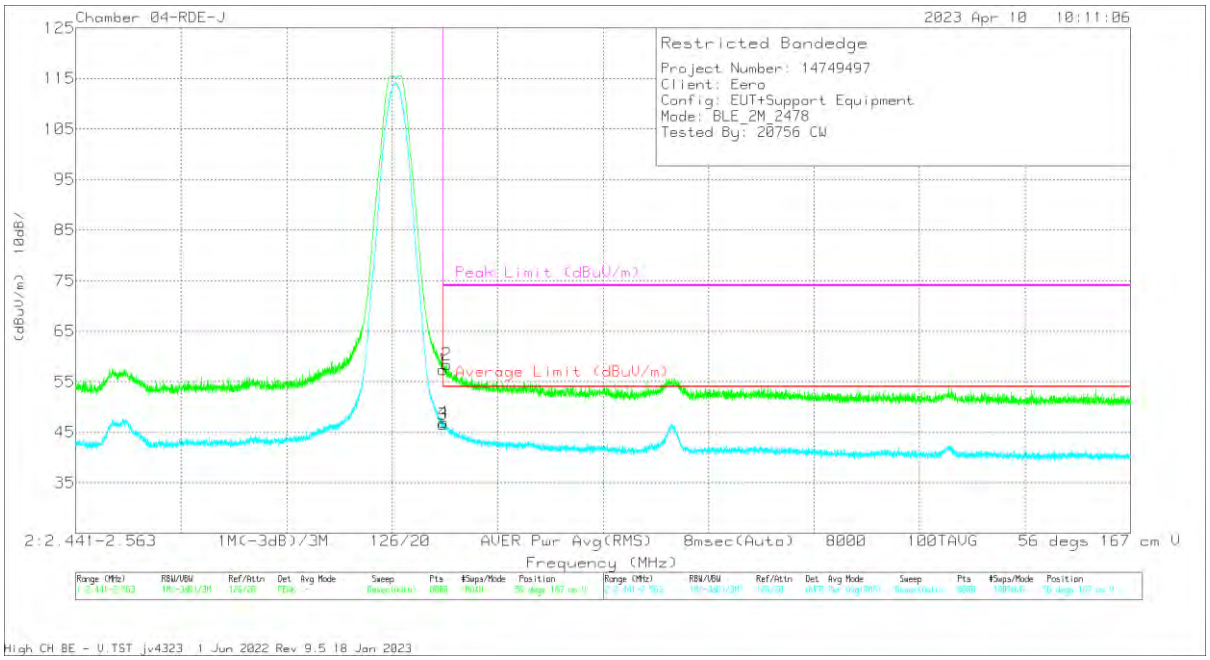
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2483.5	55.98	Pk	32.2	-35.4	52.78	-	-	74	-21.22	137	162	H
2	2555.588	57.69	Pk	32.3	-35.5	54.49	-	-	74	-19.51	137	162	H
3	* 2483.5	44.95	RMS	32.2	-35.4	41.75	54	-12.25	-	-	137	162	H
4	2509.756	45.37	RMS	32.3	-35.4	42.27	54	-11.73	-	-	137	162	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

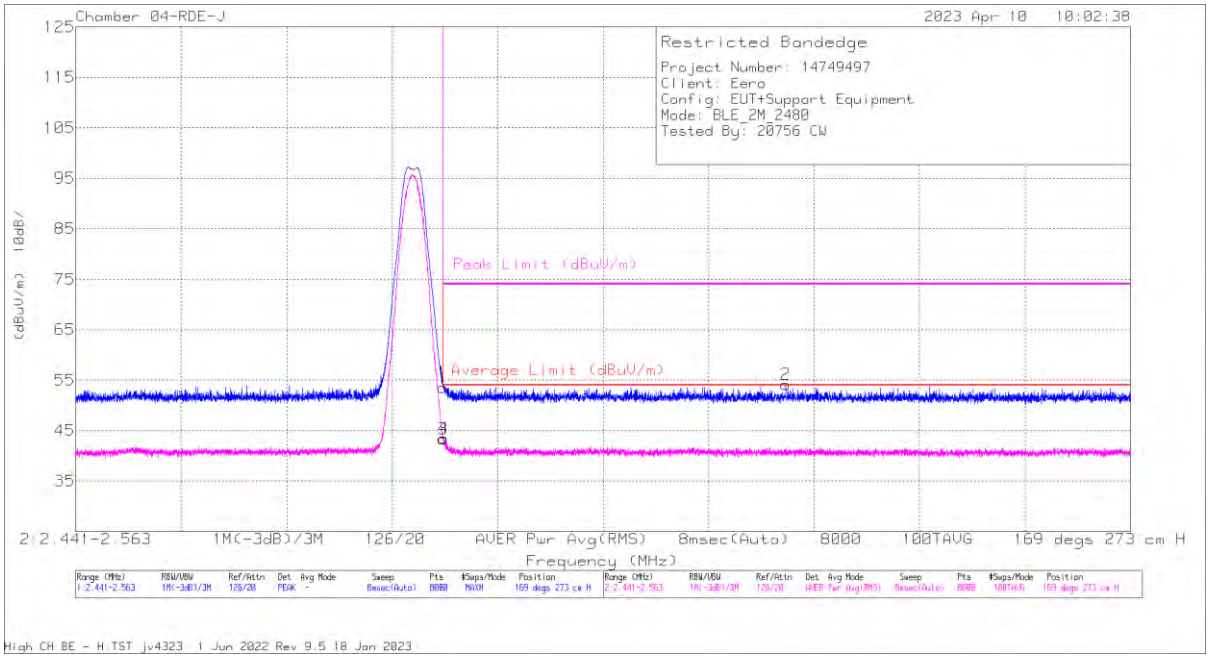
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2483.5	60.59	Pk	32.2	-35.4	57.39	-	-	74	-16.61	56	167	V
2	* 2483.919	61.52	Pk	32.3	-35.4	58.42	-	-	74	-15.58	56	167	V
3	* 2483.5	49.74	RMS	32.2	-35.4	46.54	54	-7.46	-	-	56	167	V
4	* 2483.538	50.14	RMS	32.2	-35.4	46.94	54	-7.06	-	-	56	167	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

BANDEDGE (HIGH CHANNEL 2480MHz)

HORIZONTAL RESULT



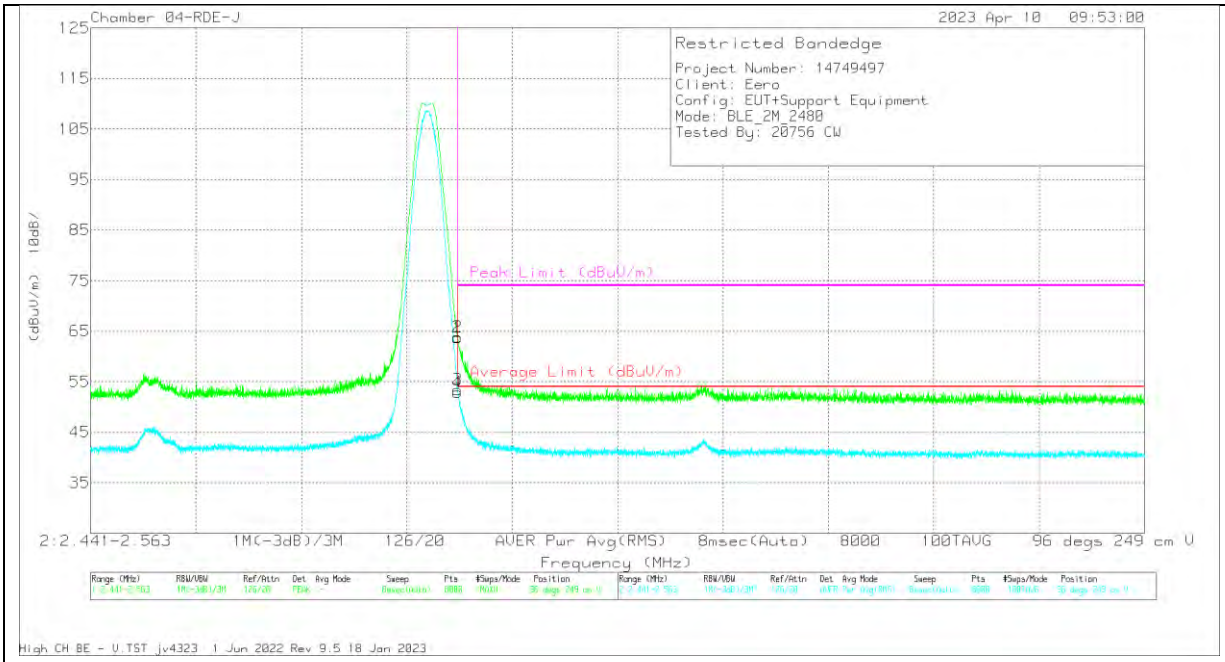
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2483.5	56.71	Pk	32.2	-35.4	53.51	-	-	74	-20.49	169	273	H
2	2523.132	57.31	Pk	32.3	-35.5	54.11	-	-	74	-19.89	169	273	H
3	* 2483.5	46.51	RMS	32.2	-35.4	43.31	54	-10.69	-	-	169	273	H
4	* 2483.523	46.71	RMS	32.2	-35.4	43.51	54	-10.49	-	-	169	273	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

VERTICAL RESULT



Trace Markers

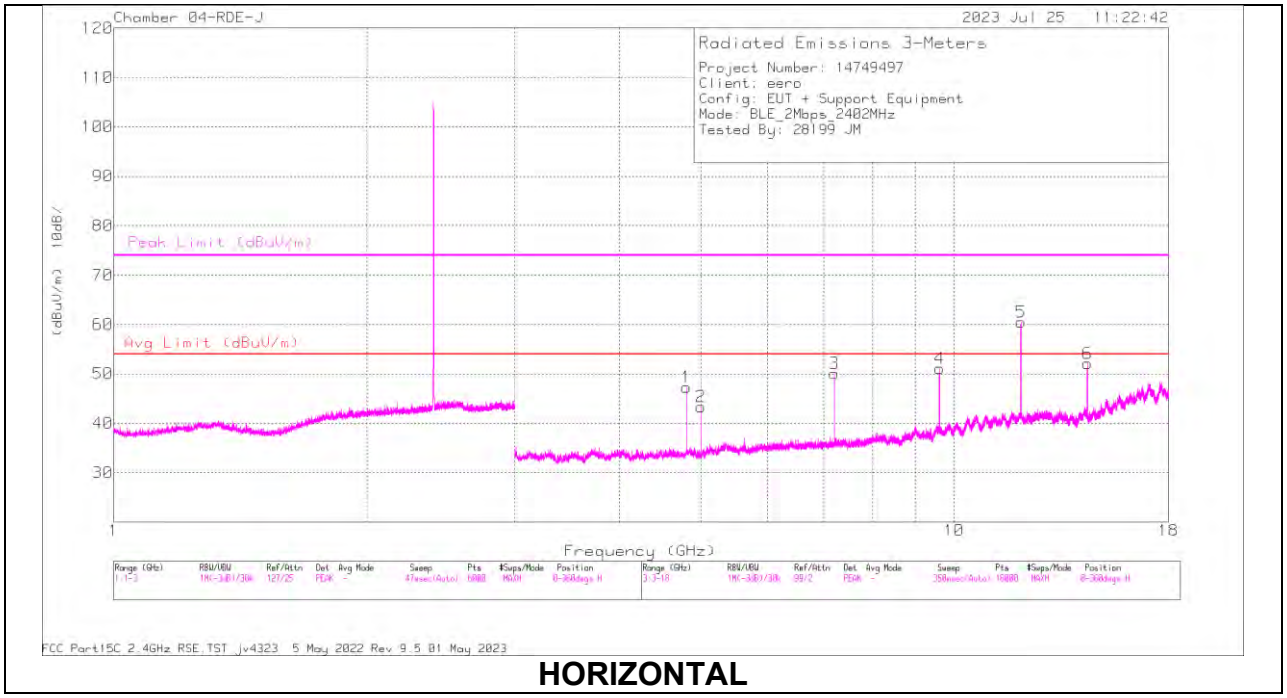
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2483.5	66.95	Pk	32.2	-35.4	63.75	-	-	74	-10.25	96	249	V
2	* 2483.507	66.99	Pk	32.2	-35.4	63.79	-	-	74	-10.21	96	249	V
3	* 2483.5	56.64	RMS	32.2	-35.4	53.44	54	-.56	-	-	96	249	V
4	* 2483.507	56.08	RMS	32.2	-35.4	52.88	54	-1.12	-	-	96	249	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

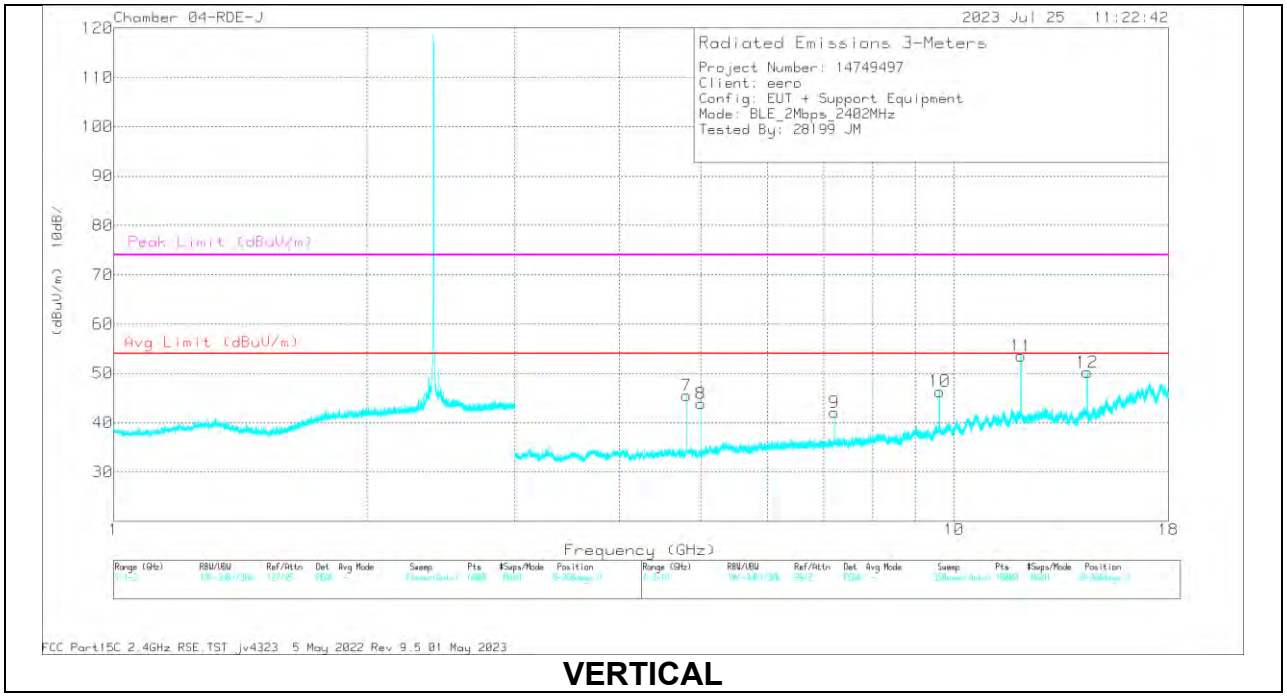
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS (2402MHz)



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

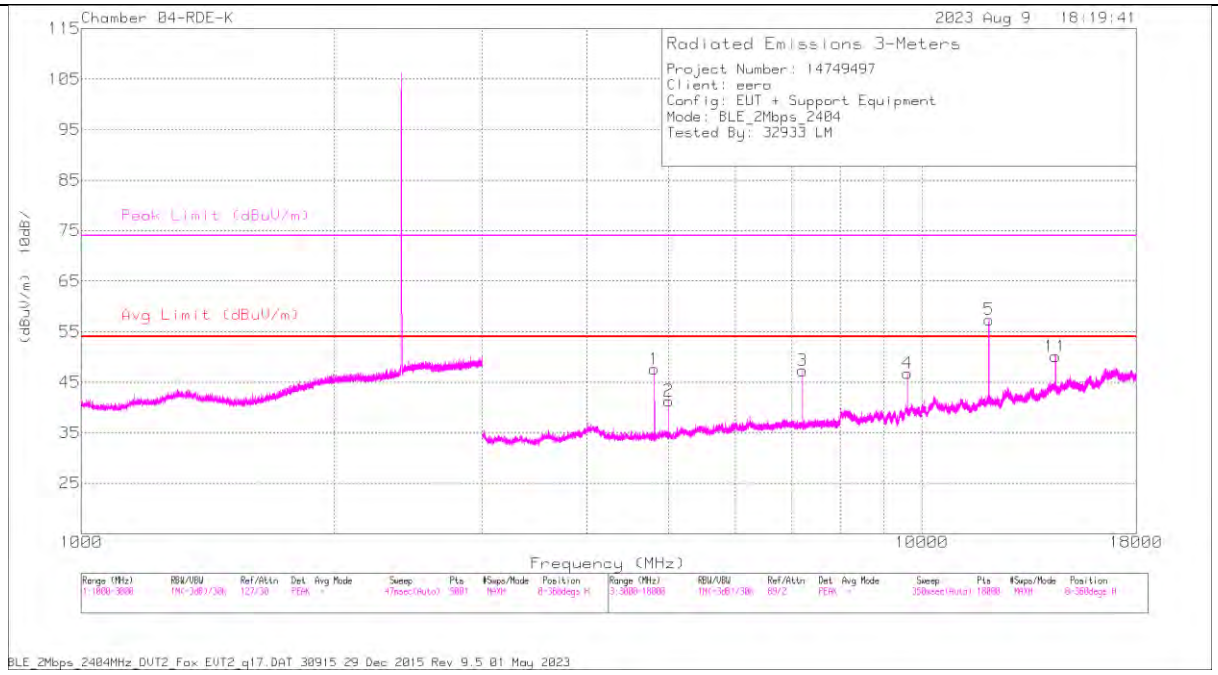
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222741 ACF(dB) - 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.802863	64.82	PK2	34	-45.1	53.72	-	-	74	-20.28	233	395	H
	* 4.80499	58.75	MAv1	34	-45	47.75	54	-6.25	-	-	233	395	H
2	* 4.999967	59.81	PK2	34.2	-44.8	49.21	-	-	74	-24.79	89	175	H
	* 5.000073	54.45	MAv1	34.2	-44.8	43.85	54	-10.15	-	-	89	175	H
3	7.206902	56.76	Pk	35.8	-42.5	50.06	-	-	-	-	0-360	200	H
4	9.61037	54.66	Pk	36.7	-40.3	51.06	-	-	-	-	0-360	200	H
5	* 12.007312	59.46	PK2	38.7	-38.8	59.36	-	-	74	-14.64	221	221	H
	* 12.01218	52.43	MAv1	38.7	-38.7	52.43	54	-1.57	-	-	221	221	H
6	14.414806	52.38	Pk	39.3	-39.6	52.08	-	-	-	-	0-360	200	H
7	* 4.804883	64.58	PK2	34	-45	53.58	-	-	74	-20.42	261	192	V
	* 4.804834	57.89	MAv1	34	-45	46.89	54	-7.11	-	-	261	192	V
8	* 5.000158	60.63	PK2	34.2	-44.8	50.03	-	-	74	-23.97	80	107	V
	* 5.000104	55.91	MAv1	34.2	-44.8	45.31	54	-8.69	-	-	80	107	V
9	7.204402	48.74	Pk	35.8	-42.5	42.04	-	-	-	-	0-360	101	V
10	9.609537	49.95	Pk	36.7	-40.3	46.35	-	-	-	-	0-360	101	V
11	* 12.01255	57.96	PK2	38.7	-38.8	57.86	-	-	74	-16.14	249	299	V
	* 12.012051	49.81	MAv1	38.7	-38.7	49.81	54	-4.19	-	-	249	299	V

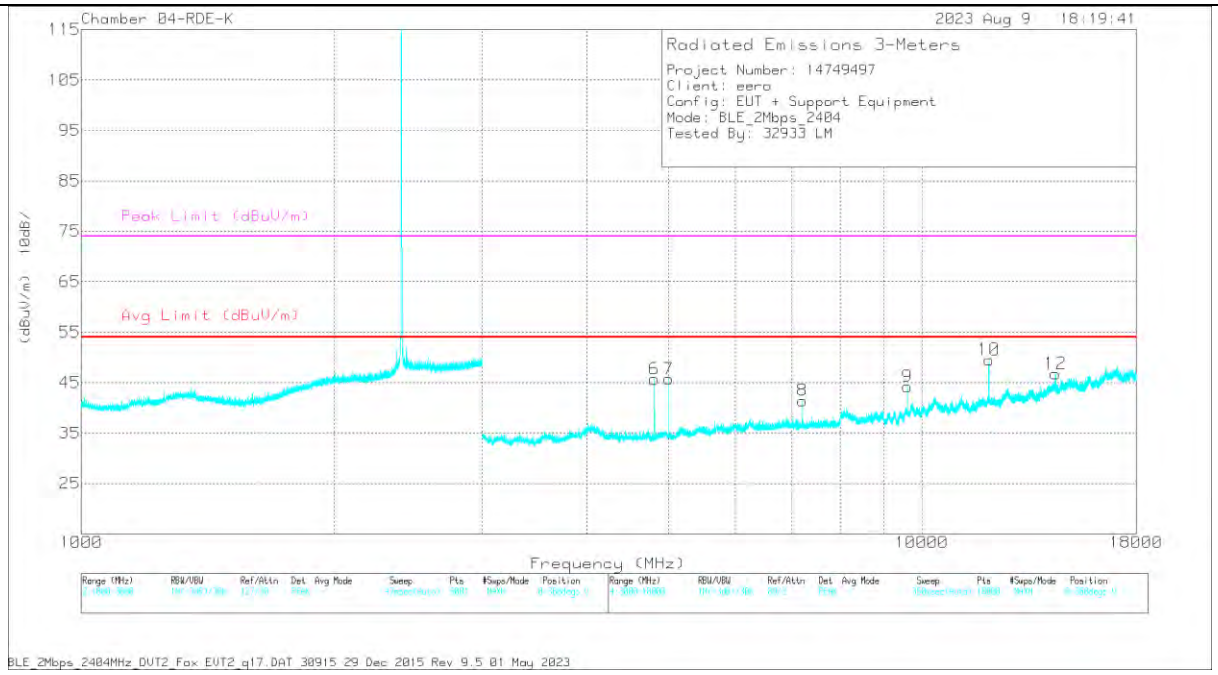
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

LOW CHANNEL RESULTS (2404MHz)



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

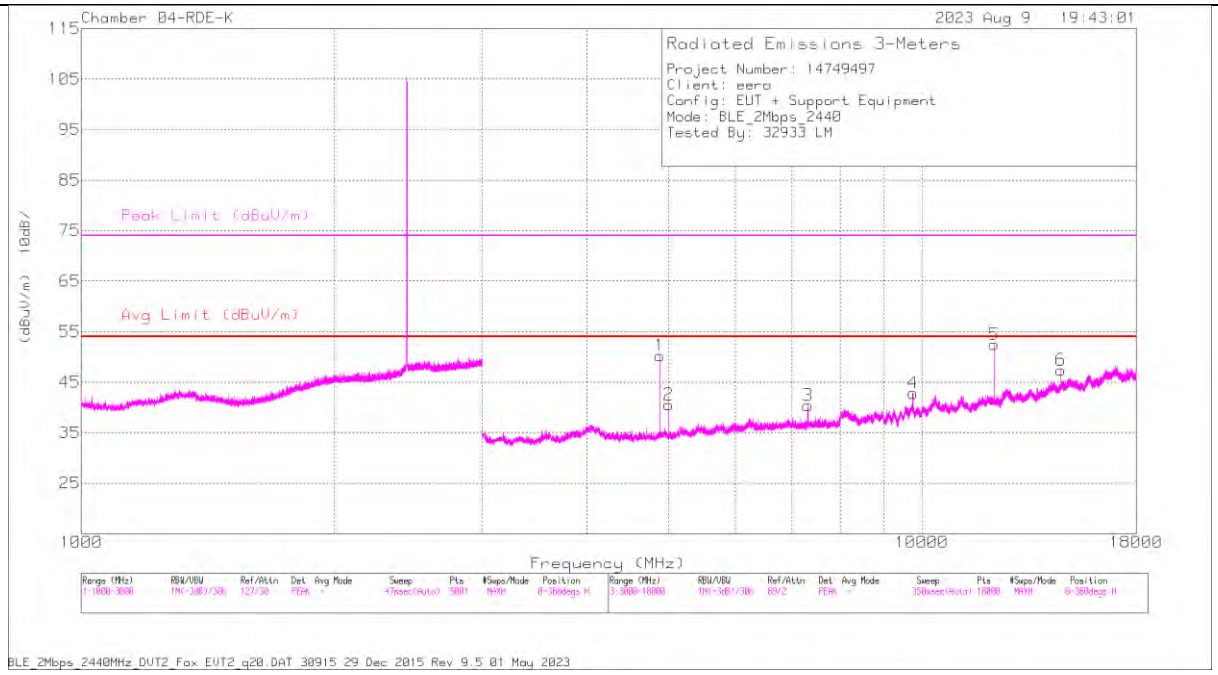
RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB) 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4808.917	60.04	PK2	33.7	-39.8	53.94	-	-	74	-20.06	9	258	H
	* 4808.729	53.98	MAv1	33.7	-39.8	47.88	54	-6.12	-	-	9	258	H
2	* 5000.224	54.72	PK2	33.8	-39.8	48.72	-	-	74	-25.28	158	247	H
	* 5000.168	48.86	MAv1	33.8	-39.8	42.86	54	-11.14	-	-	158	247	H
3	7213.569	49.32	Pk	35.7	-37.7	47.32	-	-	-	-	0-360	199	H
4	9617.871	45.78	Pk	36.7	-35.7	46.78	-	-	-	-	0-360	199	H
5	* 12022.509	54.4	PK2	38.7	-33.9	59.2	-	-	74	-14.8	313	389	H
	* 12022.381	46.95	MAv1	38.7	-33.9	51.75	54	-2.25	-	-	313	389	H
6	* 4807.053	58.69	PK2	33.7	-39.9	52.49	-	-	74	-21.51	38	286	V
	* 4807.161	52.53	MAv1	33.7	-39.9	46.33	54	-7.67	-	-	38	286	V
7	* 4999.974	58.67	PK2	33.8	-39.8	52.67	-	-	74	-21.33	176	141	V
	* 5000.061	54	MAv1	33.8	-39.8	48	54	-6	-	-	176	141	V
8	7210.236	43.44	Pk	35.7	-37.7	41.44	-	-	-	-	0-360	101	V
9	9613.704	43.32	Pk	36.7	-35.8	44.22	-	-	-	-	0-360	199	V
10	* 12022.459	50.26	PK2	38.7	-33.9	55.06	-	-	74	-18.94	69	197	V
	* 12022.256	41.3	MAv1	38.7	-33.9	46.1	54	-7.9	-	-	69	197	V

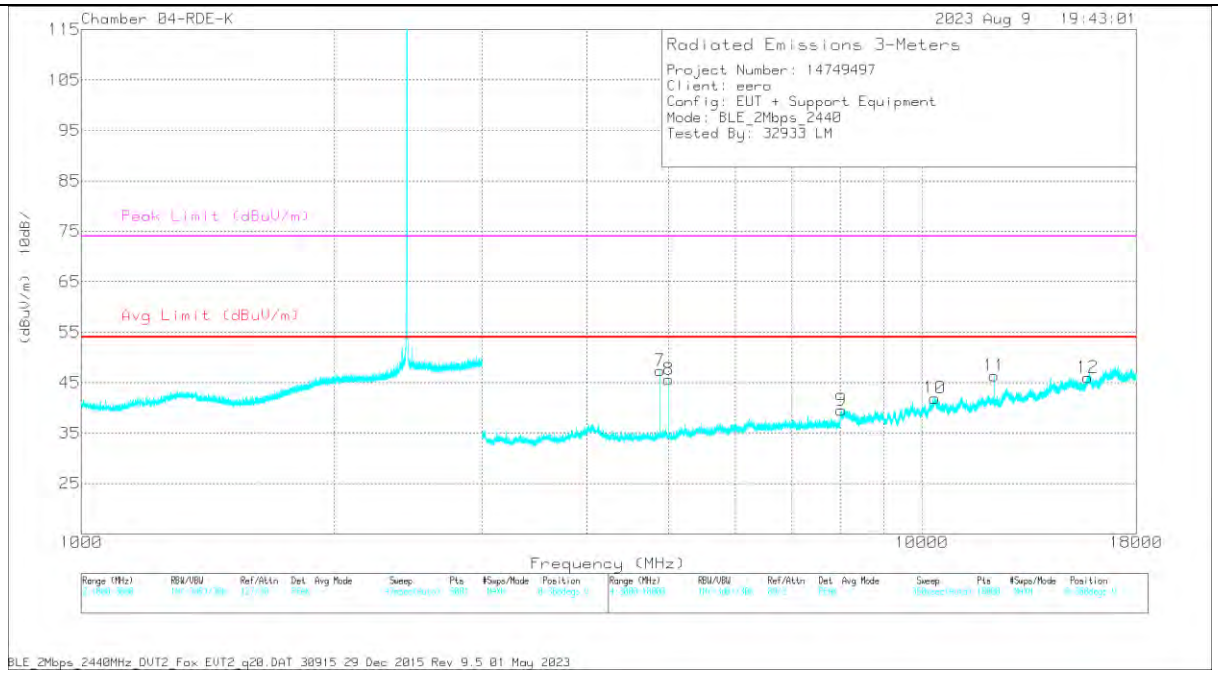
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

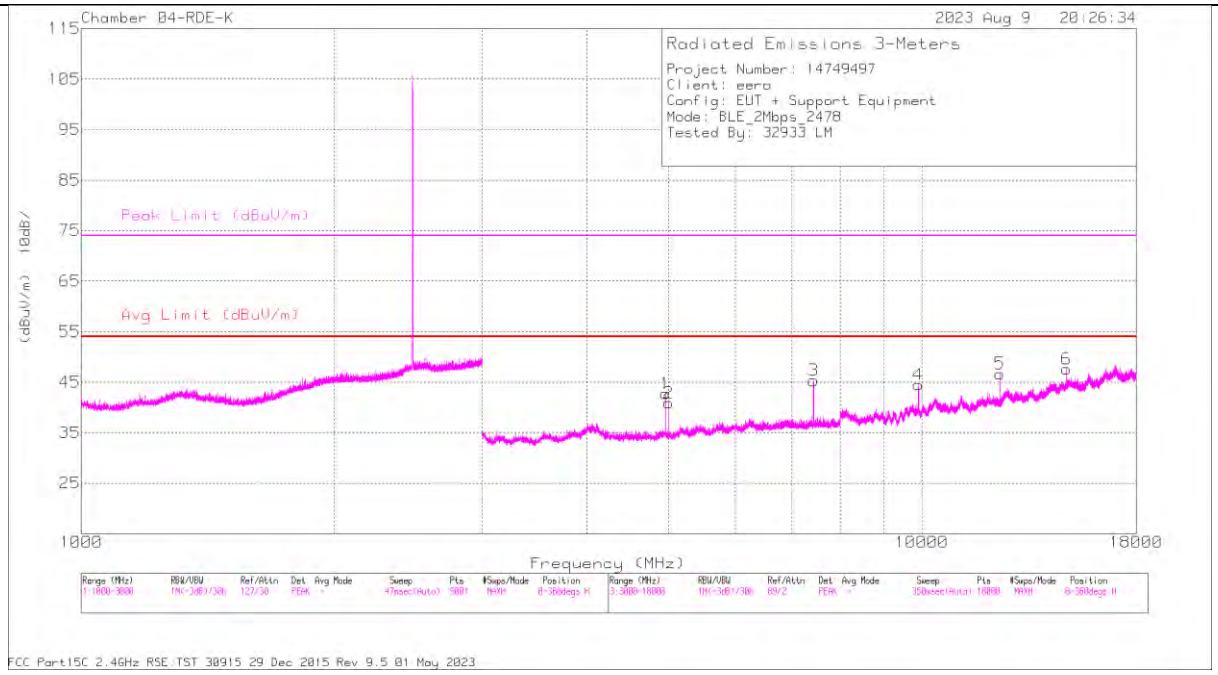
RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB) 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4879.036	62.37	PK2	33.7	-39.9	56.17	-	-	74	-17.83	348	224	H
	* 4879.04	56.85	MAv1	33.7	-39.9	50.65	54	-3.35	-	-	348	224	H
2	* 5000.062	57.09	PK2	33.8	-39.8	51.09	-	-	74	-22.91	206	308	H
	* 5000.034	52.21	MAv1	33.8	-39.8	46.21	54	-7.79	-	-	206	308	H
3	* 7321.321	53.71	PK2	35.7	-37.3	52.11	-	-	74	-21.89	296	253	H
	* 7321.378	45.34	MAv1	35.7	-37.3	43.74	54	-10.26	-	-	296	253	H
4	9761.212	41.73	Pk	36.9	-35.8	42.83	-	-	-	-	0-360	199	H
5	* 12197.543	53.69	PK2	38.9	-33.9	58.69	-	-	74	-15.31	348	197	H
	* 12197.498	46.37	MAv1	38.9	-33.9	51.37	54	-2.63	-	-	348	197	H
6	14637.318	40.5	Pk	39.7	-32.8	47.4	-	-	-	-	0-360	199	H
7	* 4878.917	60.67	PK2	33.7	-39.9	54.47	-	-	74	-19.53	46	341	V
	* 4879.108	54.93	MAv1	33.7	-39.9	48.73	54	-5.27	-	-	46	341	V
8	* 5000.122	58.3	PK2	33.8	-39.8	52.3	-	-	74	-21.7	175	142	V
	* 5000.054	53.95	MAv1	33.8	-39.8	47.95	54	-6.05	-	-	175	142	V
9	8021.115	40.07	Pk	35.9	-36.4	39.57	-	-	-	-	0-360	101	V
10	10364.579	39.74	Pk	37.7	-35.5	41.94	-	-	-	-	0-360	199	V
11	* 12197.62	49.34	PK2	38.9	-33.9	54.34	-	-	74	-19.66	62	107	V
	* 12197.394	39.73	MAv1	38.9	-33.9	44.73	54	-9.27	-	-	62	107	V
12	* 15760.928	46.69	PK2	40.1	-32	54.79	-	-	74	-19.21	313	287	V
	* 15760.382	35.03	MAv1	40.1	-32	43.13	54	-10.87	-	-	313	287	V

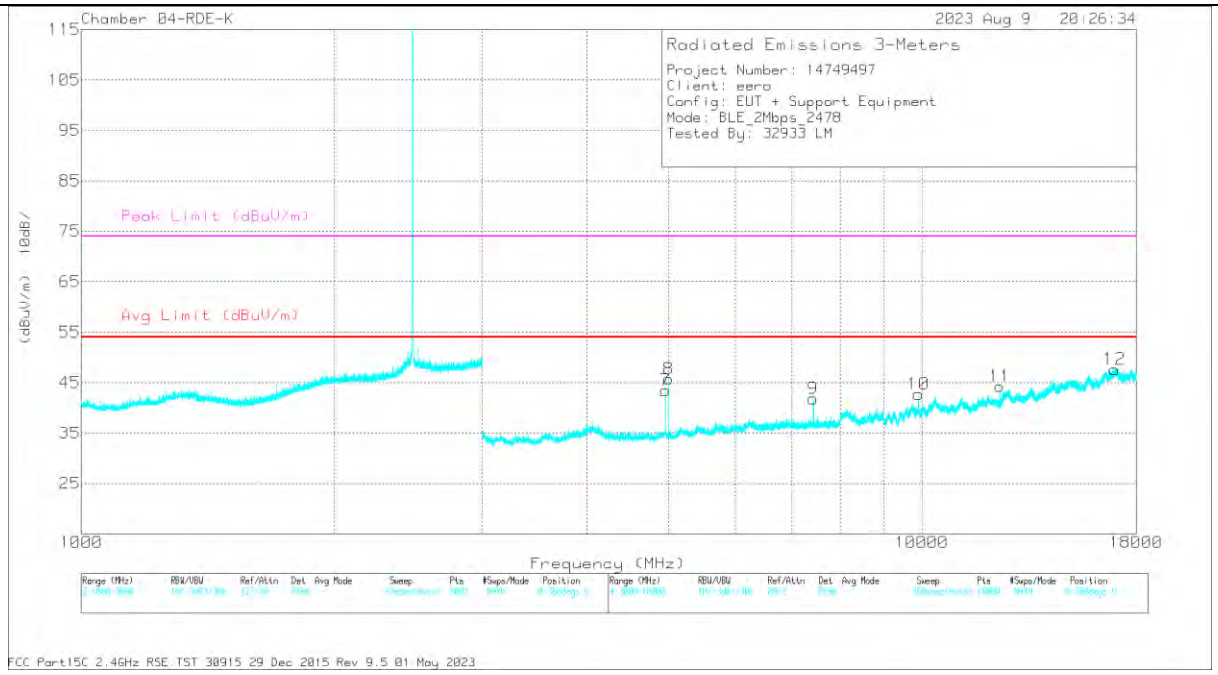
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

HIGH CHANNEL RESULTS (2478MHz)



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

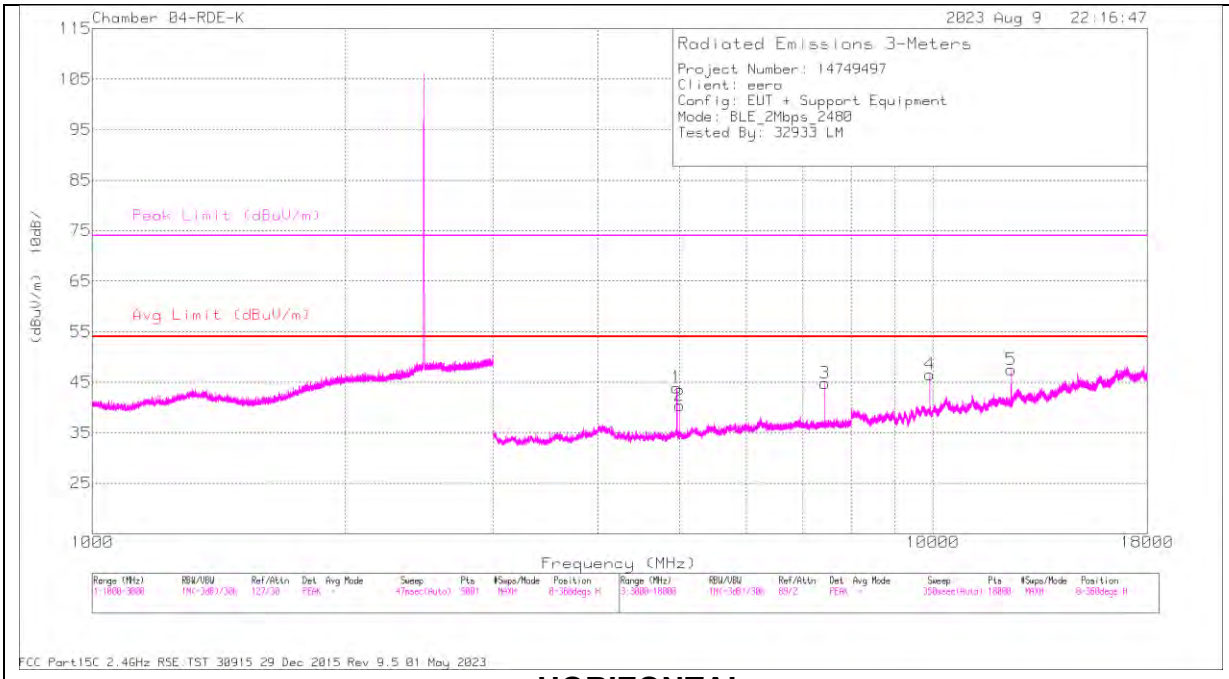
RADIATED EMISSIONS

Markers	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB) 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4954.885	60.41	PK2	33.7	-39.8	54.31	-	-	74	-19.69	326	311	H
	* 4956.828	54.53	MAv1	33.7	-39.9	48.33	54	-5.67	-	-	326	311	H
2	* 5000.123	56.83	PK2	33.8	-39.8	50.83	-	-	74	-23.17	212	290	H
	* 5000.022	52.11	MAv1	33.8	-39.8	46.11	54	-7.89	-	-	212	290	H
3	* 7435.513	55.31	PK2	35.7	-37.1	53.91	-	-	74	-20.09	271	249	H
	* 7435.286	48.25	MAv1	35.7	-37.1	46.85	54	-7.15	-	-	271	249	H
4	9909.554	43	Pk	37.1	-35.6	44.5	-	-	-	-	0-360	101	H
5	* 12392.564	51.81	PK2	39.1	-33.6	57.31	-	-	74	-16.69	313	320	H
	* 12392.296	44.35	MAv1	39.1	-33.5	49.95	54	-4.05	-	-	313	320	H
6	14871.498	41.01	Pk	40.1	-33.5	47.61	-	-	-	-	0-360	199	H
7	* 4956.925	57.98	PK2	33.7	-39.9	51.78	-	-	74	-22.22	56	155	V
	* 4956.748	50.68	MAv1	33.7	-39.9	44.48	54	-9.52	-	-	56	155	V
8	* 4999.982	57.89	PK2	33.8	-39.8	51.89	-	-	74	-22.11	177	132	V
	* 5000.053	53.65	MAv1	33.8	-39.8	47.65	54	-6.35	-	-	177	132	V
9	* 7432.362	53.72	PK2	35.7	-37.1	52.32	-	-	74	-21.68	23	126	V
	* 7432.54	45.44	MAv1	35.7	-37.1	44.04	54	-9.96	-	-	23	126	V
10	9912.887	41.21	Pk	37.1	-35.6	42.71	-	-	-	-	0-360	199	V
11	* 12392.279	48.31	PK2	39.1	-33.5	53.91	-	-	74	-20.09	6	261	V
	* 12392.283	39.53	MAv1	39.1	-33.5	45.13	54	-8.87	-	-	6	261	V

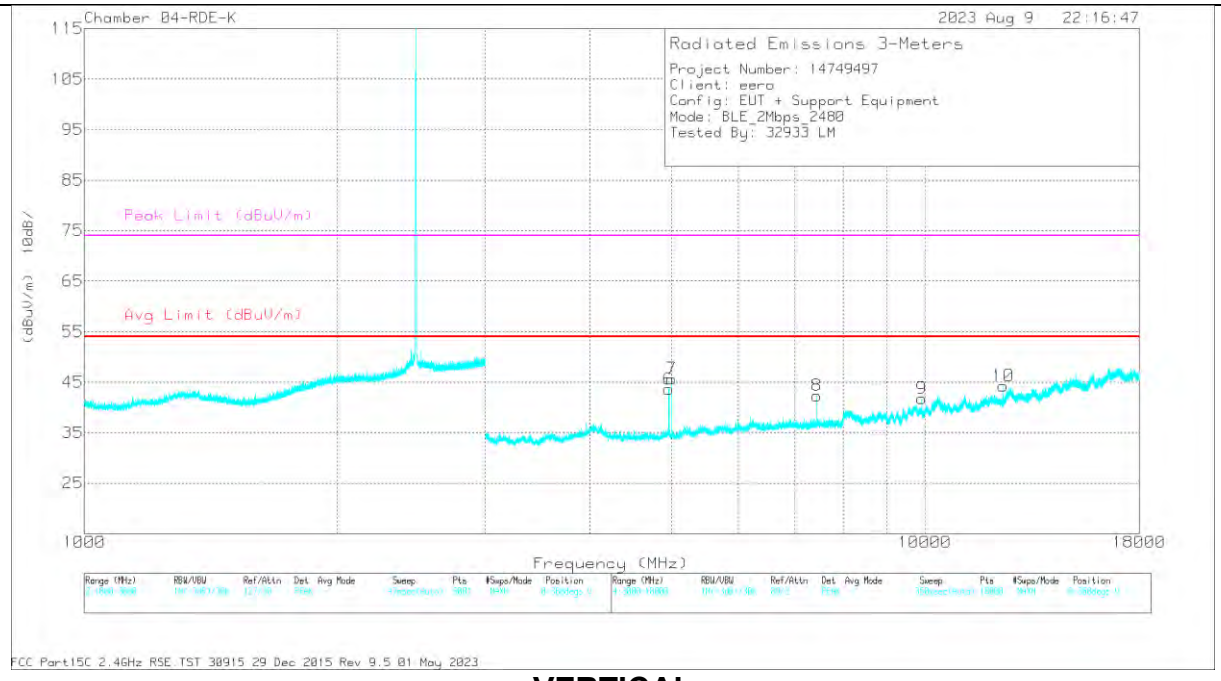
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

HIGH CHANNEL RESULTS (2480MHz)



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

RADIATED EMISSIONS

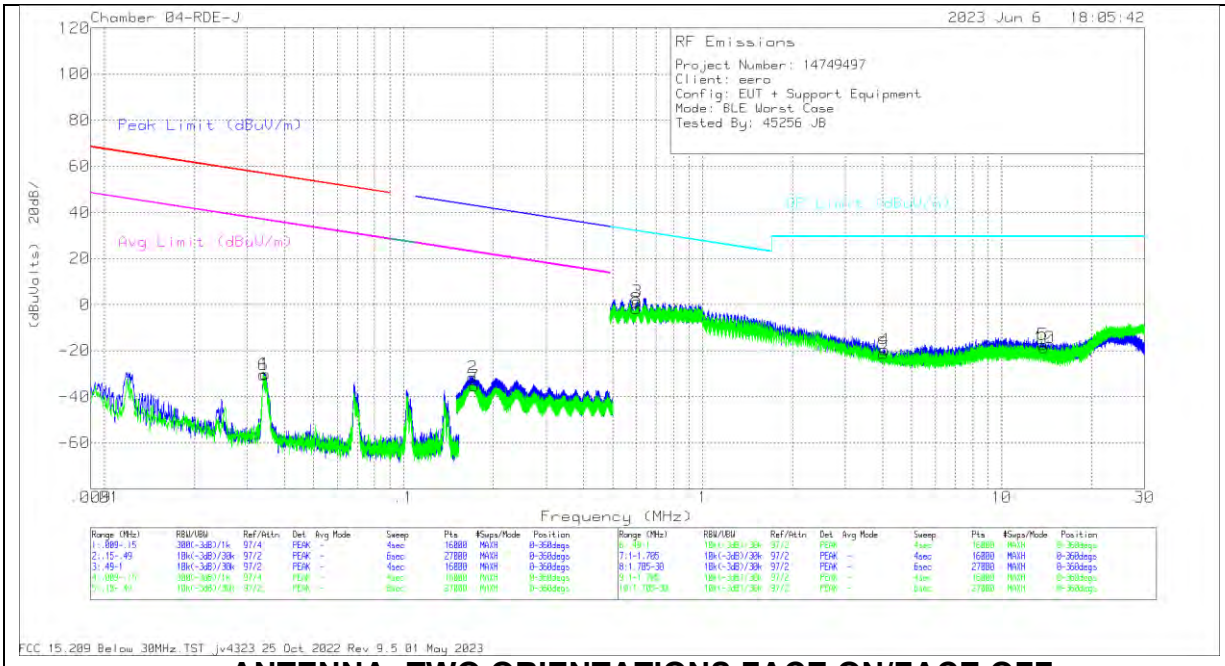
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB) 3mH	Cbl/Amp (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4959.018	61.2	PK2	33.7	-39.9	55	-	-	74	-19	331	329	H
	* 4958.995	55.39	MAv1	33.7	-39.9	49.19	54	-4.81	-	-	331	329	H
2	* 4999.93	56.52	PK2	33.8	-39.8	50.52	-	-	74	-23.48	202	316	H
	* 5000.025	51.58	MAv1	33.8	-39.8	45.58	54	-8.42	-	-	202	316	H
3	* 7441.495	54.9	PK2	35.7	-37.1	53.5	-	-	74	-20.5	269	226	H
	* 7441.335	47.52	MAv1	35.7	-37.1	46.12	54	-7.88	-	-	269	226	H
4	9922.054	45.06	Pk	37.1	-35.6	46.56	-	-	-	-	0-360	199	H
5	* 12397.353	52.74	PK2	39.1	-33.6	58.24	-	-	74	-15.76	312	335	H
	* 12397.505	45.48	MAv1	39.1	-33.6	50.98	54	-3.02	-	-	312	335	H
6	* 4958.984	57.54	PK2	33.7	-39.9	51.34	-	-	74	-22.66	68	170	V
	* 4959.037	50.48	MAv1	33.7	-39.9	44.28	54	-9.72	-	-	68	170	V
7	* 4999.077	59.68	PK2	33.8	-39.7	53.78	-	-	74	-20.22	174	130	V
	* 5000.024	53.99	MAv1	33.8	-39.8	47.99	54	-6.01	-	-	174	130	V
8	* 7438.439	53.18	PK2	35.7	-37.1	51.78	-	-	74	-22.22	360	142	V
	* 7438.493	45.19	MAv1	35.7	-37.1	43.79	54	-10.21	-	-	360	142	V
9	9921.221	40.17	Pk	37.1	-35.5	41.77	-	-	-	-	0-360	199	V
10	* 12397.529	47.52	PK2	39.1	-33.6	53.02	-	-	74	-20.98	47	102	V
	* 12397.393	37.67	MAv1	39.1	-33.6	43.17	54	-10.83	-	-	47	102	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.3. WORST CASE BELOW 30MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



ANTENNA- TWO ORIENTATIONS FACE ON/FACE OFF

Below 30MHz Data

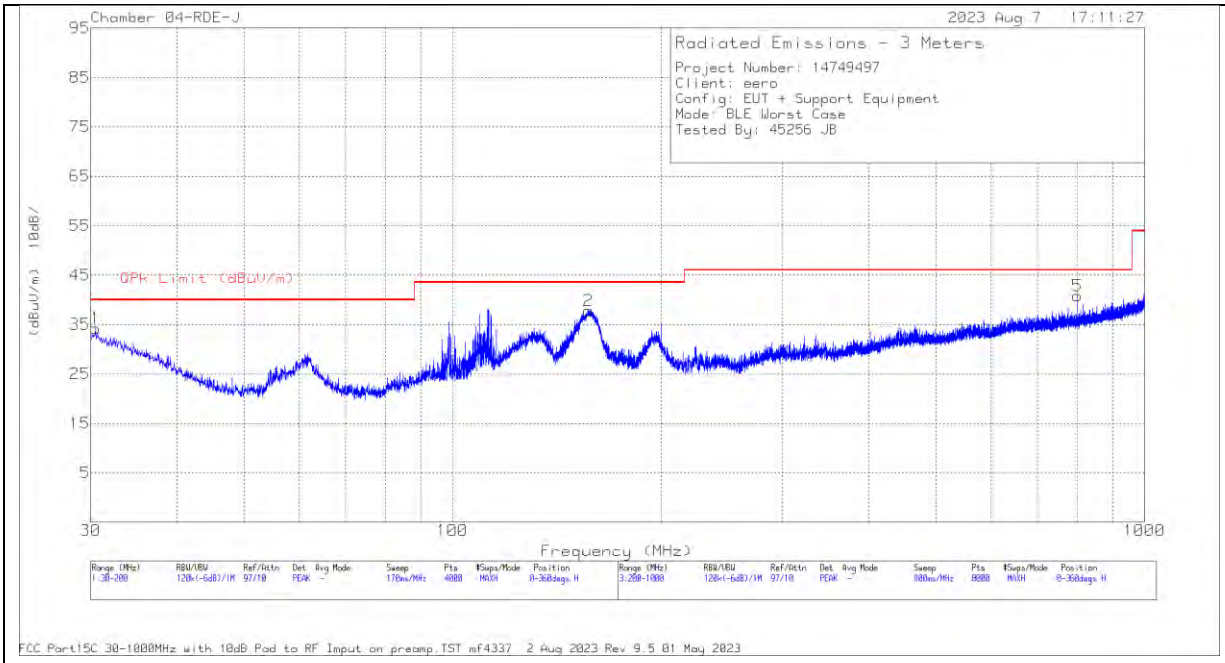
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF)	Amp/Cables (dB)	Dist Corr 300m	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	QP Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.0344	24.48	Pk	57.7	-32.2	-80	-30.02	56.84	-86.86	36.84	-66.86	-	-	-	-	-	-	-	-	0-360
2	.1705	24.64	Pk	56.1	-32.3	-80	-31.56	-	-	-	-	-	-	-	-	42.98	-74.54	22.98	-54.54	0-360
6	.0339	24.12	Pk	57.7	-32.2	-80	-30.38	56.97	-87.35	36.97	-67.35	-	-	-	-	-	-	-	-	0-360
7	.1724	20.77	Pk	56.1	-32.3	-80	-35.43	-	-	-	-	-	-	-	-	42.89	-78.32	22.89	-58.32	0-360
3	.6047	17.35	Pk	56.3	-32.2	-40	1.45	-	-	-	-	-	-	31.98	-30.53	-	-	-	-	0-360
8	.6002	13.98	Pk	56.3	-32.2	-40	-1.92	-	-	-	-	-	-	32.04	-33.96	-	-	-	-	0-360
4	4.0609	15.5	Pk	37.1	-32.1	-40	-19.5	-	-	-	-	-	-	29.5	-49	-	-	-	-	0-360
5	13.7507	20.22	Pk	34.2	-31.9	-40	-17.48	-	-	-	-	-	-	29.5	-46.98	-	-	-	-	0-360
9	4.019	13.66	Pk	37.2	-32.1	-40	-21.24	-	-	-	-	-	-	29.5	-50.74	-	-	-	-	0-360
10	13.8587	19.04	Pk	34.2	-31.9	-40	-18.66	-	-	-	-	-	-	29.5	-48.16	-	-	-	-	0-360

Pk - Peak detector

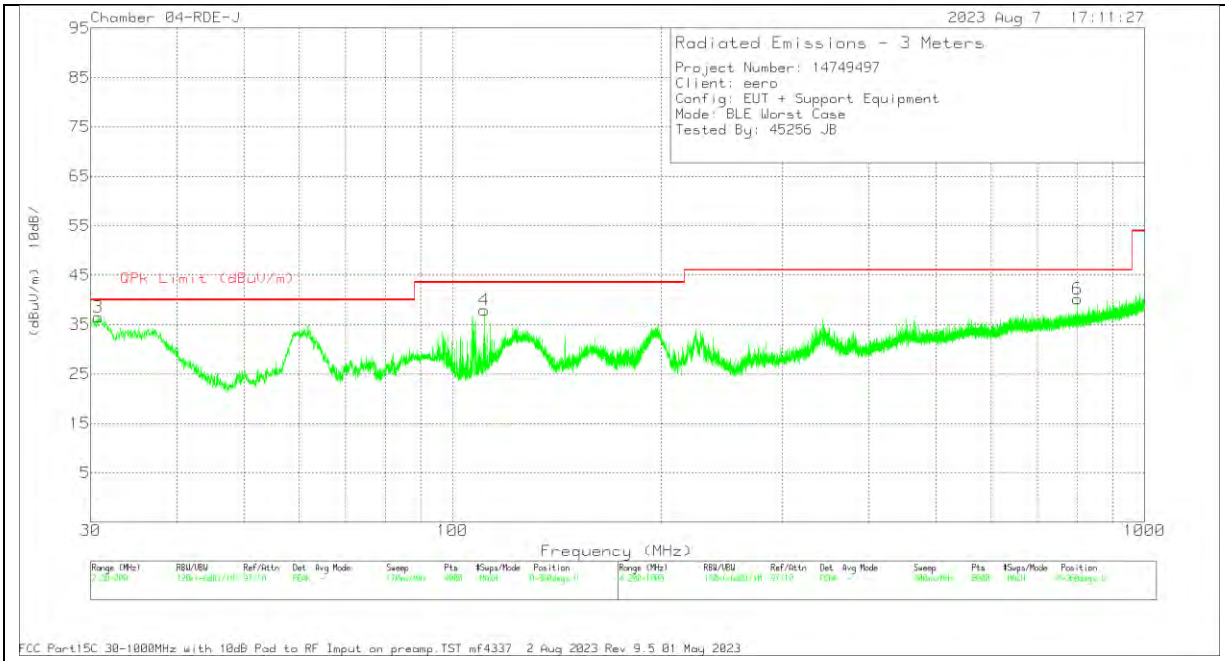
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.4. WORST CASE BELOW 1 GHz (Foxlink PSU)

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



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

Below 1GHz Data

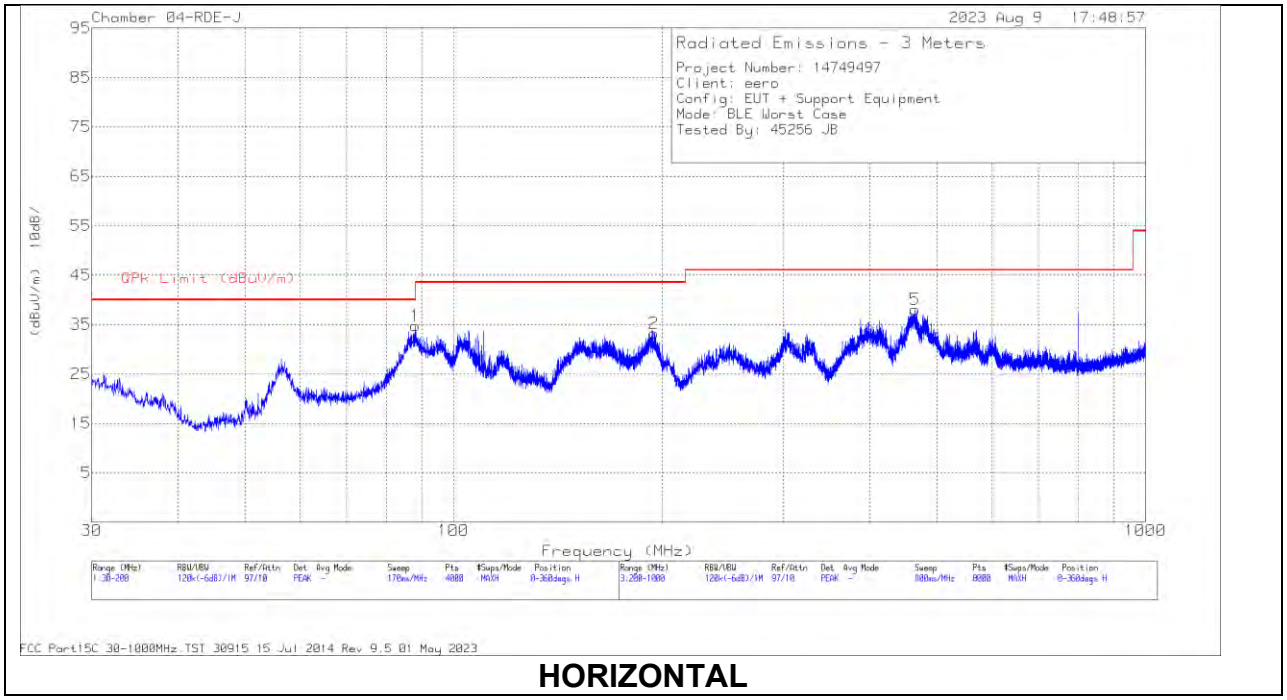
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80293 ACF (dB) 10m H	Amp/Cbl (dB)	10 dB Pad	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.4676	29.68	Pk	26.4	-31.8	10	34.28	40	-5.72	0-360	101	H
	31.9	21.73	Qp	25.4	-31.8	10	25.33	40	-14.67	164	127	H
2	157.108	40.54	Pk	18.2	-30.9	10	37.84	43.52	-5.68	0-360	199	H
	* 156.784	38.34	Qp	18.2	-30.9	10	35.64	43.52	-7.88	202	169	H
3	30.7652	32.08	Pk	26.2	-31.8	10	36.48	40	-3.52	0-360	100	V
	30.8861	27.26	Qp	26.2	-31.8	10	31.66	40	-8.34	240	117	V
4	* 111.111	40.37	Pk	18.7	-31.2	10	37.87	43.52	-5.65	0-360	100	V
	* 110.899	23.33	Qp	18.7	-31.2	10	20.83	43.52	-22.69	92	145	V
5	800.078	32.63	Pk	27	-28.8	10	40.83	46.02	-5.19	0-360	99	H
	800.024	31.51	Qp	27	-28.8	10	39.71	46.02	-6.31	152	170	H
6	800.078	32.03	Pk	27	-28.8	10	40.23	46.02	-5.79	0-360	199	V
	800.017	32.11	Qp	27	-28.8	10	40.31	46.02	-5.71	128	116	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

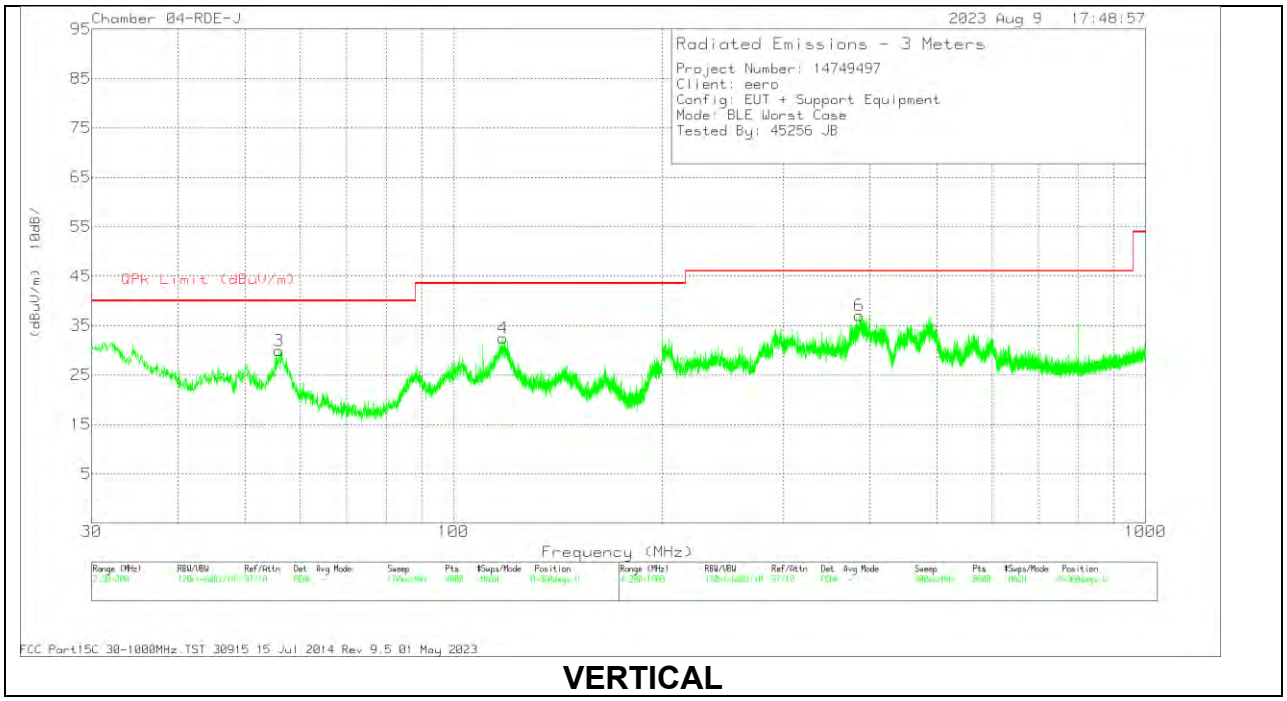
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.5. WORST CASE BELOW 1 GHz (Luxshare PSU)

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



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

Below 1GHz Data

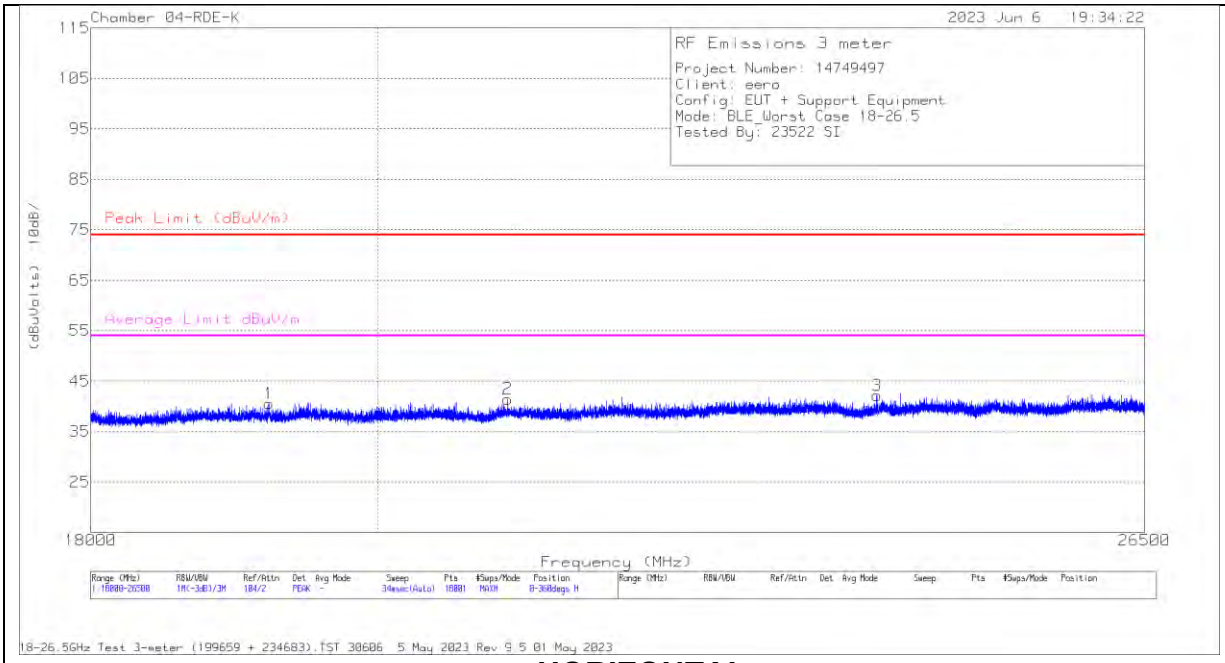
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80293 ACF (dB) 10m H	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	88.0275	52.43	Pk	13.6	-31.3	34.73	43.52	-8.79	0-360	199	H
2	194.858	46.27	Pk	17.7	-30.7	33.27	43.52	-10.25	0-360	99	H
3	55.9317	48.28	Pk	13.1	-31.5	29.88	40	-10.12	0-360	101	V
4	* 117.955	43.85	Pk	19.7	-31.1	32.45	43.52	-11.07	0-360	101	V
5	463.1	46.12	Pk	23.1	-29.9	39.32	46.02	-6.7	181	117	H
	463.1	39.52	Qp	23.1	-29.9	32.72	46.02	-13.3	181	117	H
6	385.824	46.17	Pk	20.9	-30	37.07	46.02	-8.95	0-360	99	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

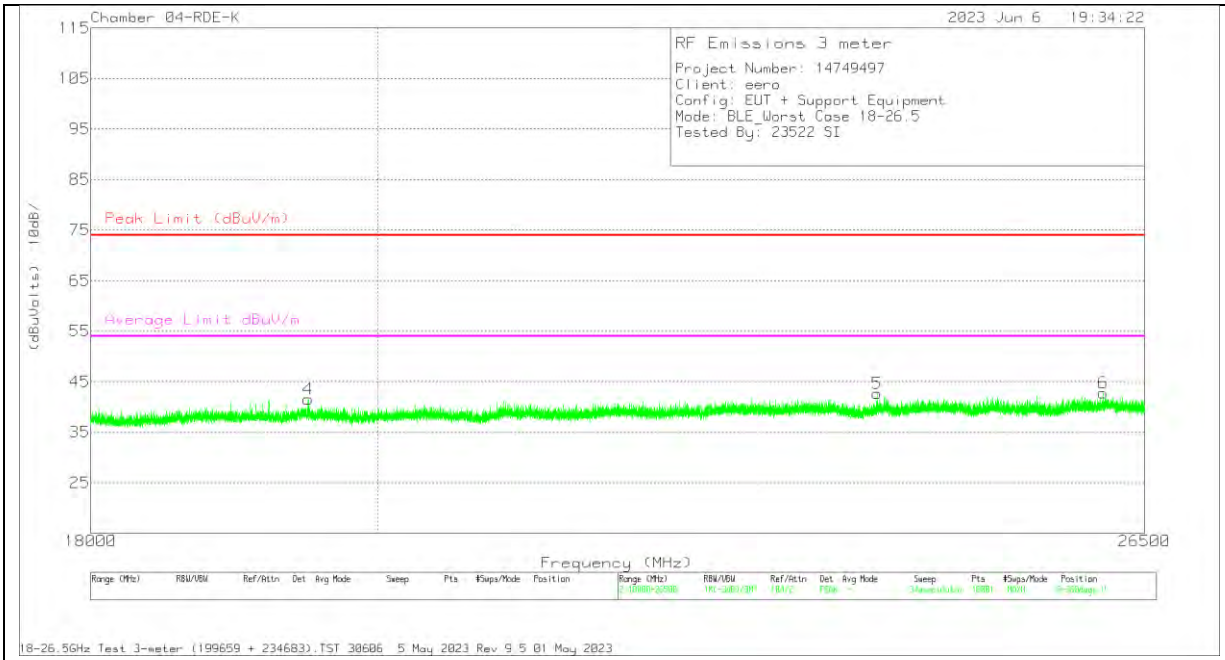
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.6. WORST CASE 18 TO 26 GHz

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



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

18 to 26 GHz Data

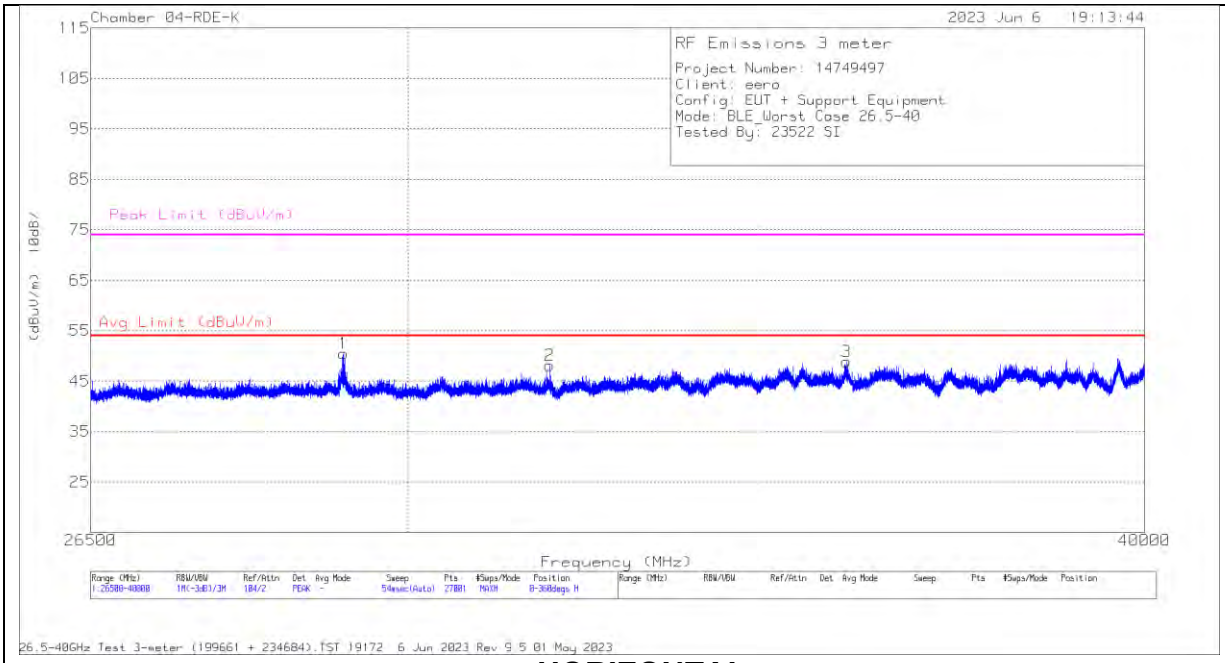
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Horn ACF (dB/m)	234683 Amp/Cbl (dB)	Cables (dB)	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 19217.388	52.19	Pk	32.5	-62.5	18.4	40.59	74	-33.41	-	-	0-360	101	H
2	* 20976.415	50.37	Pk	33	-61.1	19.2	41.47	74	-32.53	-	-	0-360	199	H
3	24021.775	50.59	Pk	33.7	-62.6	20.5	42.19	74	-31.81	-	-	0-360	199	H
4	* 19495.999	53.24	Pk	32.6	-62.8	18.5	41.54	74	-32.46	-	-	0-360	200	V
5	24022.247	51.07	Pk	33.7	-62.6	20.5	42.67	74	-31.33	-	-	0-360	101	V
6	26101.441	48.73	Pk	34.3	-61.7	21.5	42.83	74	-31.17	-	-	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

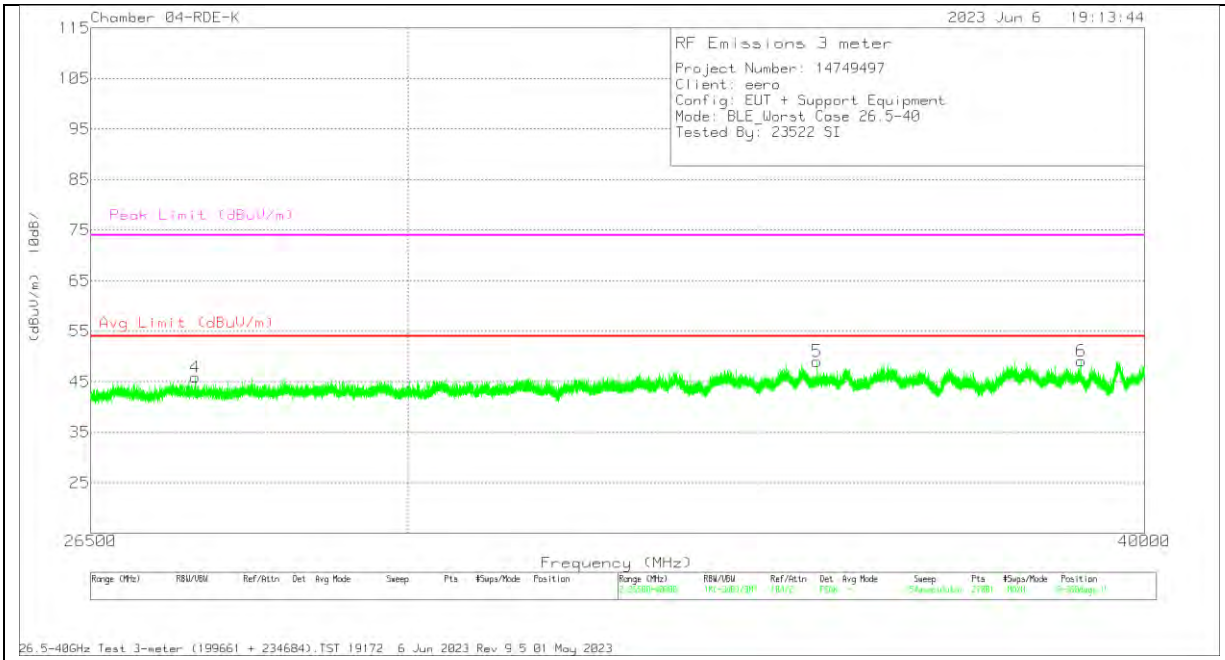
UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

10.7. WORST CASE 26 TO 40 GHz

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



HORIZONTAL



VERTICAL

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

26 to 40 GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Horn ACF (dB/m)	234684 Amp/Cbl (dB)	Cables (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	29249	50.6	Pk	36.5	-59.4	22.8	50.5	-	-	74	-23.5	0-360	200	H
2	* 31707	48.39	Pk	36.6	-60.7	23.8	48.09	-	-	74	-25.91	0-360	101	H
3	35602	45.8	Pk	37.5	-59.8	25.4	48.9	-	-	74	-25.1	0-360	101	H
4	27606.5	50.27	Pk	35.9	-62.4	22.1	45.87	-	-	74	-28.13	0-360	101	V
5	35196.5	47.74	Pk	37.4	-61.3	25.2	49.04	-	-	74	-24.96	0-360	200	V
6	* 39024.5	47.13	Pk	38	-63	27	49.13	-	-	74	-24.87	0-360	101	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

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.

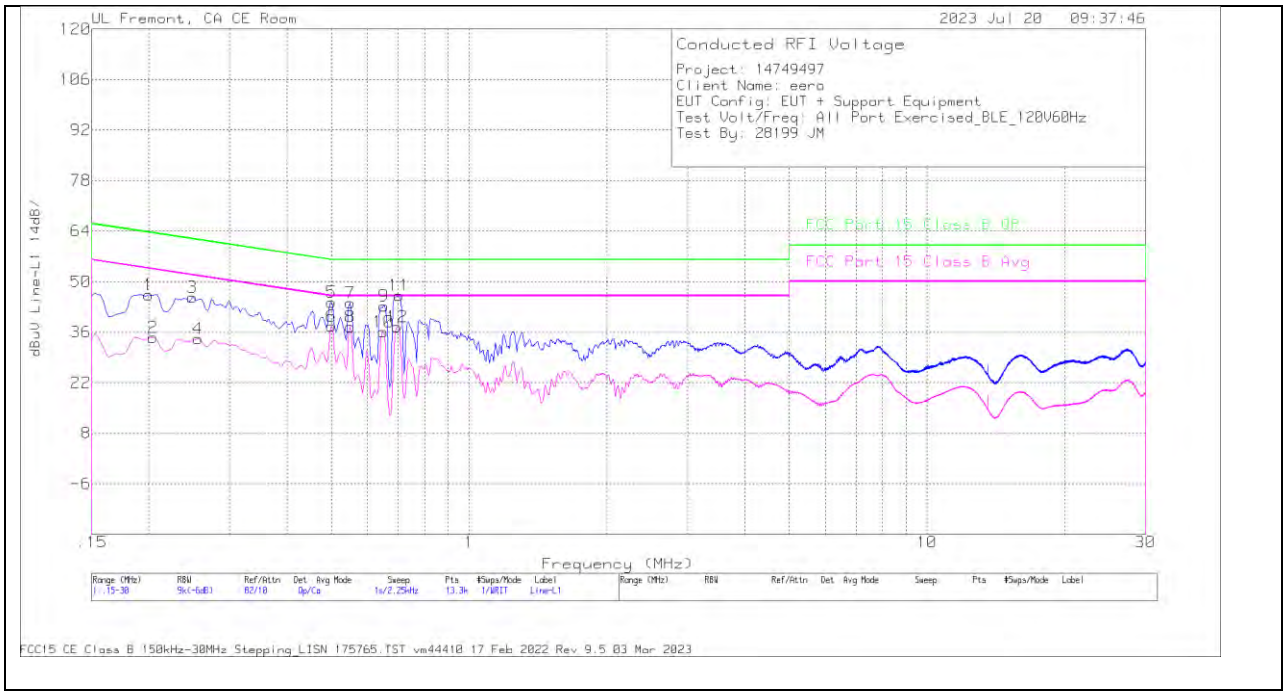
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

11.1. AC Power Line (Foxlink PSU)

LINE 1 RESULTS

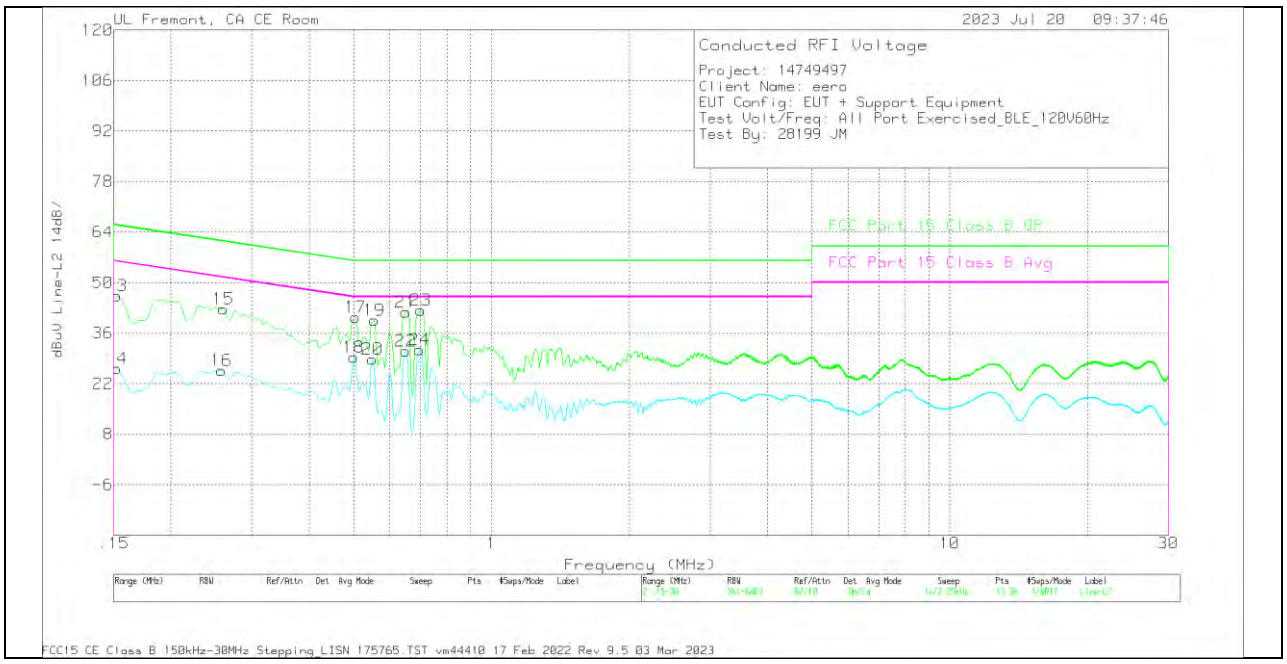


Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv	C1&C3 cable path loss	207996 Limiter with short cabl	Corrected Reading dBuV	FCC Part 15 Class B QP	QP Margin (dB)	FCC Part 15 Class B Avg	Av(CISPR)Margin (dB)
2	.204	25.2	Ca	0	0	9.4	34.6	-	-	53.45	-18.85
4	.2558	24.92	Ca	0	0	9.3	34.22	-	-	51.57	-17.35
6	.501	28.32	Ca	0	.1	9.3	37.72	-	-	46	-8.28
8	.5505	28.07	Ca	0	.1	9.3	37.47	-	-	46	-8.53
10	.6495	26.75	Ca	0	.1	9.3	36.15	-	-	46	-9.85
12	.6968	28.08	Ca	0	.1	9.3	37.48	-	-	46	-8.52
1	.1995	36.96	Qp	0	0	9.4	46.36	63.63	-17.27	-	-
3	.249	36.4	Qp	0	0	9.3	45.7	61.79	-16.09	-	-
5	.501	34.94	Qp	0	.1	9.3	44.34	56	-11.66	-	-
7	.5505	34.63	Qp	0	.1	9.3	44.03	56	-11.97	-	-
9	.6518	33.88	Qp	0	.1	9.3	43.28	56	-12.72	-	-
11	.7035	36.76	Qp	0	.1	9.3	46.16	56	-9.84	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

LINE 2 RESULTS



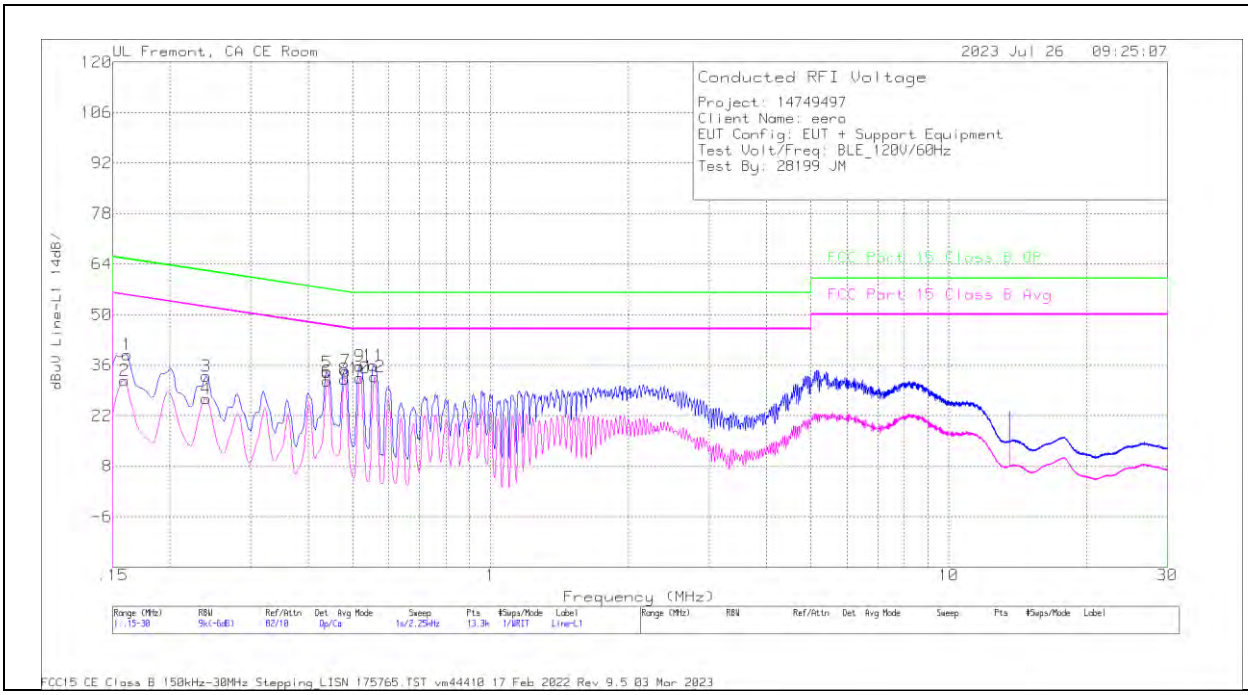
Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv	C1&C3 cable path loss	207996 Limiter with short cabl	Corrected Reading dBuV	FCC Part 15 Class B QP	QP Margin (dB)	FCC Part 15 Class B Avg	Av(CISPR)Margin (dB)
14	.1523	16.84	Ca	0	0	9.4	26.24	-	-	55.88	-29.64
16	.258	16.32	Ca	0	0	9.3	25.62	-	-	51.5	-25.88
18	.501	19.85	Ca	0	.1	9.3	29.25	-	-	46	-16.75
20	.5505	19.39	Ca	0	.1	9.3	28.79	-	-	46	-17.21
22	.6495	21.68	Ca	0	.1	9.3	31.08	-	-	46	-14.92
24	.6968	22.07	Ca	0	.1	9.3	31.47	-	-	46	-14.53
13	.1523	36.87	Qp	0	0	9.4	46.27	65.88	-19.61	-	-
15	.2603	33.33	Qp	0	0	9.3	42.63	61.42	-18.79	-	-
17	.5055	31.02	Qp	0	.1	9.3	40.42	56	-15.58	-	-
19	.555	30.14	Qp	0	.1	9.3	39.54	56	-16.46	-	-
21	.6495	32.44	Qp	0	.1	9.3	41.84	56	-14.16	-	-
23	.7013	32.88	Qp	0	.1	9.3	42.28	56	-13.72	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

11.2. AC Power Line (Luxshare PSU)

LINE 1 RESULTS

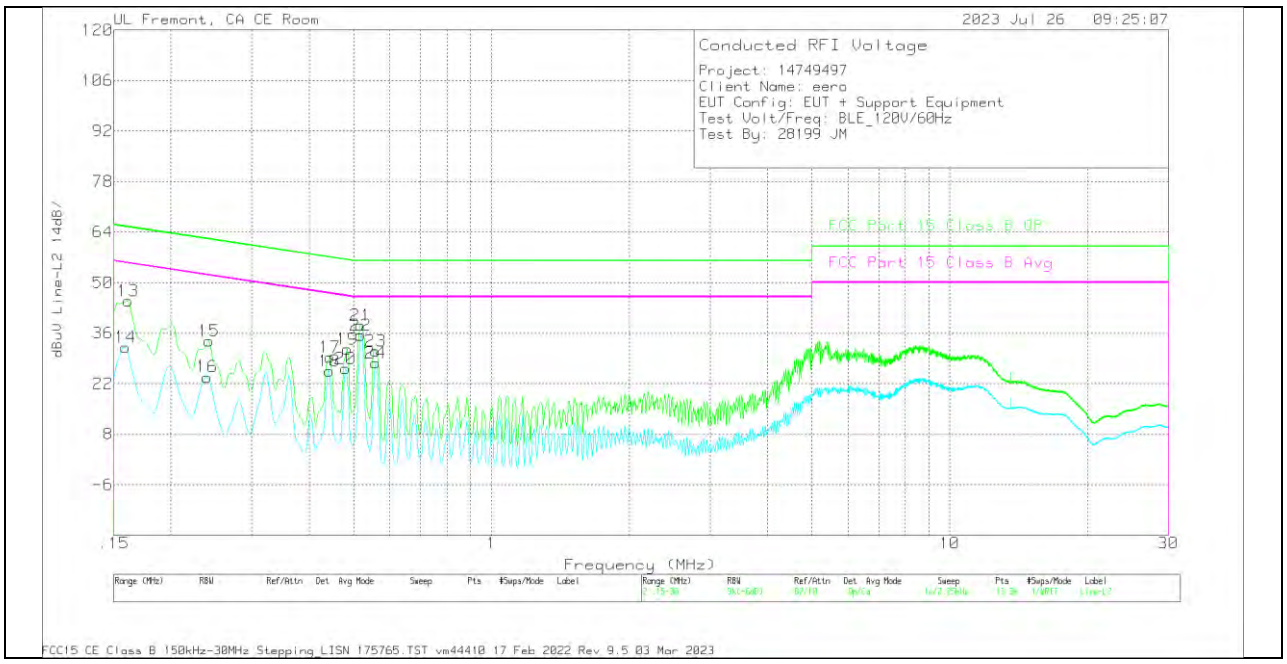


Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv	C1&C3 cable path loss	207996 Limiter with short cabl	Corrected Reading dBuV	FCC Part 15 Class B QP	QP Margin (dB)	FCC Part 15 Class B Avg	Av(CISPR)Margin (dB)
2	.159	22.4	Ca	0	0	9.4	31.8	-	-	55.52	-23.72
4	.24	17.38	Ca	0	0	9.3	26.68	-	-	52.1	-25.42
6	.4403	22.11	Ca	0	.1	9.3	31.51	-	-	47.06	-15.55
8	.4808	22.71	Ca	0	.1	9.3	32.11	-	-	46.33	-14.22
10	.519	23.06	Ca	0	.1	9.3	32.46	-	-	46	-13.54
12	.5595	23.33	Ca	0	.1	9.3	32.73	-	-	46	-13.27
1	.1613	29.51	Qp	0	0	9.4	38.91	65.4	-26.49	-	-
3	.24	23.66	Qp	0	0	9.3	32.96	62.1	-29.14	-	-
5	.4403	24.67	Qp	0	.1	9.3	34.07	57.06	-22.99	-	-
7	.483	25.04	Qp	0	.1	9.3	34.44	56.29	-21.85	-	-
9	.519	26.31	Qp	0	.1	9.3	35.71	56	-20.29	-	-
11	.555	26.54	Qp	0	.1	9.3	35.94	56	-20.06	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN	C2&C3 cable path loss	207996 Limiter with short cabl	Corrected Reading dBuV	FCC Part 15 Class B QP	QP Margin (dB)	FCC Part 15 Class B Avg	Av(CISPR)Margin (dB)
14	.159	22.63	Ca	0	0	9.4	32.03	-	-	55.52	-23.49
16	.24	14.54	Ca	0	0	9.3	23.84	-	-	52.1	-28.26
18	.4425	16.11	Ca	0	.1	9.3	25.51	-	-	47.01	-21.5
20	.4808	16.78	Ca	0	.1	9.3	26.18	-	-	46.33	-20.15
22	.519	26.01	Ca	0	.1	9.3	35.41	-	-	46	-10.59
24	.5595	18.31	Ca	0	.1	9.3	27.71	-	-	46	-18.29
13	.1613	35.61	Qp	0	0	9.4	45.01	65.4	-20.39	-	-
15	.2423	24.55	Qp	0	0	9.3	33.85	62.02	-28.17	-	-
17	.4448	19.91	Qp	0	.1	9.3	29.31	56.97	-27.66	-	-
19	.4853	22.19	Qp	0	.1	9.3	31.59	56.25	-24.66	-	-
21	.519	28.82	Qp	0	.1	9.3	38.22	56	-17.78	-	-
23	.5595	21.63	Qp	0	.1	9.3	31.03	56	-24.97	-	-

Qp - Quasi-Peak detector
Ca - CISPR average detection

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888

12. SETUP PHOTOS

Please refer to 14749497-EP1 for setup photo.

END OF TEST REPORT

UL VERIFICATION SERVICES INC.
47173 Benicia Street, Fremont, CA 94538, USA TEL:(510) 319-4000 FAX:(510) 661-0888