

TEST REPORT

Report Number: 14523740-E2V2

Applicant : APPLE, INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

Model : A2848

Brand : APPLE

FCC ID : BCG-E8435A

IC : 579C-E8435A

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 2
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:

July 24, 2023

Prepared by:

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	7/17/2023	Initial Issue	Chin Pang
V2	7/24/2023	Address TCB's questions section 6.5, 8, 9.4	Chin Pang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE INC.
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

EUT DESCRIPTION: SMART PHONE

MODEL: A2848

BRAND: APPLE

SERIAL NUMBER: C07GQU0010S00003PJ (Conducted)
C07GTH0012C00003PJ (Conducted)
LVMPXQW46R (Radiated)

SAMPLE RECEIPT DATE: FEBRUARY 14, 2023

DATE TESTED: MARCH 06 – JUNE 26, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	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. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:



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Consumer Technology Division
UL Verification Services Inc.

Prepared By:



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Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST SUMMARY

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.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, KDB 662911, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 2.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc.is accredited by A2LA, certification #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
<input type="checkbox"/>	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
<input type="checkbox"/>	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
<input checked="" type="checkbox"/>	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
<input checked="" type="checkbox"/>	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}
Conducted Antenna Port Emission Measurement	1.94
Power Spectral Density	2.466
Time Domain Measurements Using SA	3.39
RF Power Measurement Direct Method Using Power Meter	0.450 (Peak), 1.3 (Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.2%
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

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC, NB UNII, 802.15.4, 802.15.4ab-NB and MSS technologies. The rechargeable battery is not user accessible.

6.2. MAXIMUM OUTPUT POWER

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

Antenna	Configuration	Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
ANT 4	High Power	2402 - 2480	BLE 1M	21.32	135.52
	Low Power			11.36	13.68
	High Power	2404 - 2478	BLE 2M	21.75	149.62
	Low Power			11.89	15.45
ANT 3	High Power	2402 - 2480	BLE 1M	21.32	135.52
	Low Power			12.94	19.68
	High Power	2404- 2478	BLE 2M	21.85	153.11
	Low Power			13.38	21.78
BF, ANT 4 + ANT 3	High Power	2402 - 2480	BLE 1M	24.36	272.90
	Low Power			15.17	32.89
	High Power	2404- 2478	BLE 2M	24.93	311.17
	Low Power			15.75	37.58

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
Cable loss is 2.1 dB.

Frequency Range (GHz)	ANT 4 (dBi)	ANT 3 (dBi)
2.4	-4.0	-1.5

6.4. SOFTWARE AND FIRMWARE

The EUT firmware version installed during testing was 21.1.304.2213

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X, Y and Z on ANT 4, ANT 3 and 2TX Beamforming. It was determined that X (Flatbed) was the worst-case orientation for ANT 4 ANT 3 and 2TX beamforming.

Radiated band edge, harmonic, and spurious emissions from 1GHz to 18GHz were performed with the EUT was set to transmit at highest power on Low/Middle/High channels.

High Power Beamforming BLE 1Mbps mode is set to maximum power per chain to cover both SISO and MIMO modes to complies with radiated spurious emissions limits in the restricted bands between 1GHz and 18GHz low/mid/high channel (except the band edge).

Radiated emissions below 1GHz, 18-26GHz and power line conducted emissions were performed with the EUT transmits at the channel with the highest output power as worst-case scenario. There were no emissions found below 30MHz within 20dB of the limit

For below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop.

For simultaneous transmission of multiple channels in the 2.4GHz BLE and 5GHz bands. No noticeable emission was found.

Note: In the Radiated Plots and emissions data, ANT0=ANT4 and ANT1=ANT3.

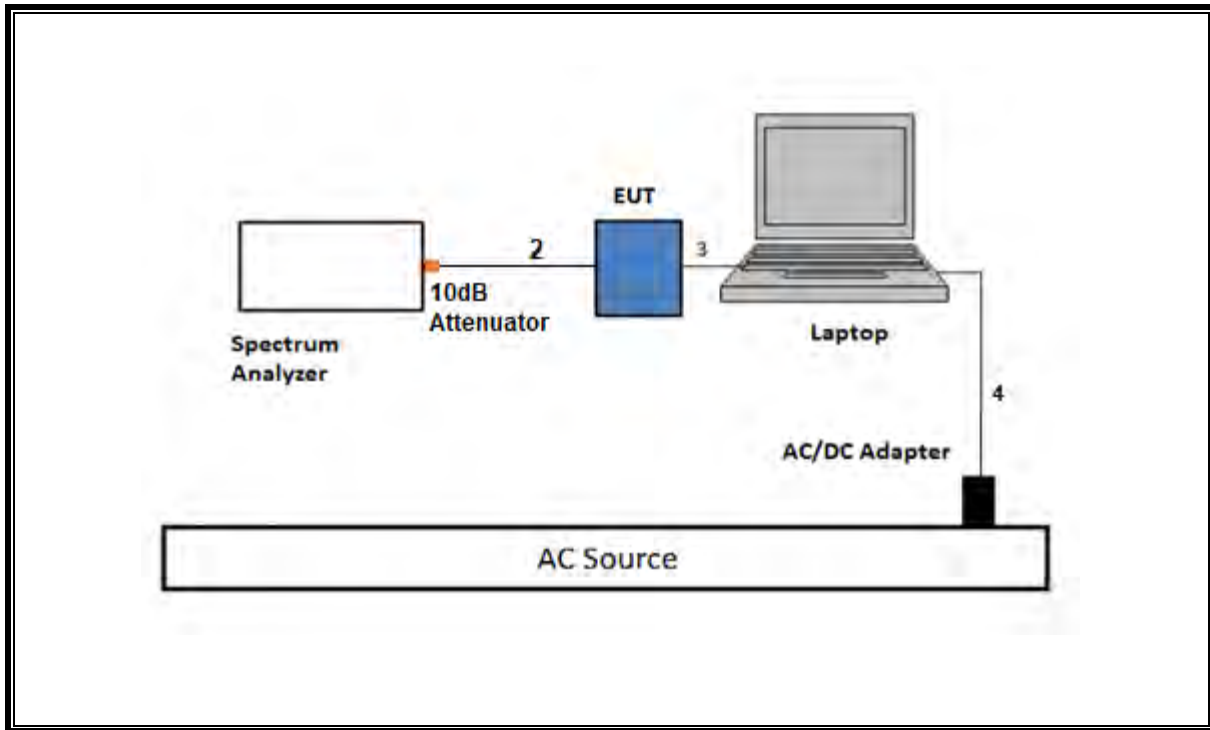
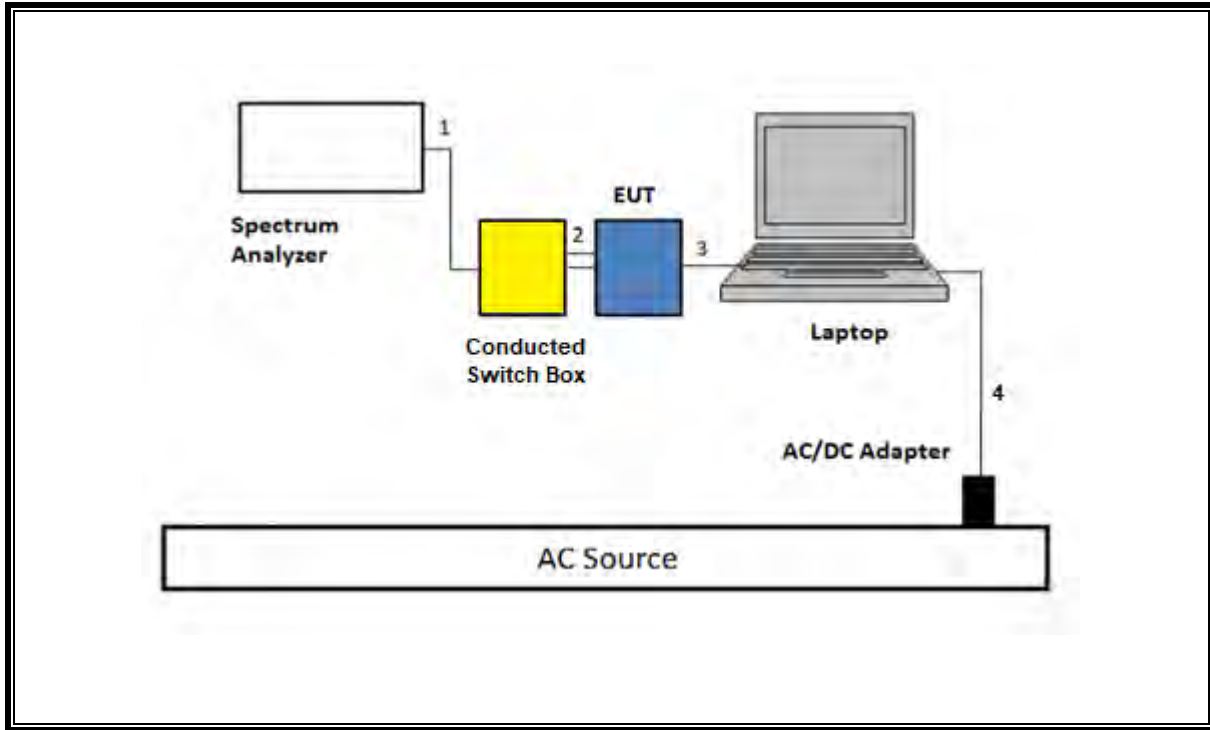
6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number	FCC ID/ DoC		
Laptop	Apple	Macbook Pro	C02VD7SAHV22	BCGA1708		
Laptop AC/DC adapter	Liteon Technology	A1424	NSW25679	DoC		
EUT AC/DC adapter	Apple	A1720	C3D8417A7R93KVPA8	DoC		
Conducted Switch Box	UL	n/a	208281	N/A		
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	N/A		
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

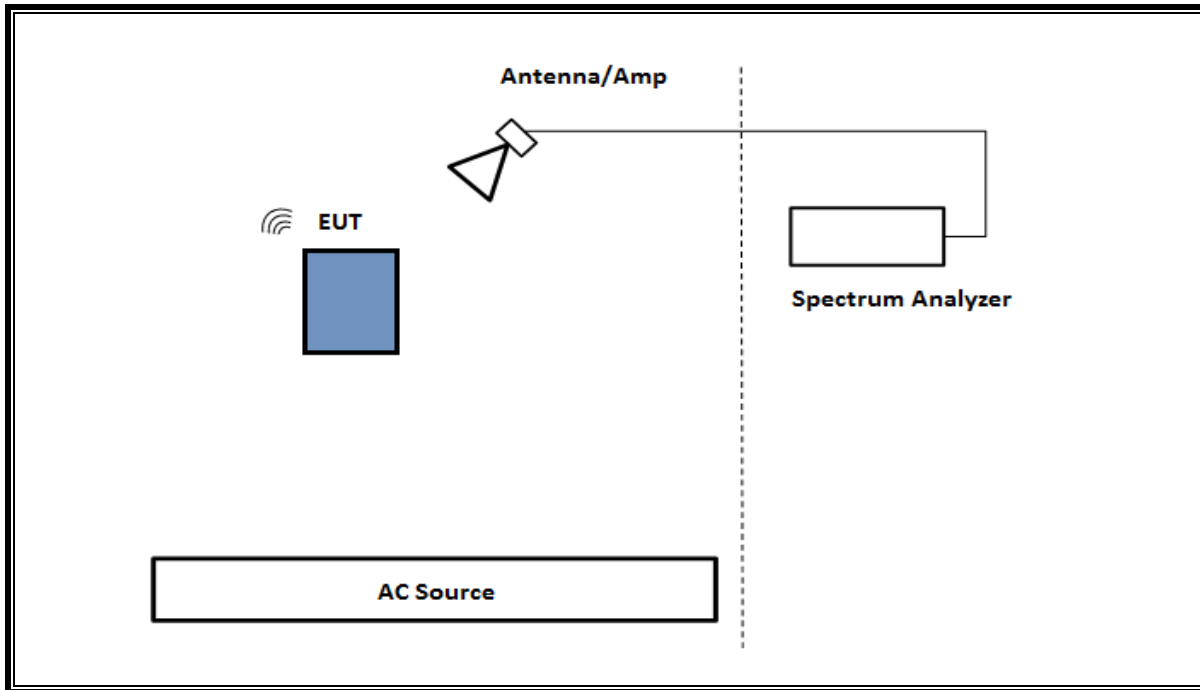
TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

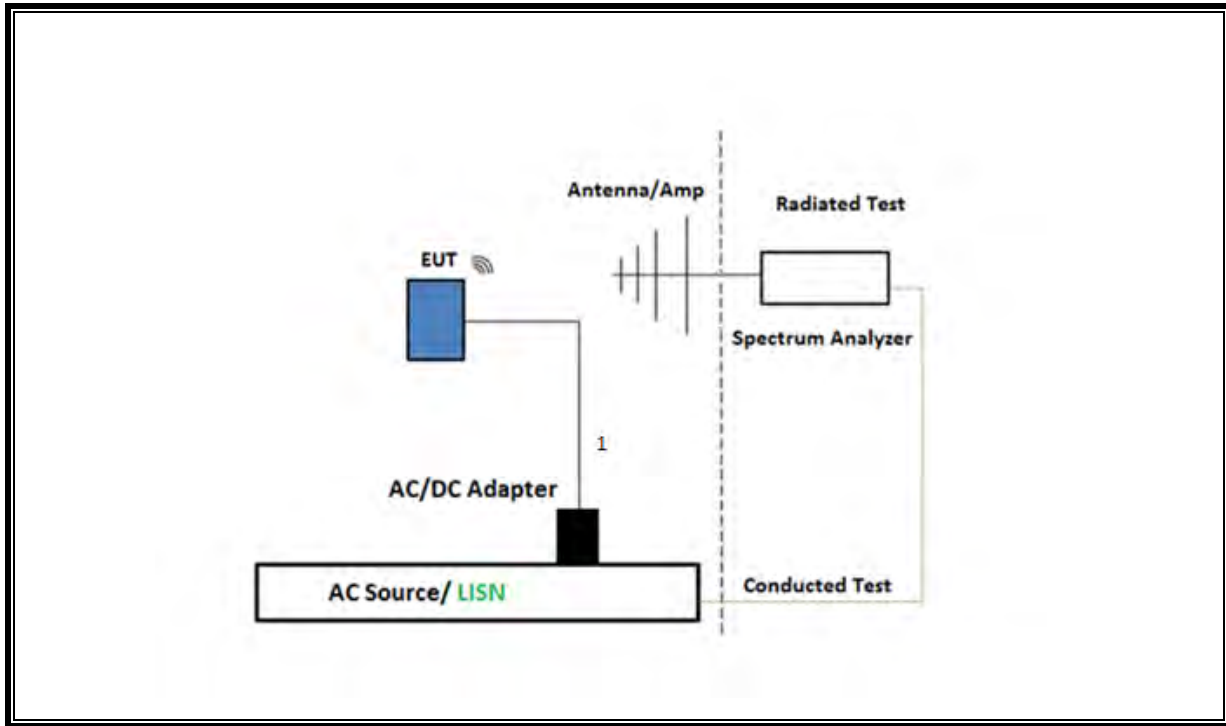
SETUP DIAGRAM FOR CONDUCTED TESTS



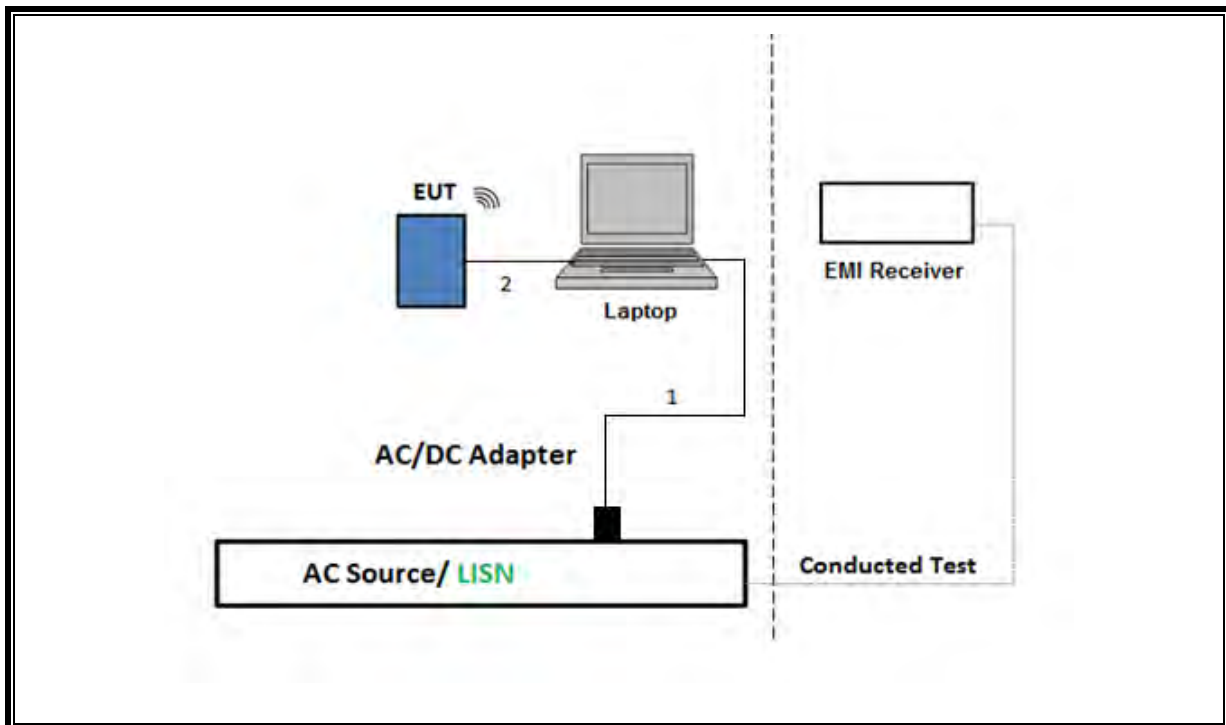
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



7. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 558074 D01 v05r02, Section 6.

6 dB BW: ANSI C63.10 Subclause -11.8.1 RBW \geq 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 Measurement using gated average power meter.

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

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1 & Clause 13

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

Band-edge: ANSI C63.10 Subclause -11.13.3.2 & Clause 13: Integration method -Peak detection

Band-edge: ANSI C63.10 Subclause -11.13.3.3 & Clause 13: Integration method -Trace averaging with continuous transmission at full power

Radiated Band-edge: ANSI C63.10-2013 Section 6.10.5 & 13

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

Radiated emissions non-restricted frequency bands ANSI C63.10 Subclause -11.11 & Clause 13

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2013 Section 6.4 & 13

NOTE: All conducted antenna port tests for Beamforming applied the same test procedures as BLE 1Mbps and BLE 2Mbps normal modes.

8. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Receiver	Rohde & Schwarz	ESW44	235670	04/30/2024	04/30/2023
Antenna, Broadband Hybrid, 30MHz to 3GHz	SunAR rf motion	JB3	235174	04/30/2024	04/30/2023
Amplifier, 9KHz to 1GHz, 32dB	Sonoma	310N	230310	01/17/2024	01/17/2023
*Antenna Horn, 18 to 26.5GHz	ARA	MWH-1826/B	172353	06/01/2023	06/01/2022
*Antenna, Horn 1-18GHz	ETS Lindgren	3117	80707	04/28/2023	04/28/2022
*RF Filter Box 1-18GHz	UL-FR	NA	169334	04/15/2023	04/15/2022
EMI Receiver	Rohde & Schwarz	ESW44	201502	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS Lindgren	3117	226672	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz	UL-FR1	NA	171875	11/10/2023	11/10/2022
Antenna, Horn 1-18GHz	ETS Lindgren	3117	226673	01/09/2024	01/09/2023
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	RATS 2	226781	04/30/2024	04/30/2023
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169935	02/29/2024	02/29/2023
Antenna, Horn 1-18GHz	ETS Lindgren	3117	230300	01/12/2024	01/12/2023
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	09/17/2023	09/17/2022
Antenna, Passive Loop 100KHz to 30MHz	ETS-Lindgren	EM-6872	PRE0179467(170016)	07/19/2023	07/19/2023
Antenna, Passive Loop 30Hz to 1MHz	Electro-Metrics	EM-6871	170014	07/19/2023	07/19/2022
Antenna, Broadband Hybrid, 30MHz to 3GHz	SunAR rf motion	JB3	235174	04/30/2024	04/30/2023
*Antenna Horn, 18 to 26.5GHz	ARA	MWH-1826/B	172353	06/01/2023	06/01/2022
Amplifier 18-26.5GHz, +5Vdc, 60dB min	AMPLICAL	AMP18G26.5-60	171583	02/29/2024	02/29/2023
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	204041	08/24/2023	08/24/2022
Spectrum Analyzer, PSA, 3Hz to 26.5GHz	Keysight Technologies Inc	E4440A	81311	02/29/2024	02/23/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	80397	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	85214	02/28/2024	02/28/2023
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A-544	87738	02/28/2024	02/28/2023
*Conducted Switch Box	N/A	CSB	221008	06/21/2023	06/21/2022
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236358	Verified/Characterized before use	
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	Verified/Characterized before use	
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	01/31/2024	01/31/2023
Power Sensor, P-series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	01/31/2024	01/31/2023

AC Line Conducted					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	02/29/2024	02/29/2023
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN- 50/250-25-2-01- 480V	175764	01/31/2024	01/31/2023
Transient Limiter	TE	TBFL1	207996	07/15/2023	07/15/2022
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, May 1 , 2023		
Conducted Software	UL	UL EMC	2020.8.16		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, Mar 3, 2023		

*Testing was completed before equipment calibration date

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

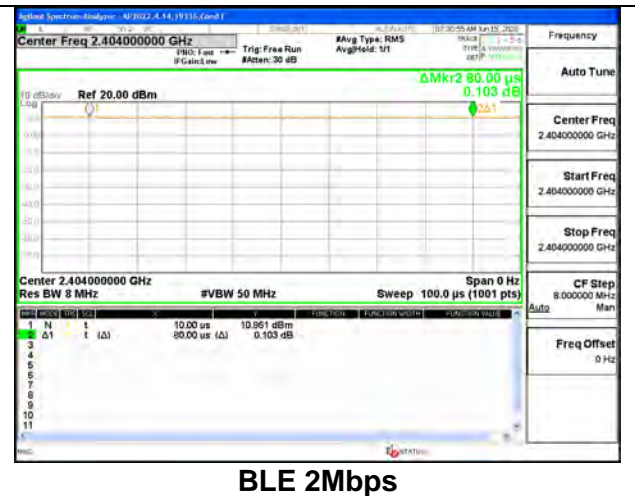
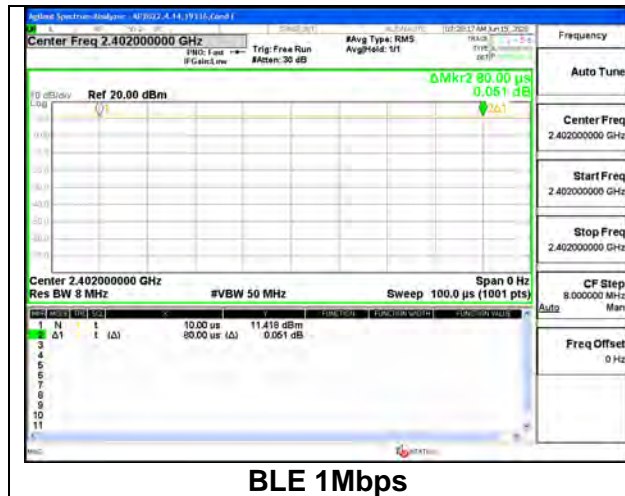
KDB 558074 Zero-Span Spectrum Analyzer Method.

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	0.08	0.08	1.000	100.00%	0.00	0.010
BLE, 2Mbps	0.08	0.08	1.000	100.00%	0.00	0.010

Note: There are the same DC factor on 1TX and 2TX.

DUTY CYCLE PLOTS



9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

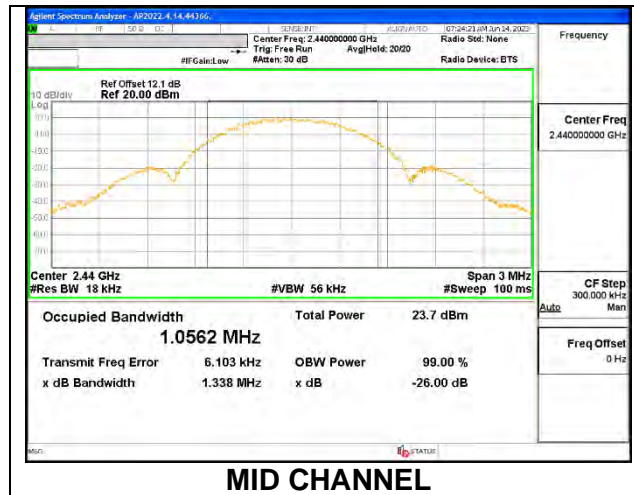
RESULTS

Only High Power modes result is reported, it covers all Low Power modes. Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

9.2.1. HIGH POWER BLE (1Mbps)

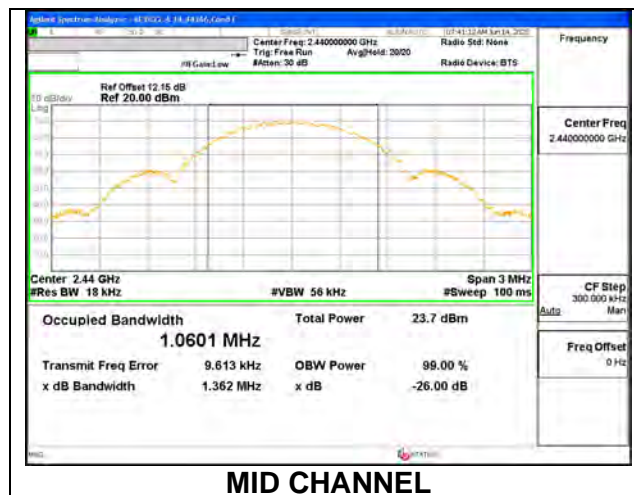
ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0506
Middle	2440	1.0562
High	2480	1.0523



ANT 3

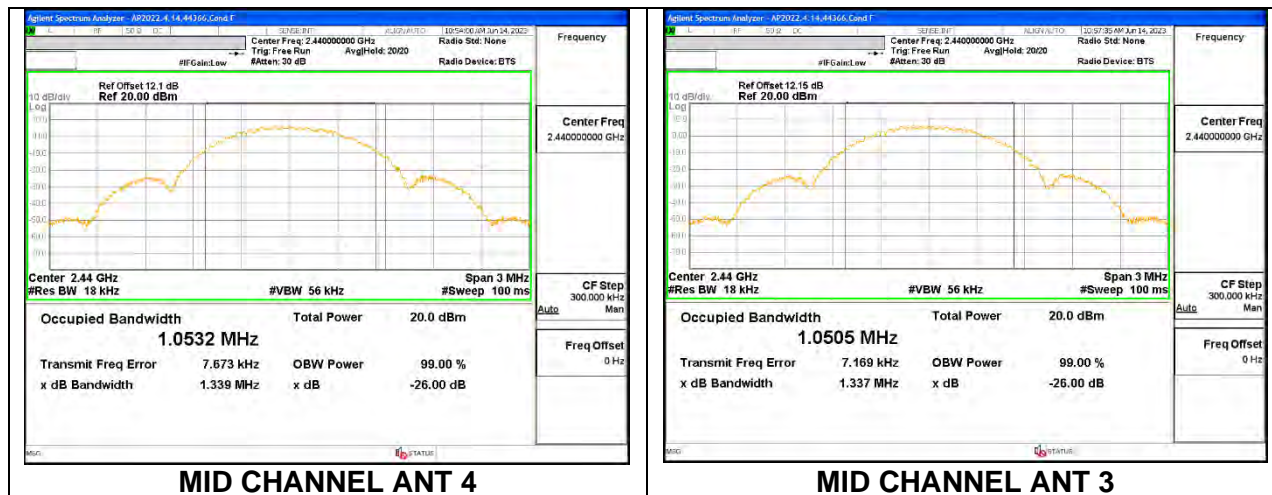
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0580
Middle	2440	1.0601
High	2480	1.0599



9.2.2. HIGH POWER BLE TXBF (1Mbps)

Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2402	1.0522	1.0558
Mid	2440	1.0532	1.0505
High	2480	1.0495	1.0505

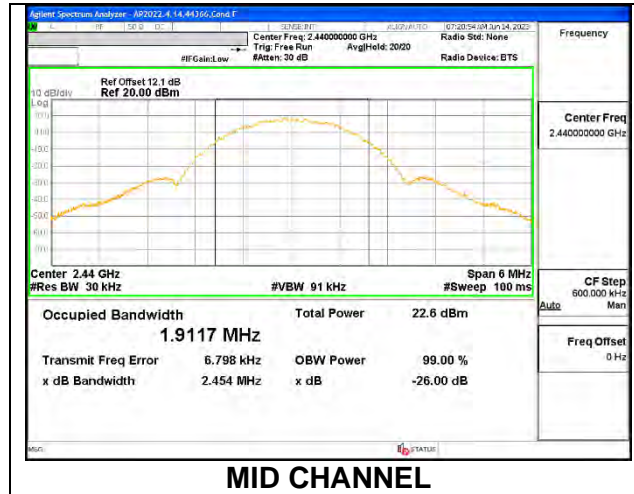
Note: Test procedures and setting are same as BLE normal mode.



9.2.3. HIGH POWER BLE (2Mbps)

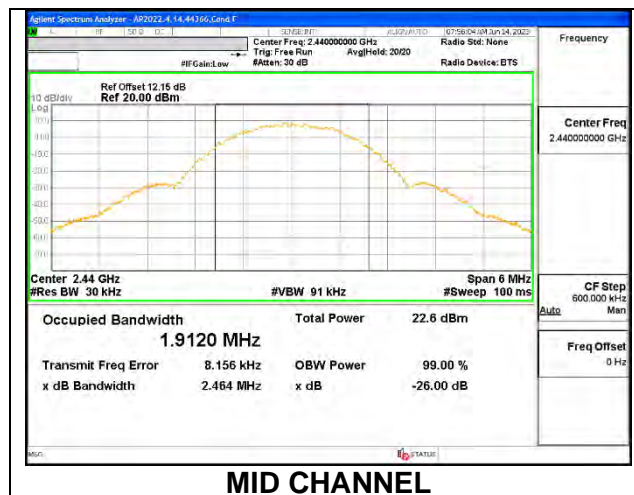
ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	1.9162
Middle	2440	1.9117
High	2478	1.9043



ANT 3

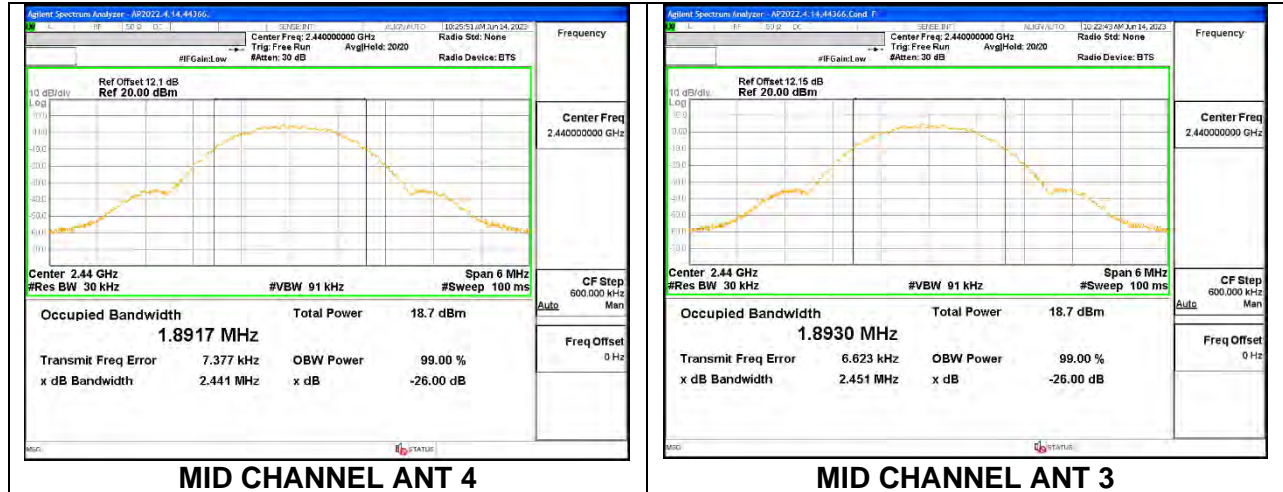
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	1.9189
Middle	2440	1.9120
High	2478	1.9087



9.2.4. HIGH POWER BLE TXBF (2Mbps)

Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2404	1.9036	1.8929
Mid	2440	1.8917	1.8930
High	2478	1.8904	1.8920

Note: Test procedures and setting are same as BLE normal mode.



9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 5.2 (a)

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

RESULTS

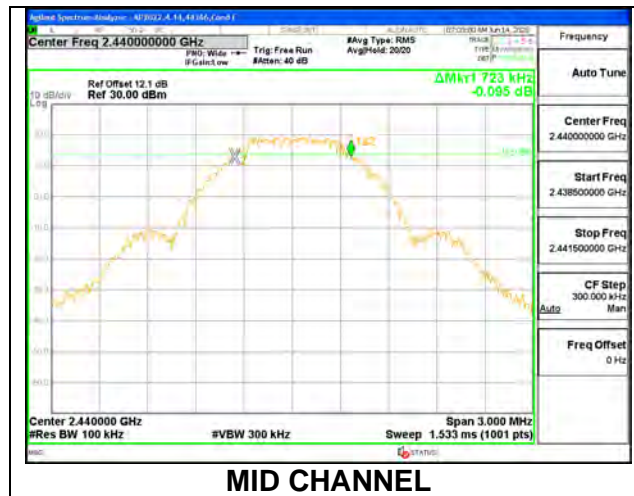
The 6dB bandwidth was measured for the narrowest bandwidth mode, High Power 1Mbps, to demonstrate compliance with the minimum required bandwidth of 500 kHz. Other modes were not tested as their bandwidth is greater than the High Power 1Mbps mode, as demonstrated by the 99% bandwidth measurements performed on all modes.

Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

9.3.1. HIGH POWER BLE (1Mbps)

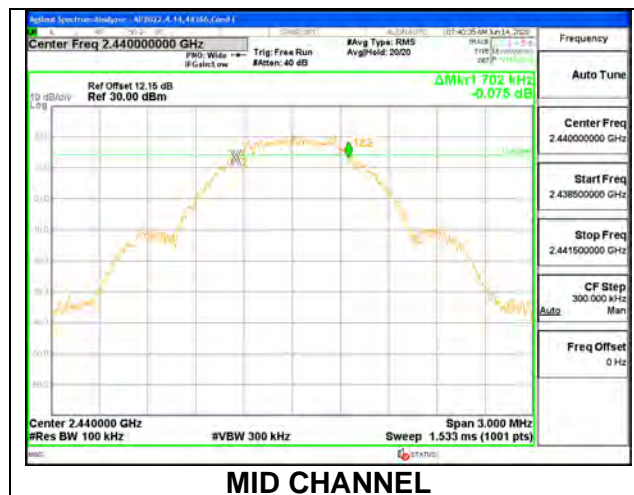
ANT 4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.687	0.5
Middle	2440	0.723	0.5
High	2480	0.720	0.5



ANT 3

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.753	0.5
Middle	2440	0.702	0.5
High	2480	0.669	0.5



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

Measurements perform using a wideband RF 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 peak power sensor. Peak output power was read directly from the power meter.

DIRECTIONAL ANTENNA GAIN

For 1 TX:

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

For 2TX:

Tx chains are correlated for power and PSD due to the device supporting Beamforming mode. The directional gains are as follows:

Band (GHz)	ANT 4 Antenna Gain (dBi)	ANT 3 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
2.4	-4.00	-1.50	-2.57	0.35

DIRECTIONAL GAIN CALCULATION:

ANSI C63.10-2013 section 14.4.3

Uncorrelated directional gain= $10 \cdot \text{LOG}((10^{(\text{Ant1}/10)} + 10^{(\text{Ant2}/10)})/2)$

Correlated directional Gain= $10 \cdot \text{LOG}(((10^{(\text{Ant1}/20)} + 10^{(\text{Ant2}/20)})^2)/2)$

Sample Calculation:

Ant4=-4.0, Ant3=-1.5

Uncorrelated Antenna gain= $10 \log[(10^{(-4.0/10)} + 10^{(-1.5/10)})/2] = -2.57 \text{dBi}$

Correlated Antenna gain= $10 \log[(10^{(-4.0/20)} + 10^{(-1.5/20)})^2/2] = 0.35 \text{dBi}$

RESULTS

9.4.1. HIGH POWER BLE (1Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	21.32	30	-8.68
Middle	2440	21.23	30	-8.77
High	2480	21.28	30	-8.72

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	21.15	30	-8.85
Middle	2440	21.30	30	-8.70
High	2480	21.32	30	-8.68

9.4.2. HIGH POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	21.32	21.25	24.30	30	-5.70
Middle	2440	21.27	21.43	24.36	30	-5.64
High	2480	21.30	21.18	24.25	30	-5.75

9.4.3. HIGH POWER BLE (2Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	21.75	30	-8.25
Middle	2440	21.72	30	-8.28
High	2478	21.75	30	-8.25

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	21.85	30	-8.15
Middle	2440	21.78	30	-8.22
High	2478	21.85	30	-8.15

9.4.4. HIGH POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	21.84	21.83	24.85	30	-5.15
Middle	2440	21.86	21.86	24.87	30	-5.13
High	2478	21.90	21.94	24.93	30	-5.07

9.4.5. LOW POWER BLE (1Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.24	30	-18.76
Middle	2440	11.36	30	-18.64
High	2480	11.26	30	-18.74

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	12.75	30	-17.25
Middle	2440	12.85	30	-17.15
High	2480	12.94	30	-17.06

9.4.6. LOW POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.32	12.69	15.07	30	-14.93
Middle	2440	11.33	12.85	15.17	30	-14.83
High	2480	11.32	12.74	15.10	30	-14.90

9.4.7. LOW POWER BLE (2Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	11.85	30	-18.15
Middle	2440	11.87	30	-18.13
High	2478	11.89	30	-18.11

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	13.28	30	-16.72
Middle	2440	13.38	30	-16.62
High	2478	13.29	30	-16.71

9.4.8. LOW POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	11.87	13.27	15.64	30	-14.36
Middle	2440	11.89	13.36	15.70	30	-14.30
High	2478	11.85	13.47	15.75	30	-14.25

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband RF 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 average power sensor. Gated average output power was read directly from power meter.

RESULTS

9.5.1. HIGH POWER BLE (1Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	20.86
Middle	2440	20.84
High	2480	20.84

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	20.81
Middle	2440	20.81
High	2480	20.84

9.5.2. HIGH POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2402	20.96	20.92	23.95
Middle	2440	20.95	20.94	23.96
High	2480	20.91	20.84	23.89

9.5.3. HIGH POWER BLE (2Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	20.83
Middle	2440	20.82
High	2478	20.82

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	20.91
Middle	2440	20.83
High	2478	20.85

9.5.4. HIGH POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	20.92	20.91	23.93
Middle	2440	20.92	20.95	23.95
High	2478	20.91	20.96	23.95

9.5.5. LOW POWER BLE (1Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.84
Middle	2440	10.88
High	2480	10.81

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	12.34
Middle	2440	12.38
High	2480	12.45

9.5.6. LOW POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2402	10.86	12.26	14.63
Middle	2440	10.92	12.35	14.70
High	2480	10.92	12.31	14.68

9.5.7. LOW POWER BLE (2Mbps)

ANT 4

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	10.95
Middle	2440	10.92
High	2478	10.91

ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	12.37
Middle	2440	12.41
High	2478	12.32

9.5.8. LOW POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	44366
Date:	6/14/2023

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	10.96	12.31	14.70
Middle	2440	10.93	12.42	14.75
High	2478	10.89	12.48	14.77

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

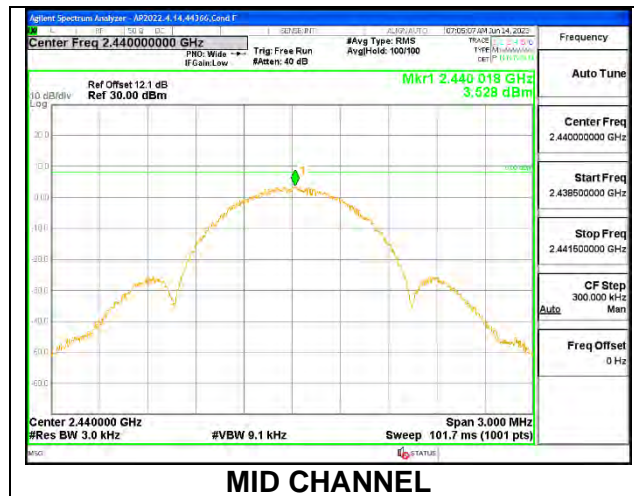
Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

Only High-Power modes result is reported, it covers all Low Power modes

9.6.1. HIGH POWER BLE (1Mbps)

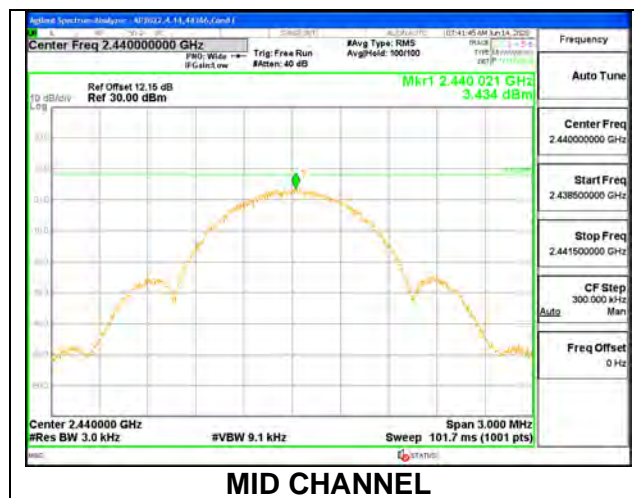
ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.724	8	-4.28
Middle	2440	3.528	8	-4.47
High	2480	3.536	8	-4.46



ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.437	8	-4.56
Middle	2440	3.434	8	-4.57
High	2480	3.511	8	-4.49



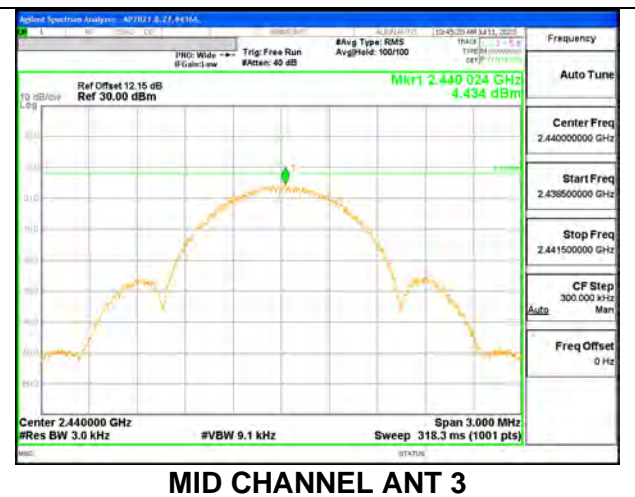
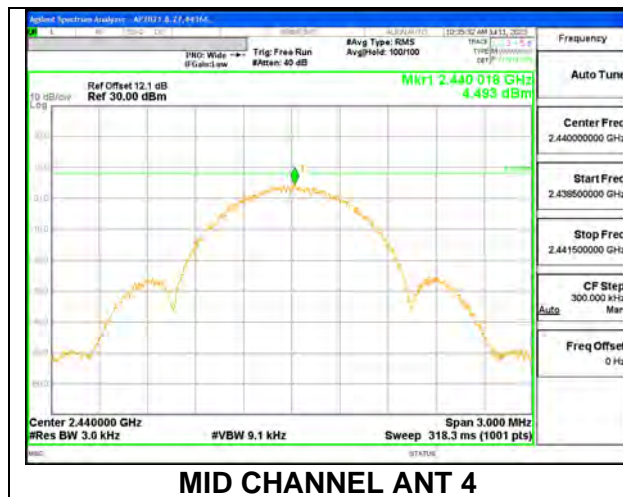
9.6.2. HIGH POWER BLE TXBF (1Mbps)

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
--------------------	------	--

PSD Results

Channel	Frequency (MHz)	ANT 4 Meas (dBm/3kHz)	ANT 3 Meas (dBm/3kHz)	Total Corr'd PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	4.400	4.550	7.49	8.0	-0.5
Mid	2440	4.493	4.434	7.47	8.0	-0.5
Hjigh	2480	4.398	4.304	7.36	8.0	-0.6

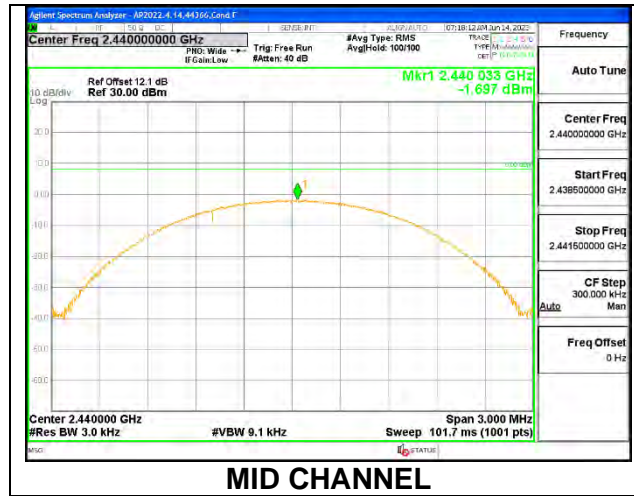
Note: Test procedures and setting are same as BLE normal mode.



9.6.3. HIGH POWER BLE (2Mbps)

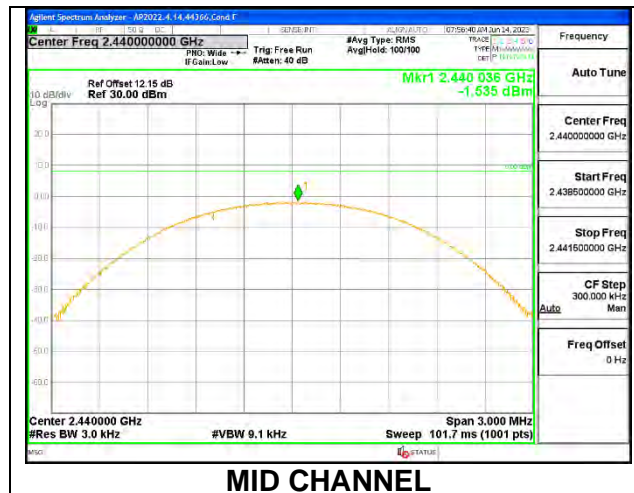
ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-1.621	8	-9.62
Middle	2440	-1.697	8	-9.70
High	2478	-1.627	8	-9.63



ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-1.669	8	-9.67
Middle	2440	-1.535	8	-9.54
High	2478	-1.775	8	-9.78



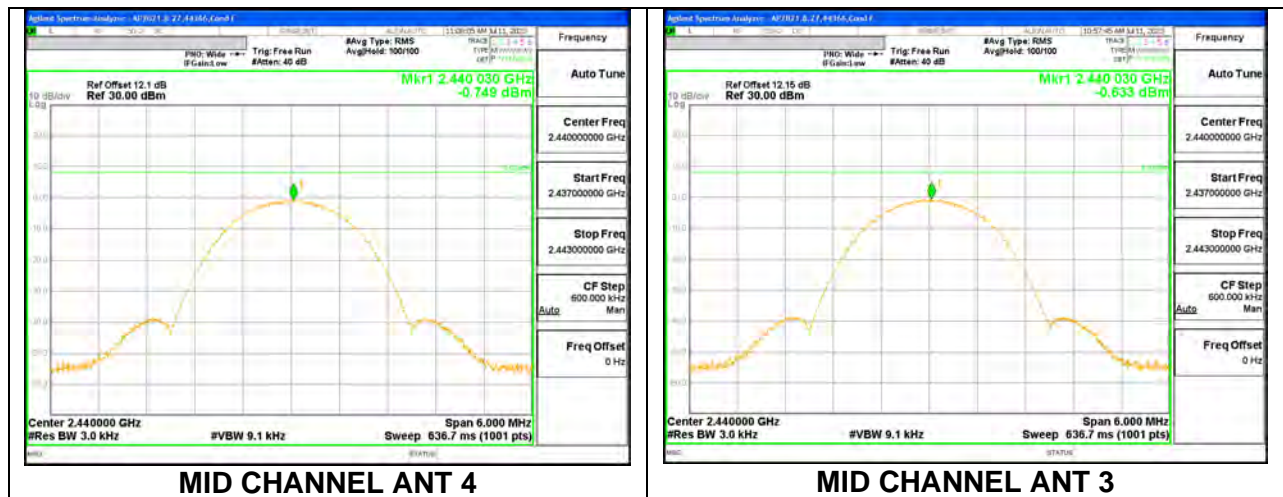
9.6.4. HIGH POWER BLE TXBF (2Mbps)

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD
--------------------	------	--

PSD Results

Channel	Frequency (MHz)	ANT 4 Meas (dBm/3kHz)	ANT 3 Meas (dBm/3kHz)	Total Corr'd PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-0.862	-0.740	2.21	8.0	-5.8
Mid	2440	-0.749	-0.633	2.32	8.0	-5.7
Hjigh	2478	-0.642	-0.753	2.31	8.0	-5.7

Note: Test procedures and setting are same as BLE normal mode.



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.

Note: Test procedures and setting are same as BLE normal mode.

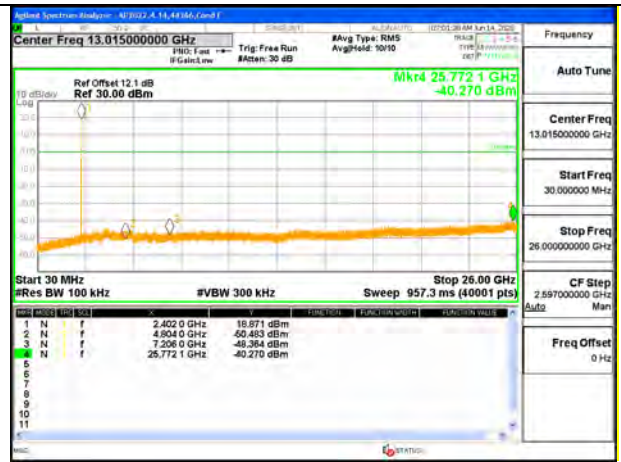
RESULTS

9.7.1. HIGH POWER BLE (1Mbps)

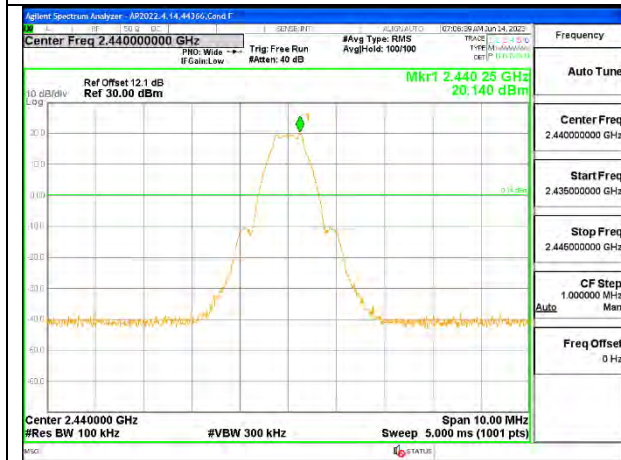
ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE

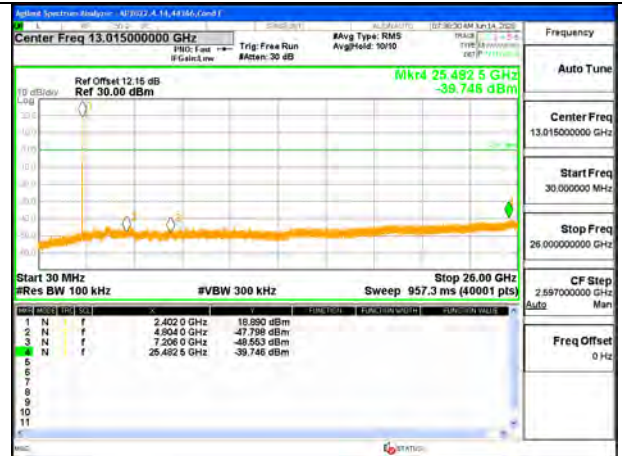


OUT-OF-BAND HIGH CHANNEL

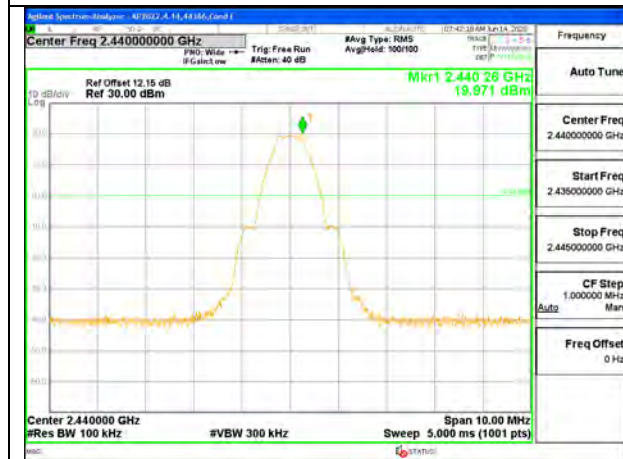
ANT 3



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

9.7.2. HIGH POWER BLE TXBF (1Mbps)

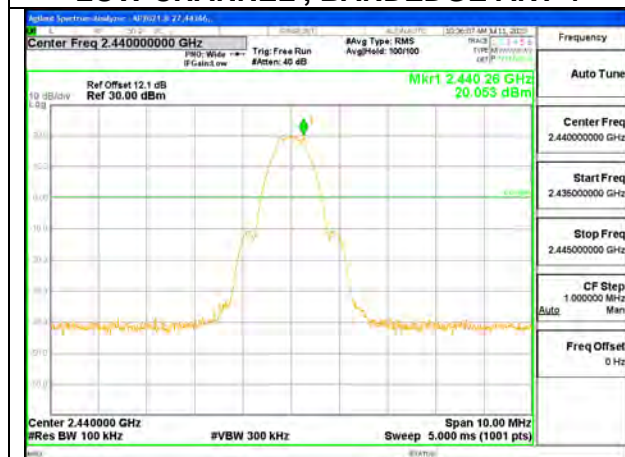
Note: Test procedures and setting are same as BLE normal mode.



LOW CHANNEL , BANDEDGE ANT 4



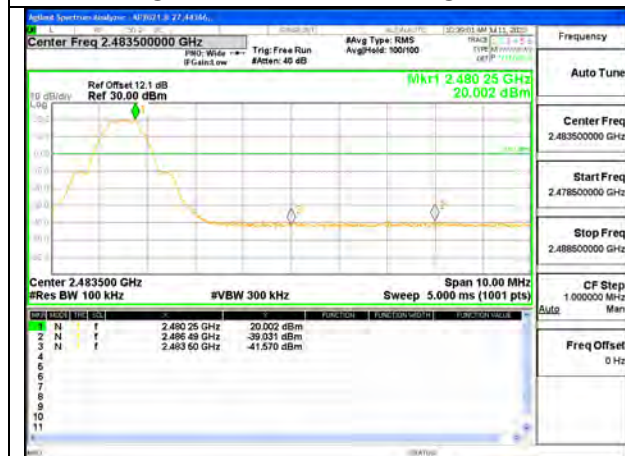
LOW CHANNEL OUT-OF-BAND ANT 4



MID CHANNEL REFERENCE ANT 4



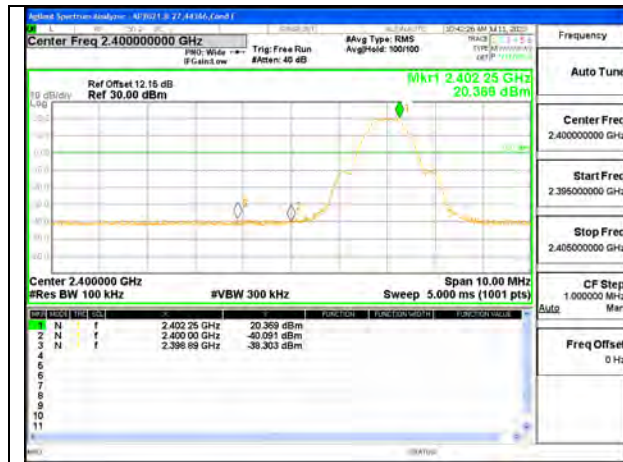
MID CHANNEL OUT-OF-BAND ANT 4



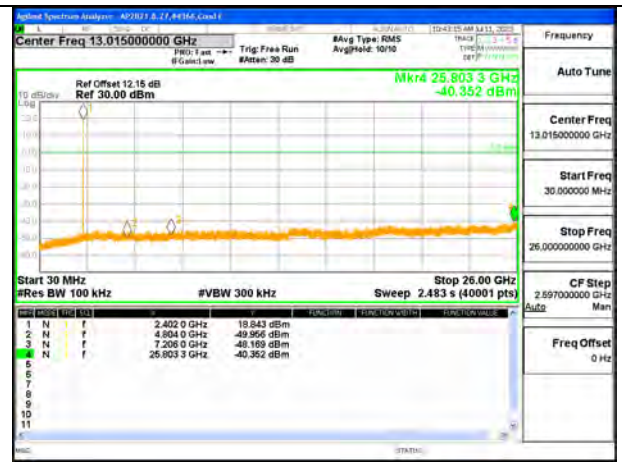
HIGH CHANNEL BANDEDGE ANT 4



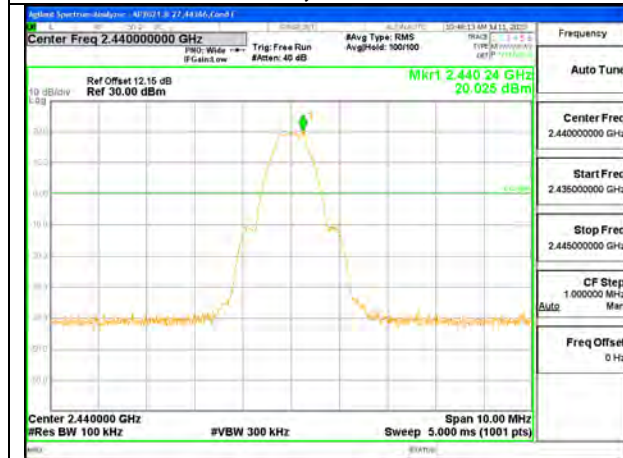
HIGH CHANNEL OUT-OF-BAND ANT 4



LOW CHANNEL , BANDEGE ANT 3



LOW CHANNEL OUT-OF-BAND ANT 3



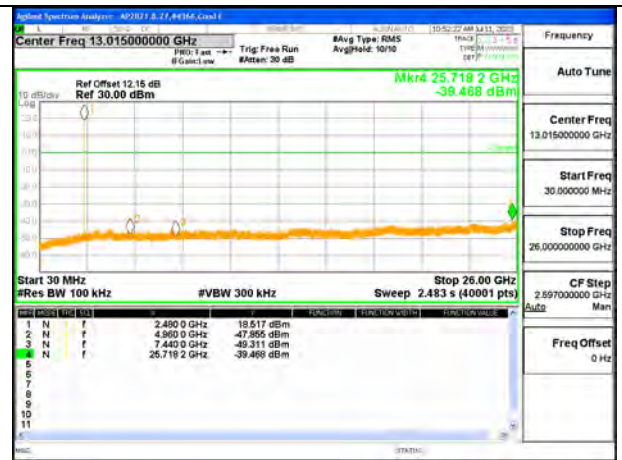
MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



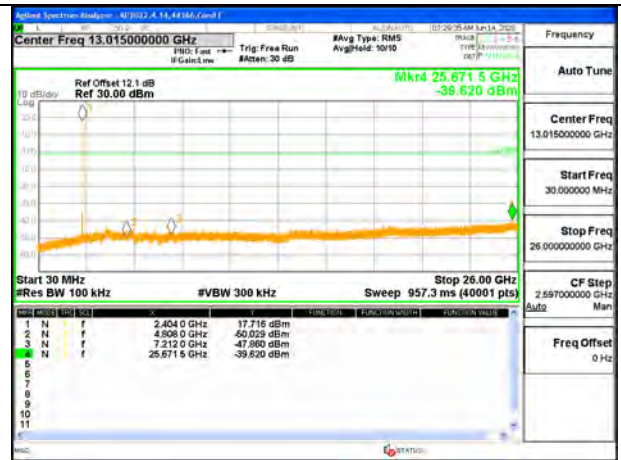
HIGH CHANNEL OUT-OF-BAND ANT 3

9.7.3. HIGH POWER BLE (2Mbps)

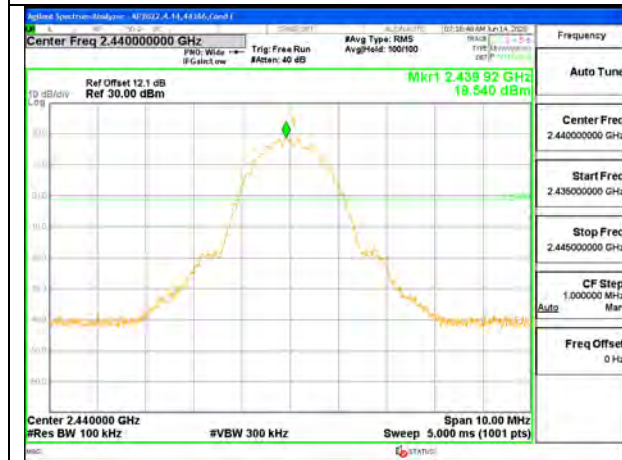
ANT 4



LOW CHANNEL BANDEDGE



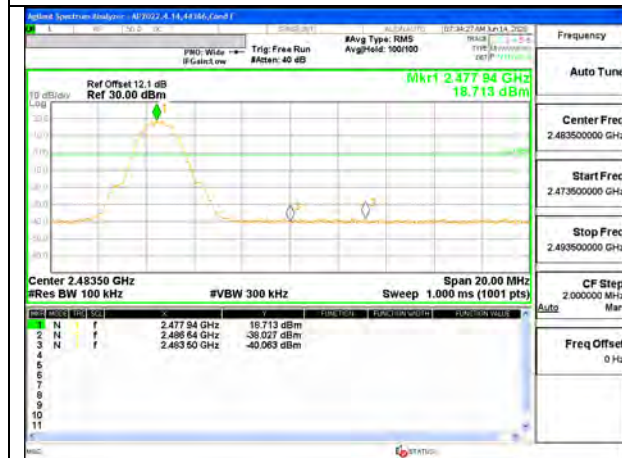
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

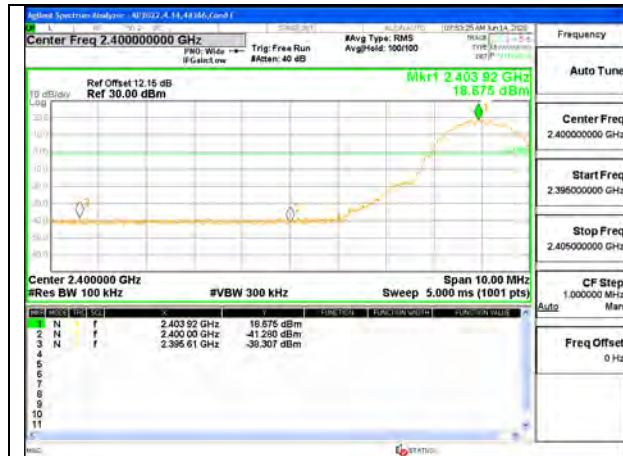


HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

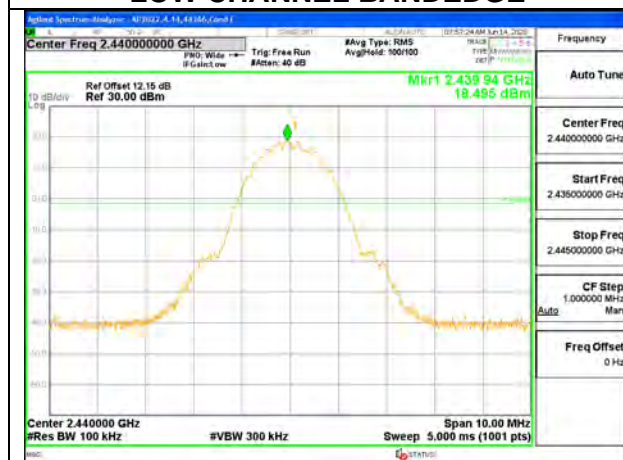
ANT 3



LOW CHANNEL BANDEDGE



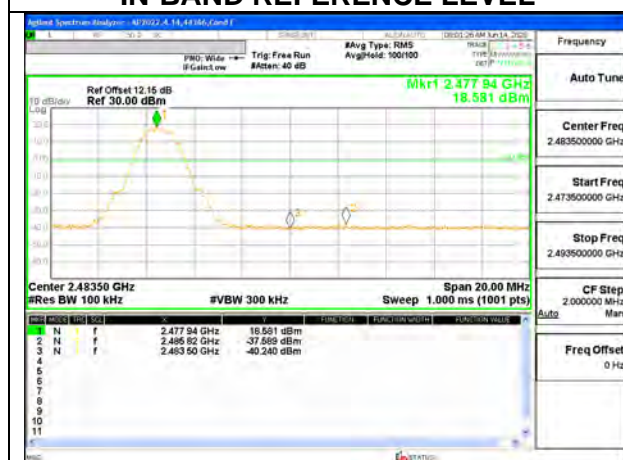
OUT-OF-BAND LOW CHANNEL



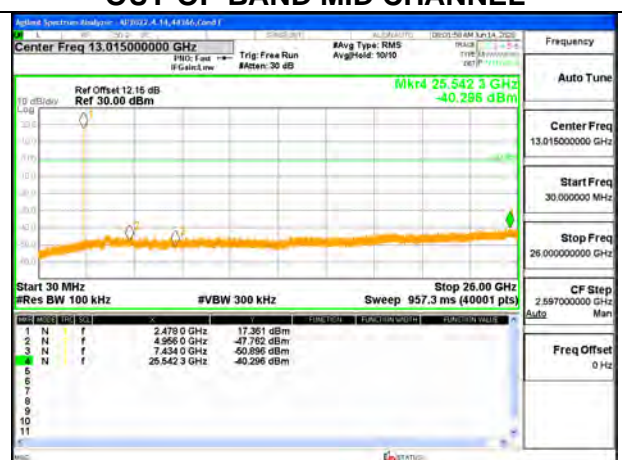
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.4. HIGH POWER BLE TXBF (2Mbps)

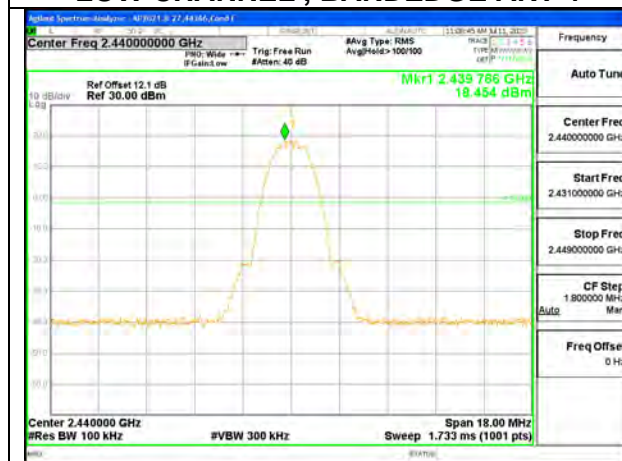
Note: Test procedures and setting are same as BLE normal mode.



LOW CHANNEL , BANDEDGE ANT 4



LOW CHANNEL OUT-OF-BAND ANT 4



MID CHANNEL REFERENCE ANT 4



MID CHANNEL OUT-OF-BAND ANT 4



HIGH CHANNEL BANDEDGE ANT 4



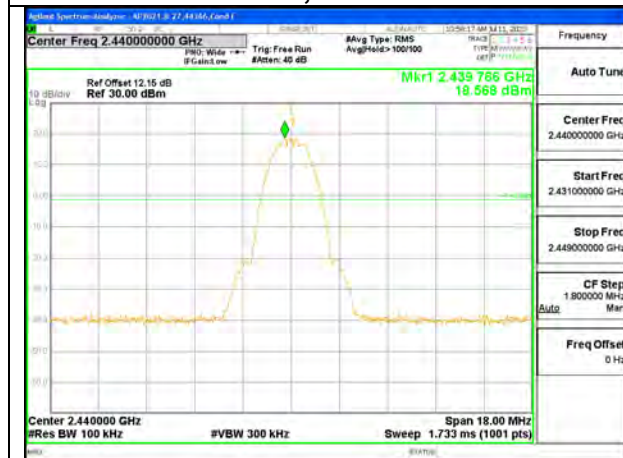
HIGH CHANNEL OUT-OF-BAND ANT 4



LOW CHANNEL , BANDEGE ANT 3



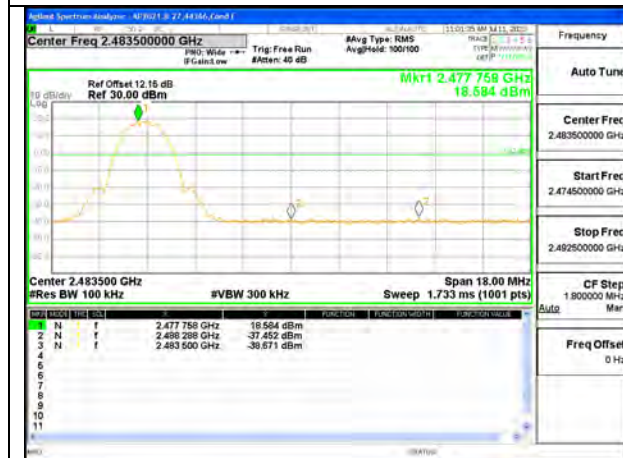
LOW CHANNEL OUT-OF-BAND ANT 3



MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



HIGH CHANNEL OUT-OF-BAND ANT 3

9.7.5. LOW POWER BLE (1Mbps)

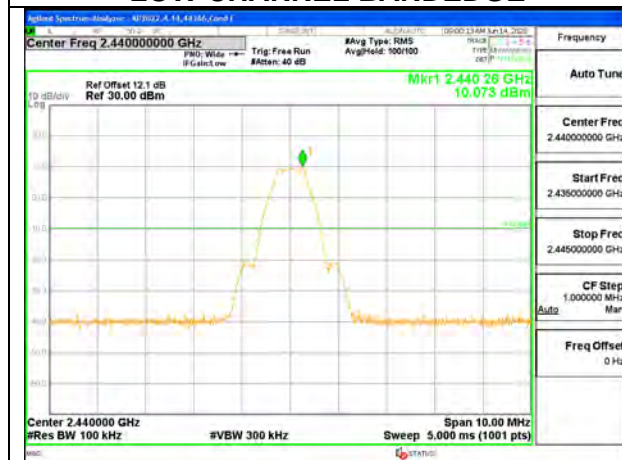
ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

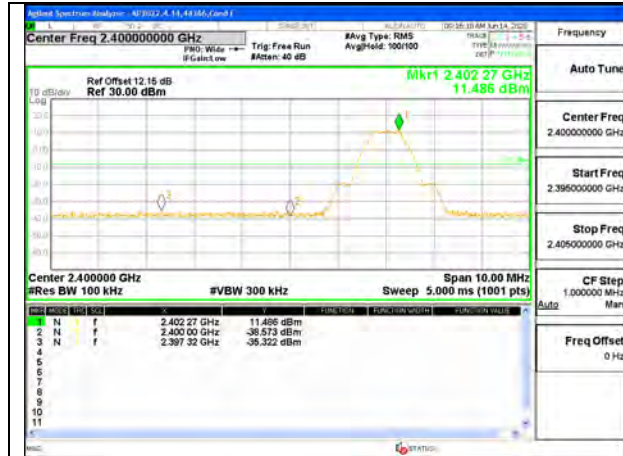


HIGH CHANNEL BANDEDGE

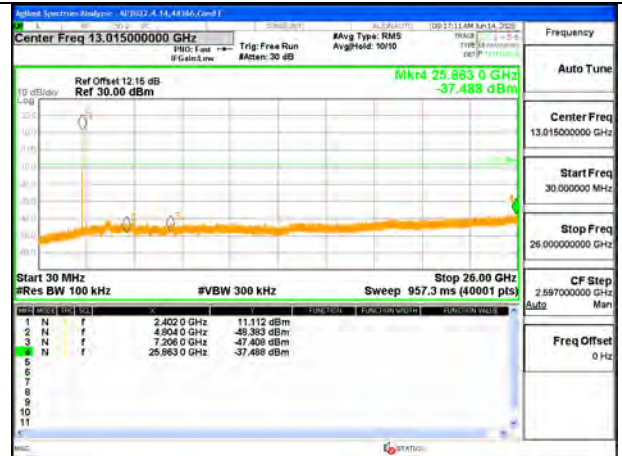


OUT-OF-BAND HIGH CHANNEL

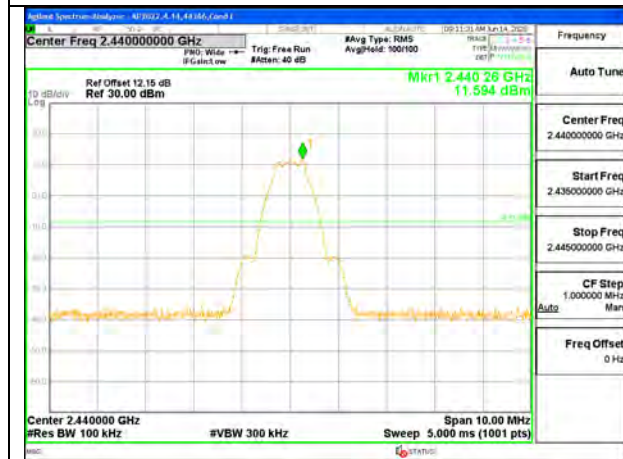
ANT 3



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

9.7.6. LOW POWER BLE TXBF (1Mbps)

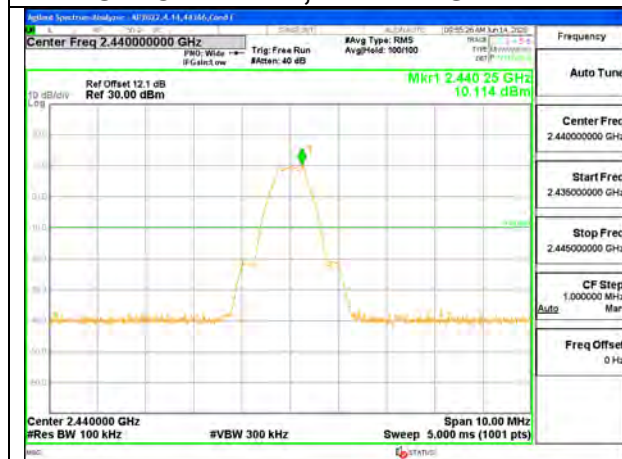
Note: Test procedures and setting are same as BLE normal mode.



LOW CHANNEL , BANDEGE ANT 4



LOW CHANNEL OUT-OF-BAND ANT 4



MID CHANNEL REFERENCE ANT 4



MID CHANNEL OUT-OF-BAND ANT 4



HIGH CHANNEL BANDEGE ANT 4



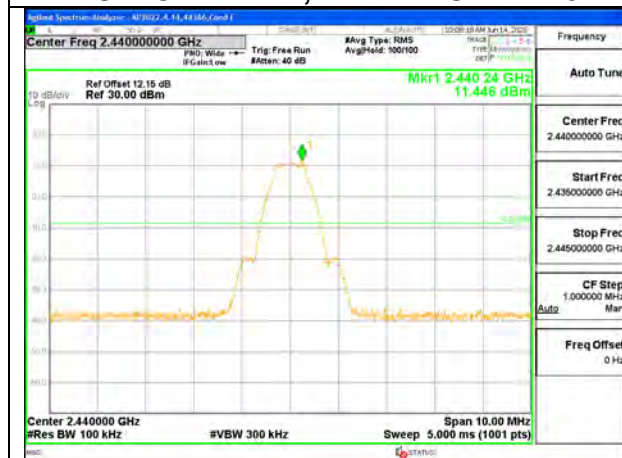
HIGH CHANNEL OUT-OF-BAND ANT 4



LOW CHANNEL , BANDEDGE ANT 3



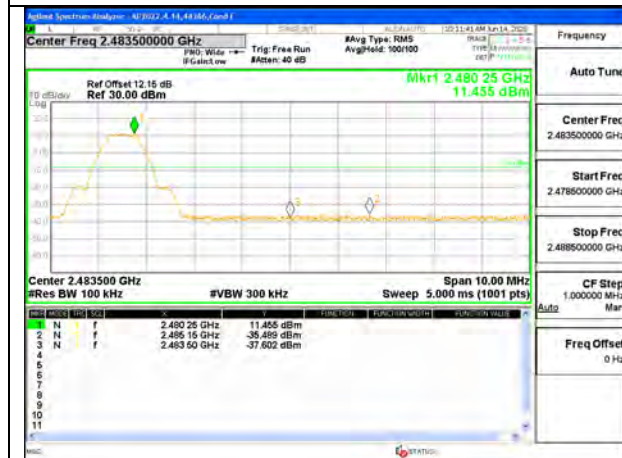
LOW CHANNEL OUT-OF-BAND ANT 3



MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



HIGH CHANNEL OUT-OF-BAND ANT 3

9.7.7. LOW POWER BLE (2Mbps)

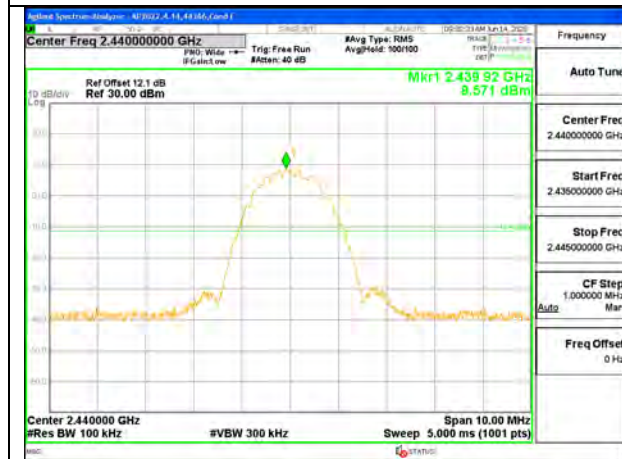
ANT 4



LOW CHANNEL BANDEDGE



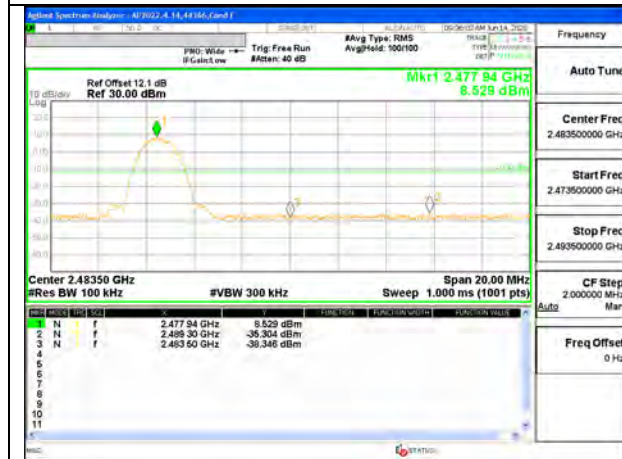
OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

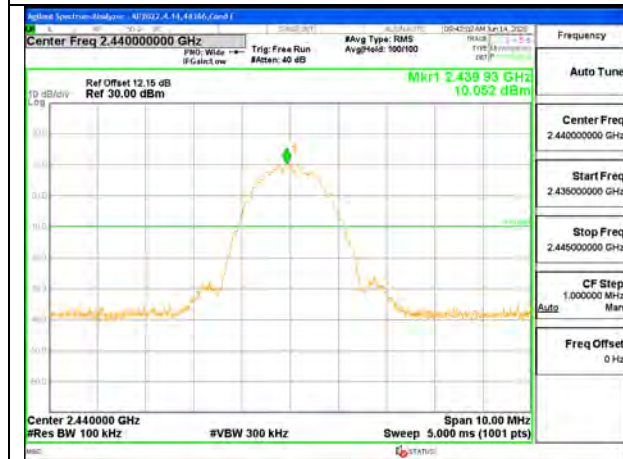
ANT 3



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



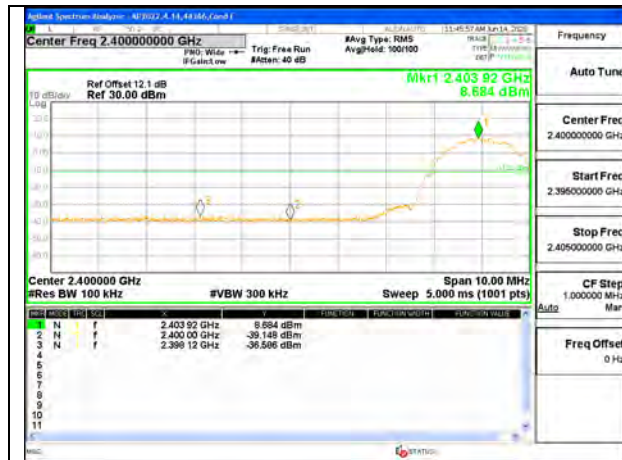
HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.8. LOW POWER BLE TXBF (2Mbps)

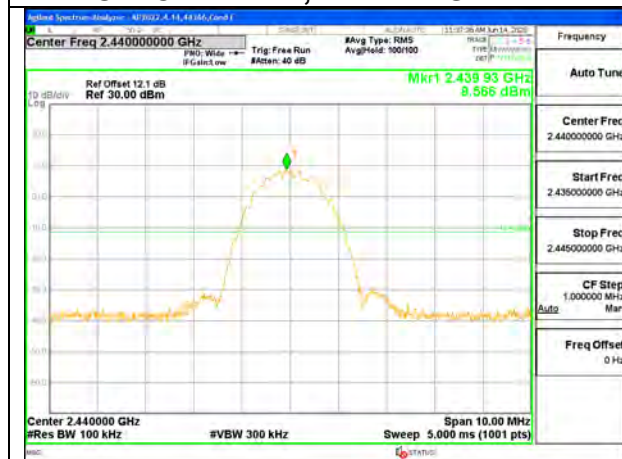
Note: Test procedures and setting are same as BLE normal mode.



LOW CHANNEL , BANDEGE ANT 4



LOW CHANNEL OUT-OF-BAND ANT 4



MID CHANNEL REFERENCE ANT 4



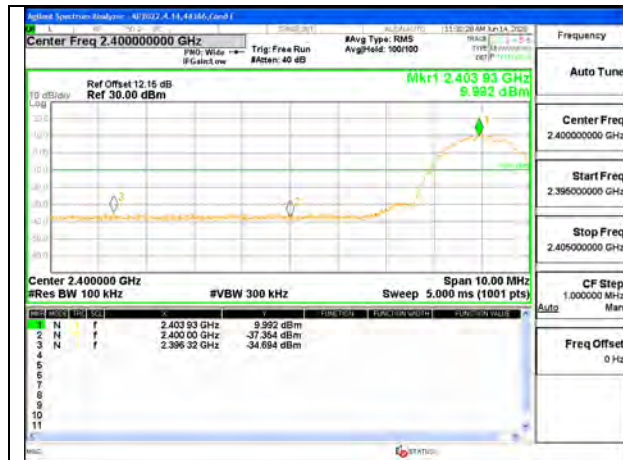
MID CHANNEL OUT-OF-BAND ANT 4



HIGH CHANNEL BANDEGE ANT 4



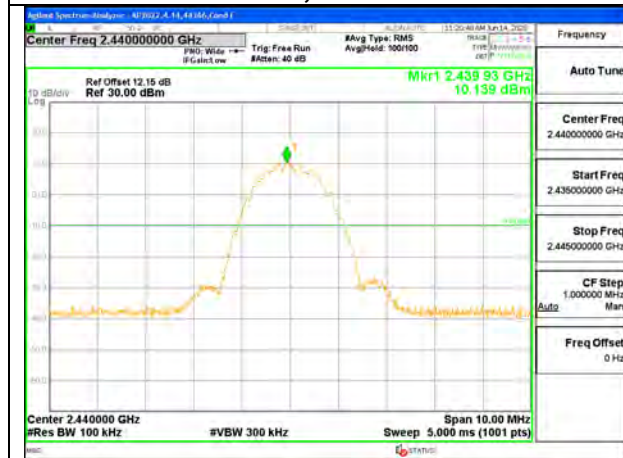
HIGH CHANNEL OUT-OF-BAND ANT 4



LOW CHANNEL , BANDEDGE ANT 3



LOW CHANNEL OUT-OF-BAND ANT 3



MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



HIGH CHANNEL OUT-OF-BAND ANT 3

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. Peak detection is used unless otherwise noted as quasi-peak.

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.

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 report in the table) using 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.

In addition:

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

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.

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

RESULTS

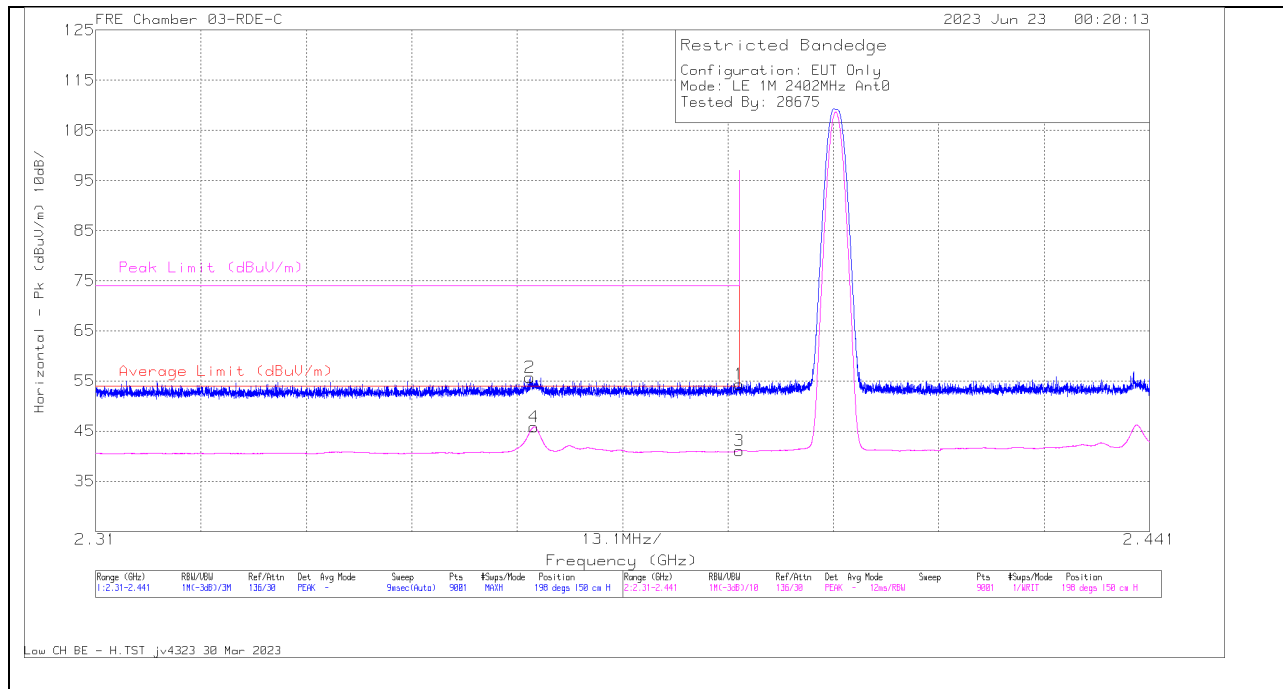
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. HIGH POWER BLE (1Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

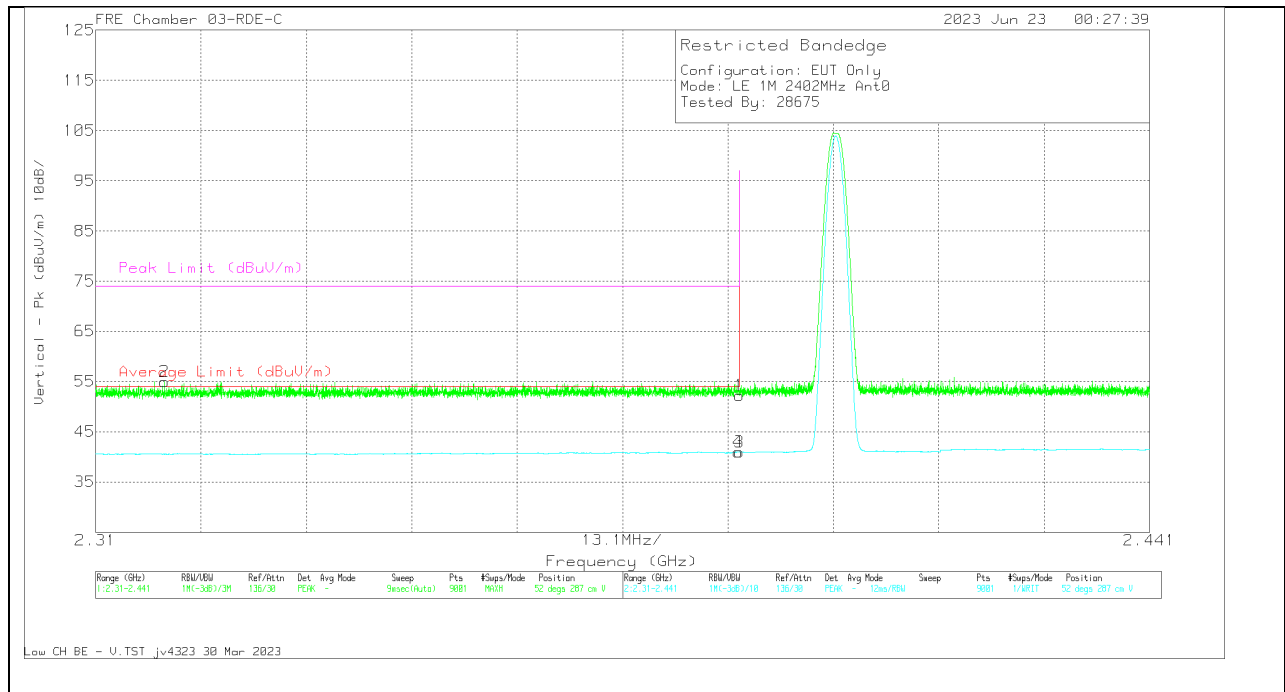
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBUV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	62	Pk	32.1	-39.8	54.3	-	-	74	-19.7	198	150	H
2	* 2.363974	63.64	Pk	32	-39.9	55.74	-	-	74	-18.26	198	150	H
3	* 2.39	48.77	VA1T	32.1	-39.8	41.07	54	-12.93	-	-	198	150	H
4	* 2.364483	53.74	VA1T	32	-39.9	45.84	54	-8.16	-	-	198	150	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

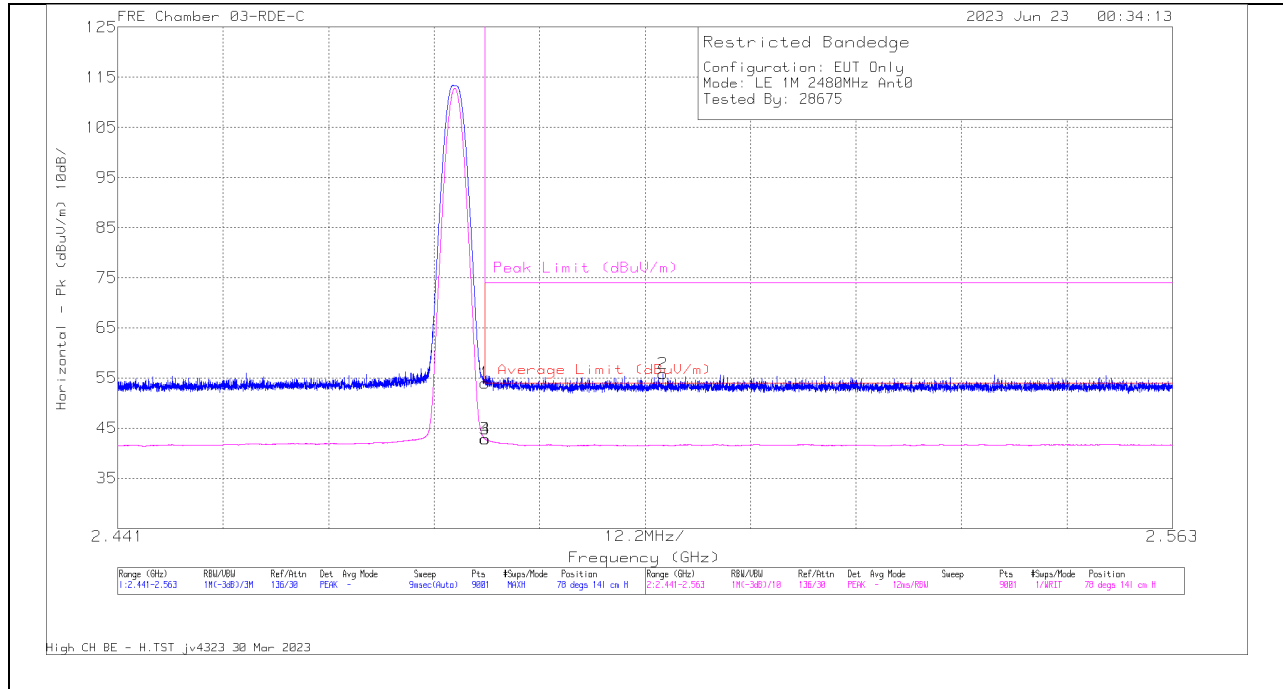


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	59.94	Pk	32.1	-39.8	52.24	-	-	74	-21.76	52	287	V
2	* 2.318559	63.17	Pk	31.8	-39.96	55.01	-	-	74	-18.99	52	287	V
3	* 2.39	48.67	VA1T	32.1	-39.8	40.97	54	-13.03	-	-	52	287	V
4	* 2.389825	48.71	VA1T	32.1	-39.83	40.98	54	-13.02	-	-	52	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

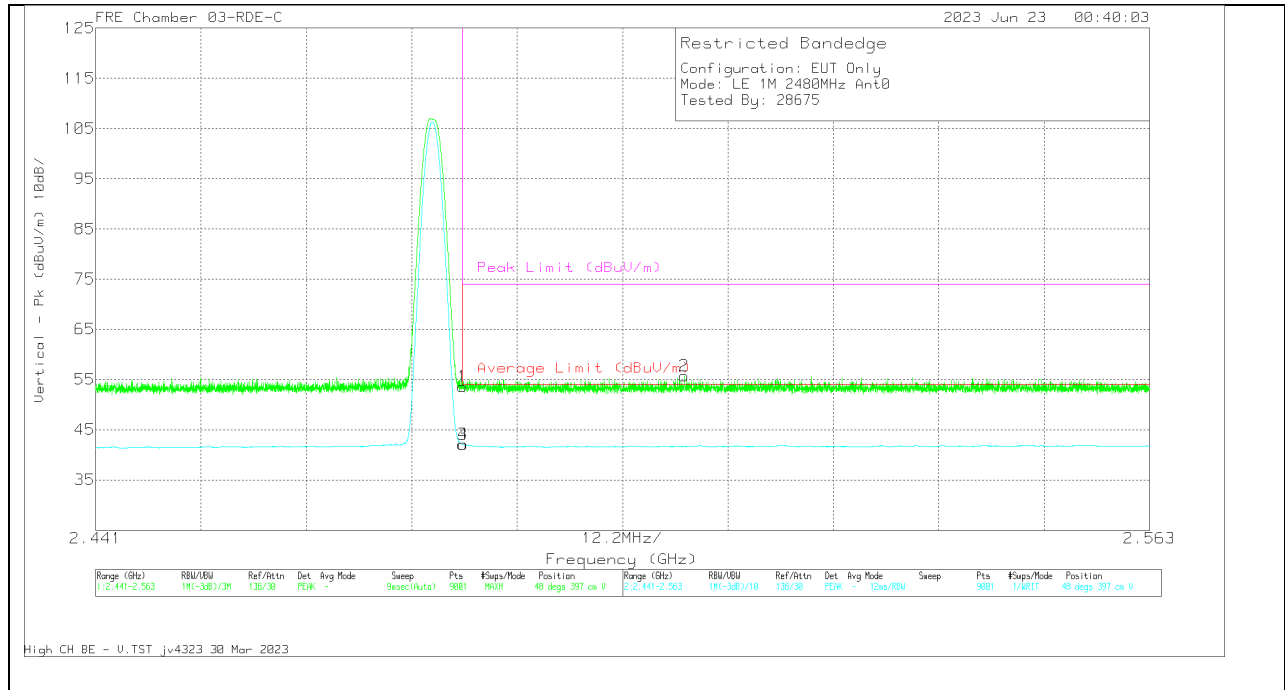
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	61.43	Pk	32.2	-39.6	54.03	-	-	74	-19.97	78	141	H
3	* 2.4835	50.2	VA1T	32.2	-39.6	42.8	54	-11.2	-	-	78	141	H
4	* 2.483512	50.19	VA1T	32.2	-39.6	42.79	54	-11.21	-	-	78	141	H
2	2.504049	63.18	Pk	32.3	-39.6	55.88	-	-	74	-18.12	78	141	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



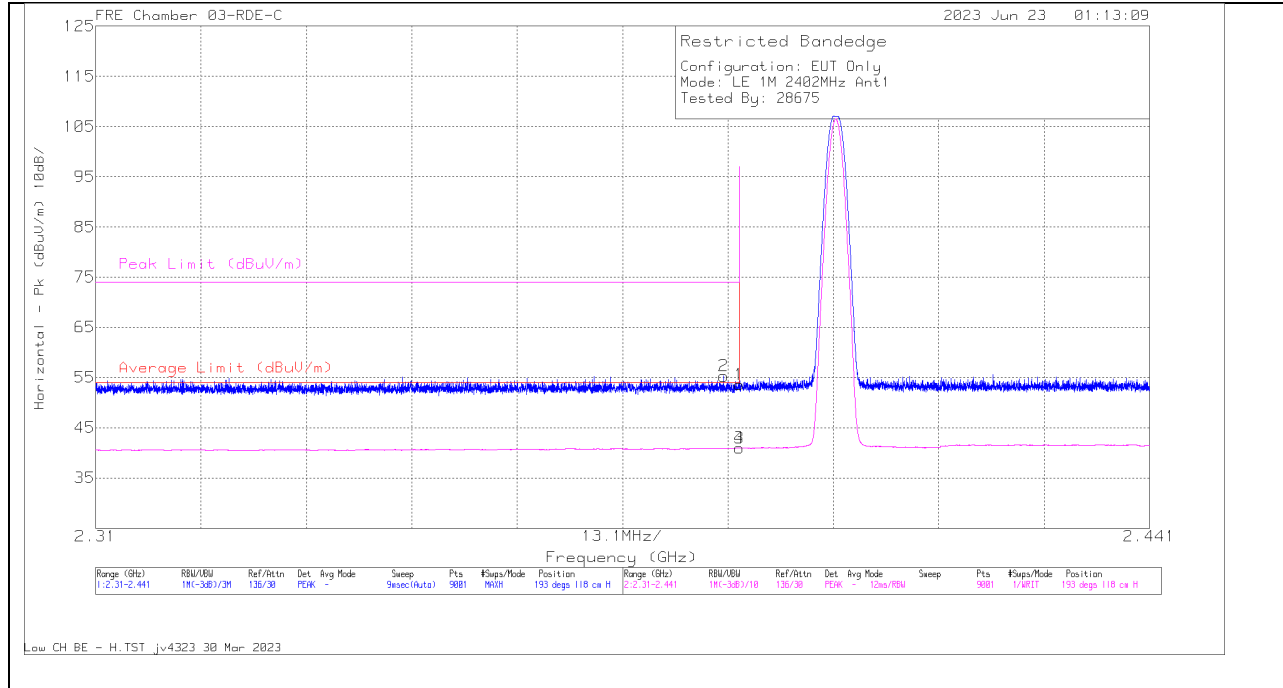
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.02	Pk	32.2	-39.6	53.62	-	-	74	-20.38	48	397	V
3	* 2.4835	49.46	VA1T	32.2	-39.6	42.06	54	-11.94	-	-	48	397	V
4	* 2.483512	49.45	VA1T	32.2	-39.6	42.05	54	-11.95	-	-	48	397	V
2	2.509132	63.03	Pk	32.3	-39.59	55.74	-	-	74	-18.26	48	397	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

ANT 3

BANDEDGE (LOW CHANNEL)

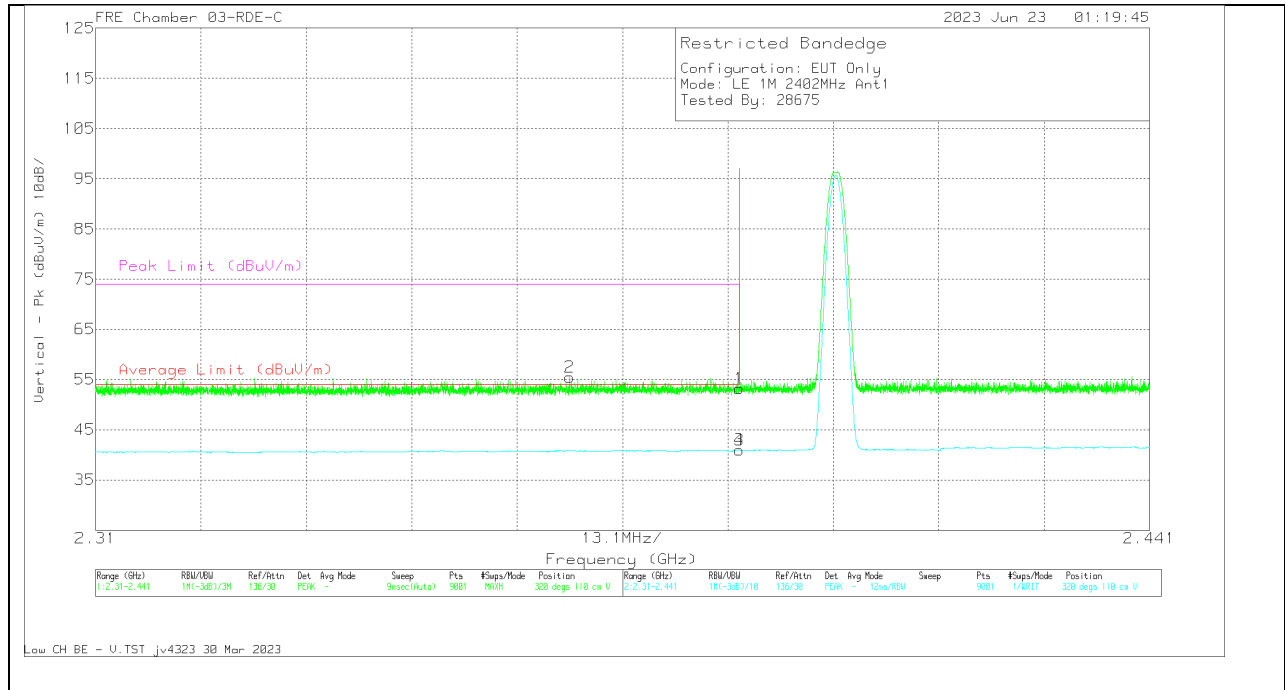
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3mH	Gain/Loss (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	61.29	Pk	32.1	-39.8	53.59	-	-	74	-20.41	193	118	H
2	* 2.388078	63.1	Pk	32.1	-39.91	55.29	-	-	74	-18.71	193	118	H
3	* 2.39	48.68	VA1T	32.1	-39.8	40.98	54	-13.02	-	-	193	118	H
4	* 2.39	48.68	VA1T	32.1	-39.8	40.98	54	-13.02	-	-	193	118	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

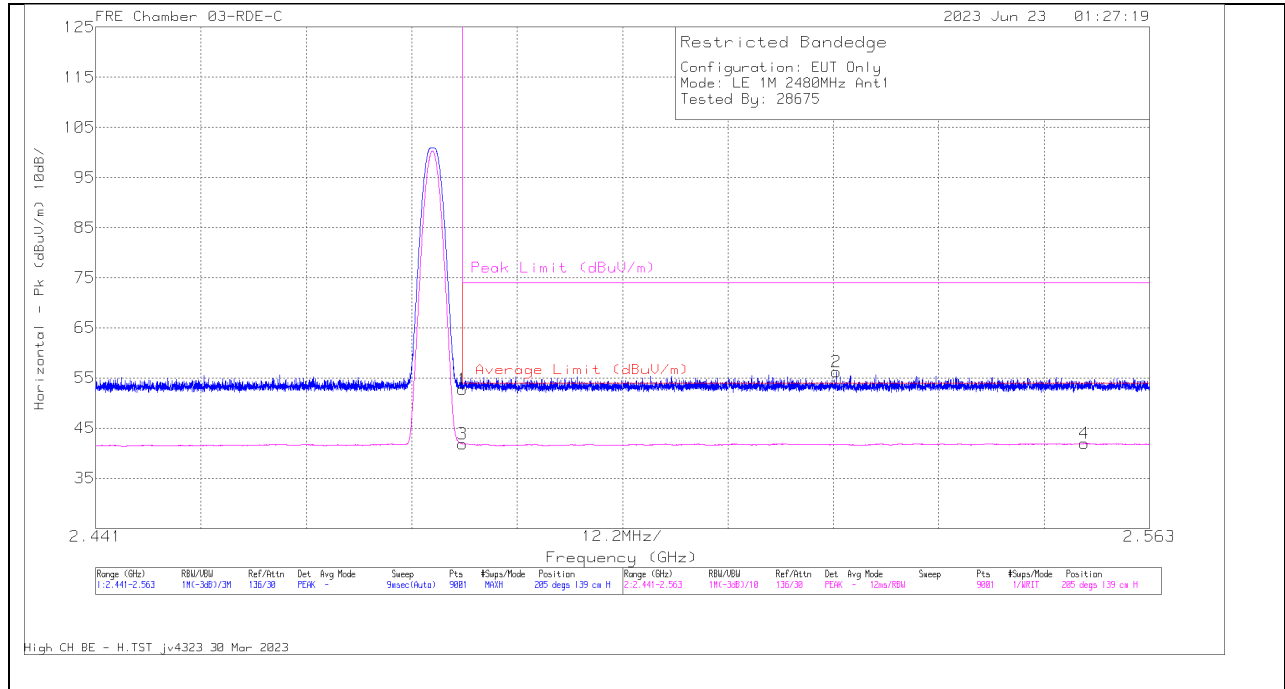


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.94	Pk	32.1	-39.8	53.24	-	-	74	-20.76	320	110	V
2	* 2.368879	63.33	Pk	32	-39.81	55.52	-	-	74	-18.48	320	110	V
3	* 2.39	48.64	VA1T	32.1	-39.8	40.94	54	-13.06	-	-	320	110	V
4	* 2.39	48.64	VA1T	32.1	-39.8	40.94	54	-13.06	-	-	320	110	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

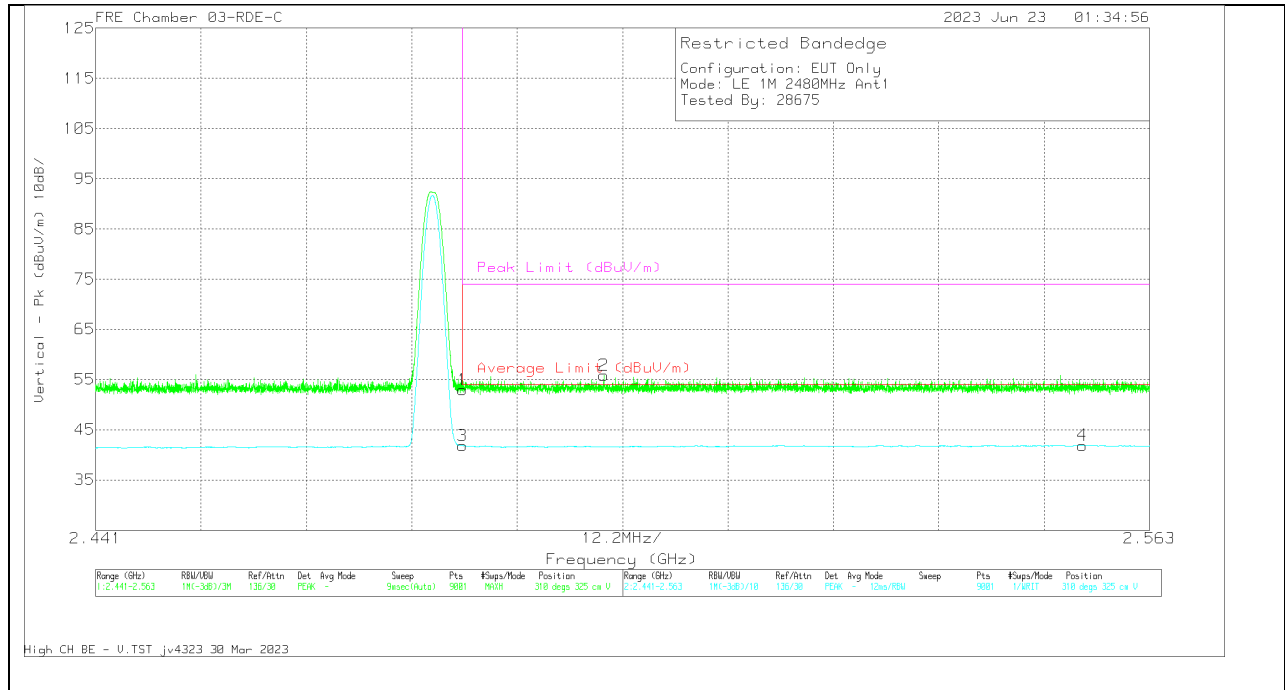
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	60.1	Pk	32.2	-39.6	52.7	-	-	74	-21.3	205	139	H
3	* 2.4835	49.28	VA1T	32.2	-39.6	41.88	54	-12.12	-	-	205	139	H
2	2.526728	63.53	Pk	32.3	-39.6	56.23	-	-	74	-17.77	205	139	H
4	2.555426	49.02	VA1T	32.3	-39.4	41.92	54	-12.08	-	-	205	139	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



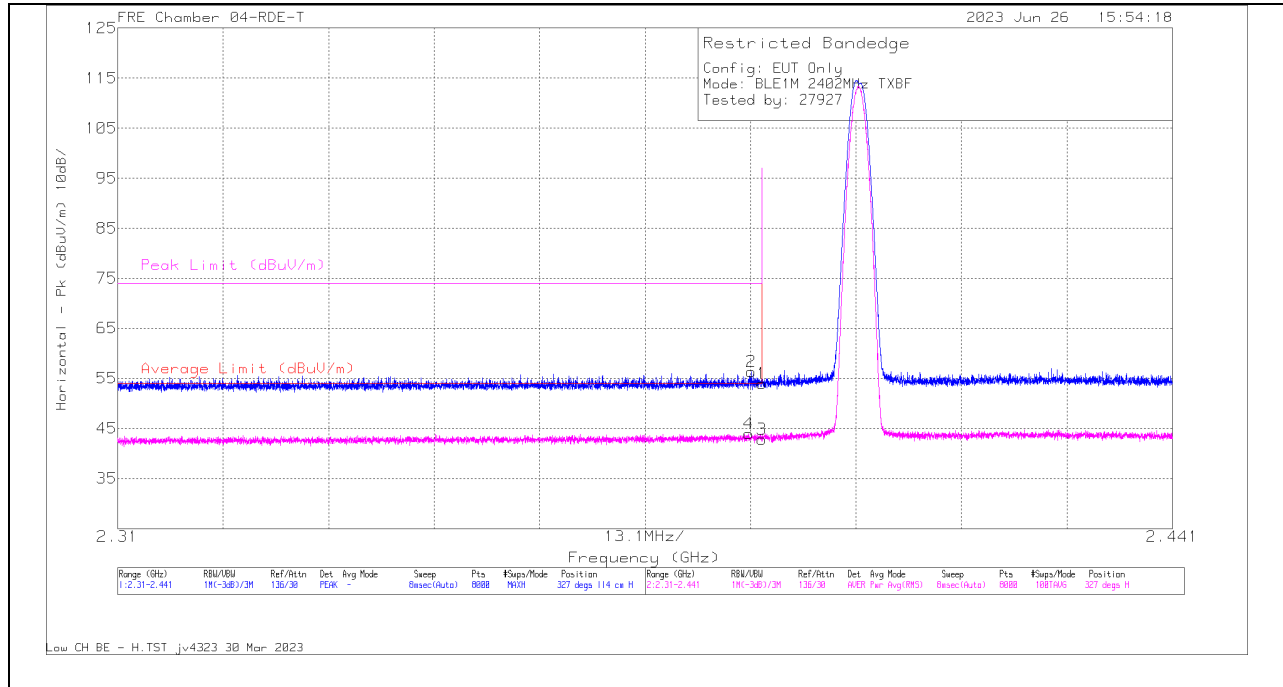
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.35	Pk	32.2	-39.6	52.95	-	-	74	-21.05	310	325	V
2	* 2.499819	63.23	Pk	32.3	-39.7	55.83	-	-	74	-18.17	310	325	V
3	* 2.4835	49.19	VA1T	32.2	-39.6	41.79	54	-12.21	-	-	310	325	V
4	2.55236	49	VA1T	32.3	-39.4	41.9	54	-12.1	-	-	310	325	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

10.2.2. HIGH POWER BLE TXBF (1Mbps)

BANDEDGE (LOW CHANNEL)

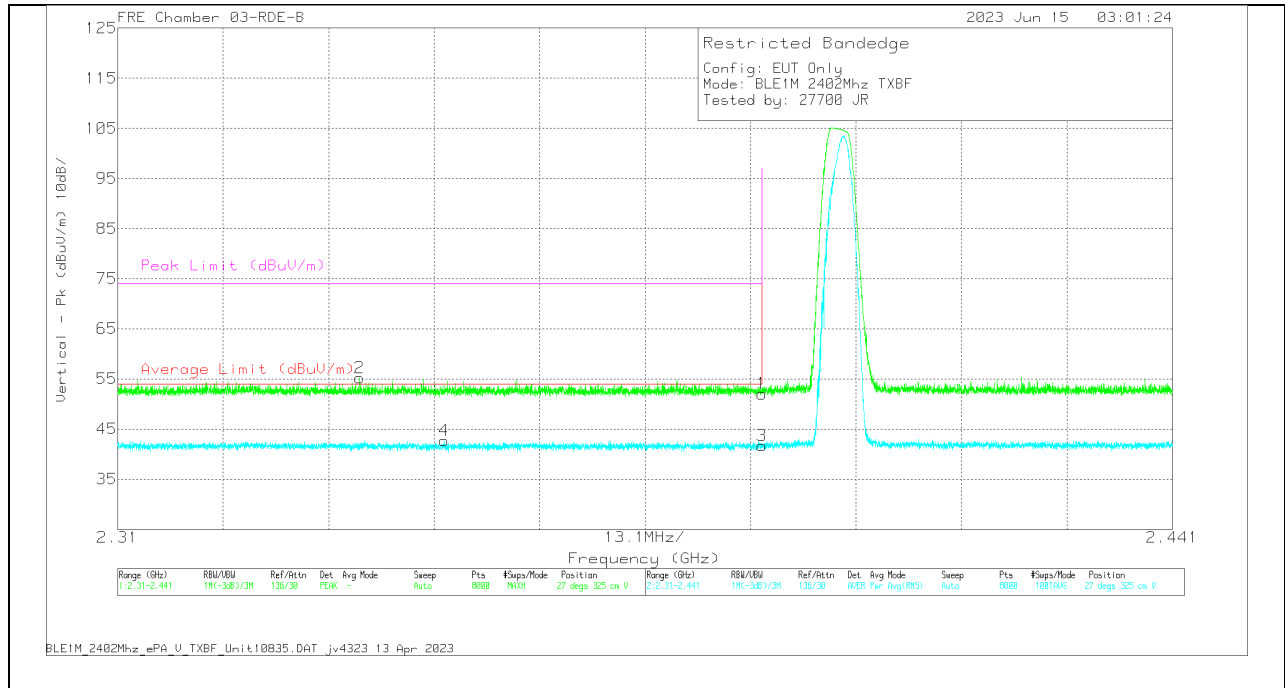
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226673 ACF (dB) 3mH	Gain/Loss (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	59.81	Pk	32.1	-37.89	54.02	-	-	74	-19.98	327	114	H
2	* 2.388708	62.09	Pk	32.1	-37.88	56.31	-	-	74	-17.69	327	114	H
3	* 2.39	48.66	RMS	32.1	-37.89	42.87	54	-11.13	-	-	327	114	H
4	* 2.388348	49.74	RMS	32.1	-37.87	43.97	54	-10.03	-	-	327	114	H

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

VERTICAL RESULT

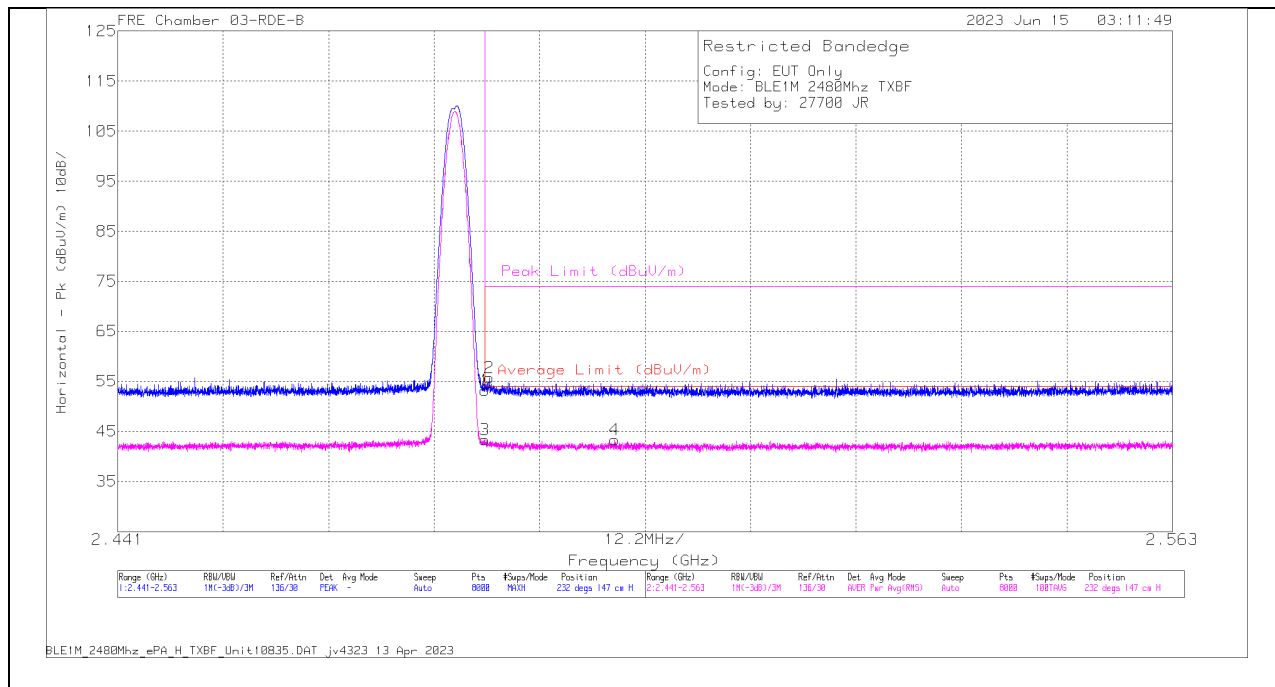


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	DCCF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.04	Pk	32.2	0	-41.2	52.04	-	-	74	-21.96	27	325	V
2	* 2.340035	64.3	Pk	32.1	0	-41.2	55.2	-	-	74	-18.8	27	325	V
3	* 2.39	50.72	RMS	32.2	0	-41.2	41.72	54	-12.28	-	-	27	325	V
4	* 2.350517	51.86	RMS	32.1	0	-41.25	42.71	54	-11.29	-	-	27	325	V

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

BANDEDGE (HIGH CHANNEL)

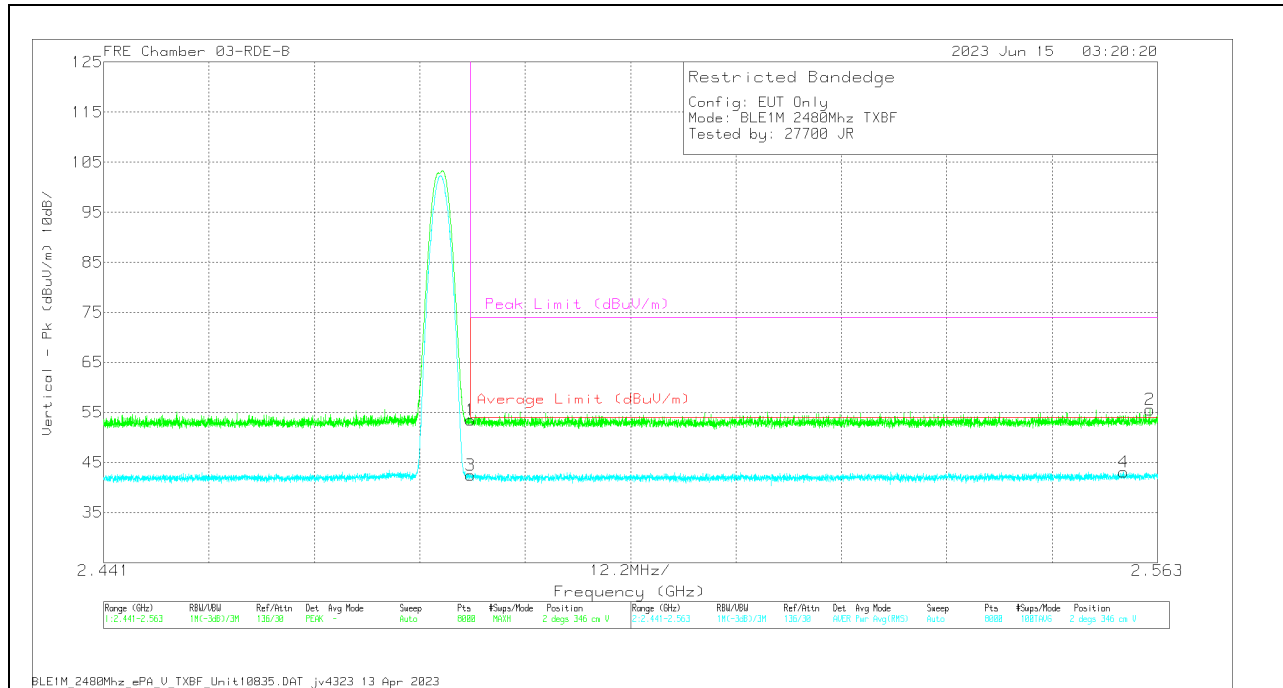
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	DCCF (dB)	Gain/Loss (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	62.14	Pk	32.2	0	-41.15	53.19	-	-	74	-20.81	232	147	H
2	* 2.48398	64.6	Pk	32.2	0	-41.1	55.7	-	-	74	-18.3	232	147	H
3	* 2.4835	52.25	RMS	32.2	0	-41.15	43.3	54	-10.7	-	-	232	147	H
4	* 2.498454	52.24	RMS	32.2	0	-41.1	43.34	54	-10.66	-	-	232	147	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	23030 0 ACF (dB/m)	DCCF (dB)	Gain/Loss (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	62.39	Pk	32.2	0	-41.15	53.44	-	-	74	-20.56	2	346	V
3	* 2.4835	51.37	RMS	32.2	0	-41.15	42.42	54	-11.58	-	-	2	346	V
4	2.559111	51.7	RMS	32.3	0	-40.9	43.1	54	-10.9	-	-	2	346	V
2	2.562101	64.04	Pk	32.3	0	-40.8	55.54	-	-	74	-18.46	2	346	V

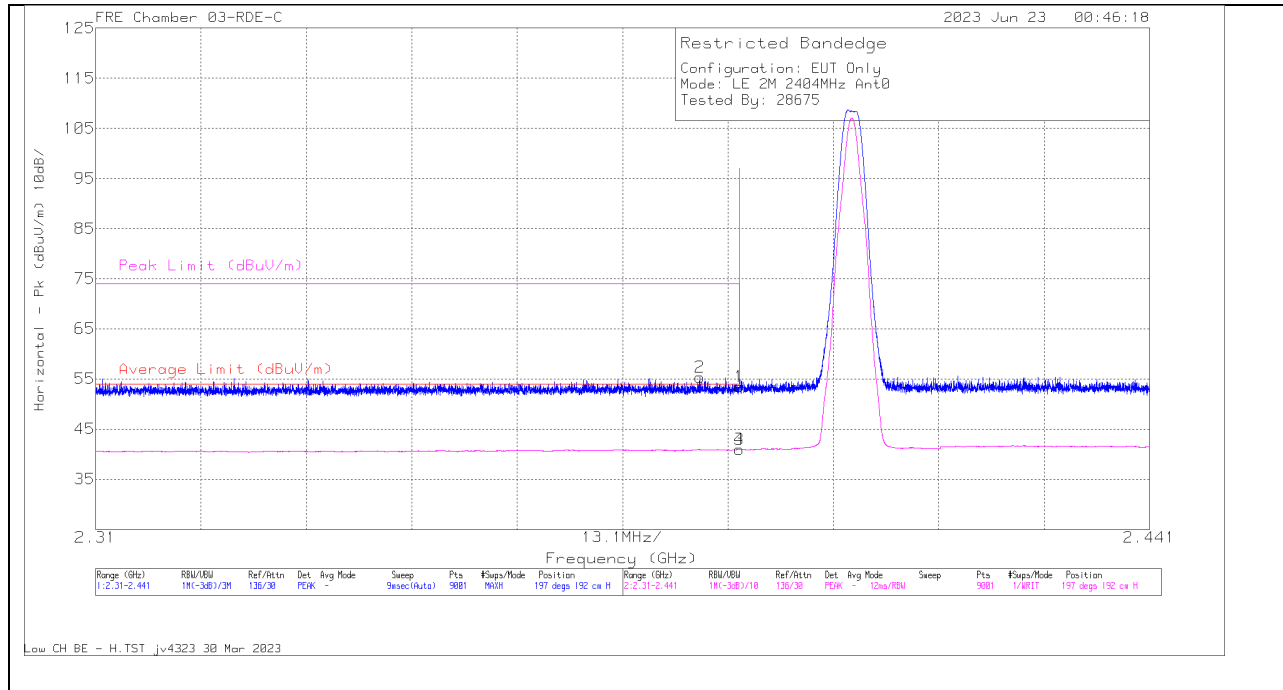
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

10.2.3. HIGH POWER BLE (2Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

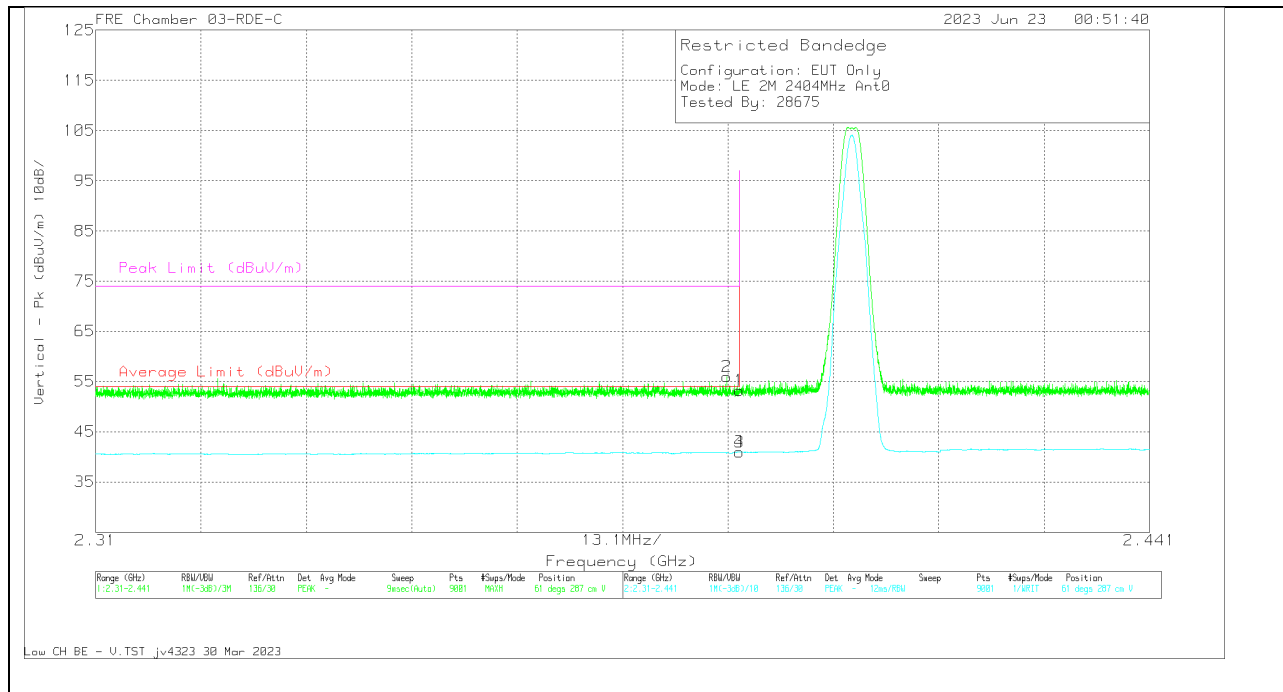
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBu)	Det	22672 ACF (dB) 3MHz	Gain/Loss (dB)	Corrected Reading (dBu/m)	Average Limit (dBu/m)	Margin (dB)	Peak Limit (dBu/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.21	Pk	32.1	-39.8	53.51	-	-	74	-20.49	197	192	H
2	* 2.38508	63.03	Pk	32.1	-39.81	55.32	-	-	74	-18.68	197	192	H
3	* 2.39	48.69	VA1T	32.1	-39.8	40.99	54	-13.01	-	-	197	192	H
4	* 2.39	48.69	VA1T	32.1	-39.8	40.99	54	-13.01	-	-	197	192	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

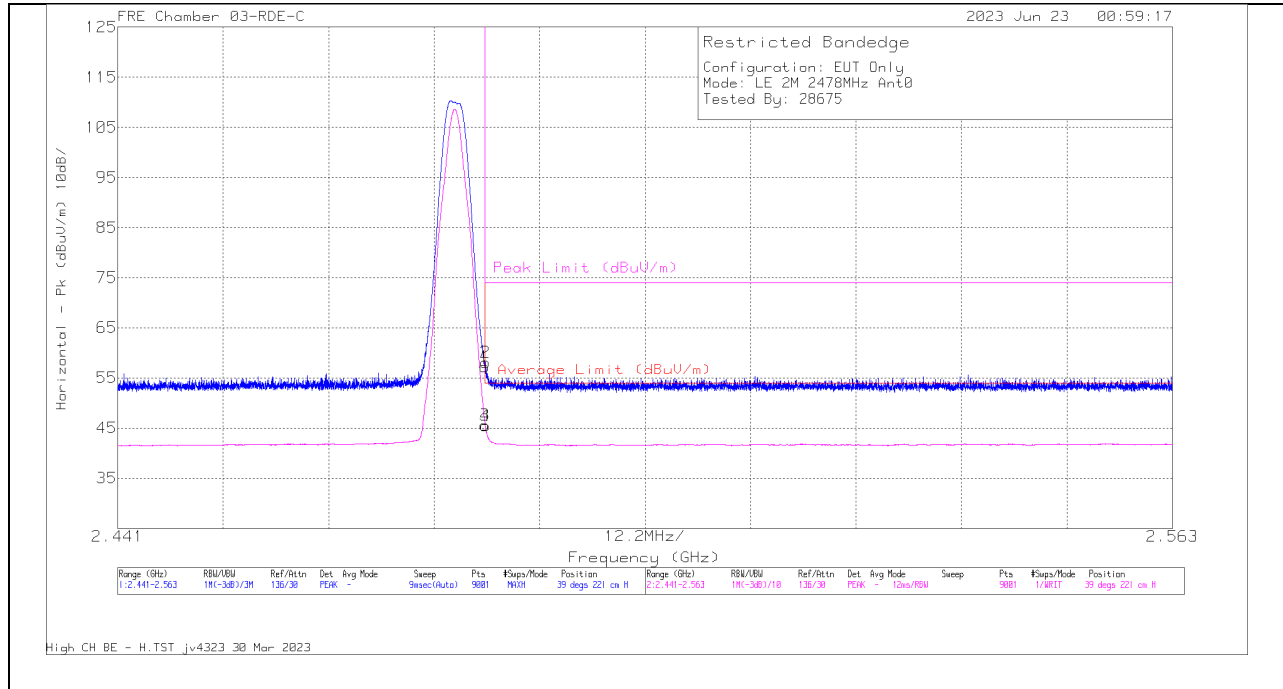


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.92	Pk	32.1	-39.8	53.22	-	-	74	-20.78	61	287	V
2	* 2.388471	63.79	Pk	32.1	-39.95	55.94	-	-	74	-18.06	61	287	V
3	* 2.39	48.67	VA1T	32.1	-39.8	40.97	54	-13.03	-	-	61	287	V
4	* 2.39	48.67	VA1T	32.1	-39.8	40.97	54	-13.03	-	-	61	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

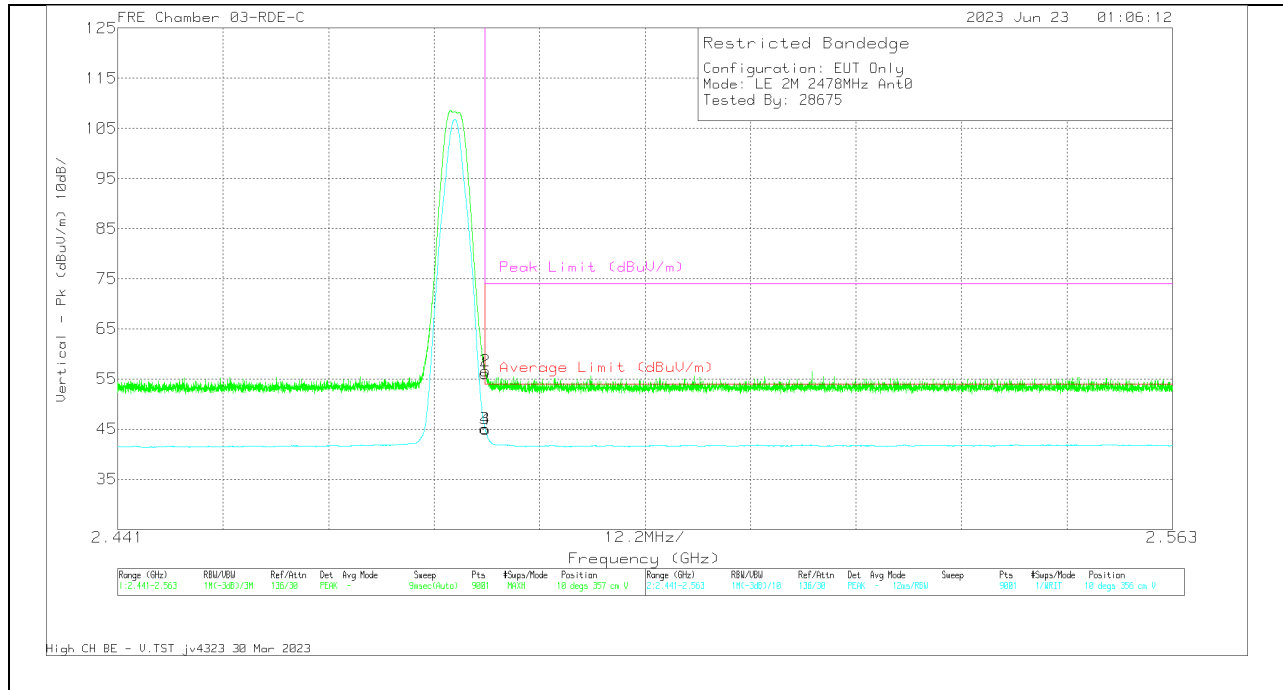
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	64.59	Pk	32.2	-39.6	57.19	-	-	74	-16.81	39	221	H
2	* 2.483512	65.51	Pk	32.2	-39.6	58.11	-	-	74	-15.89	39	221	H
3	* 2.4835	52.99	VA1T	32.2	-39.6	45.59	54	-8.41	-	-	39	221	H
4	* 2.483512	52.9	VA1T	32.2	-39.6	45.5	54	-8.5	-	-	39	221	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



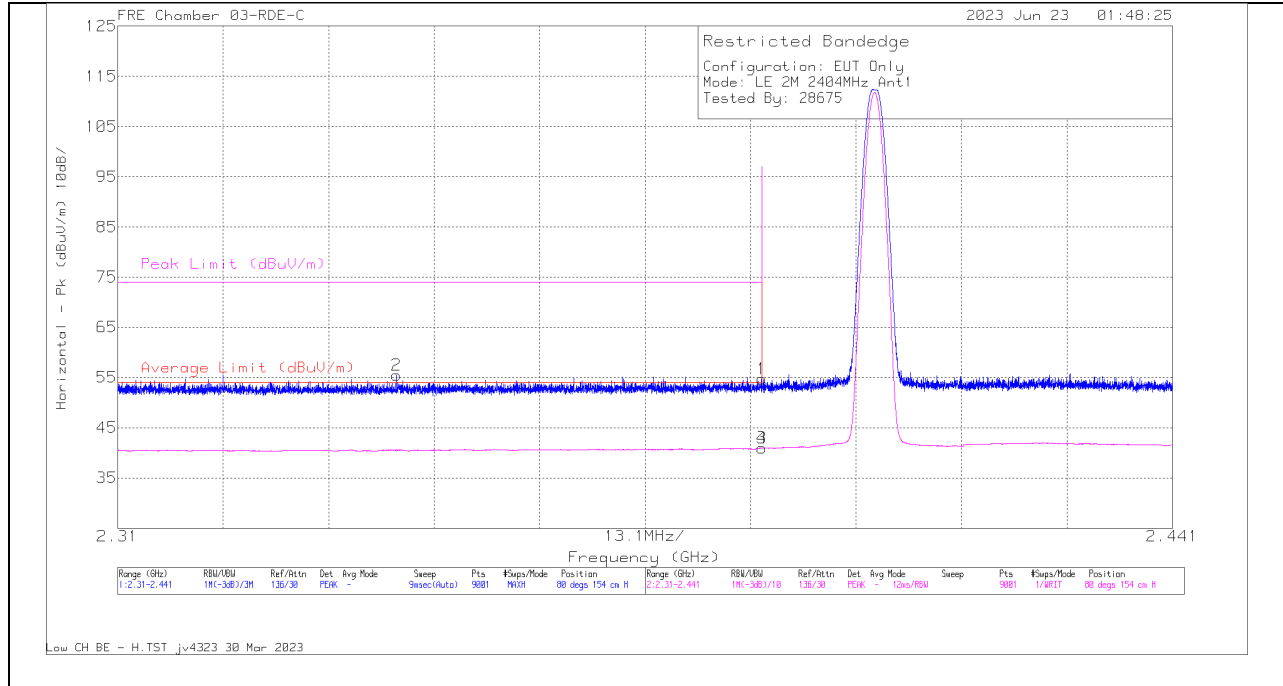
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3MHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	63.5	Pk	32.2	-39.6	56.1	-	-	74	-17.9	10	357	V
2	* 2.483512	63.99	Pk	32.2	-39.6	56.59	-	-	74	-17.41	10	357	V
3	* 2.4835	52.46	VA1T	32.2	-39.6	45.06	54	-8.94	-	-	10	356	V
4	* 2.483512	52.41	VA1T	32.2	-39.6	45.01	54	-8.99	-	-	10	356	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

ANT 3

BANDEDGE (LOW CHANNEL)

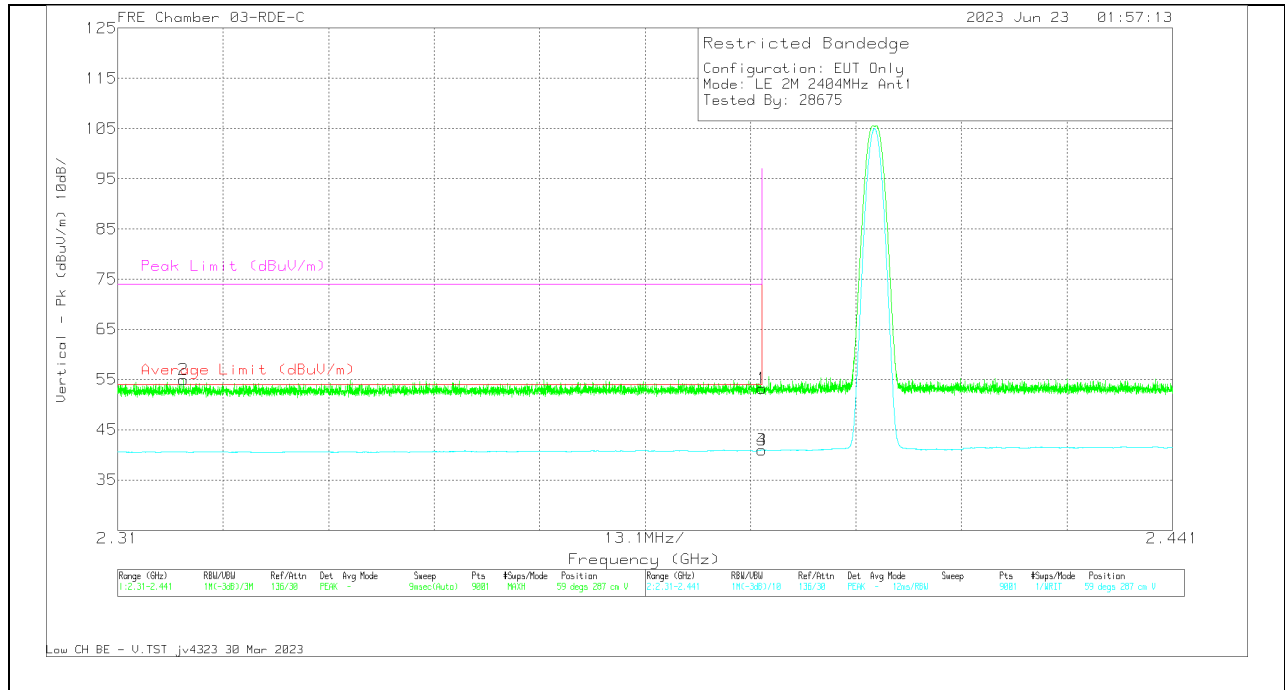
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	62.41	Pk	32.1	-39.8	54.71	-	-	74	-19.29	80	154	H
2	* 2.344658	63.52	Pk	31.9	-39.9	55.52	-	-	74	-18.48	80	154	H
3	* 2.39	48.69	VA1T	32.1	-39.8	40.99	54	-13.01	-	-	80	154	H
4	* 2.39	48.69	VA1T	32.1	-39.8	40.99	54	-13.01	-	-	80	154	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

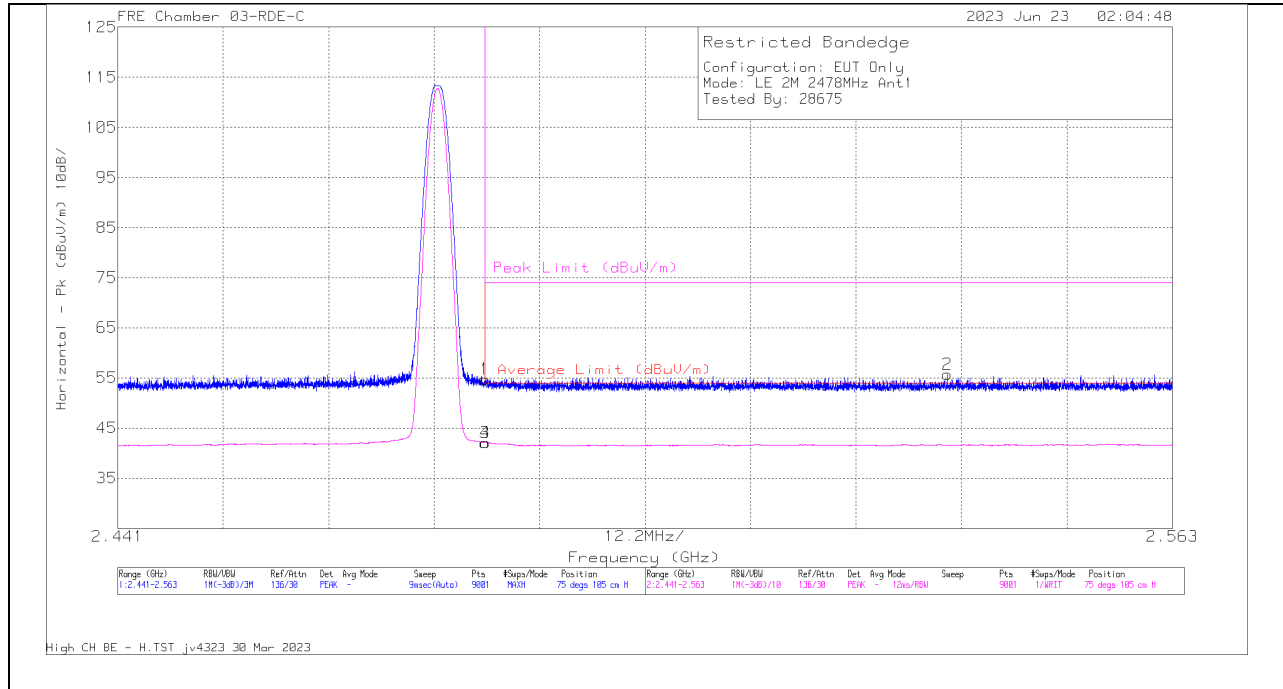


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.97	Pk	32.1	-39.8	53.27	-	-	74	-20.73	59	287	V
2	* 2.31818	63.08	Pk	31.8	-39.92	54.96	-	-	74	-19.04	59	287	V
3	* 2.39	48.65	VA1T	32.1	-39.8	40.95	54	-13.05	-	-	59	287	V
4	* 2.389985	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	59	287	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

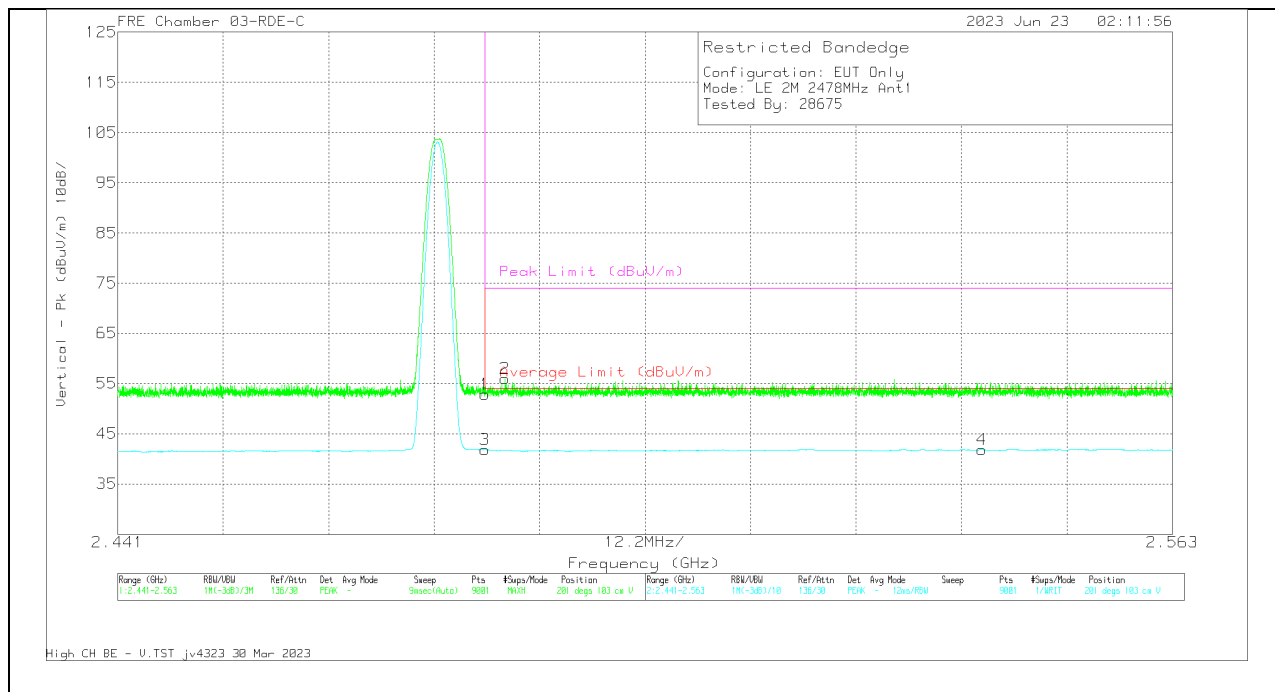
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	62.18	Pk	32.2	-39.6	54.78	-	-	74	-19.22	75	105	H
3	* 2.4835	49.52	VA1T	32.2	-39.6	42.12	54	-11.88	-	-	75	105	H
4	* 2.483512	49.51	VA1T	32.2	-39.6	42.11	54	-11.89	-	-	75	105	H
2	2.536949	62.96	Pk	32.3	-39.59	55.67	-	-	74	-18.33	75	105	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



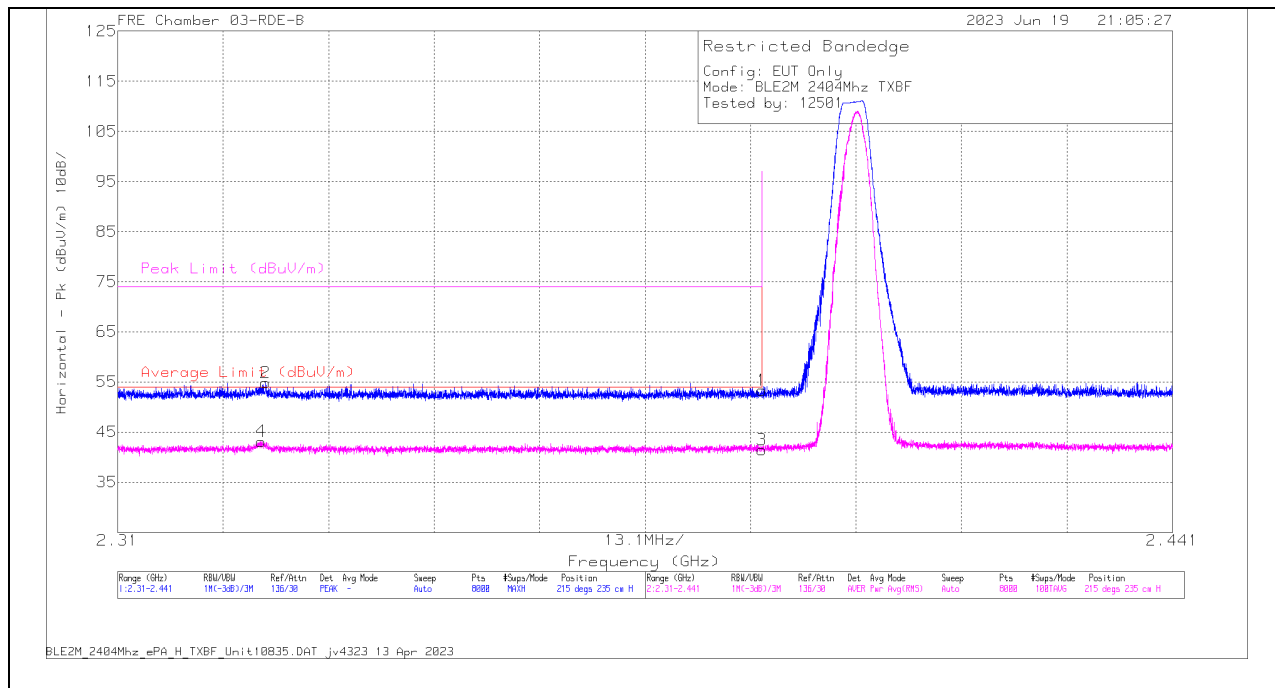
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.24	Pk	32.2	-39.6	52.84	-	-	74	-21.16	201	103	V
2	* 2.485816	63.34	Pk	32.2	-39.62	55.92	-	-	74	-18.08	201	103	V
3	* 2.4835	49.22	VA1T	32.2	-39.6	41.82	54	-12.18	-	-	201	103	V
4	2.540976	49.07	VA1T	32.3	-39.5	41.87	54	-12.13	-	-	201	103	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

10.2.4. HIGH POWER BLE TXBF (2Mbps)

BANDEDGE (LOW CHANNEL)

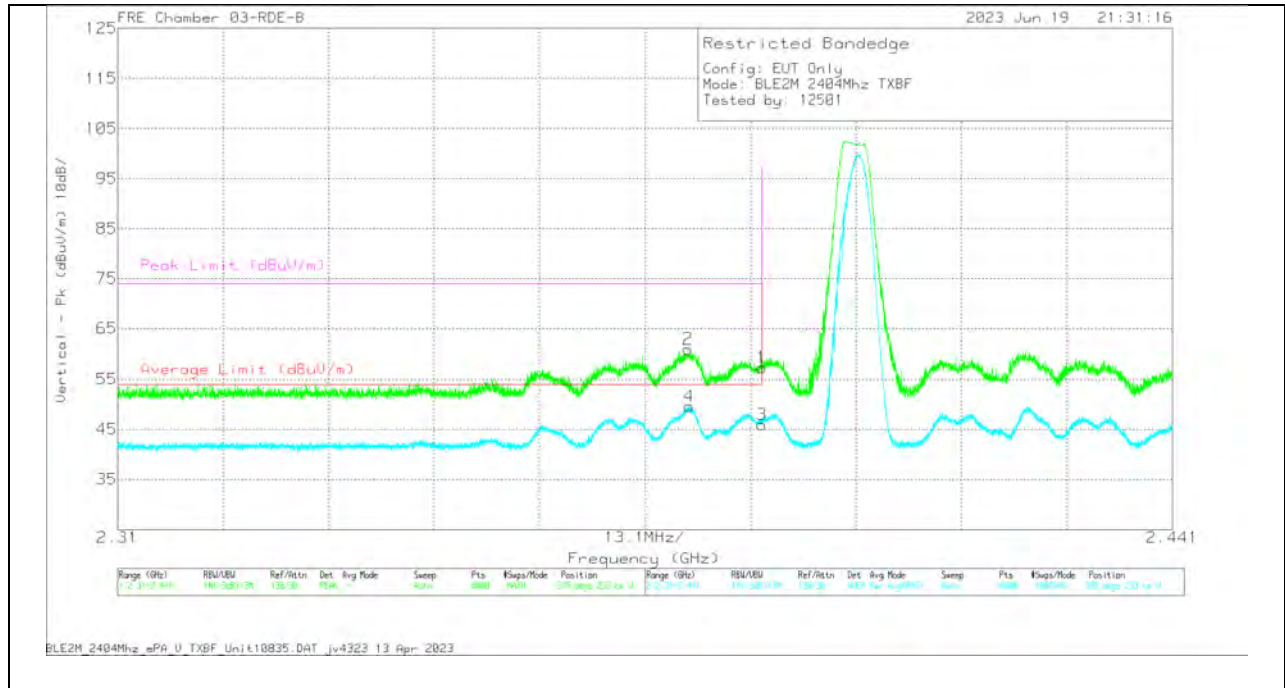
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (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	62.36	Pk	32.2	-41.2	53.36	-	-	74	-20.64	215	235	H
2	* 2.328375	63.96	Pk	32.1	-41.2	54.86	-	-	74	-19.14	215	235	H
3	* 2.39	50.48	RMS	32.2	-41.2	41.48	54	-12.52	-	-	215	235	H
4	* 2.327835	52.25	RMS	32.1	-41.2	43.15	54	-10.85	-	-	215	235	H

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

VERTICAL RESULT

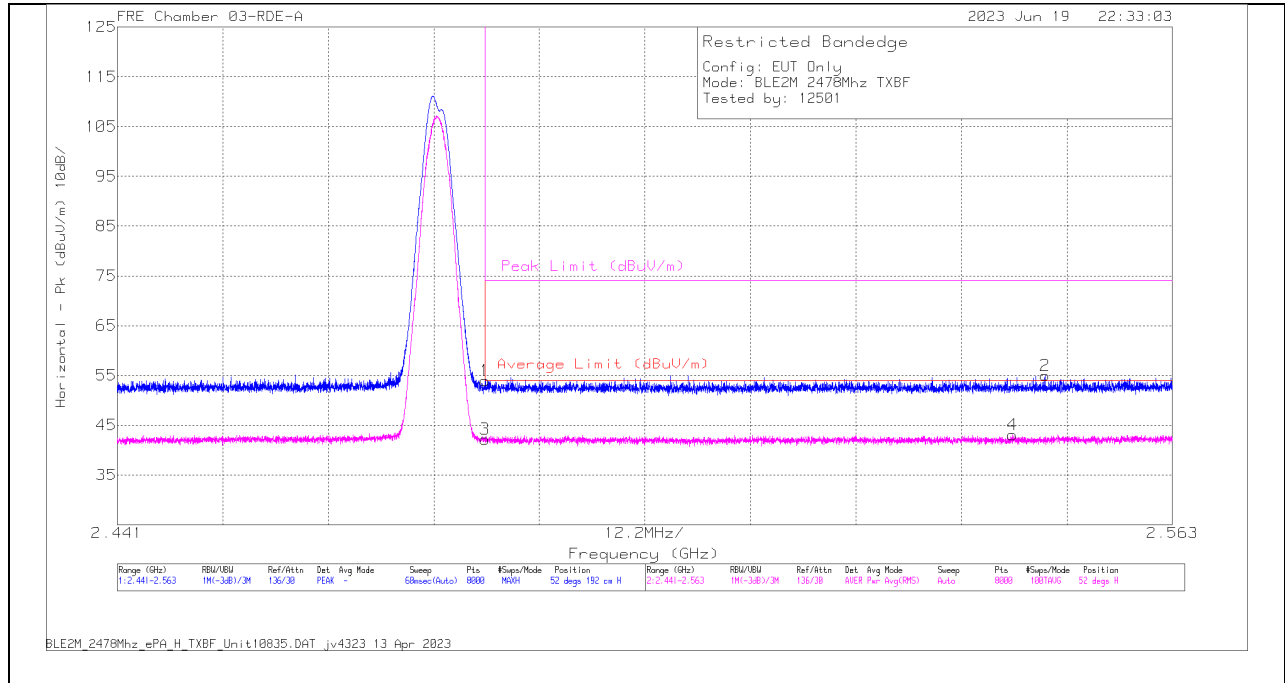


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.380831	70.04	Pk	32.1	-41.13	61.01	-	-	74	-12.99	335	233	V
4	* 2.380994	58.54	RMS	32.1	-41.1	49.54	54	-4.46	-	-	335	233	V
1	* 2.39	66.41	Pk	32.2	-41.2	57.41	-	-	74	-16.59	335	233	V
3	* 2.39	54.99	RMS	32.2	-41.2	45.99	54	-8.01	-	-	335	233	V

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

BANDEDGE (HIGH CHANNEL)

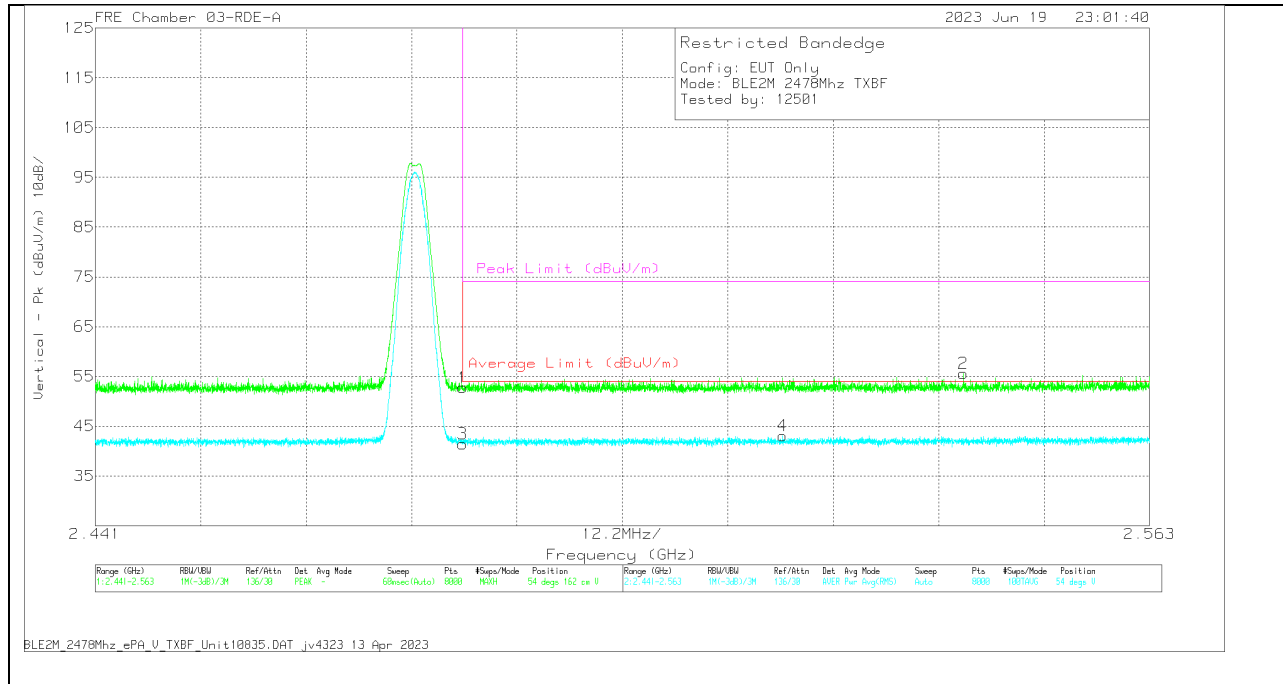
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (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	62.9	Pk	32.2	-41.15	53.95	-	-	74	-20.05	52	192	H
3	* 2.4835	51.15	RMS	32.2	-41.15	42.2	54	-11.8	-	-	52	192	H
4	2.544531	51.7	RMS	32.3	-40.95	43.05	54	-10.95	-	-	52	192	H
2	2.548252	63.63	Pk	32.3	-40.9	55.03	-	-	74	-18.97	52	192	H

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

VERTICAL RESULT

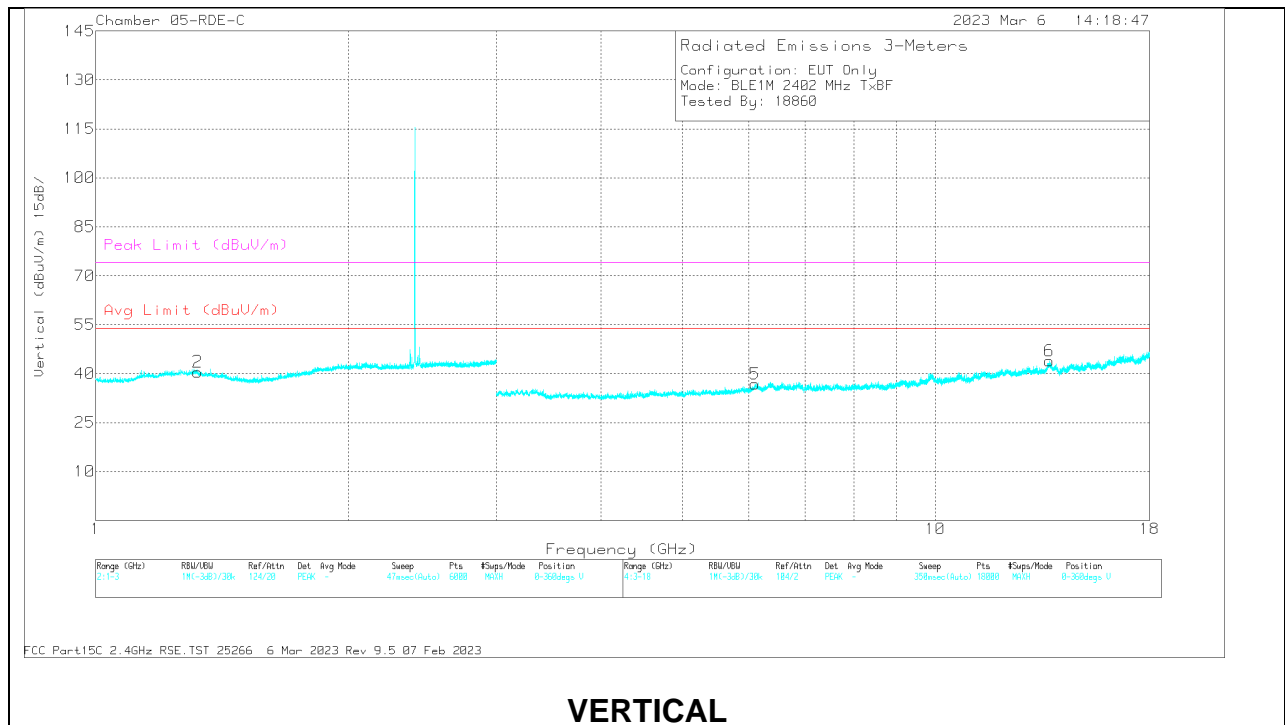
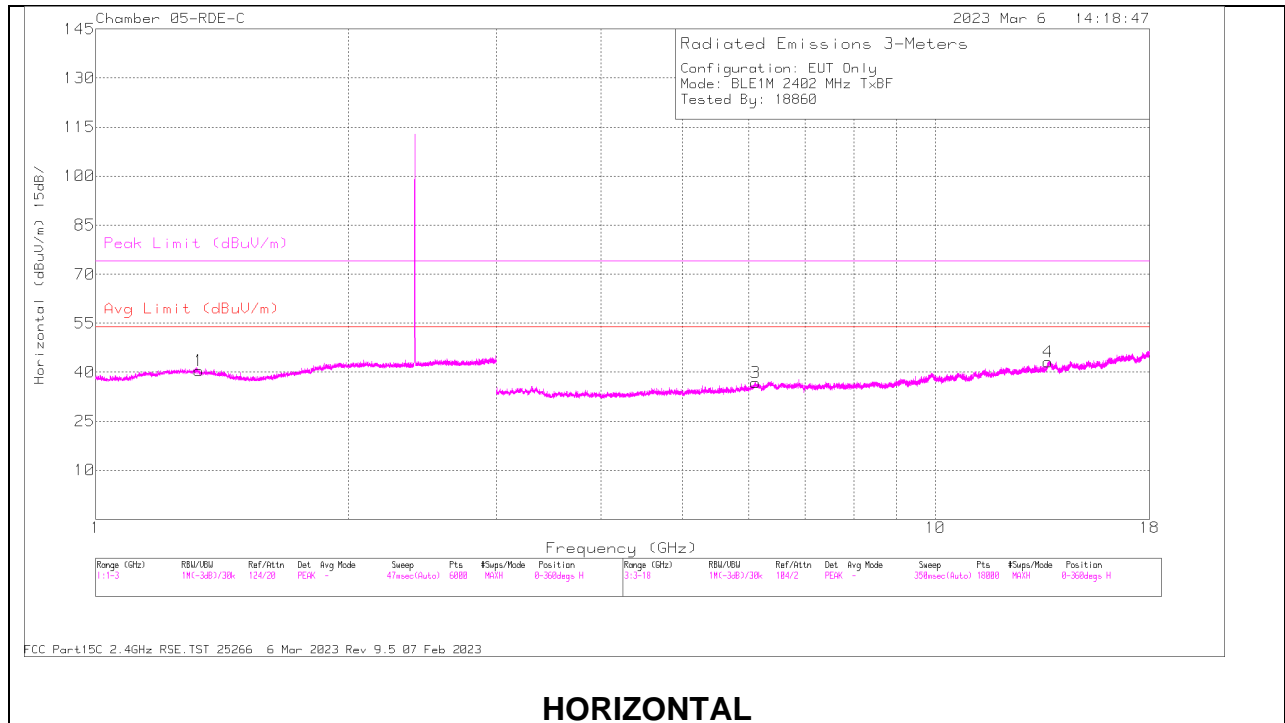


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.72	Pk	32.2	-41.15	52.77	-	-	74	-21.23	54	162	V
3	* 2.4835	50.44	RMS	32.2	-41.15	41.49	54	-12.51	-	-	54	162	V
4	2.520554	51.79	RMS	32.3	-41	43.09	54	-10.91	-	-	54	162	V
2	2.541434	64.35	Pk	32.3	-41	55.65	-	-	74	-18.35	54	162	V

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

10.2.5. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS

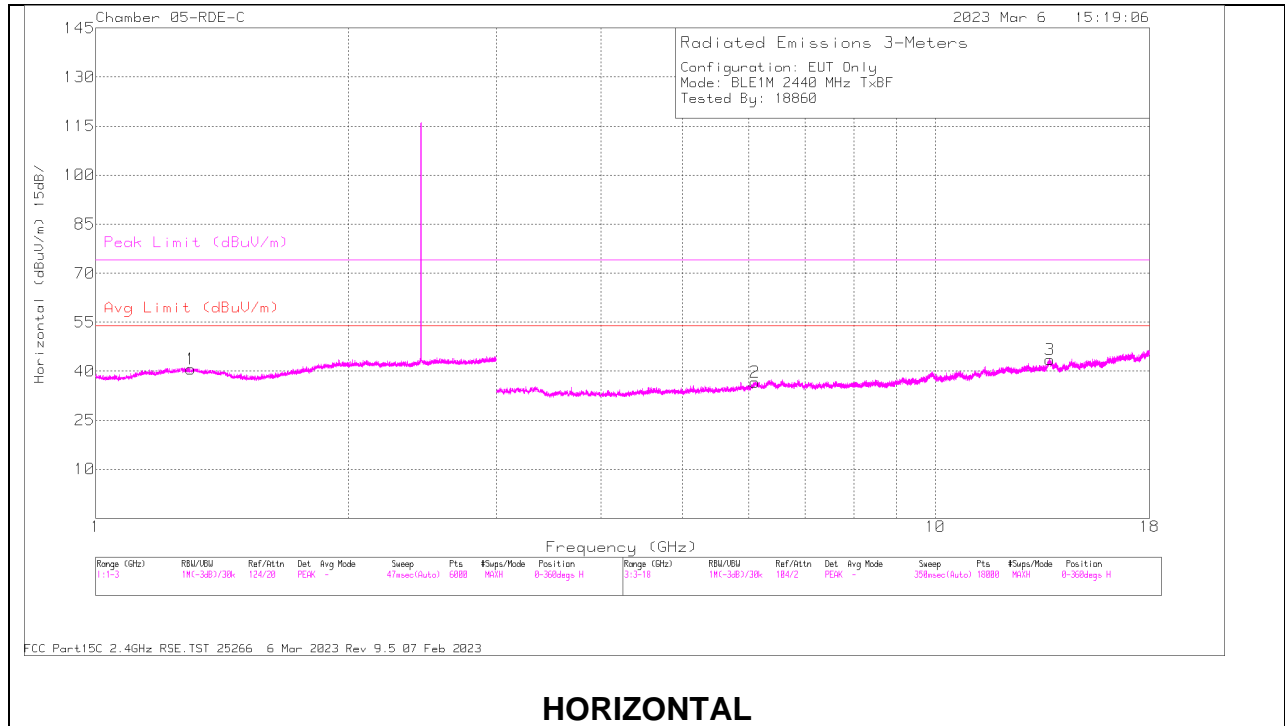


RADIATED EMISSIONS

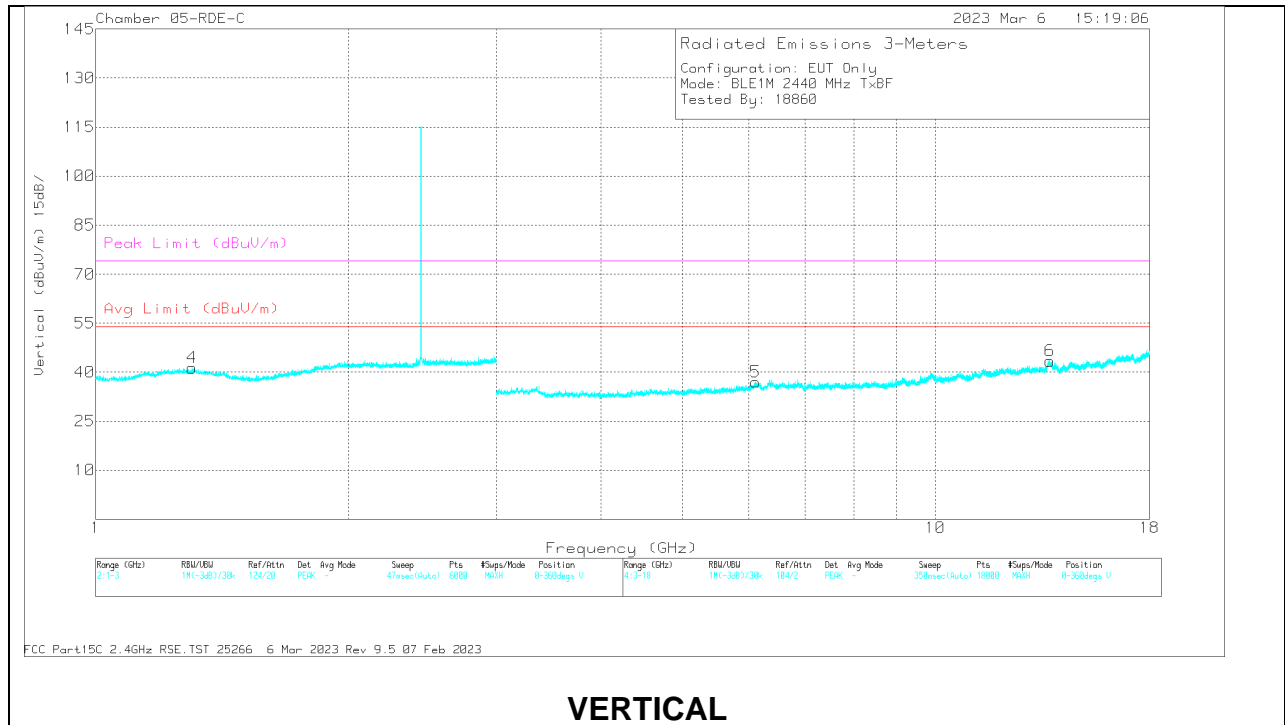
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.3254	61.76	PK2	29.6	-40.96	50.4	-	-	74	-23.6	1	199	V
	1.324191	50.09	MAv1	29.6	-40.96	38.73	54	-15.27	-	-	1	199	V
1	1.327069	61.64	PK2	29.5	-40.95	50.19	-	-	74	-23.81	1	101	H
	1.329393	50.17	MAv1	29.5	-40.94	38.73	54	-15.27	-	-	1	101	H
5	6.101792	56.98	PK2	35.5	-45.87	46.61	-	-	74	-27.39	1	199	V
	6.102707	45.47	MAv1	35.5	-45.86	35.11	54	-18.89	-	-	1	199	V
3	6.111439	57	PK2	35.5	-45.82	46.68	-	-	74	-27.32	1	199	H
	6.111274	45.4	MAv1	35.5	-45.82	35.08	54	-18.92	-	-	1	199	H
4	13.624977	58.14	PK2	39.1	-43.93	53.31	-	-	74	-20.69	1	101	H
	13.625778	45.78	MAv1	39.1	-43.93	40.95	54	-13.05	-	-	1	101	H
6	13.674494	57.99	PK2	39.2	-43.49	53.7	-	-	74	-20.3	1	101	V
	13.673624	45.8	MAv1	39.2	-43.5	41.5	54	-12.5	-	-	1	101	V

PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



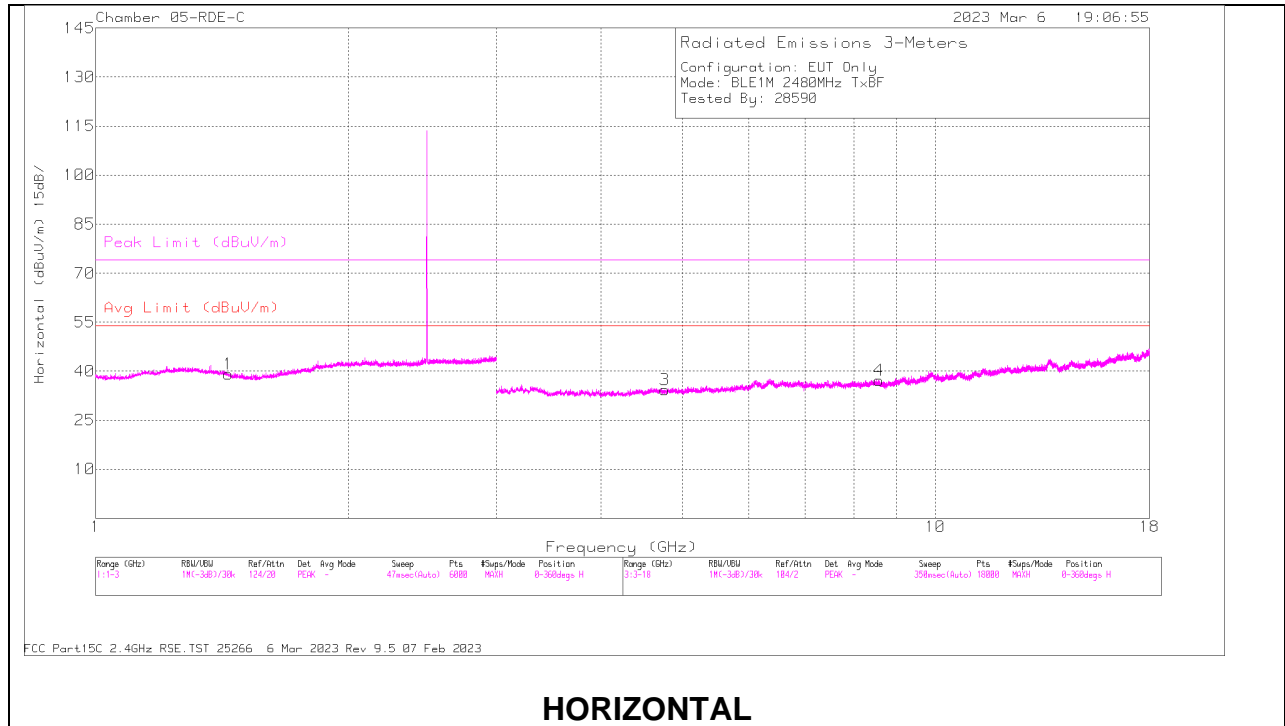
VERTICAL

RADIATED EMISSIONS

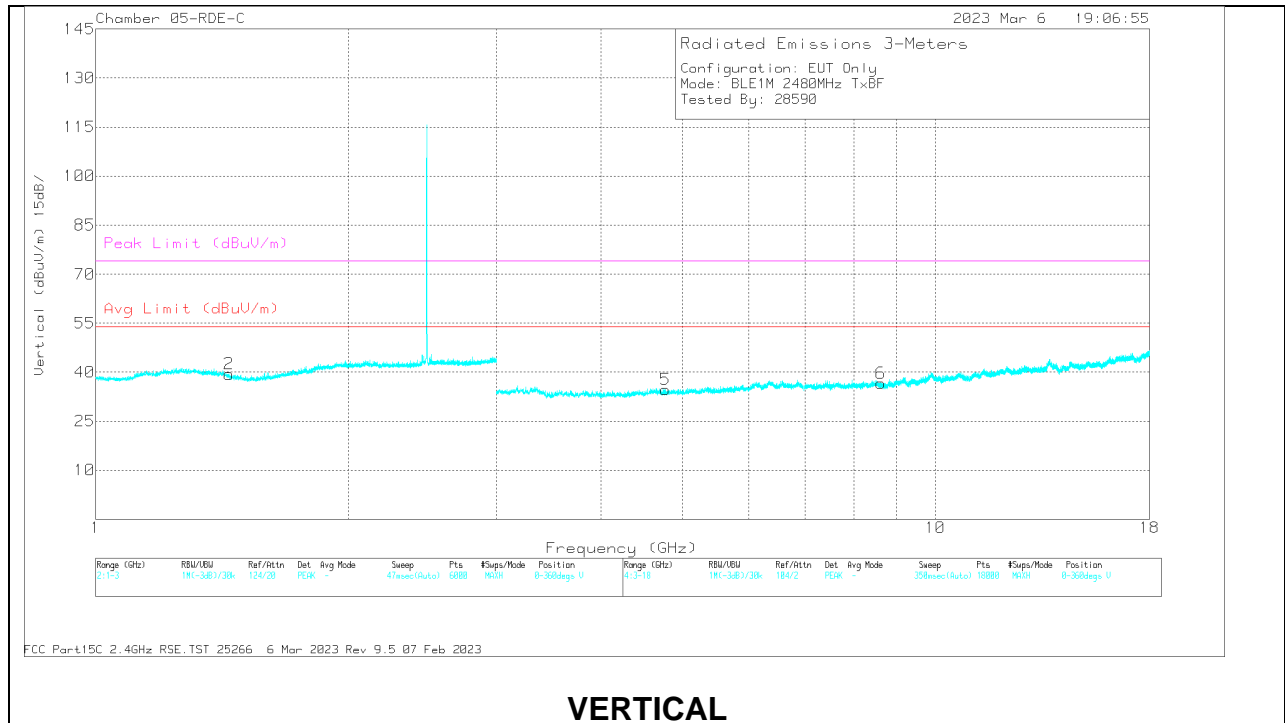
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.302045	62.37	PK2	29.8	-40.99	51.18	-	-	74	-22.82	0	101	H
	*1.302056	50.12	MAv1	29.9	-41	39.02	54	-14.98	-	-	0	101	H
4	*1.302036	61.66	PK2	29.8	-40.97	50.49	-	-	74	-23.51	0	198	V
	*1.304109	49.92	MAv1	29.8	-40.98	38.74	54	-15.26	-	-	0	198	V
2	6.096863	57.03	PK2	35.5	-45.9	46.63	-	-	74	-27.37	0	101	H
	6.096235	45.56	MAv1	35.5	-45.92	35.14	54	-18.86	-	-	0	101	H
5	6.107544	57.39	PK2	35.5	-45.82	47.07	-	-	74	-26.93	0	199	V
	6.107341	45.45	MAv1	35.5	-45.83	35.12	54	-18.88	-	-	0	199	V
6	13.699959	57.11	PK2	39.1	-43.39	52.82	-	-	74	-21.18	0	199	V
	13.700441	45.69	MAv1	39.1	-43.4	41.39	54	-12.61	-	-	0	199	V
4	13.710819	56.87	PK2	39.2	-43.58	52.49	-	-	74	-21.51	0	101	H
	13.708025	45.4	MAv1	39.2	-43.51	41.09	54	-12.91	-	-	0	101	H

PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	80707 ACF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*1.439326	61.32	PK2	28.4	-40.67	49.05	-	-	74	-24.95	0	199	H
	*1.439398	50.12	MAv1	28.4	-40.67	37.85	54	-16.15	-	-	0	199	H
2	*1.439697	61.99	PK2	28.4	-40.66	49.73	-	-	74	-24.27	0	199	V
	*1.439111	49.71	MAv1	28.4	-40.67	37.44	54	-16.56	-	-	0	199	V
3	*4.763463	58.14	PK2	34.2	-48.29	44.05	-	-	74	-29.95	0	199	H
	*4.763532	46.73	MAv1	34.2	-48.3	32.63	54	-21.37	-	-	0	199	H
5	*4.77087	58.52	PK2	34.2	-48.31	44.41	-	-	74	-29.59	0	101	V
	*4.77095	46.98	MAv1	34.2	-48.3	32.88	54	-21.12	-	-	0	101	V
4	8.569415	56.14	PK2	35.8	-45.74	46.2	-	-	74	-27.8	0	199	H
	8.568812	44.62	MAv1	35.8	-45.74	34.68	54	-19.32	-	-	0	199	H
6	8.608484	56.21	PK2	35.9	-45.77	46.34	-	-	74	-27.66	0	199	V
	8.609579	44.65	MAv1	35.9	-45.77	34.78	54	-19.22	-	-	0	199	V

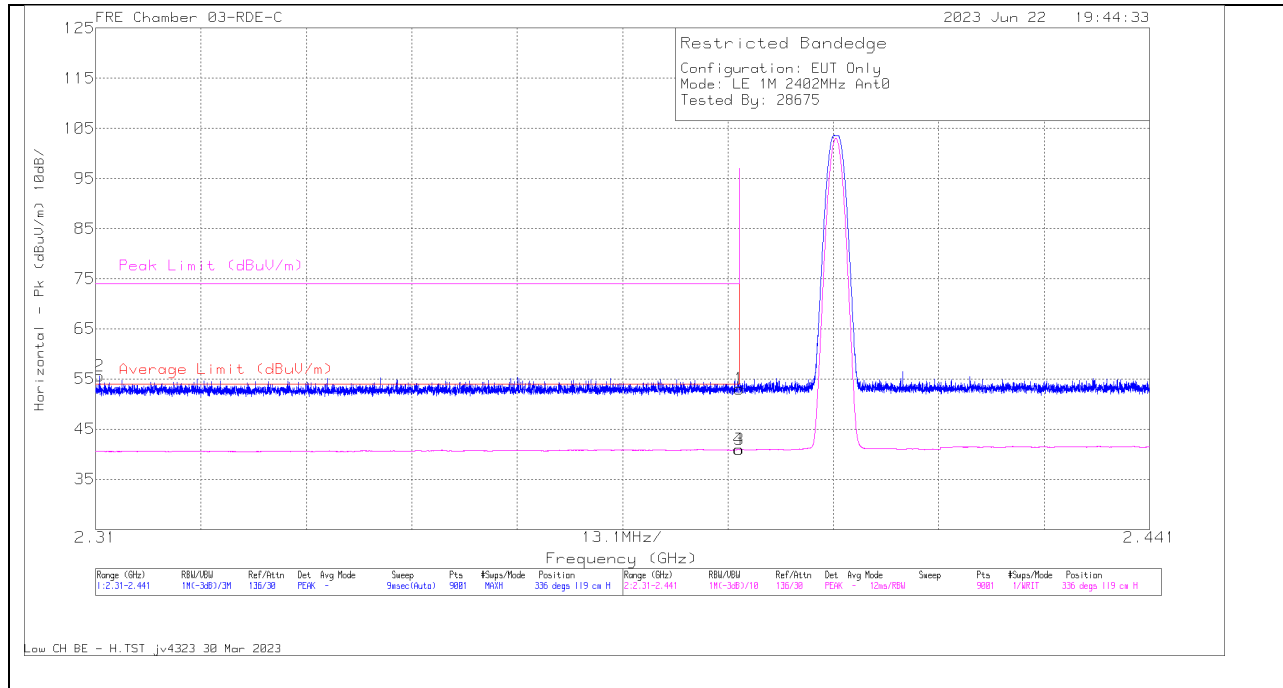
PK2 - KDB558074 Method: Maximum Peak
 MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.6. LOW POWER BLE (1Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

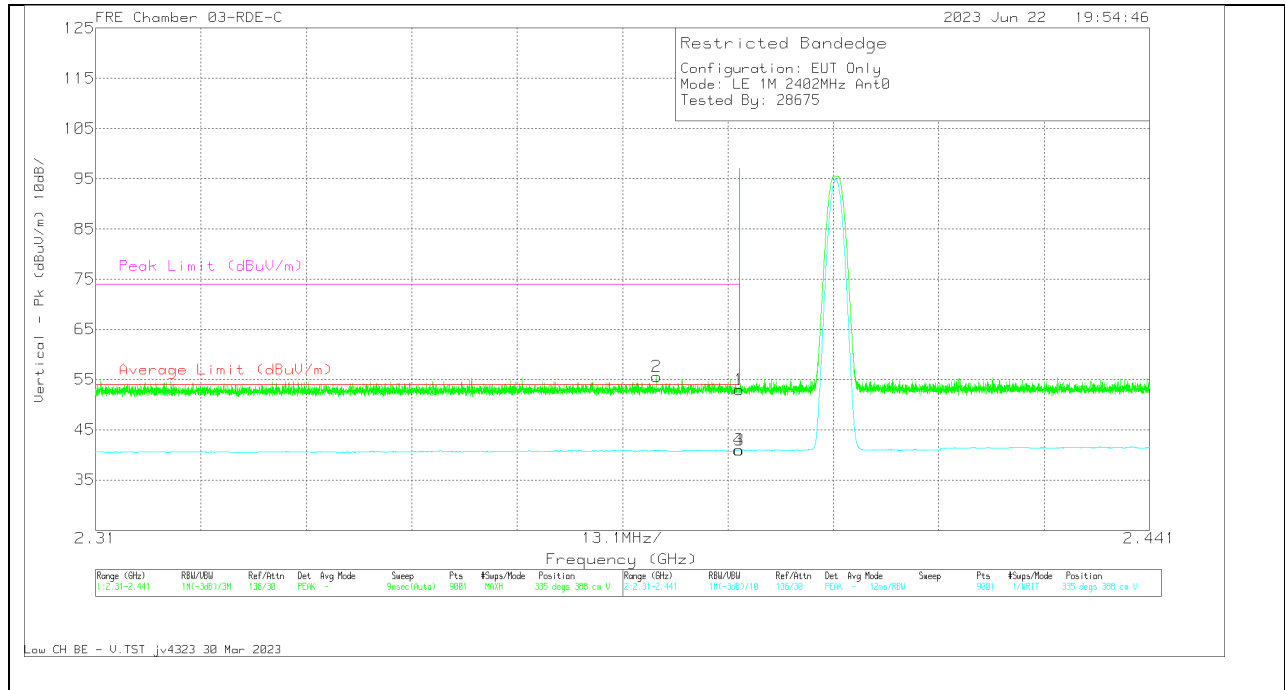
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	60.74	Pk	32.1	-39.8	53.04	-	-	74	-20.96	336	119	H
2	* 2.31048	63.71	Pk	31.8	-39.95	55.56	-	-	74	-18.44	336	119	H
3	* 2.39	48.63	VA1T	32.1	-39.8	40.93	54	-13.07	-	-	336	119	H
4	* 2.389927	48.67	VA1T	32.1	-39.81	40.96	54	-13.04	-	-	336	119	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

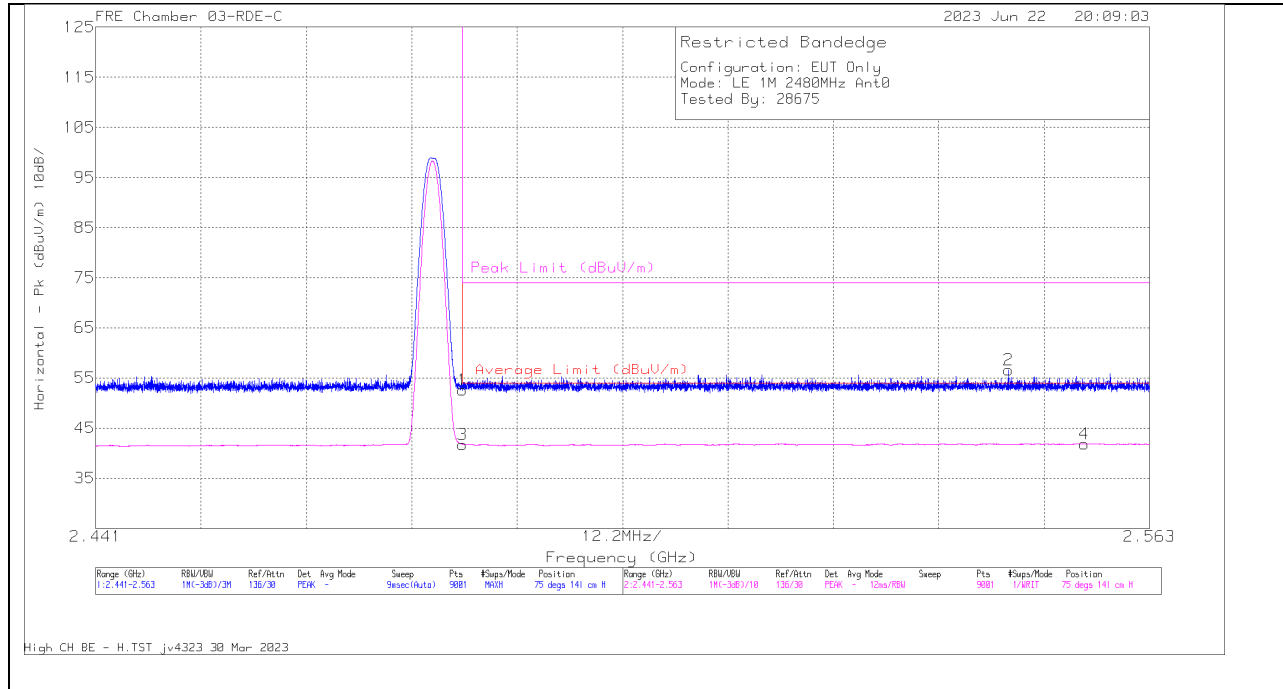


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.73	Pk	32.1	-39.8	53.03	-	-	74	-20.97	335	388	V
2	* 2.379752	63.38	Pk	32	-39.82	55.56	-	-	74	-18.44	335	388	V
3	* 2.39	48.63	VA1T	32.1	-39.8	40.93	54	-13.07	-	-	335	388	V
4	* 2.389927	48.65	VA1T	32.1	-39.81	40.94	54	-13.06	-	-	335	388	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

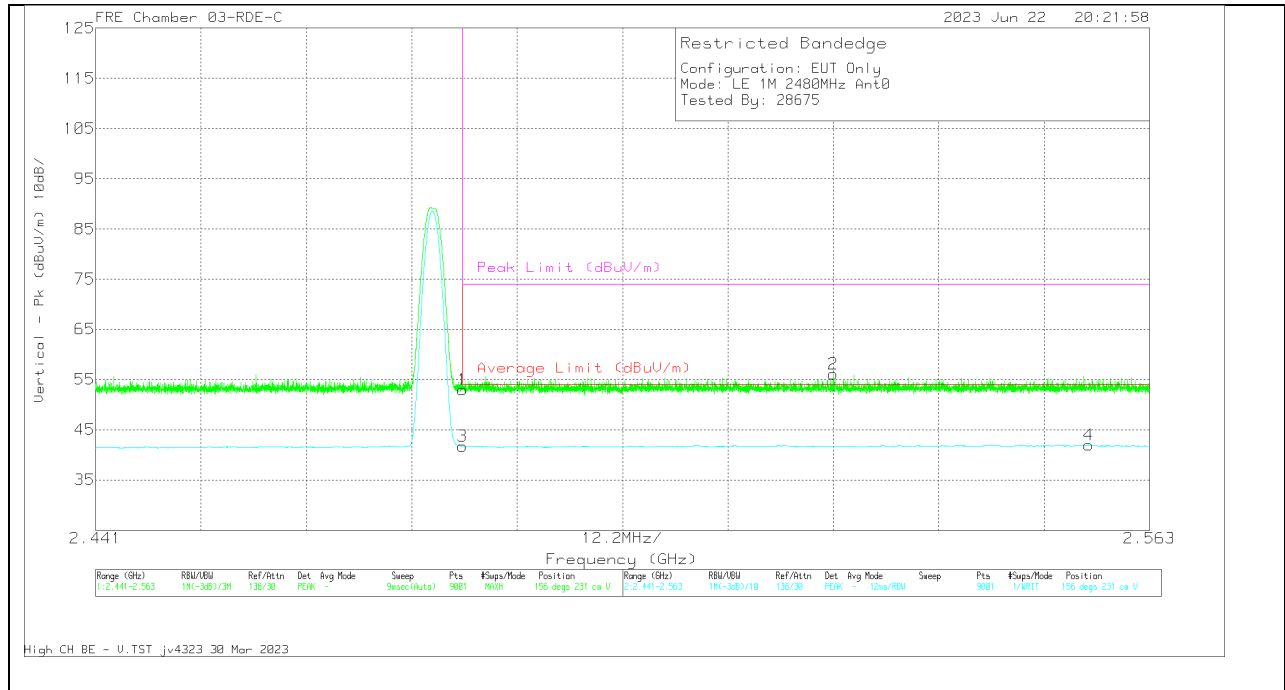
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	59.97	Pk	32.2	-39.6	52.57	-	-	74	-21.43	75	141	H
3	* 2.4835	49.13	VA1T	32.2	-39.6	41.73	54	-12.27	-	-	75	141	H
2	2.546669	63.94	Pk	32.3	-39.6	56.64	-	-	74	-17.36	75	141	H
4	2.55544	48.99	VA1T	32.3	-39.4	41.89	54	-12.11	-	-	75	141	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



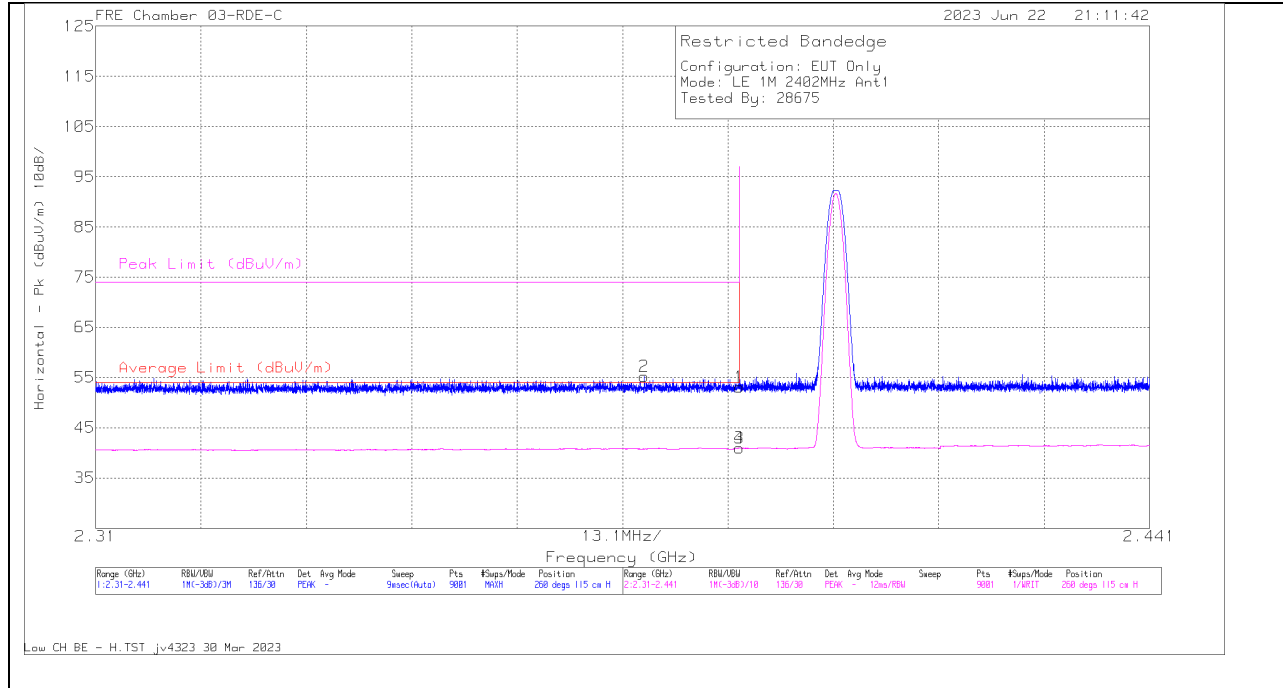
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.43	Pk	32.2	-39.6	53.03	-	-	74	-20.97	156	231	V
3	* 2.4835	49.13	VA1T	32.2	-39.6	41.73	54	-12.27	-	-	156	231	V
2	2.526416	63.45	Pk	32.3	-39.6	56.15	-	-	74	-17.85	156	231	V
4	2.555968	49.01	VA1T	32.3	-39.4	41.91	54	-12.09	-	-	156	231	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

ANT 3

BANDEDGE (LOW CHANNEL)

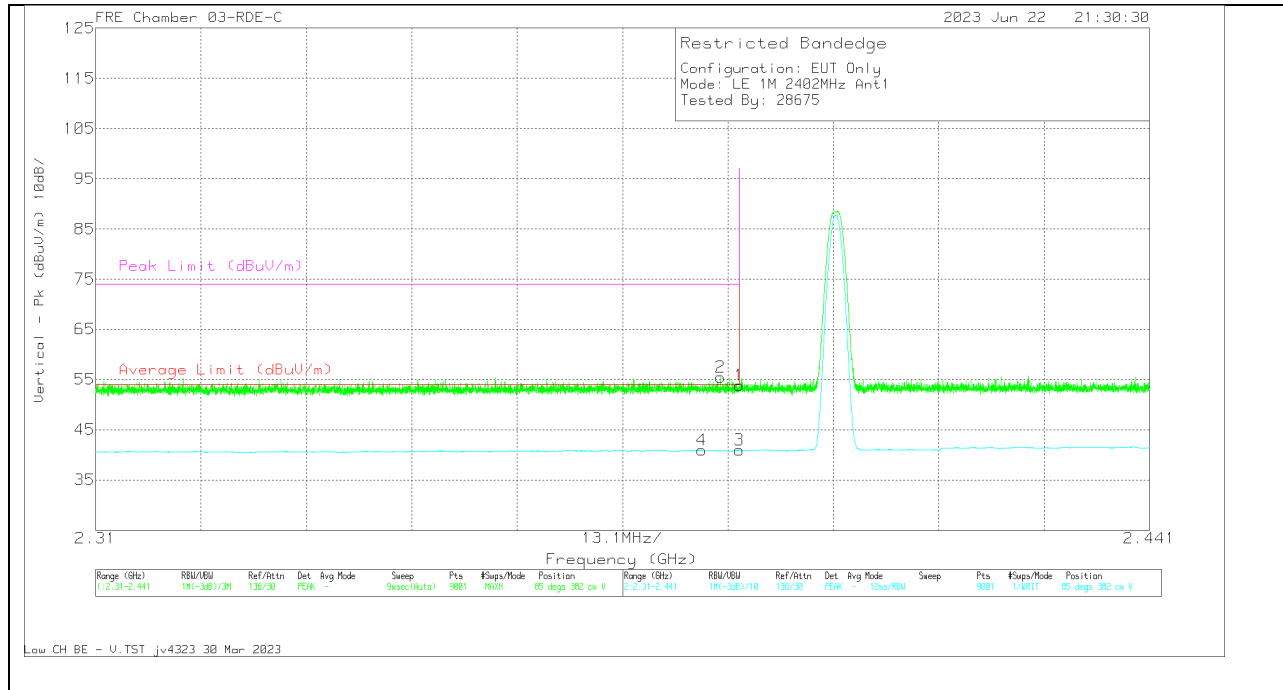
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	60.81	Pk	32.1	-39.8	53.11	-	-	74	-20.89	260	115	H
2	* 2.378166	63.13	Pk	32	-39.9	55.23	-	-	74	-18.77	260	115	H
3	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	260	115	H
4	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	260	115	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

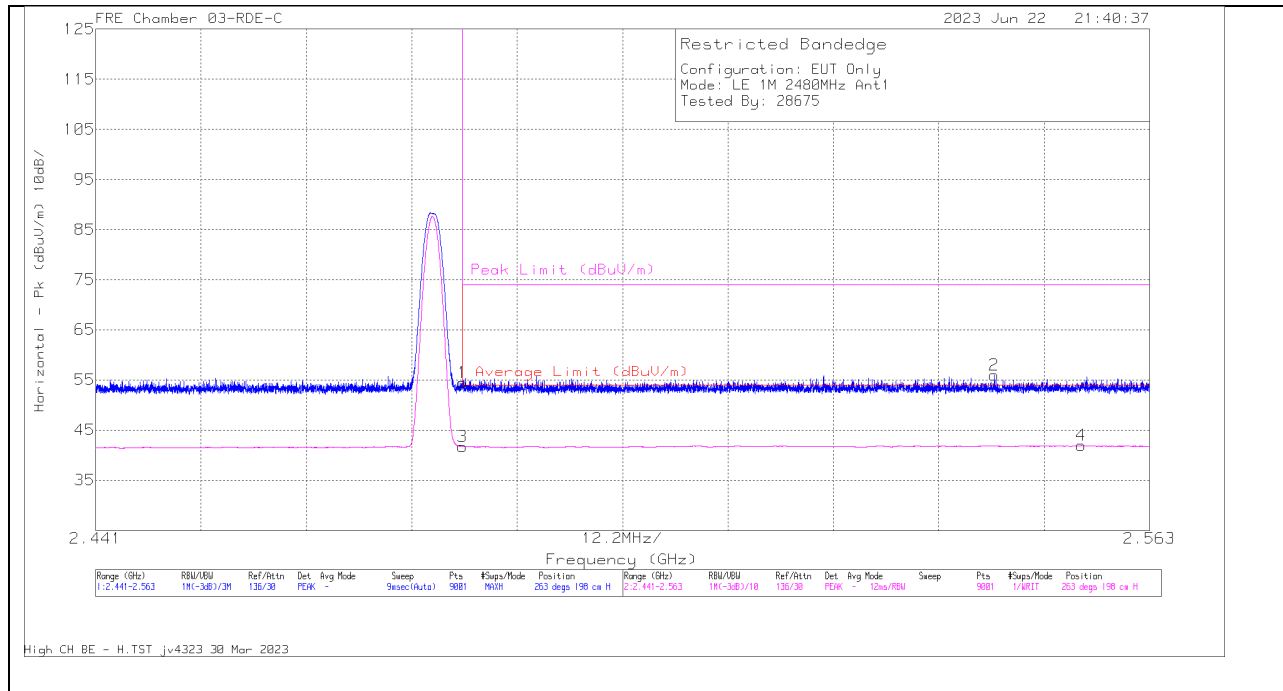


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3mHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.59	Pk	32.1	-39.8	53.89	-	-	74	-20.11	85	382	V
2	* 2.387685	63.24	Pk	32.1	-39.9	55.44	-	-	74	-18.56	85	382	V
3	* 2.39	48.62	VA1T	32.1	-39.8	40.92	54	-13.08	-	-	85	382	V
4	* 2.385342	48.66	VA1T	32.1	-39.83	40.93	54	-13.07	-	-	85	382	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

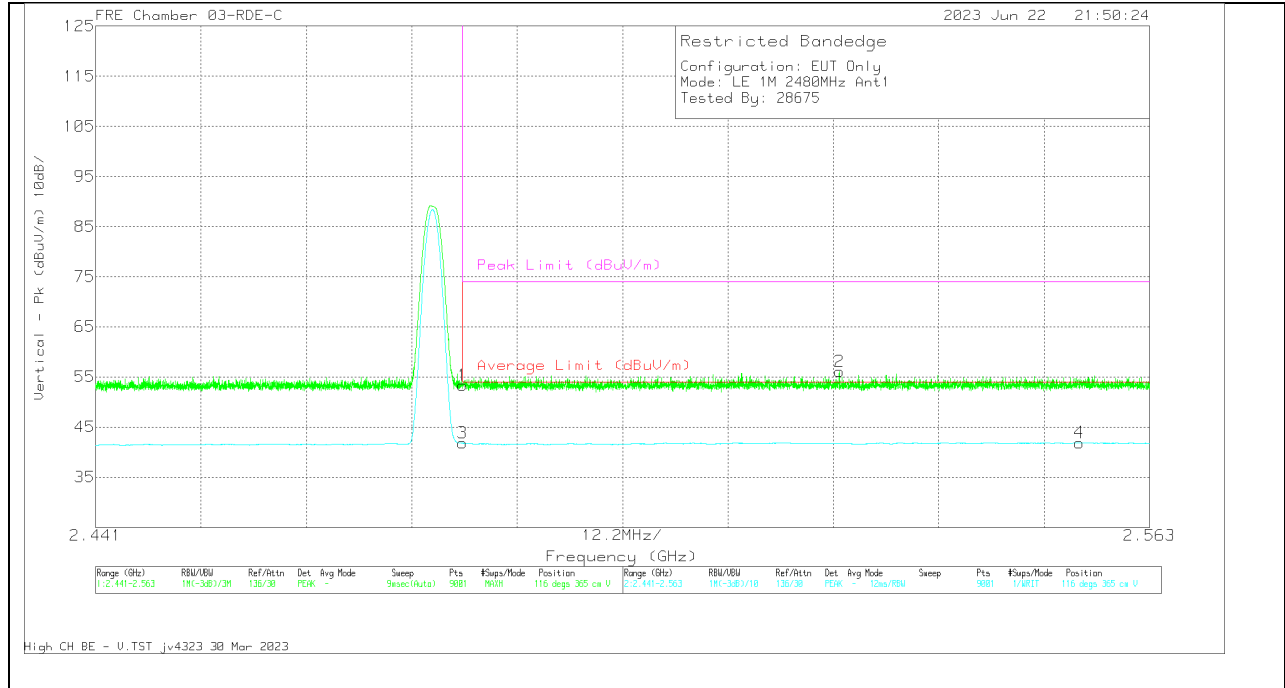
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	61.85	Pk	32.2	-39.6	54.45	-	-	74	-19.55	263	198	H
3	* 2.4835	49.12	VA1T	32.2	-39.6	41.72	54	-12.28	-	-	263	198	H
2	2.545002	63.12	Pk	32.3	-39.5	55.92	-	-	74	-18.08	263	198	H
4	2.555101	49.03	VA1T	32.3	-39.4	41.93	54	-12.07	-	-	263	198	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



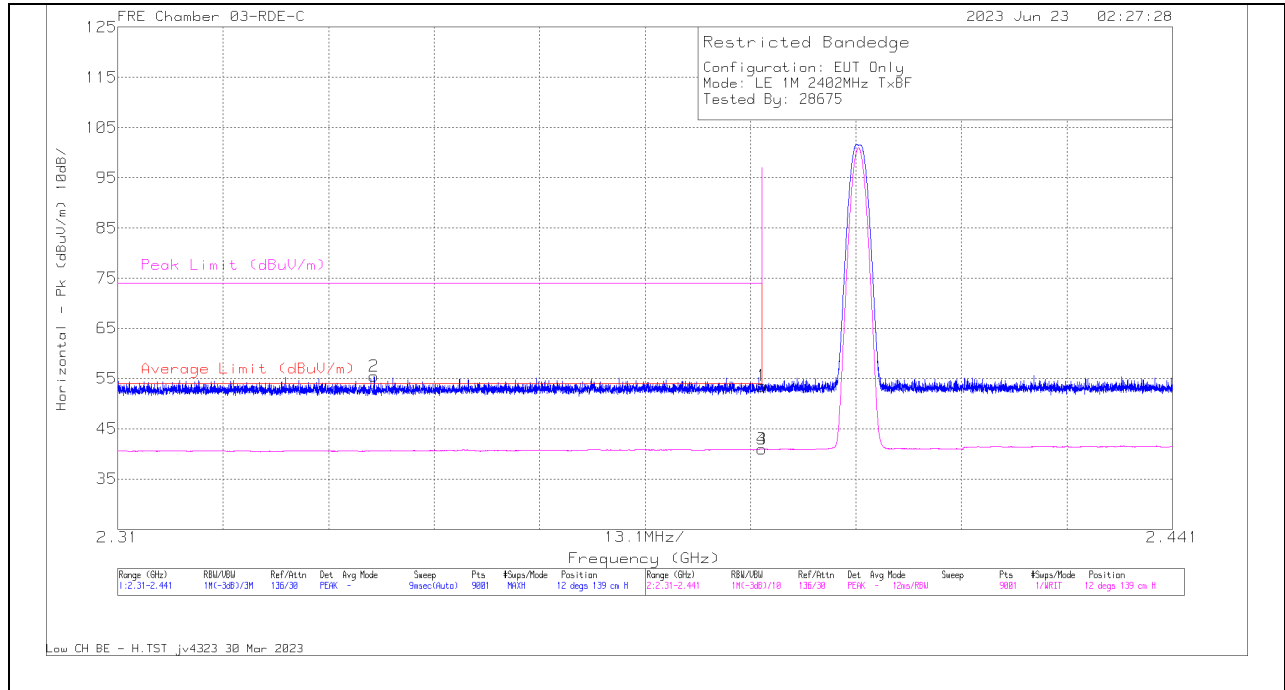
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mit	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.74	Pk	32.2	-39.6	53.34	-	-	74	-20.66	116	365	V
3	* 2.4835	49.19	VA1T	32.2	-39.6	41.79	54	-12.21	-	-	116	365	V
2	2.527081	63.41	Pk	32.3	-39.6	56.11	-	-	74	-17.89	116	365	V
4	2.55487	49.01	VA1T	32.3	-39.41	41.9	54	-12.1	-	-	116	365	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

10.2.7. LOW POWER BLE TXBF (1Mbps)

BANDEDGE (LOW CHANNEL)

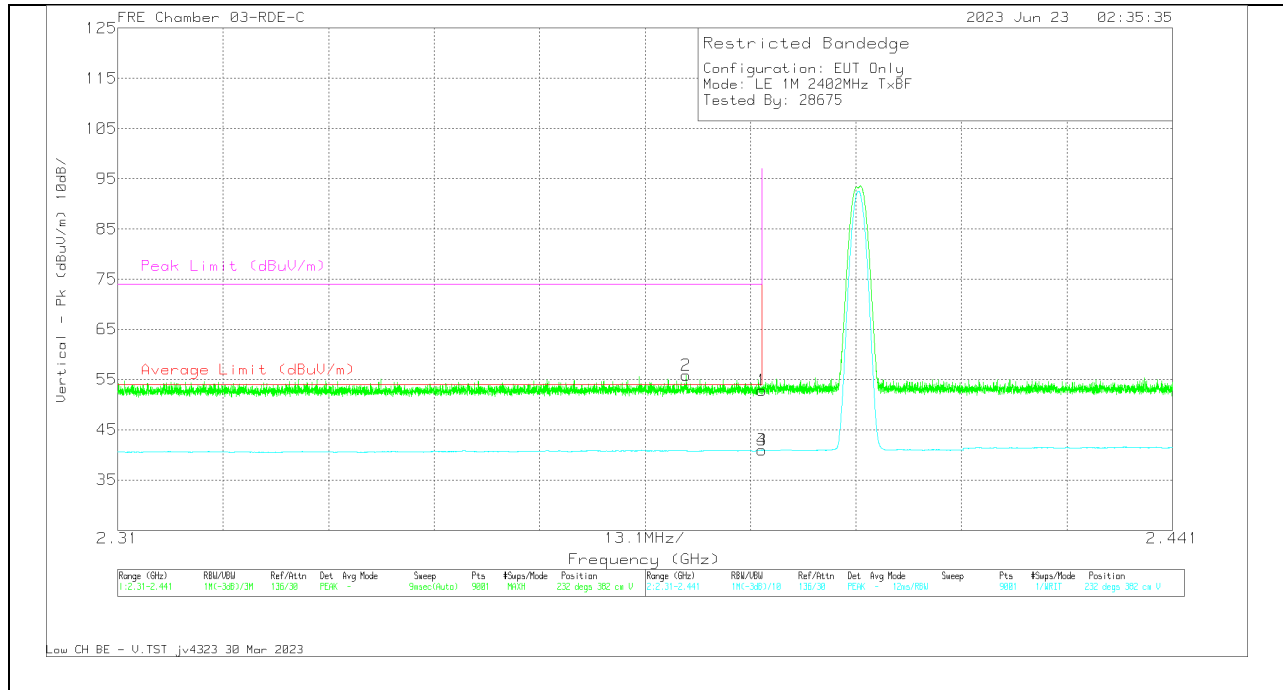
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBU/m)	Margin (dB)	Peak Limit (dBU/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.24	Pk	32.1	-39.8	53.54	-	-	74	-20.46	12	139	H
2	* 2.341863	63.61	Pk	31.9	-40	55.51	-	-	74	-18.49	12	139	H
3	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	12	139	H
4	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	12	139	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average $V_B=1/T_{on}$ where: T_{on} is transmit duration

VERTICAL RESULT

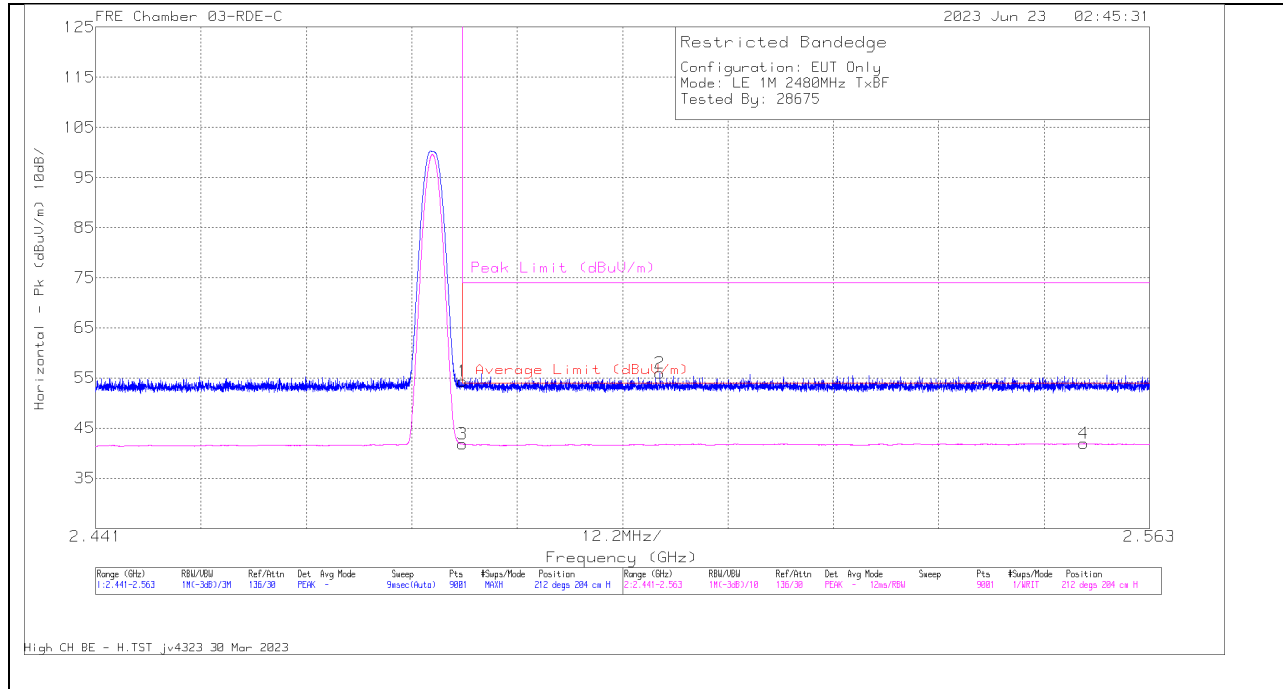


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.49	Pk	32.1	-39.8	52.79	-	-	74	-21.21	232	382	V
2	* 2.380611	63.56	Pk	32.1	-39.86	55.8	-	-	74	-18.2	232	382	V
3	* 2.39	48.63	VA1T	32.1	-39.8	40.93	54	-13.07	-	-	232	382	V
4	* 2.39	48.63	VA1T	32.1	-39.8	40.93	54	-13.07	-	-	232	382	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

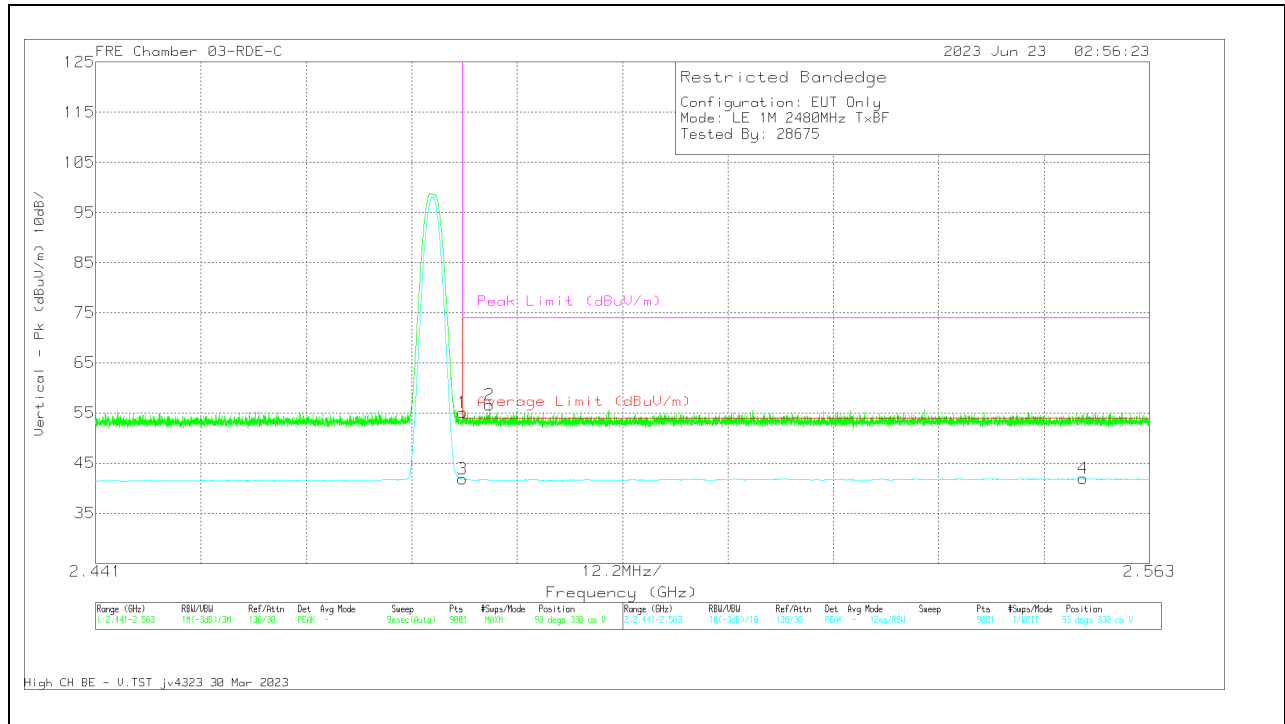
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	61.69	Pk	32.2	-39.6	54.29	-	-	74	-19.71	212	204	H
3	* 2.4835	49.19	VA1T	32.2	-39.6	41.79	54	-12.21	-	-	212	204	H
2	2.506313	63.3	Pk	32.3	-39.57	56.03	-	-	74	-17.97	212	204	H
4	2.555399	49.01	VA1T	32.3	-39.4	41.91	54	-12.09	-	-	212	204	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	62.56	Pk	32.2	-39.6	55.16	-	-	74	-18.84	93	330	V
2	* 2.486562	64.11	Pk	32.2	-39.66	56.65	-	-	74	-17.35	93	330	V
3	* 2.4835	49.22	VA1T	32.2	-39.6	41.82	54	-12.18	-	-	93	330	V
4	2.555345	49.01	VA1T	32.3	-39.4	41.91	54	-12.09	-	-	93	330	V

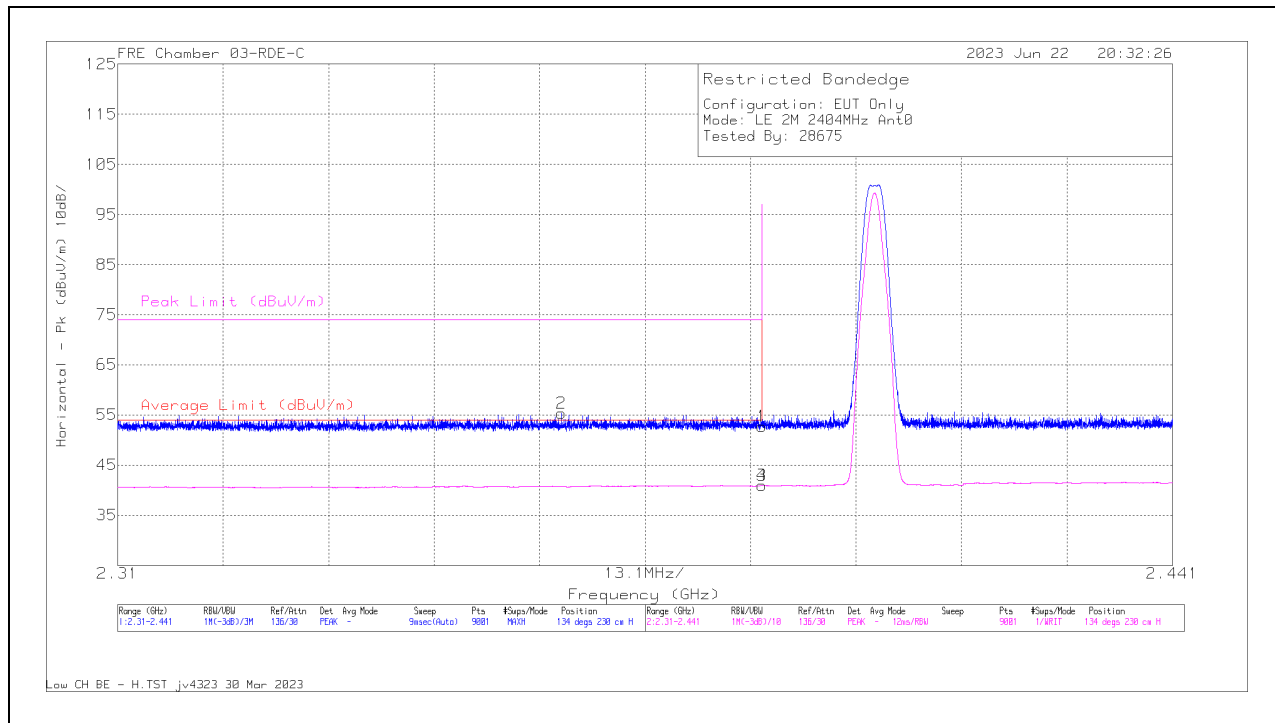
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

10.2.8. LOW POWER BLE (2Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

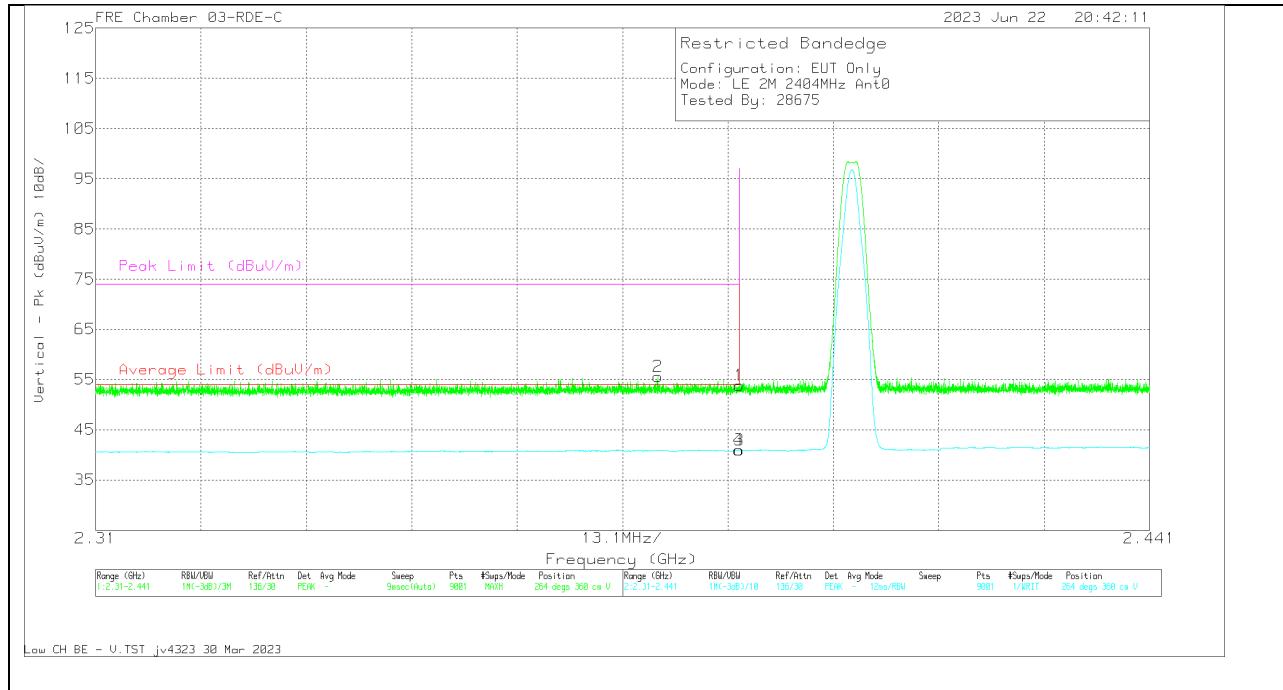
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3MHz	Gain/Loss (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	60.47	Pk	32.1	-39.8	52.77	-	-	74	-21.23	134	230	H
2	* 2.36508	63.21	Pk	32	-39.91	55.3	-	-	74	-18.7	134	230	H
3	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	134	230	H
4	* 2.39	48.66	VA1T	32.1	-39.8	40.96	54	-13.04	-	-	134	230	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

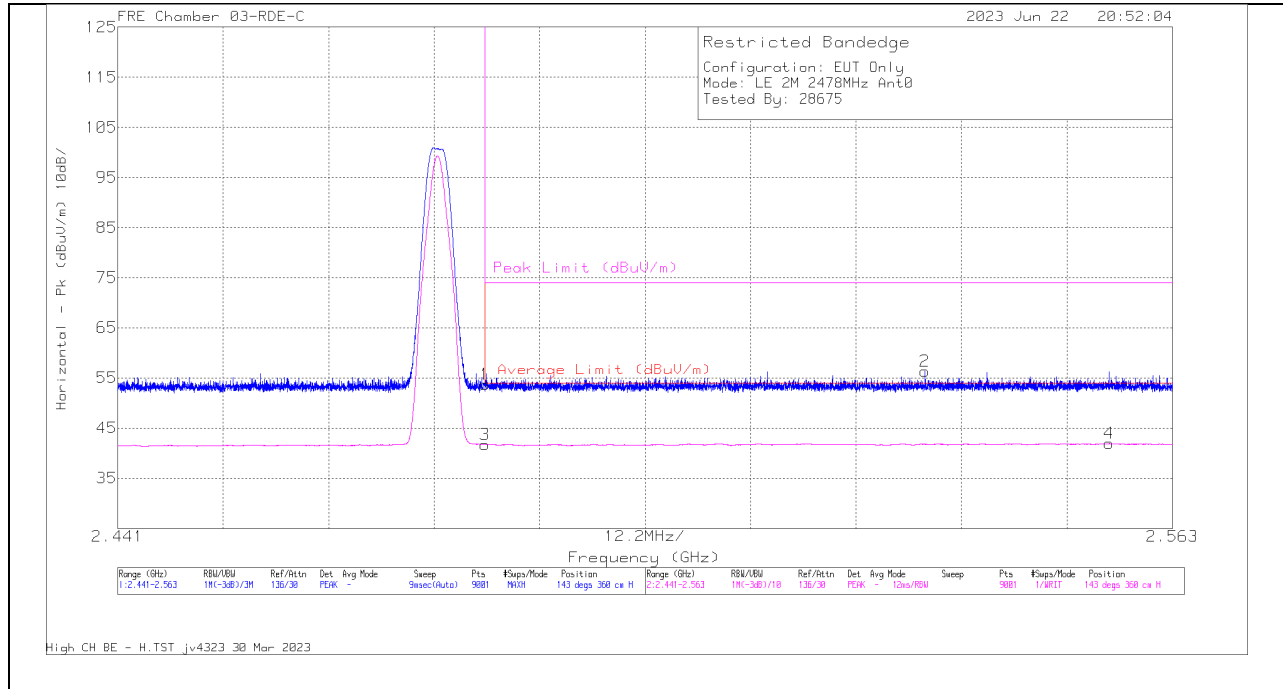


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mHz	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	61.51	Pk	32.1	-39.8	53.81	-	-	74	-20.19	264	360	V
2	* 2.379883	63.37	Pk	32	-39.81	55.56	-	-	74	-18.44	264	360	V
3	* 2.39	48.62	VA1T	32.1	-39.8	40.92	54	-13.08	-	-	264	360	V
4	* 2.389942	48.65	VA1T	32.1	-39.81	40.94	54	-13.06	-	-	264	360	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 PK - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

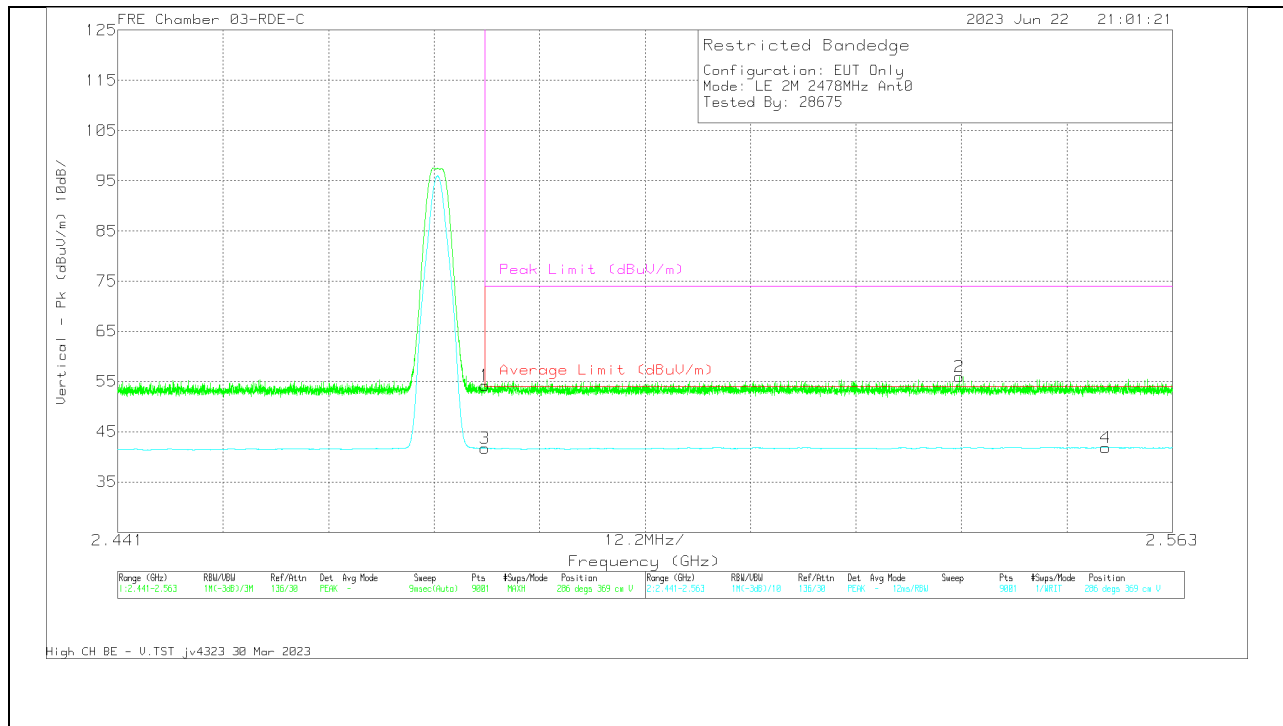
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	61.18	Pk	32.2	-39.6	53.78	-	-	74	-20.22	143	360	H
3	* 2.4835	49.13	VA1T	32.2	-39.6	41.73	54	-12.27	-	-	143	360	H
2	2.534387	63.54	Pk	32.3	-39.54	56.3	-	-	74	-17.7	143	360	H
4	2.555684	49.03	VA1T	32.3	-39.4	41.93	54	-12.07	-	-	143	360	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



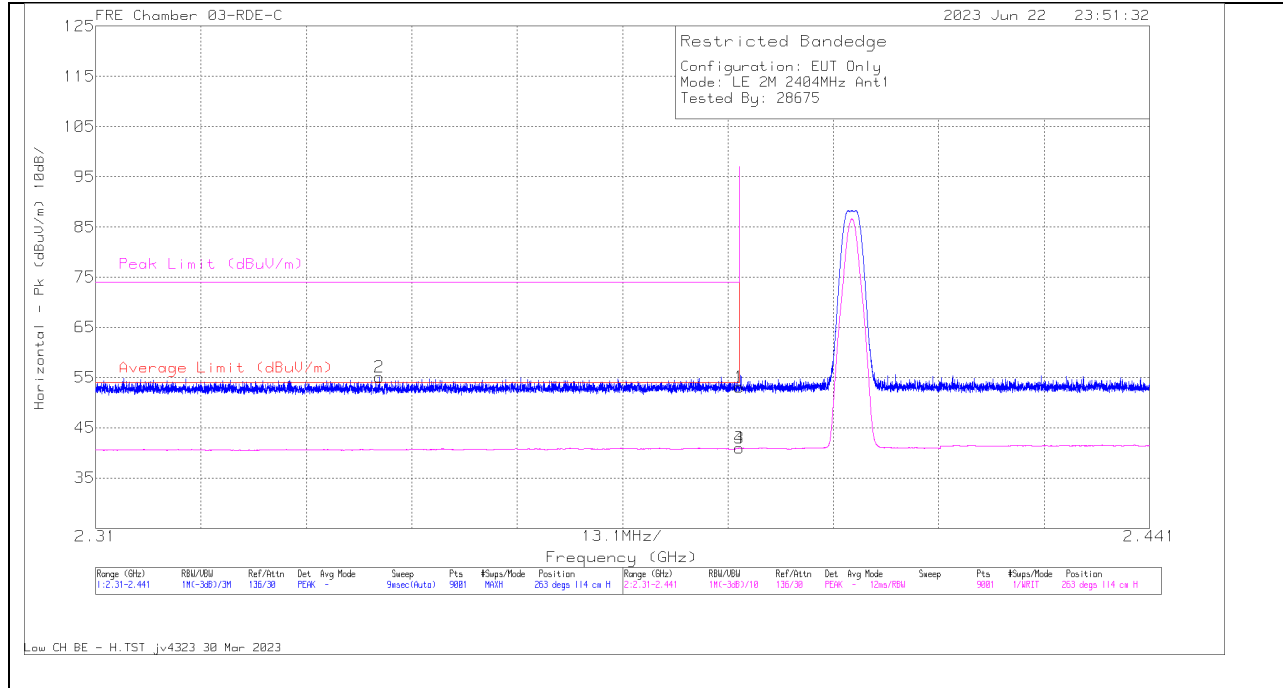
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mit	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.57	Pk	32.2	-39.6	54.17	-	-	74	-19.83	286	369	V
3	* 2.4835	49.16	VA1T	32.2	-39.6	41.76	54	-12.24	-	-	286	369	V
2	2.538373	63.22	Pk	32.3	-39.56	55.96	-	-	74	-18.04	286	369	V
4	2.555277	48.99	VA1T	32.3	-39.4	41.89	54	-12.11	-	-	286	369	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

ANT 3

BANDEDGE (LOW CHANNEL)

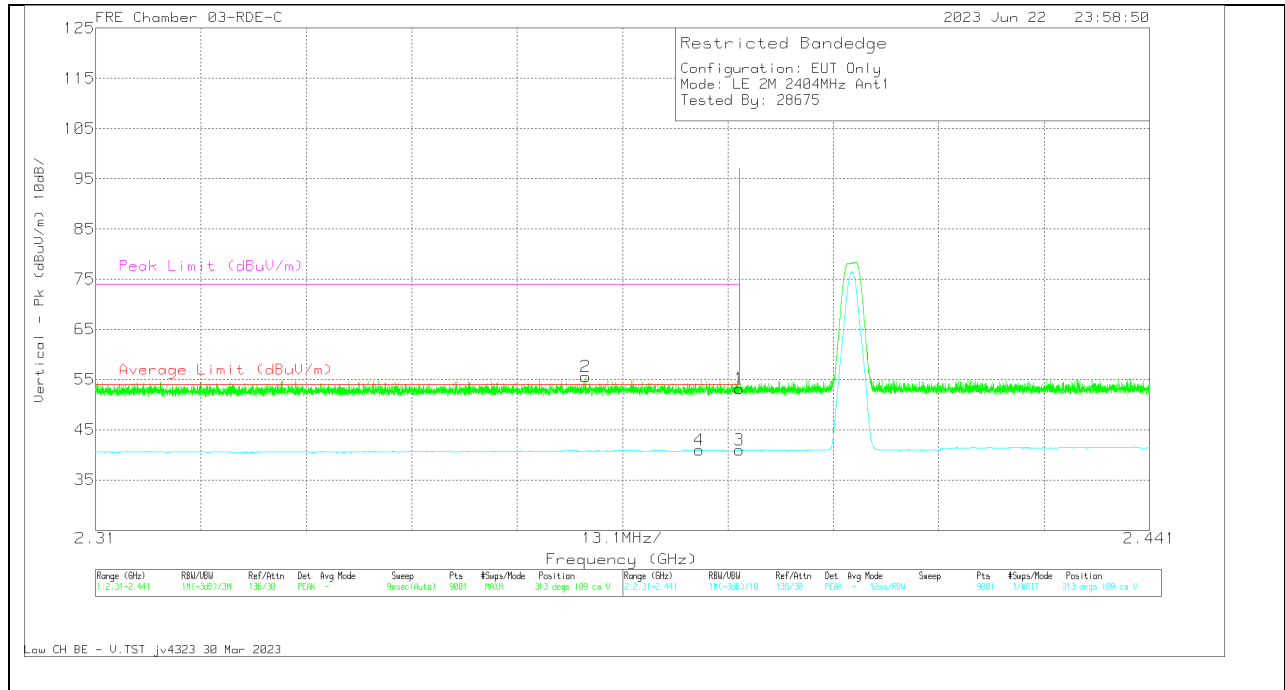
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (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	60.84	Pk	32.1	-39.8	53.14	-	-	74	-20.86	263	114	H
2	* 2.345255	63.15	Pk	31.9	-39.93	55.12	-	-	74	-18.88	263	114	H
3	* 2.39	48.64	VA1T	32.1	-39.8	40.94	54	-13.06	-	-	263	114	H
4	* 2.389985	48.65	VA1T	32.1	-39.8	40.95	54	-13.05	-	-	263	114	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT

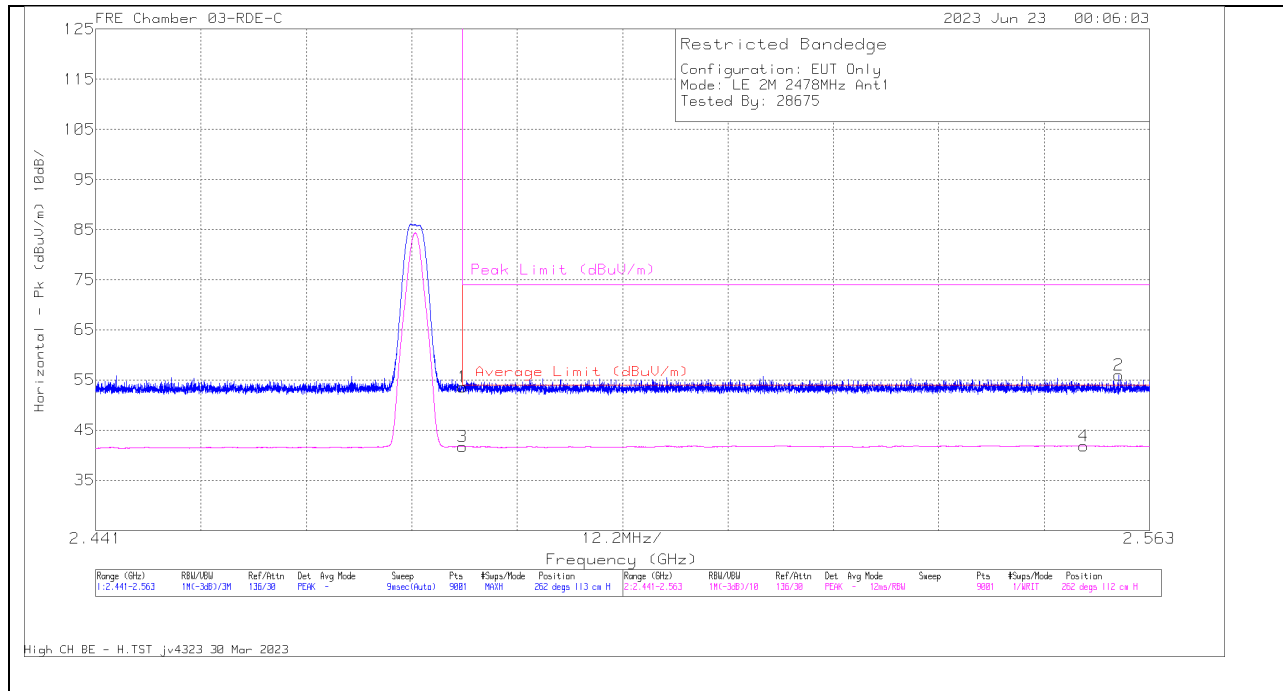


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	60.9	Pk	32.1	-39.8	53.2	-	-	74	-20.8	313	109	V
2	* 2.370902	63.47	Pk	32	-39.9	55.57	-	-	74	-18.43	313	109	V
3	* 2.39	48.63	VA1T	32.1	-39.8	40.93	54	-13.07	-	-	313	109	V
4	* 2.385036	48.64	VA1T	32.1	-39.8	40.94	54	-13.06	-	-	313	109	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

BANDEDGE (HIGH CHANNEL)

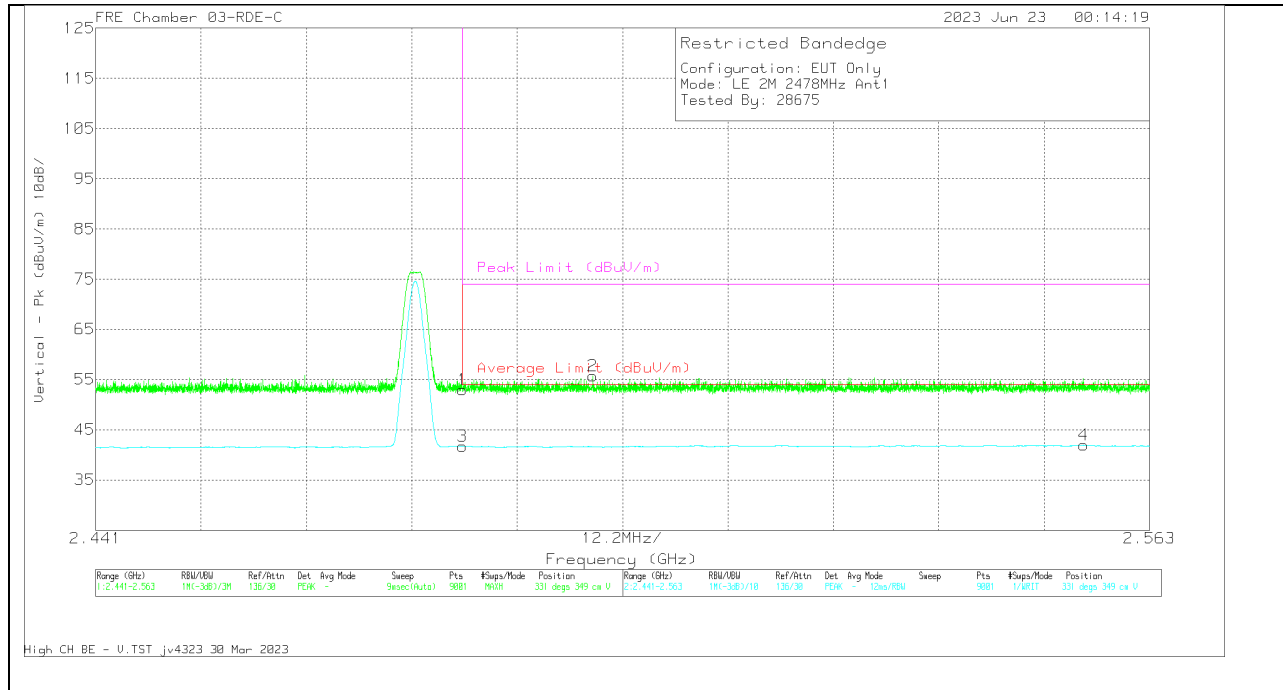
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3MHz	Gain/Loss (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	60.97	Pk	32.2	-39.6	53.57	-	-	74	-20.43	262	113	H
3	* 2.4835	49.11	VA1T	32.2	-39.6	41.71	54	-12.29	-	-	262	112	H
4	2.55386	48.98	VA1T	32.3	-39.4	41.88	54	-12.12	-	-	262	112	H
2	2.559439	63.14	Pk	32.3	-39.5	55.94	-	-	74	-18.06	262	113	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

VERTICAL RESULT



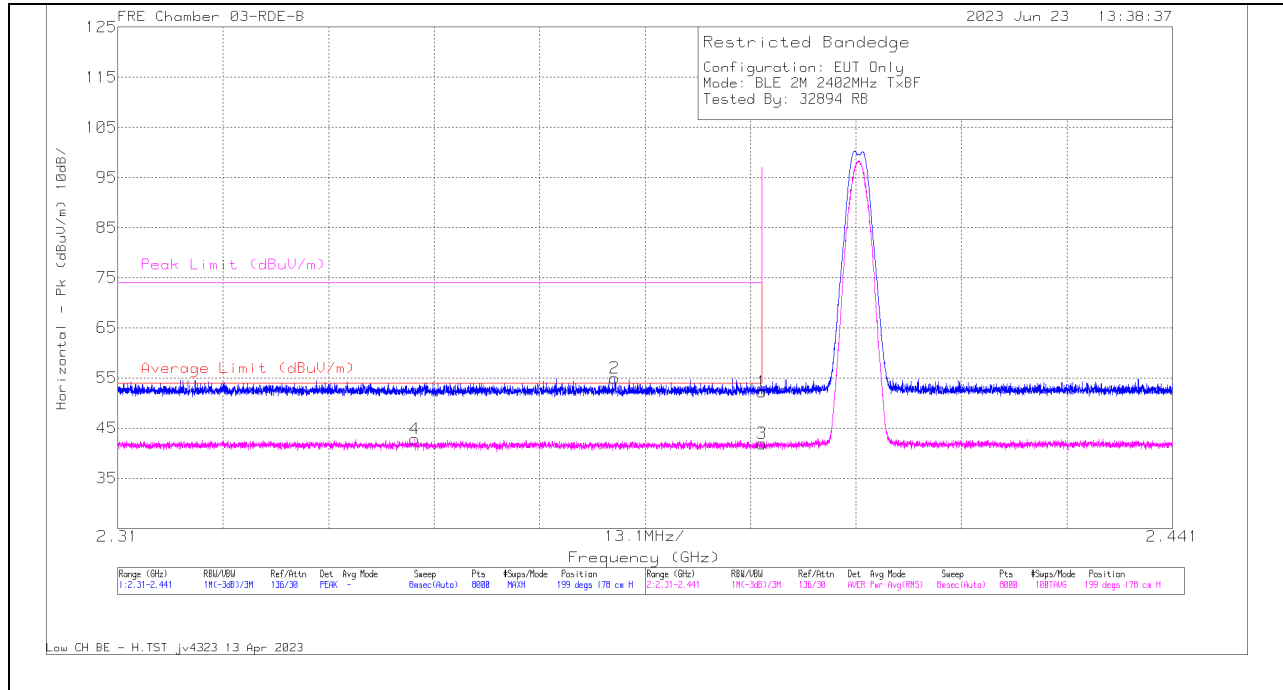
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	226672 ACF (dB) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	60.42	Pk	32.2	-39.6	53.02	-	-	74	-20.98	331	349	V
2	* 2.498572	63.13	Pk	32.3	-39.66	55.77	-	-	74	-18.23	331	349	V
3	* 2.4835	49.09	VA1T	32.2	-39.6	41.69	54	-12.31	-	-	331	349	V
4	2.555399	49.01	VA1T	32.3	-39.4	41.91	54	-12.09	-	-	331	349	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 VA1T - FHSS: Linear Voltage Average VB=1/Ton where: Ton is transmit duration

10.2.9. LOW POWER BLE TXBF (2Mbps)

BANDEDGE (LOW CHANNEL)

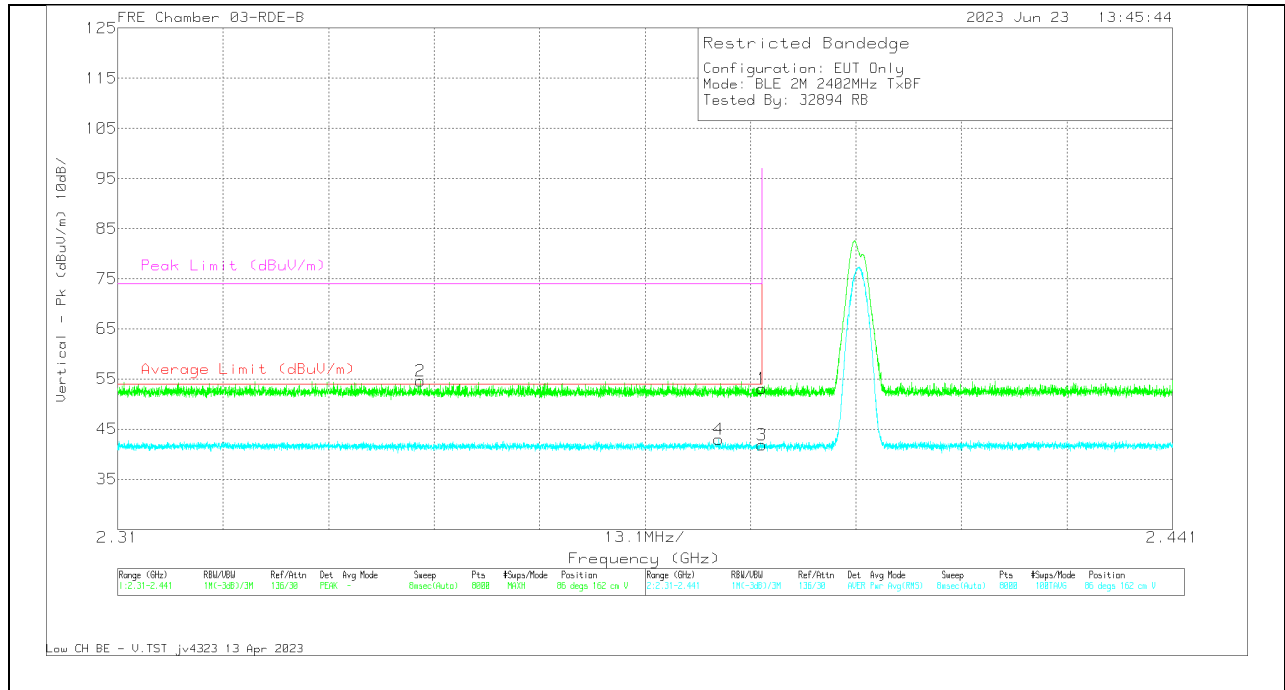
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (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	61.23	PK	32.2	-41.2	52.23	-	-	74	-21.77	199	178	H
2	* 2.371741	64.05	PK	32.1	-41.2	54.95	-	-	74	-19.05	199	178	H
3	* 2.39	50.9	RMS	32.2	-41.2	41.9	54	-12.1	-	-	199	178	H
4	* 2.346865	51.9	RMS	32.1	-41.2	42.8	54	-11.2	-	-	199	178	H

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

VERTICAL RESULT

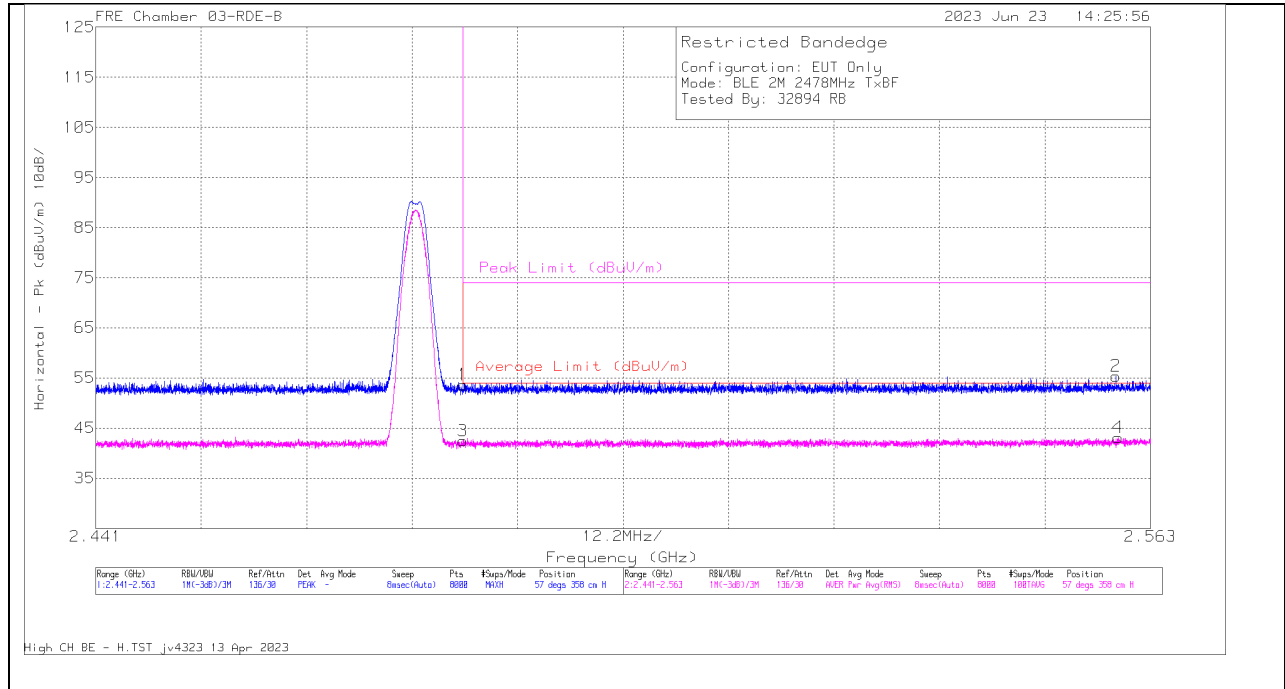


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	62.08	Pk	32.2	-41.2	53.08	-	-	74	-20.92	86	162	V
2	* 2.347569	63.74	Pk	32.1	-41.2	54.64	-	-	74	-19.36	86	162	V
3	* 2.39	50.82	RMS	32.2	-41.2	41.82	54	-12.18	-	-	86	162	V
4	* 2.384663	51.91	RMS	32.2	-41.2	42.91	54	-11.09	-	-	86	162	V

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

BANDEDGE (HIGH CHANNEL)

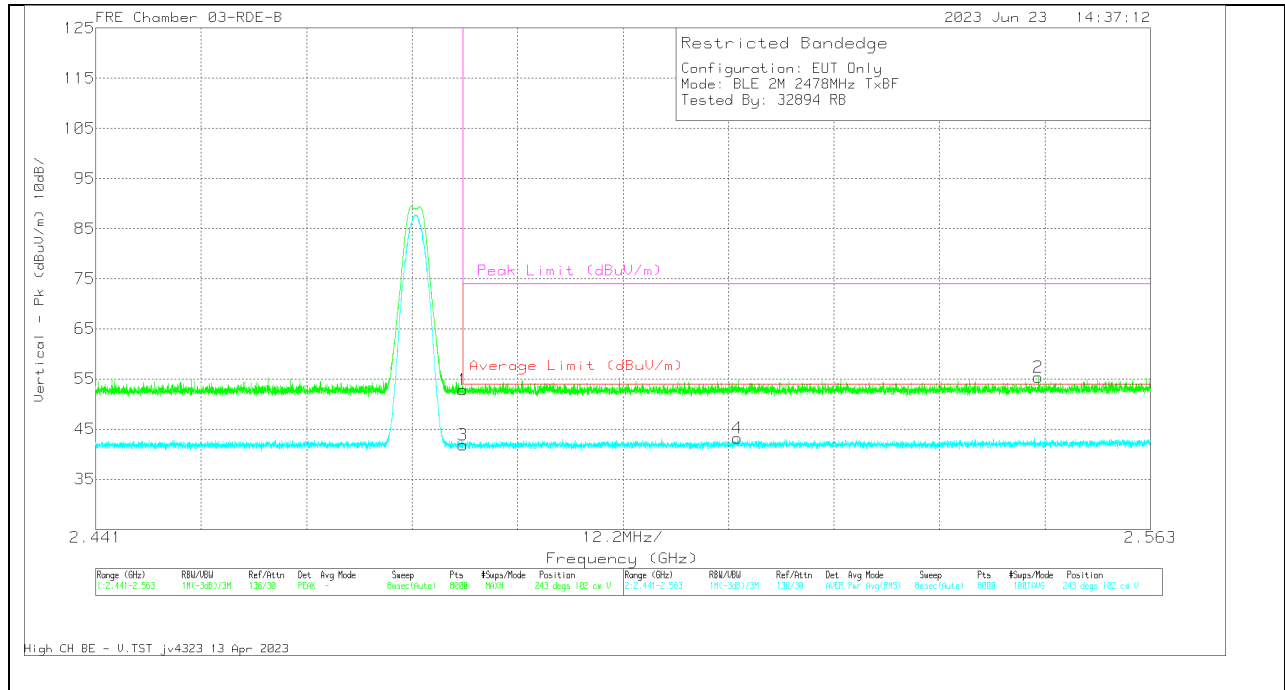
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (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	62.61	Pk	32.2	-41.15	53.66	-	-	74	-20.34	57	358	H
3	* 2.4835	51.36	RMS	32.2	-41.15	42.41	54	-11.59	-	-	57	358	H
2	2.55902	64.01	Pk	32.3	-40.9	55.41	-	-	74	-18.59	57	358	H
4	2.559264	51.75	RMS	32.3	-40.9	43.15	54	-10.85	-	-	57	358	H

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

VERTICAL RESULT

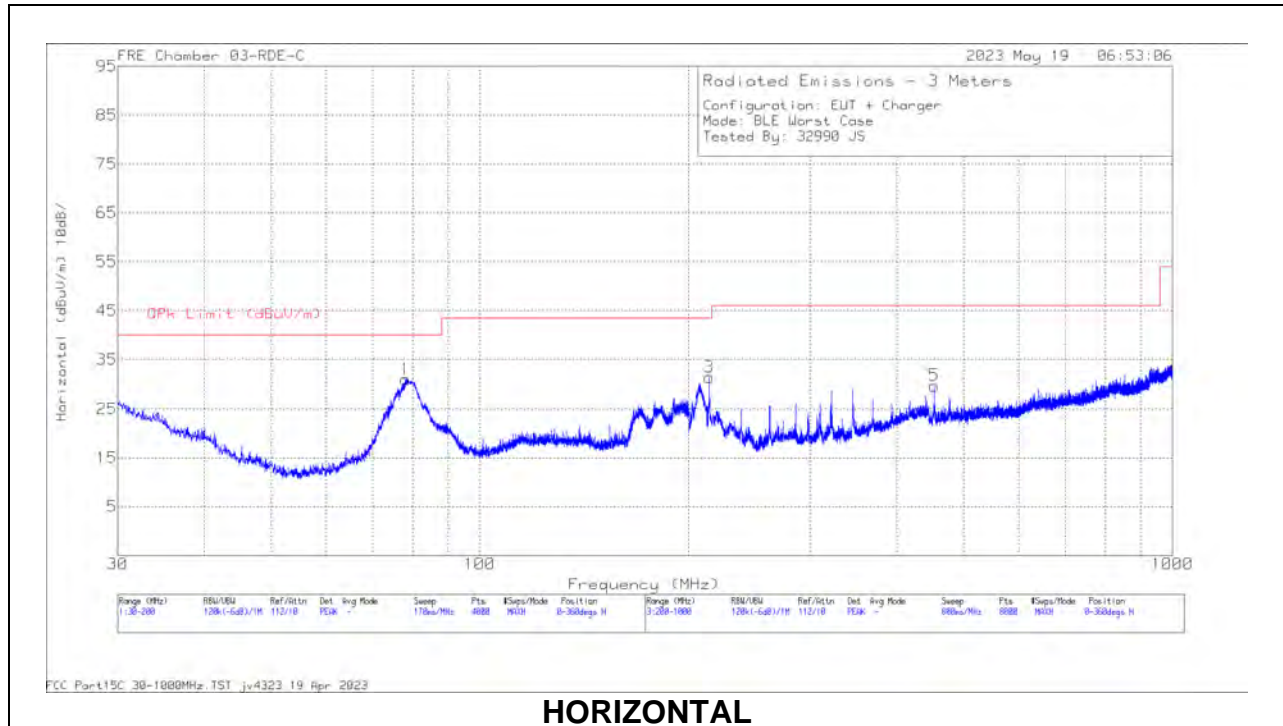


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	61.8	Pk	32.2	-41.15	52.85	-	-	74	-21.15	243	102	V
3	* 2.4835	50.76	RMS	32.2	-41.15	41.81	54	-12.19	-	-	243	102	V
4	2.515247	51.94	RMS	32.2	-40.92	43.22	54	-10.78	-	-	243	102	V
2	2.550052	63.94	Pk	32.3	-40.9	55.34	-	-	74	-18.66	243	102	V

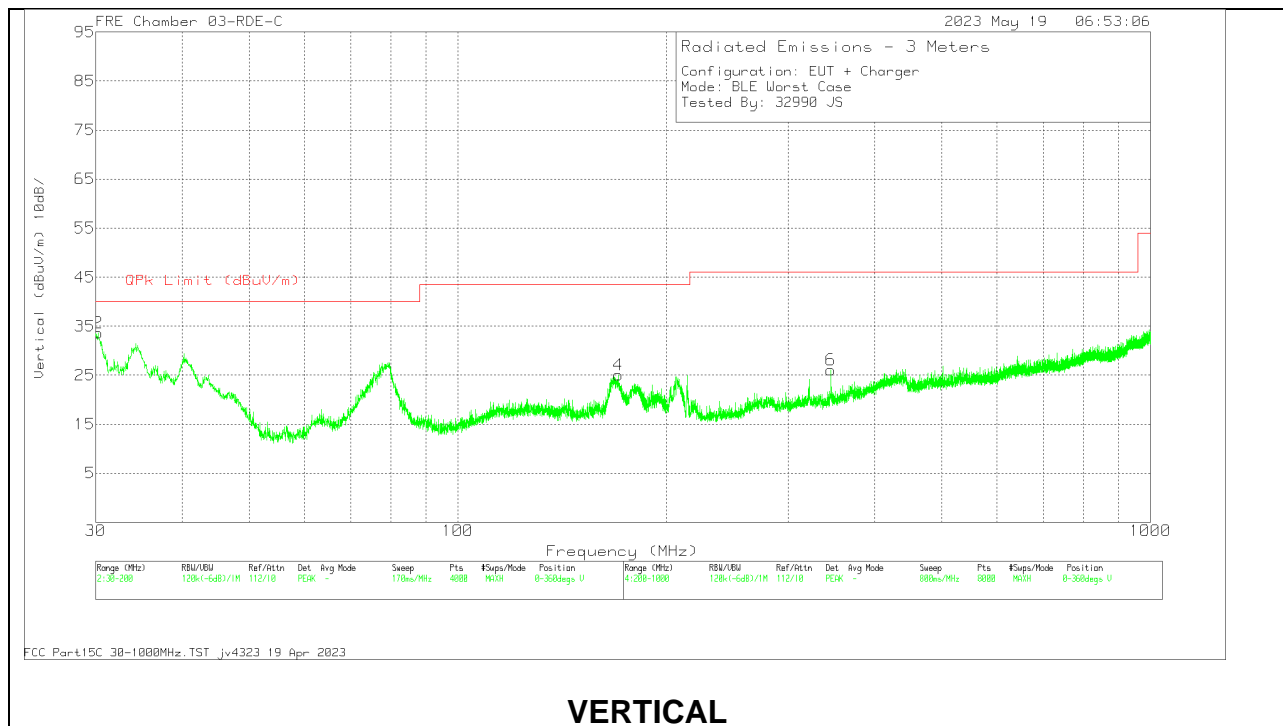
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

10.3. WORST CASE BELOW 1 GHZ

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



HORIZONTAL



VERTICAL

DATA

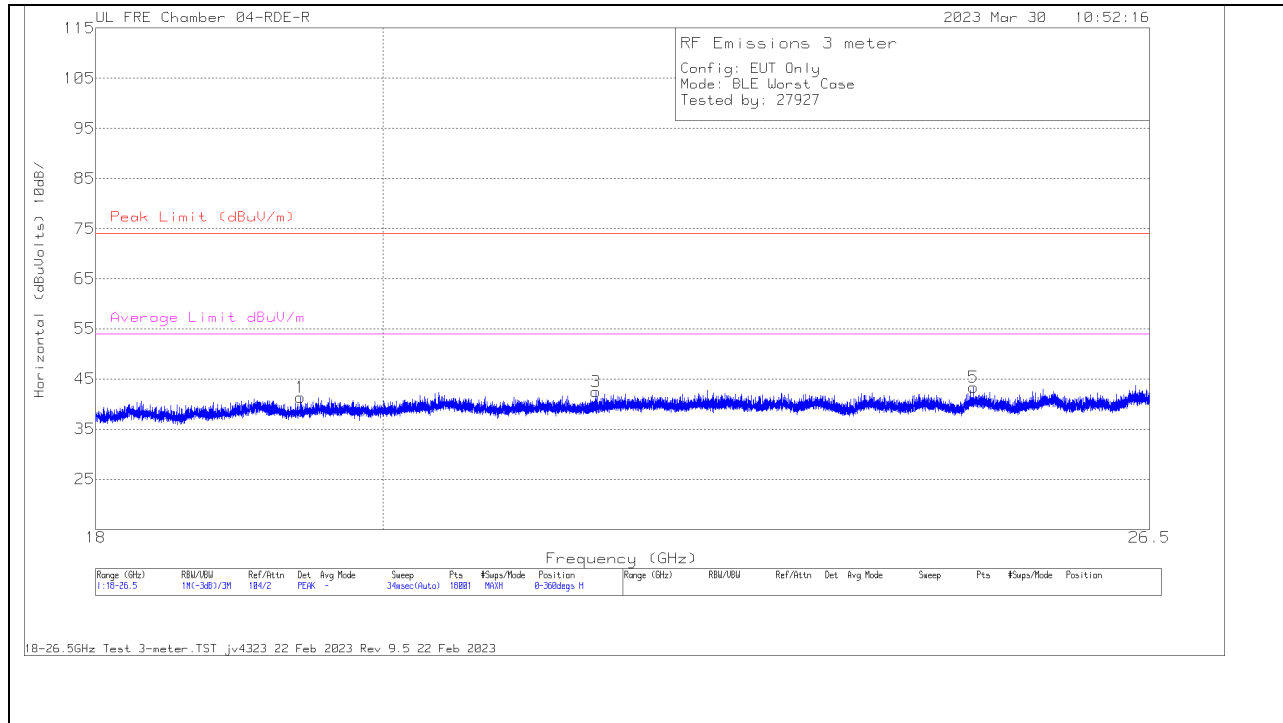
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	235174 ACF (dB) 10m H	Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 170.329	37.62	Pk	17.8	-30.4	25.02	43.52	-18.5	0-360	100	V
2	30.2126	38.68	Pk	26.7	-31.7	33.68	40	-6.32	0-360	100	V
	30.2797	34.62	Qp	26.6	-31.7	29.52	40	-10.48	96	100	V
1	78.0799	48.48	Pk	13.6	-31	31.08	40	-8.92	0-360	198	H
3	214.402	45.12	Pk	16.5	-30.2	31.42	43.52	-12.1	0-360	99	H
6	345.519	35.32	Pk	20.2	-29.4	26.12	46.02	-19.9	0-360	99	V
5	452.833	35.83	Pk	22.9	-29	29.73	46.02	-16.29	0-360	198	H

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

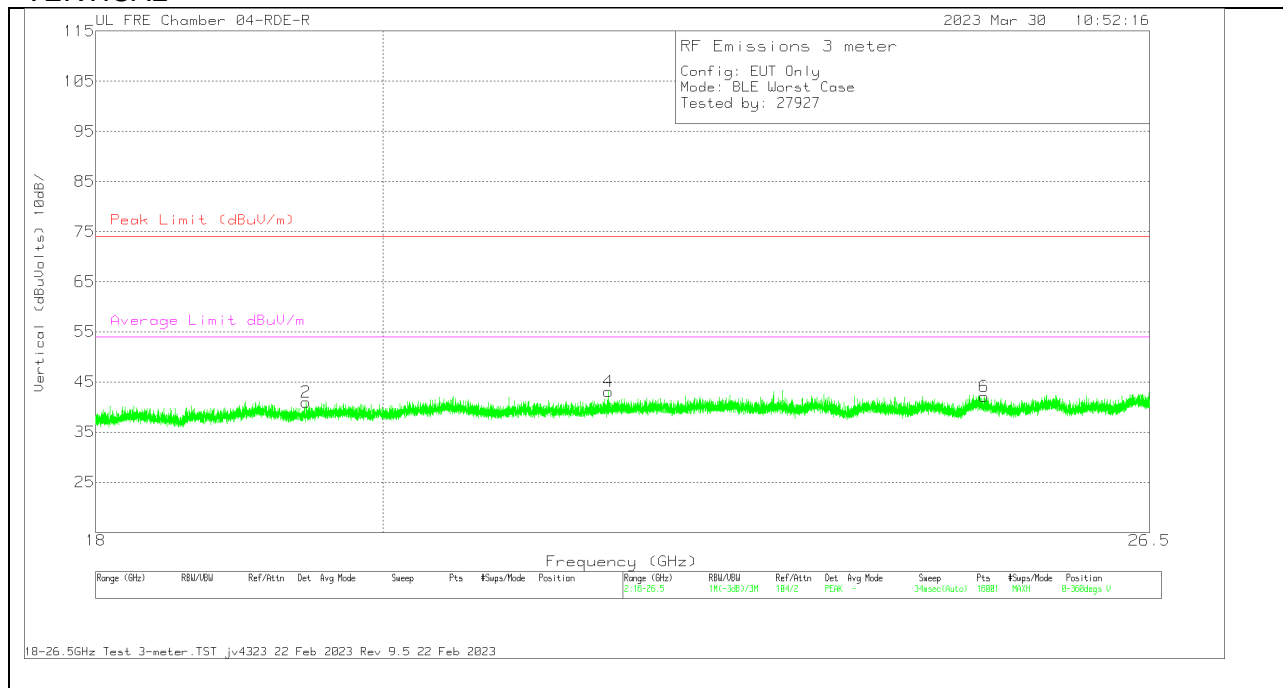
10.4. WORST CASE 18-26 GHz

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

HORIZONTAL



VERTICAL



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	172353 ACF (dB) - 3mH	171583 Amp Assembly (dB)	Cables (dB)	Corrected Reading (dBuV oIts)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	19.406277	58	Pk	33.1	-65.4	15.6	41.3	74	-32.7	54	-12.7	0-360	99	H
2	19.44311	57.52	Pk	33.1	-65.3	15.6	40.92	74	-33.08	54	-13.08	0-360	99	V
3	21.628082	57.14	Pk	33.6	-64.8	16.5	42.44	74	-31.56	54	-11.58	0-360	99	H
4	21.727248	58.04	Pk	33.6	-65	16.5	43.14	74	-30.86	54	-10.86	0-360	99	V
5	24.843913	55.47	Pk	34.6	-64.4	17.7	43.37	74	-30.63	54	-10.63	0-360	99	H
6	24.940247	54.24	Pk	34.6	-64.4	17.7	42.14	74	-31.86	54	-11.86	0-360	99	V

PK – Peak Detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

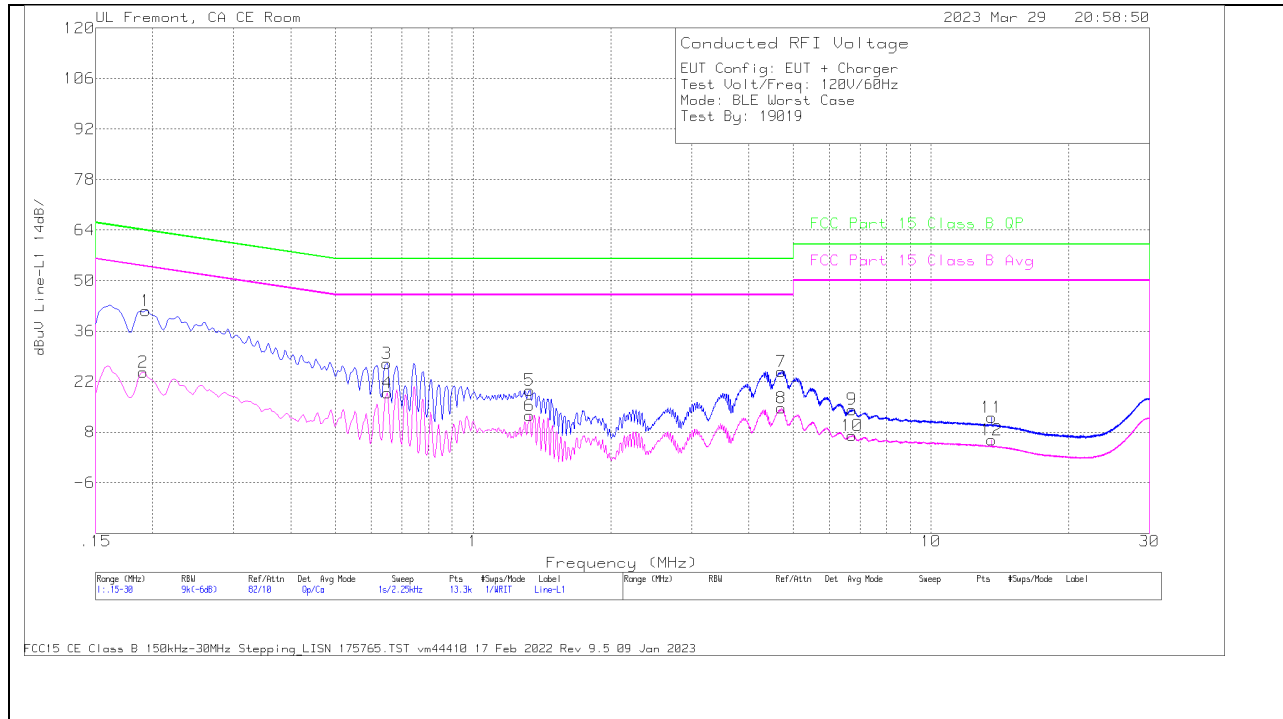
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1. AC Power Line WITH AC/DC ADAPTER

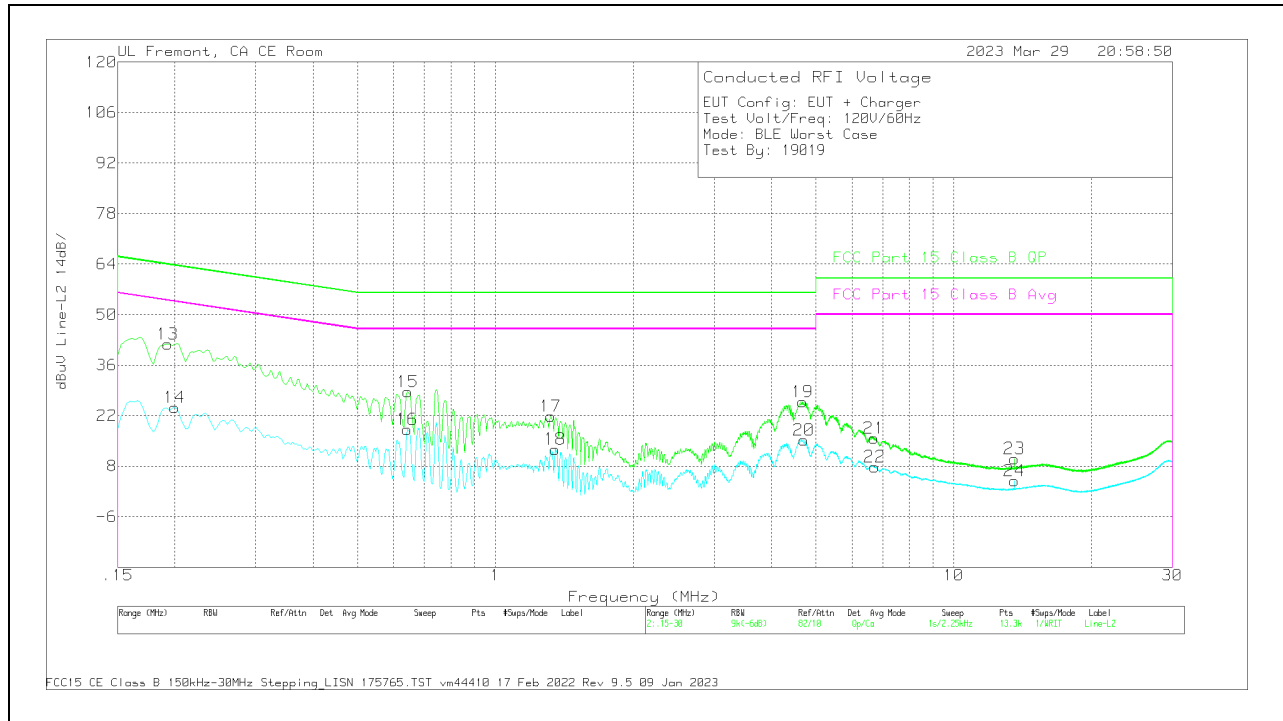
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)Margin (dB)
2	.1905	15.16	Ca	0	0	9.4	24.56	-	-	54.01	-29.45
4	.6495	9.43	Ca	0	.1	9.3	18.83	-	-	46	-27.17
6	1.329	3.22	Ca	0	.1	9.3	12.62	-	-	46	-33.38
8	4.7108	5.3	Ca	0	.1	9.3	14.7	-	-	46	-31.3
10	6.72	-2.42	Ca	0	.2	9.3	7.08	-	-	50	-42.92
12	13.56	-3.76	Ca	.1	.2	9.3	5.84	-	-	50	-44.16
1	.1928	32.2	Qp	0	0	9.4	41.6	63.92	-22.32	-	-
3	.6473	17.61	Qp	0	.1	9.3	27.01	56	-28.99	-	-
5	1.329	10.26	Qp	0	.1	9.3	19.66	56	-36.34	-	-
7	4.7108	15.46	Qp	0	.1	9.3	24.86	56	-31.14	-	-
9	6.72	4.78	Qp	0	.2	9.3	14.28	60	-45.72	-	-
11	13.56	2.44	Qp	.1	.2	9.3	12.04	60	-47.96	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS

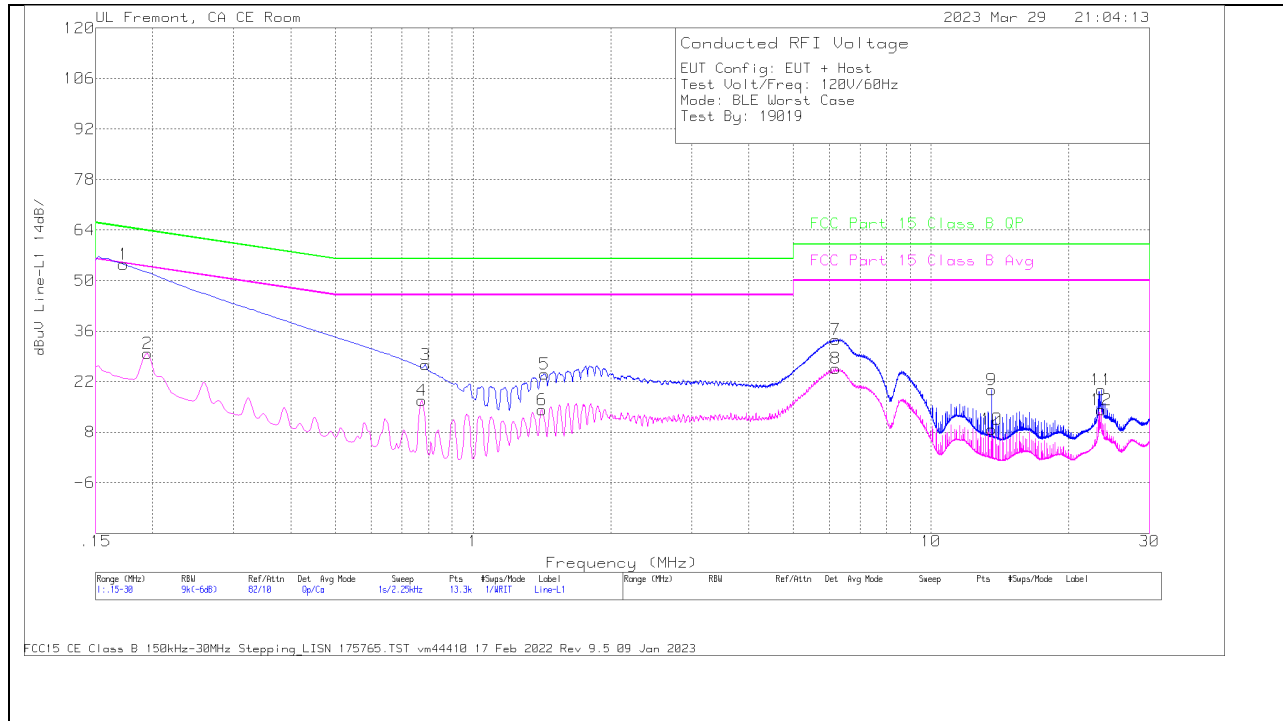


Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dBuV	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
14	.1995	14.94	Ca	0	0	9.4	24.34	-	-	53.63	-29.29
16	.6428	8.75	Ca	0	.1	9.3	18.15	-	-	46	-27.85
18	1.3515	3.31	Ca	0	.1	9.3	12.71	-	-	46	-33.29
20	4.7108	5.89	Ca	0	.1	9.3	15.29	-	-	46	-30.71
22	6.7223	-1.56	Ca	0	.1	9.3	7.84	-	-	50	-42.16
24	13.56	-5.59	Ca	.1	.2	9.3	4.01	-	-	50	-45.99
13	.1928	32.44	Qp	0	0	9.4	41.84	63.92	-22.08	-	-
15	.645	19.21	Qp	0	.1	9.3	28.61	56	-27.39	-	-
17	1.3223	12.39	Qp	0	.1	9.3	21.79	56	-34.21	-	-
19	4.6748	16.38	Qp	0	.1	9.3	25.78	56	-30.22	-	-
21	6.7065	6.37	Qp	0	.1	9.3	15.77	60	-44.23	-	-
23	13.56	.5	Qp	.1	.2	9.3	10.1	60	-49.9	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

11.2. AC POWER LINE WITH LAPTOP

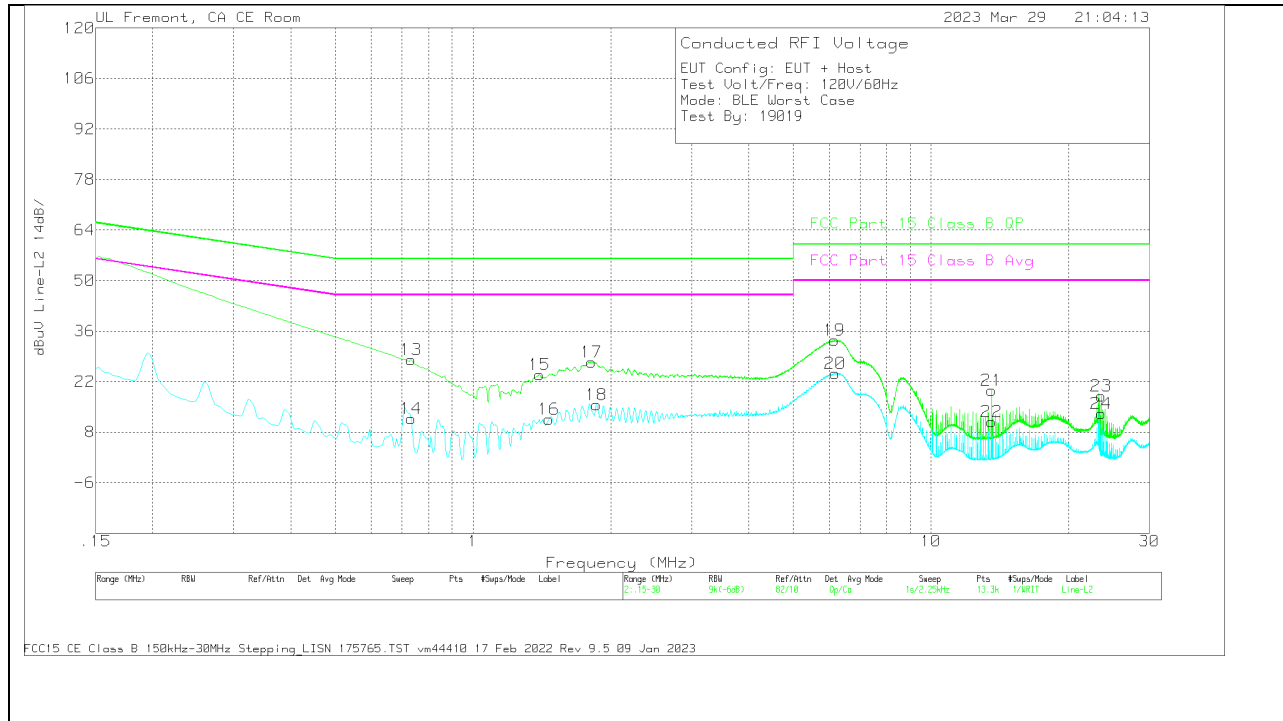
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L1_LISN.csv dB	C1&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
2	.195	20.41	Ca	0	0	9.4	29.81	-	-	53.82	-24.01
4	.7733	7.42	Ca	0	.1	9.3	16.82	-	-	46	-29.18
6	1.4145	4.84	Ca	0	.1	9.3	14.24	-	-	46	-31.76
8	6.189	16.2	Ca	0	.1	9.3	25.6	-	-	50	-24.4
10	13.56	-.83	Ca	.1	.2	9.3	8.77	-	-	50	-41.23
12	23.5073	4.36	Ca	.2	.3	9.4	14.26	-	-	50	-35.74
1	.1725	45.04	Qp	0	0	9.4	54.44	64.84	-10.4	-	-
3	.7868	17.32	Qp	0	.1	9.3	26.72	56	-29.28	-	-
5	1.4325	14.71	Qp	0	.1	9.3	24.11	56	-31.89	-	-
7	6.1958	24.29	Qp	0	.1	9.3	33.69	60	-26.31	-	-
9	13.56	10.15	Qp	.1	.2	9.3	19.75	60	-40.25	-	-
11	23.5073	9.87	Qp	.2	.3	9.4	19.77	60	-40.23	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	L2_LISN dB	C2&C3 cable path loss dB	207996 Limiter with short cabl dB	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av(CISPR)M argin (dB)
14	.7328	2.41	Ca	0	.1	9.3	11.81	-	-	46	-34.19
16	1.464	2.11	Ca	0	.1	9.3	11.51	-	-	46	-34.49
18	1.86	6.21	Ca	0	.1	9.3	15.61	-	-	46	-30.39
20	6.18	14.88	Ca	0	.1	9.3	24.28	-	-	50	-25.72
22	13.56	1.23	Ca	.1	.2	9.3	10.83	-	-	50	-39.17
24	23.5073	3.19	Ca	.2	.3	9.4	13.09	-	-	50	-36.91
13	.7328	18.66	Qp	0	.1	9.3	28.06	56	-27.94	-	-
15	1.3965	14.51	Qp	0	.1	9.3	23.91	56	-32.09	-	-
17	1.8161	18.02	Qp	0	.1	9.3	27.42	56	-28.58	-	-
19	6.1643	24.08	Qp	0	.1	9.3	33.48	60	-26.52	-	-
21	13.56	9.9	Qp	.1	.2	9.3	19.5	60	-40.5	-	-
23	23.5073	8.11	Qp	.2	.3	9.4	18.01	60	-41.99	-	-

Qp - Quasi-Peak detector
 Ca - CISPR average detection

12. SETUP PHOTOS

Please refer to setup photos 14523740-EP1V1

END OF TEST REPORT