TEST REPORT

Report Number: 13573777-E2V2

Applicant	:	APPLE, INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A
Model	:	A2481 (Parent Model, Full Test) A2626, A2628, A2629, A2630 (Variant Models)
FCC ID	:	BCG-E3994A (Parent Model, Full Test) BCG-E3996A, BCG-E4029A, BCG-E4030A (Variant Models)
IC	:	579C-E3994A (Parent Model, Full Test) 579C-E3996A, 579C-E4029A, 579C-E4030A (Variant Models)
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C ISED RSS-247 ISSUE 2 ISED RSS-GEN ISSUE 5

Date of Issue:
August 05, 2021

Prepared by:
UL Verification Services Inc.
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ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	7/26/2021	Initial Issue	Frank Ibrahim
V2	8/5/2021	Address TCB: Updated section 6.5; Updated Section 8. Equipment list; updated pg 25, 6dB test mode justification; updated section 9.6 PSD test description; input new BE data pg 62 and updated Max power table.	Francisco Guarnero

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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:	SMARTPHONE
MODEL:	A2481 (Parent Model, Full Test) A2626, A2628, A2629, A2630 (Variant Models)
BRAND:	APPLE
FCC ID:	BCG-E3994A (Parent Model, Full Test) BCG-E3996A, BCG-E4029A, BCG-E4030A (Variant Models)
IC ID:	579C-E3994A (Parent Model, Full Test) 579C-E3996A, 579C-E4029A, 579C-E4030A (Variant Models)
SERIAL NUMBER:	US1H9; C7CF300D10Y2; G0HFYT6X7Q
SAMPLE RECEIPT DATE:	03/25/2021; 02/09/2021; 06/28/2021
DATE TESTED:	MARCH 17, 2021 – AUGUST 5, 2021

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5	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 NVLAP, NIST, any agency of the Federal Government, or any agency of the U.S. government.

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Approved & Released For
UL Verification Services Inc. By:

Frank Ibrahim
Staff Engineer
Consumer Technology Division
UL Verification Services Inc.

Prepared By:

Francisco Guarnero
Test Engineer
Consumer Technology Division
UL Verification Services Inc.

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2. TEST SUMMARY

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

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
N/A	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
- FCC KDB 662911 D01 v02r01
- RSS-GEN Issue 5 + A1 + A2
- RSS-247 Issue 2

4. FACILITIES AND ACCREDITATION

UL LLC 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
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538	US0104	2324A	208313
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538	US0104	22541	208313
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538	US0104	2324B	208313

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{Lab}
Worst Case 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%.

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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, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and MSS. All models support at least one UICC based SIM. The second SIM is either an UICC based p-SIM (physical SIM) or e-SIM (electronic SIM). The device supports a built-in inductive charging transmitter and receiver. The rechargeable battery is not user accessible.

Testing was performed on the parent model and is used to support the application for the parent and variants identified in this report based on the test plan submitted and approved via KDB inquiry by the FCC and by ISED-Canada.

The Models and FCC and IC ID covered by this report include:

Parent Model: A2481; FCC ID: BCG-E3994A; IC ID: 579C-E3994A

Variant Models: A2626; FCC ID: BCG-E3996A; IC ID: 579C-E3996A
A2628; FCC ID: BCG-E4029A; IC ID: 579C-E4029A
A2629; FCC ID: BCG-E4030A; IC ID: 579C-E4030A
A2630; FCC ID: BCG-E4030A; IC ID: 579C-E4030A

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	20.48	111.69
	Low Power			11.34	13.61
	High Power	2404 - 2478	BLE 2M	20.86	121.90
	Low Power			11.42	13.87
ANT 3	High Power	2402 - 2480	BLE 1M	20.06	101.39
	Low Power			11.19	13.15
	High Power	2404 - 2478	BLE 2M	20.13	103.04
	Low Power			11.53	14.22
BF, ANT 4 + ANT 3	High Power	2402 - 2480	BLE 1M	20.25	105.93
	Low Power			14.30	26.92
	High Power	2404 - 2478	BLE 2M	20.76	119.12
	Low Power			14.40	27.54

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6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna Type is IFA.
The antennas' gains, as provided by the manufacturer, are as follows:

Frequency Range (GHz)	ANT 4 (dBi)	ANT 3 (dBi)
2.4	-3.00	-0.70

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 19.1.309.2612

6.5. WORST-CASE CONFIGURATION AND MODE

The EUT was investigated in three orthogonal orientations X, Y and Z on ANT 4 (Core 0) and ANT 3 (Core 1). It was determined that X (Flatbed) was the worst-case orientation for ANT 4, ANT 3 and 2TX TxBF.

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 AC power line conducted emissions were performed with the EUT transmitting at the channel with the highest output power as worst-case scenario.

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

For below 30MHz testing, investigation was done on three antenna orientations: RX antenna Face-on, Face-off and horizontal (parallel to ground). The worst-case configurations were determined on RX antenna Face-on and Face-off; therefore, all final tests were performed using these two orientations.

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

There are two vendors of the WiFi/Bluetooth radio modules: variant 1 and variant 2. The Wi-Fi/Bluetooth radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances.

Baseline testing was performed on the two variants to determine the worst case on all conducted power and radiated emissions.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID/ DoC**
Laptop	Apple	Macbook Pro	C02YL3ZMJHC8	BCGA1989
Laptop AC/DC adapter	Apple	A1424	NSW25679	DoC
EUT AC/DC adapter	Apple	A1720	C3D8417A7R93KVPA8	DoC

I/O CABLES (RF 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	1.0	N/A
3	Antenna	1	SMA	Un-shielded	0.2	To spectrum Analyzer

I/O CABLES (RF RADIATED 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	Un-shielded	1	N/A

TEST SETUP

The EUT is connected to a test laptop during the tests. Test software exercised the radio card.

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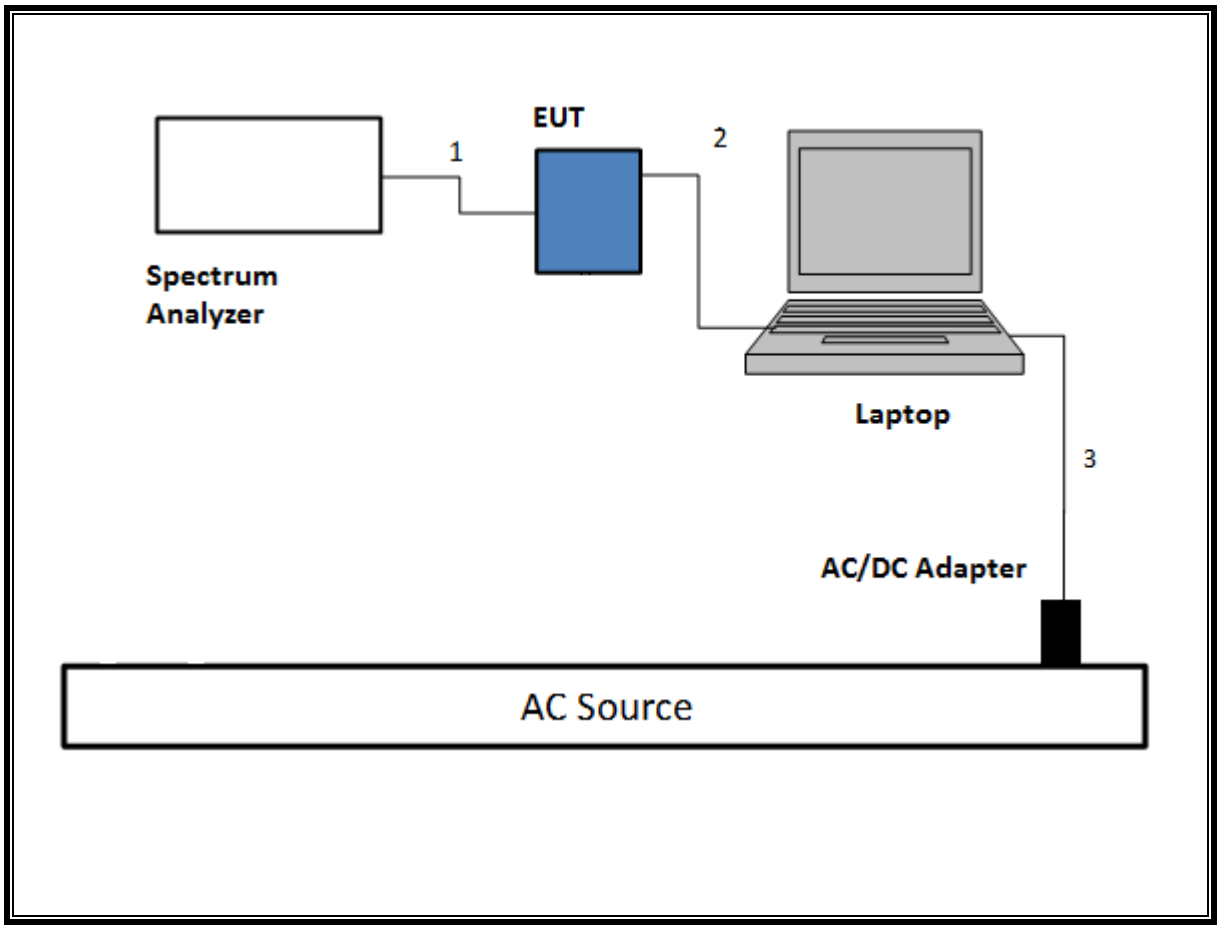
SETUP DIAGRAM FOR CONDUCTED TESTS



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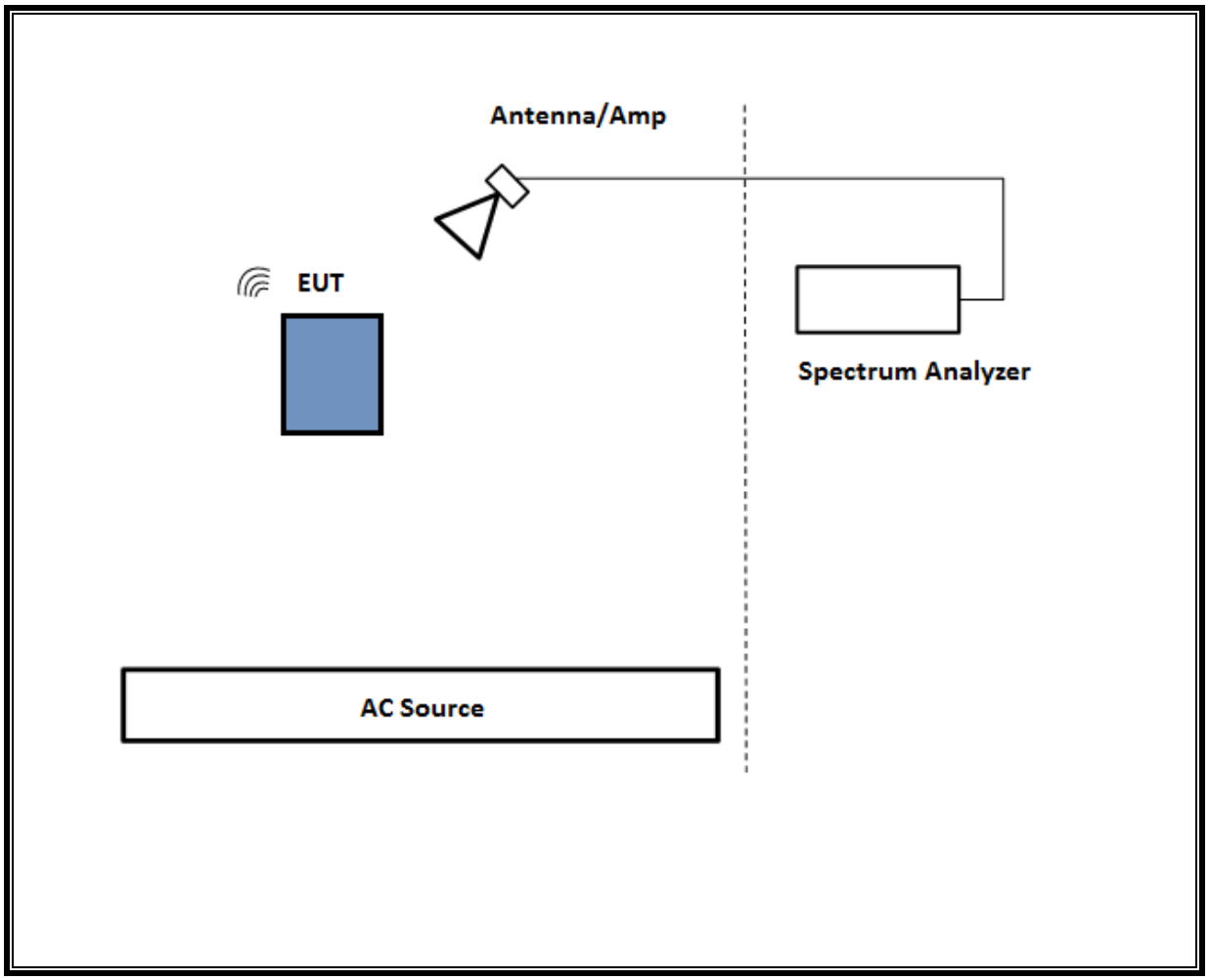
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



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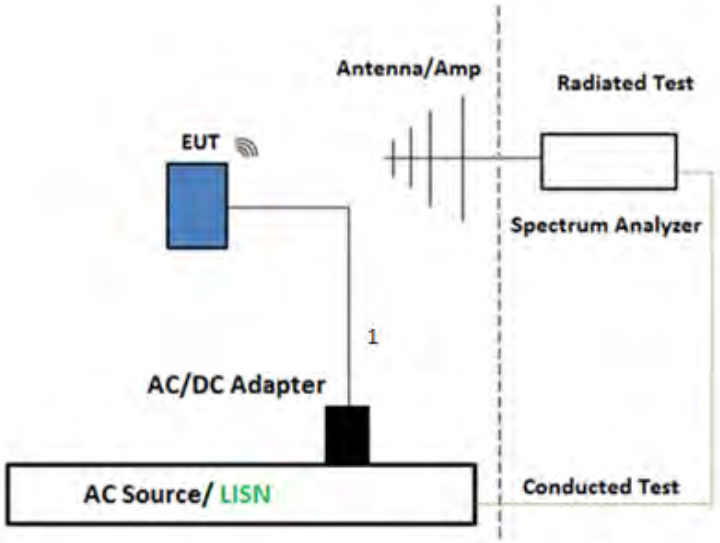
SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



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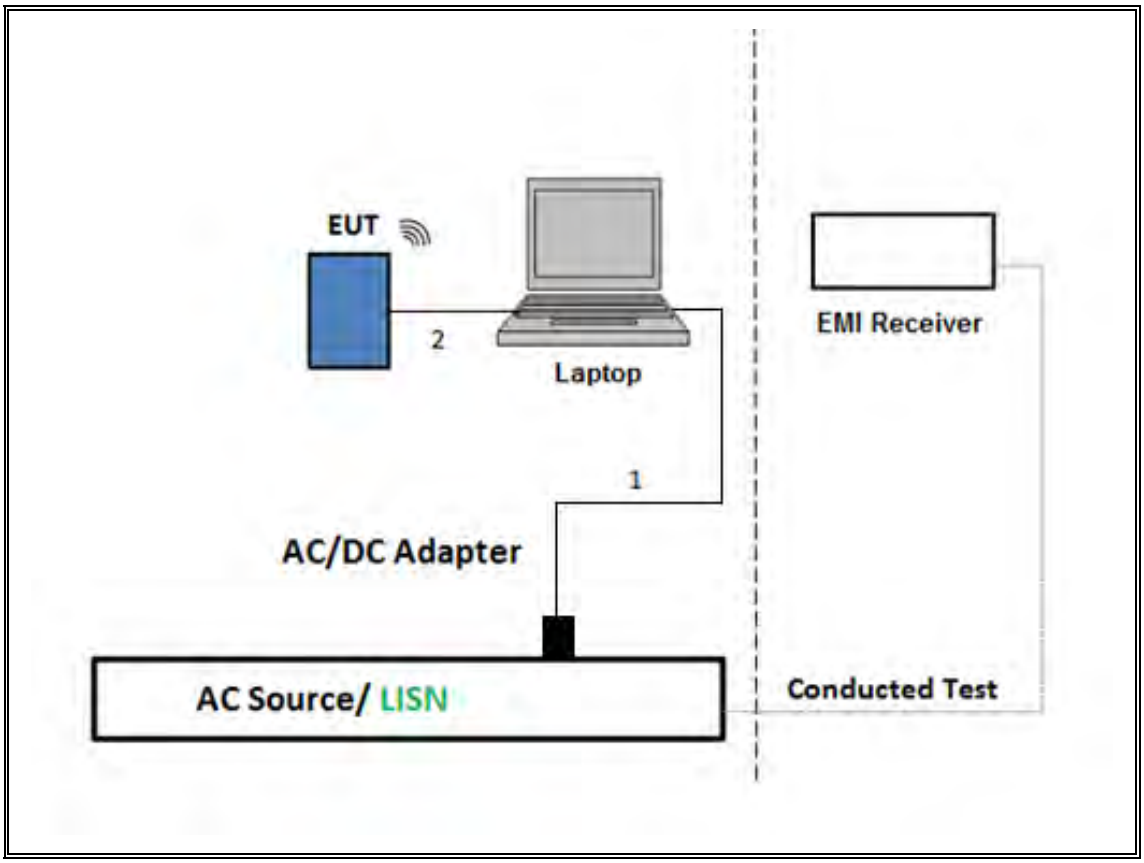
TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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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 ≥ 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

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.

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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
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T341	01/28/2022	01/28/2021
Power Meter, P-series single channel	Keysight	N1912A	T1244	01/25/2022	01/25/2021
Power Sensor	Keysight	N1921A	T1224	01/25/2022	01/25/2021
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	PRE0213973	02/16/2022	02/16/2021
Amplifier, 100MHz -18GHz	AMPLICAL	AMP0.1G18-47-20	205876	03/14/2022	03/14/2021
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	02/26/2022	02/26/2021
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	T136	07/07/2021	07/07/2020
RF Amplifier, 1-18GHz	MITEQ	AFS42-00101800-25-S-42	T1165	06/12/2022	06/12/2021
Spectrum Analyzer	Keysight Technologies Inc	N9030A	SA0016	11/25/2021	11/25/2020
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	PRE0213831	12/03/2021	12/03/2020
Rf Amplifier 1-18GHz, 45dB Min	AMPLICAL	AMP0.1G18-47-20	172122	12/31/2021	12/31/2020
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201498	02/25/2022	02/25/2021
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB3	T900	02/24/2022	02/24/2021
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	T173	07/22/2021	07/22/2020
Spectrum Analyzer, PXA, 3Hz to 50GHz	Keysight Technologies Inc	N9030A	T342	01/25/2022	01/25/2021
Antenna, Active Loop 9KHz to 30MHz	EMCO	6502	T35	11/23/2021	11/23/2020
*Antenna Horn, 18 to 26GHz	ARA	SWH-28	T125	04/17/2021	04/17/2020
*Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	04/08/2021	04/08/2020

AC Line Conducted					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	T1436	02/19/2022	02/19/2021
Power Cable, Line Conducted Emissions	UL	PR1	T861	10/27/2021	10/27/2020
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01	PRE0186446	01/20/2022	01/20/2021
UL AUTOMATION SOFTWARE					
Radiated Software	UL	UL EMC	Ver 9.5, Mar 6, 2020		
Conducted Software	UL	UL EMC	2020.2.26		
AC Line Conducted Software	UL	UL EMC	Ver 9.5, February 21, 2020		

*Testing is completed before equipment expiration date.

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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	5.00	5.00	1.000	100.00%	0.00	0.010
BLE, 2Mbps	5.00	5.00	1.000	100.00%	0.00	0.010
BLE, TXBF, 1Mbps	5.00	5.00	1.000	100.00%	0.00	0.010
BLE, TXBF, 2Mbps	5.00	5.00	1.000	100.00%	0.00	0.010

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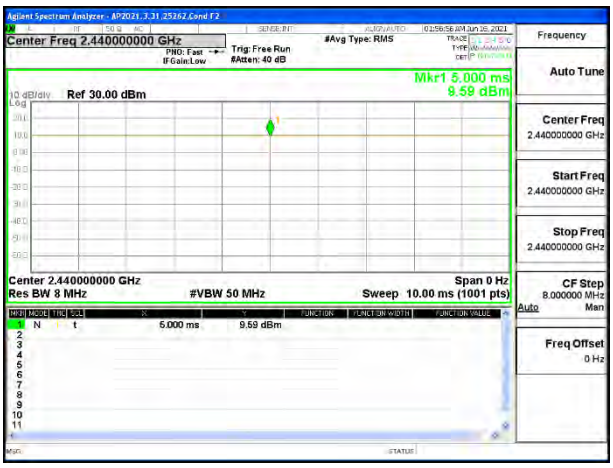
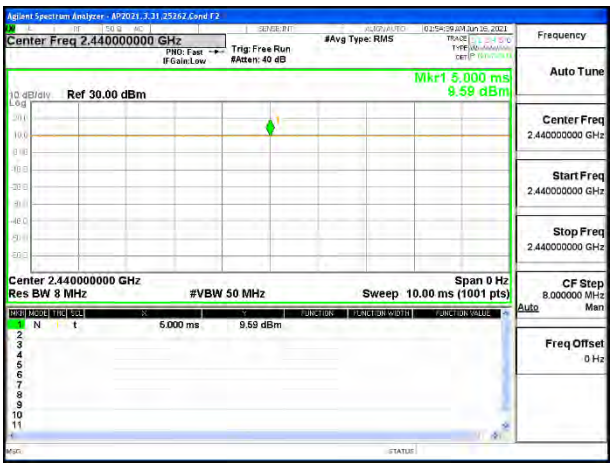
DUTY CYCLE PLOTS

BLE 1Mbps

BLE 2Mbps



BLE TXBF 1Mbps



BLE TXBF 2Mbps

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9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

Only High-Power modes results are reported, they cover all Low Power modes. Only Mid channel plot is reported to show analyzer settings.

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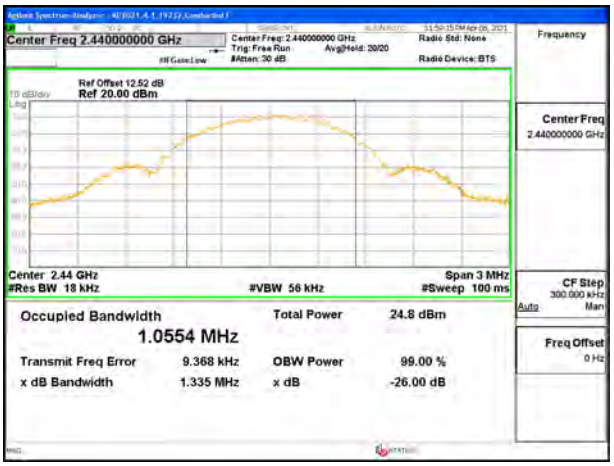
9.2.1. **HIGH POWER BLE (1Mbps)**

ANT 4

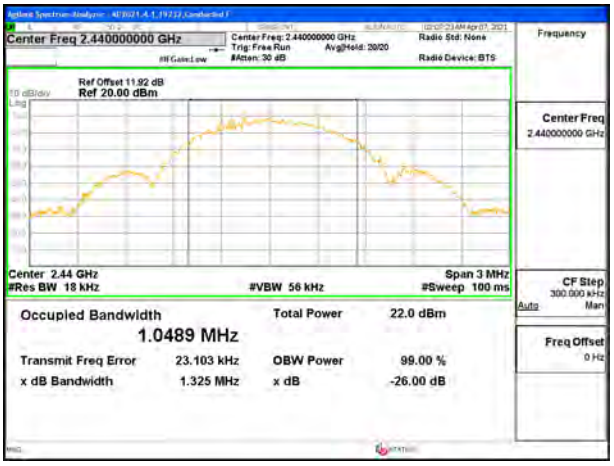
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0467
Middle	2440	1.0554
High	2480	1.0528



MID CHANNEL

ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0501
Middle	2440	1.0489
High	2480	1.0516



MID CHANNEL

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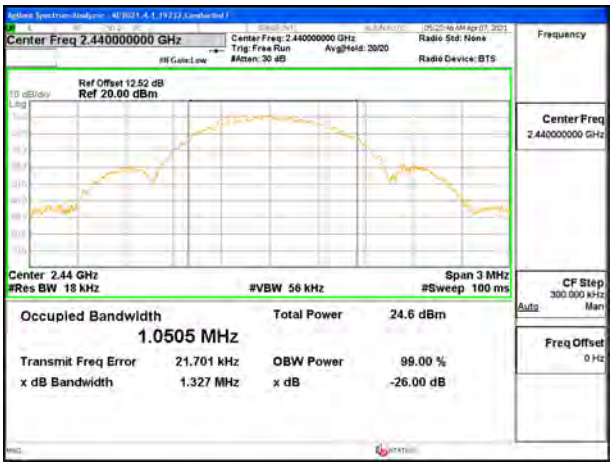
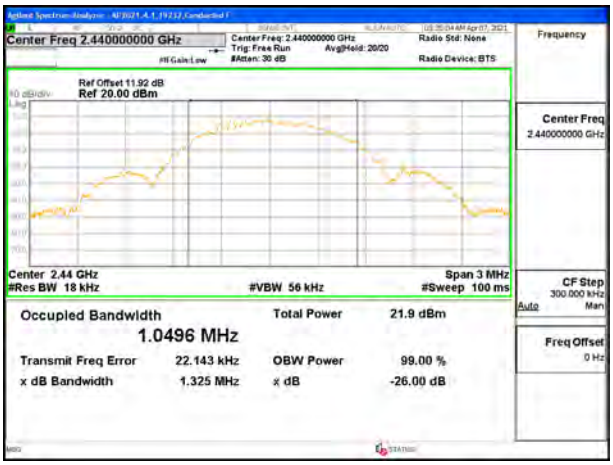
9.2.2. **HIGH POWER BLE TXBF (1Mbps)**

Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2402	1.0498	1.0482
Mid	2440	1.0505	1.0496
High	2480	1.0508	1.0460

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



MID CHANNEL ANT 4



MID CHANNEL ANT 3

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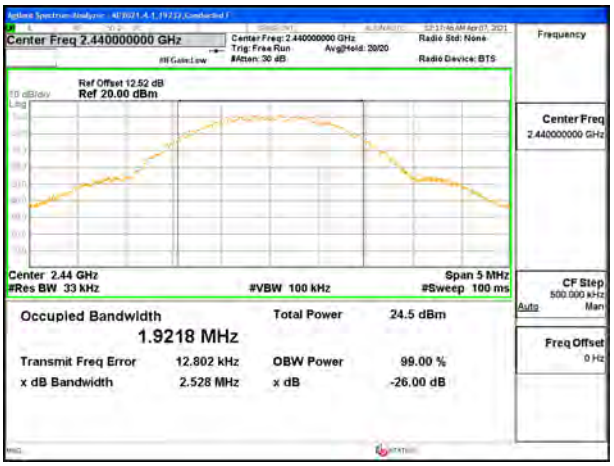
9.2.3. **HIGH POWER BLE (2Mbps)**

ANT 4

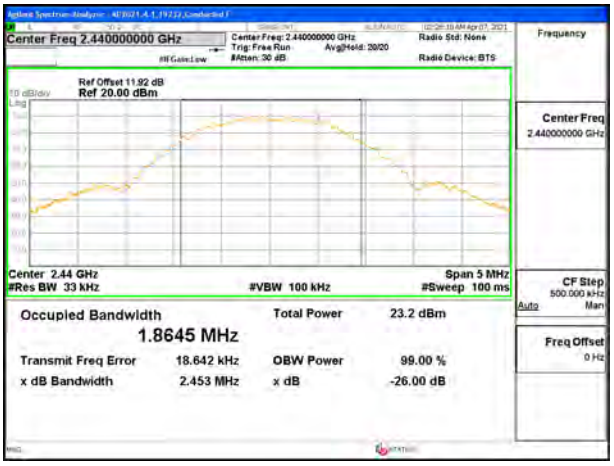
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	1.9136
Middle	2440	1.9218
High	2478	1.9170



MID CHANNEL

ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	1.8634
Middle	2440	1.8645
High	2478	1.8714



MID CHANNEL

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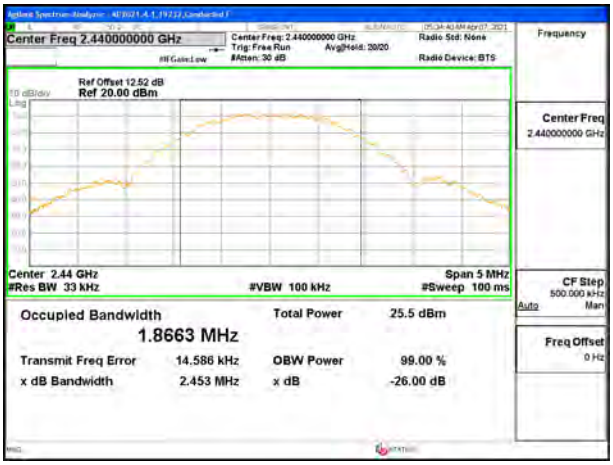
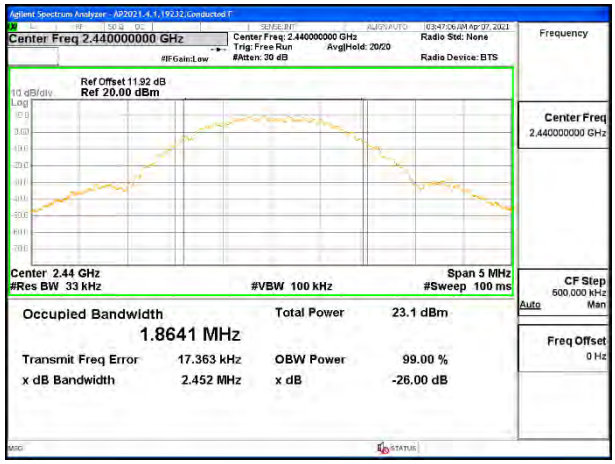
9.2.4. **HIGH POWER BLE TXBF (2Mbps)**

Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2404	1.8668	1.8642
Mid	2440	1.8663	1.8641
High	2478	1.8694	1.8711

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



MID CHANNEL ANT 4



MID CHANNEL ANT 3

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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.

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9.3.1. **HIGH POWER BLE (1Mbps)**

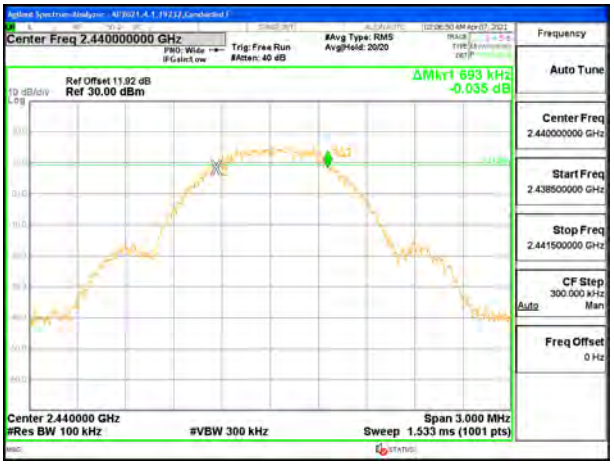
ANT 4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.684	0.5
Middle	2440	0.675	0.5
High	2480	0.729	0.5

MID CHANNEL

ANT 3

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.675	0.5
Middle	2440	0.693	0.5
High	2480	0.684	0.5



MID CHANNEL

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9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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

TEST PROCEDURE

The 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 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	-3.00	-0.70	-1.70	1.24

RESULTS

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9.4.1. HIGH POWER BLE (1Mbps)

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	20.47	30	-9.53
Middle	2440	20.38	30	-9.62
High	2480	20.48	30	-9.52

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	19.98	30	-10.02
Middle	2440	20.06	30	-9.94
High	2480	20.00	30	-10.00

9.4.2. HIGH POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	17.15	17.26	20.22	30	-9.78
Middle	2440	17.31	17.16	20.25	30	-9.75
High	2480	16.90	17.09	20.01	30	-9.99

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9.4.3. **HIGH POWER BLE (2Mbps)**

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	20.80	30	-9.20
Middle	2440	20.86	30	-9.14
High	2478	20.85	30	-9.15

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	20.06	30	-9.94
Middle	2440	20.13	30	-9.87
High	2478	20.00	30	-10.00

9.4.4. **HIGH POWER BLE TXBF (2Mbps)**

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	17.64	17.73	20.70	30	-9.30
Middle	2440	17.66	17.72	20.70	30	-9.30
High	2478	17.56	17.93	20.76	30	-9.24

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9.4.5. LOW POWER BLE (1Mbps)

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.75	30	-19.25
Middle	2440	11.34	30	-18.66
High	2480	11.02	30	-18.98

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	11.19	30	-18.81
Middle	2440	11.18	30	-18.82
High	2480	11.14	30	-18.86

9.4.6. LOW POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.77	11.12	13.96	30	-16.04
Middle	2440	11.25	11.33	14.30	30	-15.70
High	2480	10.82	11.02	13.93	30	-16.07

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9.4.7. LOW POWER BLE (2Mbps)

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	10.92	30	-19.08
Middle	2440	11.42	30	-18.58
High	2478	11.21	30	-18.79

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	11.26	30	-18.74
Middle	2440	11.53	30	-18.47
High	2478	11.31	30	-18.69

9.4.8. LOW POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Output Power ANT 4 (dBm)	Output Power ANT 3 (dBm)	Total Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	11.05	11.35	14.21	30	-15.79
Middle	2440	11.37	11.40	14.40	30	-15.60
High	2478	10.96	11.28	14.13	30	-15.87

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9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

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

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9.5.1. HIGH POWER BLE (1Mbps)

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	19.99
Middle	2440	19.90
High	2480	19.98

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	19.49
Middle	2440	19.48
High	2480	19.44

9.5.2. HIGH POWER BLE TXBF (1Mbps)

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2402	16.85	16.91	19.89
Middle	2440	16.99	16.90	19.96
High	2480	16.58	16.80	19.70

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9.5.3. **HIGH POWER BLE (2Mbps)**

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	19.94
Middle	2440	19.85
High	2478	20.00

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	19.35
Middle	2440	19.48
High	2478	19.42

9.5.4. **HIGH POWER BLE TXBF (2Mbps)**

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	16.76	16.85	19.82
Middle	2440	16.82	16.91	19.88
High	2478	16.70	16.96	19.84

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9.5.5. **LOW POWER BLE (1Mbps)**

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.56
Middle	2440	10.99
High	2480	10.75

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.98
Middle	2440	10.91
High	2480	10.91

9.5.6. **LOW POWER BLE TXBF (1Mbps)**

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2402	10.58	10.96	13.78
Middle	2440	10.99	10.97	13.99
High	2480	10.67	10.86	13.78

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9.5.7. LOW POWER BLE (2Mbps)

ANT 4

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	10.70
Middle	2440	10.98
High	2478	10.80

ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	10.86
Middle	2440	10.98
High	2478	10.98

9.5.8. LOW POWER BLE TXBF (2Mbps)

ANT 4 + ANT 3

Tested By:	19232
Date:	6/30/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	10.65	10.99	13.83
Middle	2440	10.99	10.91	13.96
High	2478	10.69	10.98	13.85

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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

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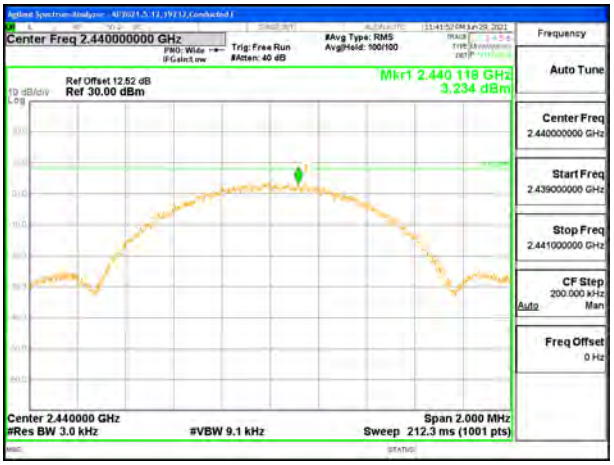
9.6.1. **HIGH POWER BLE (1Mbps)**

ANT 4

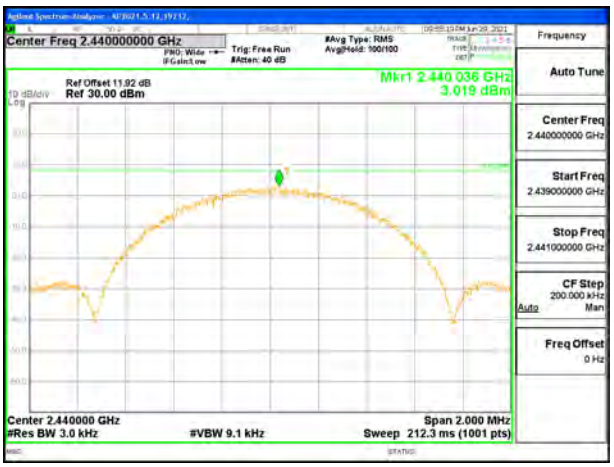
Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.576	8	-4.42
Middle	2440	3.234	8	-4.77
High	2480	3.192	8	-4.81



MID CHANNEL

ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.047	8	-4.95
Middle	2440	3.019	8	-4.98
High	2480	2.974	8	-5.03



MID CHANNEL

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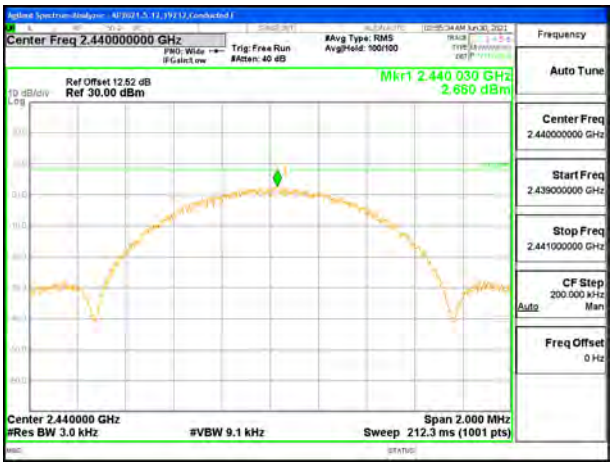
9.6.2. **HIGH POWER BLE TXBF (1Mbps)**

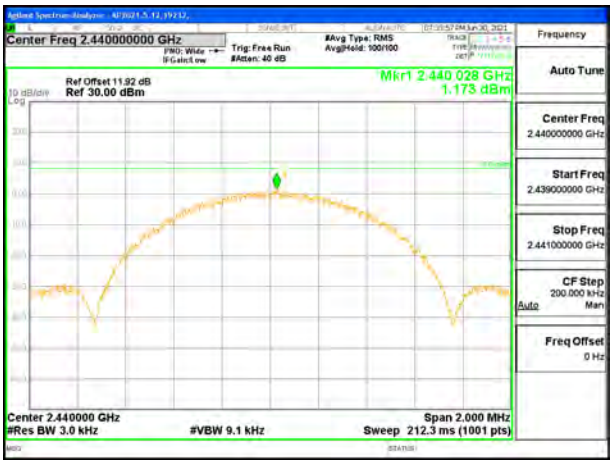
PSD Results

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	1.845	1.077	4.49	8.0	-3.5
Mid	2440	2.660	1.173	4.99	8.0	-3.0
High	2480	1.683	0.470	4.13	8.0	-3.9

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



MID CHANNEL ANT 4



MID CHANNEL ANT 3

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9.6.3. **HIGH POWER BLE (2Mbps)**

ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-0.422	8	-8.42
Middle	2440	-0.637	8	-8.64
High	2478	-0.516	8	-8.52

MID CHANNEL

ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-1.165	8	-9.17
Middle	2440	-0.973	8	-8.97
High	2478	-1.209	8	-9.21

MID CHANNEL

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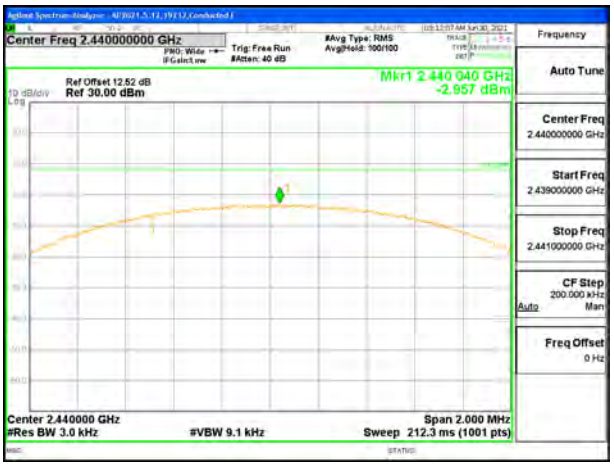
9.6.4. **HIGH POWER BLE TXBF (2Mbps)**

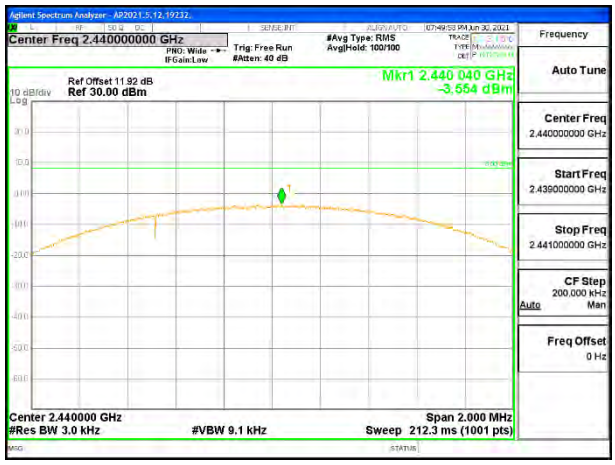
PSD Results

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	-3.375	-3.596	-0.47	8.0	-8.5
Mid	2440	-2.957	-3.554	-0.23	8.0	-8.2
Hjigh	2478	-3.483	-3.618	-0.54	8.0	-8.5

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



MID CHANNEL ANT 4



MID CHANNEL ANT 3

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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 dB.

RESULTS

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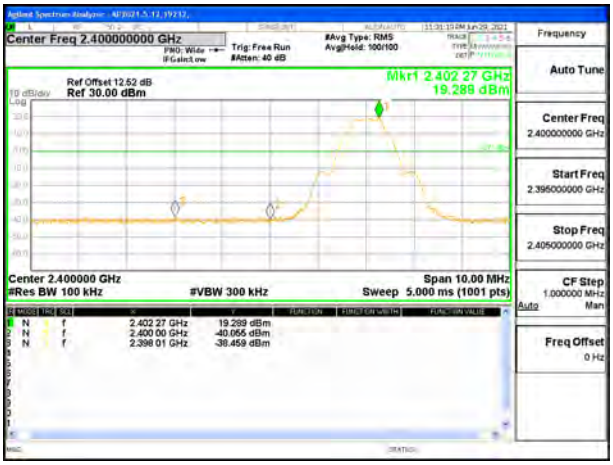
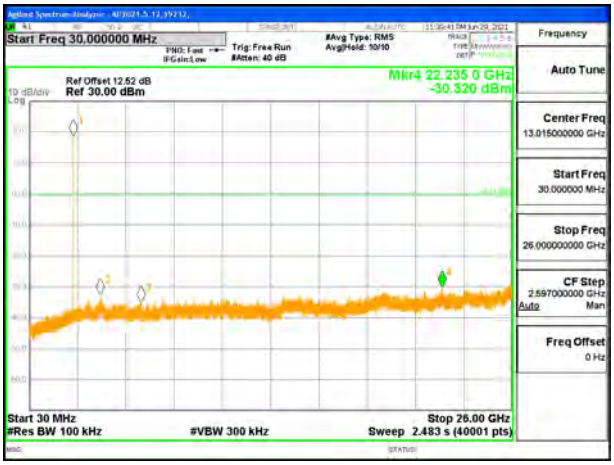
9.7.1. **HIGH POWER BLE (1Mbps)**

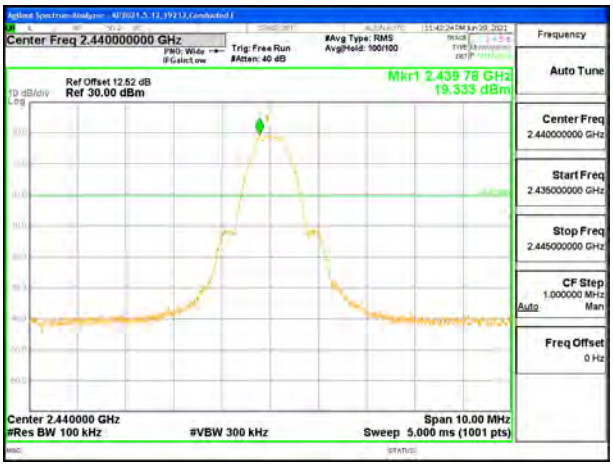
ANT 4



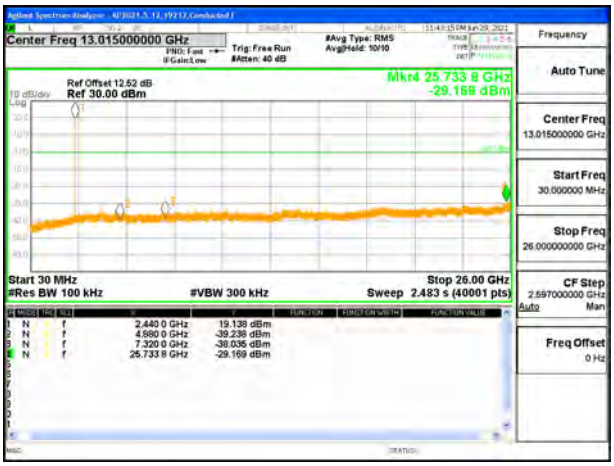
LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

HIGH CHANNEL BANDEDGE

OUT-OF-BAND HIGH CHANNEL

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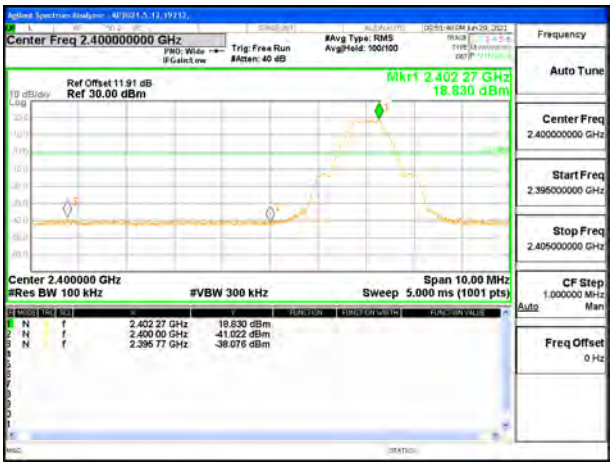
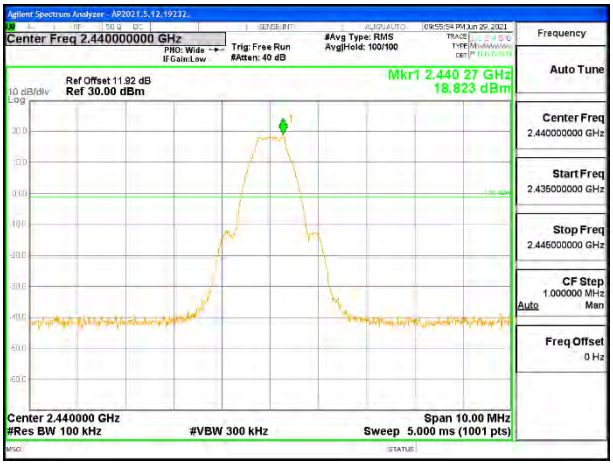
ANT 3



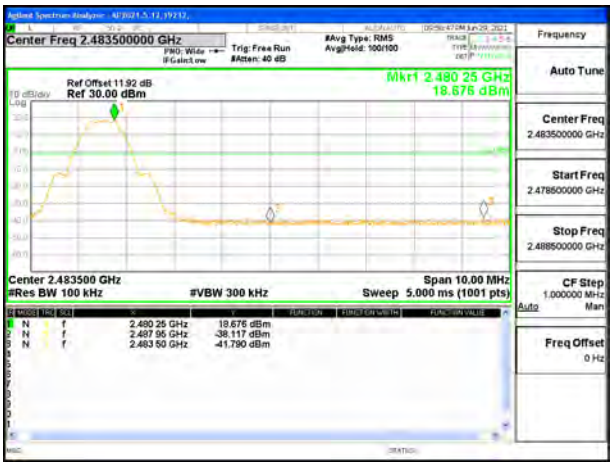
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

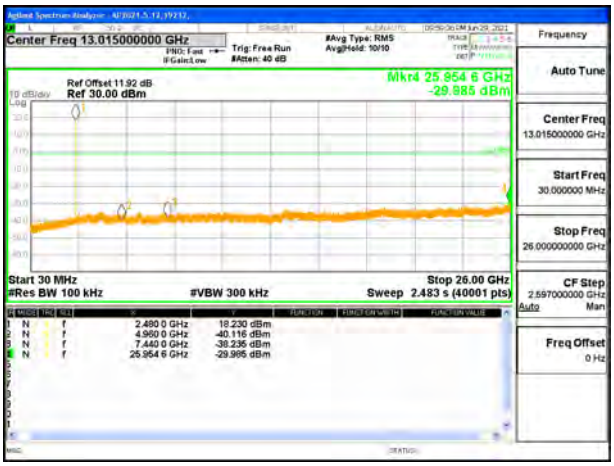


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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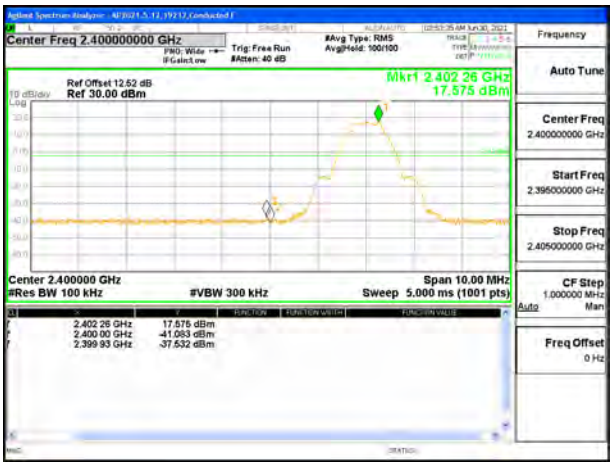
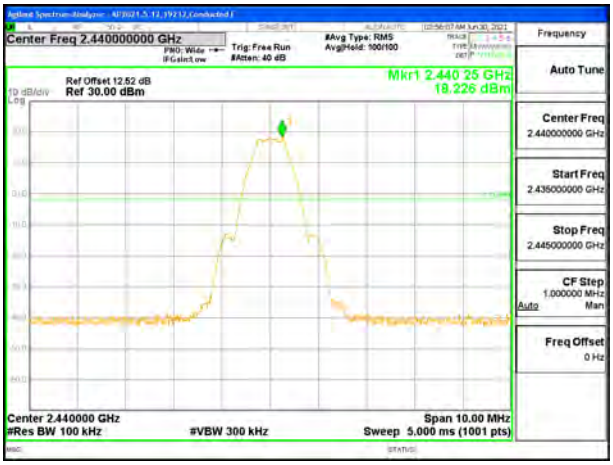
9.7.2. **HIGH POWER BLE TXBF (1Mbps)**

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

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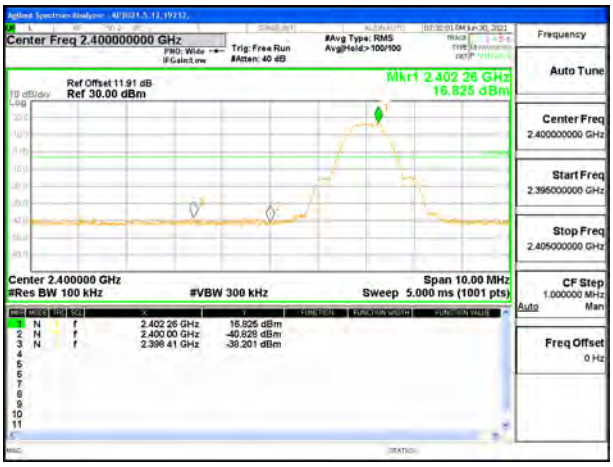
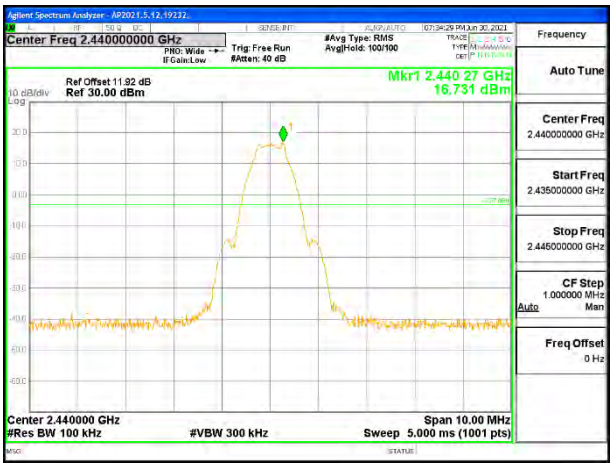
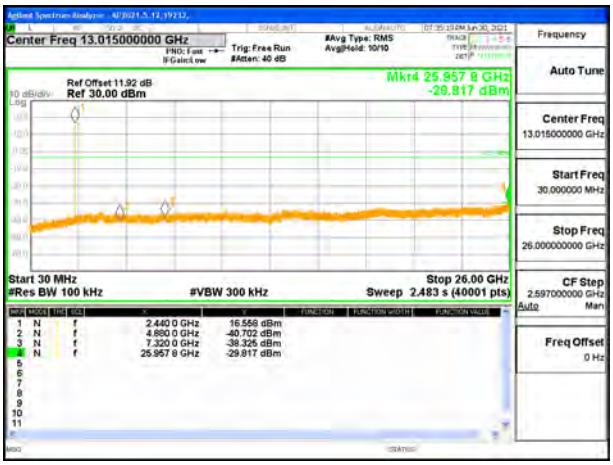


LOW CHANNEL, BANDEDGE ANT 3

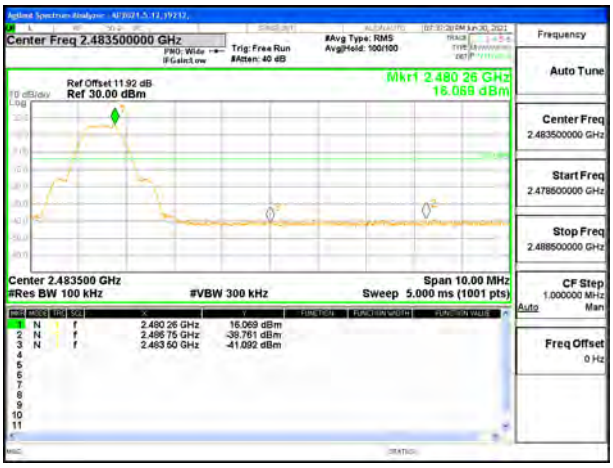
LOW CHANNEL OUT-OF-BAND ANT 3



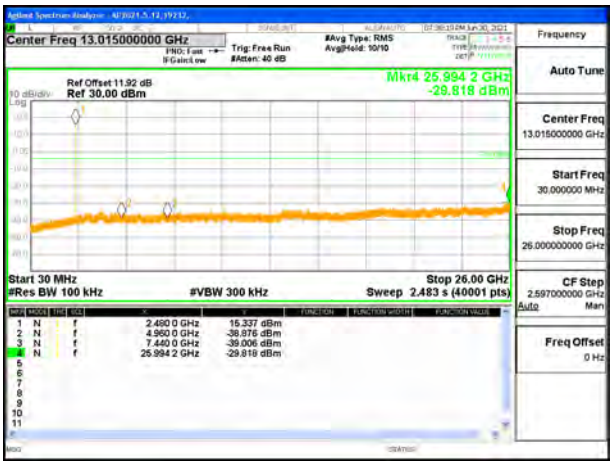
MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



HIGH CHANNEL OUT-OF-BAND ANT 3

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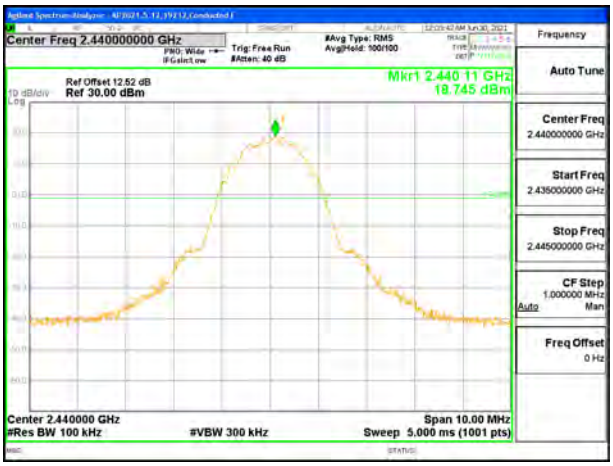
9.7.3. **HIGH POWER BLE (2Mbps)**

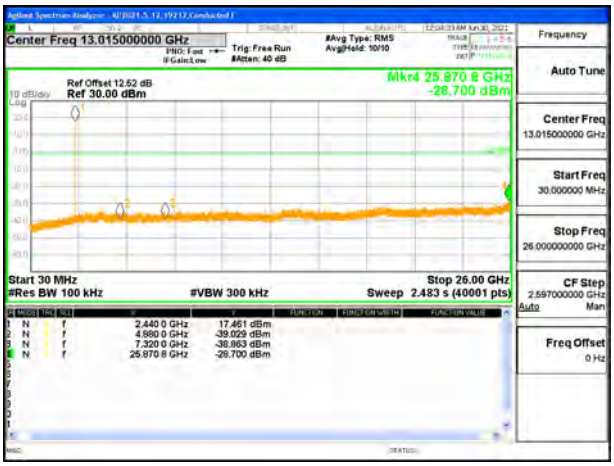
ANT 4

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

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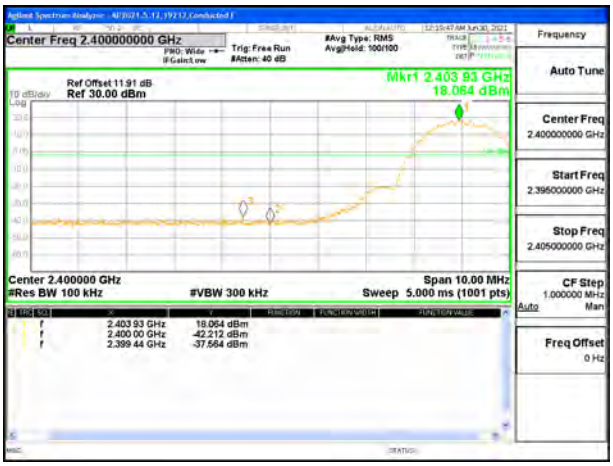
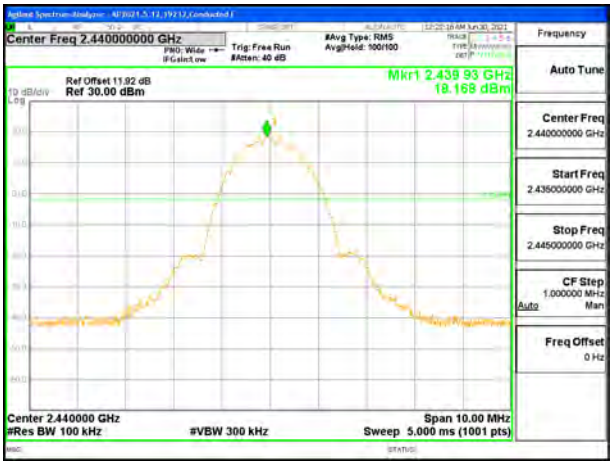
ANT 3

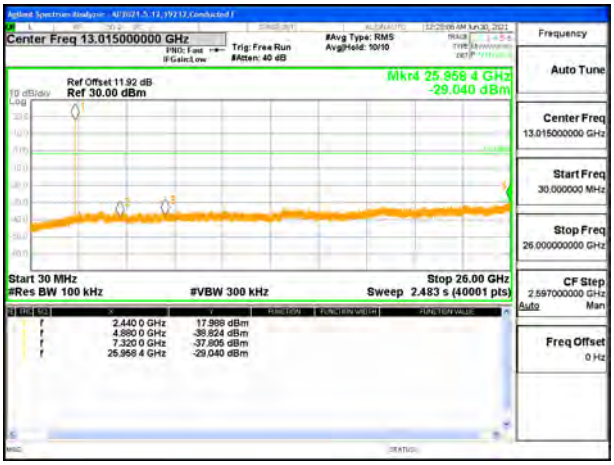


LOW CHANNEL BANDEDGE

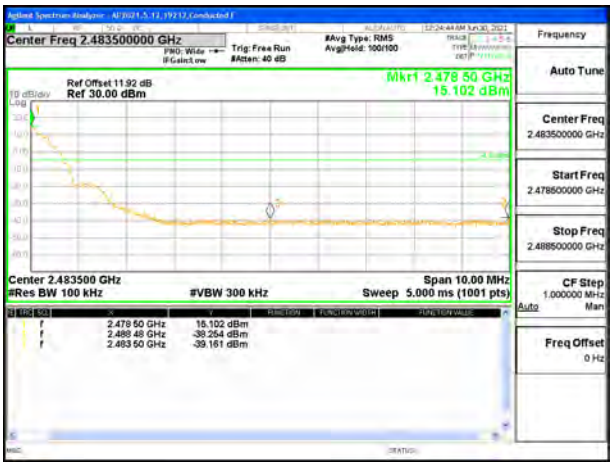
OUT-OF-BAND LOW CHANNEL



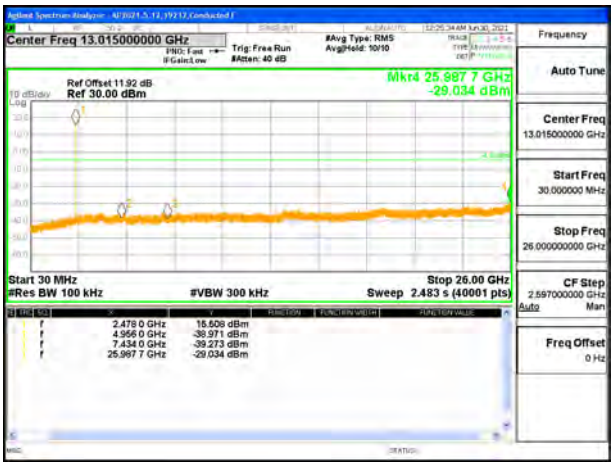
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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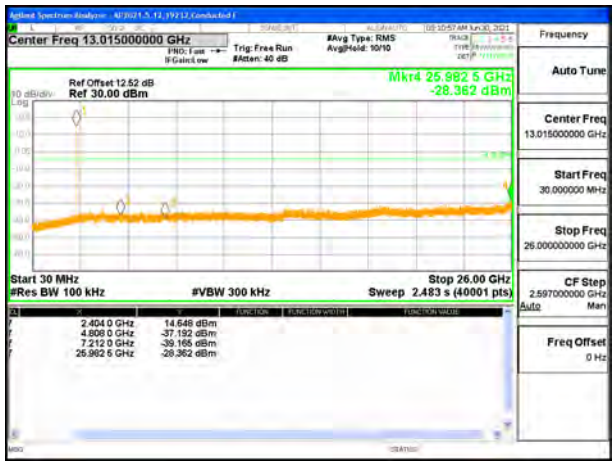
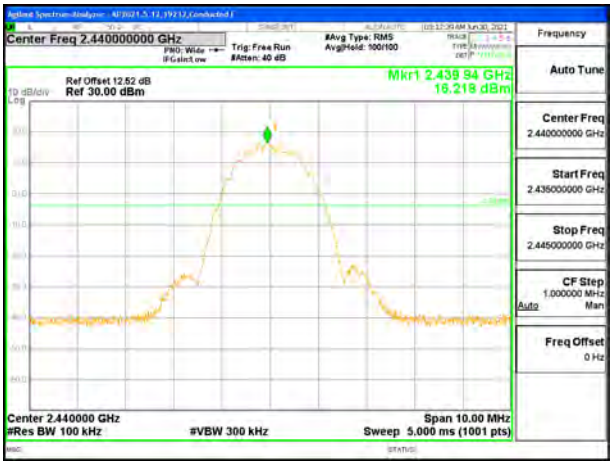
9.7.4. **HIGH POWER BLE TXBF (2Mbps)**

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

LOW CHANNEL, BANDEDGE ANT 4

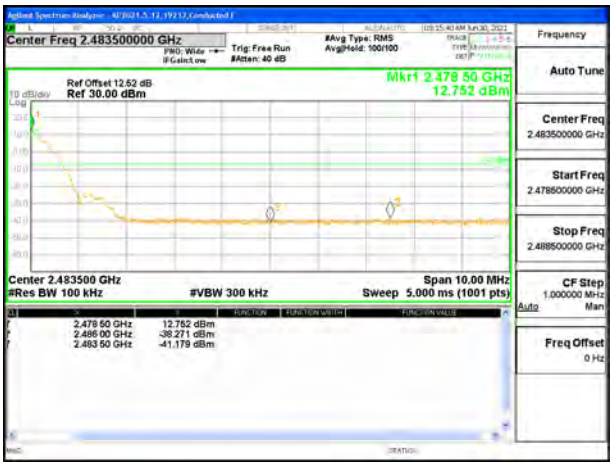


LOW CHANNEL OUT-OF-BAND ANT 4

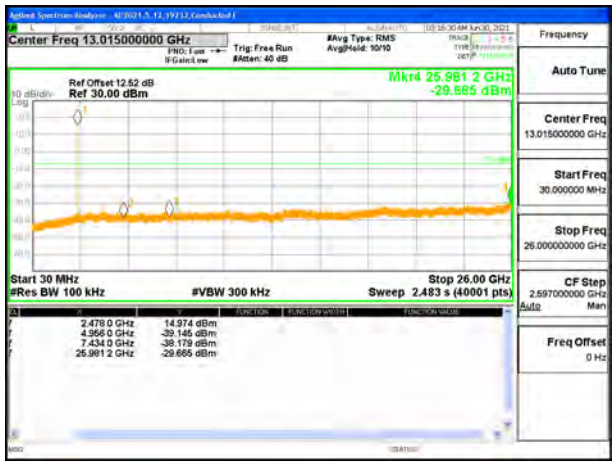


MID CHANNEL REFERENCE ANT 4

MID CHANNEL OUT-OF-BAND ANT 4



HIGH CHANNEL BANDEDGE ANT 4



HIGH CHANNEL OUT-OF-BAND ANT 4

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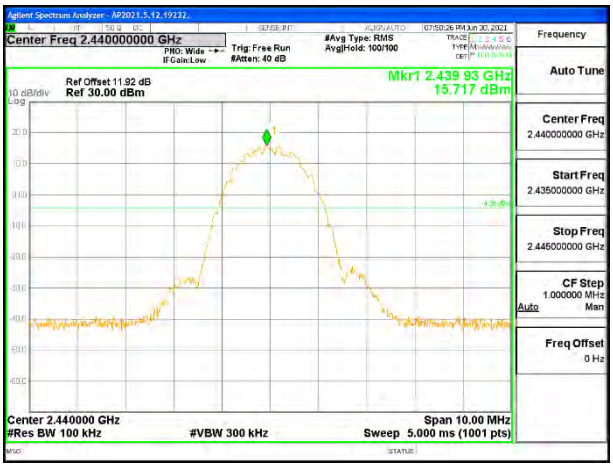
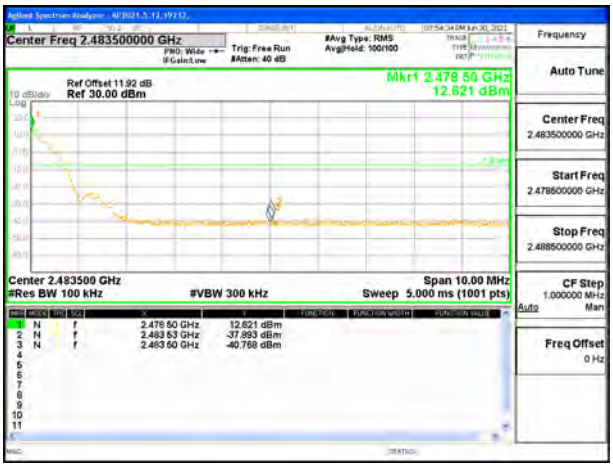
LOW CHANNEL, BANDEDGE ANT 3

LOW CHANNEL OUT-OF-BAND ANT 3

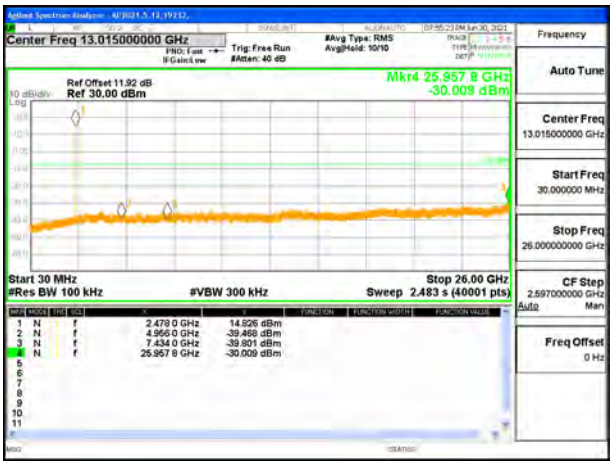


MID CHANNEL REFERENCE ANT 3

MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3



HIGH CHANNEL OUT-OF-BAND ANT 3

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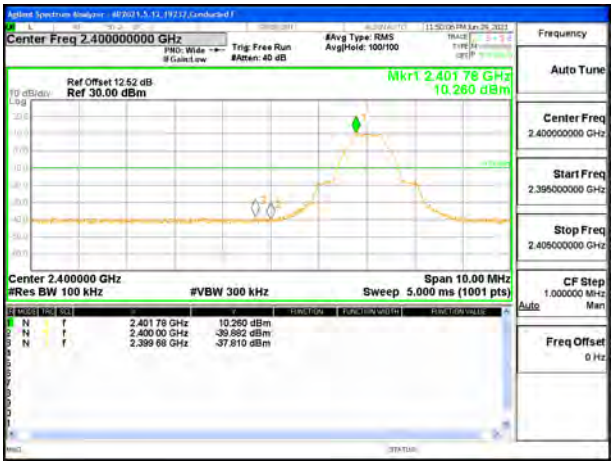
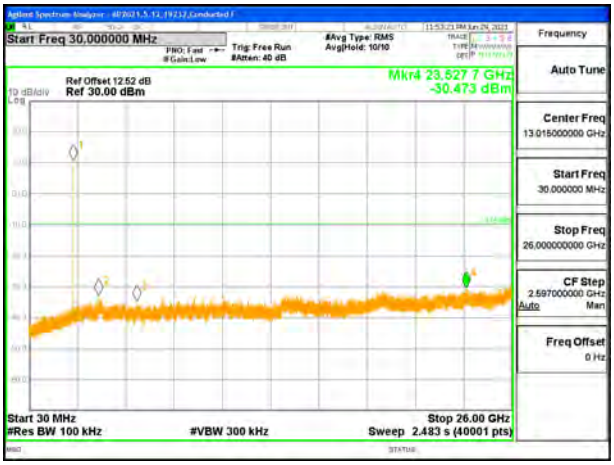
9.7.5. **LOW POWER BLE (1Mbps)**

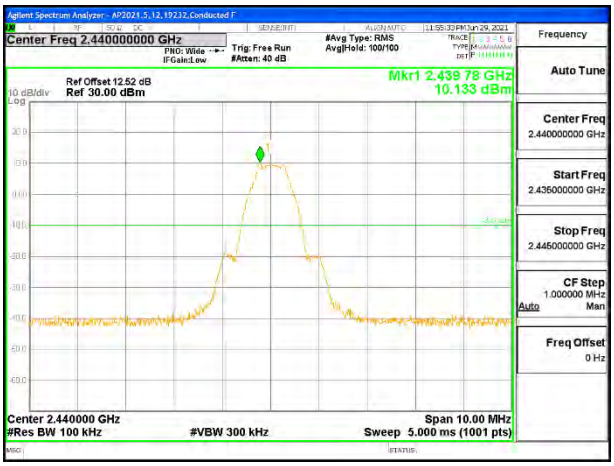
ANT 4



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

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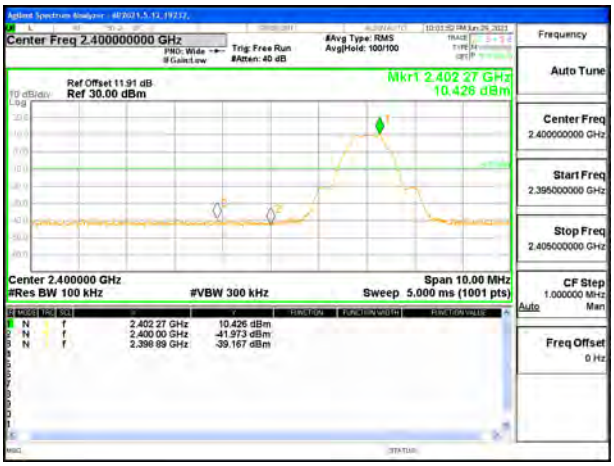
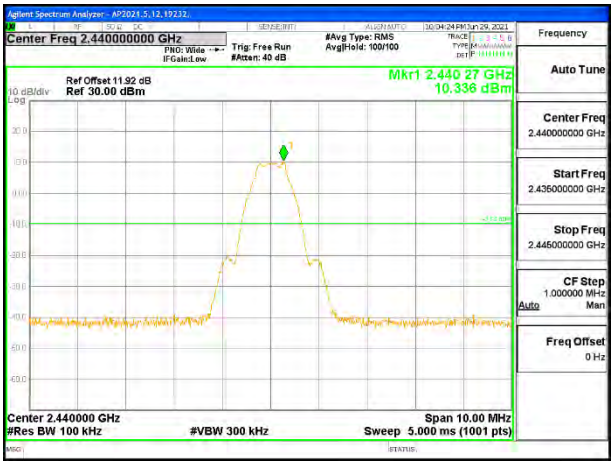
ANT 3



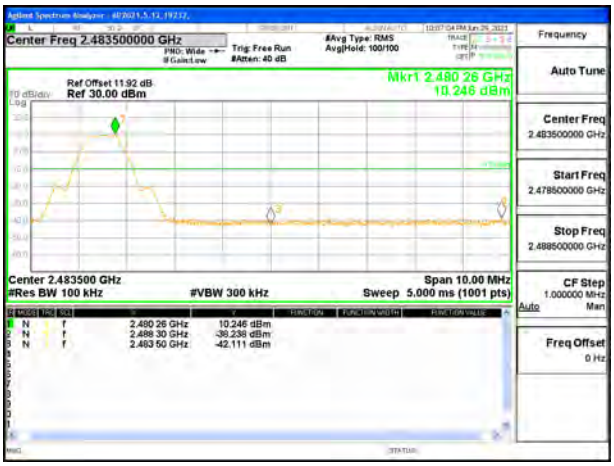
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL

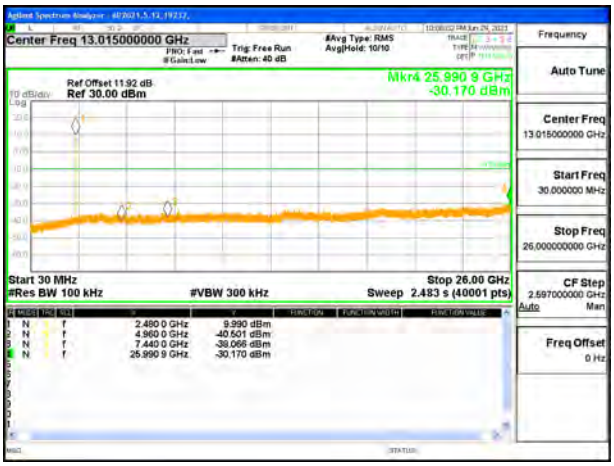


IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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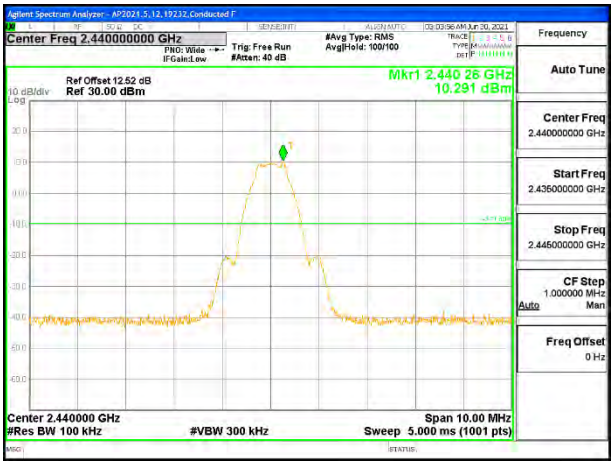
9.7.6. **LOW POWER BLE TXBF (1Mbps)**

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

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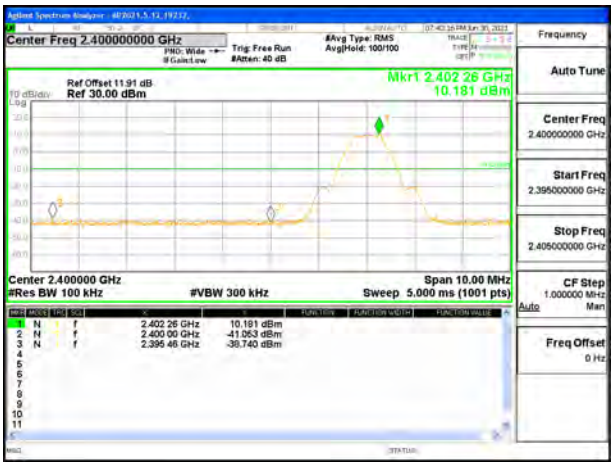
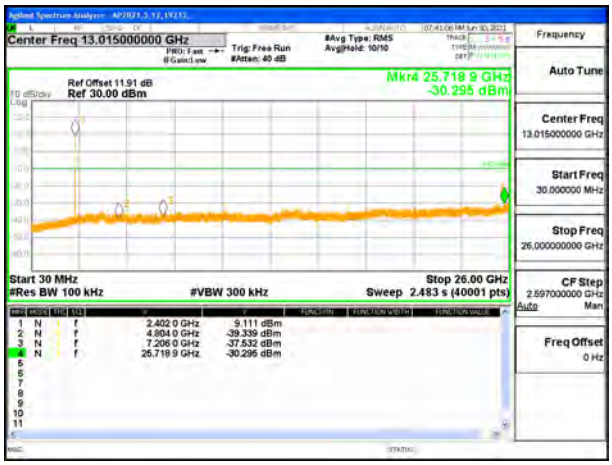
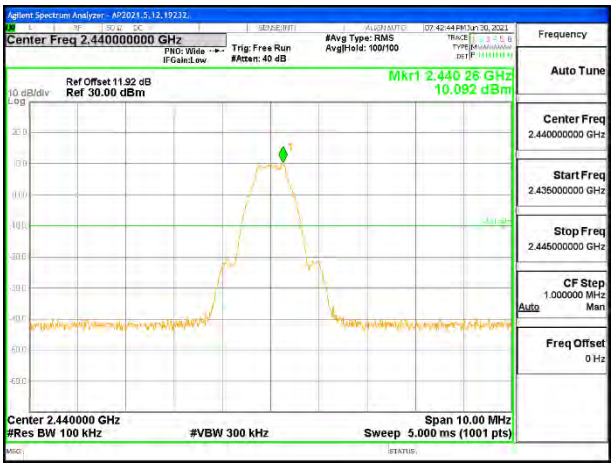


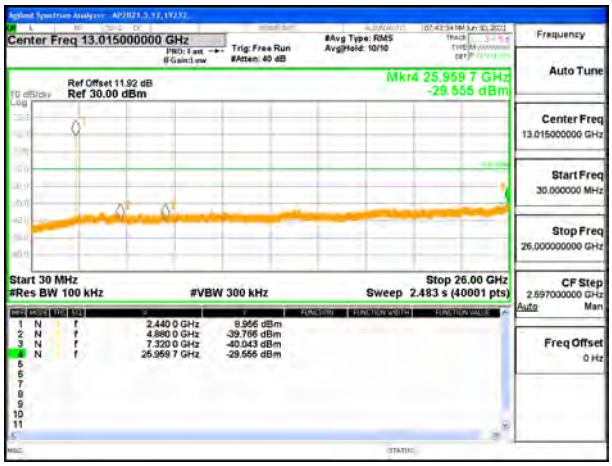
LOW CHANNEL, BANDEDGE ANT 3



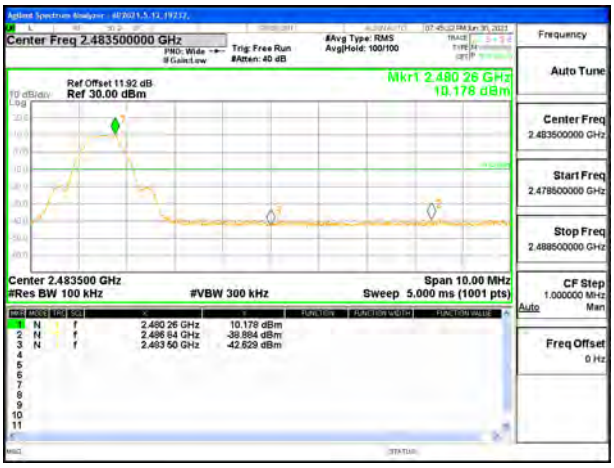
LOW CHANNEL OUT-OF-BAND ANT 3



MID CHANNEL REFERENCE ANT 3



MID CHANNEL OUT-OF-BAND ANT 3



HIGH CHANNEL REFERENCE ANT 3

HIGH CHANNEL OUT-OF-BAND ANT 3

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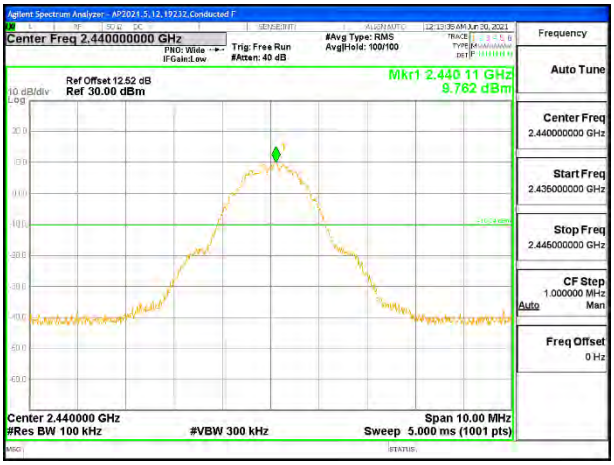
9.7.7. **LOW POWER BLE (2Mbps)**

ANT 4

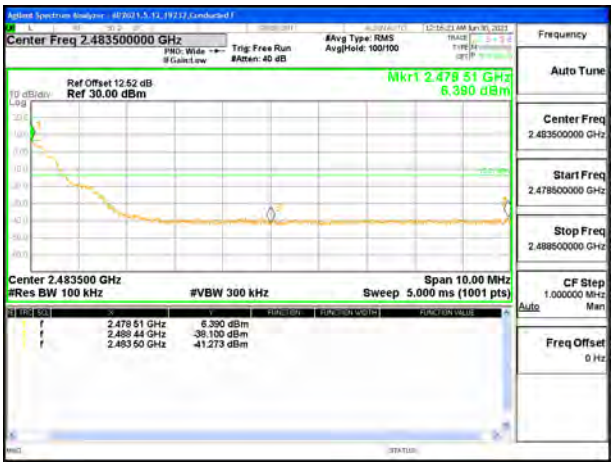
LOW CHANNEL BANDEDGE

OUT-OF-BAND LOW CHANNEL



IN-BAND REFERENCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE

OUT-OF-BAND HIGH CHANNEL

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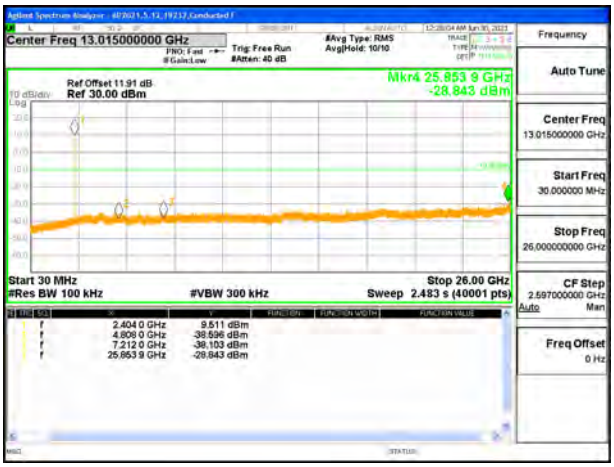
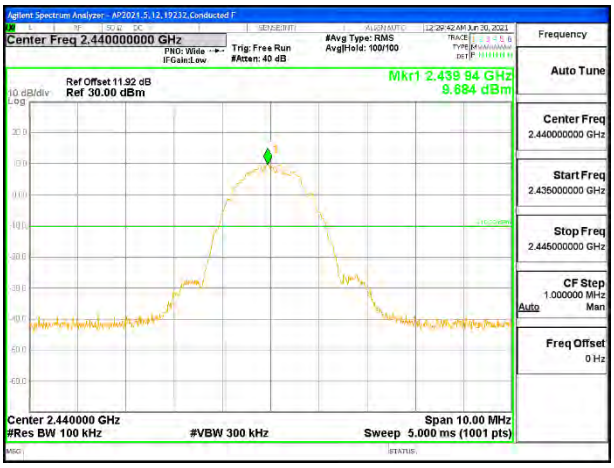
ANT 3

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

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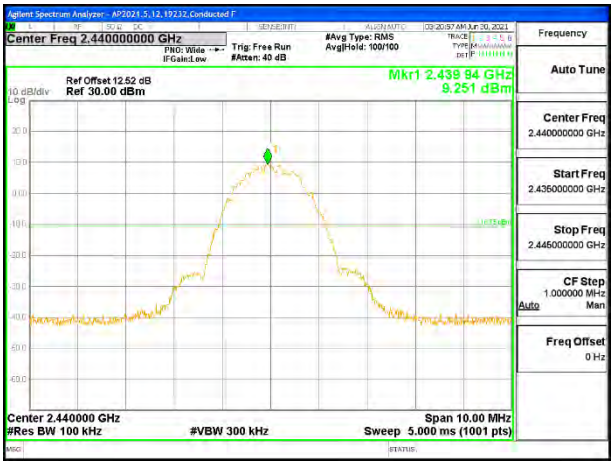
9.7.8. **LOW POWER BLE TXBF (2Mbps)**

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

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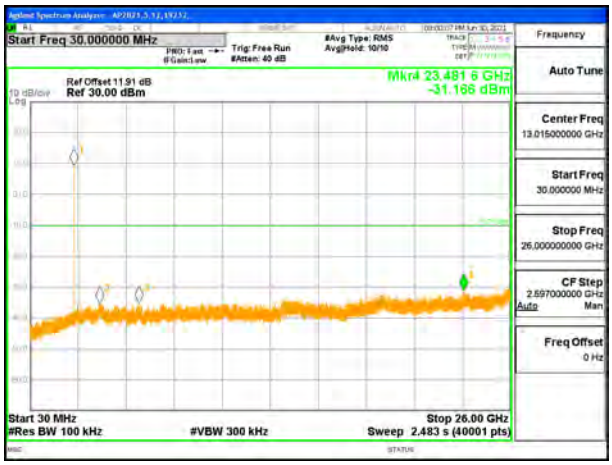
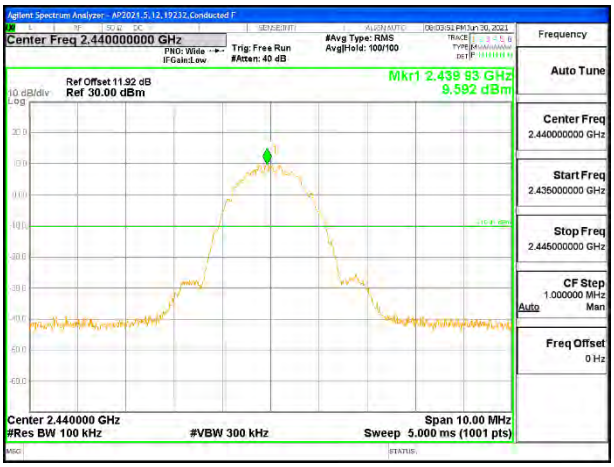
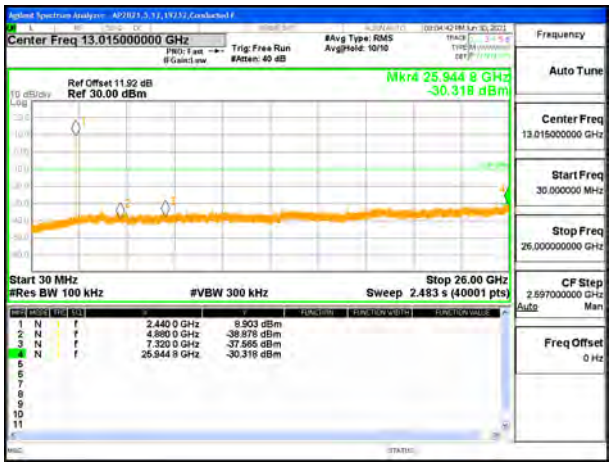
LOW CHANNEL, BANDEDGE ANT 3



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

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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.

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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

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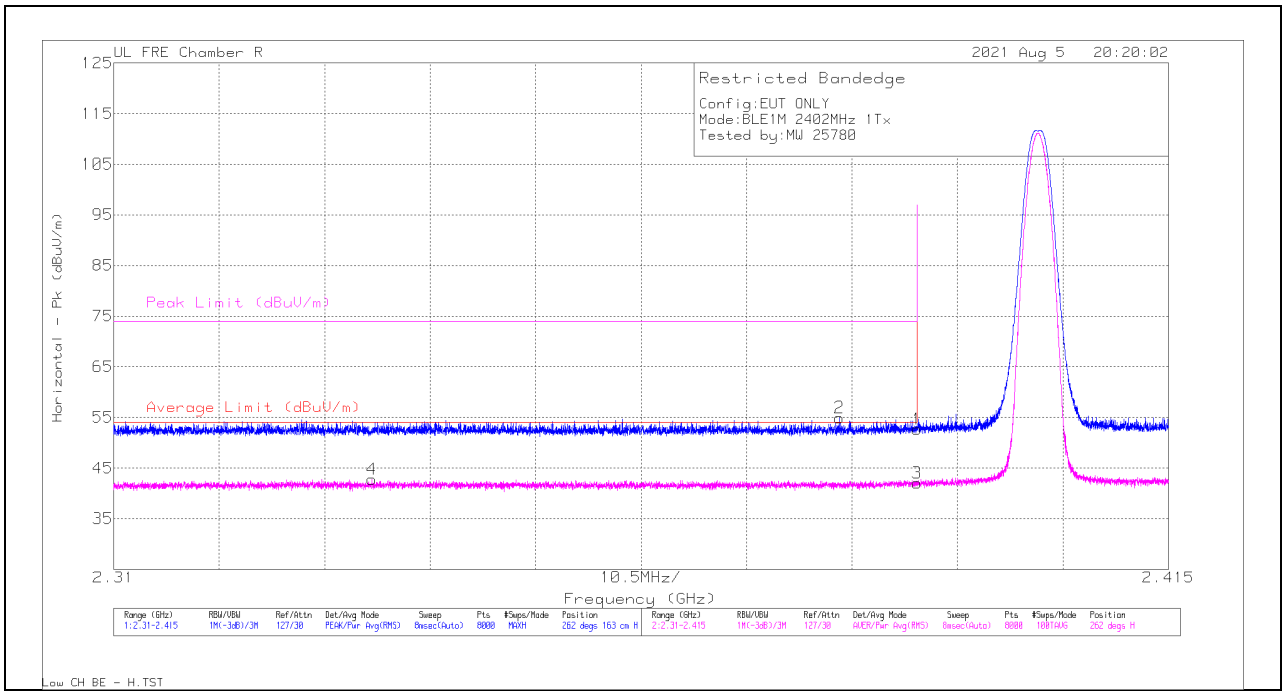
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. HIGH POWER BLE (1Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	56.06	Pk	32.1	-35.5	52.66	-	-	74	-21.34	262	163	H
2	* 2.38225	58.36	Pk	32.1	-35.5	54.96	-	-	74	-19.04	262	163	H
3	* 2.39	45.4	RMS	32.1	-35.5	42	54	-12	-	-	262	163	H
4	* 2.33569	46.03	RMS	32.3	-35.6	42.73	54	-11.27	-	-	262	163	H

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

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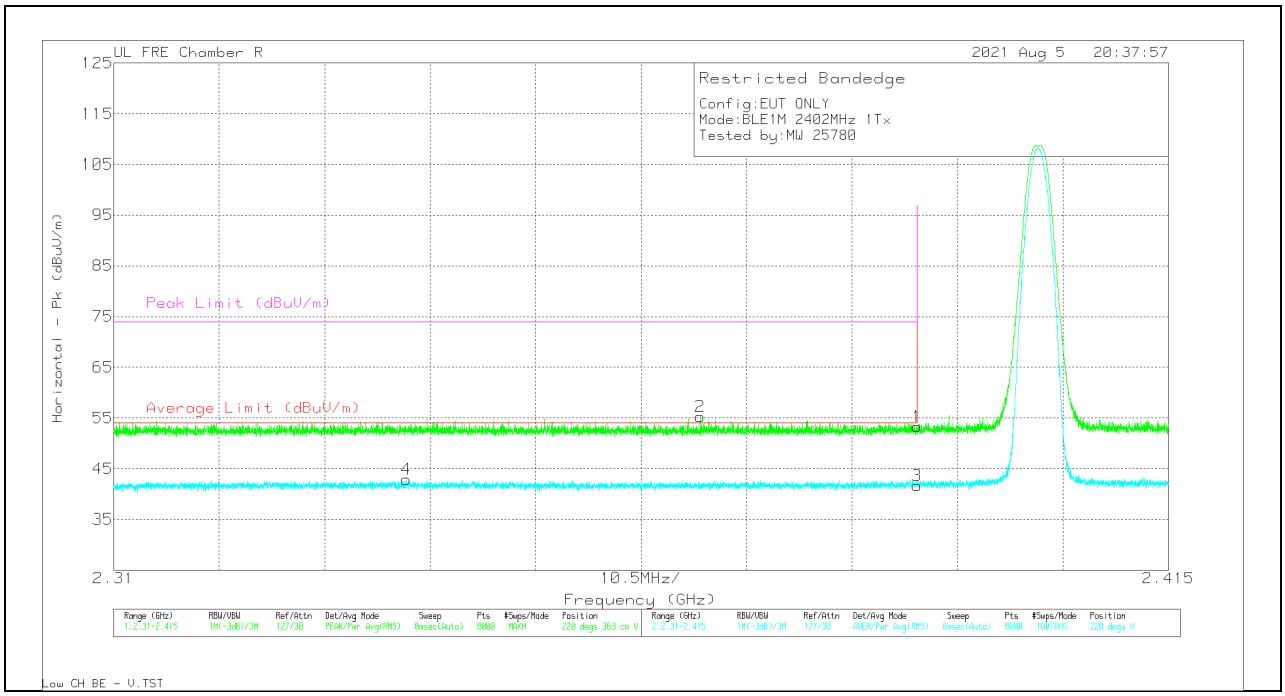
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	56.74	Pk	32.1	-35.5	53.34	-	-	74	-20.66	220	363	V
2	* 2.36839	58.83	Pk	32.1	-35.6	55.33	-	-	74	-18.67	220	363	V
3	* 2.39	45.1	RMS	32.1	-35.5	41.7	54	-12.3	-	-	220	363	V
4	* 2.33913	46.29	RMS	32.2	-35.6	42.89	54	-11.11	-	-	220	363	V

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

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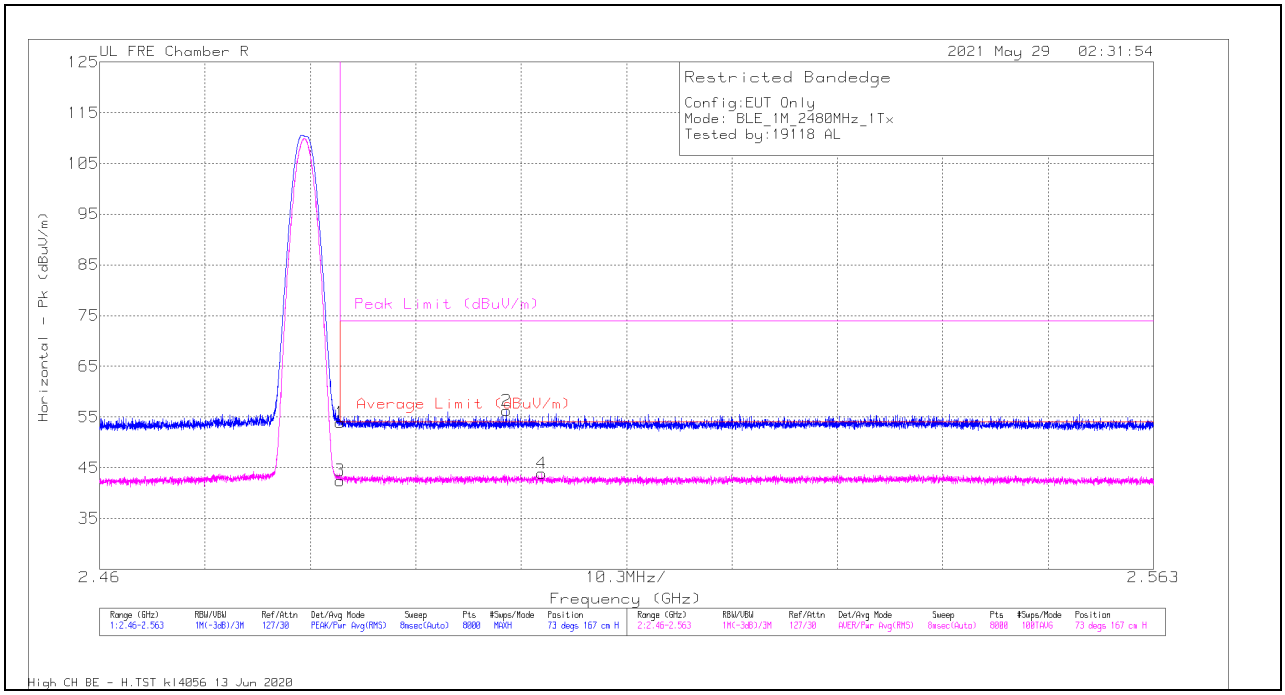
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.75	Pk	32.5	-35.3	53.95	-	-	74	-20.05	73	167	H
2	2.49975	58.79	Pk	32.6	-35.1	56.29	-	-	74	-17.71	73	167	H
3	2.4835	45.27	RMS	32.5	-35.3	42.47	54	-11.53	-	-	73	167	H
4	2.50319	46.5	RMS	32.6	-35.2	43.9	54	-10.1	-	-	73	167	H

Pk - Peak detector
RMS - RMS detection

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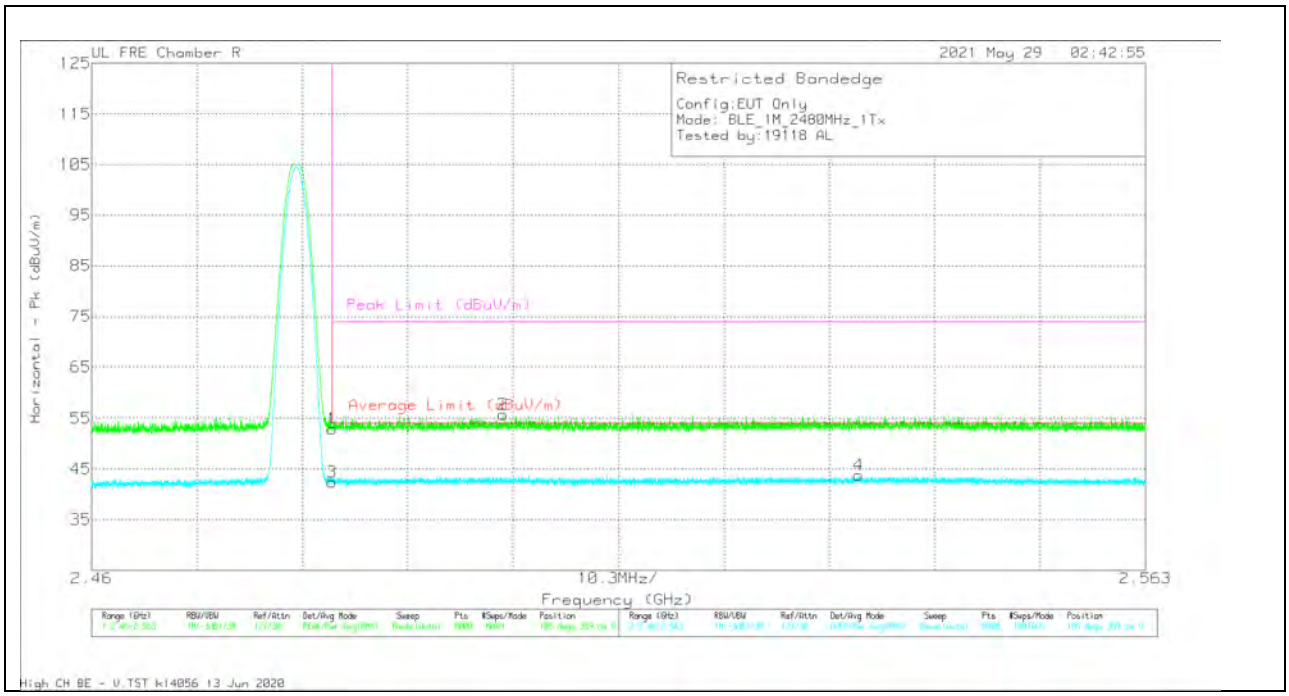
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	55.76	Pk	32.5	-35.3	52.96	-	-	74	-21.04	105	359	V
2	2.50019	58.27	Pk	32.6	-35.1	55.77	-	-	74	-18.23	105	359	V
3	2.4835	45.2	RMS	32.5	-35.3	42.4	54	-11.6	-	-	105	359	V
4	2.53498	46.17	RMS	32.6	-35	43.77	54	-10.23	-	-	105	359	V

Pk - Peak detector
RMS - RMS detection

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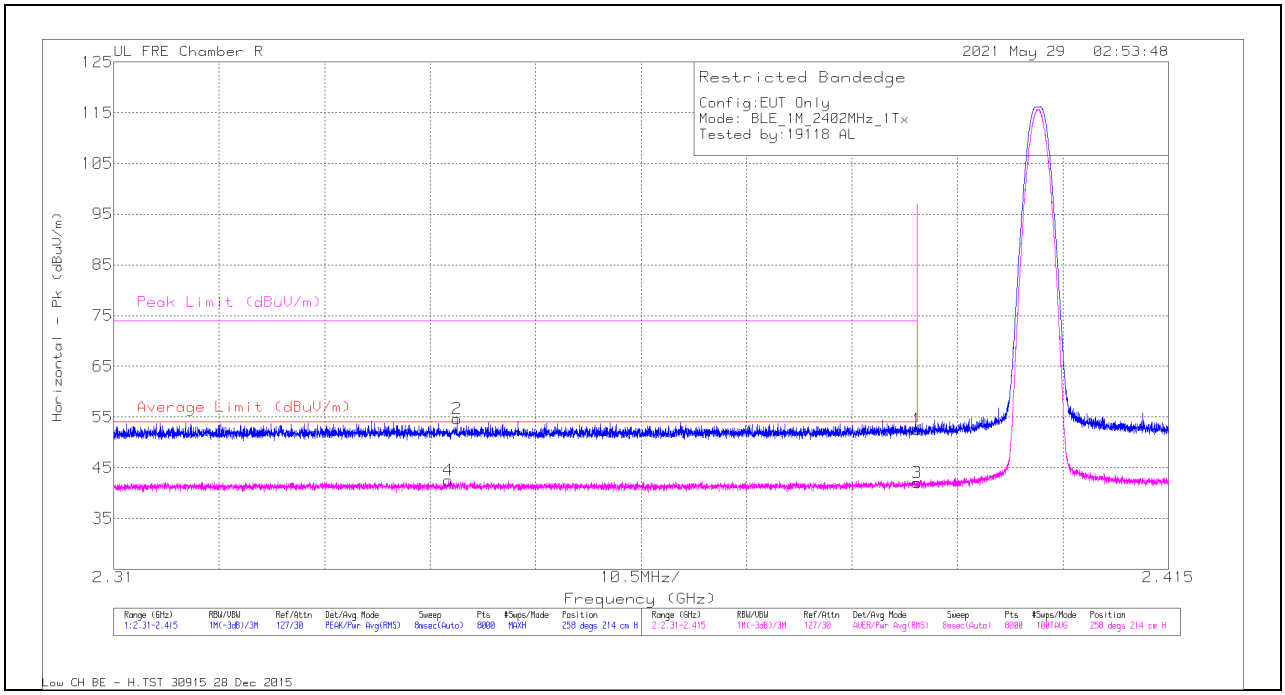
ANT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56	Pk	32.1	-35.5	52.6	-	-	74	-21.4	258	214	H
2	2.3442	58.09	Pk	32.2	-35.6	54.69	-	-	74	-19.31	258	214	H
3	2.39	45.42	RMS	32.1	-35.5	42.02	54	-11.98	-	-	258	214	H
4	2.3433	45.96	RMS	32.2	-35.6	42.56	54	-11.44	-	-	258	214	H

Pk - Peak detector
RMS - RMS detection

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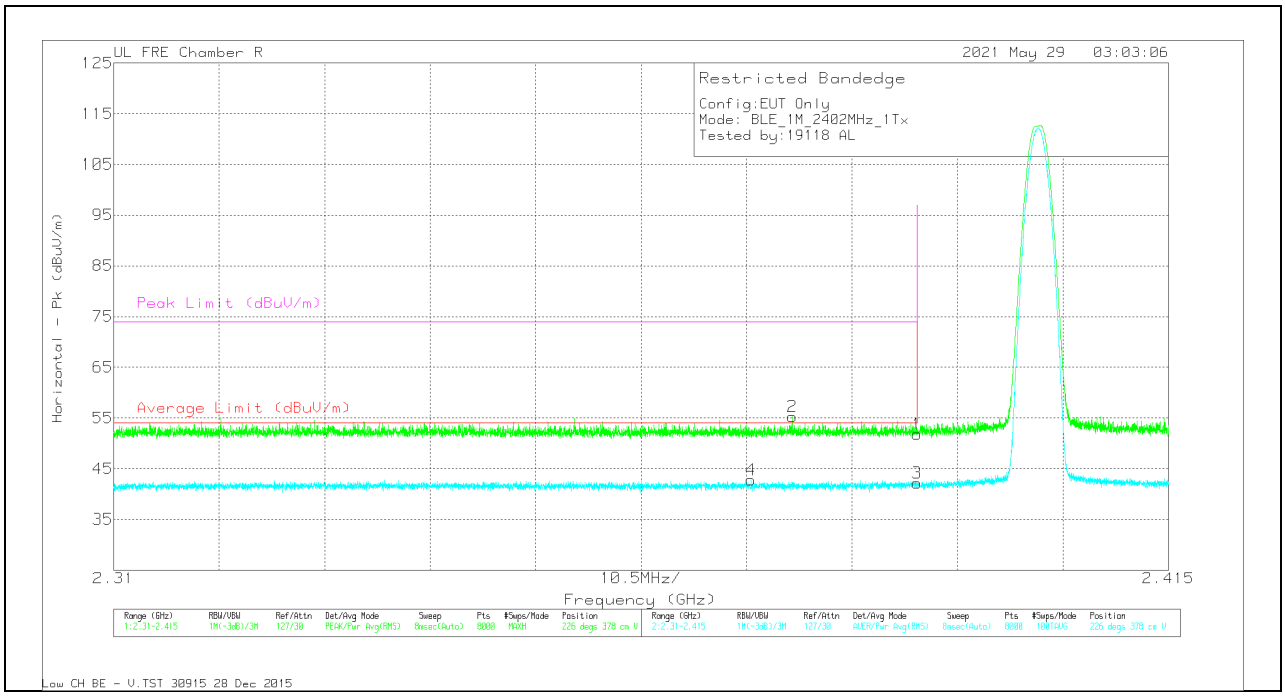
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.21	Pk	32.1	-35.5	51.81	-	-	74	-22.19	226	378	V
2	2.37755	58.72	Pk	32.1	-35.5	55.32	-	-	74	-18.68	226	378	V
3	2.39	45.52	RMS	32.1	-35.5	42.12	54	-11.88	-	-	226	378	V
4	2.37346	46.16	RMS	32.1	-35.5	42.76	54	-11.24	-	-	226	378	V

Pk - Peak detector
RMS - RMS detection

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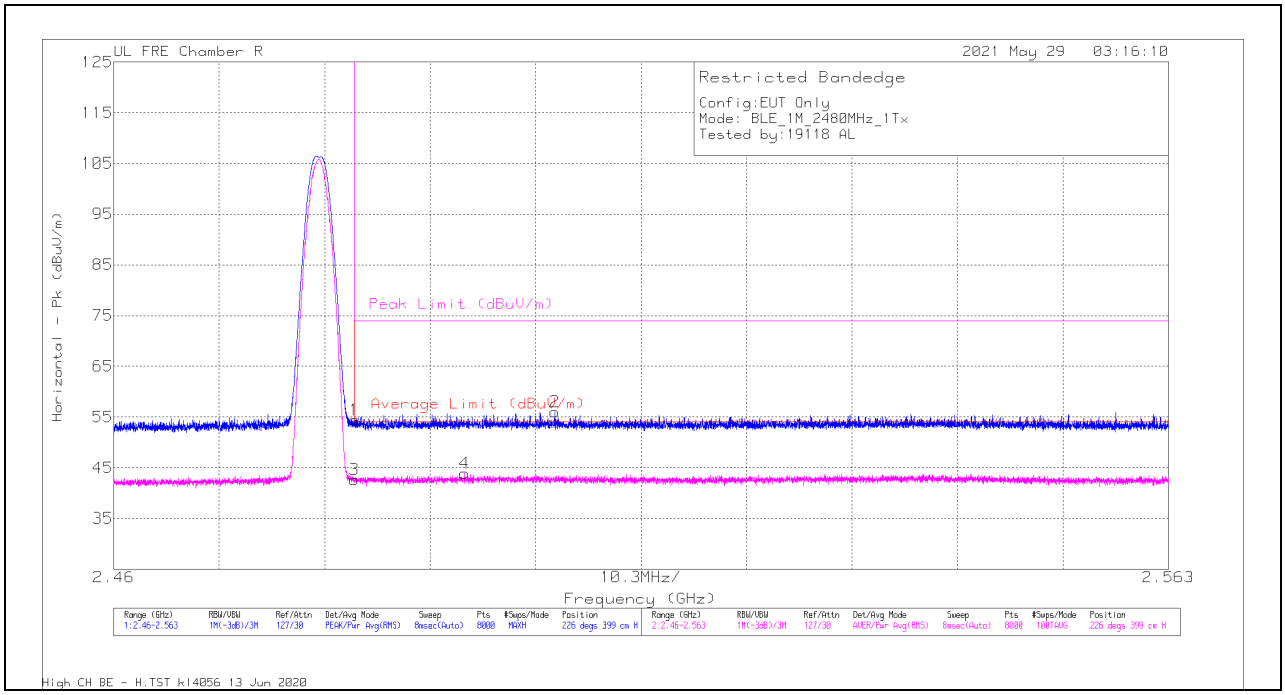
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.24	Pk	32.5	-35.3	54.44	-	-	74	-19.56	226	399	H
2	2.50309	58.57	Pk	32.6	-35.2	55.97	-	-	74	-18.03	226	399	H
3	2.4835	45.42	RMS	32.5	-35.3	42.62	54	-11.38	-	-	226	399	H
4	2.49429	46.45	RMS	32.6	-35.2	43.85	54	-10.15	-	-	226	399	H

Pk - Peak detector
RMS - RMS detection

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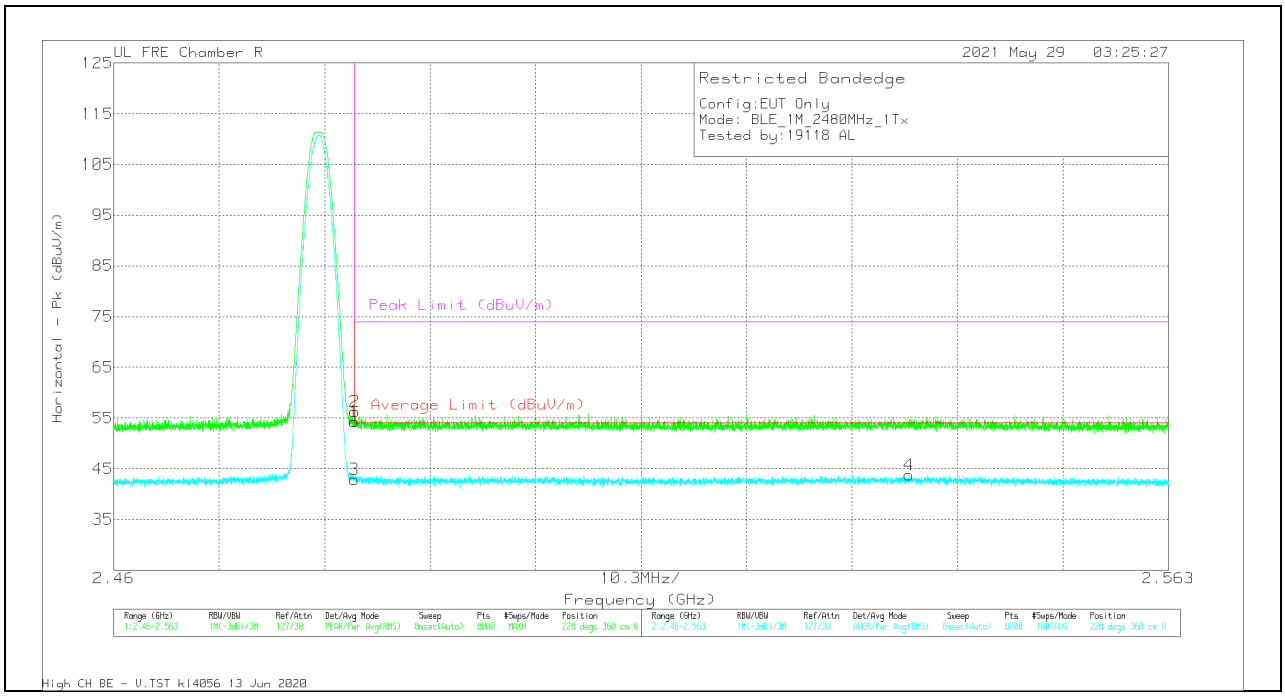
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.03	Pk	32.5	-35.3	54.23	-	-	74	-19.77	228	360	V
2	2.48353	59.03	Pk	32.5	-35.3	56.23	-	-	74	-17.77	228	360	V
3	2.4835	45.67	RMS	32.5	-35.3	42.87	54	-11.13	-	-	228	360	V
4	2.53764	46.22	RMS	32.6	-35	43.82	54	-10.18	-	-	228	360	V

Pk - Peak detector
RMS - RMS detection

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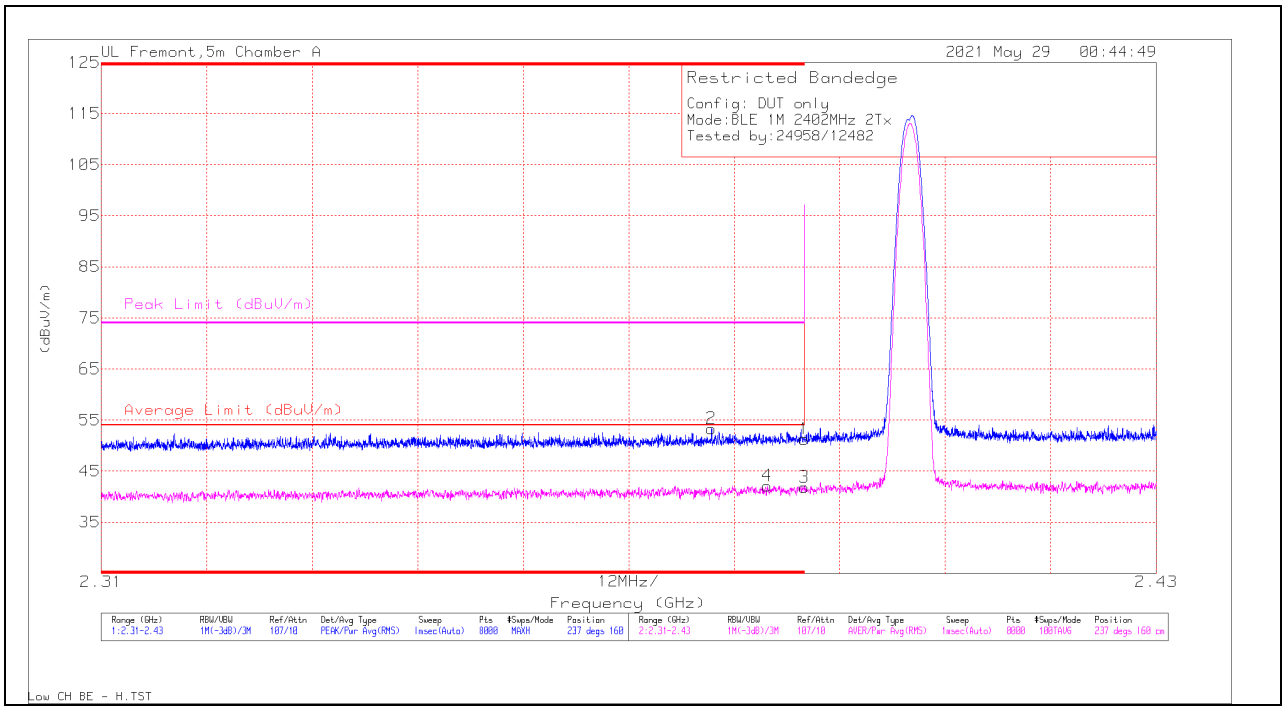
10.2.2. HIGH POWER BLE TXBF (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	39.98	Pk	32.6	-21.3	51.28	-	-	74	-22.72	237	160	H
2	* 2.37941	42.14	Pk	32.5	-21.3	53.34	-	-	74	-20.66	237	160	H
3	* 2.38999	30.55	RMS	32.6	-21.3	41.85	54	-12.15	-	-	237	160	H
4	* 2.38576	30.83	RMS	32.6	-21.3	42.13	54	-11.87	-	-	237	160	H

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

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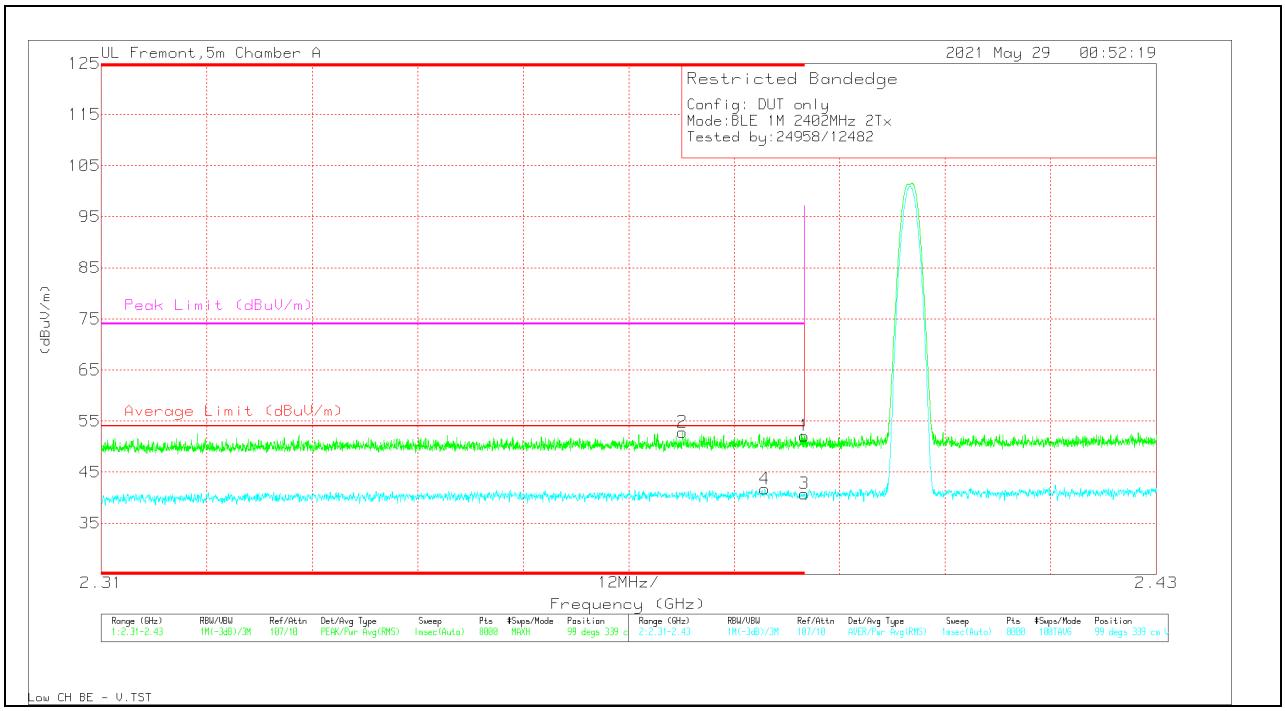
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	40.82	Pk	32.6	-21.3	52.12	-	-	74	-21.88	99	339	V
2	* 2.37611	41.65	Pk	32.5	-21.3	52.85	-	-	74	-21.15	99	339	V
3	* 2.38999	29.48	RMS	32.6	-21.3	40.78	54	-13.22	-	-	99	339	V
4	* 2.38548	30.43	RMS	32.6	-21.3	41.73	54	-12.27	-	-	99	339	V

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

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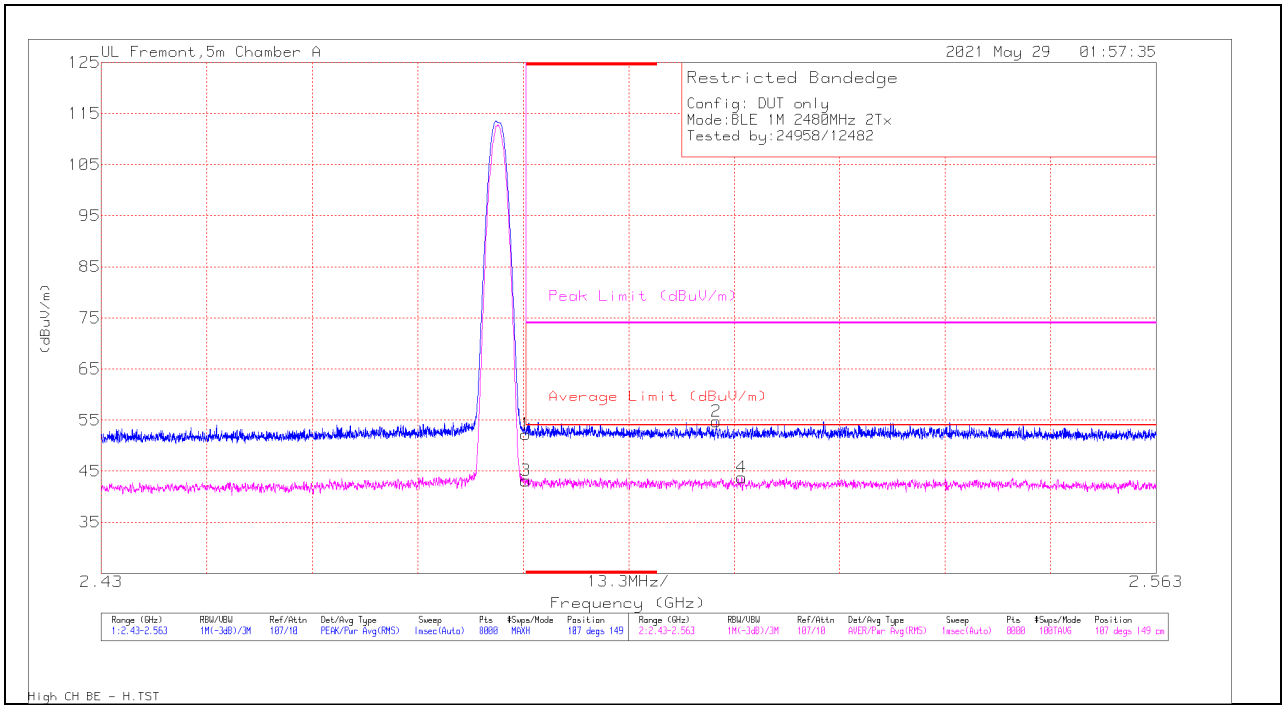
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	39.63	Pk	33.4	-20.8	52.23	-	-	74	-21.77	107	149	H
2	2.50752	41.82	Pk	33.5	-20.6	54.72	-	-	74	-19.28	107	149	H
3	* 2.48351	30.54	RMS	33.4	-20.8	43.14	54	-10.86	-	-	107	149	H
4	2.51074	30.96	RMS	33.5	-20.7	43.76	54	-10.24	-	-	107	149	H

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

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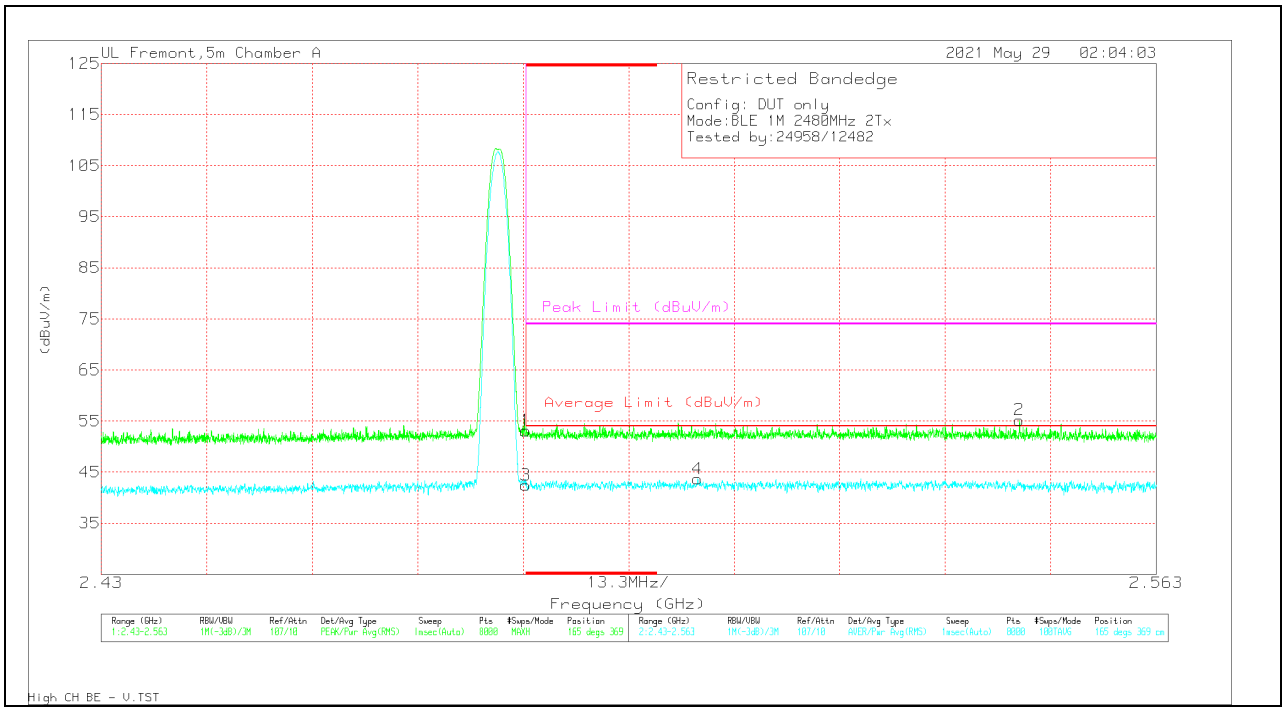
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	40.52	Pk	33.4	-20.8	53.12	-	-	74	-20.88	165	369	V
2	2.54574	42.5	Pk	33.3	-20.6	55.2	-	-	74	-18.8	165	369	V
3	* 2.48351	29.85	RMS	33.4	-20.8	42.45	54	-11.55	-	-	165	369	V
4	2.50519	30.86	RMS	33.5	-20.7	43.66	54	-10.34	-	-	165	369	V

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

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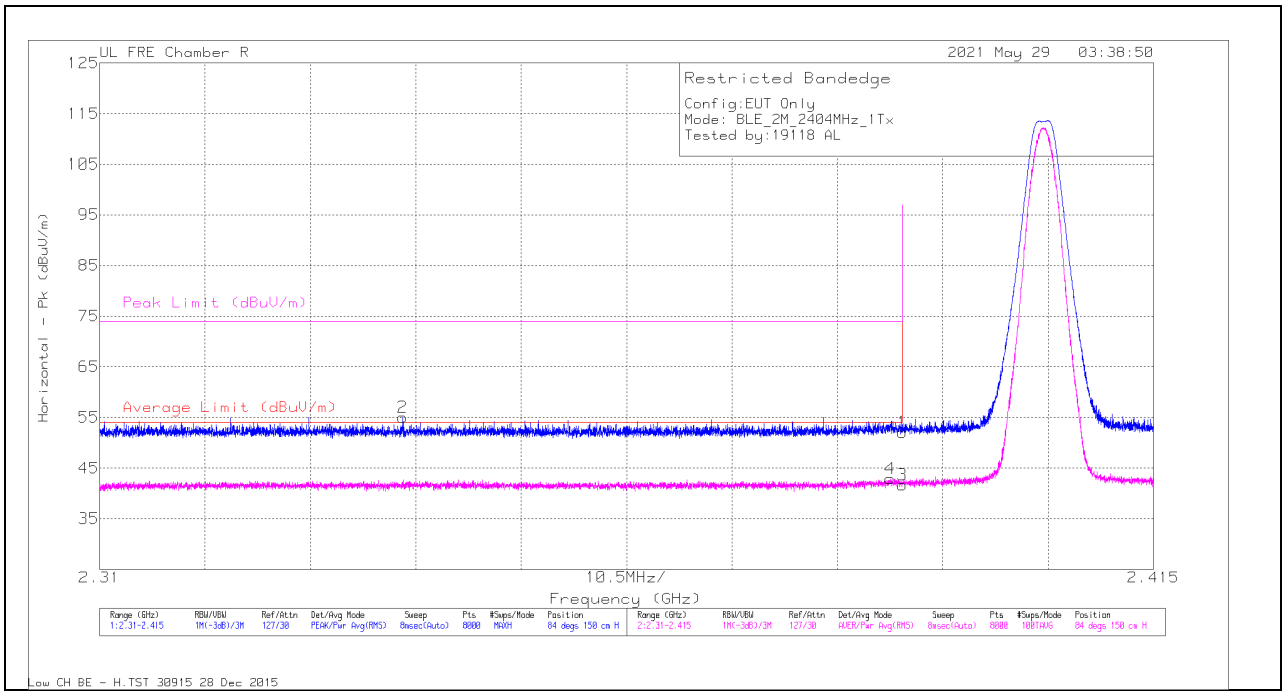
10.2.3. HIGH POWER BLE (2Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.41	Pk	32.1	-35.5	52.01	-	-	74	-21.99	84	150	H
2	2.34022	58.47	Pk	32.2	-35.6	55.07	-	-	74	-18.93	84	150	H
3	2.39	45.02	RMS	32.1	-35.5	41.62	54	-12.38	-	-	84	150	H
4	2.38876	46.35	RMS	32.1	-35.5	42.95	54	-11.05	-	-	84	150	H

Pk - Peak detector
RMS - RMS detection

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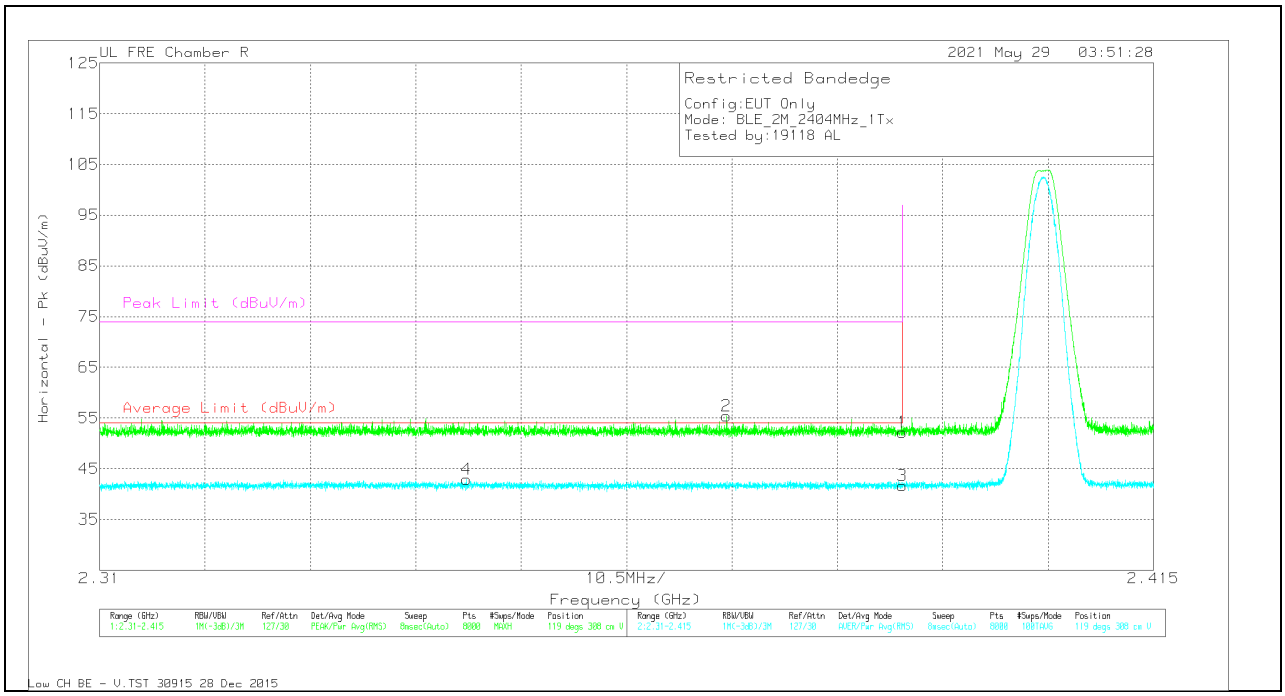
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.53	Pk	32.1	-35.5	52.13	-	-	74	-21.87	119	308	V
2	2.37247	58.83	Pk	32.1	-35.5	55.43	-	-	74	-18.57	119	308	V
3	2.39	45.12	RMS	32.1	-35.5	41.72	54	-12.28	-	-	119	308	V
4	2.34657	46.32	RMS	32.2	-35.6	42.92	54	-11.08	-	-	119	308	V

Pk - Peak detector
RMS - RMS detection

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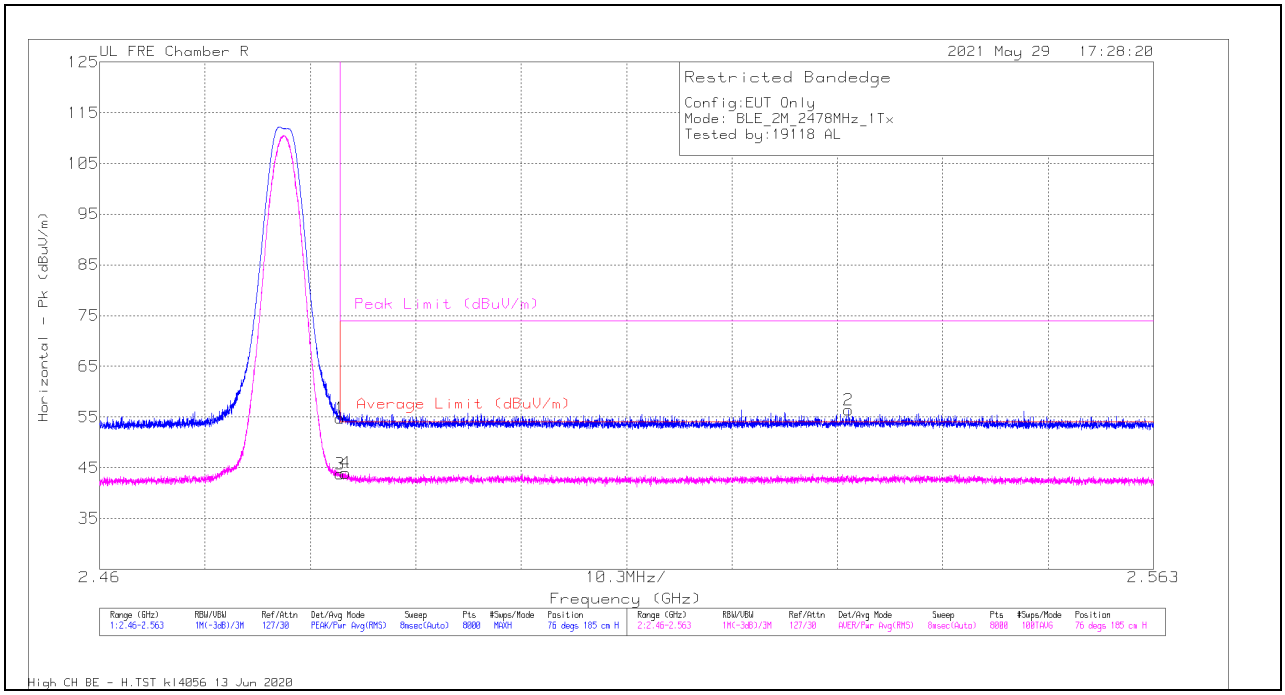
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.59	Pk	32.5	-35.3	54.79	-	-	74	-19.21	76	185	H
2	2.53322	58.84	Pk	32.6	-35	56.44	-	-	74	-17.56	76	185	H
3	2.4835	46.61	RMS	32.5	-35.3	43.81	54	-10.19	-	-	76	185	H
4	2.48402	46.76	RMS	32.5	-35.3	43.96	54	-10.04	-	-	76	185	H

Pk - Peak detector
RMS - RMS detection

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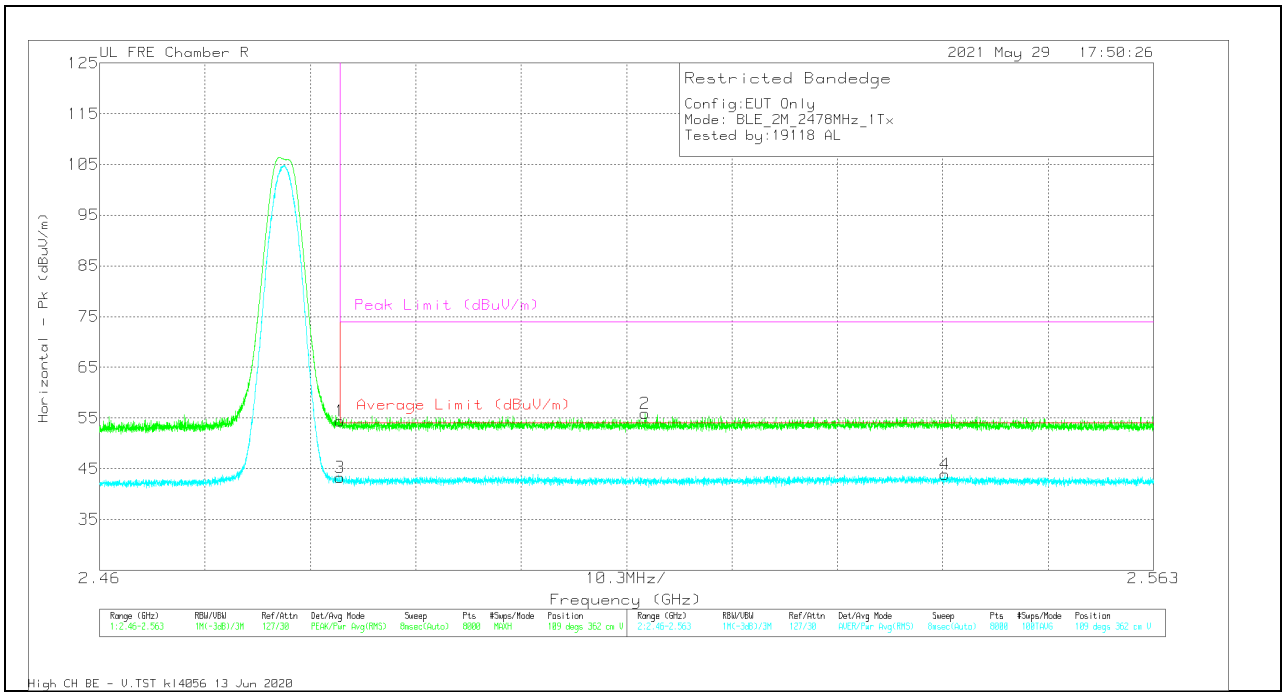
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.26	Pk	32.5	-35.3	54.46	-	-	74	-19.54	109	362	V
2	2.51332	58.54	Pk	32.6	-35.2	55.94	-	-	74	-18.06	109	362	V
3	2.4835	46.07	RMS	32.5	-35.3	43.27	54	-10.73	-	-	109	362	V
4	2.54259	46.28	RMS	32.6	-35	43.88	54	-10.12	-	-	109	362	V

Pk - Peak detector
RMS - RMS detection

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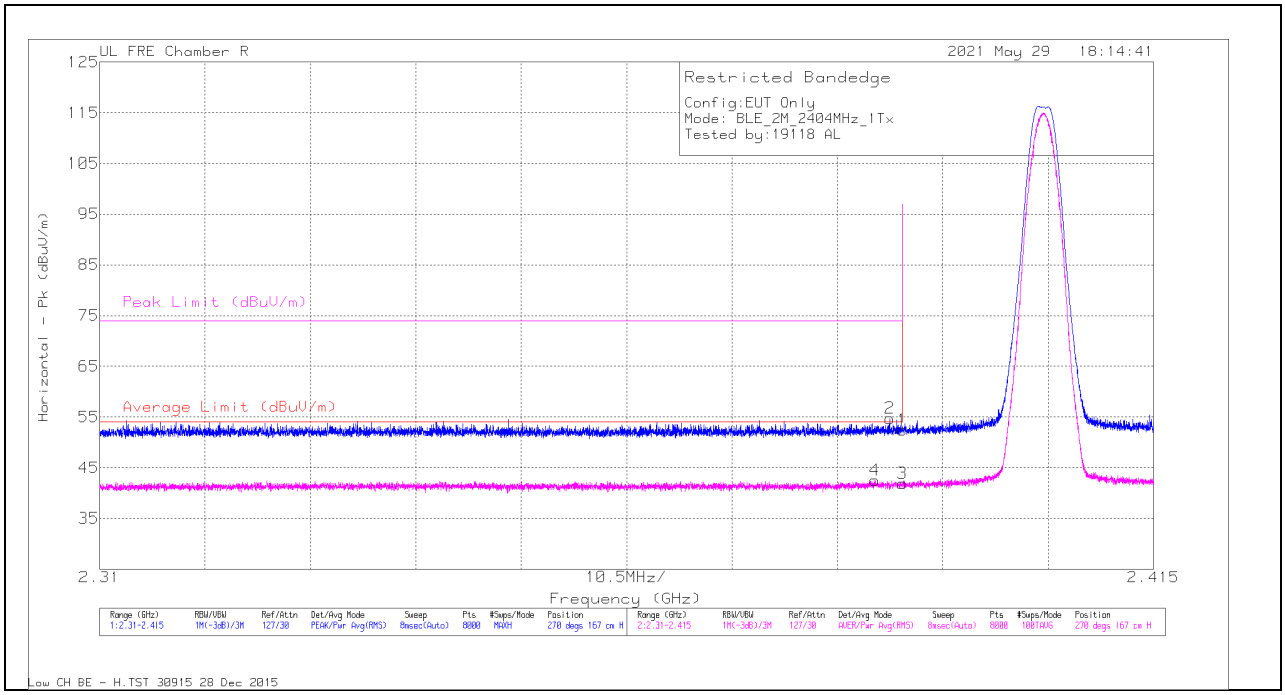
ANT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.84	Pk	32.1	-35.5	52.44	-	-	74	-21.56	270	167	H
2	2.38871	58.12	Pk	32.1	-35.5	54.72	-	-	74	-19.28	270	167	H
3	2.39	45.3	RMS	32.1	-35.5	41.9	54	-12.1	-	-	270	167	H
4	2.38721	45.91	RMS	32.1	-35.5	42.51	54	-11.49	-	-	270	167	H

Pk - Peak detector
RMS - RMS detection

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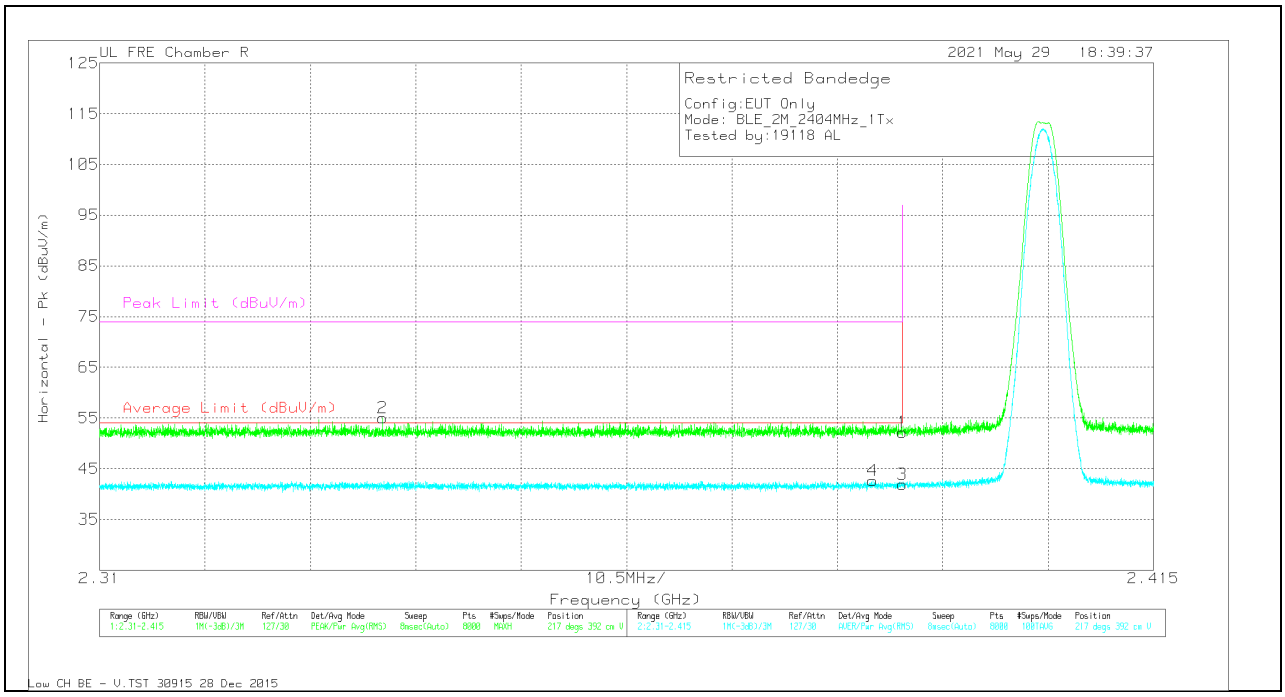
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.62	Pk	32.1	-35.5	52.22	-	-	74	-21.78	217	392	V
2	2.33818	58.44	Pk	32.2	-35.6	55.04	-	-	74	-18.96	217	392	V
3	2.39	45.26	RMS	32.1	-35.5	41.86	54	-12.14	-	-	217	392	V
4	2.38702	46.03	RMS	32.1	-35.5	42.63	54	-11.37	-	-	217	392	V

Pk - Peak detector
RMS - RMS detection

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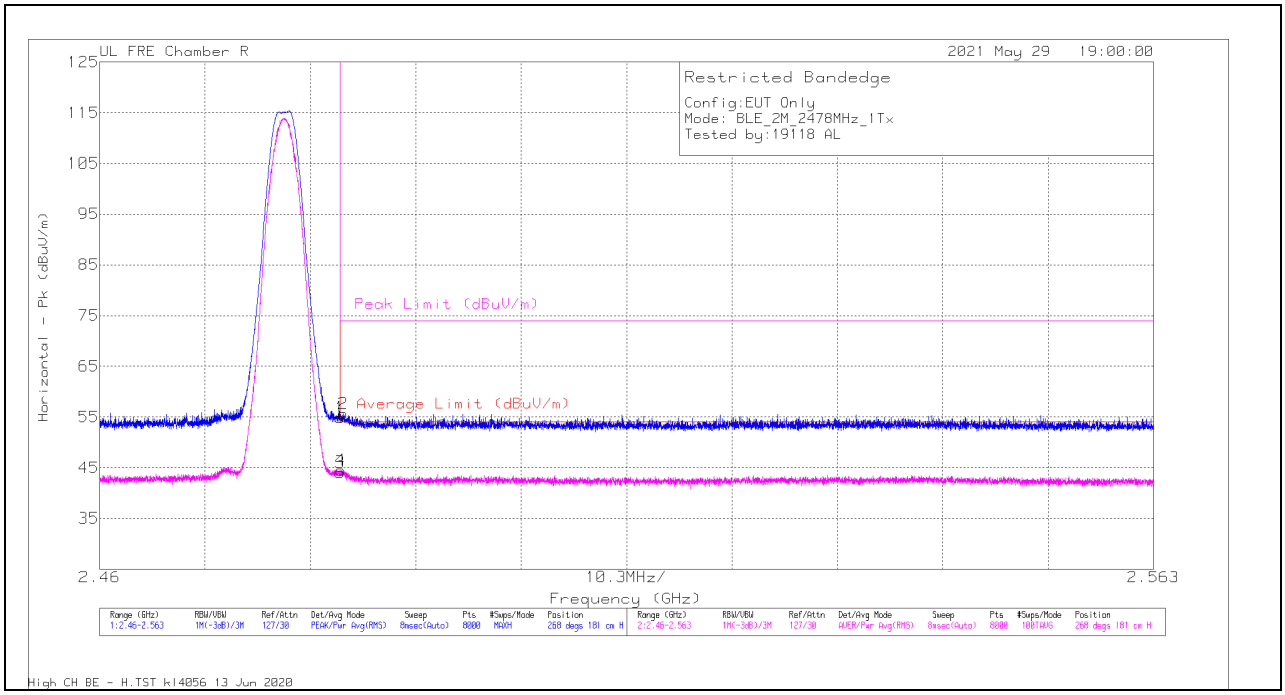
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.72	Pk	32.5	-35.3	54.92	-	-	74	-19.08	268	181	H
2	2.48381	58.44	Pk	32.5	-35.3	55.64	-	-	74	-18.36	268	181	H
3	2.4835	46.88	RMS	32.5	-35.3	44.08	54	-9.92	-	-	268	181	H
4	2.48356	47.33	RMS	32.5	-35.3	44.53	54	-9.47	-	-	268	181	H

Pk - Peak detector
RMS - RMS detection

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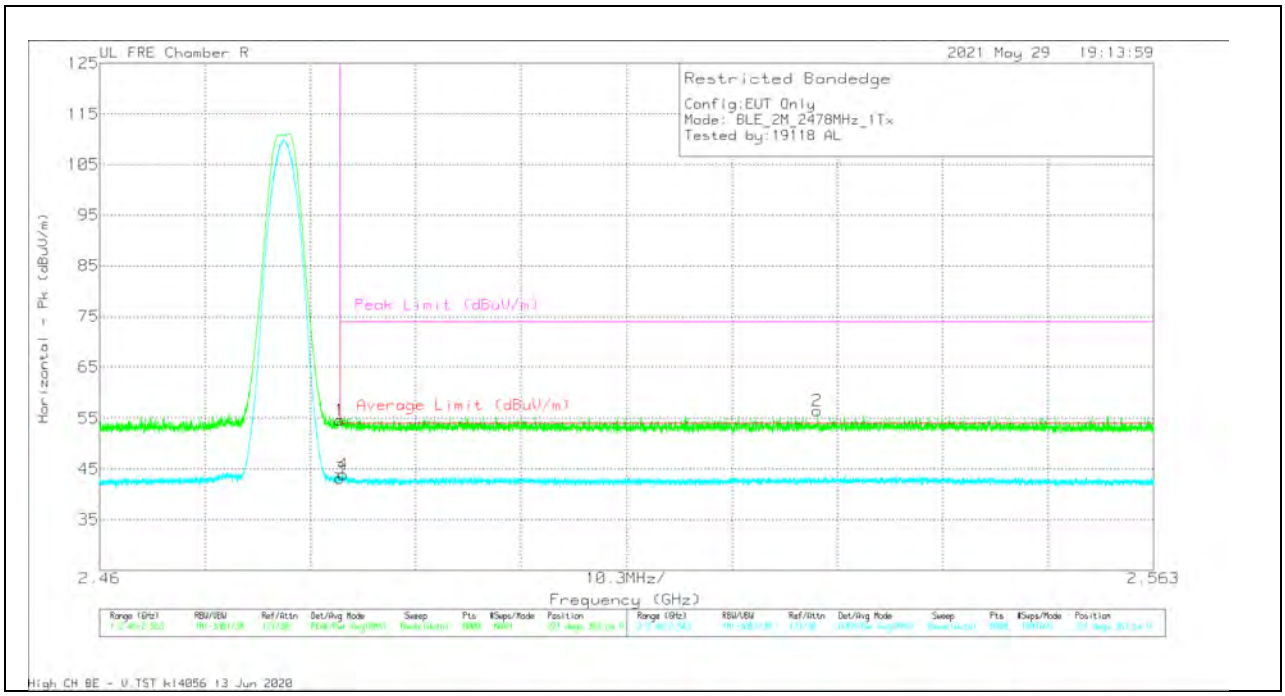
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.51	Pk	32.5	-35.3	54.71	-	-	74	-19.29	221	363	V
2	2.53013	58.89	Pk	32.7	-35.1	56.49	-	-	74	-17.51	221	363	V
3	2.4835	45.96	RMS	32.5	-35.3	43.16	54	-10.84	-	-	221	363	V
4	2.48378	46.74	RMS	32.5	-35.3	43.94	54	-10.06	-	-	221	363	V

Pk - Peak detector
RMS - RMS detection

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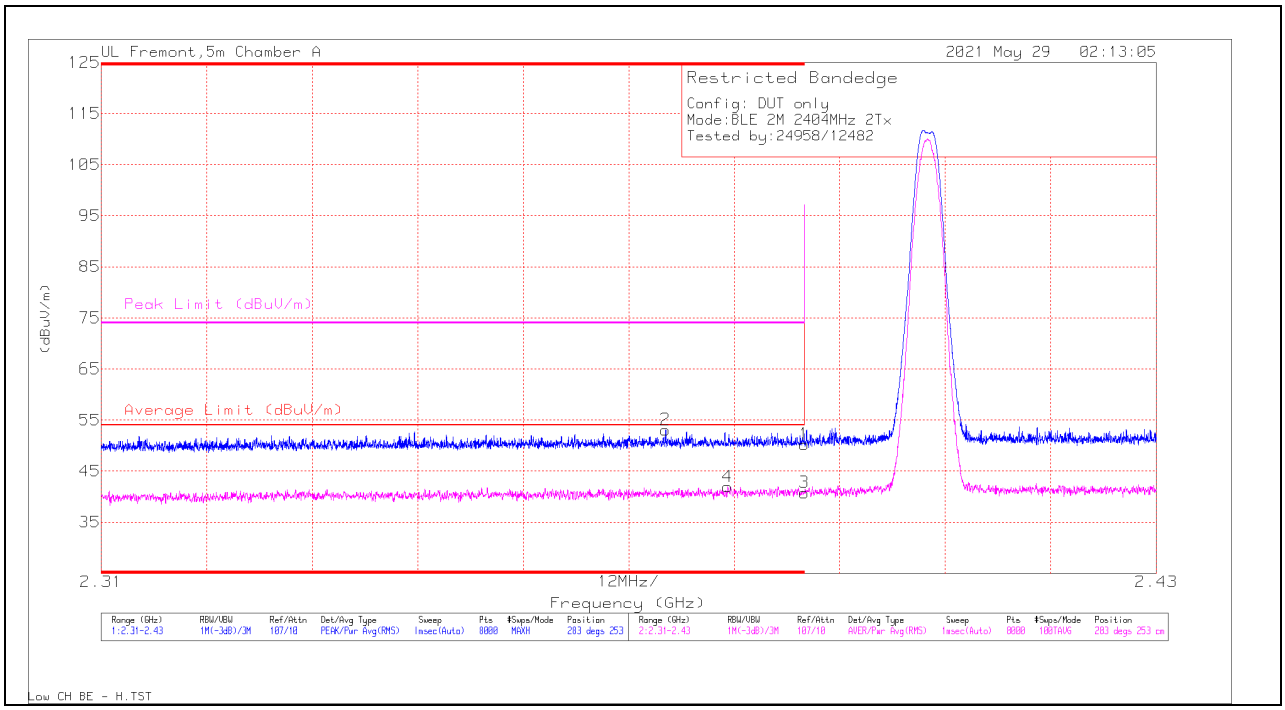
10.2.4. HIGH POWER BLE TXBF (2Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	38.95	Pk	32.6	-21.3	50.25	-	-	74	-23.75	283	253	H
2	* 2.37419	41.88	Pk	32.5	-21.3	53.08	-	-	74	-20.92	283	253	H
3	* 2.38999	29.49	RMS	32.6	-21.3	40.79	54	-13.21	-	-	283	253	H
4	* 2.38127	30.64	RMS	32.6	-21.3	41.94	54	-12.06	-	-	283	253	H

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

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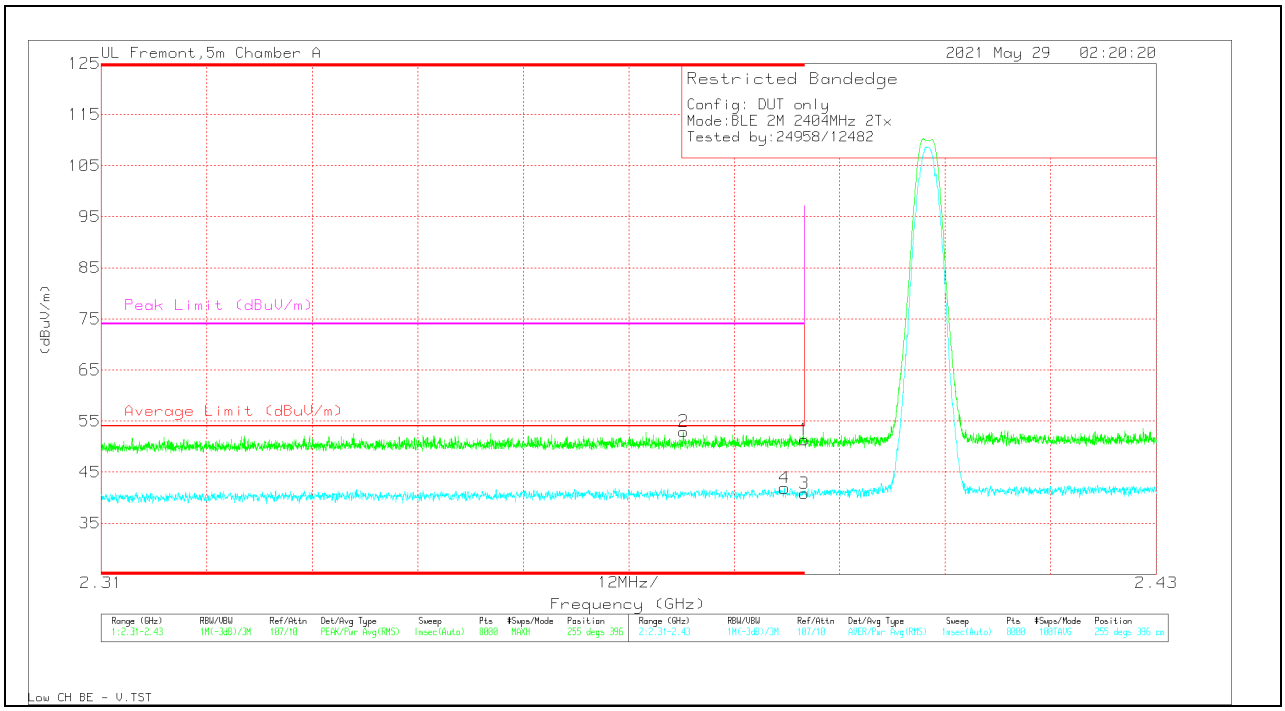
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	40.06	Pk	32.6	-21.3	51.36	-	-	74	-22.64	255	396	V
2	* 2.37622	41.74	Pk	32.5	-21.3	52.94	-	-	74	-21.06	255	396	V
3	* 2.38999	29.55	RMS	32.6	-21.3	40.85	54	-13.15	-	-	255	396	V
4	* 2.38771	30.62	RMS	32.6	-21.3	41.92	54	-12.08	-	-	255	396	V

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

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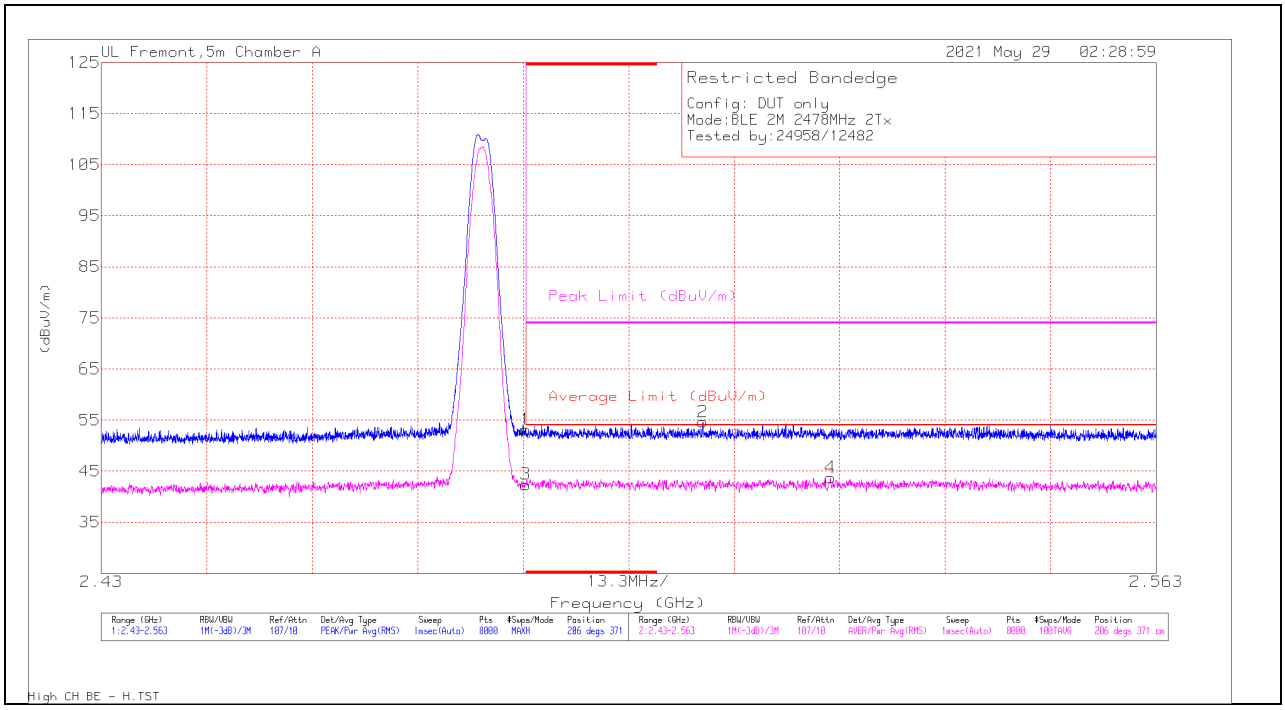
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	40.52	Pk	33.4	-20.8	53.12	-	-	74	-20.88	206	371	H
2	2.50584	41.82	Pk	33.5	-20.7	54.62	-	-	74	-19.38	206	371	H
3	* 2.48351	29.79	RMS	33.4	-20.8	42.39	54	-11.61	-	-	206	371	H
4	2.52191	30.99	RMS	33.4	-20.7	43.69	54	-10.31	-	-	206	371	H

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

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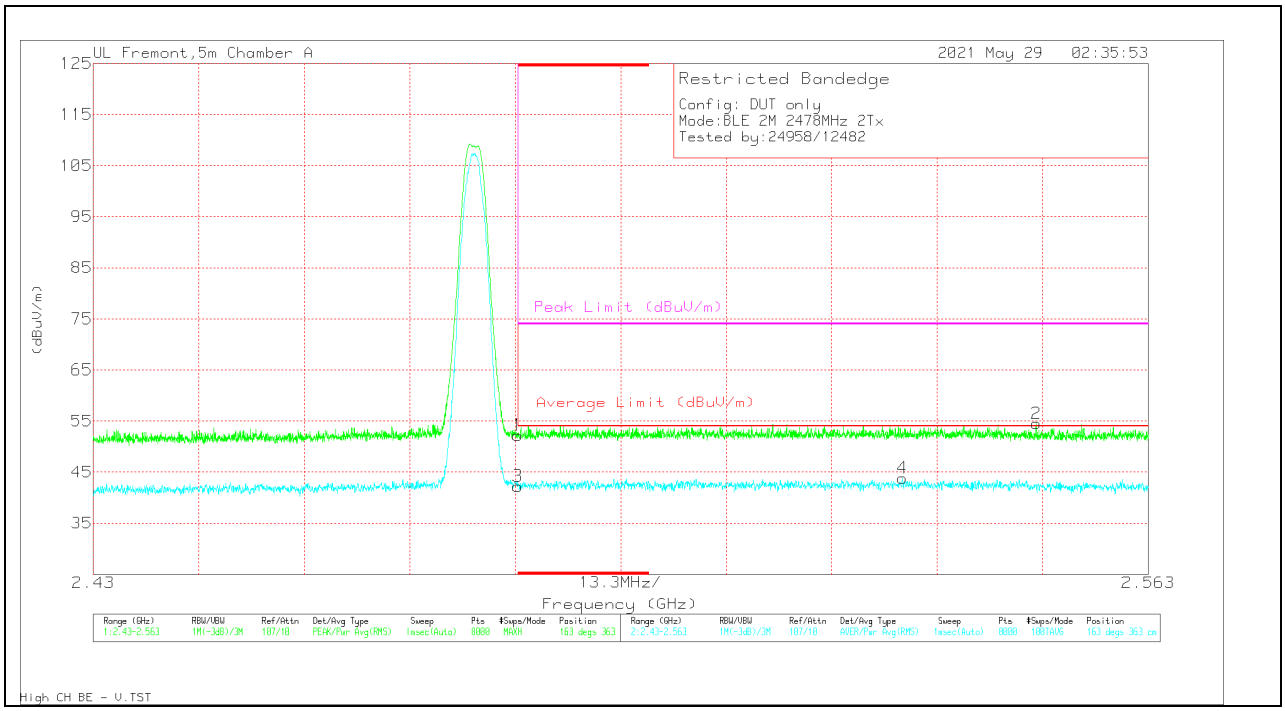
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	39.6	Pk	33.4	-20.8	52.2	-	-	74	-21.8	163	363	V
2	2.54887	41.91	Pk	33.2	-20.6	54.51	-	-	74	-19.49	163	363	V
3	* 2.48351	29.63	RMS	33.4	-20.8	42.23	54	-11.77	-	-	163	363	V
4	2.53201	30.93	RMS	33.4	-20.5	43.83	54	-10.17	-	-	163	363	V

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

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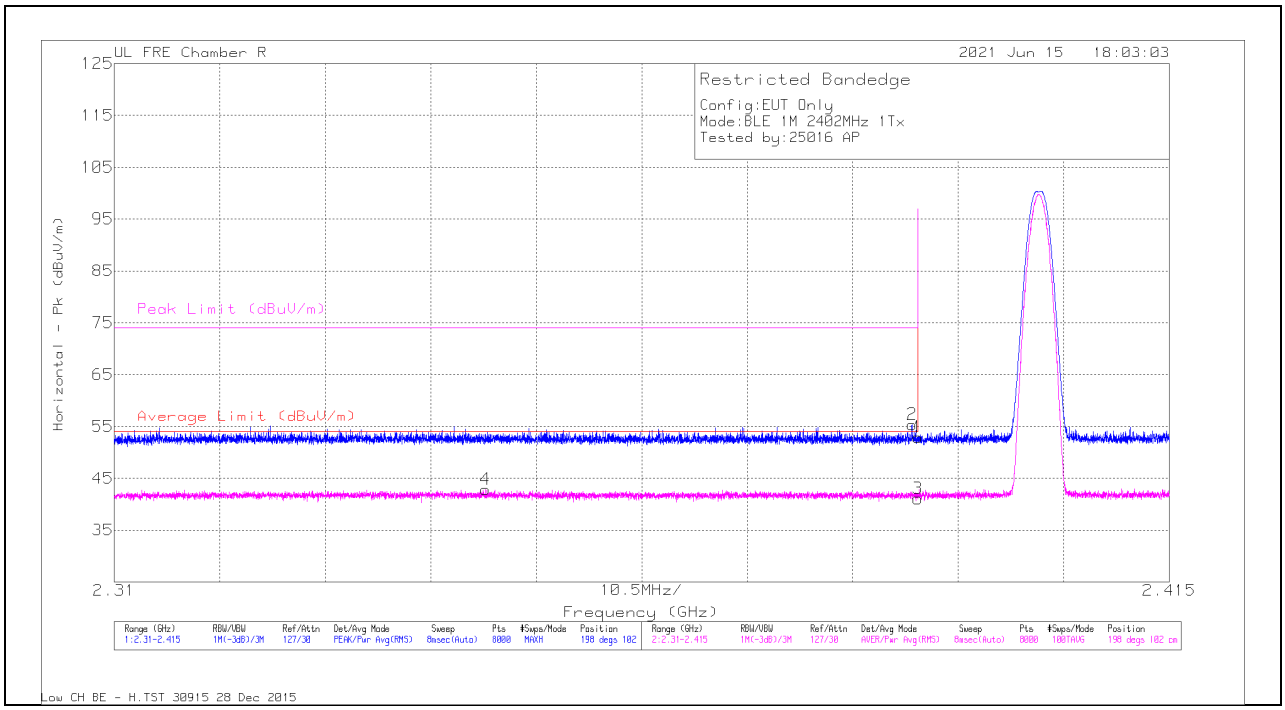
10.2.5. LOW POWER BLE (1Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56.31	Pk	32.1	-35.5	52.91	-	-	74	-21.09	198	102	H
2	2.38939	58.77	Pk	32.1	-35.5	55.37	-	-	74	-18.63	198	102	H
3	2.39	44.48	RMS	32.1	-35.5	41.08	54	-12.92	-	-	198	102	H
4	2.34695	46.25	RMS	32.2	-35.6	42.85	54	-11.15	-	-	198	102	H

Pk - Peak detector
RMS - RMS detection

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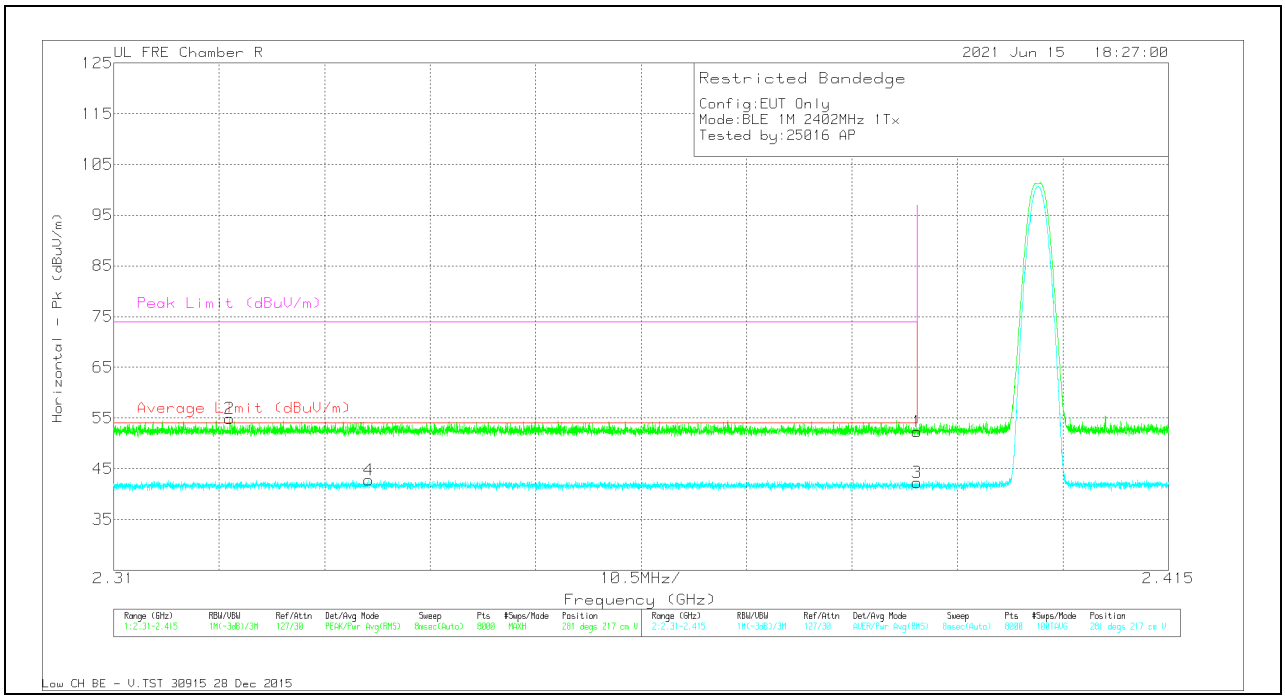
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.74	Pk	32.1	-35.5	52.34	-	-	74	-21.66	281	217	V
2	2.32156	58.27	Pk	32.2	-35.6	54.87	-	-	74	-19.13	281	217	V
3	2.39	45.73	RMS	32.1	-35.5	42.33	54	-11.67	-	-	281	217	V
4	2.33537	46.11	RMS	32.3	-35.6	42.81	54	-11.19	-	-	281	217	V

Pk - Peak detector
RMS - RMS detection

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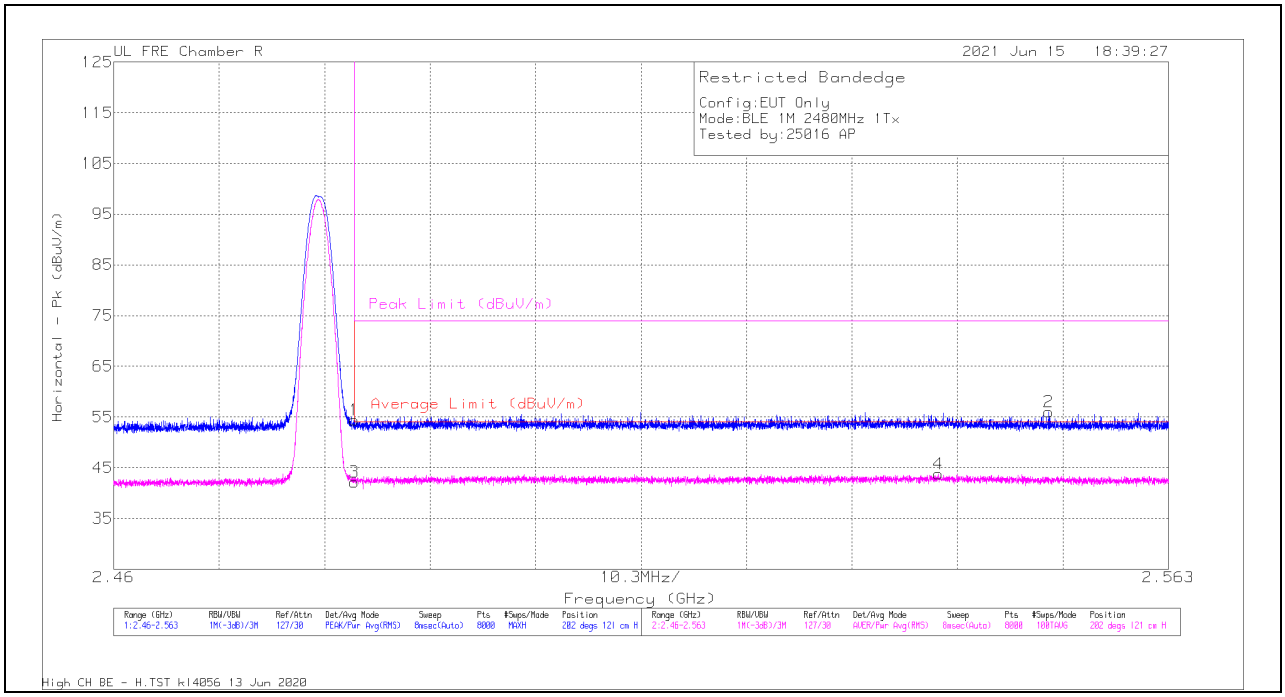
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.17	Pk	32.5	-35.3	54.37	-	-	74	-19.63	202	121	H
2	2.55129	58.58	Pk	32.4	-35	55.98	-	-	74	-18.02	202	121	H
3	2.4835	44.91	RMS	32.5	-35.3	42.11	54	-11.89	-	-	202	121	H
4	2.54051	46.15	RMS	32.6	-35	43.75	54	-10.25	-	-	202	121	H

Pk - Peak detector
RMS - RMS detection

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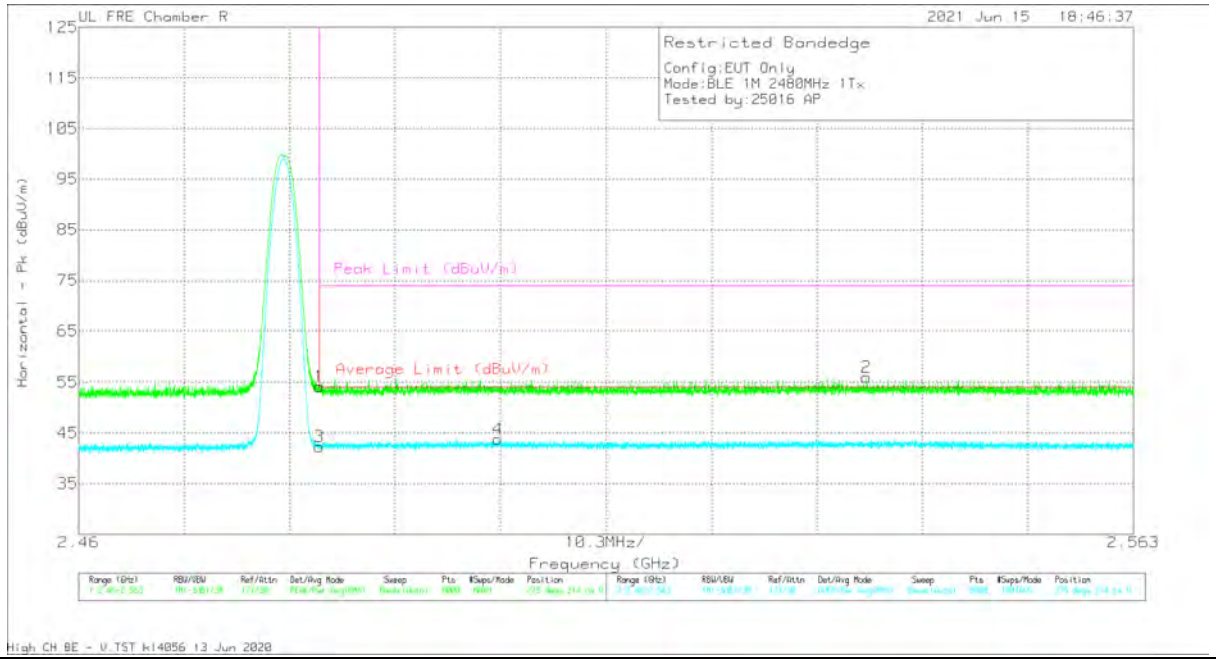
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.92	Pk	32.5	-35.3	54.12	-	-	74	-19.88	275	214	V
2	2.53693	58.44	Pk	32.6	-35	56.04	-	-	74	-17.96	275	214	V
3	2.4835	45.13	RMS	32.5	-35.3	42.33	54	-11.67	-	-	275	214	V
4	2.50095	46.22	RMS	32.6	-35.1	43.72	54	-10.28	-	-	275	214	V

Pk - Peak detector
RMS - RMS detection

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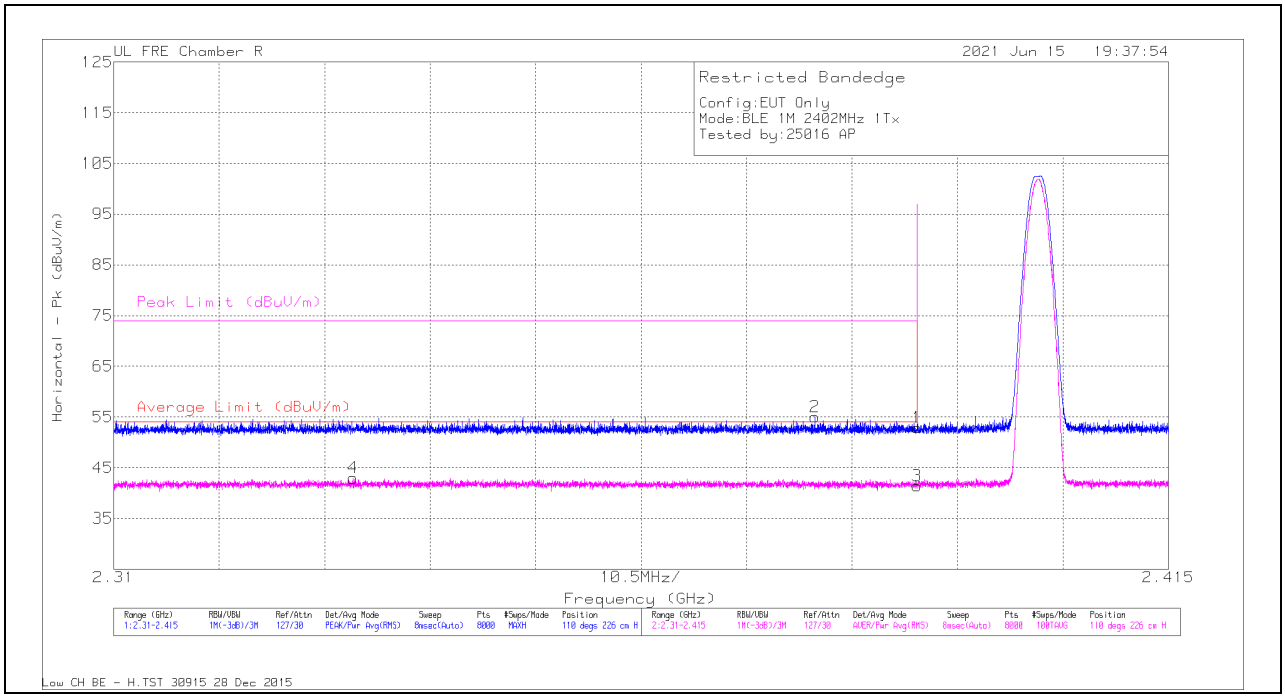
ANT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56.38	Pk	32.1	-35.5	52.98	-	-	74	-21.02	110	226	H
2	2.37978	58.47	Pk	32.1	-35.5	55.07	-	-	74	-18.93	110	226	H
3	2.39	44.82	RMS	32.1	-35.5	41.42	54	-12.58	-	-	110	226	H
4	2.33384	46.27	RMS	32.3	-35.6	42.97	54	-11.03	-	-	110	226	H

Pk - Peak detector
RMS - RMS detection

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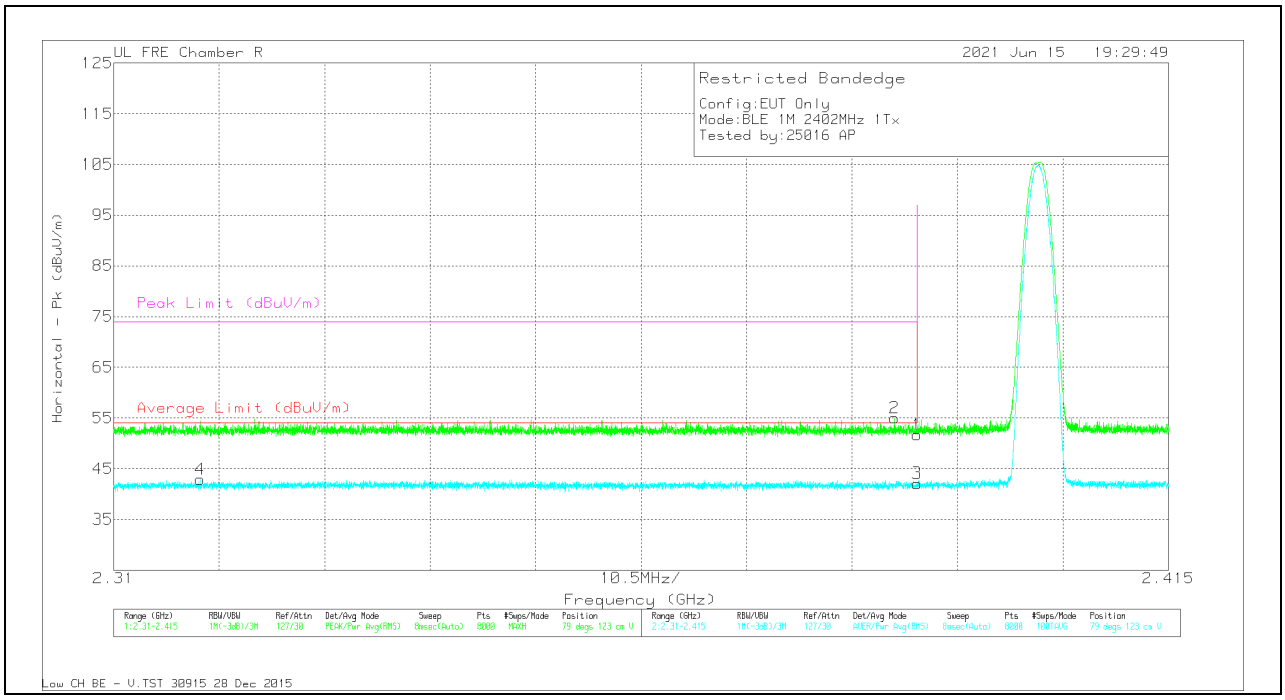
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.13	Pk	32.1	-35.5	51.73	-	-	74	-22.27	79	123	V
2	2.38775	58.42	Pk	32.1	-35.5	55.02	-	-	74	-18.98	79	123	V
3	2.39	45.5	RMS	32.1	-35.5	42.1	54	-11.9	-	-	79	123	V
4	2.31859	46.28	RMS	32.2	-35.6	42.88	54	-11.12	-	-	79	123	V

Pk - Peak detector
RMS - RMS detection

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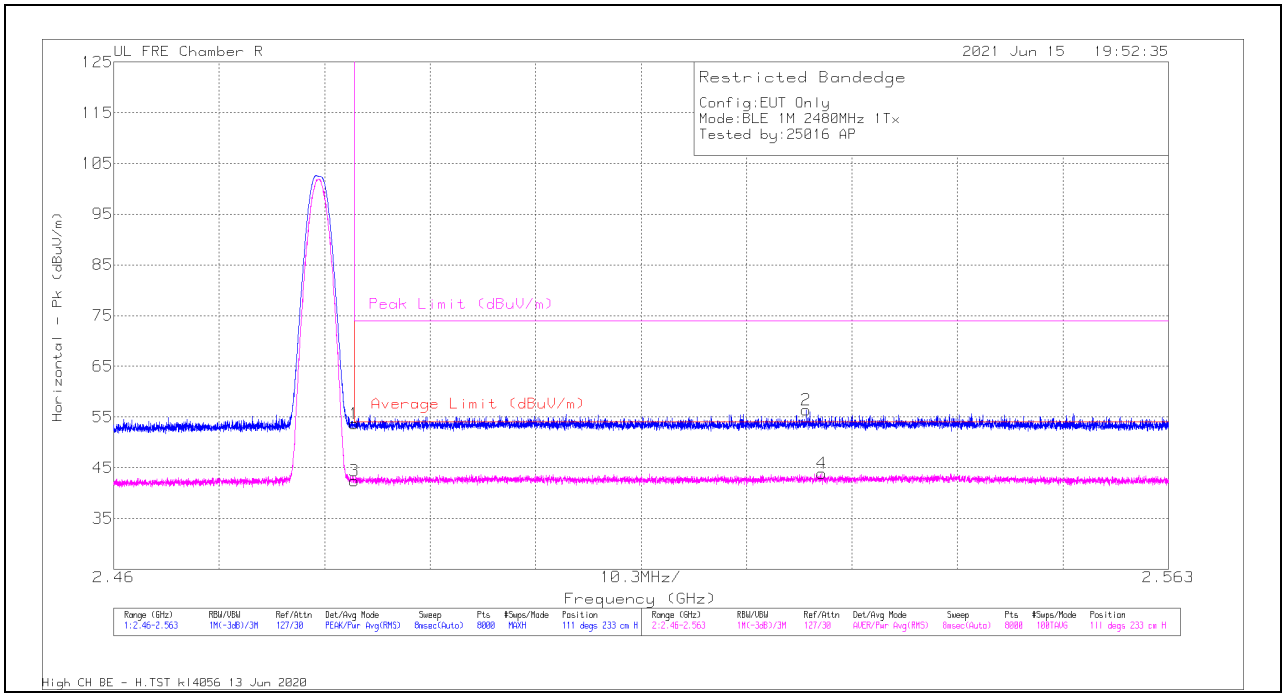
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.51	Pk	32.5	-35.3	53.71	-	-	74	-20.29	111	233	H
2	2.52762	58.81	Pk	32.7	-35.1	56.41	-	-	74	-17.59	111	233	H
3	2.4835	45.17	RMS	32.5	-35.3	42.37	54	-11.63	-	-	111	233	H
4	2.52916	46.33	RMS	32.7	-35.1	43.93	54	-10.07	-	-	111	233	H

Pk - Peak detector
RMS - RMS detection

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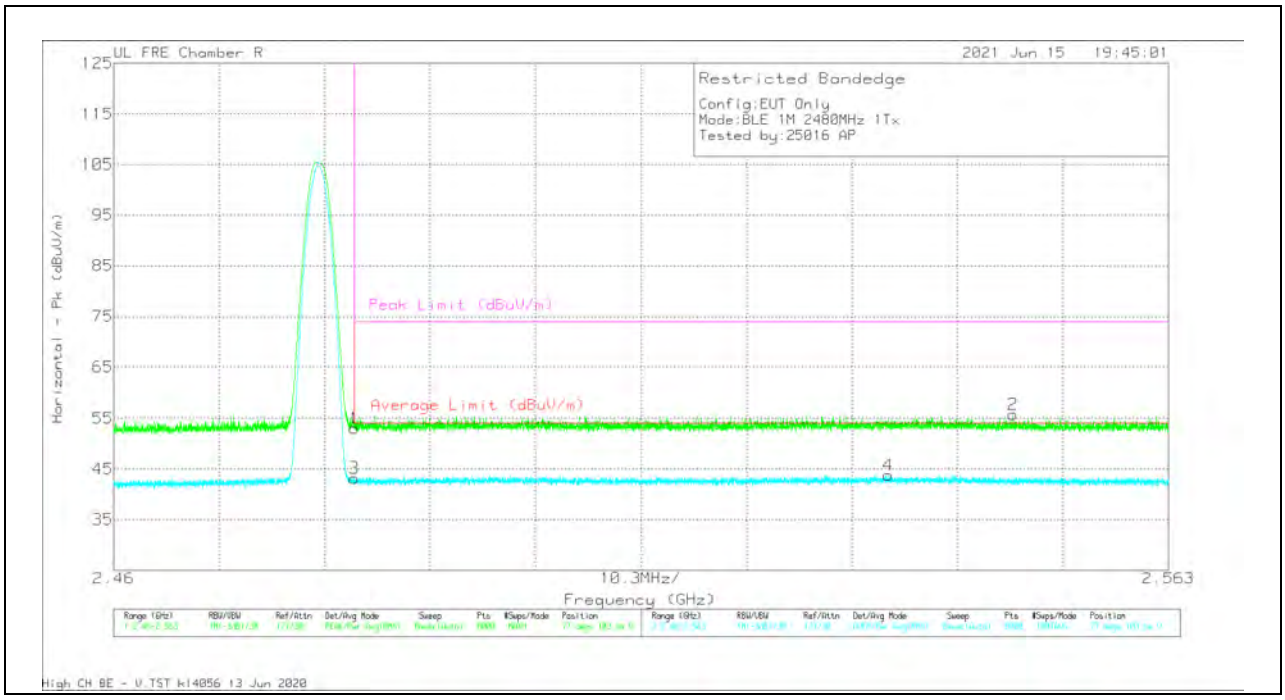
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	55.84	Pk	32.5	-35.3	53.04	-	-	74	-20.96	77	103	V
2	2.54782	58.32	Pk	32.5	-35	55.82	-	-	74	-18.18	77	103	V
3	2.4835	46.01	RMS	32.5	-35.3	43.21	54	-10.79	-	-	77	103	V
4	2.53563	46.22	RMS	32.6	-35	43.82	54	-10.18	-	-	77	103	V

Pk - Peak detector
RMS - RMS detection

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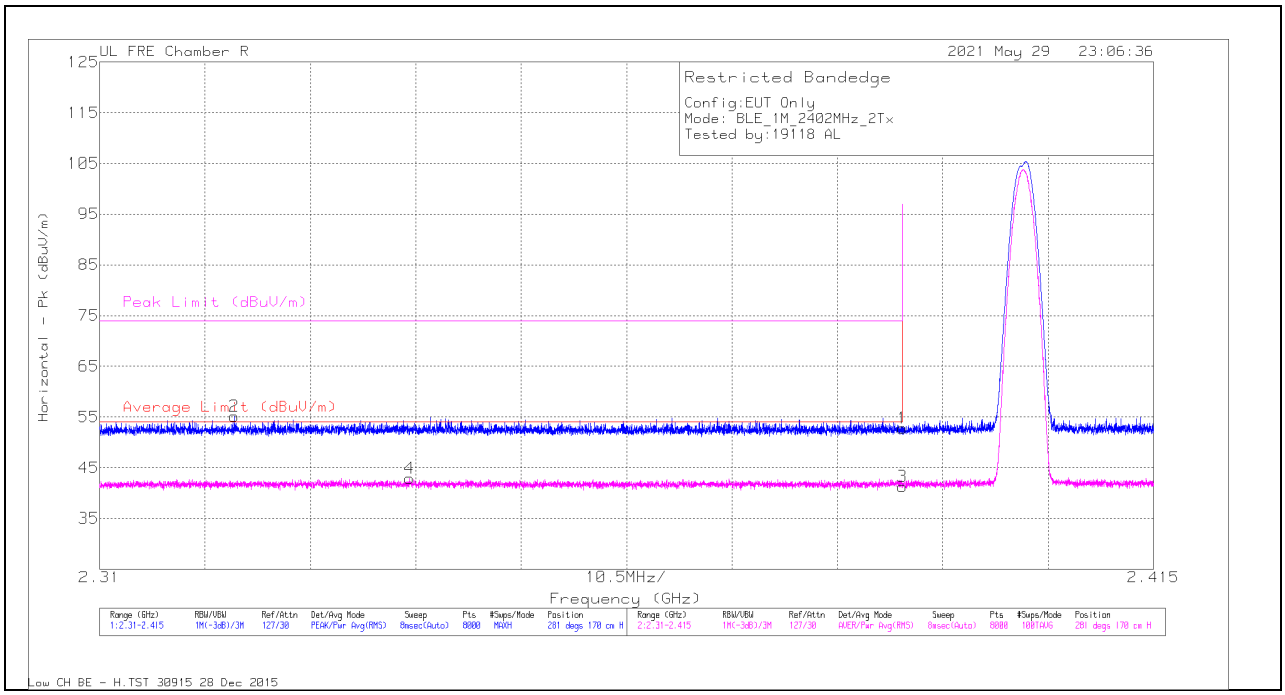
10.2.6. LOW POWER BLE TXBF (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56.15	Pk	32.1	-35.5	52.75	-	-	74	-21.25	281	170	H
2	2.32343	58.53	Pk	32.2	-35.6	55.13	-	-	74	-18.87	281	170	H
3	2.39	44.65	RMS	32.1	-35.5	41.25	54	-12.75	-	-	281	170	H
4	2.34087	46.35	RMS	32.2	-35.6	42.95	54	-11.05	-	-	281	170	H

Pk - Peak detector
RMS - RMS detection

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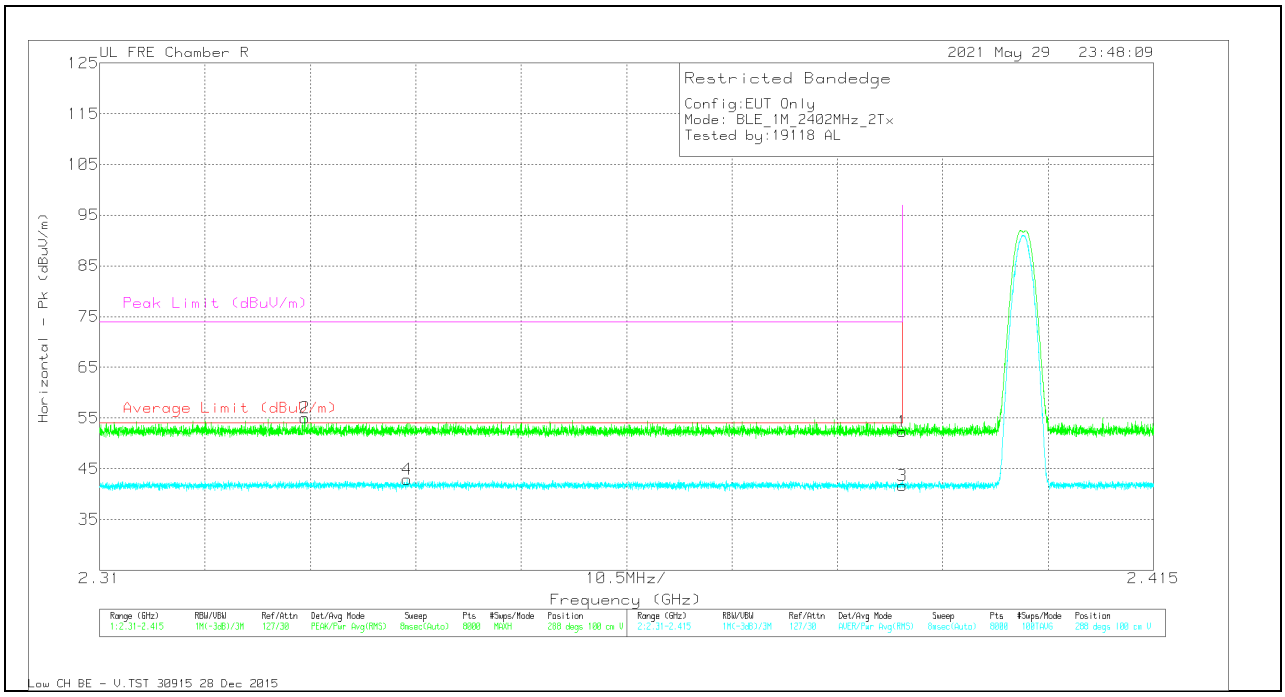
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.75	Pk	32.1	-35.5	52.35	-	-	74	-21.65	288	100	V
2	2.33044	58.41	Pk	32.2	-35.6	55.01	-	-	74	-18.99	288	100	V
3	2.39	45.05	RMS	32.1	-35.5	41.65	54	-12.35	-	-	288	100	V
4	2.34063	46.27	RMS	32.2	-35.6	42.87	54	-11.13	-	-	288	100	V

Pk - Peak detector
RMS - RMS detection

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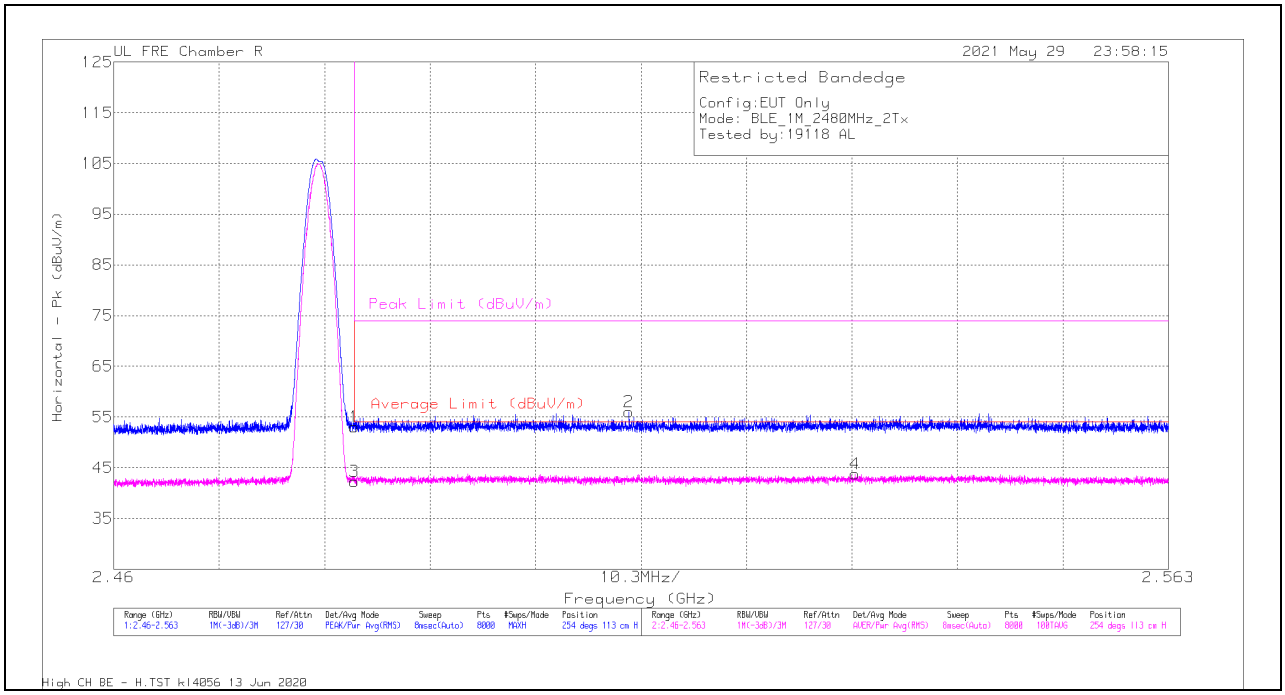
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	55.83	Pk	32.5	-35.3	53.03	-	-	74	-20.97	254	113	H
2	2.5103	58.63	Pk	32.6	-35.2	56.03	-	-	74	-17.97	254	113	H
3	2.4835	45.13	RMS	32.5	-35.3	42.33	54	-11.67	-	-	254	113	H
4	2.53239	46.22	RMS	32.6	-35	43.82	54	-10.18	-	-	254	113	H

Pk - Peak detector
RMS - RMS detection

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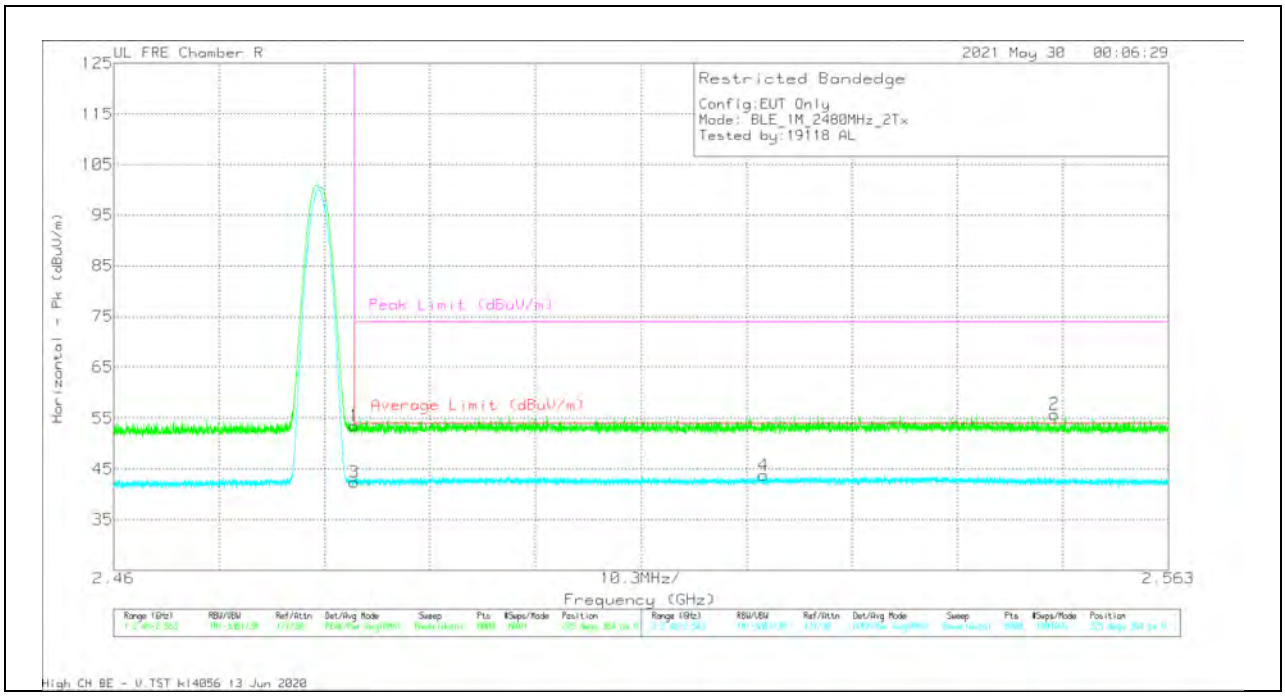
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.3	Pk	32.5	-35.3	53.5	-	-	74	-20.5	225	364	V
2	2.55185	58.43	Pk	32.4	-35	55.83	-	-	74	-18.17	225	364	V
3	2.4835	45.21	RMS	32.5	-35.3	42.41	54	-11.59	-	-	225	364	V
4	2.52347	46.29	RMS	32.7	-35.2	43.79	54	-10.21	-	-	225	364	V

Pk - Peak detector
RMS - RMS detection

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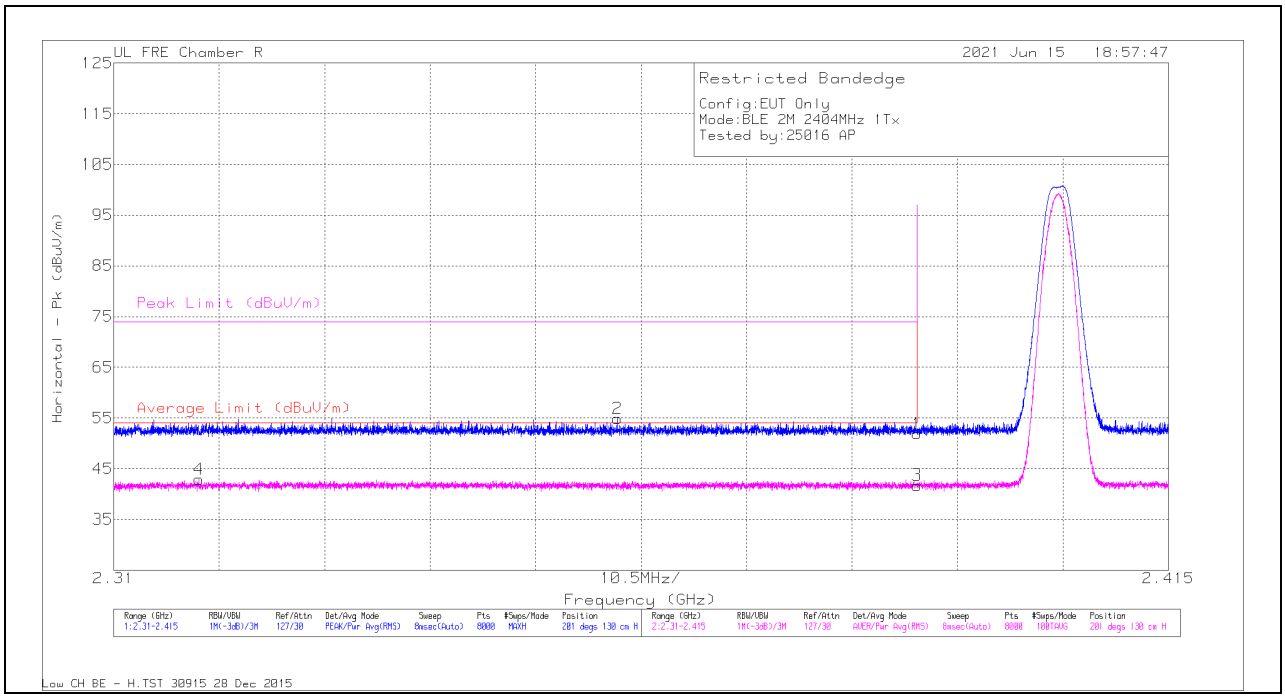
10.2.7. LOW POWER BLE (2Mbps)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.39	Pk	32.1	-35.5	51.99	-	-	74	-22.01	201	130	H
2	2.36015	58.33	Pk	32.1	-35.5	54.93	-	-	74	-19.07	201	130	H
3	2.39	45.13	RMS	32.1	-35.5	41.73	54	-12.27	-	-	201	130	H
4	2.31847	46.26	RMS	32.2	-35.6	42.86	54	-11.14	-	-	201	130	H

Pk - Peak detector
RMS - RMS detection

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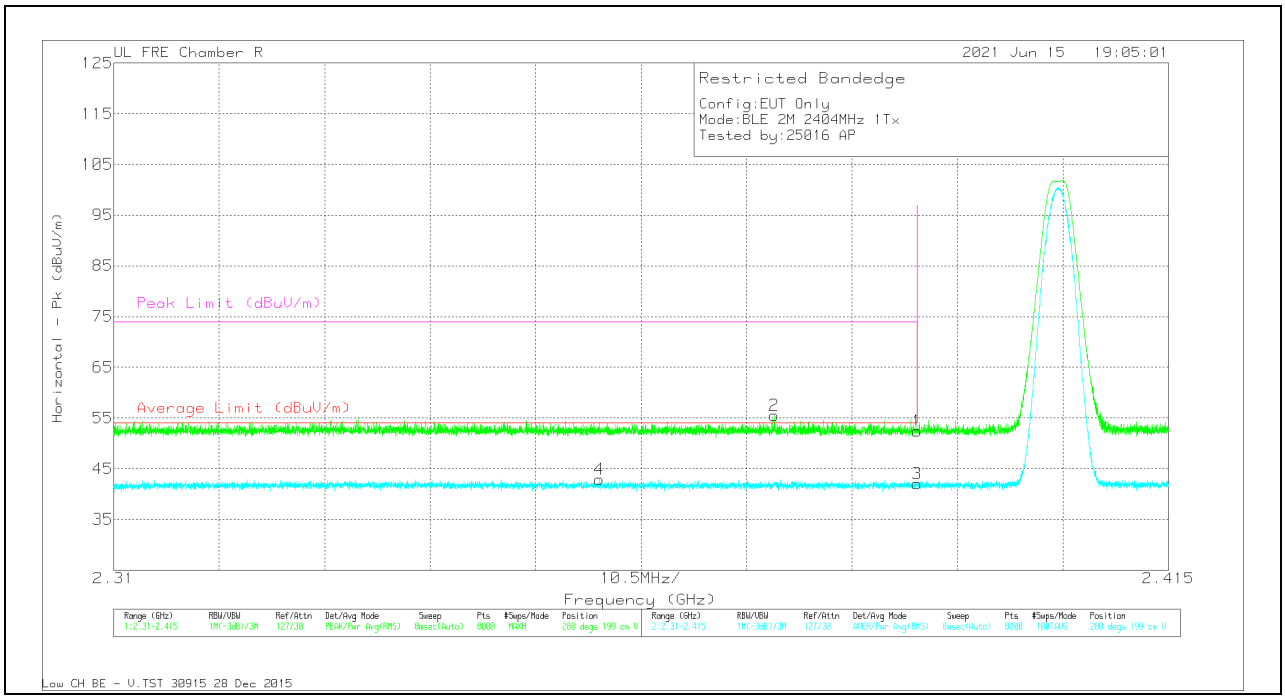
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.86	Pk	32.1	-35.5	52.46	-	-	74	-21.54	280	199	V
2	2.37577	58.9	Pk	32.1	-35.5	55.5	-	-	74	-18.5	280	199	V
3	2.39	45.46	RMS	32.1	-35.5	42.06	54	-11.94	-	-	280	199	V
4	2.35837	46.38	RMS	32.1	-35.6	42.88	54	-11.12	-	-	280	199	V

Pk - Peak detector
RMS - RMS detection

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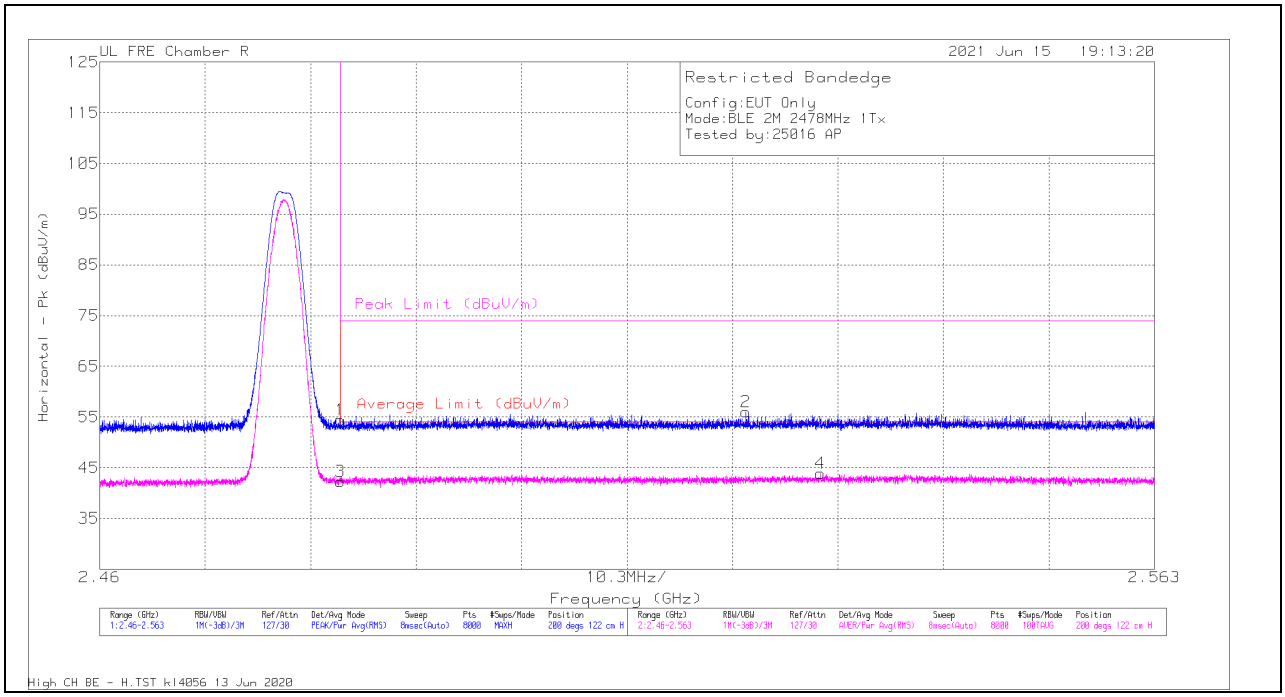
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	57.22	Pk	32.5	-35.3	54.42	-	-	74	-19.58	200	122	H
2	2.52308	58.48	Pk	32.7	-35.2	55.98	-	-	74	-18.02	200	122	H
3	2.4835	45.07	RMS	32.5	-35.3	42.27	54	-11.73	-	-	200	122	H
4	2.53036	46.39	RMS	32.6	-35.1	43.89	54	-10.11	-	-	200	122	H

Pk - Peak detector
RMS - RMS detection

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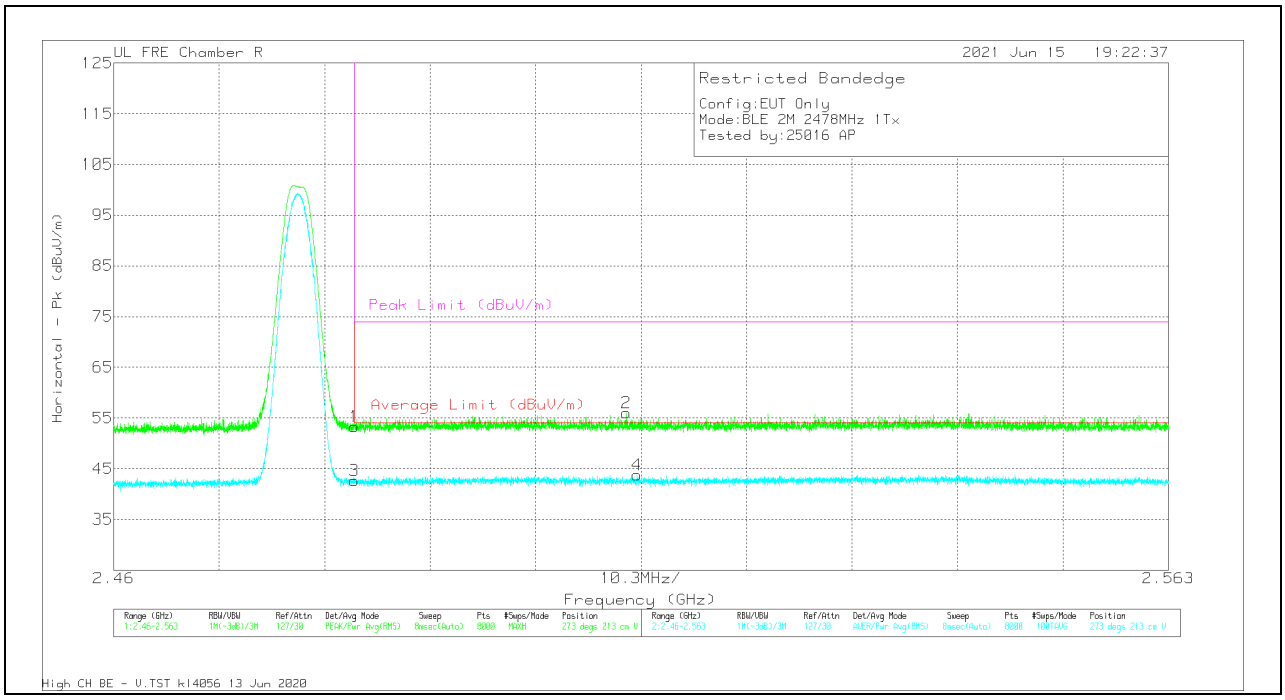
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.11	Pk	32.5	-35.3	53.31	-	-	74	-20.69	273	213	V
2	2.51008	58.61	Pk	32.6	-35.2	56.01	-	-	74	-17.99	273	213	V
3	2.4835	45.41	RMS	32.5	-35.3	42.61	54	-11.39	-	-	273	213	V
4	2.5111	46.42	RMS	32.6	-35.2	43.82	54	-10.18	-	-	273	213	V

Pk - Peak detector
RMS - RMS detection

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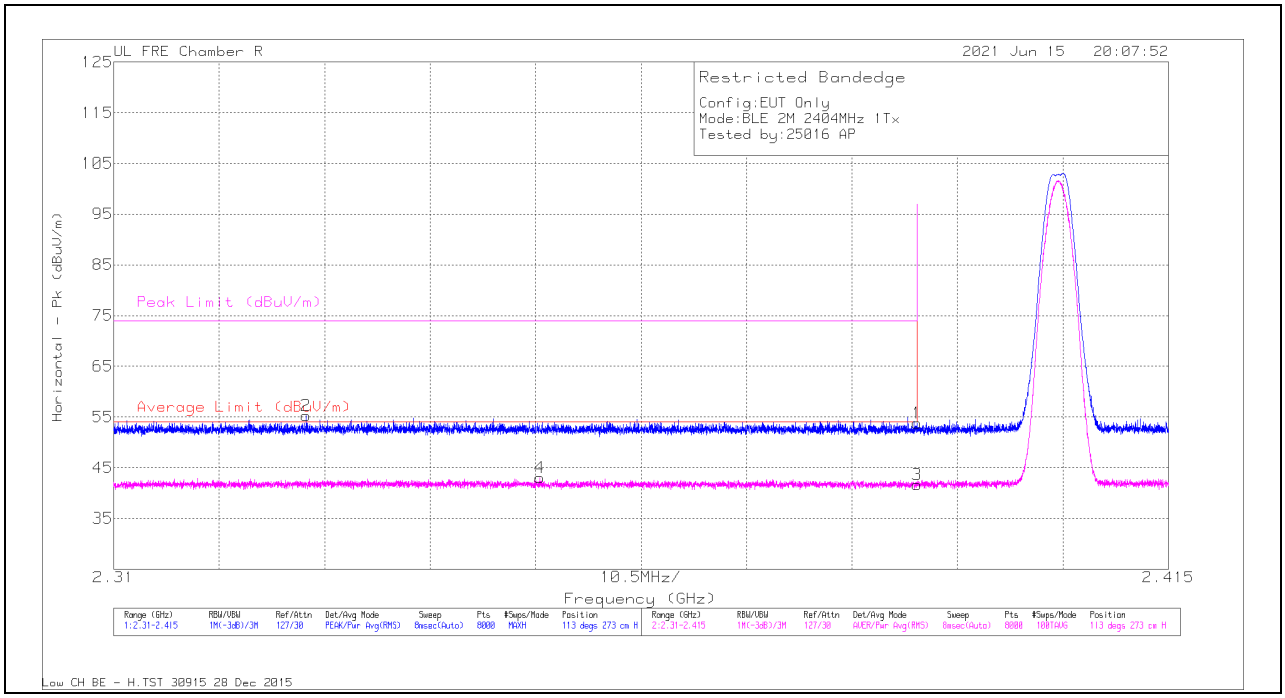
ANT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.32914	58.62	Pk	32.2	-35.6	55.22	-	-	74	-18.78	113	273	H
4	2.35244	46.56	RMS	32.1	-35.6	43.06	54	-10.94	-	-	113	273	H
1	2.39	57.18	Pk	32.1	-35.5	53.78	-	-	74	-20.22	113	273	H
3	2.39	45.12	RMS	32.1	-35.5	41.72	54	-12.28	-	-	113	273	H

Pk - Peak detector
RMS - RMS detection

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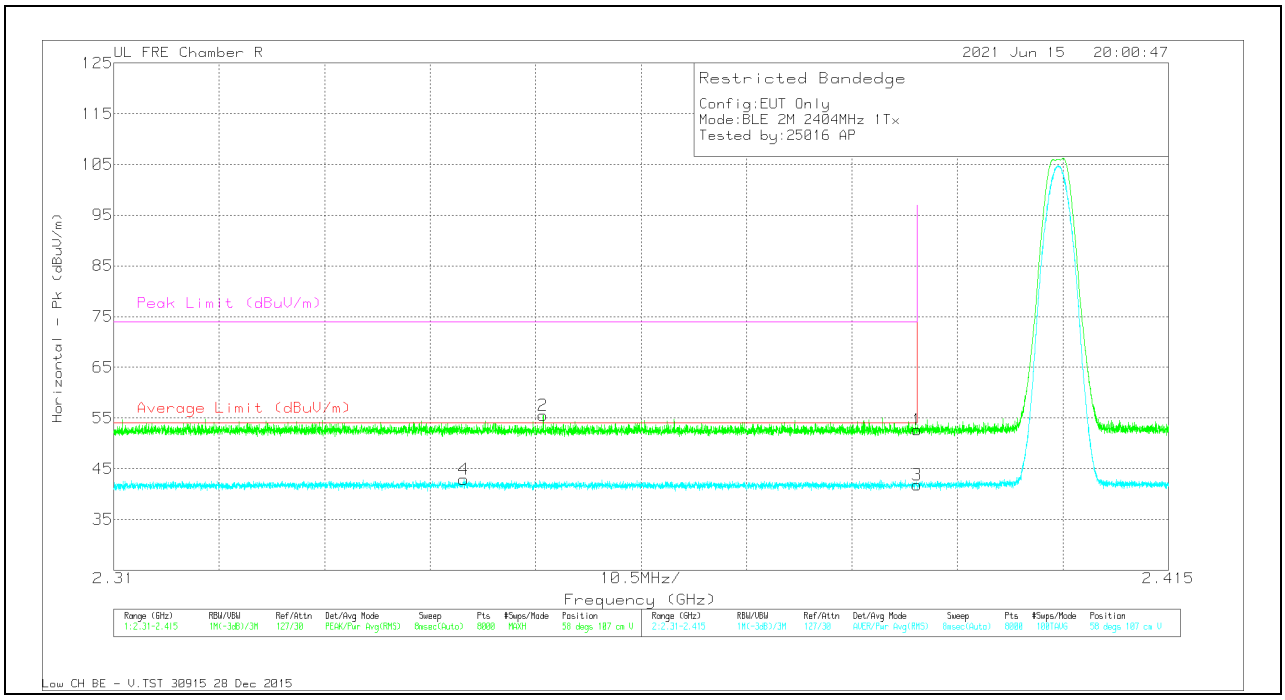
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56.12	Pk	32.1	-35.5	52.72	-	-	74	-21.28	58	107	V
2	2.35275	59.03	Pk	32.1	-35.6	55.53	-	-	74	-18.47	58	107	V
3	2.39	45.17	RMS	32.1	-35.5	41.77	54	-12.23	-	-	58	107	V
4	2.34484	46.36	RMS	32.2	-35.6	42.96	54	-11.04	-	-	58	107	V

Pk - Peak detector
RMS - RMS detection

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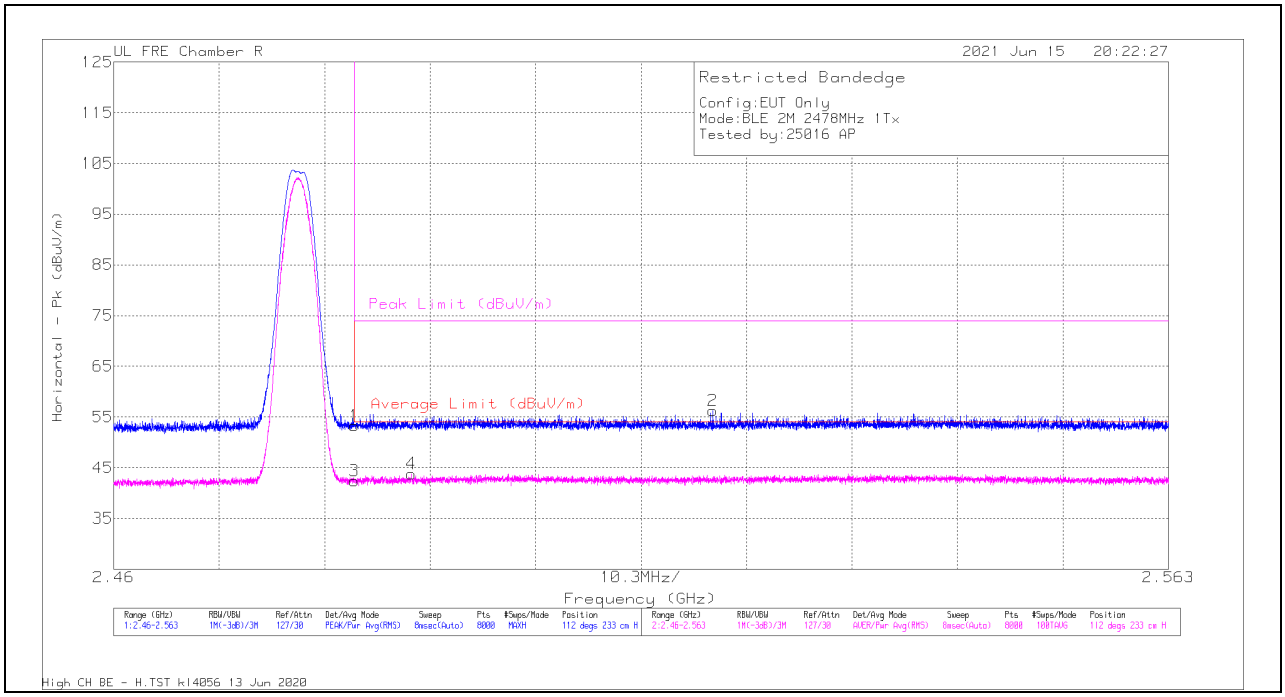
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.1	Pk	32.5	-35.3	53.3	-	-	74	-20.7	112	233	H
2	2.51853	58.77	Pk	32.7	-35.2	56.27	-	-	74	-17.73	112	233	H
3	2.4835	45.19	RMS	32.5	-35.3	42.39	54	-11.61	-	-	112	233	H
4	2.48906	46.53	RMS	32.5	-35.2	43.83	54	-10.17	-	-	112	233	H

Pk - Peak detector

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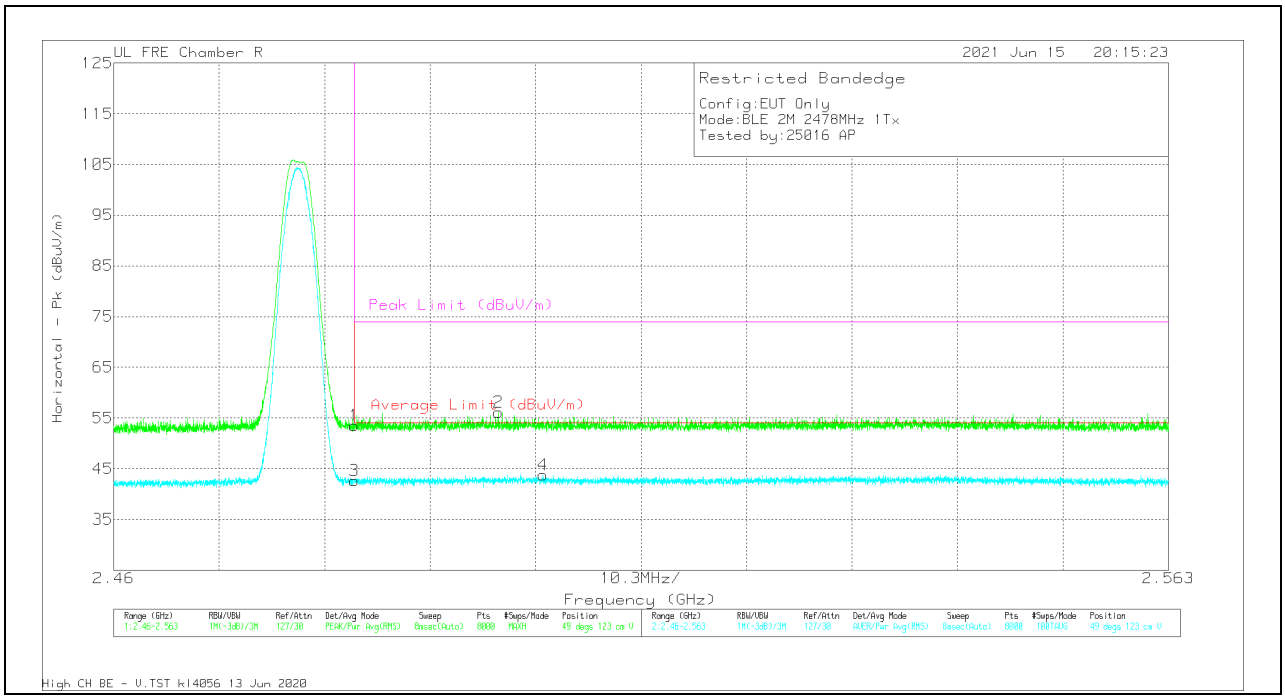
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.3	Pk	32.5	-35.3	53.5	-	-	74	-20.5	49	123	V
2	2.49755	58.74	Pk	32.6	-35.2	56.14	-	-	74	-17.86	49	123	V
3	2.4835	45.44	RMS	32.5	-35.3	42.64	54	-11.36	-	-	49	123	V
4	2.50193	46.29	RMS	32.6	-35.1	43.79	54	-10.21	-	-	49	123	V

Pk - Peak detector
RMS - RMS detection

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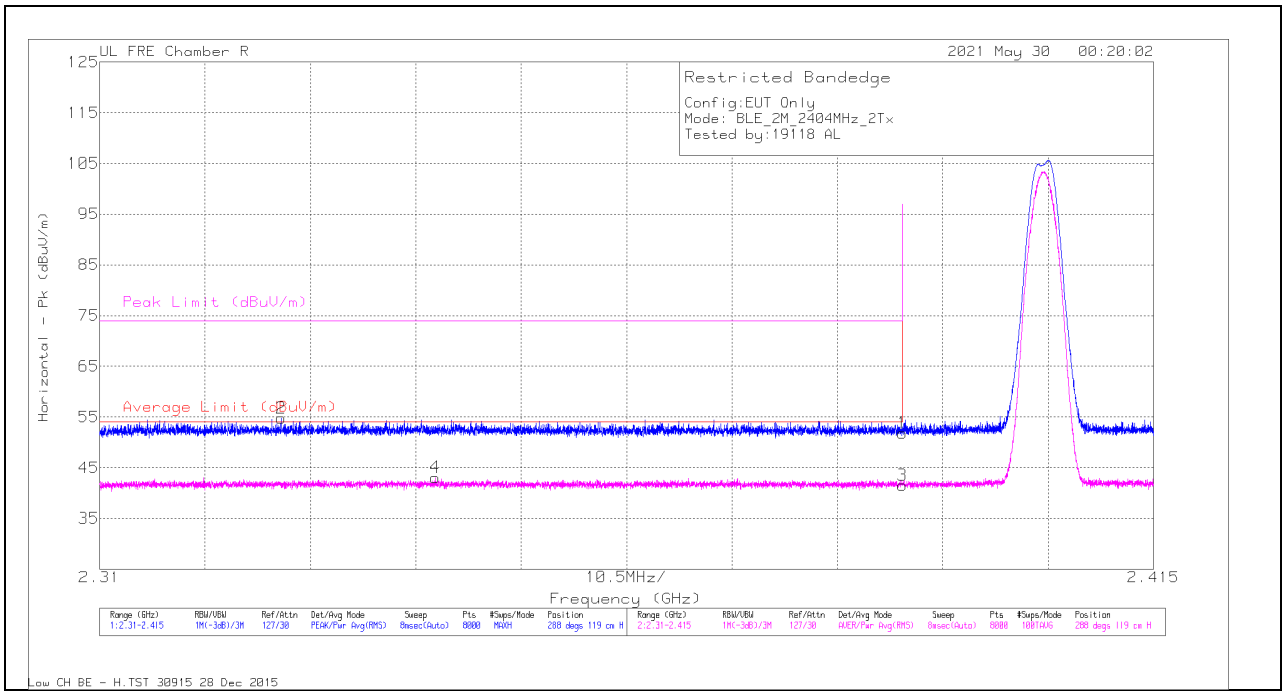
10.2.8. LOW POWER BLE TXBF (2Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	55.27	Pk	32.1	-35.5	51.87	-	-	74	-22.13	288	119	H
2	2.32806	58.21	Pk	32.2	-35.6	54.81	-	-	74	-19.19	288	119	H
3	2.39	44.94	RMS	32.1	-35.5	41.54	54	-12.46	-	-	288	119	H
4	2.34341	46.49	RMS	32.2	-35.6	43.09	54	-10.91	-	-	288	119	H

Pk - Peak detector
RMS - RMS detection

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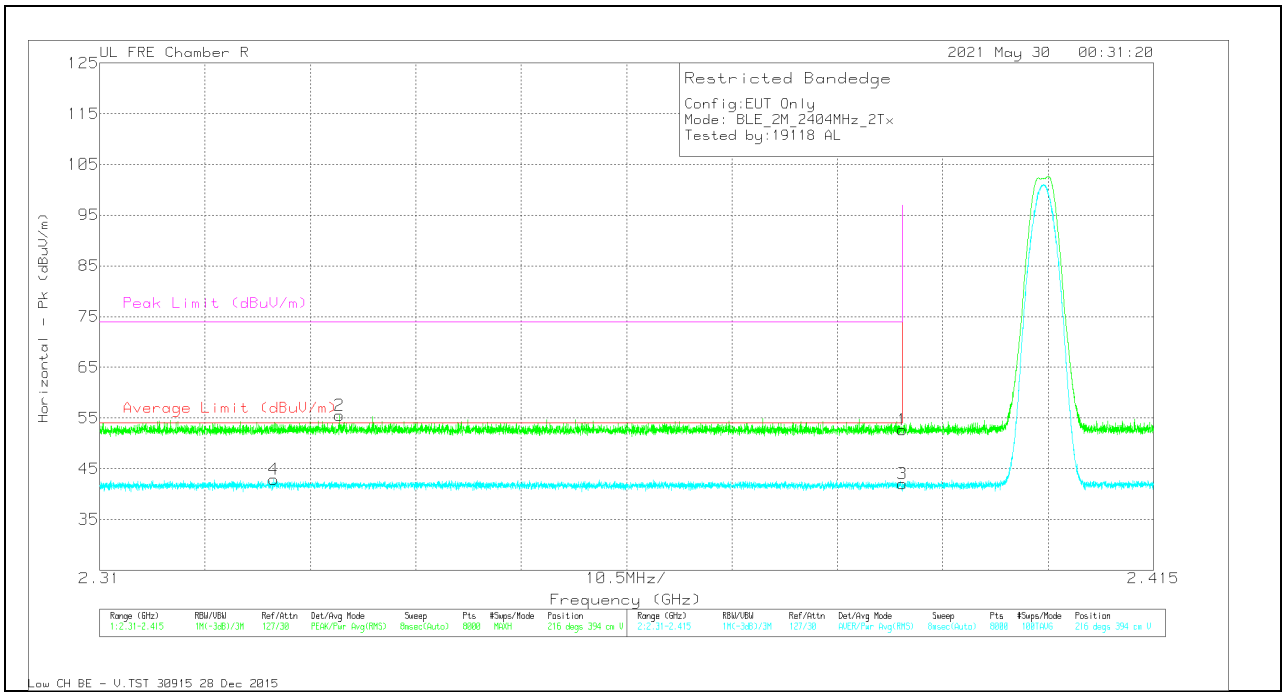
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.39	56.05	Pk	32.1	-35.5	52.65	-	-	74	-21.35	216	394	V
2	2.33386	58.82	Pk	32.3	-35.6	55.52	-	-	74	-18.48	216	394	V
3	2.39	45.43	RMS	32.1	-35.5	42.03	54	-11.97	-	-	216	394	V
4	2.32737	46.29	RMS	32.2	-35.6	42.89	54	-11.11	-	-	216	394	V

Pk - Peak detector
RMS - RMS detection

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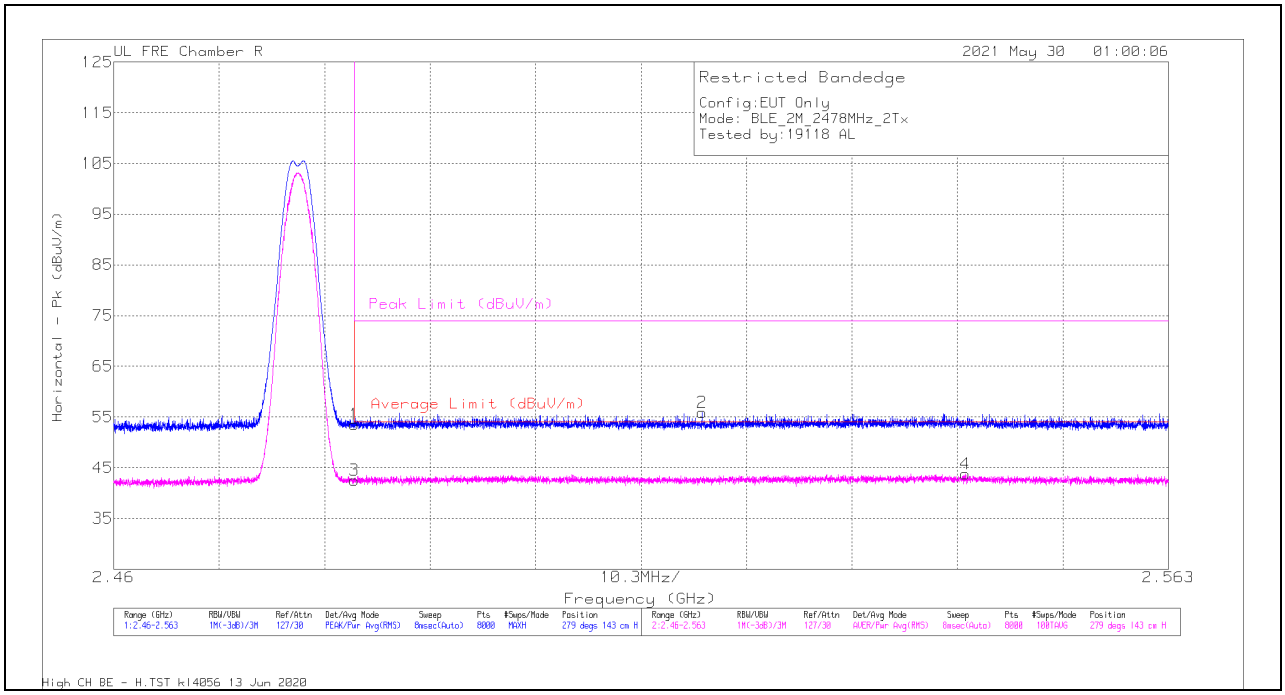
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	56.37	Pk	32.5	-35.3	53.57	-	-	74	-20.43	279	143	H
2	2.51744	58.37	Pk	32.7	-35.2	55.87	-	-	74	-18.13	279	143	H
3	2.4835	45.38	RMS	32.5	-35.3	42.58	54	-11.42	-	-	279	143	H
4	2.54316	46.19	RMS	32.6	-35	43.79	54	-10.21	-	-	279	143	H

Pk - Peak detector
RMS - RMS detection

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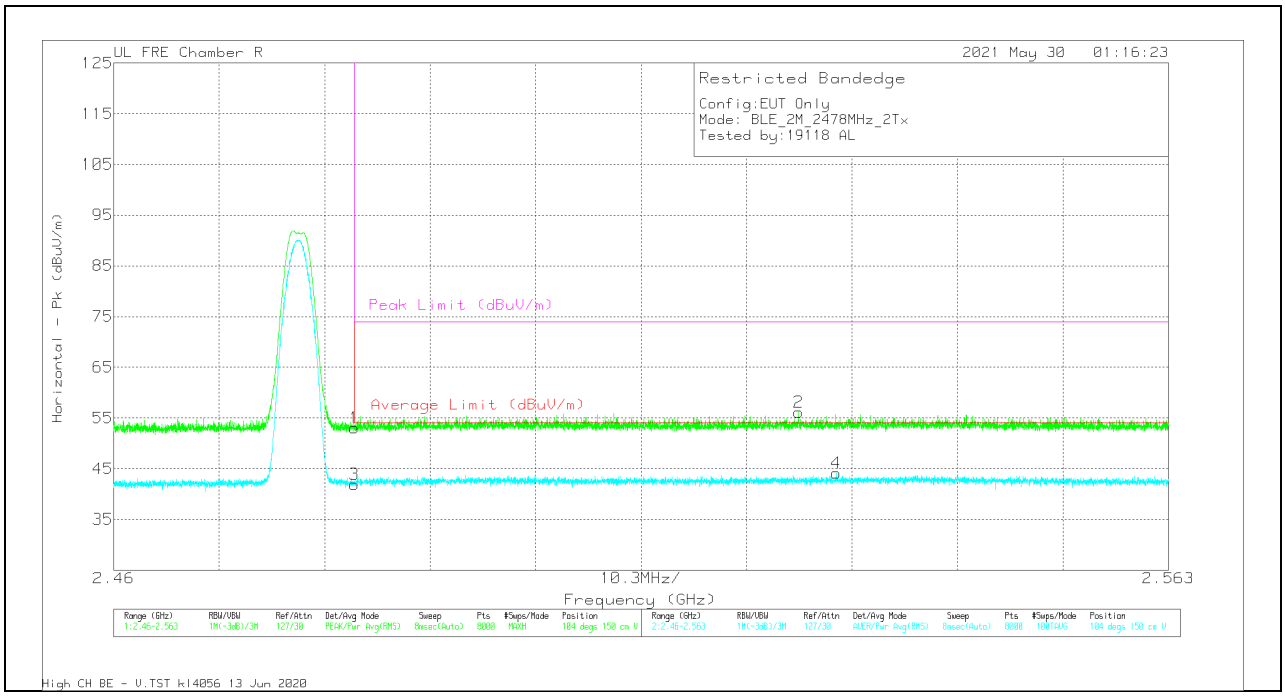
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213973 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4835	55.9	Pk	32.5	-35.3	53.1	-	-	74	-20.9	104	150	V
2	2.52687	58.56	Pk	32.7	-35.1	56.16	-	-	74	-17.84	104	150	V
3	2.4835	44.71	RMS	32.5	-35.3	41.91	54	-12.09	-	-	104	150	V
4	2.53057	46.59	RMS	32.6	-35.1	44.09	54	-9.91	-	-	104	150	V

Pk - Peak detector
RMS - RMS detection

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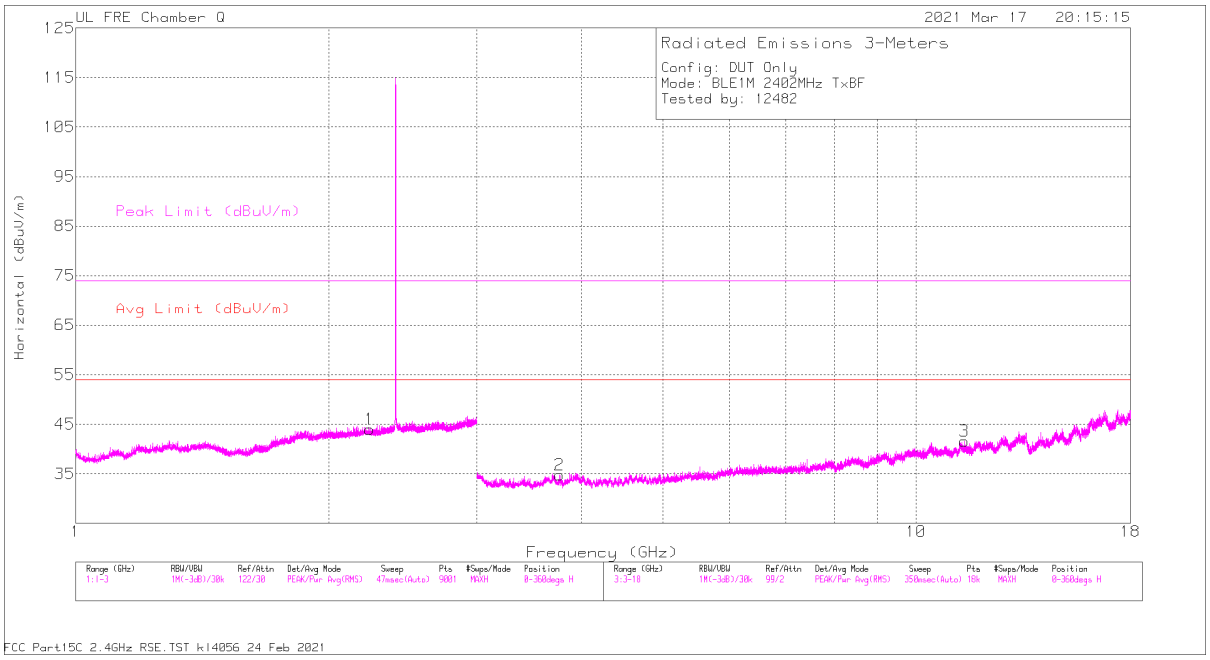
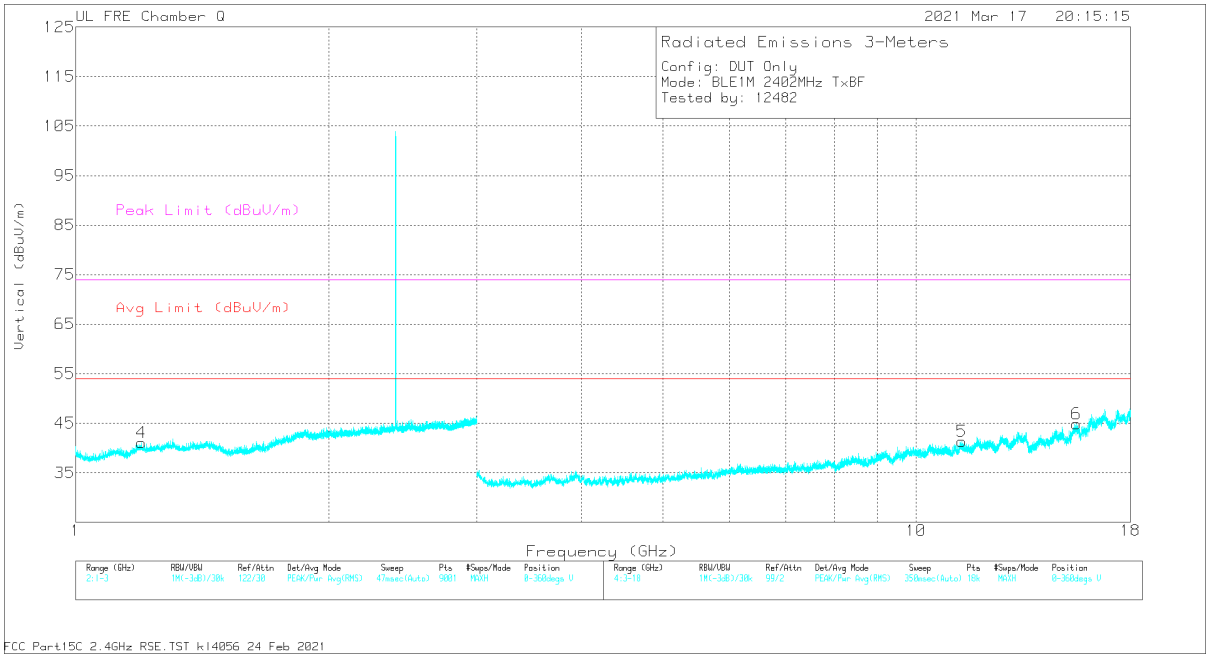
10.2.9. HIGH POWER HARMONICS AND SPURIOUS EMISSIONS TXBF (1Mbps)

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Range 1: Horizontal 1000 - 3000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.23727	56.87	PK2	31.6	-34.6	53.87	-	-	74	-20.13	228	199	H
	* 2.23591	45.3	MAv1	31.6	-34.6	42.3	54	-11.7	-	-	228	199	H

Range 2: Vertical 1000 - 3000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 1.19768	57.9	PK2	28.5	-35.8	50.6	-	-	74	-23.4	144	361	V
	* 1.19534	46.15	MAv1	28.5	-35.8	38.85	54	-15.15	-	-	144	361	V

Range 3: Horizontal 3000 - 18000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.76658	51.3	PK2	33.3	-40.3	44.3	-	-	74	-29.7	233	181	H
	* 3.7669	39.35	MAv1	33.3	-40.3	32.35	54	-21.65	-	-	233	181	H
3	* 11.41456	46.12	PK2	38	-33.8	50.32	-	-	74	-23.68	106	290	H
	* 11.41552	34.64	MAv1	38	-33.8	38.84	54	-15.16	-	-	106	290	H

Range 4: Vertical 3000 - 18000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 11.33599	46.55	PK2	38	-34.1	50.45	-	-	74	-23.55	81	140	V
	* 11.33695	35.07	MAv1	38	-34.1	38.97	54	-15.03	-	-	81	140	V
6	* 15.5299	47.06	PK2	40.3	-32.9	54.46	-	-	74	-19.54	319	129	V
	* 15.53194	35.3	MAv1	40.3	-32.9	42.7	54	-11.3	-	-	319	129	V

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

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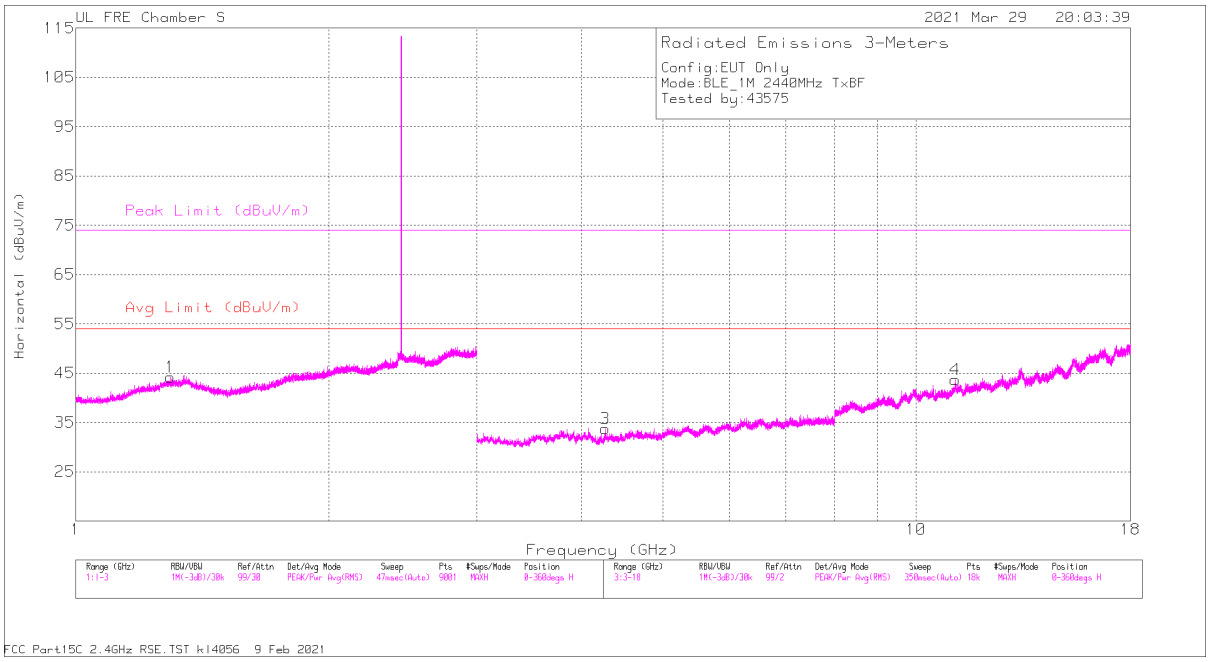
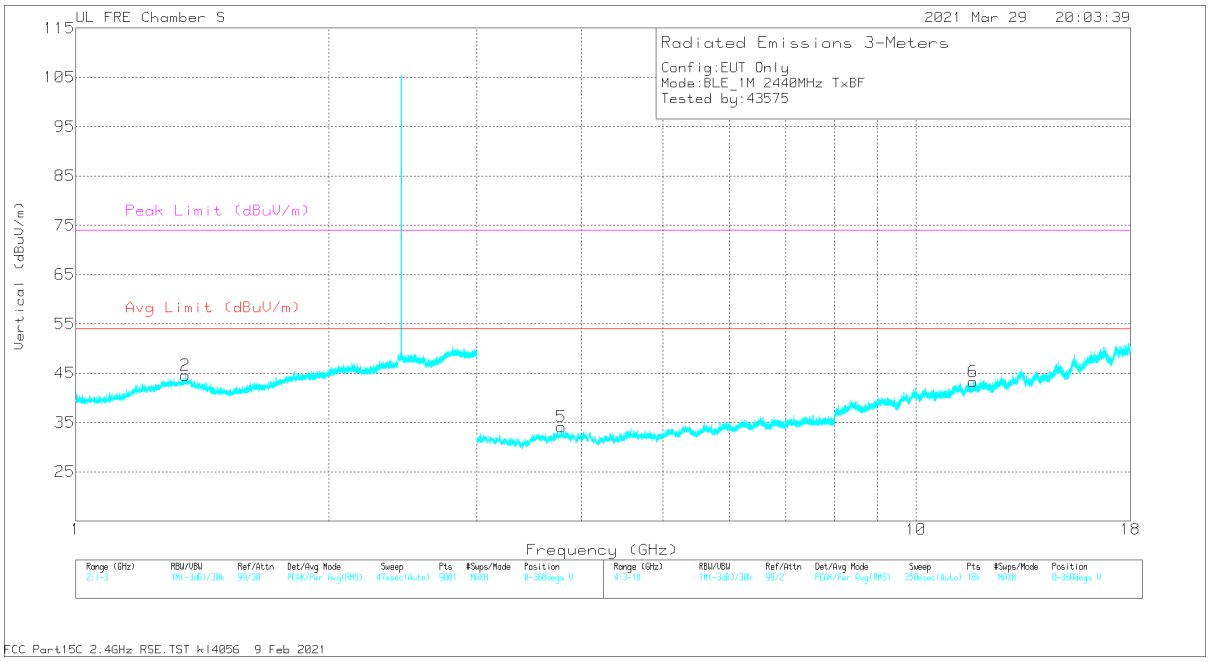
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213833 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.29689	59.47	PK2	29	-35.3	53.17	-	-	74	-20.83	0	100	H
	* 1.29491	47.86	MAv1	29.1	-35.3	41.66	54	-12.34	-	-	0	100	H
2	* 1.34892	59.36	PK2	29.4	-35	53.76	-	-	74	-20.24	0	201	V
	* 1.34925	47.59	MAv1	29.4	-35	41.99	54	-12.01	-	-	0	201	V
3	* 4.26454	52.49	PK2	33.5	-41.5	44.49	-	-	74	-29.51	0	100	H
	* 4.26445	40.83	MAv1	33.5	-41.5	32.83	54	-21.17	-	-	0	100	H
4	* 11.13605	48.35	PK2	38	-34.4	51.95	-	-	74	-22.05	0	100	H
	* 11.13642	36.72	MAv1	38	-34.4	40.32	54	-13.68	-	-	0	100	H
5	* 3.78389	52.23	PK2	33.5	-40.7	45.03	-	-	74	-28.97	0	201	V
	* 3.78469	40.56	MAv1	33.5	-40.7	33.36	54	-20.64	-	-	0	201	V
6	* 11.68709	47.41	PK2	38.5	-34	51.91	-	-	74	-22.09	0	200	V
	* 11.68578	35.82	MAv1	38.5	-34	40.32	54	-13.68	-	-	0	200	V

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

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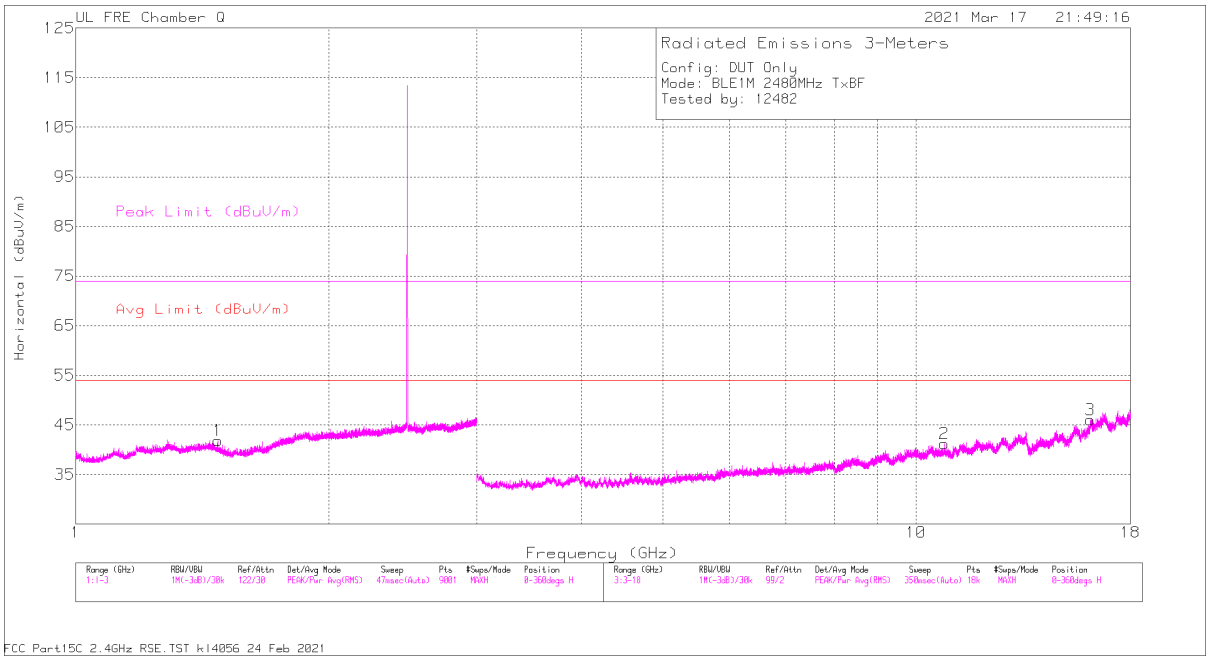
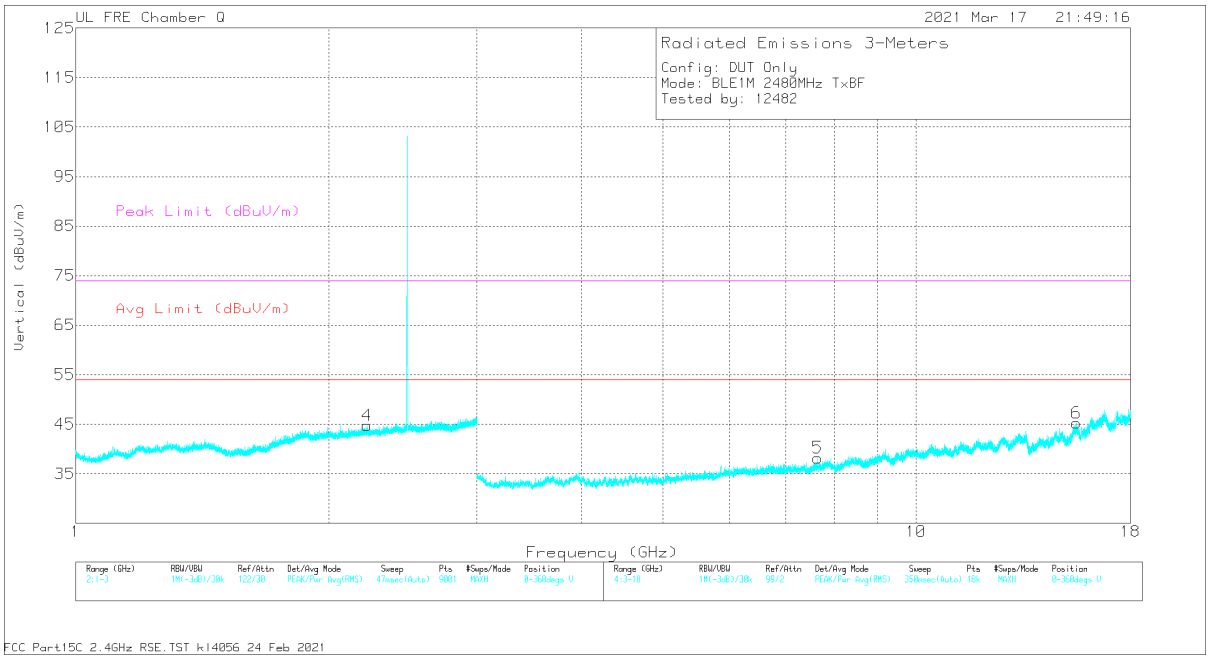
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Range 1: Horizontal 1000 - 3000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.4757	57.93	PK2	28	-35.2	50.73	-	-	74	-23.27	5	260	H
	* 1.475	45.96	MAv1	28	-35.2	38.76	54	-15.24	-	-	5	260	H

Range 2: Vertical 1000 - 3000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.22373	56.55	PK2	31.7	-34.6	53.65	-	-	74	-20.35	9	185	V
	* 2.22387	45.5	MAv1	31.7	-34.6	42.6	54	-11.4	-	-	9	185	V

Range 3: Horizontal 3000 - 18000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 10.80481	46.11	PK2	37.8	-34	49.91	-	-	74	-24.09	31	238	H
	* 10.80414	34.63	MAv1	37.8	-34	38.43	54	-15.57	-	-	31	238	H
3	* 16.1197	47.02	PK2	40.7	-33.2	54.52	-	-	74	-19.48	55	294	H
	* 16.12151	35.62	MAv1	40.7	-33.1	43.22	54	-10.78	-	-	55	294	H

Range 4: Vertical 3000 - 18000MHz

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0213831 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 7.63618	48.57	PK2	35.7	-37.6	46.67	-	-	74	-27.33	287	369	V
	* 7.63698	37.14	MAv1	35.7	-37.5	35.34	54	-18.66	-	-	287	369	V
6	* 15.52408	47.23	PK2	40.3	-33	54.53	-	-	74	-19.47	75	294	V
	* 15.5265	35.24	MAv1	40.3	-32.9	42.64	54	-11.36	-	-	75	294	V

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

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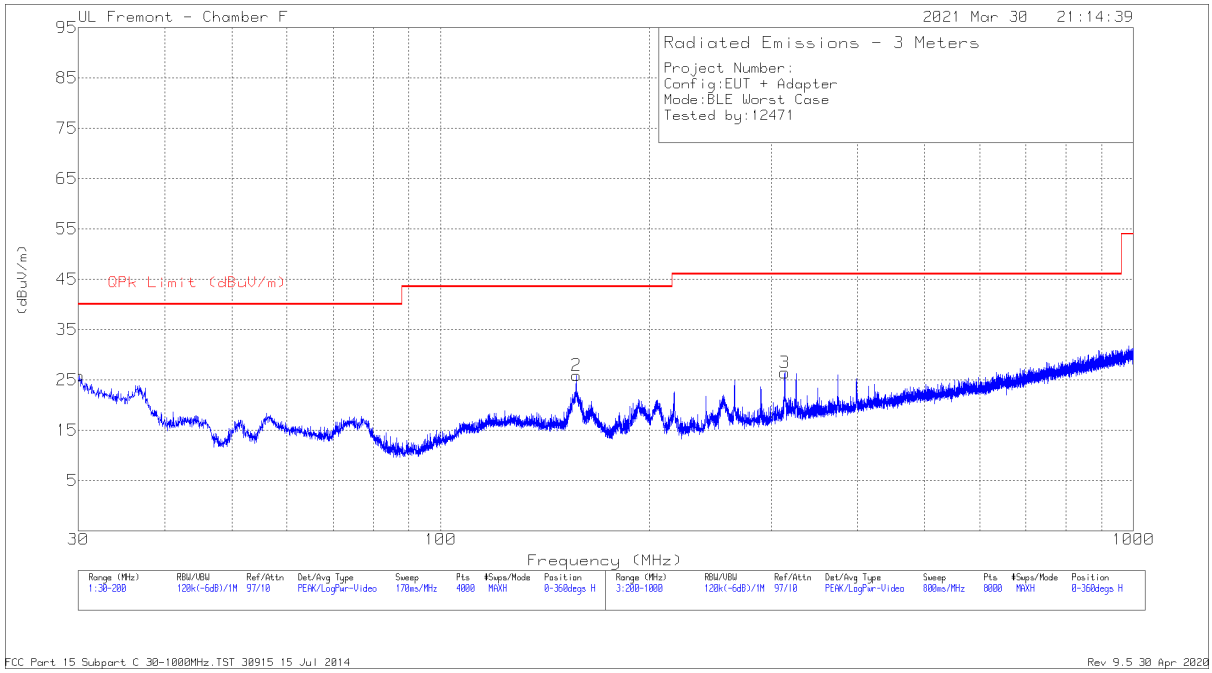
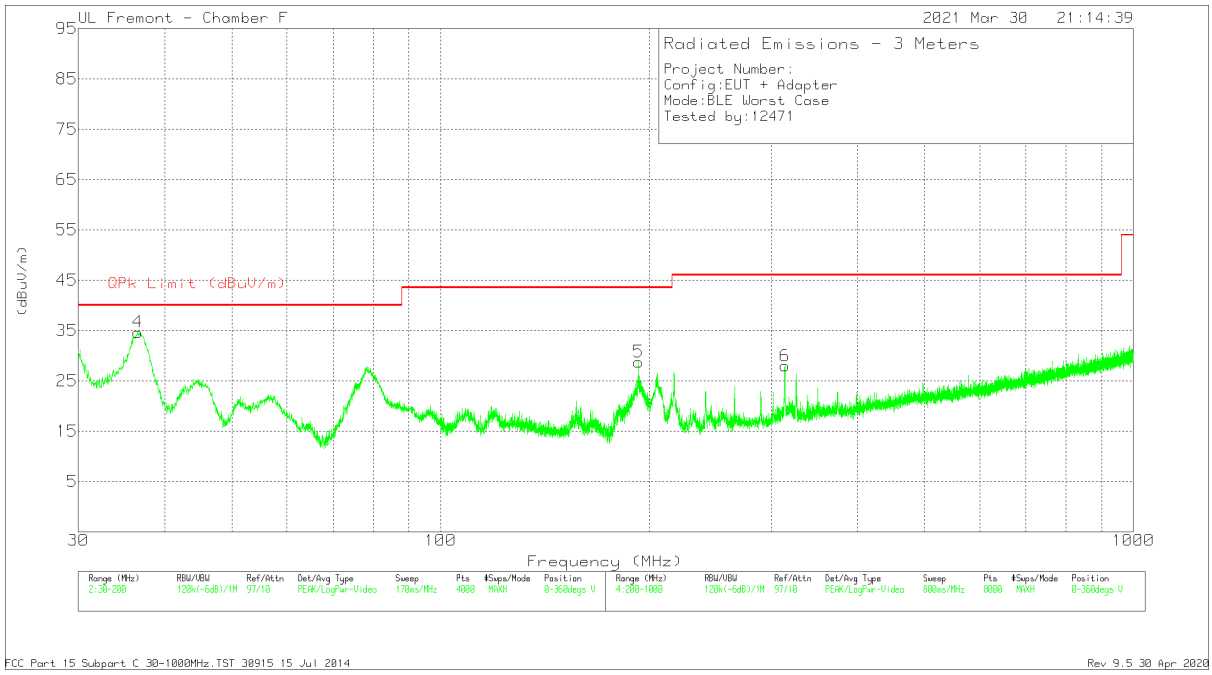
10.3. WORST CASE BELOW 1 GHZ

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



HORIZONTAL



VERTICAL

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DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.1275	29.71	Pk	28.1	-31.9	25.91	40	-14.09	0-360	200	H
2	157.1079	38.18	Pk	18.5	-30.8	25.88	43.52	-17.64	0-360	200	H
4	36.5892	43.46	Pk	23	-31.8	34.66	40	-5.34	0-360	100	V
4	36.9652	40.06	Qp	22.7	-31.8	30.96	40	-9.04	241	102	V
5	193.2848	41.17	Pk	18	-30.4	28.77	43.52	-14.75	0-360	100	V
3	314.0148	35.94	Pk	20.3	-29.8	26.44	46.02	-19.58	0-360	99	H
6	314.3149	37.48	Pk	20.3	-29.8	27.98	46.02	-18.04	0-360	99	V

Pk - Peak detector
Qp - Quasi-Peak detector

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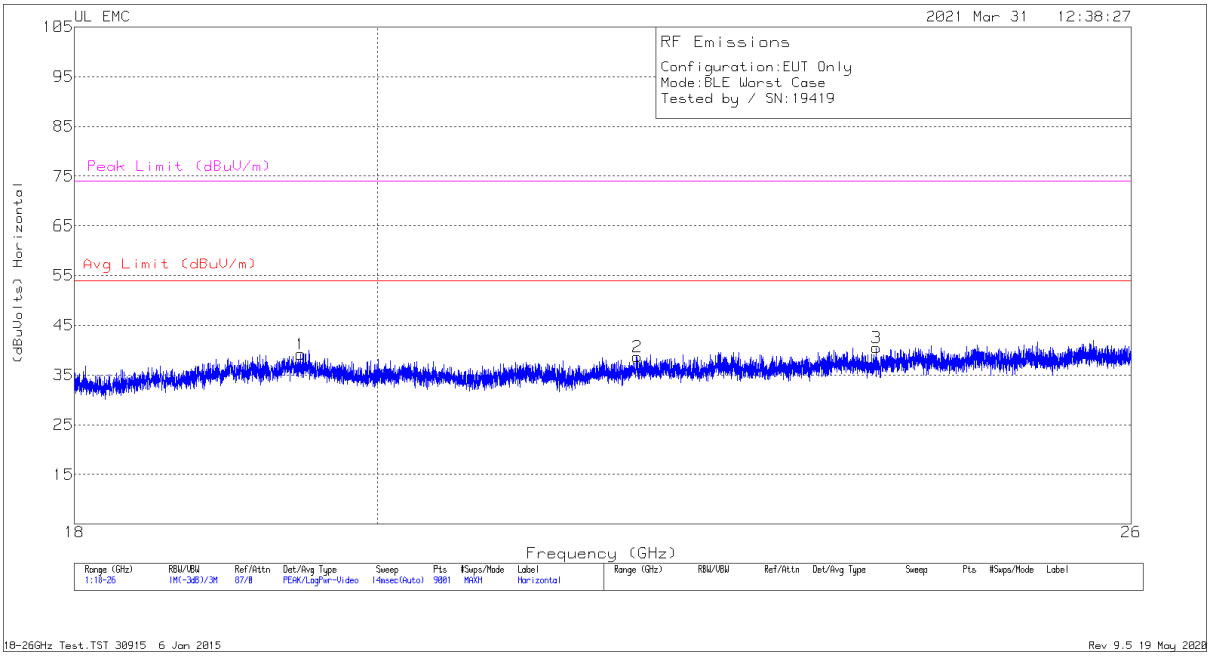
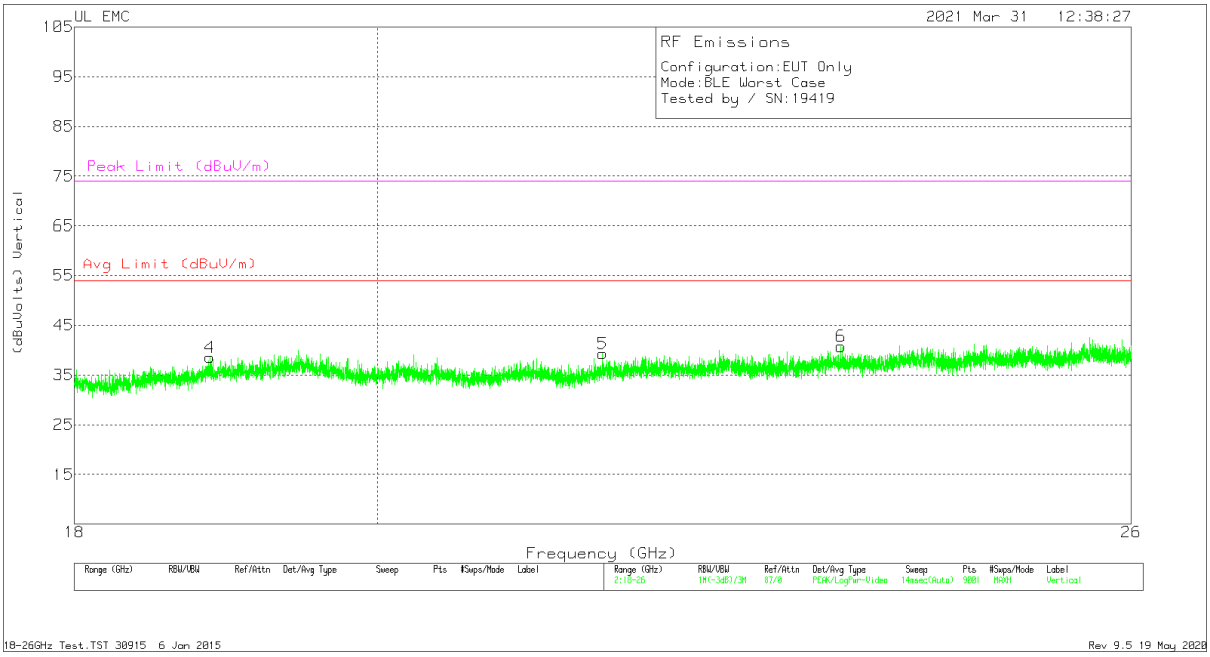
10.4. WORST CASE 18-26 GHz

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



HORIZONTAL



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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T125 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.47378	34.9	Pk	32.8	-19	-9.5	39.2	54	-14.8	74	-34.8
2	21.89333	35.64	Pk	33.3	-20.8	-9.5	38.64	54	-15.36	74	-35.36
3	23.792	36.09	Pk	33.7	-19.8	-9.5	40.49	54	-13.51	74	-33.51
4	18.86933	35.95	Pk	32.5	-20.4	-9.5	38.55	54	-15.45	74	-35.45
5	21.63111	36.24	Pk	33.2	-20.6	-9.5	39.34	54	-14.66	74	-34.66
6	23.50045	36.44	Pk	33.9	-20.1	-9.5	40.74	54	-13.26	74	-33.26

Pk - Peak detector

Note: test distance was 1m.

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	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

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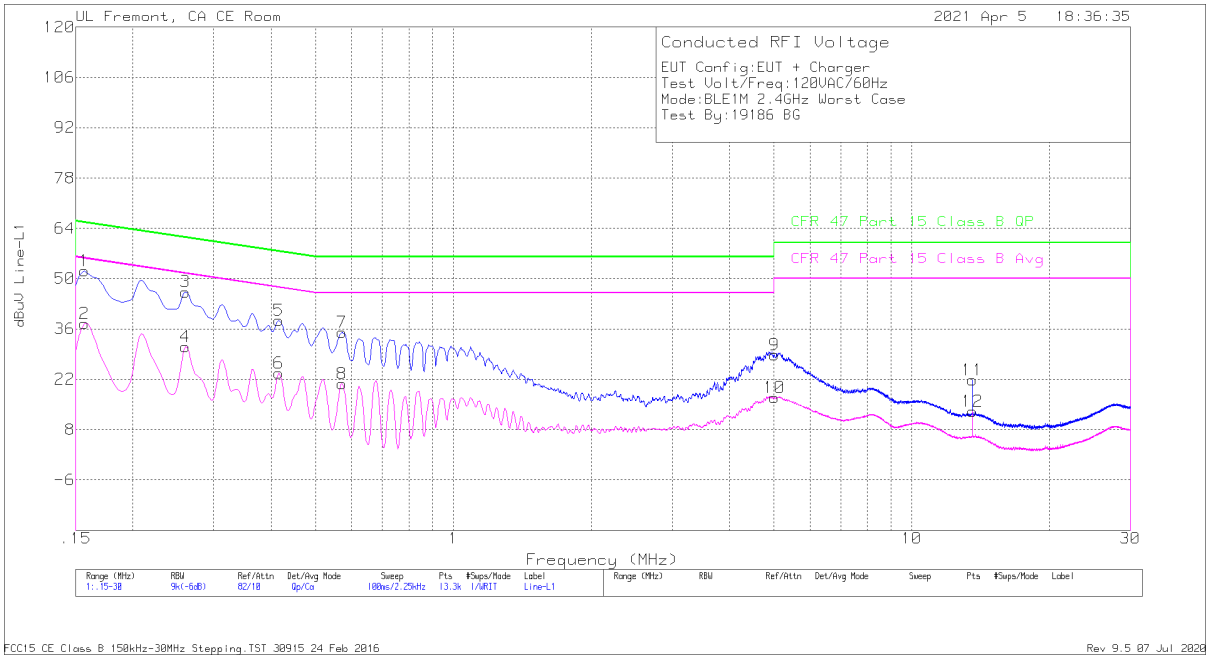
11.1. AC Power Line WITH AC/DC Adapter

LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 L1	LC Cables C1&C3 dB	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)M argin (dB)
1	.15675	41.9	Qp	.1	0	10.1	52.1	65.63	-13.53	-	-
2	.15675	27.39	Ca	.1	0	10.1	37.59	-	-	55.63	-18.04
3	.26025	36.23	Qp	0	0	10.1	46.33	61.42	-15.09	-	-
4	.26025	20.97	Ca	0	0	10.1	31.07	-	-	51.42	-20.35
5	.4155	28.35	Qp	0	0	10.1	38.45	57.54	-19.09	-	-
6	.4155	13.56	Ca	0	0	10.1	23.66	-	-	47.54	-23.88
7	.57075	25.01	Qp	0	0	10.1	35.11	56	-20.89	-	-
8	.57075	10.74	Ca	0	0	10.1	20.84	-	-	46	-25.16
9	5.01225	18.55	Qp	0	.1	10.2	28.85	60	-31.15	-	-
10	5.02125	6.64	Ca	0	.1	10.2	16.94	-	-	50	-33.06
11	13.56	11.36	Qp	.1	.2	10.2	21.86	60	-38.14	-	-
12	13.56	2.51	Ca	.1	.2	10.2	13.01	-	-	50	-36.99

Qp - Quasi-Peak detector
Ca - CISPR average detection

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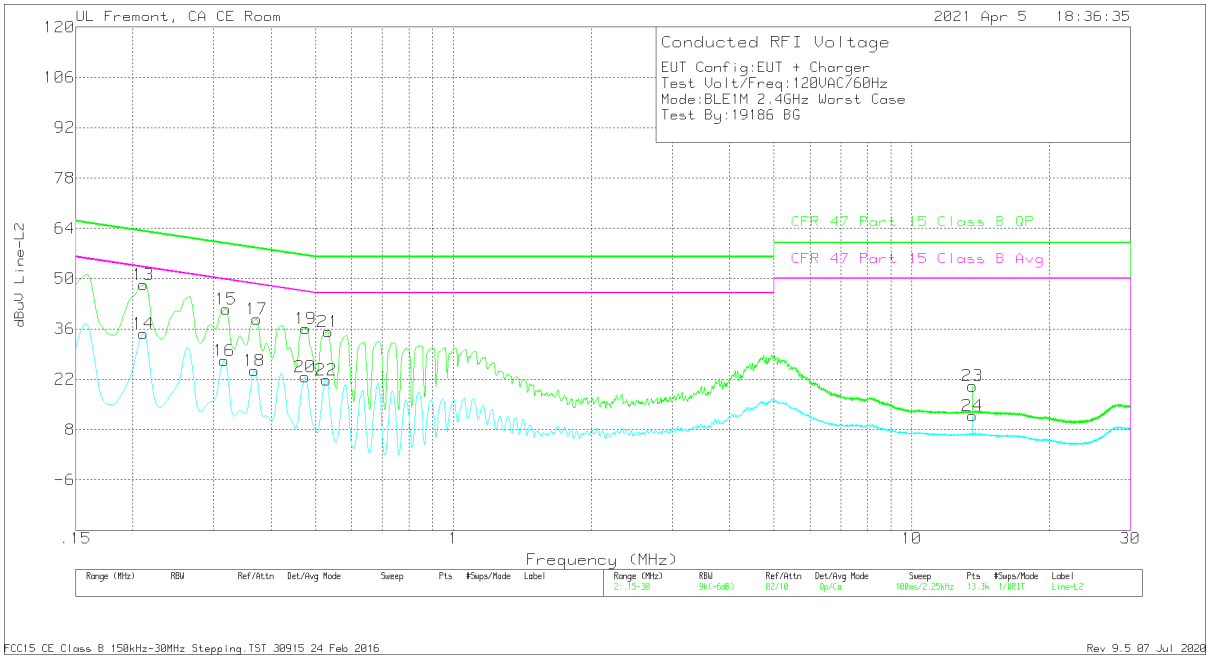
LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 L2	LC Cables C2&C3 dB	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
13	.21075	38.27	Qp	0	0	10.1	48.37	63.18	-14.81	-	-
14	.21075	24.56	Ca	0	0	10.1	34.66	-	-	53.18	-18.52
15	.31875	31.5	Qp	0	0	10.1	41.6	59.74	-18.14	-	-
16	.3165	17.15	Ca	0	0	10.1	27.25	-	-	49.8	-22.55
17	.37275	28.57	Qp	0	0	10.1	38.67	58.44	-19.77	-	-
18	.36825	14.39	Ca	0	0	10.1	24.49	-	-	48.54	-24.05
19	.47625	26.1	Qp	0	0	10.1	36.2	56.4	-20.2	-	-
20	.474	12.55	Ca	0	0	10.1	22.65	-	-	46.44	-23.79
21	.5325	25.12	Qp	0	0	10.1	35.22	56	-20.78	-	-
22	.528	11.66	Ca	0	0	10.1	21.76	-	-	46	-24.24
23	13.56	9.66	Qp	.1	.2	10.2	20.16	60	-39.84	-	-
24	13.56	1.31	Ca	.1	.2	10.2	11.81	-	-	50	-38.19

Qp - Quasi-Peak detector
Ca - CISPR average detection

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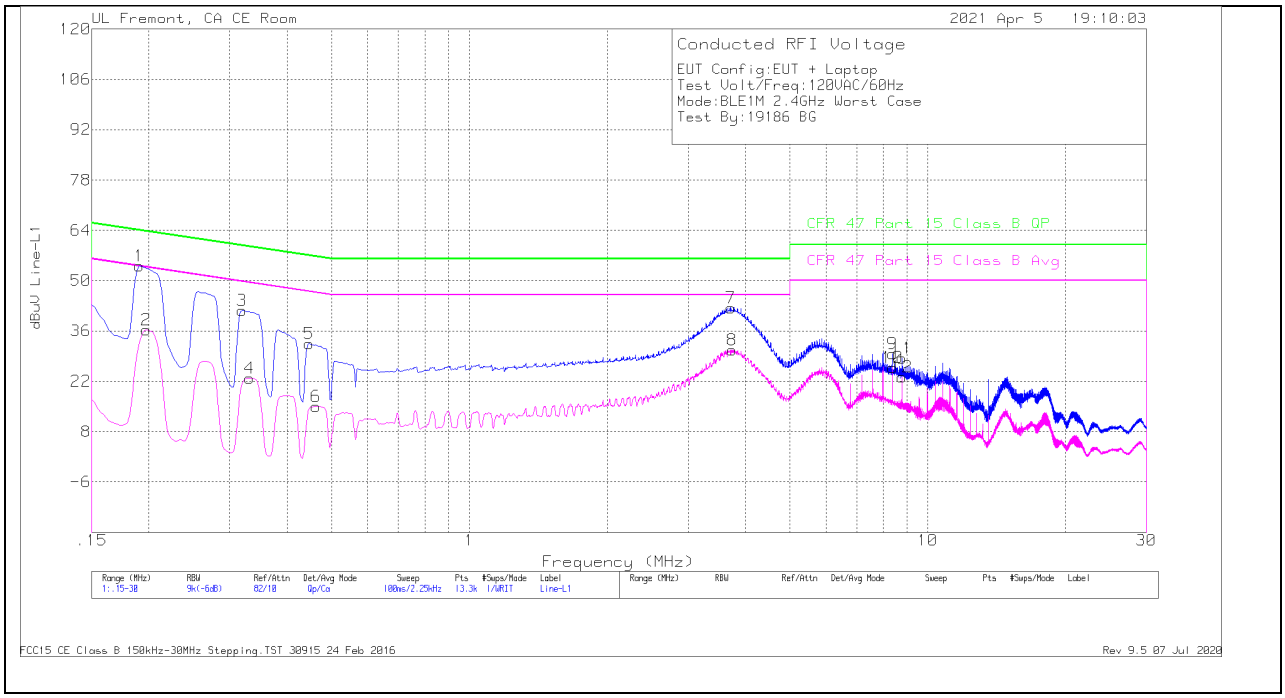
11.2. AC Power Line WITH LAPTOP

LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 L1	LC Cables C1&C3 dB	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)M argin (dB)
1	.1905	43.97	Qp	0	0	10.1	54.07	64.01	-9.94	-	-
2	.19725	26.16	Ca	0	0	10.1	36.26	-	-	53.73	-17.47
3	.31875	31.62	Qp	0	0	10.1	41.72	59.74	-18.02	-	-
4	.33113	12.78	Ca	0	0	10.1	22.88	-	-	49.42	-26.54
5	.447	22.32	Qp	0	0	10.1	32.42	56.93	-24.51	-	-
6	.46275	4.97	Ca	0	0	10.1	15.07	-	-	46.64	-31.57
7	3.723	32.05	Qp	0	.1	10.2	42.35	56	-13.65	-	-
8	3.7455	20.43	Ca	0	.1	10.2	30.73	-	-	46	-15.27
9	8.38275	19.31	Qp	0	.2	10.2	29.71	60	-30.29	-	-
10	8.38275	15.4	Ca	0	.2	10.2	25.8	-	-	50	-24.2
11	8.781	18.03	Qp	0	.2	10.2	28.43	60	-31.57	-	-
12	8.781	12.87	Ca	0	.2	10.2	23.27	-	-	50	-26.73

Qp - Quasi-Peak detector
Ca - CISPR average detection

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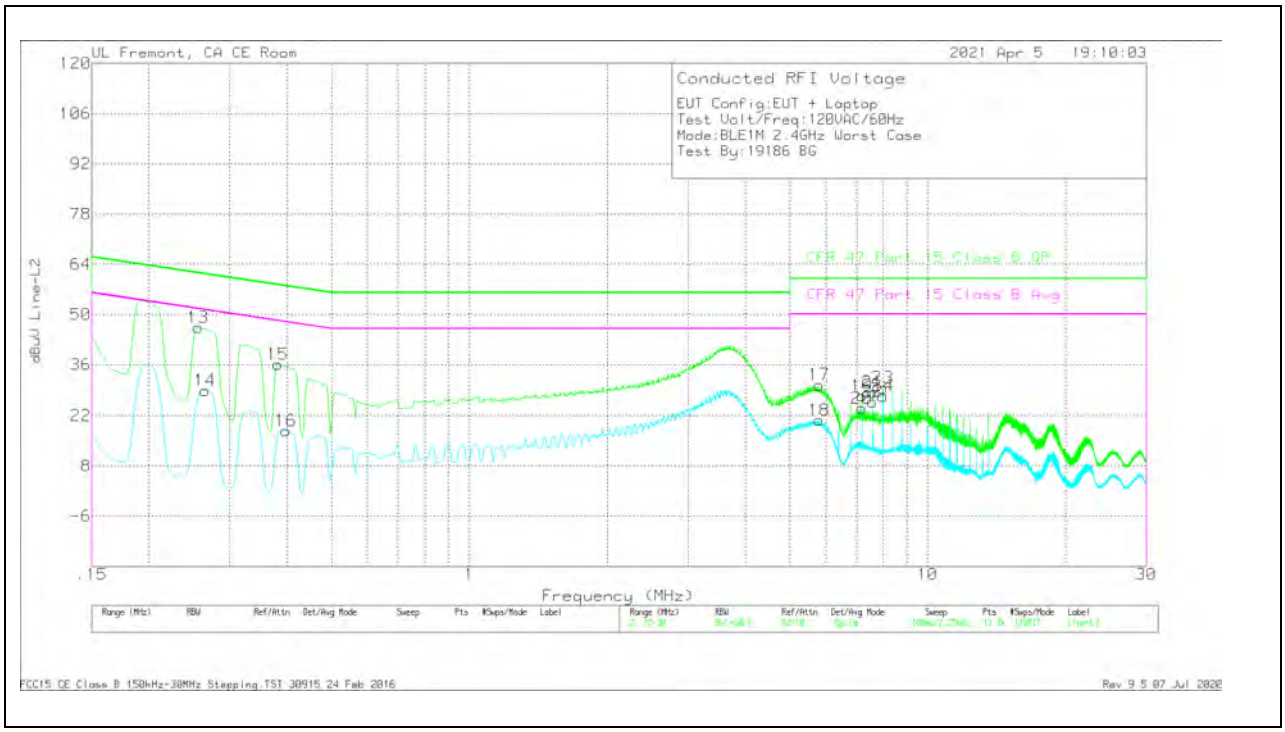
LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE018644 6 L2	LC Cables C2&C3 dB	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)M argin (dB)
13	.25575	36.34	Qp	0	0	10.1	46.44	61.57	-15.13	-	-
14	.26475	18.84	Ca	0	0	10.1	28.94	-	-	51.28	-22.34
15	.38175	26.05	Qp	0	0	10.1	36.15	58.24	-22.09	-	-
16	.3975	7.64	Ca	0	0	10.1	17.74	-	-	47.91	-30.17
17	5.79975	20.27	Qp	0	.1	10.2	30.57	60	-29.43	-	-
18	5.802	10.51	Ca	0	.1	10.2	20.81	-	-	50	-29.19
19	7.1835	17.27	Qp	0	.1	10.2	27.57	60	-32.43	-	-
20	7.1835	13.76	Ca	0	.1	10.2	24.06	-	-	50	-25.94
21	7.584	18.08	Qp	0	.1	10.2	28.38	60	-31.62	-	-
22	7.584	15.62	Ca	0	.1	10.2	25.92	-	-	50	-24.08
23	7.98225	19.31	Qp	0	.1	10.2	29.61	60	-30.39	-	-
24	7.98225	17.19	Ca	0	.1	10.2	27.49	-	-	50	-22.51

Qp - Quasi-Peak detector
Ca - CISPR average detection

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12. SETUP PHOTOS

Please refer to 13573777-EP1 for setup photos

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