



TEST REPORT

Report Number: 13573771-E3V2

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

Model : A2484 (Parent Model, Full Test)
A2641, A2643, A2644, A2645 (Variant Models)

FCC ID : BCG-E4003A (Parent Model)
BCG-E4005A, BCG-E4035A, BCG-E4036A (Variant Models)

IC : 579C-E4003A (Parent Model)
579C-E4005A, 579C-E4035A, 579C-E4036A (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 + A1 + A2

Date Of Issue:
August 05, 2021

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	7/30/2021	Initial Issue	Chin Pang
V2	8/5/2021	Address TCB's Questions on Section 9.1, 9.3 and section 9.6. removed YH in page 103.	Chin Pang

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: SMARTPHONE

MODEL: A2484 (PARENT MODEL)
A2641, A2643, A2644, A2645, (VARIANT MODELS)

BRAND: APPLE

FCC IC: BCG-E4003A (PARENT MODEL)
BCG-E4005A, BCG-E4035A, BCG-E4036A (VARIANT MODELS)

IC ID: 579C-E4003A (PARENT MODEL)
579C-E4005A, 579C-E4035A, 579C-E4036A (VARIANT MODELS)

SERIAL NUMBER: C070407005S0G3H1, Q7X92R9C06

SAMPLE RECEIPT DATE: 11/05/2020, 6/28/2021

DATE TESTED: DECEMBER 04, 2020 – JULY 29, 2021

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Complies
ISED RSS-247 Issue 2	Complies
ISED RSS-GEN Issue 5 + A1 + A2	Complies

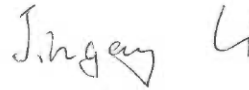
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released For
UL Verification Services Inc. By:

Prepared By:



Chin Pang
Senior Engineer
Consumer Technology Division
UL Verification Services Inc.

Jingang Li
Test Engineer
Consumer Technology Division
UL Verification Services Inc.

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.
-	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, KDB662911, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 2.

4. FACILITIES AND ACCREDITATION

UL Verification Services, Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
<input type="checkbox"/>	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	208313
<input checked="" type="checkbox"/>	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA	US0104	22541	208313
<input checked="" type="checkbox"/>	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA	US0104	2324B	208313

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
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, 5G, CDMA, IEEE 802.11a/b/g/n/ac/ax, Bluetooth, Ultra-Wideband, GPS, NFC and WPT. 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 Model and FCC/IC ID covered by this report includes:

Parent Model: A2484; FCC ID: BCG-E4003A, IC ID: 579C-E4003A

Variant Models: A2641; FCC ID: BCG-E4005A, IC ID: 579C-E4005A
 A2643; FCC ID: BCG-E4035A, IC ID: 579C-E4035A
 A2644; FCC ID: BCG-E4036A, IC ID: 579C-E4036A
 A2645; FCC ID: BCG-E4036A, IC ID: 579C-E4036A

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	2404 - 2476	HDR4	14.50	28.18
	Low Power			9.46	8.83
	High Power		HDR8	15.80	38.02
	Low Power			9.57	9.06
ANT 3	High Power	2404 - 2476	HDR4	14.44	27.80
	Low Power			9.41	8.73
	High Power		HDR8	15.82	38.19
	Low Power			9.68	9.29
BF, ANT 4 + ANT 3	High Power	2404 - 2476	HDR4	17.20	52.48
	Low Power			12.33	17.10
	High Power		HDR8	18.74	74.82
	Low Power			12.78	18.97

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

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

Frequency Range (GHz)	ANT 4 (dBi)	ANT 3 (dBi)
2.4	0.1	-0.6

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was FW Version: 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, ANT 3 and 2TX beamforming, it was determined that X (Flatbed) was the worst-case orientation for ANT 4 and 2TX Beamforming and Y (Landscape) orientation for ANT 3.

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

High Power Beamforming HDR8 mode is set to maximum power per chain to cover both SISO and MIMO modes to comply with radiated spurious emissions limits in the restricted bands between 1GHz and 18GHz low/mid/high channel (except the band edge).

Radiated emissions below 1GHz, 18-26GHz and power line conducted emissions were performed with the EUT transmits at the channel with the highest output power as worst-case scenario.

For below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop. There were no emissions found below 30MHz within 20dB of the limit.

99%, 6dB and PSD on high power mode are tested to cover Low power mode since 99%, 6dB results are no different on low power mode and for PSD high power mode is the worst case.

There are two vendors of the WiFi/Bluetooth radio modules: variant 1 and variant 2. The WiFi/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.

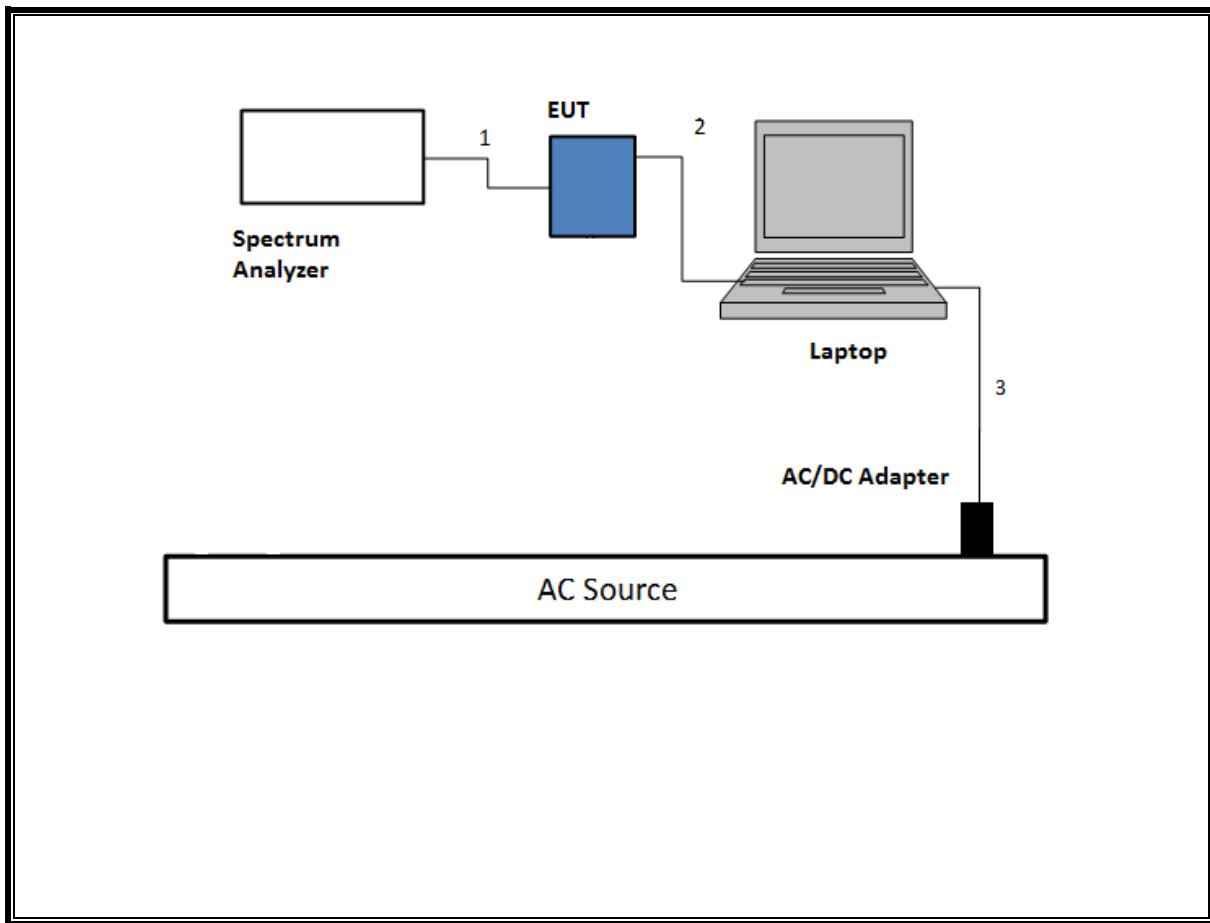
6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description	Manufacturer	Model	Serial Number	FCC ID/ DoC		
Laptop	Apple	Macbook Pro	C02VD7SAHV22	BCGA1708		
Laptop AC/DC adapter	Liteon Technology	A1424	NSW25679	DoC		
EUT AC/DC adapter	Apple	A1720	C3D8417A7R93KVPA8	DoC		
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	1	SMA	Un-shielded	0.2	To spectrum Analyzer
2	USB	1	USB	Shielded	1.0	N/A
3	AC	1	AC	Un-shielded	2	N/A
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

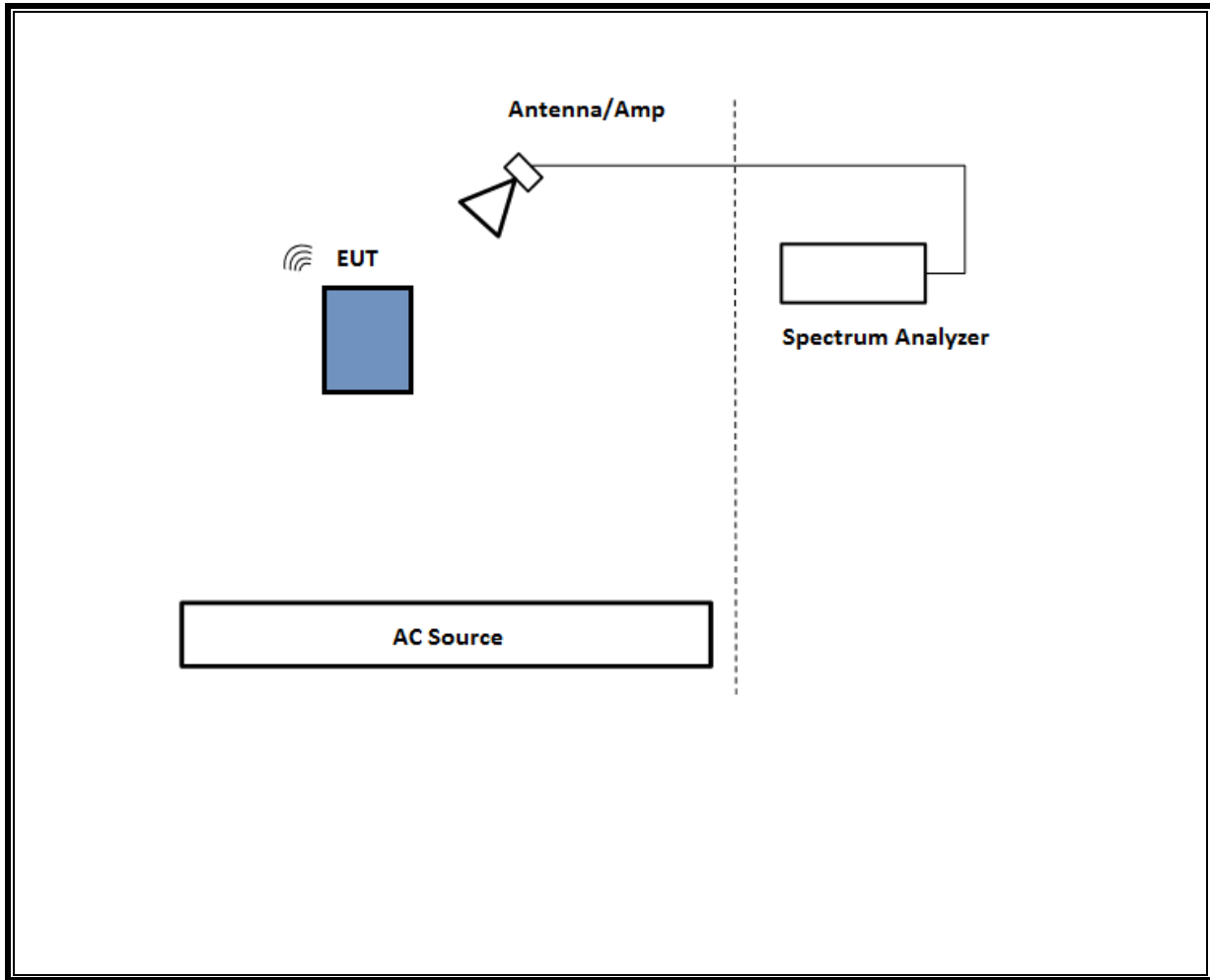
TEST SETUP

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

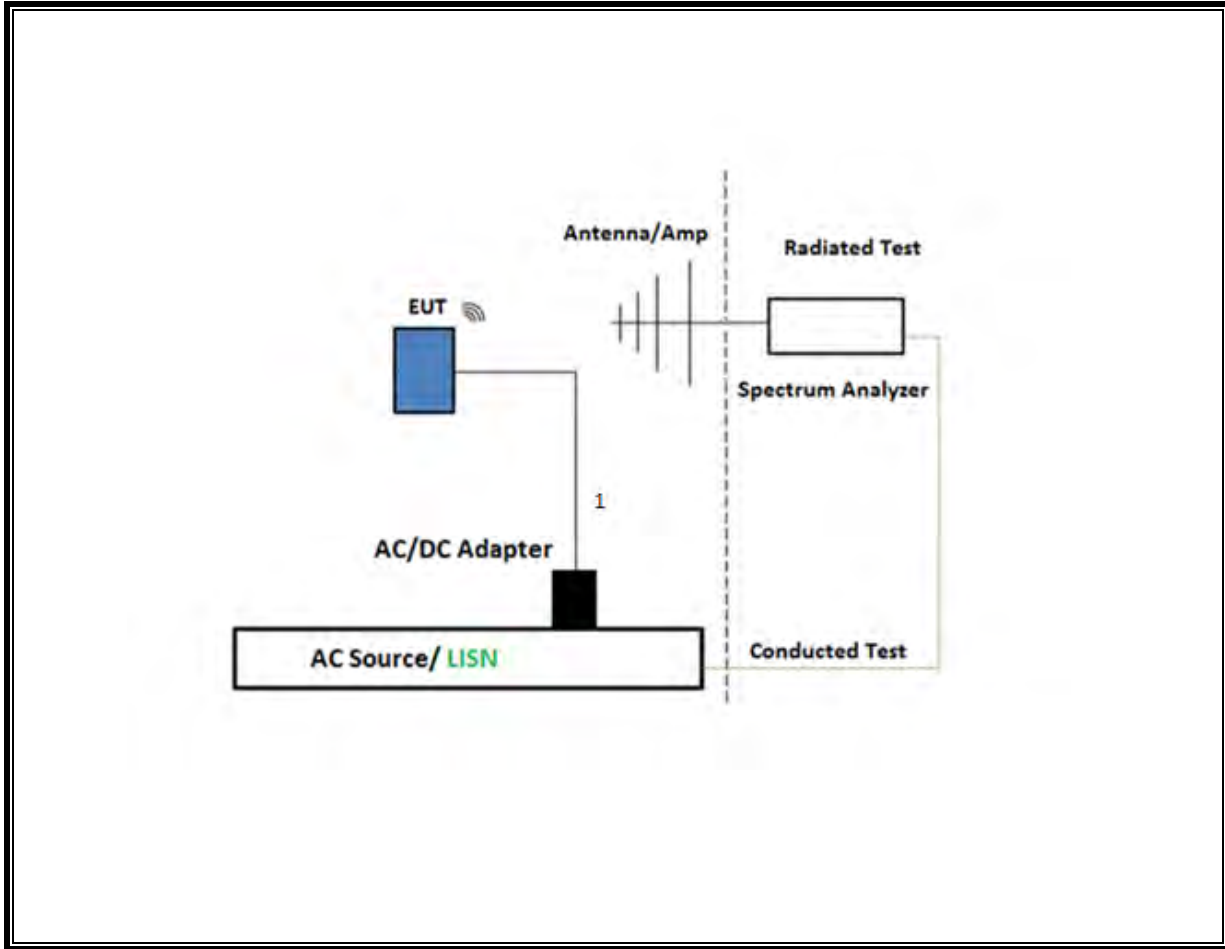
SETUP DIAGRAM FOR CONDUCTED TESTS



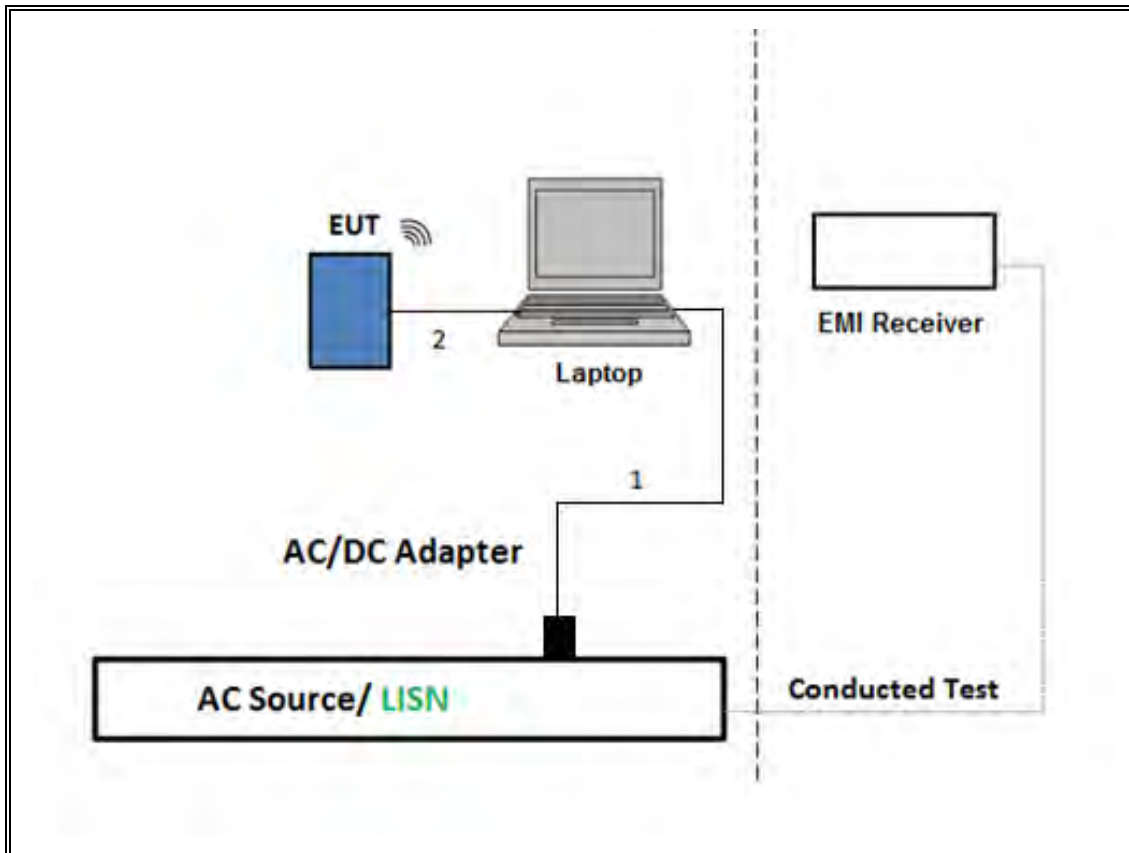
SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz



SETUP DIAGRAM FOR Below 1GHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



7. MEASUREMENT METHOD

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

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

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

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter

Output Power: ANSI C63.10 Subclause -11.9.2.3.2 Measurement using gated average power meter.

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

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

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

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

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

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 HDR normal modes.

8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	ID Num	Cal Due	Last Cal
Amplifier, 1 to 18GHz, 35dB	Amplical	AMP1G18-35	T1571	08/20/2021	08/20/2020
Antenna, Horn 1-18GHz	ETS Lindgren	3117	PRE0100034	09/15/2021	09/15/2020
Amplifier, 1 to 18GHz	Amplical	AMP1G18-35	138301	03/30/2022	03/30/2021
Antenna, BroadBand Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	10/27/2021	10/27/2020
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T1466	01/25/2022	01/25/2021
Antenna, Horn 1-18GHz	ETS Lindgren	3117	PRE0078107	03/01/2022	03/01/2021
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	PRE0213831	12/03/2021	12/03/2020
RF Amplifier, 1-18GHz	AMPLICAL	AMP0.1G18-47-20	172122	12/31/2021	12/31/2020
EMI Receiver	Rohde & Schwarz	ESW44	201497	02/25/2022	02/25/2021
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T342	01/25/2022	1/25/2021
Antenna Horn, 18 to 26GHz	ARA	MWH-1826	T447	09/24/2021	09/24/2020
*Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	04/08/2021	04/19/2020
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1454	01/27/2022	01/27/2022
EMI Receiver	Rohde & Schwarz	ESW44	201501	02/23/2022	02/23/2021
Power Sensor	Keysight	N1921A	T1224	01/25/2022	01/25/2021
Power Meter, P-series single channel	Keysight	N1912A	T1244	01/25/2022	01/25/2021
Antenna, BroadBand Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	202329	10/27/2021	10/27/2020
Amplifier, 9kHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	202992	11/22/2021	11/22/2020
EMI Test Receiver	Rohde & Schwarz	ESW44	PRE0179522	02/19/2022	02/19/2021
Antenna, Active Loop 9kHz-30MHz	ETS-Lindgren	6502	T35	11/23/2021	11/23/2020

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		

Note: *Testing is completed before equipment expiration date.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

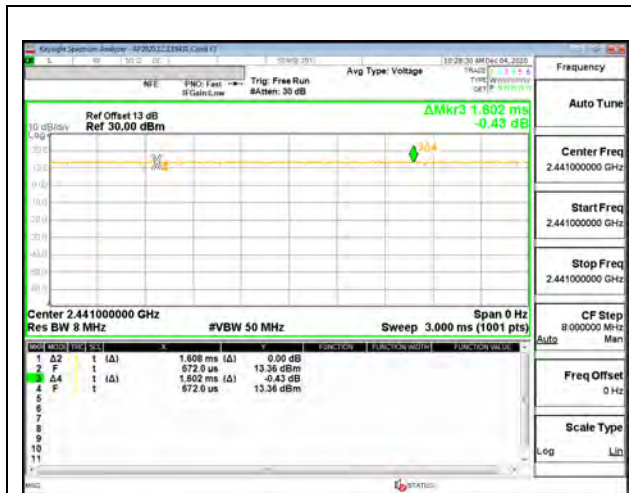
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

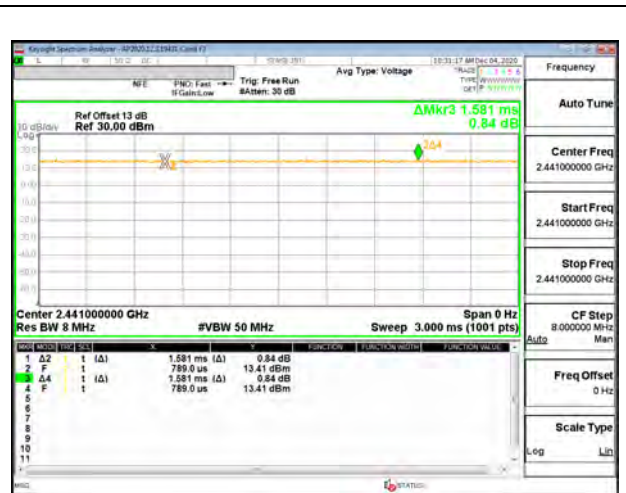
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
HDR4	1.602	1.602	1.000	100.00%	0.00	0.010
HDR8	1.581	1.581	1.000	100.00%	0.00	0.010
HDR4, TXBF	1.956	1.956	1.000	100.00%	0.00	0.010
HDR8, TXBF	1.722	1.722	1.000	100.00%	0.00	0.010

DUTY CYCLE PLOTS



DUTY CYCLE HDR4



DUTY CYCLE HDR8



DUTY CYCLE HDR4 TXBF



DUTY CYCLE HDR8 TXBF

9.2. 99% BANDWIDTH**LIMITS**

None; for reporting purposes only.

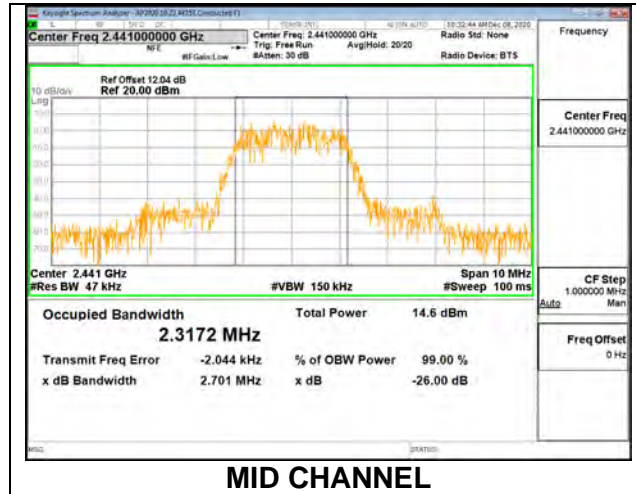
RESULTS

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

9.2.1. HIGH POWER HDR (HDR4)

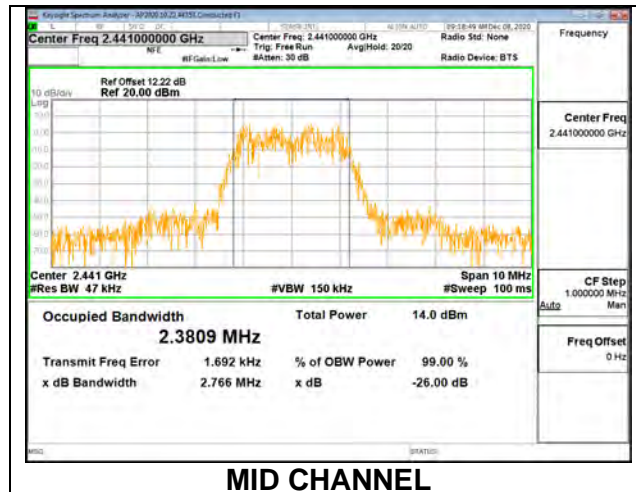
ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.2935
Middle	2441	2.3172
High	2476	2.3272



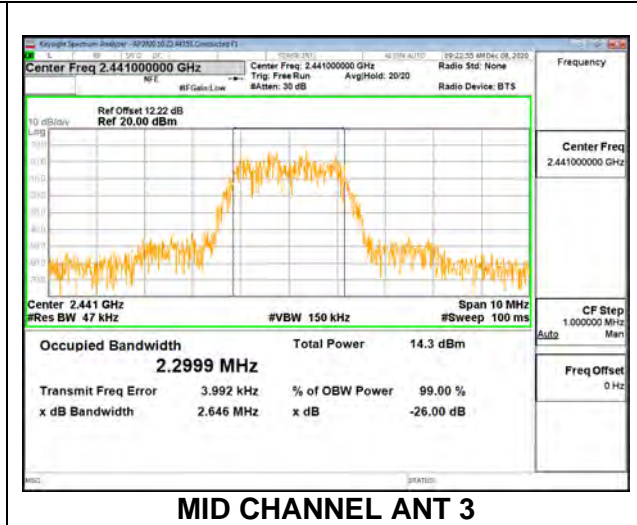
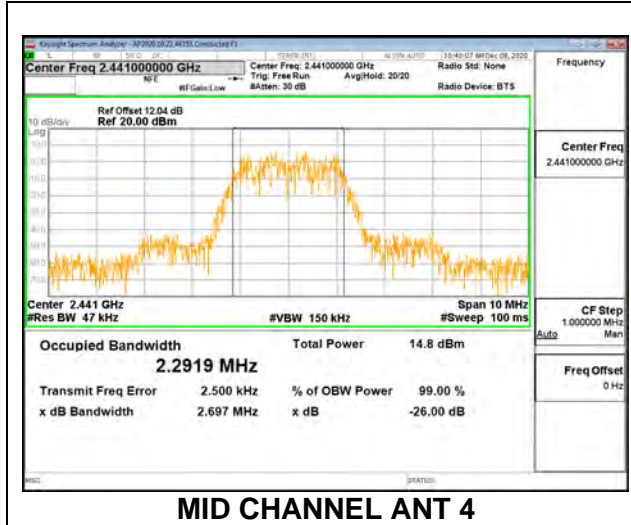
ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	2.2960
Middle	2441	2.3809
High	2476	2.3533



9.2.2. HIGH POWER HDR TXBF (HDR4)

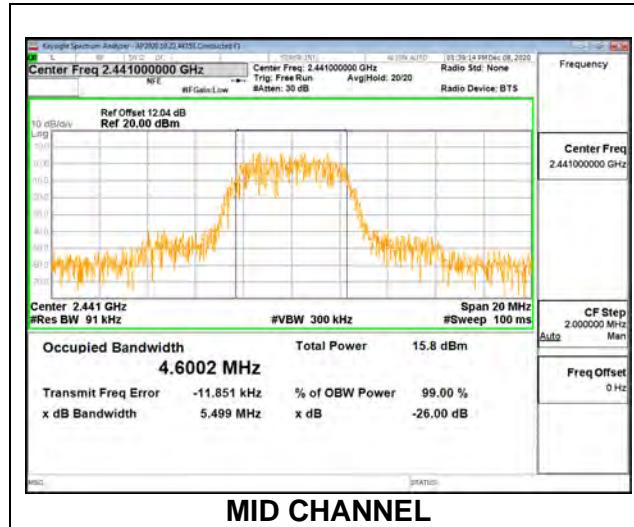
Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2404	2.2925	2.3166
Middle	2441	2.2919	2.2999
High	2476	2.3500	2.3260



9.2.3. HIGH POWER HDR (HDR8)

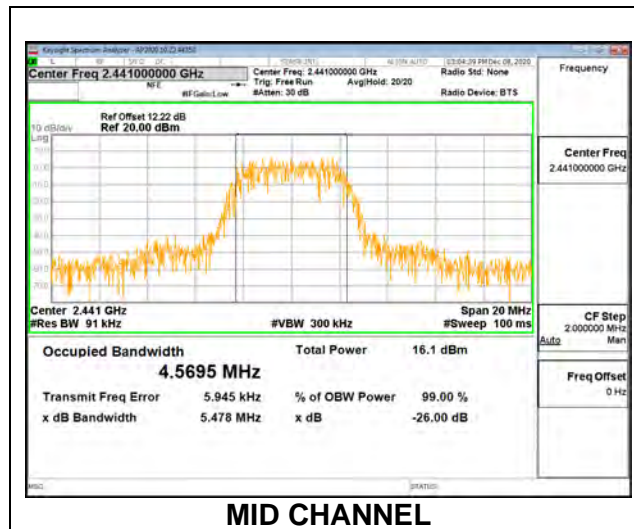
ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	4.5889
Middle	2441	4.6002
High	2476	4.6256



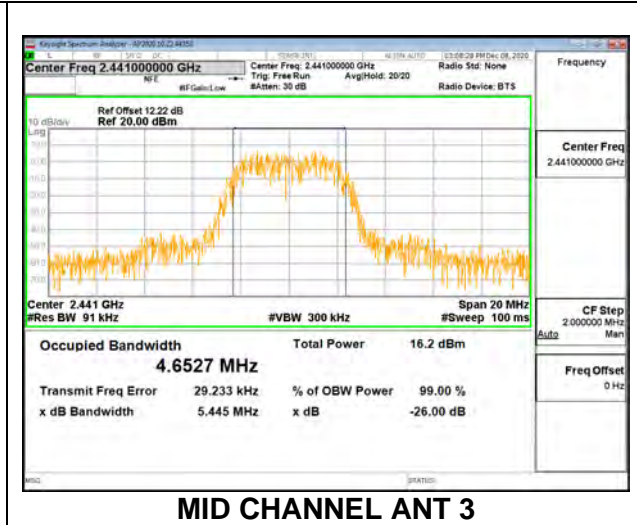
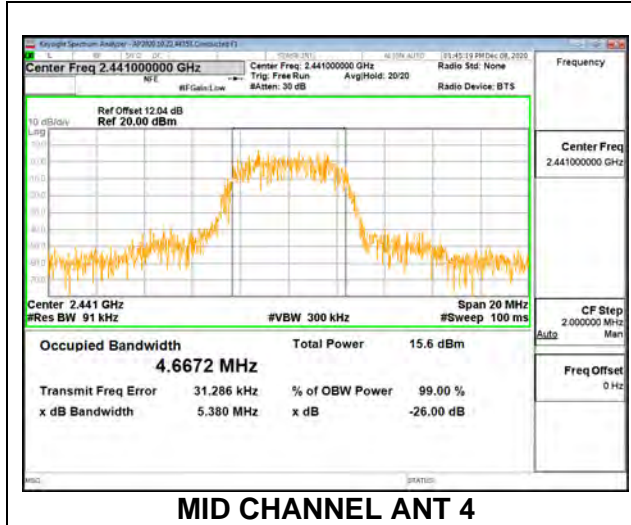
ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2404	4.6078
Middle	2441	4.5695
High	2476	4.6550



9.2.4. HIGH POWER HDR TXBF (HDR8)

Channel	Frequency (MHz)	99% Bandwidth ANT 4 (MHz)	99% Bandwidth ANT 3 (MHz)
Low	2404	4.5471	4.6468
Middle	2441	4.6672	4.6527
High	2476	4.6093	4.6125



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

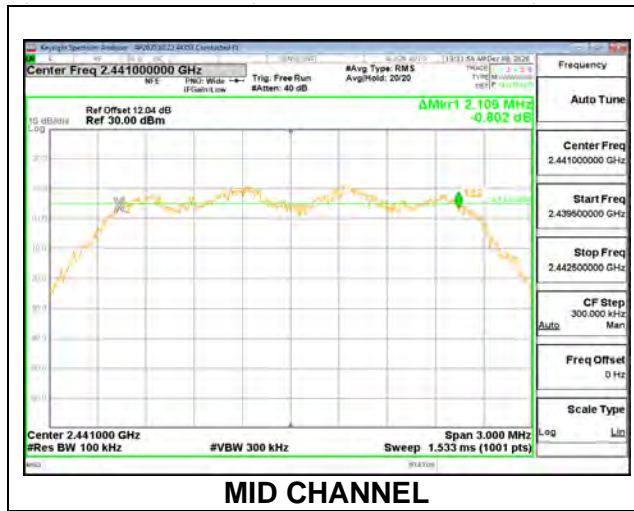
The 6dB bandwidth was measured for the HDR4 mode to demonstrate compliance with the minimum required bandwidth of 500 kHz. Other modes were not tested as their bandwidth is greater than the HDR4 mode, as demonstrated by the 99% bandwidth measurements performed on all modes.

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

9.3.1. HIGH POWER HDR (HDR4)

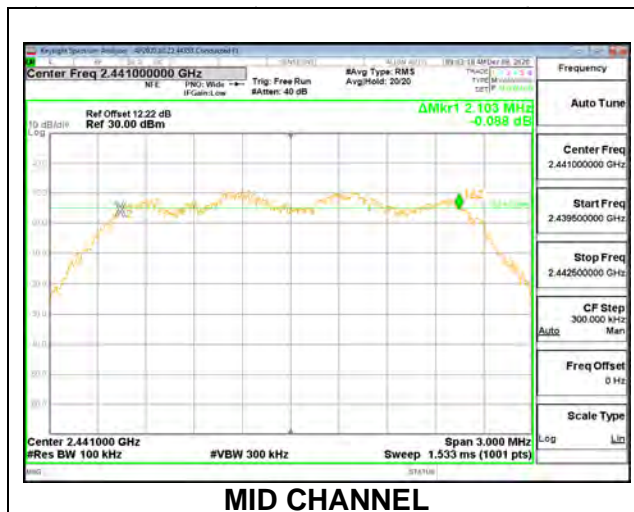
ANT 4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2404	2.085	0.5
Middle	2441	2.109	0.5
High	2476	2.145	0.5



ANT 3

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2404	2.097	0.5
Middle	2441	2.103	0.5
High	2476	2.097	0.5



9.4. OUTPUT POWER**LIMITS**

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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

TEST PROCEDURE

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 2 TX:

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	0.10	-0.60	-0.24	2.77

RESULTS

9.4.1. HIGH POWER HDR (HDR4)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	14.50	30	-15.50
Middle	2441	14.28	30	-15.72
High	2476	14.42	30	-15.58

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	14.44	30	-15.56
Middle	2441	14.32	30	-15.68
High	2476	14.27	30	-15.73

9.4.2. HIGH POWER HDR TXBF (HDR4)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading ANT 4 (dBm)	Peak Power Reading ANT 3 (dBm)	Total Corr'd Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	14.22	14.16	17.20	30.00	-12.80
Middle	2441	14.11	14.13	17.13	30.00	-12.87
High	2476	14.09	14.08	17.10	30.00	-12.90

9.4.3. HIGH POWER HDR (HDR8)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	15.70	30	-14.30
Middle	2441	15.80	30	-14.20
High	2478	15.65	30	-14.35

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	15.82	30	-14.18
Middle	2441	15.79	30	-14.21
High	2478	15.67	30	-14.33

9.4.4. HIGH POWER HDR TXBF (HDR8)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading ANT 4 (dBm)	Peak Power Reading ANT 3 (dBm)	Total Corr'd Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	15.70	15.75	18.74	30.00	-11.26
Middle	2441	15.72	15.71	18.73	30.00	-11.27
High	2478	15.66	15.70	18.69	30.00	-11.31

9.4.5. LOW POWER HDR (HDR4)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.42	30	-20.58
Middle	2441	9.46	30	-20.54
High	2478	9.40	30	-20.60

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.37	30	-20.63
Middle	2441	9.41	30	-20.59
High	2478	9.33	30	-20.67

9.4.6. LOW POWER HDR TXBF (HDR4)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading ANT 4 (dBm)	Peak Power Reading ANT 3 (dBm)	Total Corr'd Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.33	9.28	12.32	30.00	-17.68
Middle	2441	9.31	9.32	12.33	30.00	-17.67
High	2478	9.11	9.24	12.19	30.00	-17.81

9.4.7. LOW POWER HDR (HDR8)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.50	30	-20.50
Middle	2441	9.57	30	-20.43
High	2478	9.56	30	-20.44

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.60	30	-20.40
Middle	2441	9.68	30	-20.32
High	2478	9.61	30	-20.39

9.4.8. LOW POWER HDR TXBF (HDR8)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Peak Power Reading ANT 4 (dBm)	Peak Power Reading ANT 3 (dBm)	Total Corr'd Power (dBm)	Limit (dBm)	Margin (dB)
Low	2404	9.68	9.66	12.68	30.00	-17.32
Middle	2441	9.80	9.74	12.78	30.00	-17.22
High	2478	9.67	9.63	12.66	30.00	-17.34

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

9.5.1. HIGH POWER HDR (HDR4)

ANT 4

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	12.37
Middle	2441	12.27
High	2476	12.23

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	12.33
Middle	2441	12.29
High	2476	12.27

9.5.2. HIGH POWER HDR TXBF (HDR4)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	12.40	12.35	15.39
Middle	2441	12.39	12.31	15.36
High	2476	12.36	12.22	15.30

9.5.3. HIGH POWER HDR (HDR8)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	13.34
Middle	2441	13.42
High	2476	13.25

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	13.41
Middle	2441	13.37
High	2476	13.27

9.5.4. HIGH POWER HDR TXBF (HDR8)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	13.35	13.39	16.38
Middle	2441	13.38	13.34	16.37
High	2476	13.25	13.29	16.28

9.5.5. LOW POWER HDR (HDR4)

ANT 4

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	7.22
Middle	2441	7.26
High	2476	7.20

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	7.22
Middle	2441	7.25
High	2476	7.18

9.5.6. LOW POWER HDR TXBF (HDR4)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	7.18	7.12	10.16
Middle	2441	7.15	7.16	10.17
High	2476	7.11	7.08	10.11

9.5.7. LOW POWER HDR (HDR8)**ANT 4**

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	7.14
Middle	2441	7.19
High	2476	7.16

ANT 3

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	AV power (dBm)
Low	2404	7.16
Middle	2441	7.24
High	2476	7.17

9.5.8. LOW POWER HDR TXBF (HDR8)

Tested By:	12492
Date:	7/10/2021

Channel	Frequency (MHz)	Average Power ANT 4 (dBm)	Average Power ANT 3 (dBm)	Total Power (dBm)
Low	2404	7.25	7.21	10.24
Middle	2441	7.36	7.29	10.34
High	2476	7.23	7.19	10.22

9.6. POWER SPECTRAL DENSITY**LIMITS**

FCC §15.247 (e)

RSS-247 (5.2) (b)

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

RESULTS

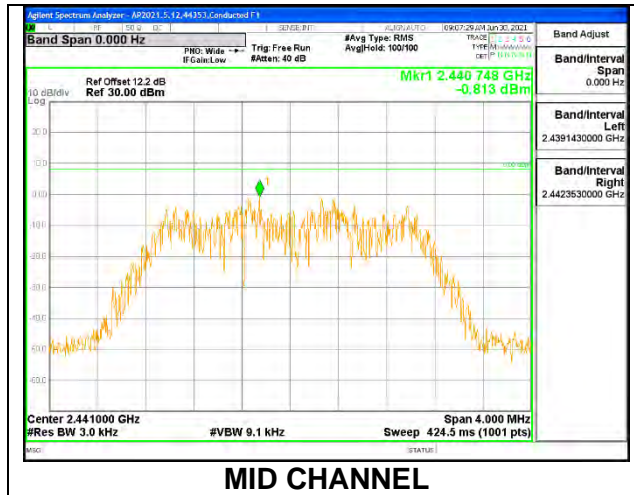
Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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

9.6.1. HIGH POWER HDR (HDR4)

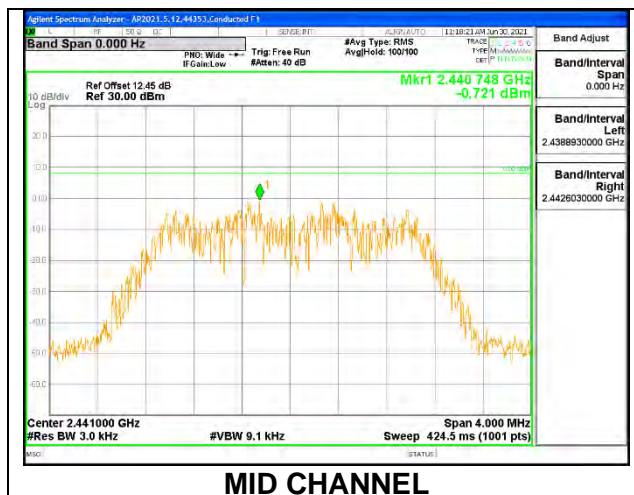
ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-0.628	8	-8.63
Middle	2441	-0.813	8	-8.81
High	2476	-0.778	8	-8.78



ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-0.684	8	-8.68
Middle	2441	-0.721	8	-8.72
High	2476	-1.413	8	-9.41

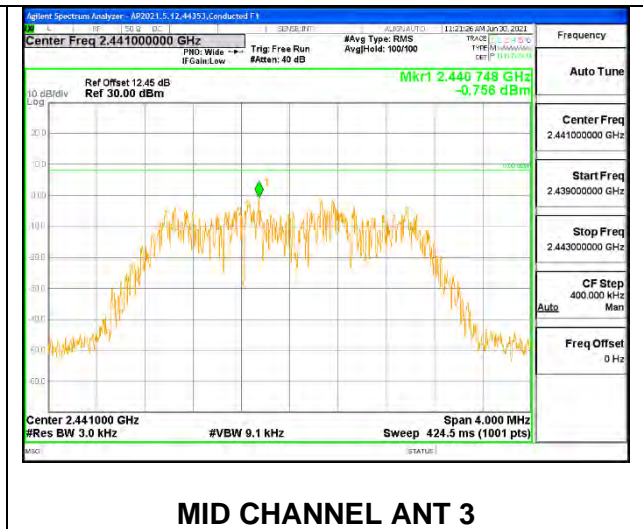
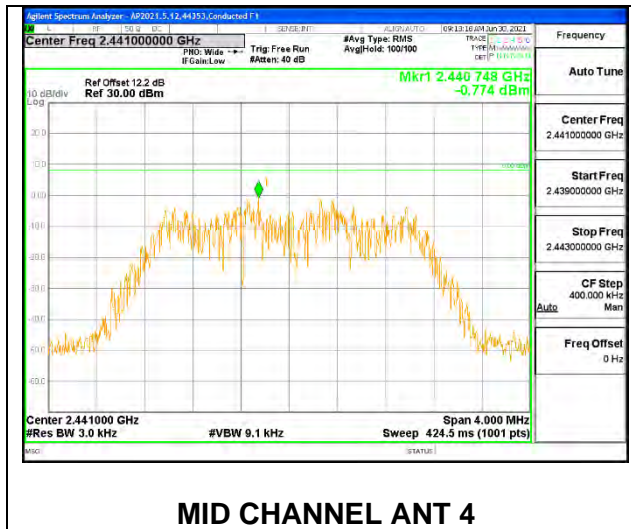


9.6.2. HIGH POWER HDR TXBF (HDR4)

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

PSD Results

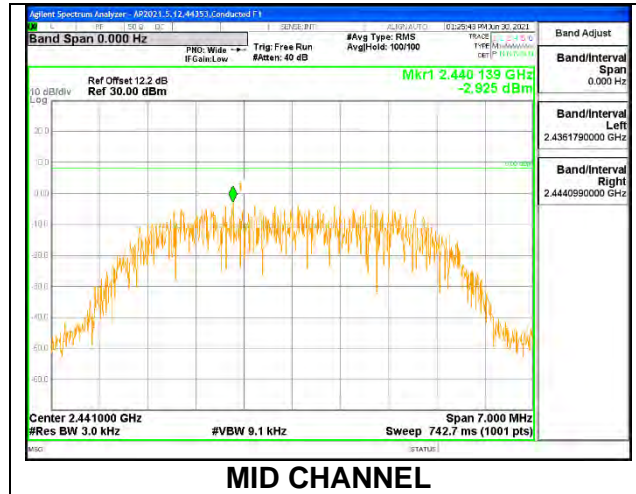
Channel	Frequency (MHz)	ANT 4 Meas (dBm/ 3kHz)	ANT 3 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low	2404	-0.640	-0.503	2.44	8.0	-5.6
Mid	2441	-0.774	-0.756	2.25	8.0	-5.8
High	2476	-0.776	-1.334	1.96	8.0	-6.0



9.6.3. HIGH POWER HDR (HDR8)

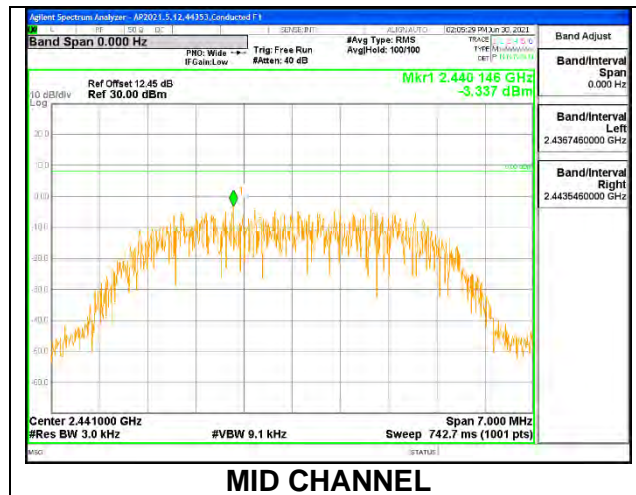
ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-3.037	8	-11.04
Middle	2441	-2.925	8	-10.93
High	2476	-3.335	8	-11.34



ANT 3

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2404	-3.234	8	-11.23
Middle	2441	-3.337	8	-11.34
High	2476	-3.533	8	-11.53

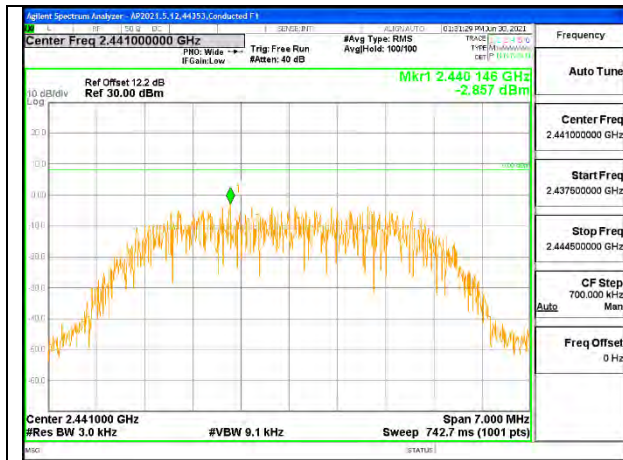


9.6.4. HIGH POWER HDR TXBF (HDR8)

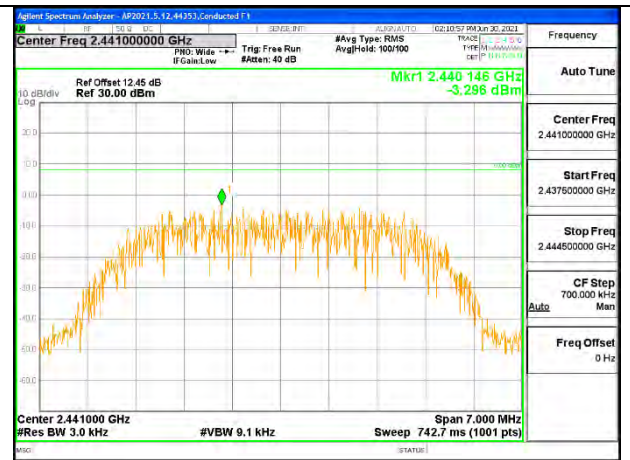
Note: Test procedures and setting are same as HDR normal mode.

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	-3.314	-3.193	-0.24	8.0	-8.2
Mid	2441	-2.857	-3.296	-0.06	8.0	-8.1
High	2476	-3.344	-3.639	-0.48	8.0	-8.5



MID CHANNEL ANT 4



MID CHANNEL ANT 3

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.

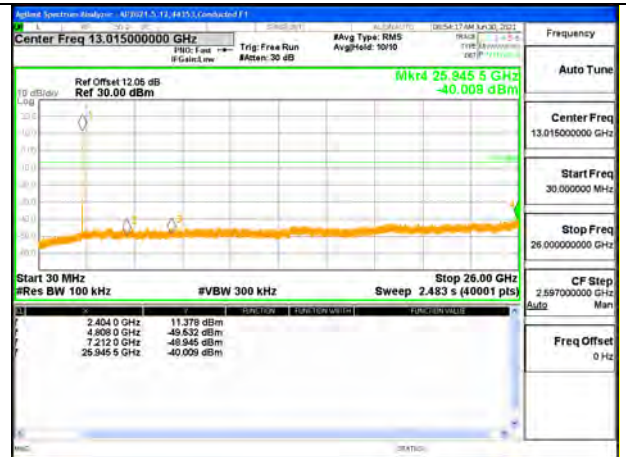
RESULTS

9.7.1. HIGH POWER HDR (HDR4)

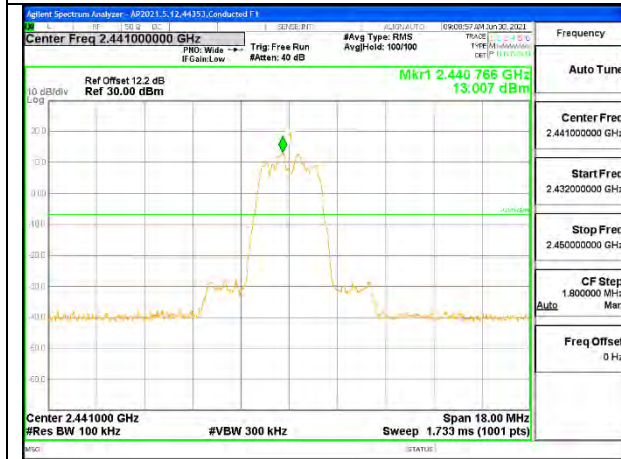
ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



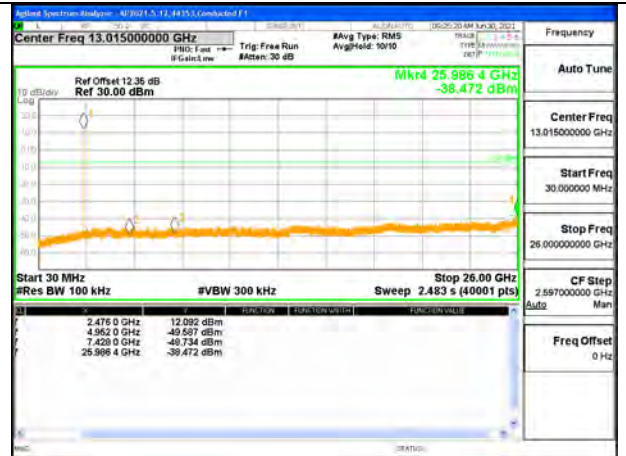
MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

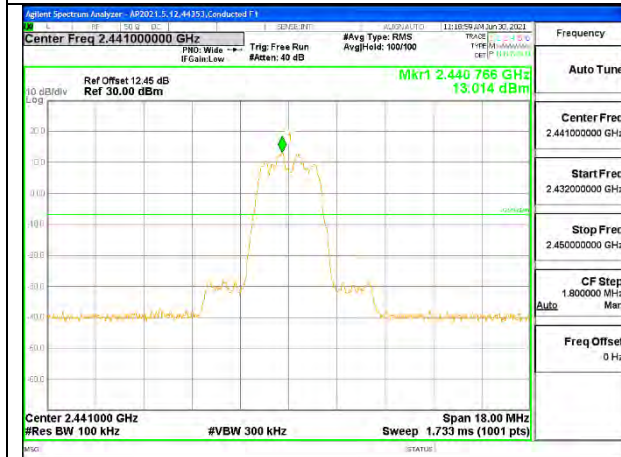
ANT 3



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.2. HIGH POWER HDR TXBF (HDR4)

ANT 4



LOW CHANNEL BANDEDGE ANT 4



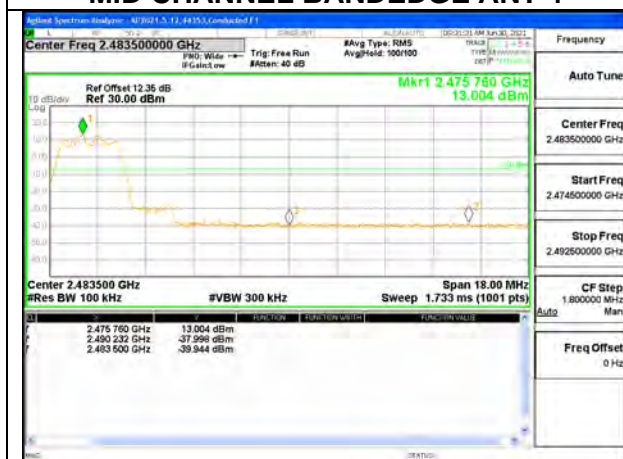
OUT-OF-BAND LOW CHANNEL ANT 4



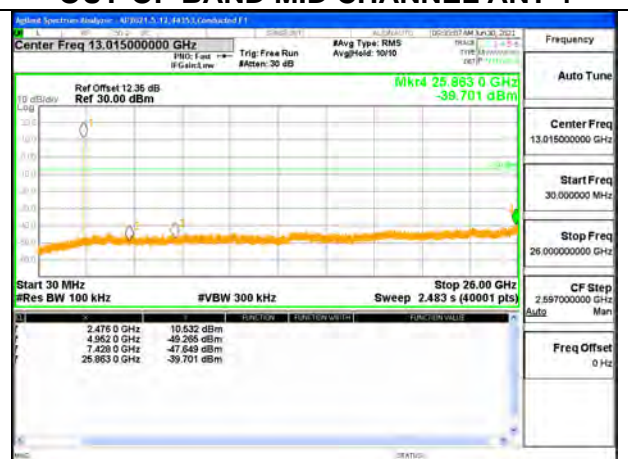
MID CHANNEL BANDEDGE ANT 4



OUT-OF-BAND MID CHANNEL ANT 4



HIGH CHANNEL BANDEDGE ANT 4



OUT-OF-BAND HIGH CHANNEL ANT 4

ANT 3



LOW CHANNEL BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL ANT 3



MID CHANNEL BANDEDGE ANT 3



OUT-OF-BAND MID CHANNEL ANT 3



HIGH CHANNEL BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL ANT 3

9.7.3. HIGH POWER HDR (HDR8)

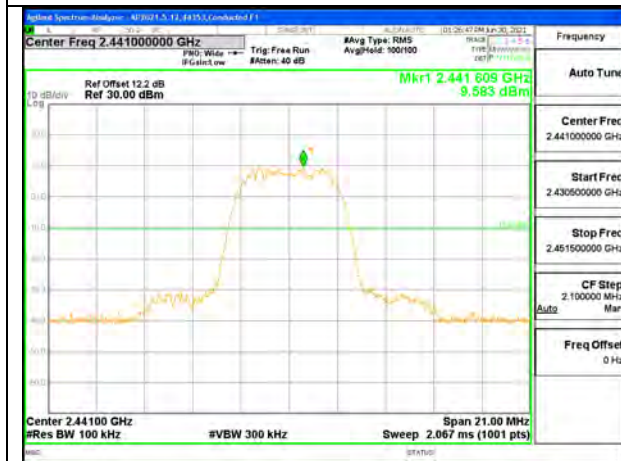
ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

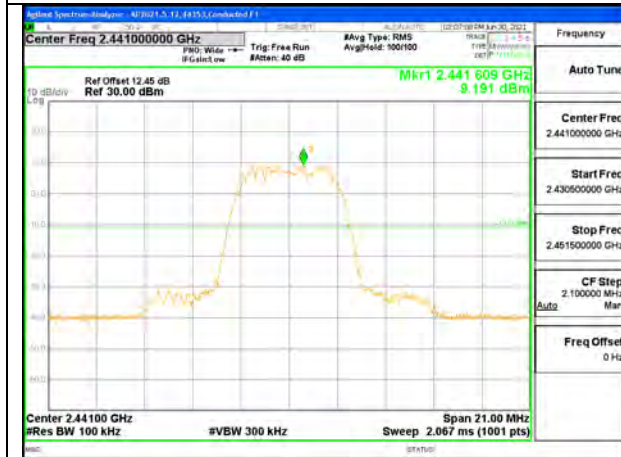
ANT 3



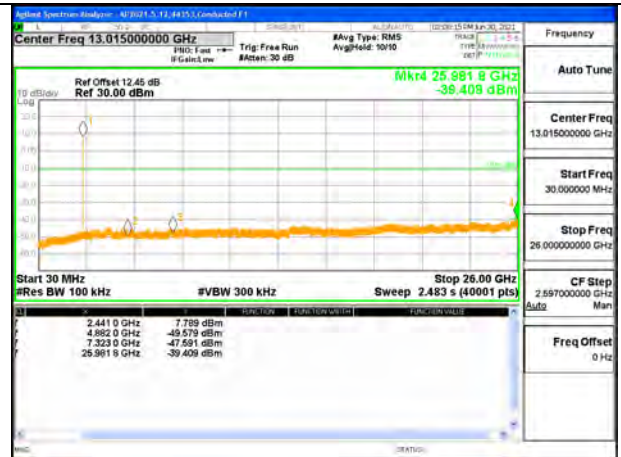
LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.4. HIGH POWER HDR TXBF (HDR8)

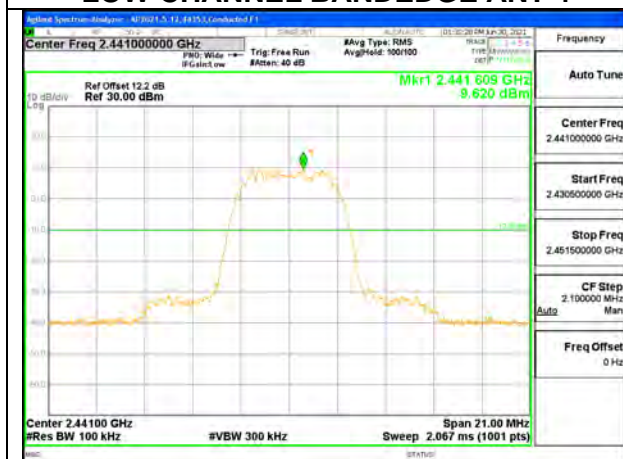
ANT 4



LOW CHANNEL BANDEDGE ANT 4



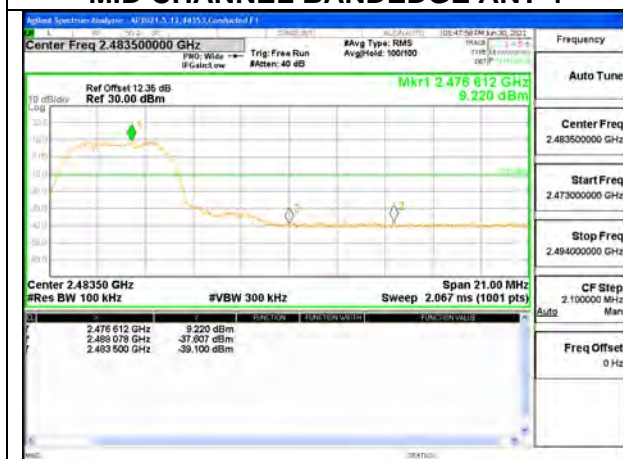
OUT-OF-BAND LOW CHANNEL ANT 4



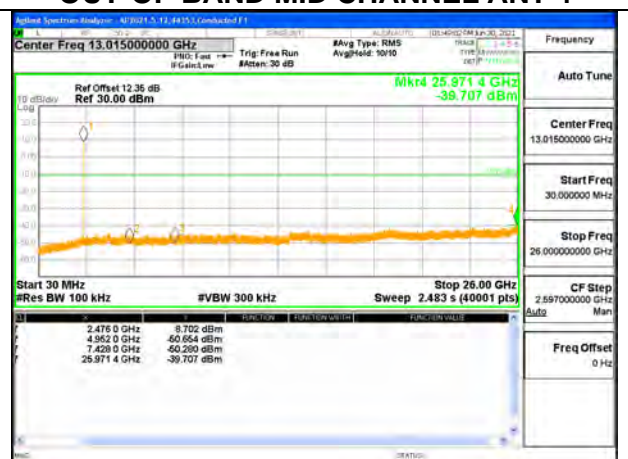
MID CHANNEL BANDEDGE ANT 4



OUT-OF-BAND MID CHANNEL ANT 4



HIGH CHANNEL BANDEDGE ANT 4



OUT-OF-BAND HIGH CHANNEL ANT 4

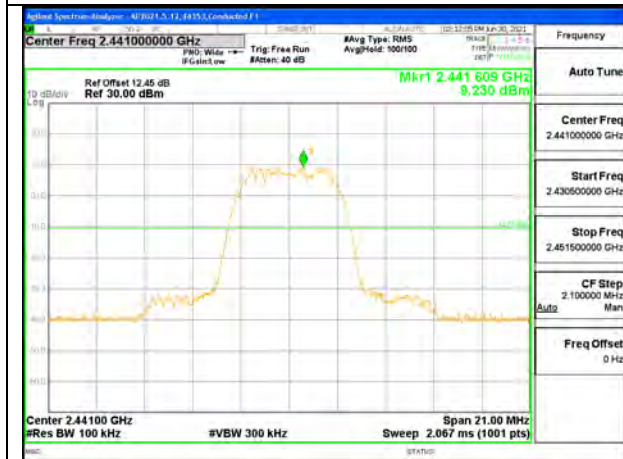
ANT 3



LOW CHANNEL BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL ANT 3



MID CHANNEL BANDEDGE ANT 3



OUT-OF-BAND MID CHANNEL ANT 3



HIGH CHANNEL BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL ANT 3

9.7.5. LOW POWER HDR (HDR4)

ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

ANT 3



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.6. LOW POWER HDR TXBF (HDR4)

ANT 4



LOW CHANNEL BANDEDGE ANT 4



OUT-OF-BAND LOW CHANNEL ANT 4



MID CHANNEL BANDEDGE ANT 4



OUT-OF-BAND MID CHANNEL ANT 4



HIGH CHANNEL BANDEDGE ANT 4

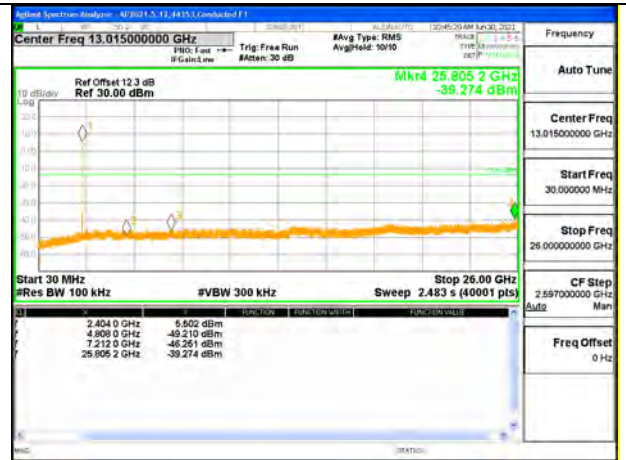


OUT-OF-BAND HIGH CHANNEL ANT 4

ANT 3



LOW CHANNEL BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL ANT 3



MID CHANNEL BANDEDGE ANT 3



OUT-OF-BAND MID CHANNEL ANT 3



HIGH CHANNEL BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL ANT 3

9.7.7. LOW POWER HDR (HDR8)

ANT 4



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

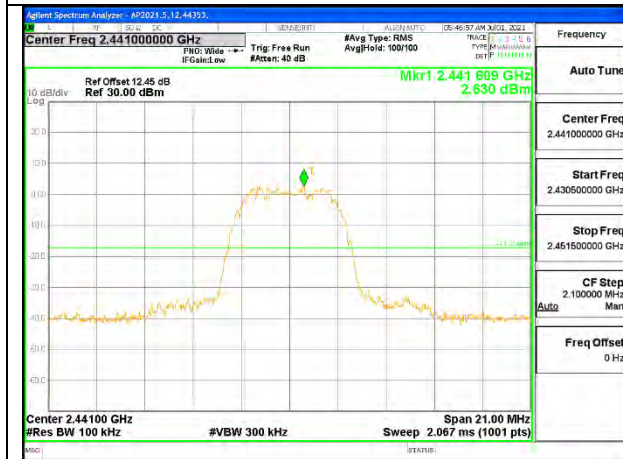
ANT 3



LOW CHANNEL BANDEDGE



OUT-OF-BAND LOW CHANNEL



MID CHANNEL BANDEDGE



OUT-OF-BAND MID CHANNEL



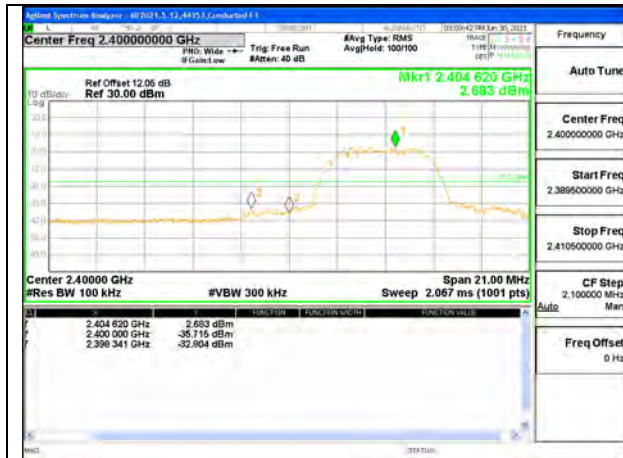
HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

9.7.8. LOW POWER HDR TXBF (HDR8)

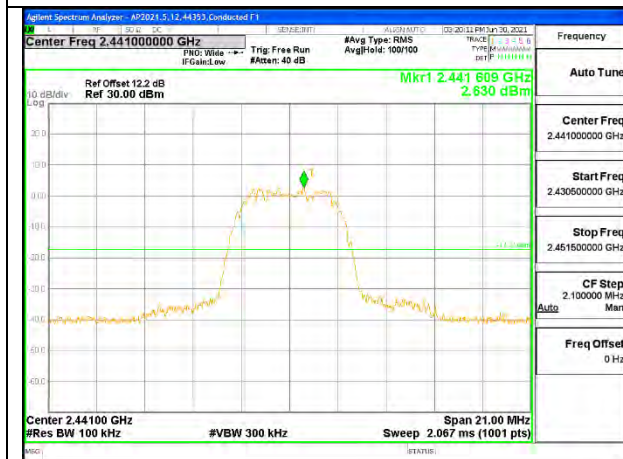
ANT 4



LOW CHANNEL BANDEDGE ANT 4



OUT-OF-BAND LOW CHANNEL ANT 4



MID CHANNEL BANDEDGE ANT 4



OUT-OF-BAND MID CHANNEL ANT 4



HIGH CHANNEL BANDEDGE ANT 4

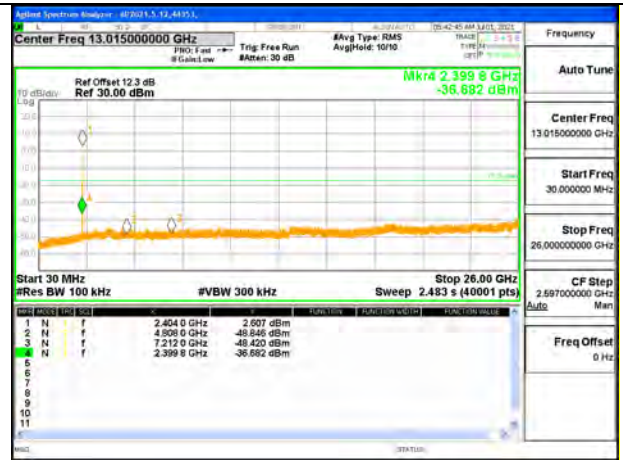


OUT-OF-BAND HIGH CHANNEL ANT 4

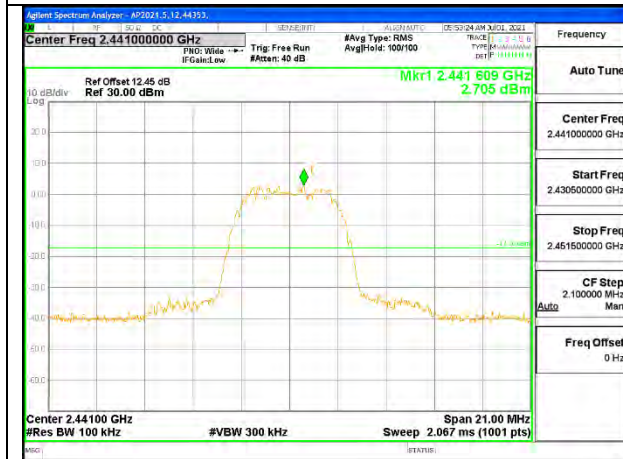
ANT 3



LOW CHANNEL BANDEDGE ANT 3



OUT-OF-BAND LOW CHANNEL ANT 3



MID CHANNEL BANDEDGE ANT 3



OUT-OF-BAND MID CHANNEL ANT 3



HIGH CHANNEL BANDEDGE ANT 3



OUT-OF-BAND HIGH CHANNEL ANT 3

10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209
RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

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

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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

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

The 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.

RESULTS:

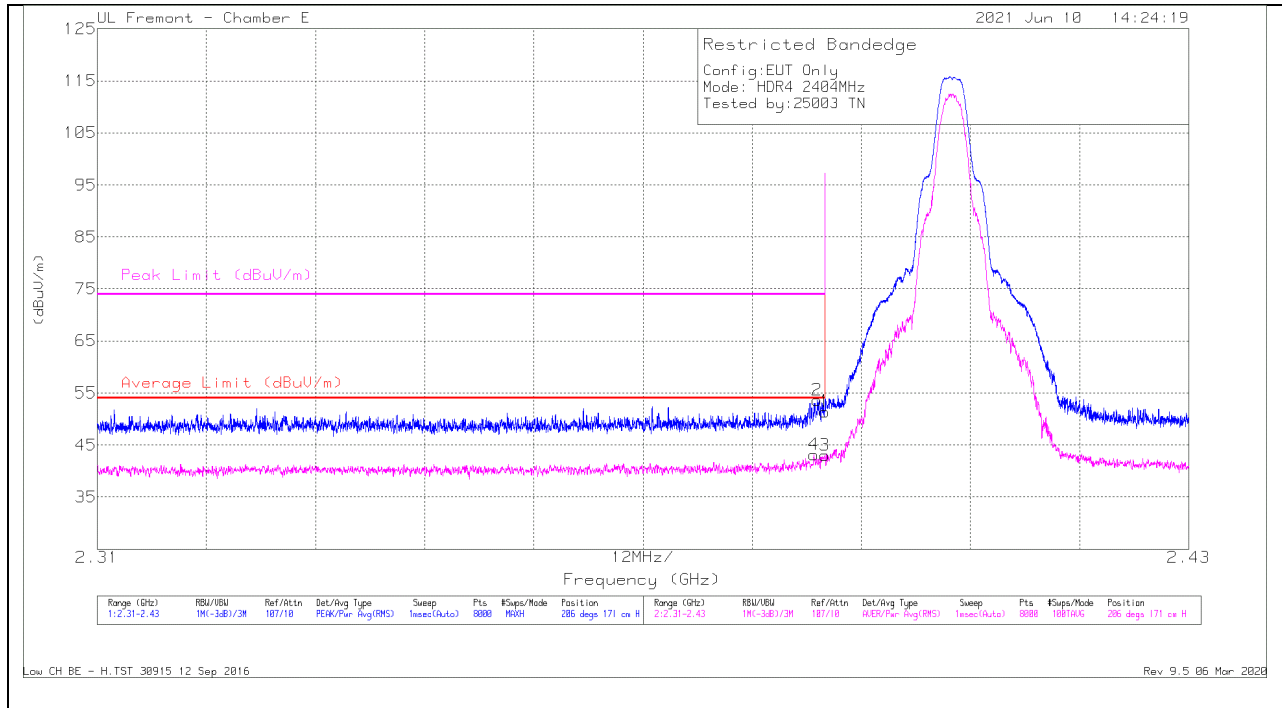
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. HIGH POWER HDR (HDR4)

ANT 4

BANDEDGE (LOW CHANNEL)

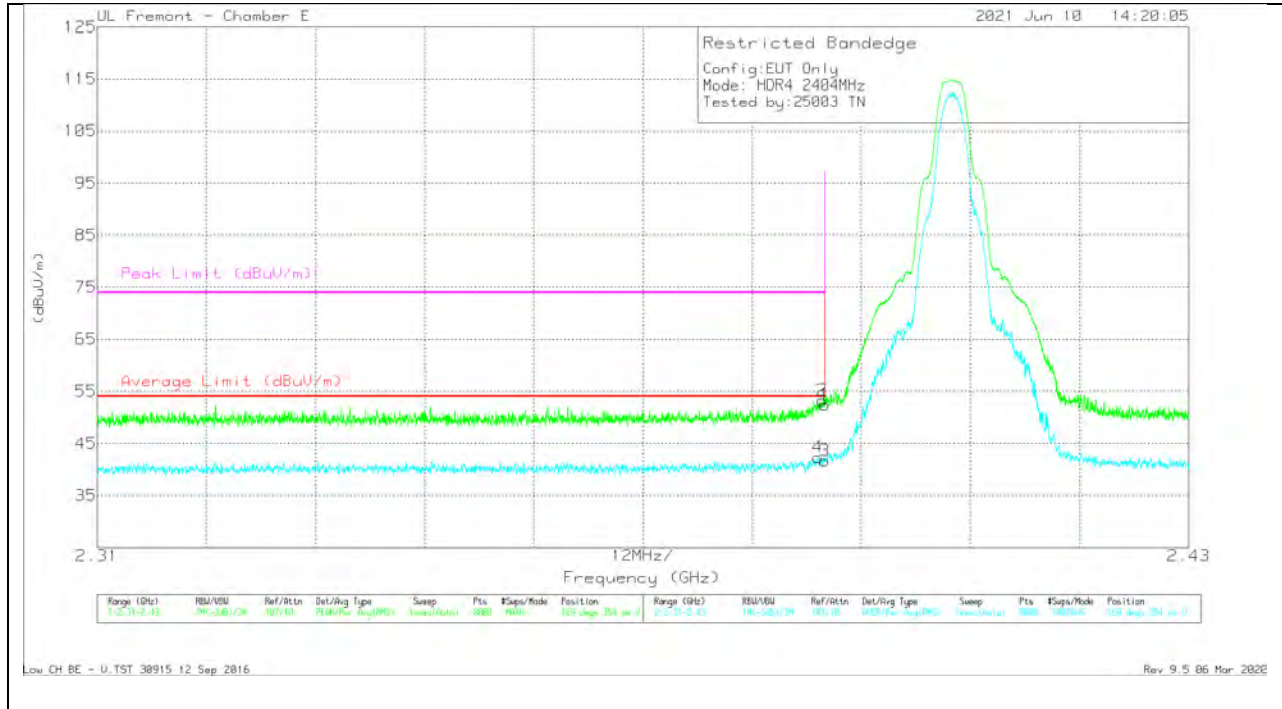
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.38878	36.33	RMS	32.2	-25.4	43.13	54	-10.87	-	-	206	171	H
2	* 2.38915	46.82	Pk	32.2	-25.4	53.62	-	-	74	-20.38	206	171	H
1	* 2.38999	44.64	Pk	32.2	-25.4	51.44	-	-	74	-22.56	206	171	H
3	* 2.38999	36.25	RMS	32.2	-25.4	43.05	54	-10.95	-	-	206	171	H

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

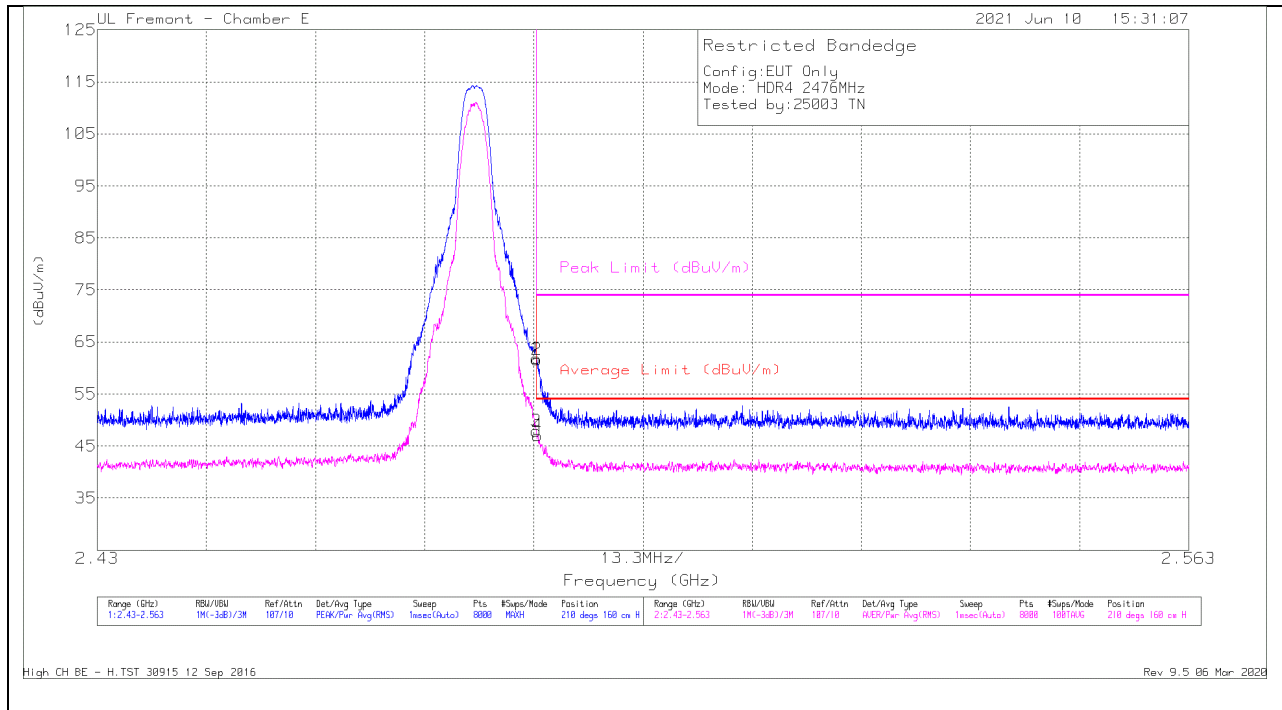
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.38921	35.45	RMS	32.2	-25.4	42.25	54	-11.75	-	-	169	354	V
2	* 2.38971	46.48	Pk	32.2	-25.4	53.28	-	-	74	-20.72	169	354	V
1	* 2.38999	45.63	Pk	32.2	-25.4	52.43	-	-	74	-21.57	169	354	V
3	* 2.38999	34.85	RMS	32.2	-25.4	41.65	54	-12.35	-	-	169	354	V

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

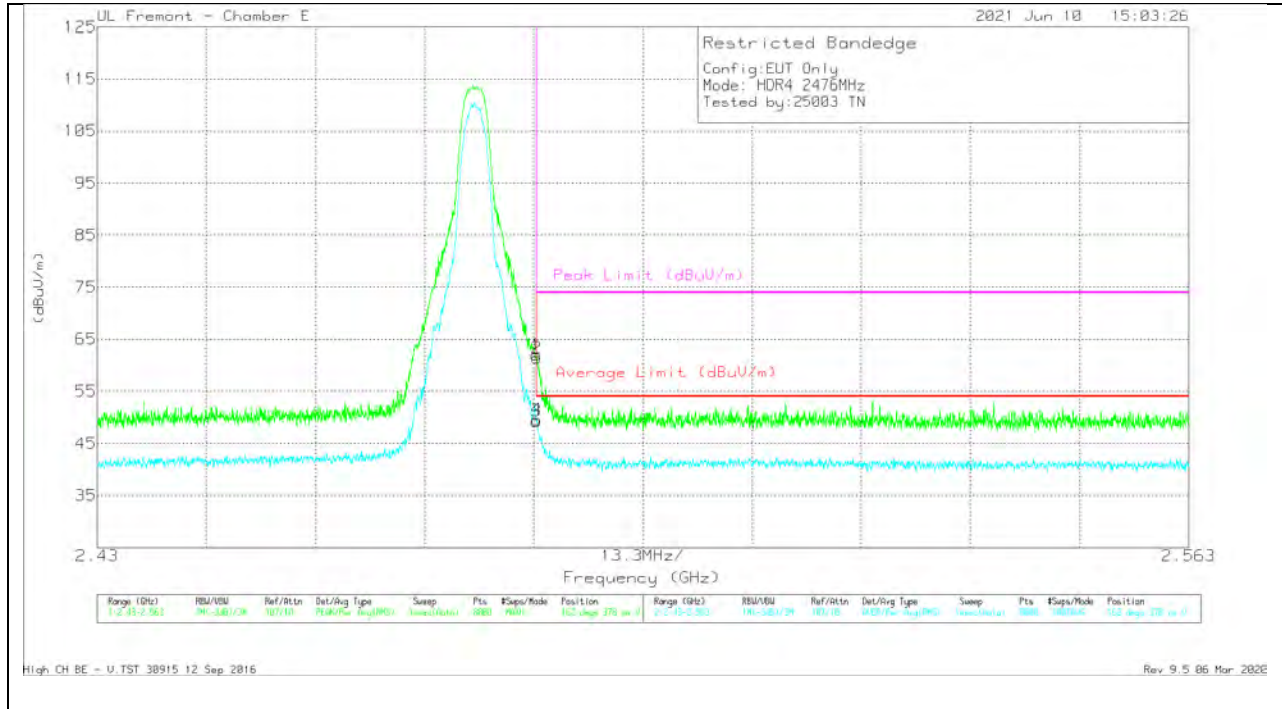
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Ch/Filter/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	54.67	Pk	32.6	-25.4	61.87	-	-	74	-12.13	210	160	H
3	* 2.48351	40.74	RMS	32.6	-25.4	47.94	54	-6.06	-	-	210	160	H
2	* 2.48354	54.42	Pk	32.6	-25.4	61.62	-	-	74	-12.38	210	160	H
4	* 2.48364	39.82	RMS	32.6	-25.4	47.02	54	-6.98	-	-	210	160	H

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

VERTICAL RESULT



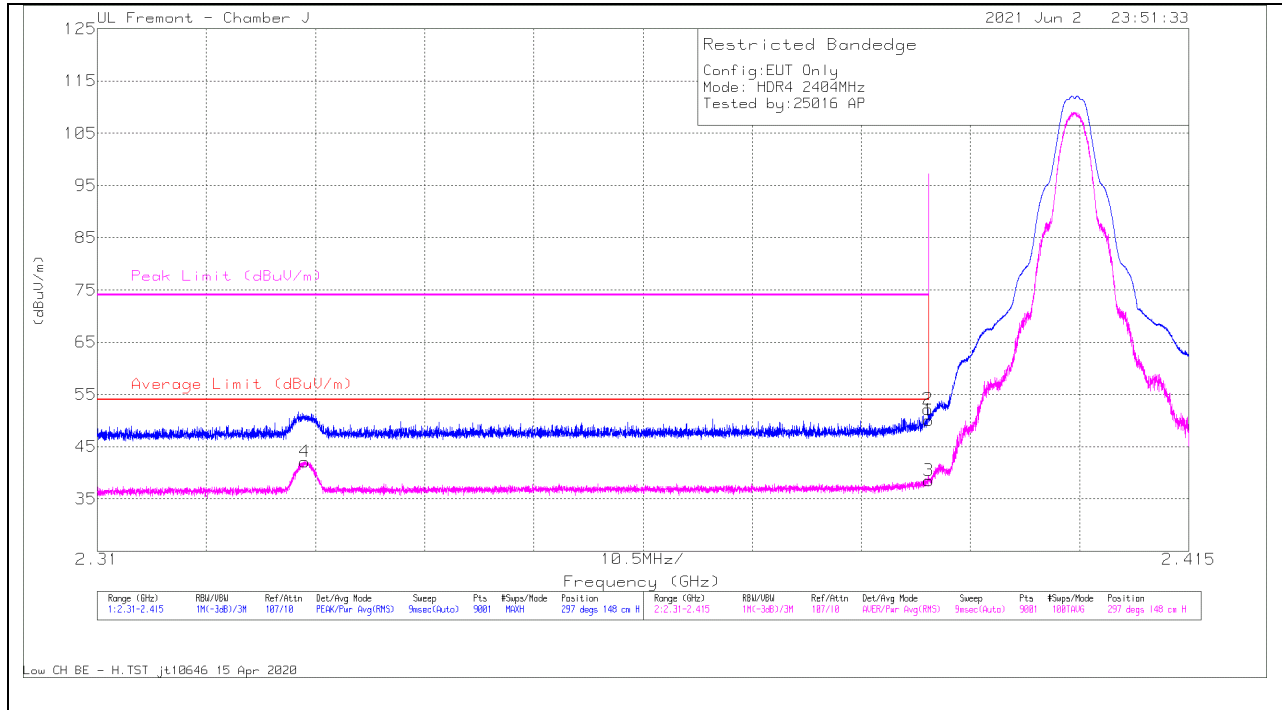
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	54.75	Pk	32.6	-25.4	61.95	-	-	74	-12.05	162	378	V
3	* 2.48351	42.09	RMS	32.6	-25.4	49.29	54	-4.71	-	-	162	378	V
4	* 2.48359	42.33	RMS	32.6	-25.4	49.53	54	-4.47	-	-	162	378	V
2	* 2.48361	54.15	Pk	32.6	-25.4	61.35	-	-	74	-12.65	162	378	V

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

ANT 3

BANDEDGE (LOW CHANNEL)

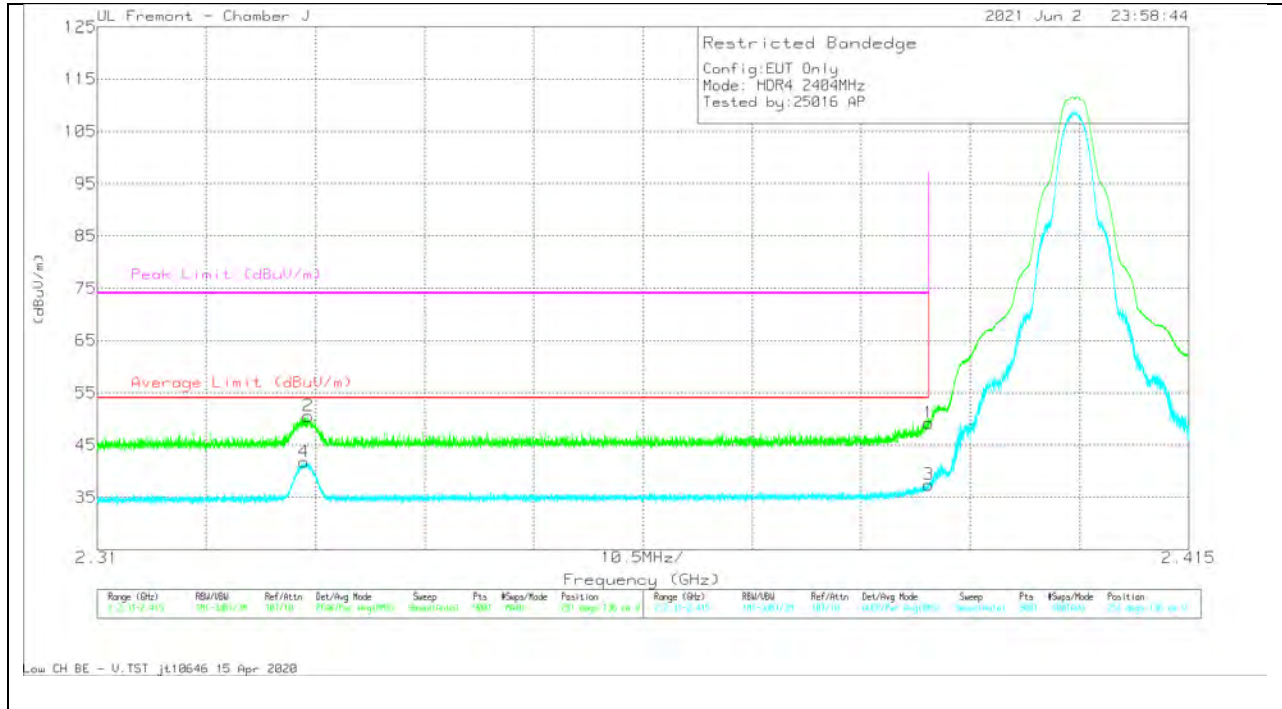
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010034 (dB/m)	Amp/Cb/ Ftr/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	43.15	Pk	32.1	-25.2	50.05	-	-	74	-23.95	297	148	H
2	* 2.38994	45.2	Pk	32.1	-25.2	52.1	-	-	74	-21.9	297	148	H
3	* 2.38999	31.59	RMS	32.1	-25.2	38.49	54	-15.51	-	-	297	148	H
4	* 2.32996	35.64	RMS	31.8	-25.3	42.14	54	-11.86	-	-	297	148	H

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

VERTICAL RESULT

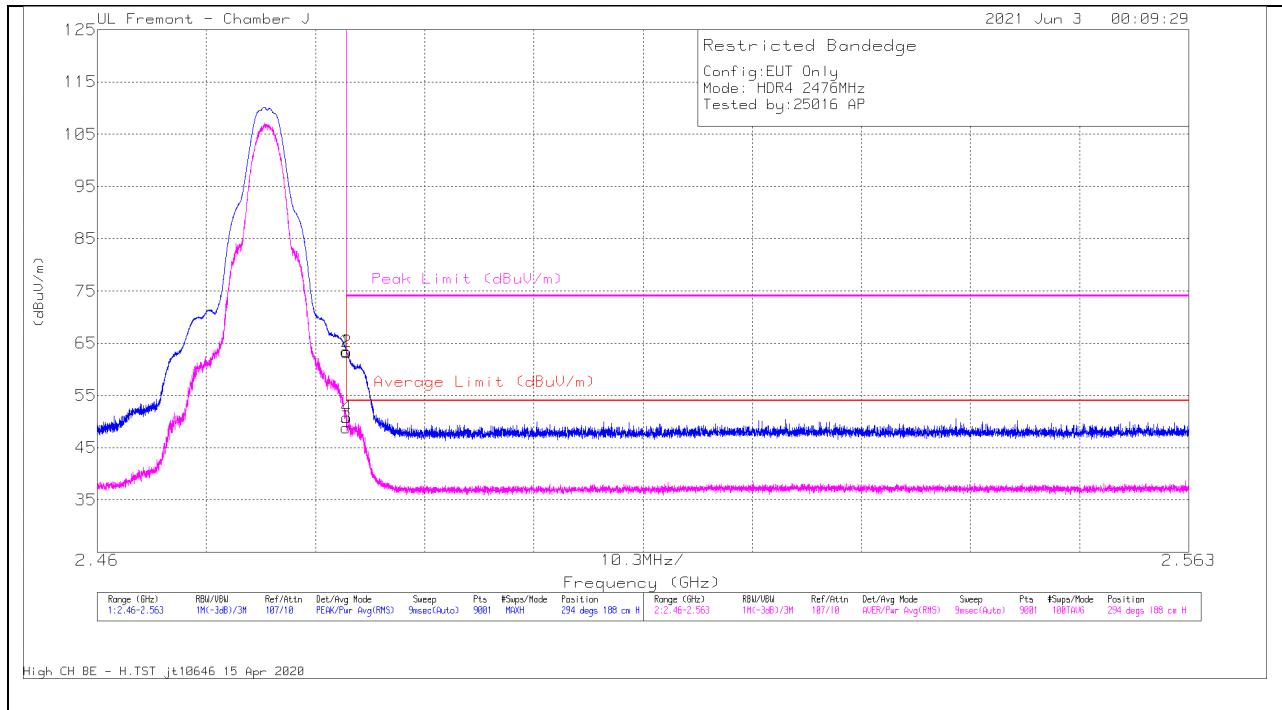


Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	42.28	Pk	32.1	-25.2	49.18	-	-	74	-24.82	251	136	V
2	* 2.3303	43.98	Pk	31.8	-25.3	50.48	-	-	74	-23.52	251	136	V
3	* 2.38999	30.49	RMS	32.1	-25.2	37.39	54	-16.61	-	-	251	136	V
4	* 2.3299	35.21	RMS	31.8	-25.3	41.71	54	-12.29	-	-	251	136	V

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

BANEDGE (HIGH CHANNEL)

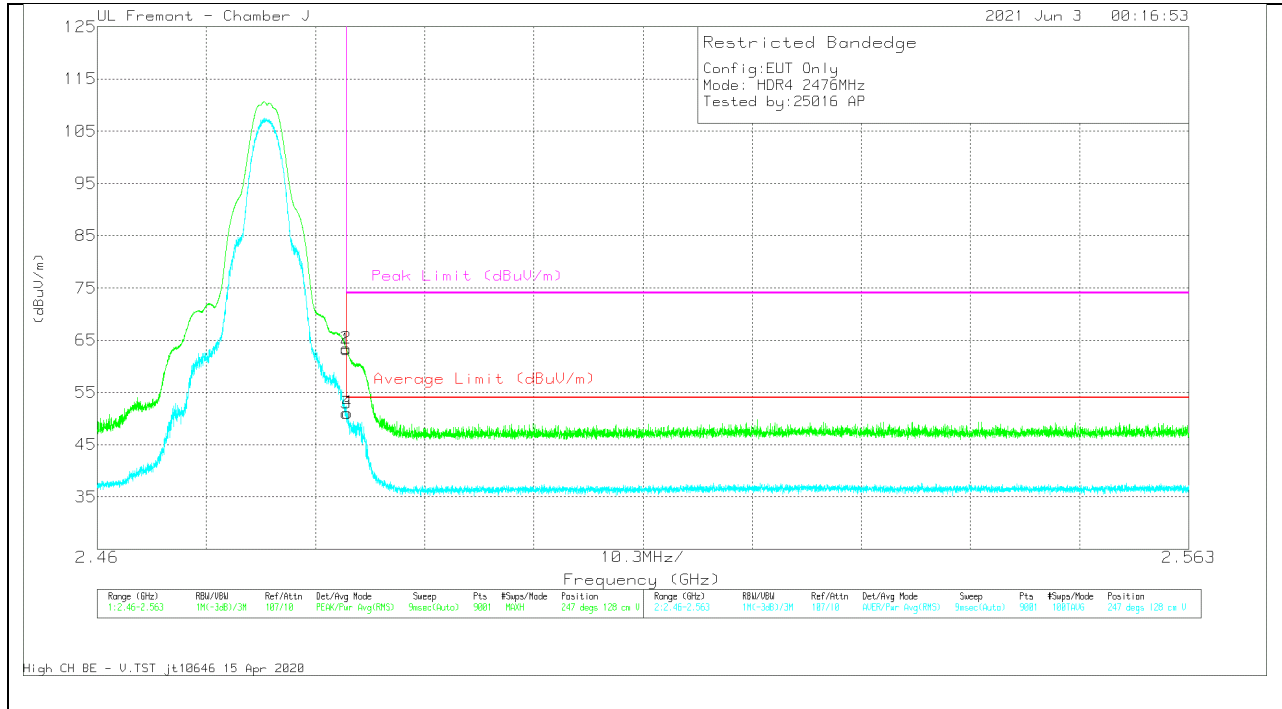
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Filtr/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	56.13	Pk	32.5	-25.2	63.43	-	-	74	-10.57	294	188	H
2	* 2.48354	55.97	Pk	32.5	-25.2	63.27	-	-	74	-10.73	294	188	H
3	* 2.48351	41.5	RMS	32.5	-25.2	48.8	54	-5.2	-	-	294	188	H
4	* 2.48354	43.5	RMS	32.5	-25.2	50.8	54	-3.2	-	-	294	188	H

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

VERTICAL RESULT



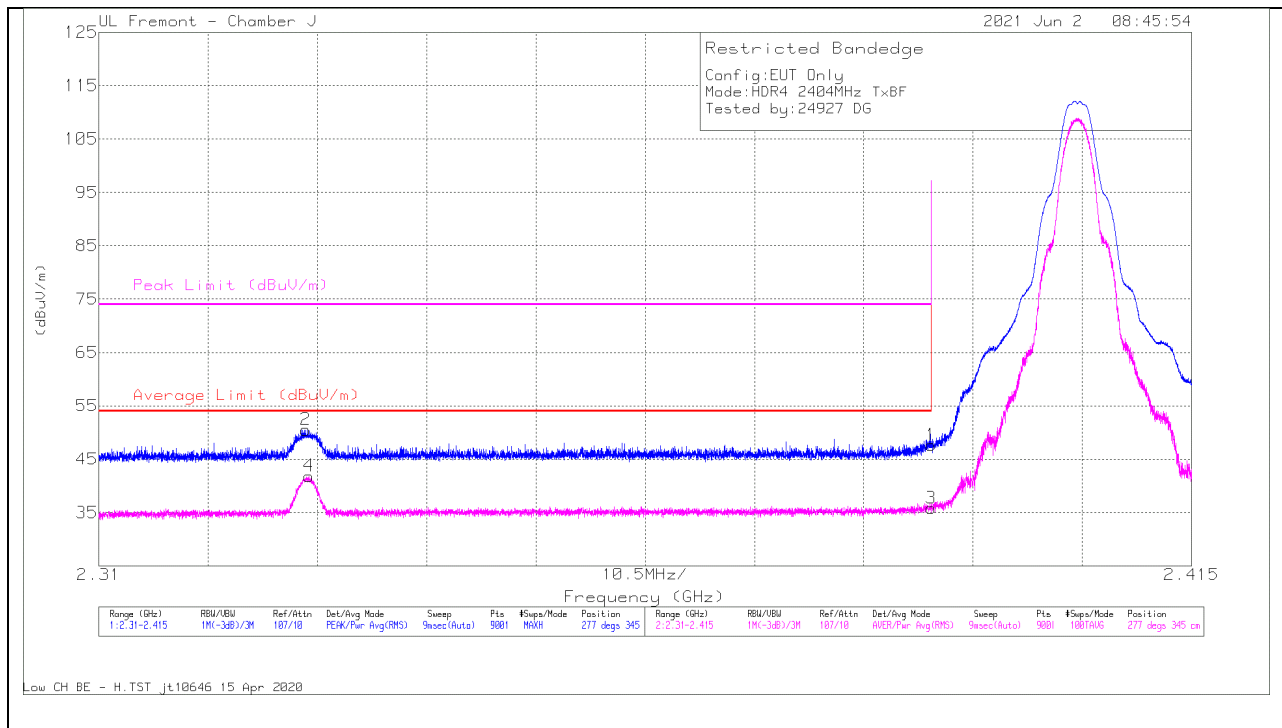
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	55.96	Pk	32.5	-25.2	63.26	-	-	74	-10.74	247	128	V
2	* 2.48352	56.16	Pk	32.5	-25.2	63.46	-	-	74	-10.54	247	128	V
3	* 2.48351	43.68	RMS	32.5	-25.2	50.98	54	-3.02	-	-	247	128	V
4	* 2.4836	43.8	RMS	32.5	-25.2	51.1	54	-2.9	-	-	247	128	V

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

10.2.2. HIGH POWER HDR TXBF (HDR4)

BANDEDGE (LOW CHANNEL)

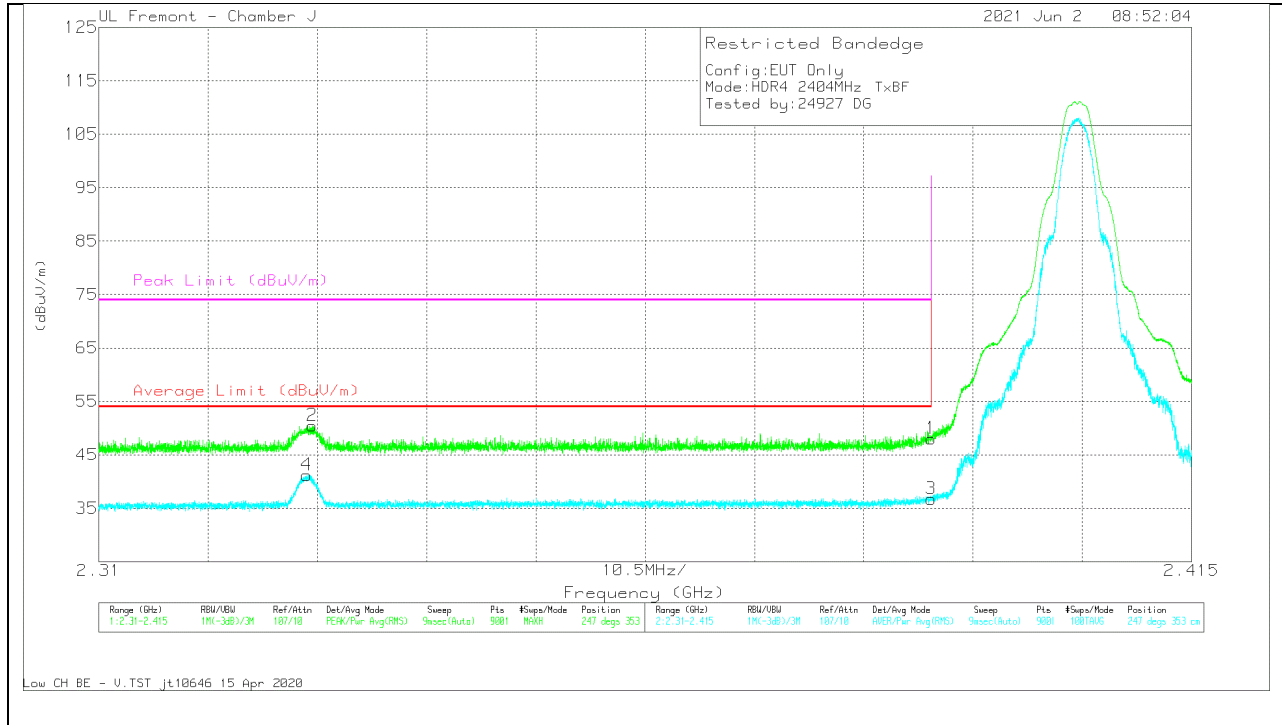
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/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	40.74	Pk	32.1	-25.2	47.64	-	-	74	-26.36	277	345	H
2	* 2.32986	44.01	Pk	31.8	-25.3	50.51	-	-	74	-23.49	277	345	H
3	* 2.38999	28.9	RMS	32.1	-25.2	35.8	54	-10.2	-	-	277	345	H
4	* 2.33018	35.34	RMS	31.8	-25.3	41.84	54	-12.16	-	-	277	345	H

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

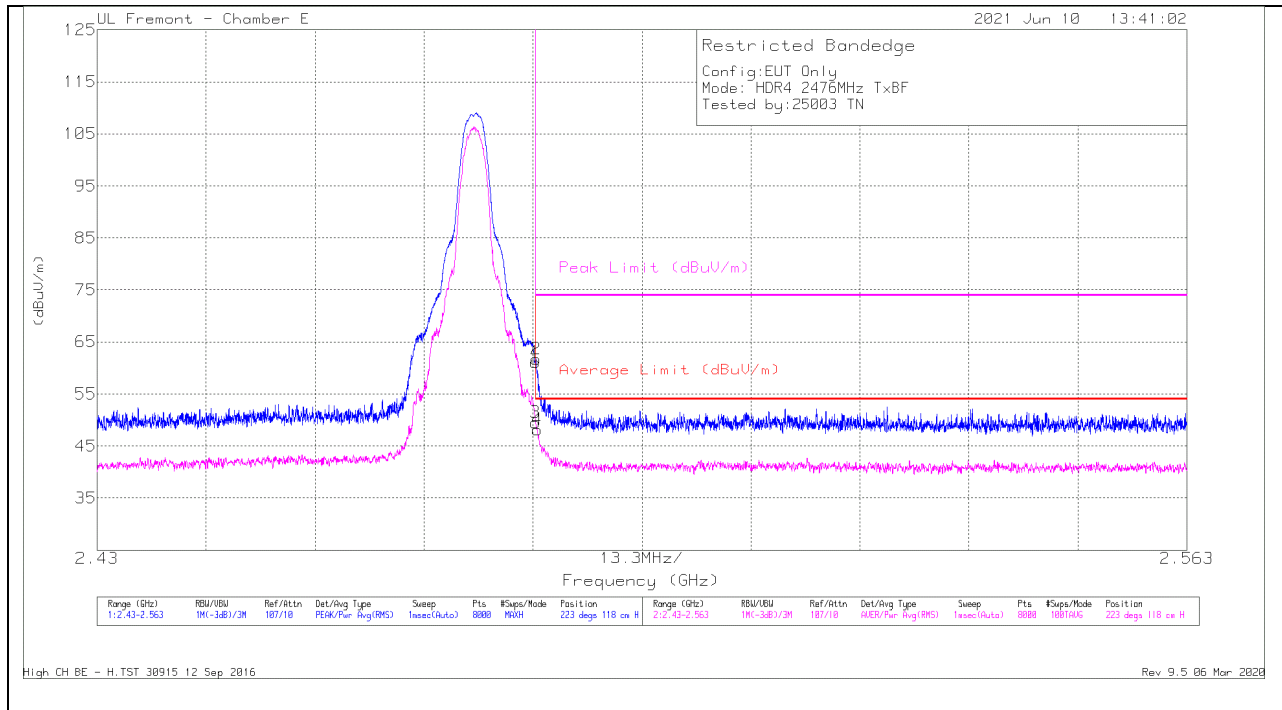
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/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	41.13	Pk	32.1	-25.2	48.03	-	-	74	-25.97	247	353	V
2	* 2.33051	43.96	Pk	31.8	-25.3	50.46	-	-	74	-23.54	247	353	V
3	* 2.38999	29.86	RMS	32.1	-25.2	36.76	54	-17.24	-	-	247	353	V
4	* 2.32997	34.72	RMS	31.8	-25.3	41.22	54	-12.78	-	-	247	353	V

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

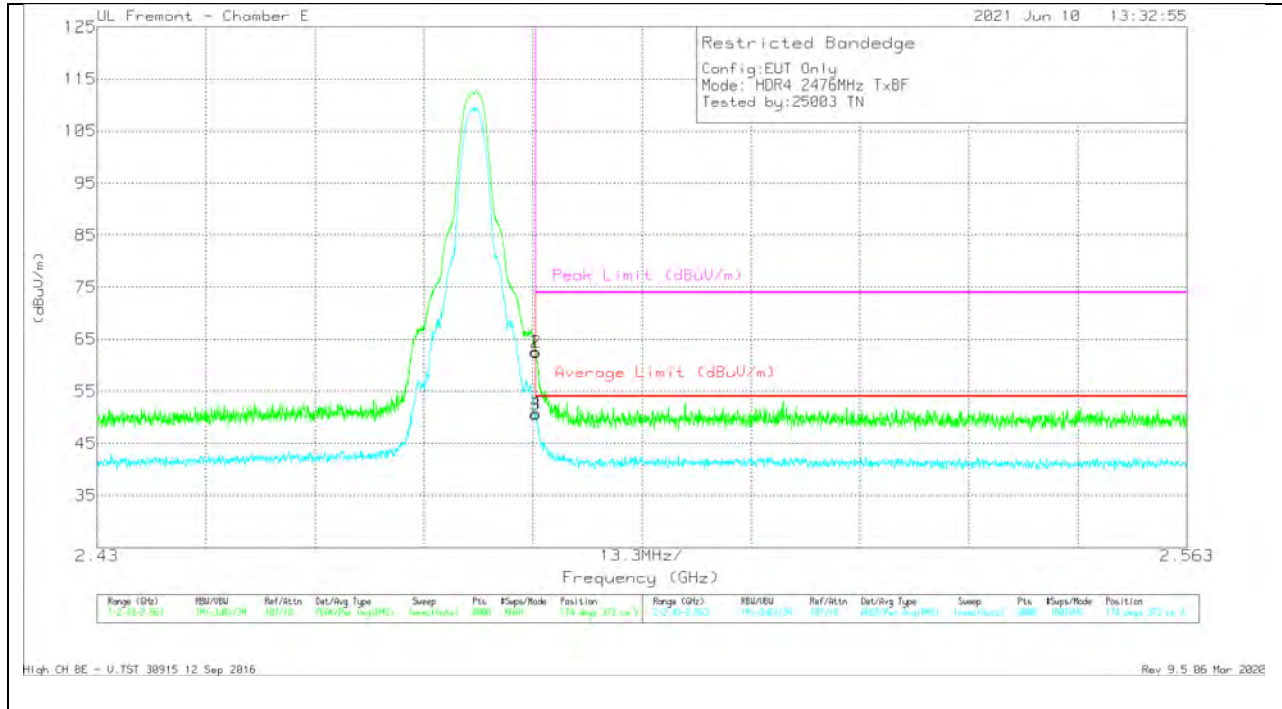
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Ch/Filter/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	53.87	Pk	32.6	-25.4	61.07	-	-	74	-12.93	223	118	H
3	* 2.48351	42.31	RMS	32.6	-25.4	49.51	54	-4.49	-	-	223	118	H
2	* 2.48357	54.55	Pk	32.6	-25.4	61.75	-	-	74	-12.25	223	118	H
4	* 2.48371	40.97	RMS	32.6	-25.4	48.17	54	-5.83	-	-	223	118	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/FI tr/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	55.37	Pk	32.6	-25.4	62.57	-	-	74	-11.43	174	372	V
3	* 2.48351	43.26	RMS	32.6	-25.4	50.46	54	-3.54	-	-	174	372	V
4	* 2.48354	43.52	RMS	32.6	-25.4	50.72	54	-3.28	-	-	174	372	V
2	* 2.48357	55.26	Pk	32.6	-25.4	62.46	-	-	74	-11.54	174	372	V

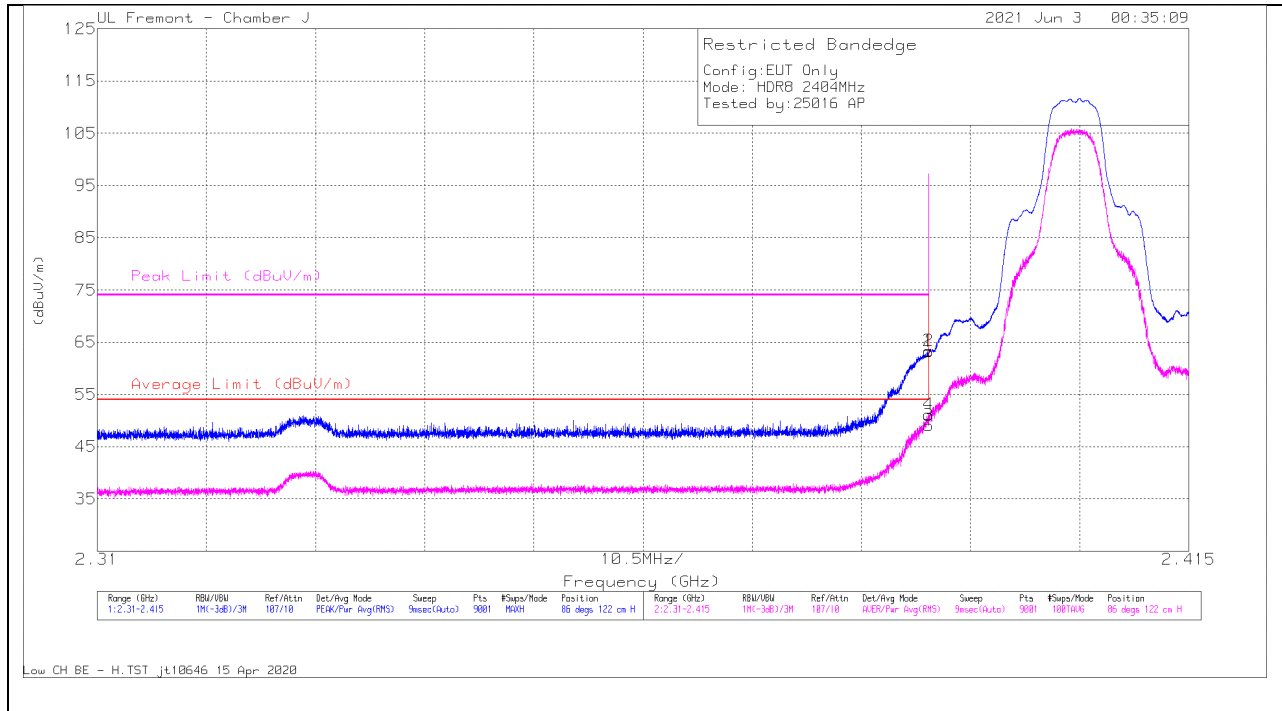
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

10.2.3. HIGH POWER HDR (HDR8)

ANT 4

BANDEDGE (LOW CHANNEL)

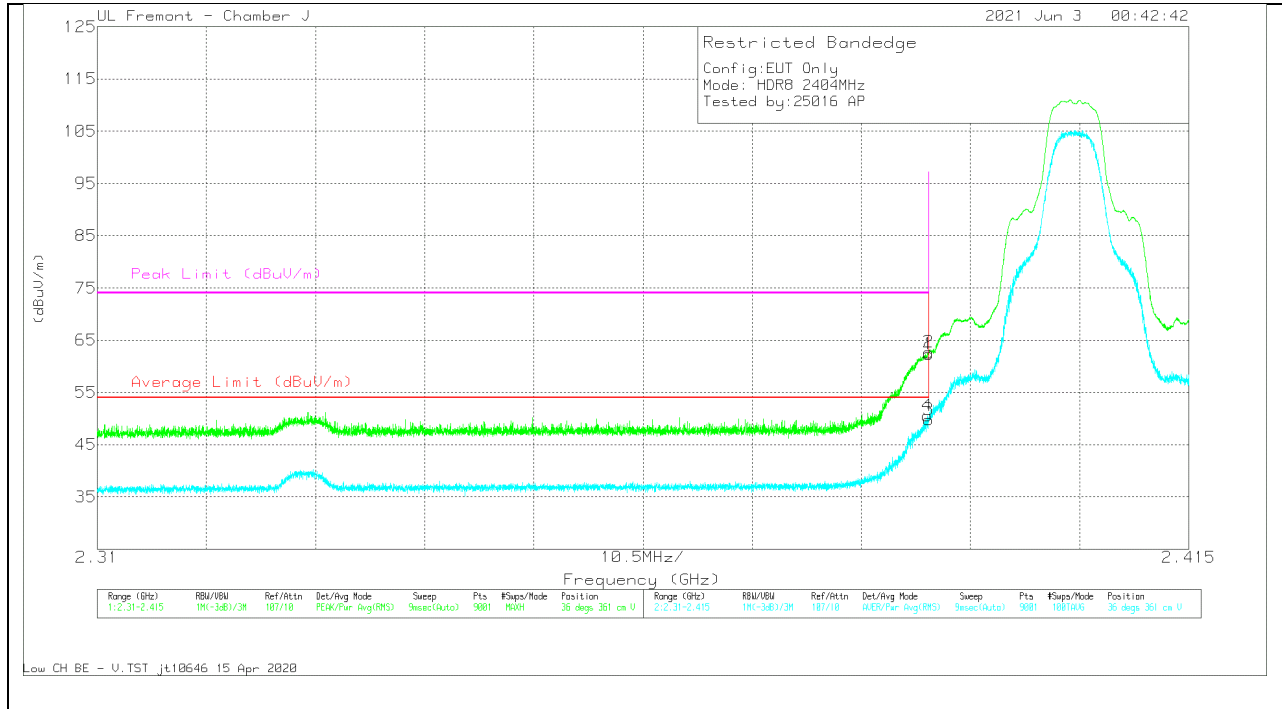
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Fitr/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	56.33	Pk	32.1	-25.2	63.23	-	-	74	-10.77	86	122	H
2	* 2.38998	56.38	Pk	32.1	-25.2	63.26	-	-	74	-10.72	86	122	H
3	* 2.38999	42.12	RMS	32.1	-25.2	49.02	54	-4.98	-	-	86	122	H
4	* 2.38997	44.22	RMS	32.1	-25.2	51.12	54	-2.88	-	-	86	122	H

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

VERTICAL RESULT

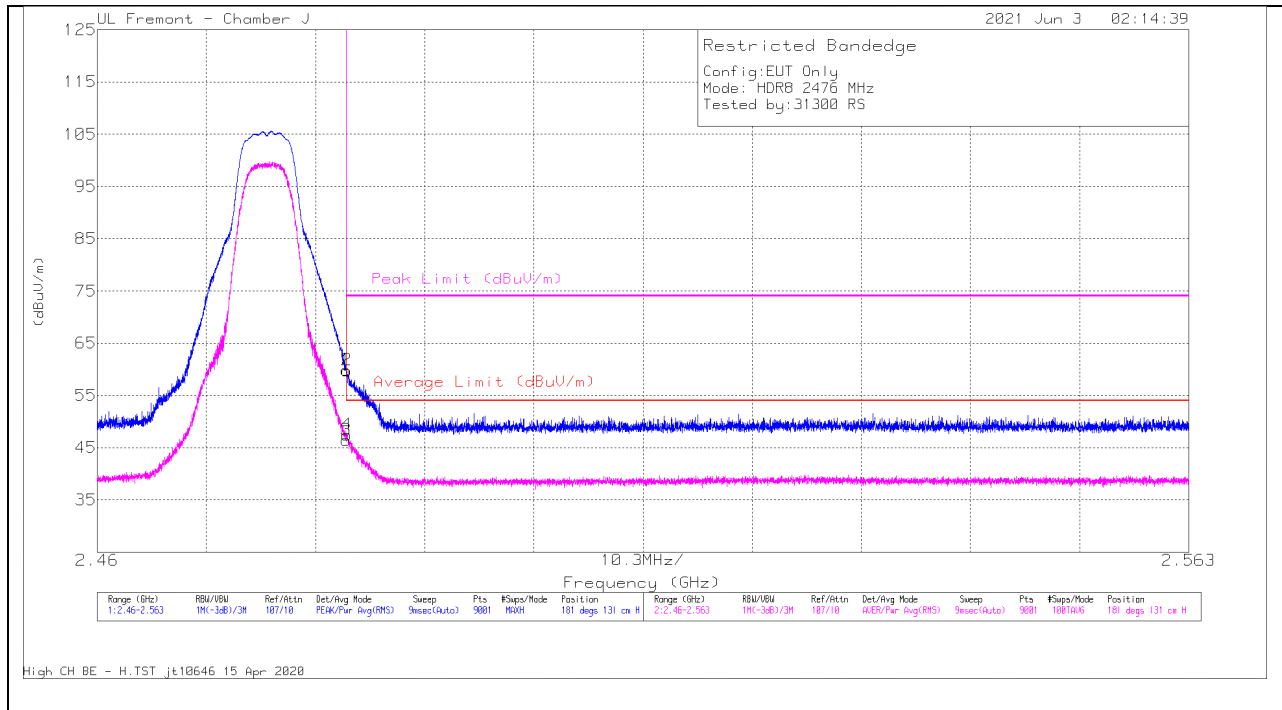


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	55.4	Pk	32.1	-25.2	62.3	-	-	74	-11.7	36	361	V
2	* 2.38995	55.75	Pk	32.1	-25.2	62.65	-	-	74	-11.35	36	361	V
3	* 2.38999	42.92	RMS	32.1	-25.2	49.82	54	-4.18	-	-	36	361	V
4	* 2.38986	43.6	RMS	32.1	-25.2	50.5	54	-3.5	-	-	36	361	V

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

BANDEDGE (HIGH CHANNEL)

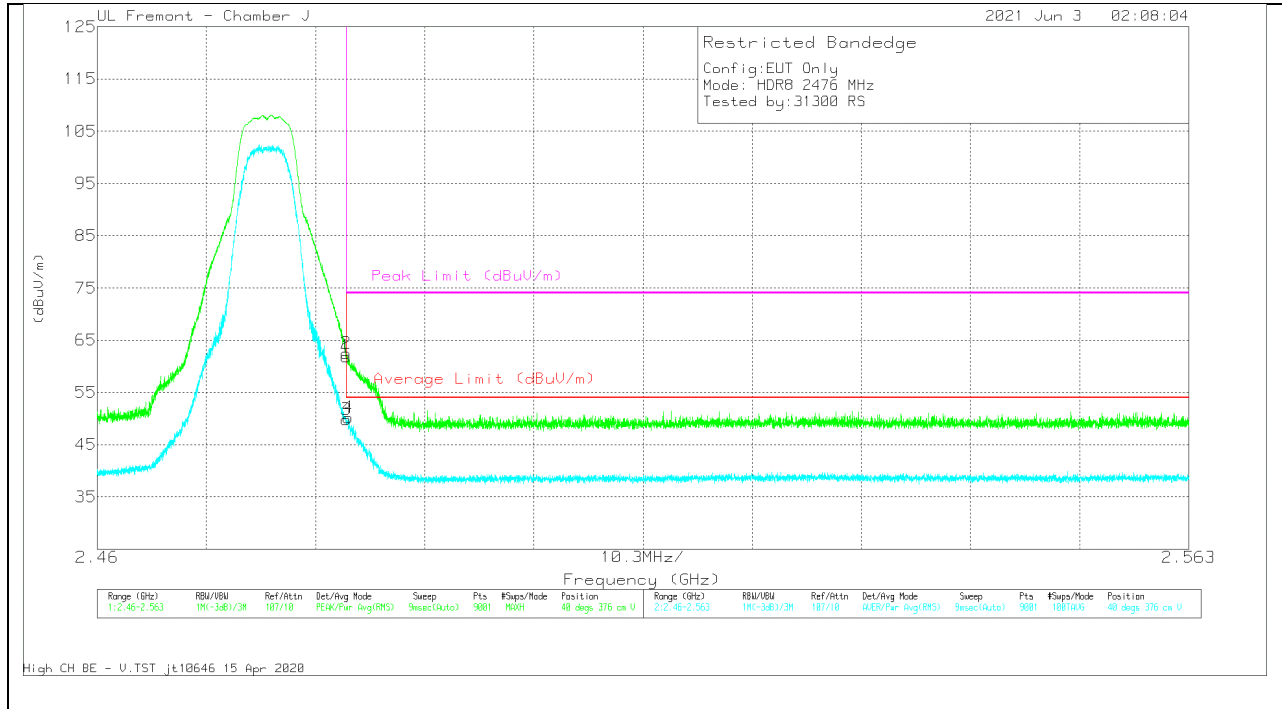
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cb/Flt r/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	52.51	Pk	32.5	-25.2	59.81	-	-	74	-14.19	181	131	H
2	* 2.48354	52.49	PK	32.5	-25.2	59.79	-	-	74	-14.21	181	131	H
3	* 2.48351	39.1	RMS	32.5	-25.2	46.4	54	-7.6	-	-	181	131	H
4	* 2.48353	40.12	RMS	32.5	-25.2	47.42	54	-6.58	-	-	181	131	H

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

VERTICAL RESULT



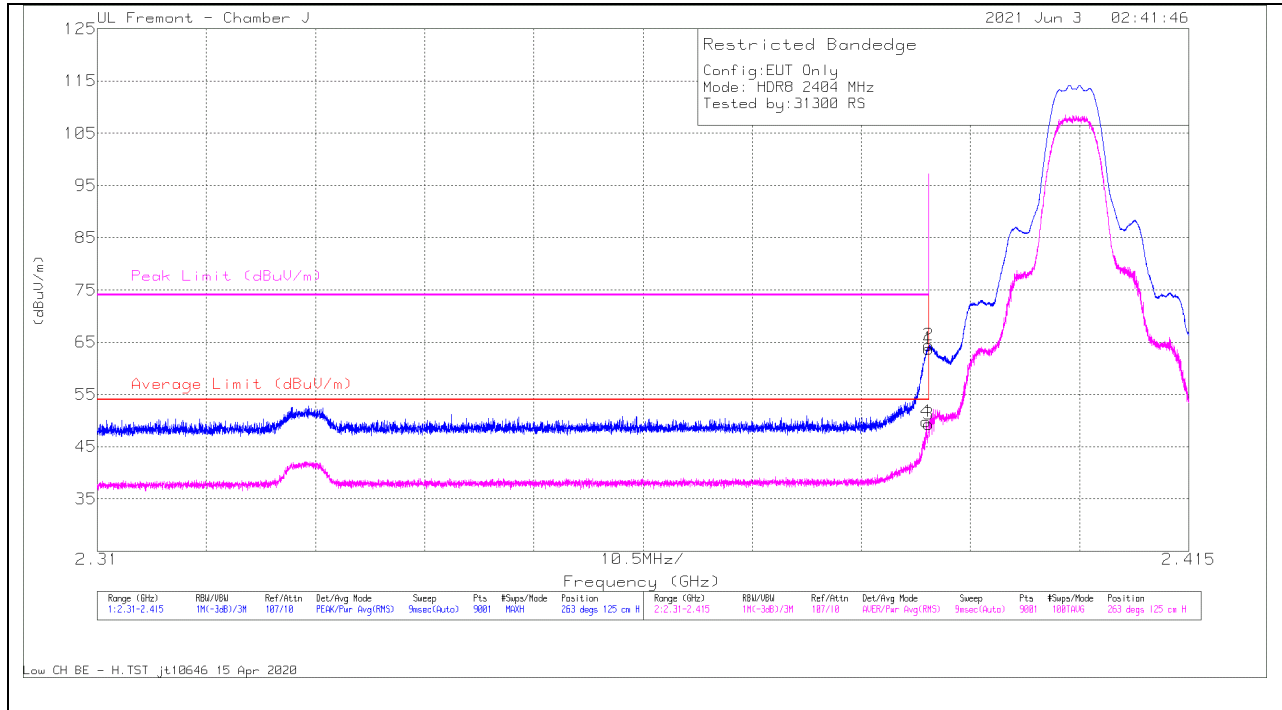
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cb/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	54.6	Pk	32.5	-25.2	61.9	-	-	74	-12.1	40	376	V
2	* 2.48352	55.2	Pk	32.5	-25.2	62.5	-	-	74	-11.5	40	376	V
3	* 2.48351	42.5	RMS	32.5	-25.2	49.8	54	-4.2	-	-	40	376	V
4	* 2.48368	42.83	RMS	32.5	-25.2	50.13	54	-3.87	-	-	40	376	V

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

ANT 3

BANEDGE (LOW CHANNEL)

HORIZONTAL RESULT



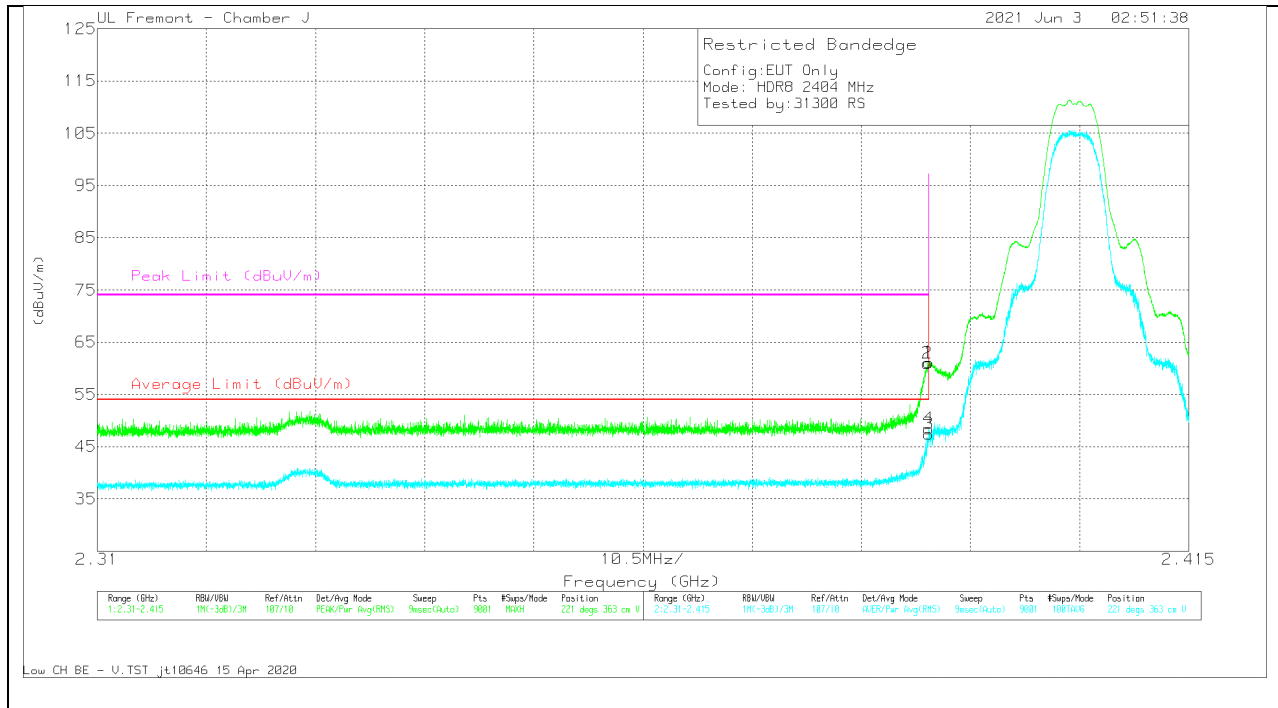
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cb/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	56.86	Pk	32.1	-25.2	63.76	-	-	74	-10.24	263	125	H
2	* 2.38995	57.52	Pk	32.1	-25.2	64.42	-	-	74	-9.58	263	125	H
3	* 2.38999	42.4	RMS	32.1	-25.2	49.3	54	-4.7	-	-	263	125	H
4	* 2.38976	42.95	RMS	32.1	-25.2	49.85	54	-4.15	-	-	263	125	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

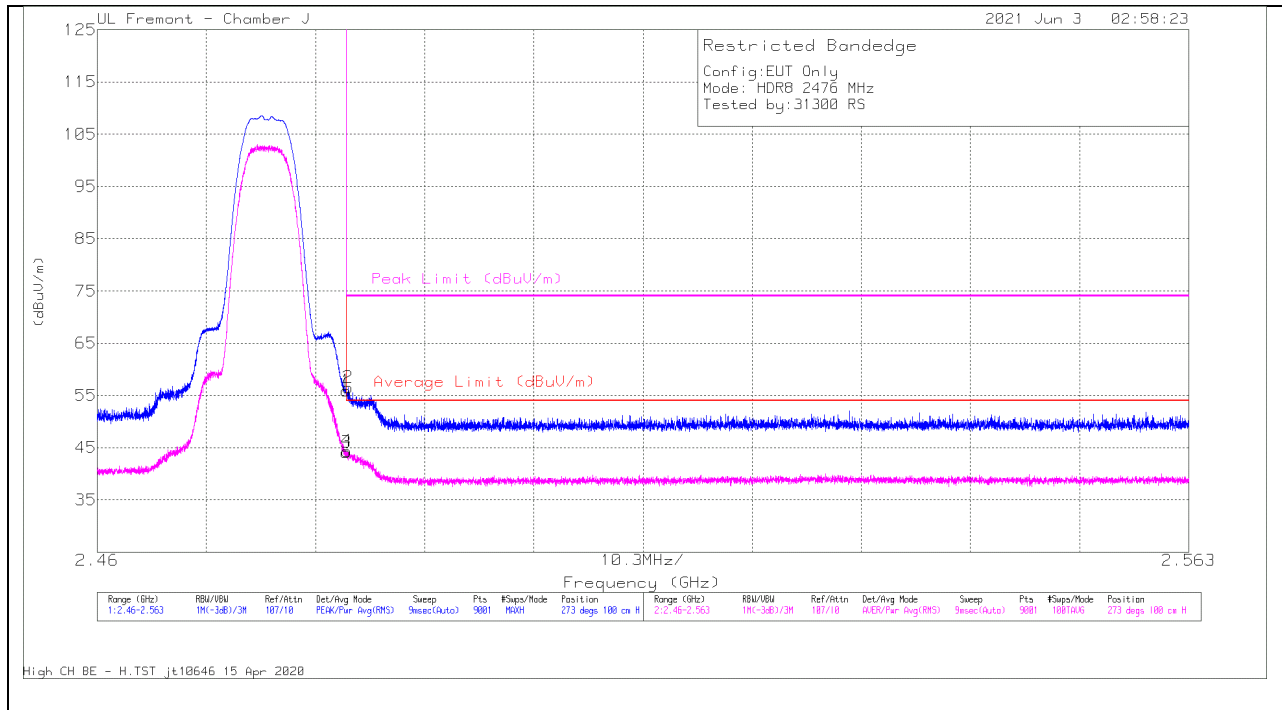


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	54.18	Pk	32.1	-25.2	61.08	-	-	74	-12.92	221	363	V
2	* 2.38988	54.09	Pk	32.1	-25.2	60.99	-	-	74	-13.01	221	363	V
3	* 2.38999	40.5	RMS	32.1	-25.2	47.4	54	-6.6	-	-	221	363	V
4	* 2.38998	41.49	RMS	32.1	-25.2	48.39	54	-5.61	-	-	221	363	V

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

BANDEDGE (HIGH CHANNEL)

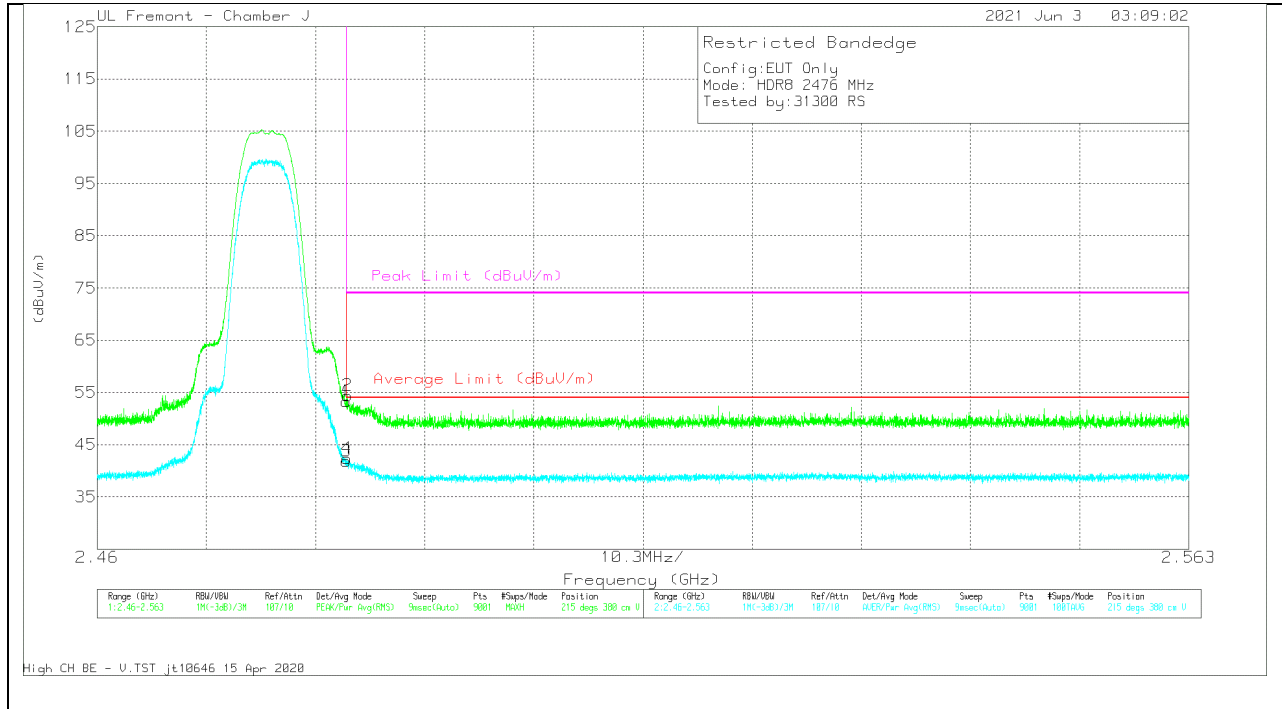
HORIZONTAL RESULT



Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	48.6	Pk	32.5	-25.2	55.9	-	-	74	-18.1	273	100	H
2	* 2.48367	49.24	Pk	32.5	-25.2	56.54	-	-	74	-17.46	273	100	H
3	* 2.48351	36.8	RMS	32.5	-25.2	44.1	54	-9.9	-	-	273	100	H
4	* 2.48353	37.08	RMS	32.5	-25.2	44.38	54	-9.62	-	-	273	100	H

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

VERTICAL RESULT



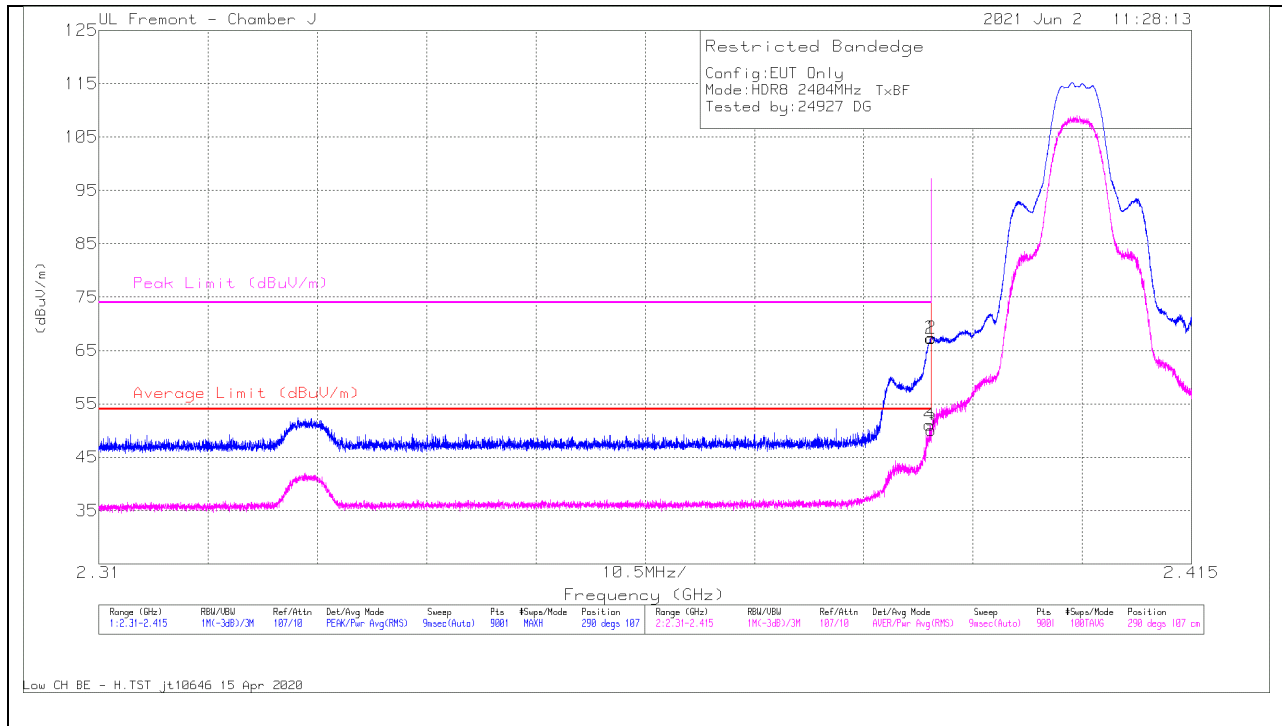
Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	45.93	Pk	32.5	-25.2	53.23	-	-	74	-20.77	215	380	V
2	* 2.48361	47.05	Pk	32.5	-25.2	54.35	-	-	74	-19.65	215	380	V
3	* 2.48351	34.5	RMS	32.5	-25.2	41.8	54	-12.2	-	-	215	380	V
4	* 2.48354	35.1	RMS	32.5	-25.2	42.4	54	-11.6	-	-	215	380	V

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

10.2.4. HIGH POWER HDR TXBF (HDR8)

BANDEDGE (LOW CHANNEL)

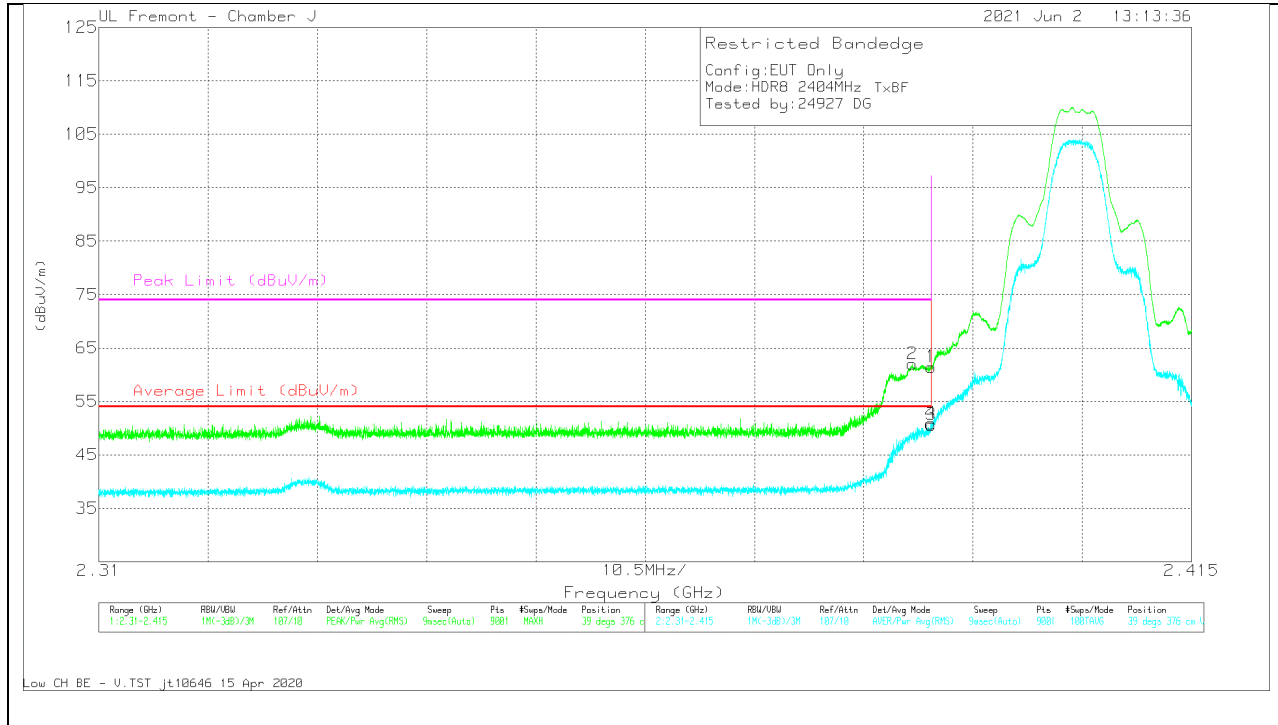
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/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	60.44	Pk	32.1	-25.2	67.34	-	-	74	-6.66	290	107	H
2	* 2.38994	60.39	Pk	32.1	-25.2	67.29	-	-	74	-6.71	290	107	H
3	* 2.38999	43.2	RMS	32.1	-25.2	50.1	54	-3.9	-	-	290	107	H
4	* 2.38983	44.12	RMS	32.1	-25.2	51.02	54	-2.98	-	-	290	107	H

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

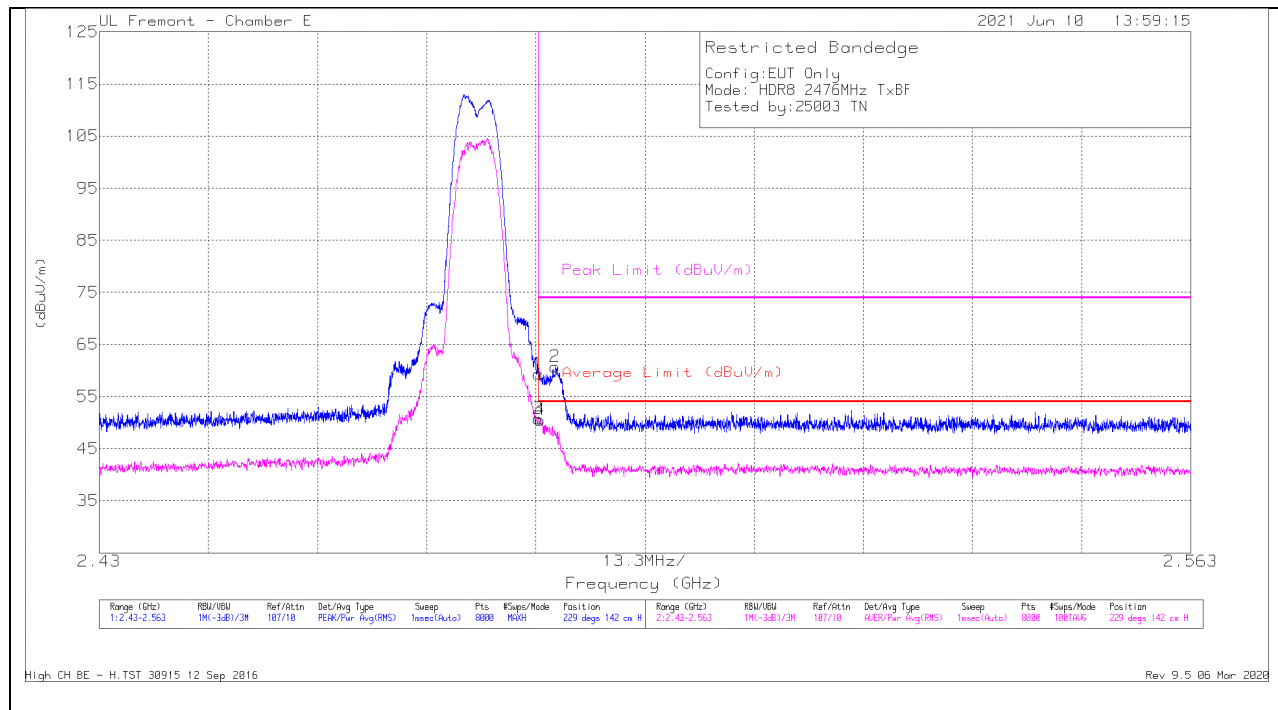
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0100 034 (dB/m)	Amp/Cb/ Ftr/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	54.52	Pk	32.1	-25.2	61.42	-	-	74	-12.58	39	376	V
2	* 2.38818	55.11	Pk	32.1	-25.2	62.01	-	-	74	-11.99	39	376	V
3	* 2.38999	43.75	RMS	32.1	-25.2	50.65	54	-3.35	-	-	39	376	V
4	* 2.38995	43.99	RMS	32.1	-25.2	50.89	54	-3.11	-	-	39	376	V

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

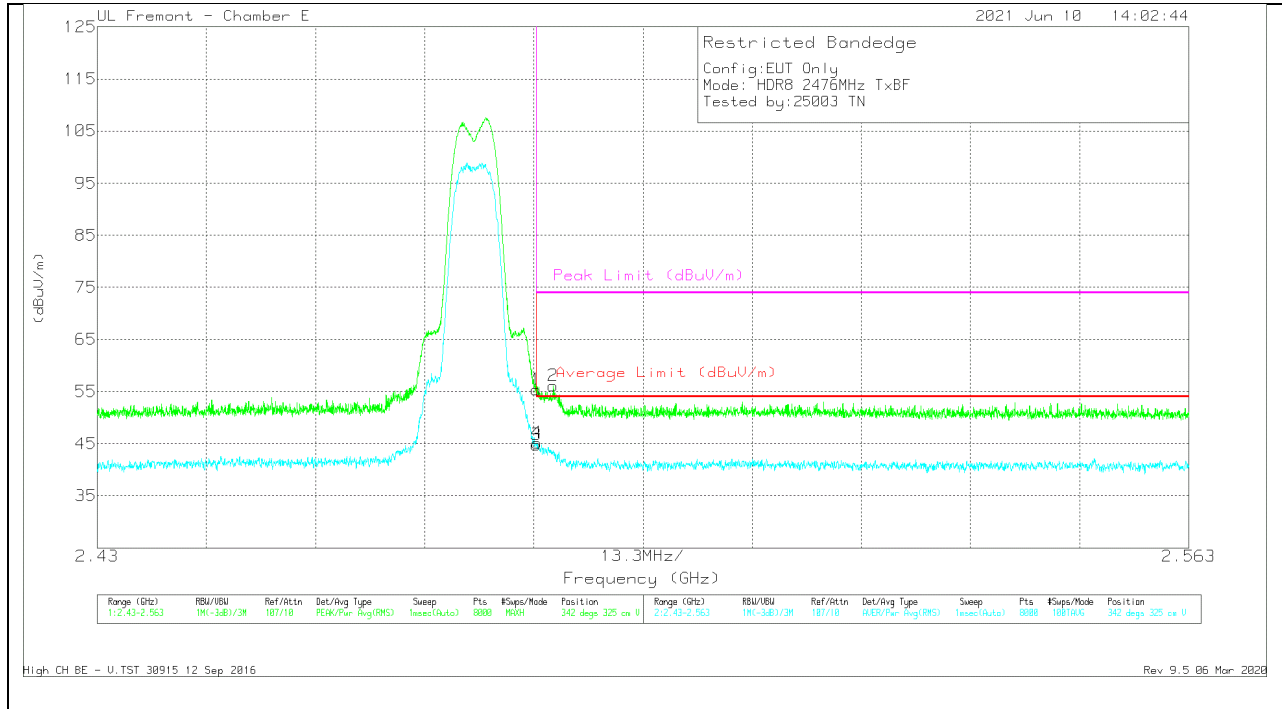
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Chl/FI tr/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	52.11	Pk	32.6	-25.4	59.31	-	-	74	-14.69	229	142	H
3	* 2.48351	43.53	RMS	32.6	-25.4	50.73	54	-3.27	-	-	229	142	H
4	* 2.48374	43.25	RMS	32.6	-25.4	50.45	54	-3.55	-	-	229	142	H
2	* 2.48557	53.49	Pk	32.6	-25.4	60.69	-	-	74	-13.31	229	142	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Ftr/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	48.12	Pk	32.6	-25.4	55.32	-	-	74	-18.68	342	325	V
3	* 2.48351	37.62	RMS	32.6	-25.4	44.82	54	-9.18	-	-	342	325	V
4	* 2.48354	37.91	RMS	32.6	-25.4	45.11	54	-8.89	-	-	342	325	V
2	* 2.48557	48.93	Pk	32.6	-25.4	56.13	-	-	74	-17.87	342	325	V

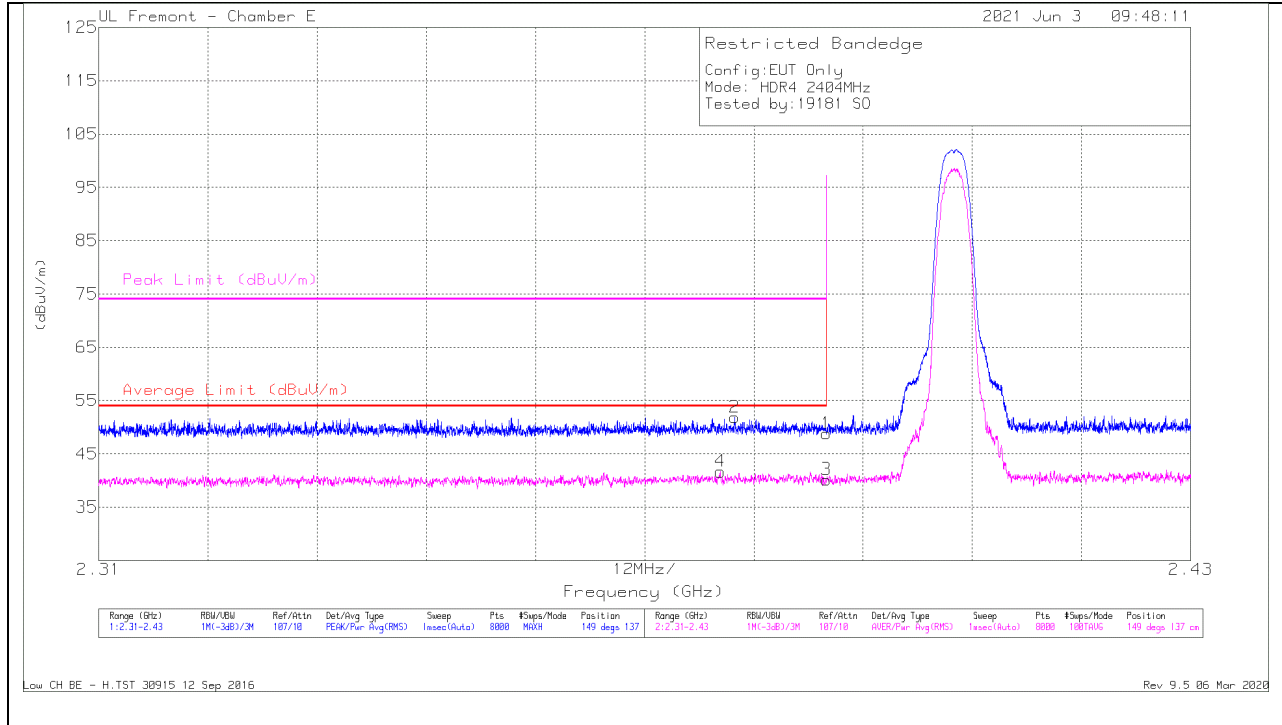
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

10.2.5. LOW POWER HDR (HDR4)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT

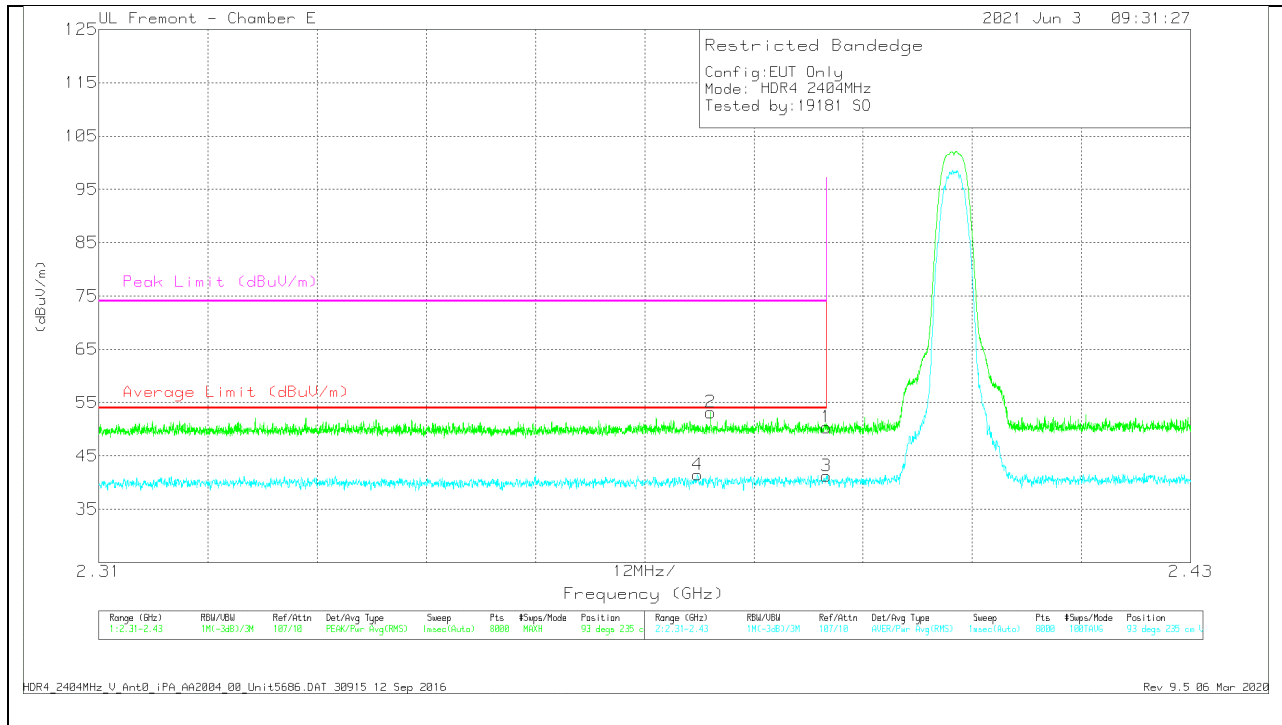


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cb/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.3783	34.88	RMS	32.2	-25.4	41.68	54	-12.32	-	-	149	137	H
2	* 2.37989	45.07	Pk	32.2	-25.4	51.87	-	-	74	-22.13	149	137	H
1	* 2.38999	42.02	Pk	32.2	-25.4	48.82	-	-	74	-25.18	149	137	H
3	* 2.38999	33.36	RMS	32.2	-25.4	40.16	54	-13.84	-	-	149	137	H

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

Low CH BE - H.TST 30915 12 Sep 2016
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VERTICAL RESULT



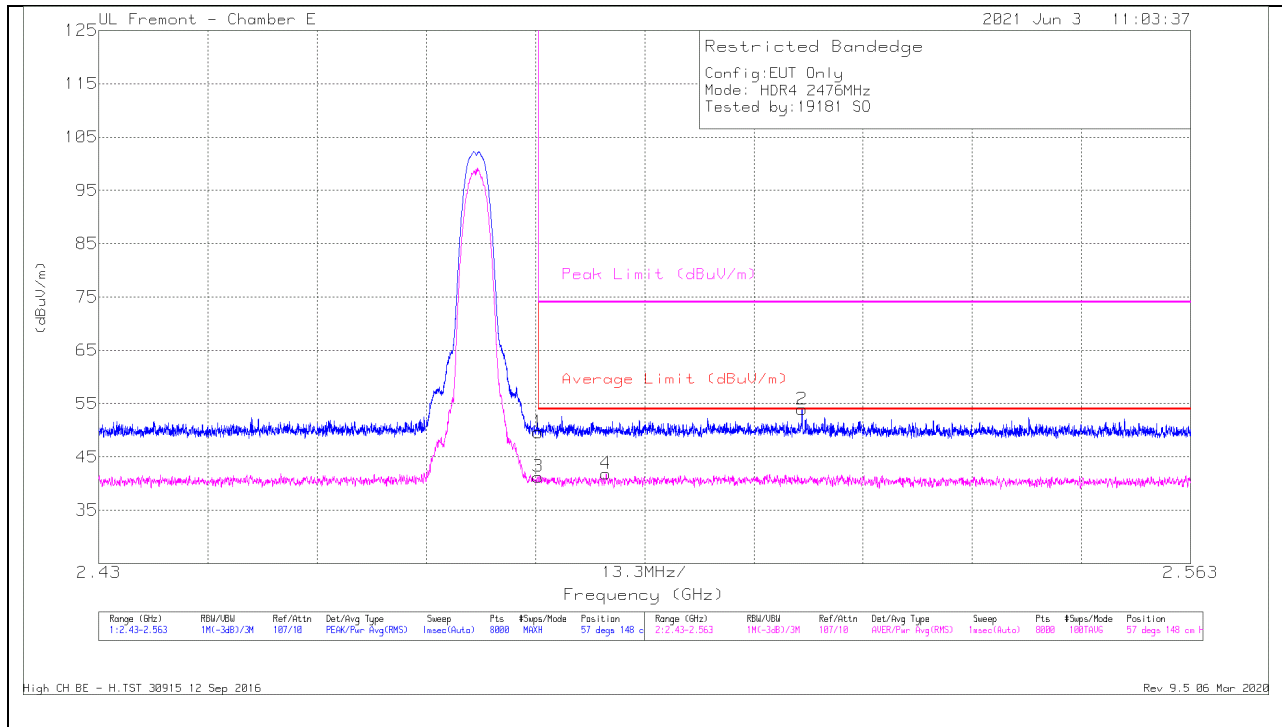
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0078 107 (dB/m)	Amp/Cb/ Ftr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	43.57	Pk	32.2	-25.4	50.37	-	-	74	-23.63	93	235	V
2	* 2.37724	46.38	Pk	32.2	-25.4	53.18	-	-	74	-20.82	93	235	V
3	* 2.38999	34.43	RMS	32.2	-25.4	41.23	54	-12.77	-	-	93	235	V
4	* 2.37581	34.67	RMS	32.2	-25.4	41.47	54	-12.53	-	-	93	235	V

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

HDR4_2404MHz_V_Ant0_iPA_AA2004_00_Unit5686.DAT 30915 12 Sep 2016
Rev 9.5 06 Mar 2020

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT

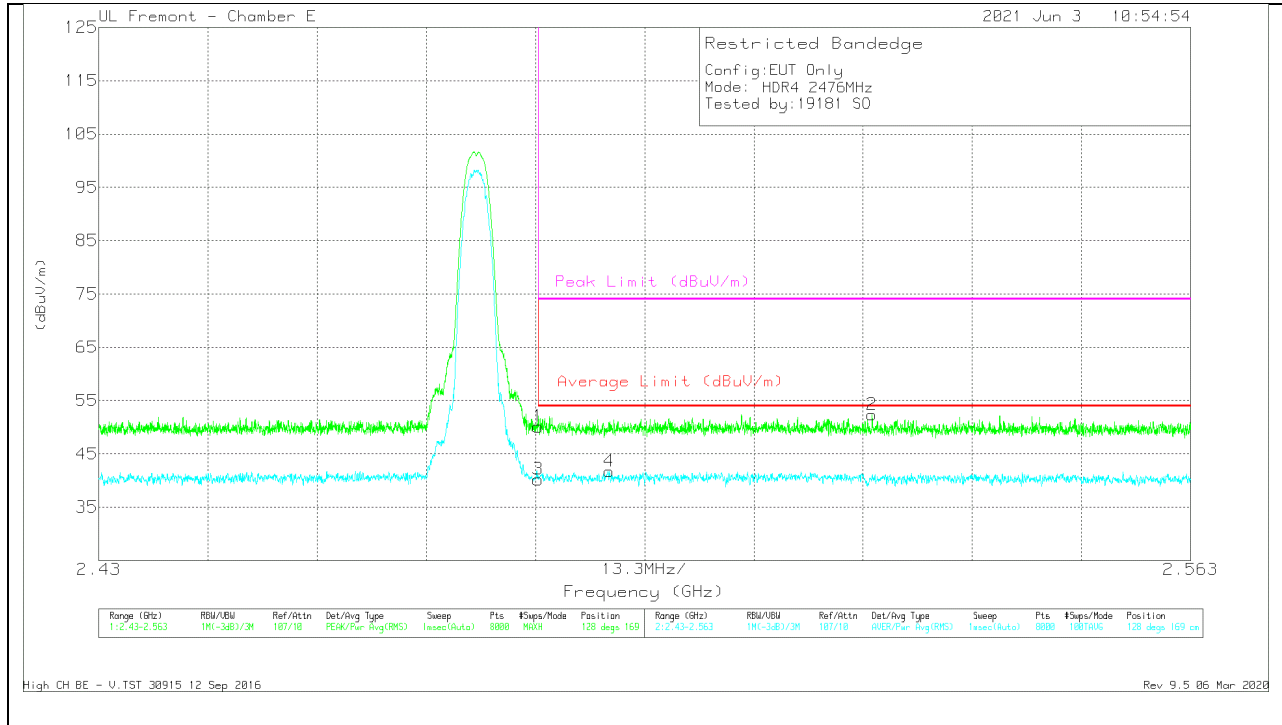


Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF PRE0078 107 (dB/m)	Amp/Cb/l Filtr/Pad (dB)	Correcte d Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	42.44	Pk	32.6	-25.4	49.64	-	-	74	-24.36	57	148	H
3	* 2.48351	34.09	RMS	32.6	-25.4	41.29	54	-12.71	-	-	57	148	H
4	* 2.4918	34.68	RMS	32.7	-25.5	41.88	54	-12.12	-	-	57	148	H
2	2.51566	46.55	Pk	32.7	-25.3	53.95	-	-	74	-20.05	57	148	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 PRE007810 7 (dB/m)	Amp/Cbl/Fit r/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	42.91	Pk	32.6	-25.4	50.11	-	-	74	-23.89	128	169	V
3	* 2.48351	33.02	RMS	32.6	-25.4	40.22	54	-13.78	-	-	128	169	V
4	* 2.49219	34.52	RMS	32.7	-25.5	41.72	54	-12.28	-	-	128	169	V
2	2.52419	45.26	Pk	32.5	-25.4	52.36	-	-	74	-21.64	128	169	V

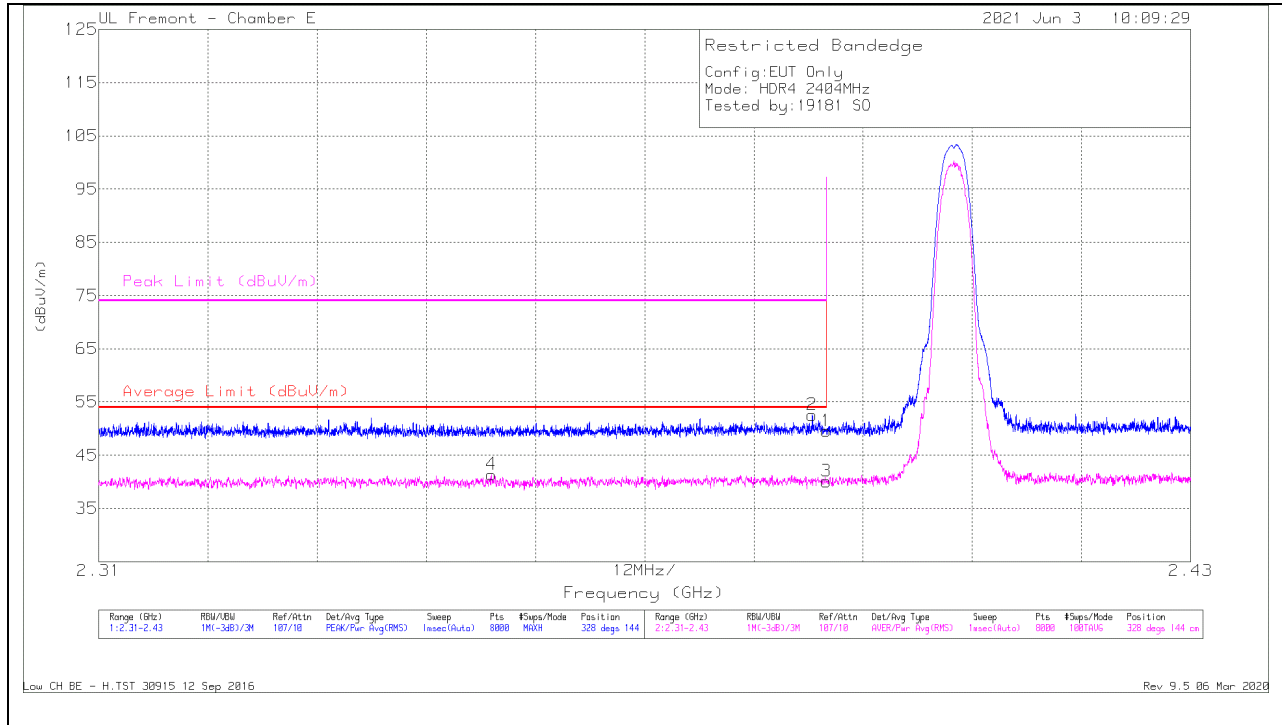
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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ANT 3

BANEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.35315	34.77	RMS	32	-25.4	41.37	54	-12.63	-	-	328	144	H
2	* 2.38842	45.76	Pk	32.2	-25.4	52.56	-	-	74	-21.44	328	144	H
1	* 2.38999	42.74	Pk	32.2	-25.4	49.54	-	-	74	-24.46	328	144	H
3	* 2.38999	33.28	RMS	32.2	-25.4	40.08	54	-13.92	-	-	328	144	H

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

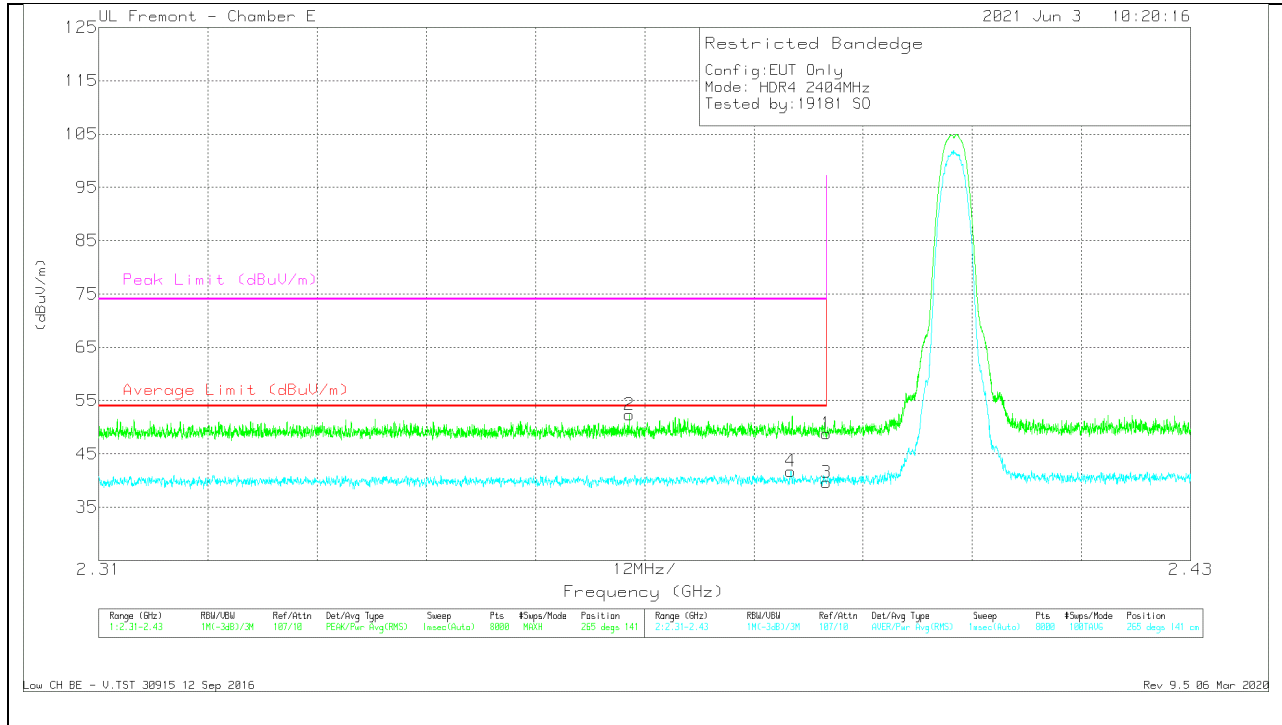
Pk - Peak detector

RMS - RMS detection

Low CH BE - H.TST 30915 12 Sep 2016

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VERTICAL RESULT



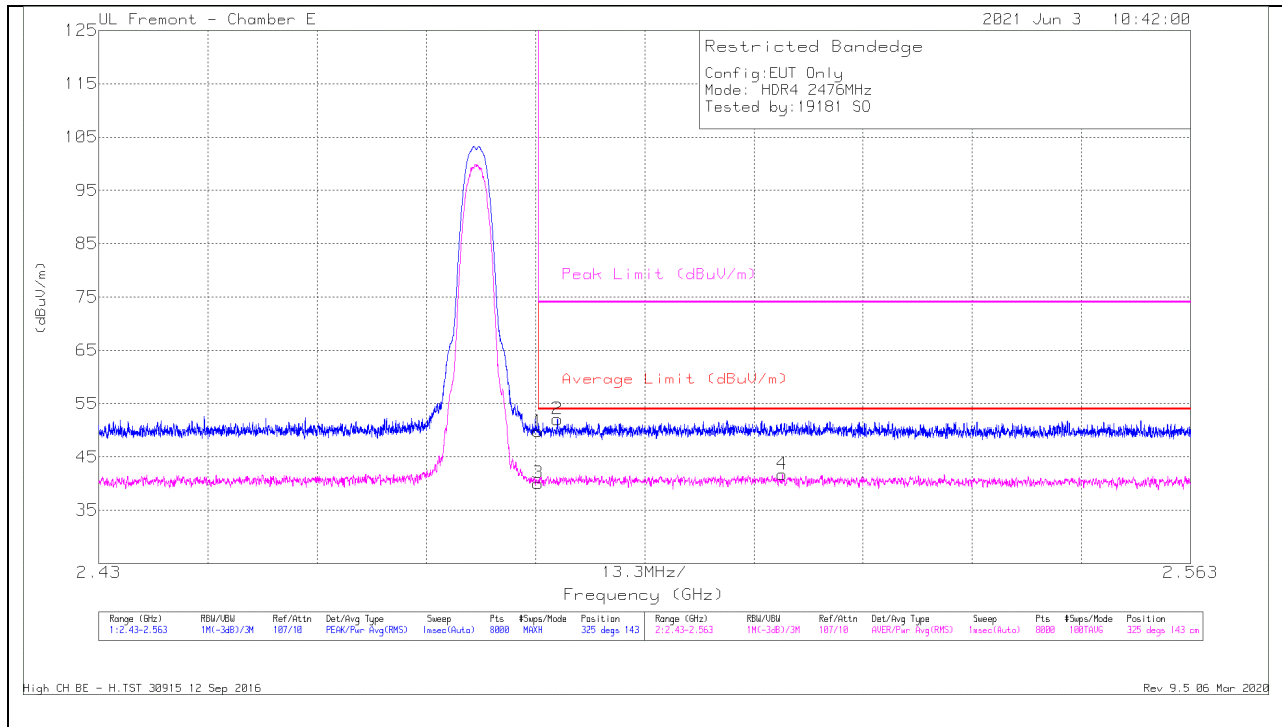
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.36831	45.75	Pk	32.1	-25.5	52.35	-	-	74	-21.65	265	141	V
4	* 2.38606	34.93	RMS	32.2	-25.4	41.73	54	-12.27	-	-	265	141	V
1	* 2.38999	42.01	Pk	32.2	-25.4	48.81	-	-	74	-25.19	265	141	V
3	* 2.38999	32.84	RMS	32.2	-25.4	39.64	54	-14.36	-	-	265	141	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

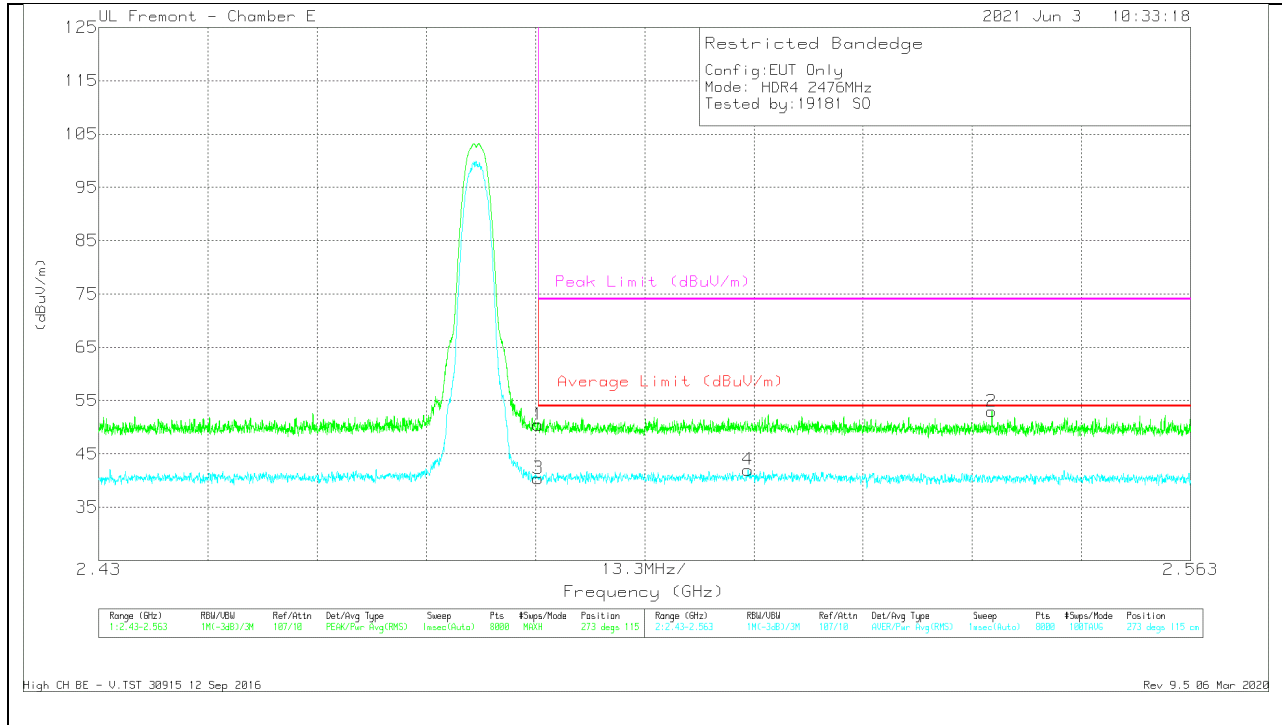


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0078107 (dB/m)	Amp/Cb/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	42.58	Pk	32.6	-25.4	49.78	-	-	74	-24.22	325	143	H
3	* 2.48351	32.87	RMS	32.6	-25.4	40.07	54	-13.93	-	-	325	143	H
2	* 2.48587	44.87	Pk	32.6	-25.4	52.07	-	-	74	-21.93	325	143	H
4	2.51327	34.47	RMS	32.7	-25.4	41.77	54	-12.23	-	-	325	143	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 PRE0078107 (dB/m)	Amp/Cbl/Fitter/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	43.28	PK	32.6	-25.4	50.48	-	-	74	-23.52	273	115	V
3	* 2.48351	33.22	RMS	32.6	-25.4	40.42	54	-13.58	-	-	273	115	V
2	2.50908	34.63	RMS	32.7	-25.3	42.03	54	-11.97	-	-	273	115	V
4	2.53877	45.85	PK	32.5	-25.4	52.95	-	-	74	-21.05	273	115	V

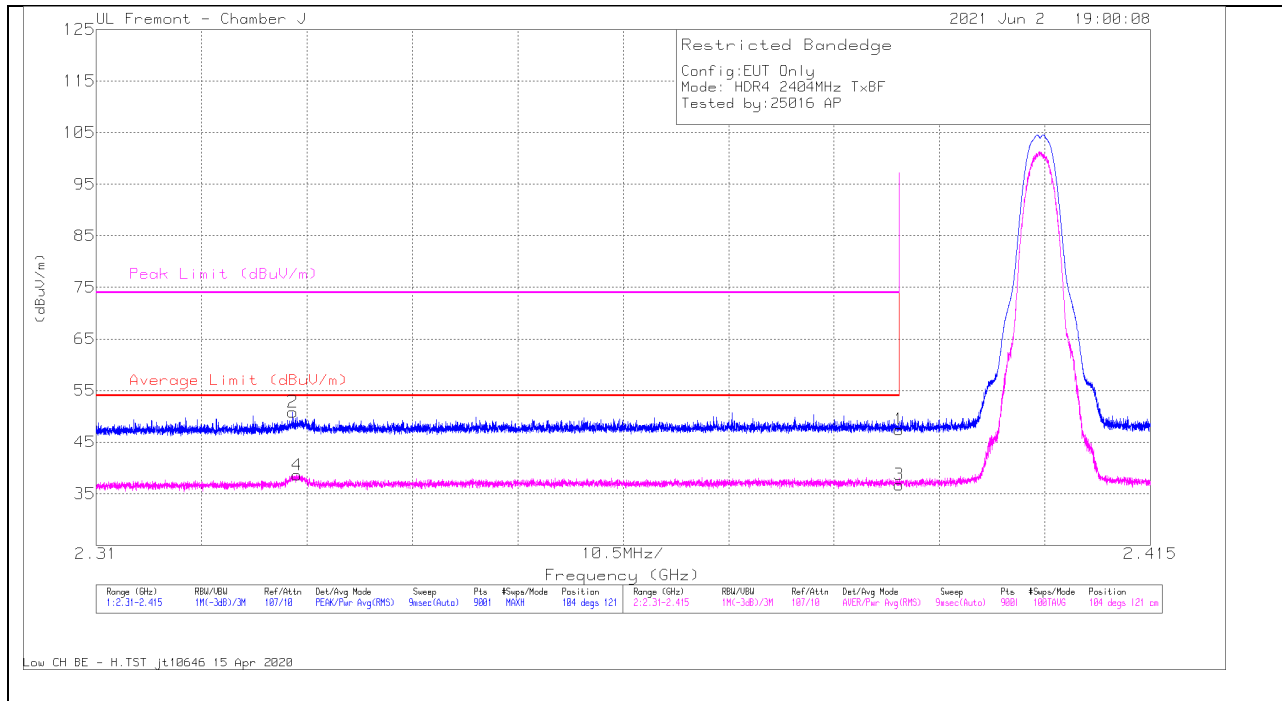
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

High CH BE - V.TST 30915 12 Sep 2016
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10.2.6. LOW POWER HDR TXBF (HDR4)

BANDEDGE (LOW CHANNEL)

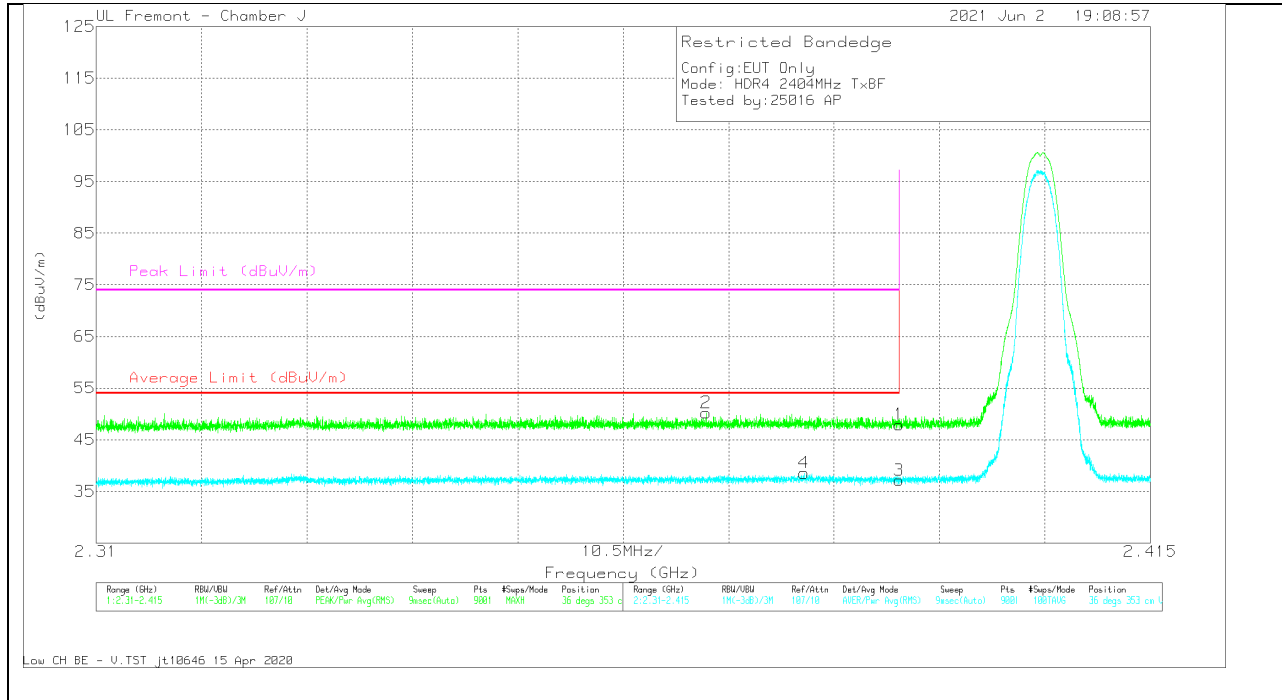
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRED10003 4 (dB/m)	Amp/Cb/Flt r/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	40.56	PK	32.1	-25.2	47.46	-	-	74	-26.54	104	121	H
2	* 2.32959	44.33	PK	31.8	-25.3	50.83	-	-	74	-23.17	104	121	H
3	* 2.38999	29.84	RMS	32.1	-25.2	36.74	54	-17.26	-	-	104	121	H
4	* 2.33001	32.11	RMS	31.8	-25.3	38.61	54	-15.39	-	-	104	121	H

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

VERTICAL RESULT

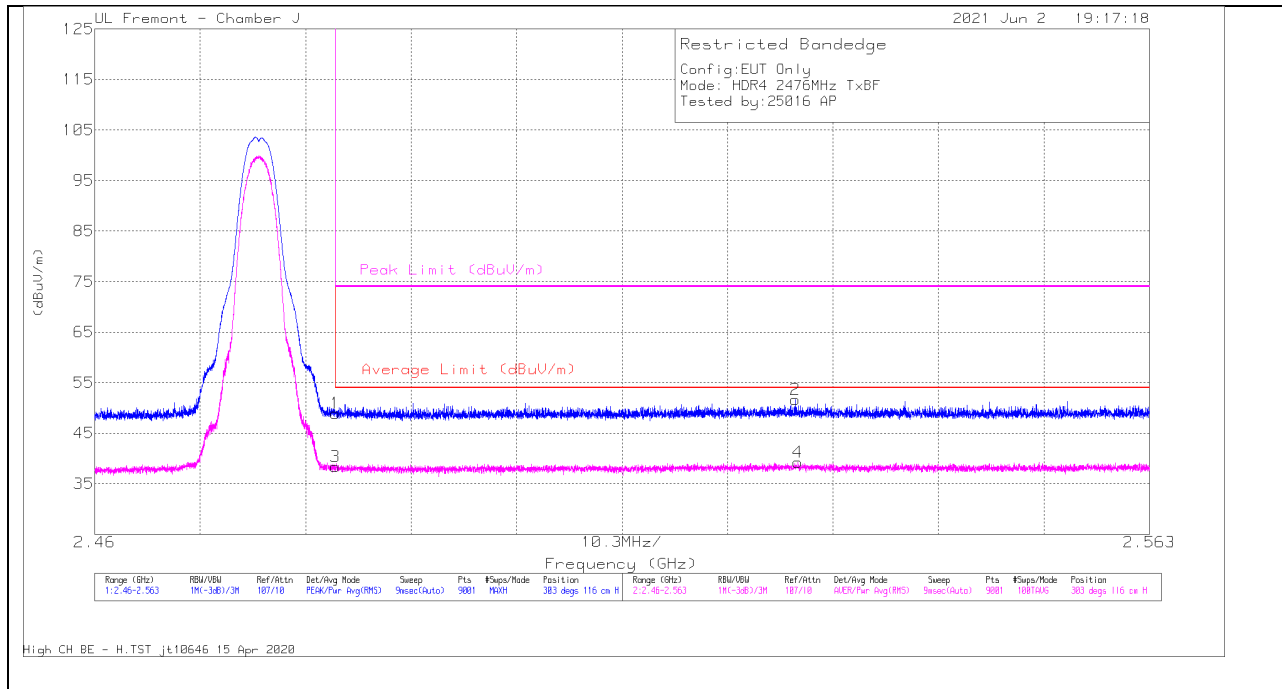


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	41.04	PK	32.1	-25.2	47.94	-	-	74	-26.06	36	353	V
2	* 2.37075	43.33	PK	32.1	-25.2	50.23	-	-	74	-23.77	36	353	V
3	* 2.38999	30.26	RMS	32.1	-25.2	37.16	54	-16.84	-	-	36	353	V
4	* 2.3805	31.67	RMS	32.1	-25.2	38.57	54	-15.43	-	-	36	353	V

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

BANDEDGE (HIGH CHANNEL)

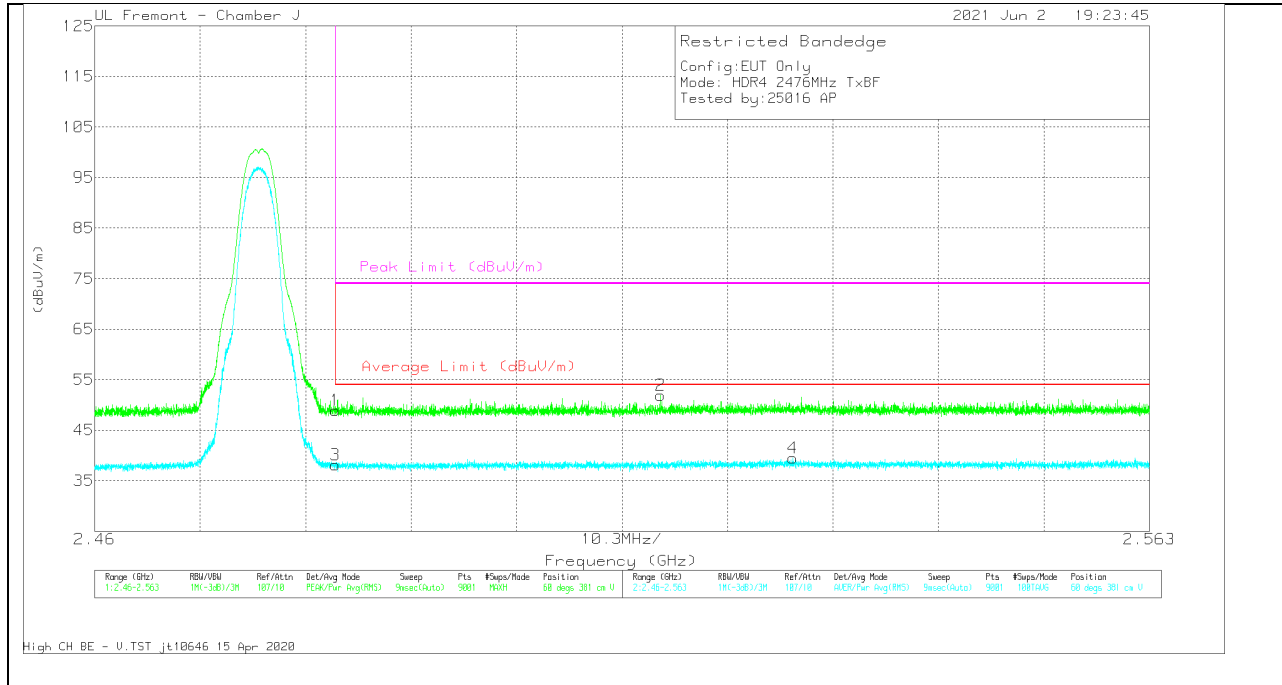
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/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	41.62	Pk	32.5	-25.2	48.92	-	-	74	-25.08	303	116	H
2	2.52844	43.95	Pk	32.8	-25.1	51.65	-	-	74	-22.35	303	116	H
3	* 2.48351	31.04	RMS	32.5	-25.2	38.34	54	-15.66	-	-	303	116	H
4	2.52866	31.53	RMS	32.8	-25.1	39.23	54	-14.77	-	-	303	116	H

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

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Dege)	Height (cm)	Polarity
1	* 2.48351	41.67	Pk	32.5	-25.2	48.97	-	-	74	-25.03	60	381	V
2	2.51524	44.35	Pk	32.7	-25.2	51.85	-	-	74	-22.15	60	381	V
3	* 2.48351	30.84	RMS	32.5	-25.2	38.14	54	-15.86	-	-	60	381	V
4	2.52818	31.75	RMS	32.8	-25.1	39.45	54	-14.55	-	-	60	381	V

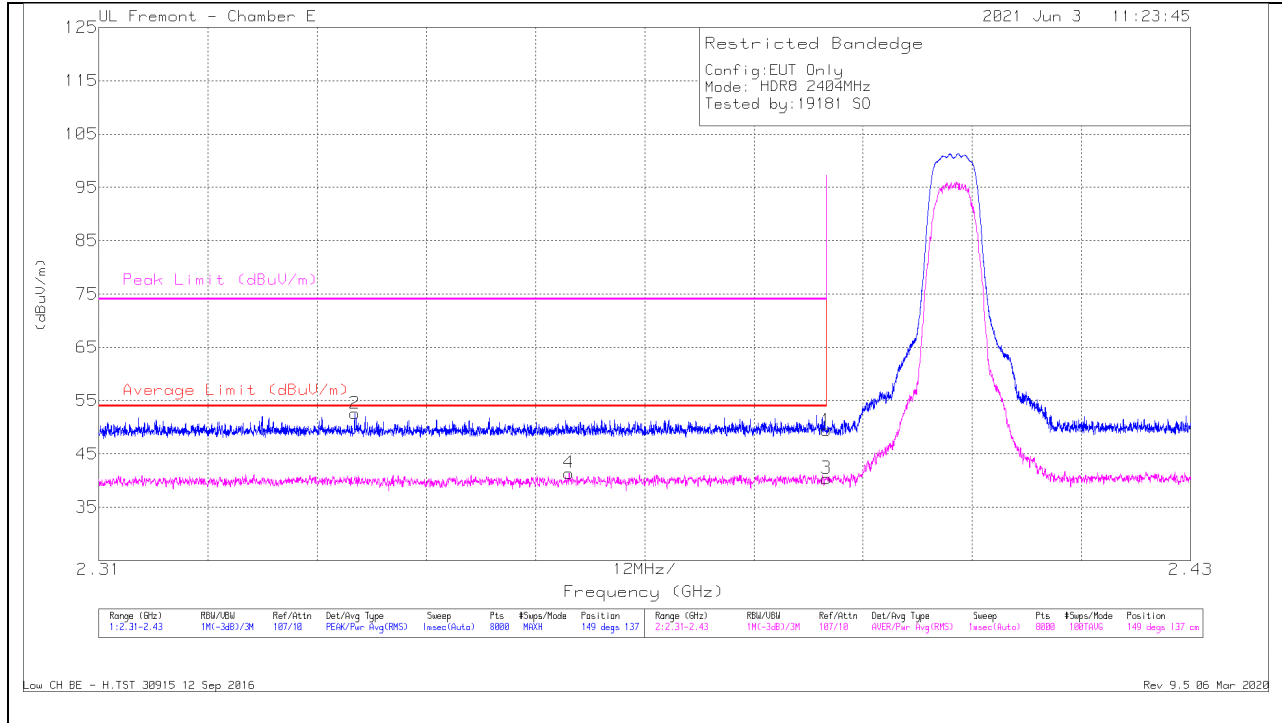
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

10.2.7. LOW POWER HDR (HDR8)

ANT 4

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT

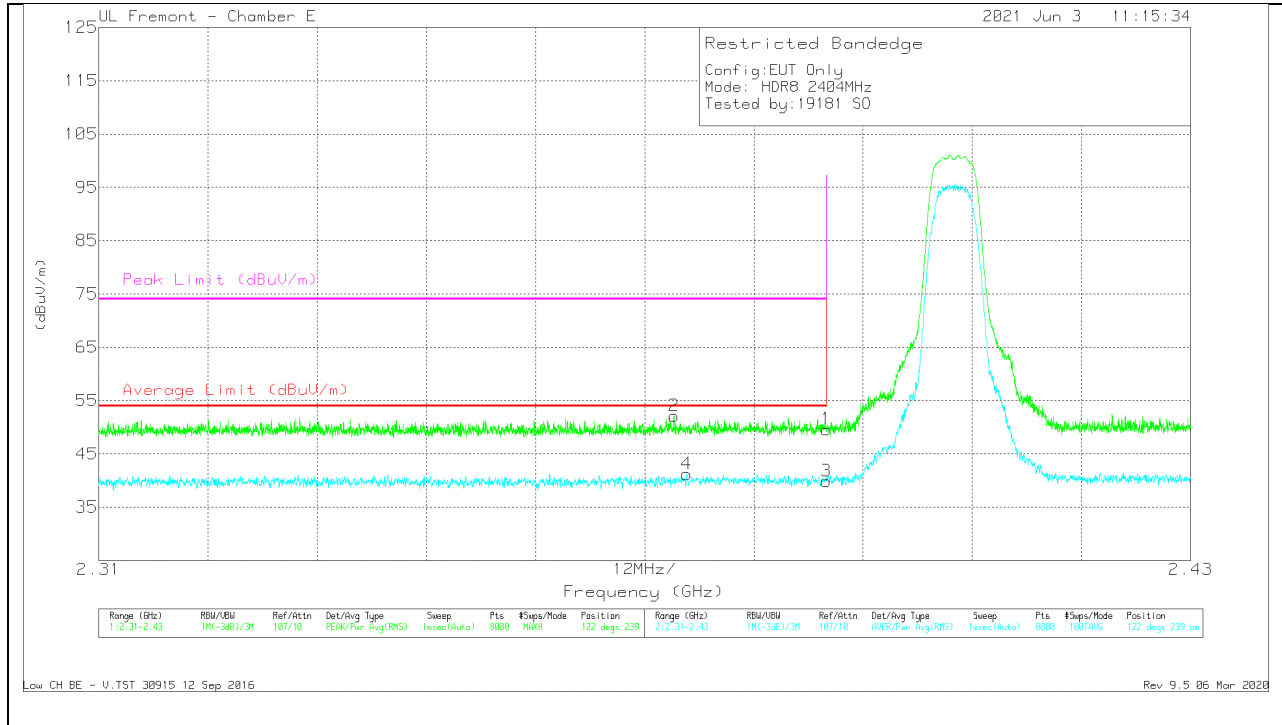


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Chl/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.33813	45.89	Pk	32.1	-25.4	52.59	-	-	74	-21.41	149	137	H
4	* 2.36168	34.81	RMS	32	-25.4	41.41	54	-12.59	-	-	149	137	H
1	* 2.38999	42.6	Pk	32.2	-25.4	49.4	-	-	74	-24.6	149	137	H
3	* 2.38999	33.62	RMS	32.2	-25.4	40.42	54	-13.58	-	-	149	137	H

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

Low CH BE - H.TST 30915 12 Sep 2016
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VERTICAL RESULT



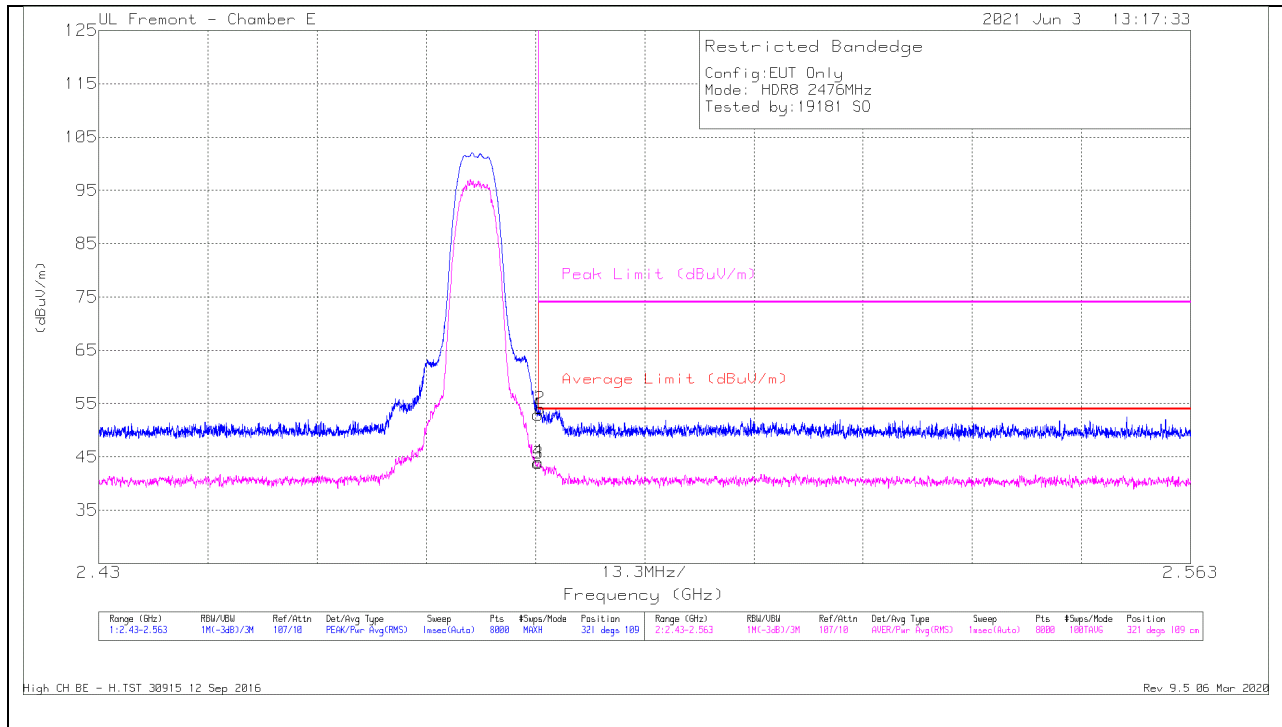
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cb/Fit r/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.37322	45.49	Pk	32.1	-25.5	52.09	-	-	74	-21.91	122	239	V
4	* 2.37463	34.5	RMS	32.2	-25.5	41.2	54	-12.8	-	-	122	239	V
1	* 2.38999	42.81	Pk	32.2	-25.4	49.61	-	-	74	-24.39	122	239	V
3	* 2.38999	33.09	RMS	32.2	-25.4	39.89	54	-14.11	-	-	122	239	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 PRE007810 7 (dB/m)	Amp/Ch/Filter/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	45.73	Pk	32.6	-25.4	52.93	-	-	74	-21.07	321	109	H
3	* 2.48351	36.59	RMS	32.6	-25.4	43.79	54	-10.21	-	-	321	109	H
4	* 2.48356	36.88	RMS	32.6	-25.4	44.08	54	-9.92	-	-	321	109	H
2	* 2.48376	46.87	Pk	32.6	-25.4	54.07	-	-	74	-19.93	321	109	H

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

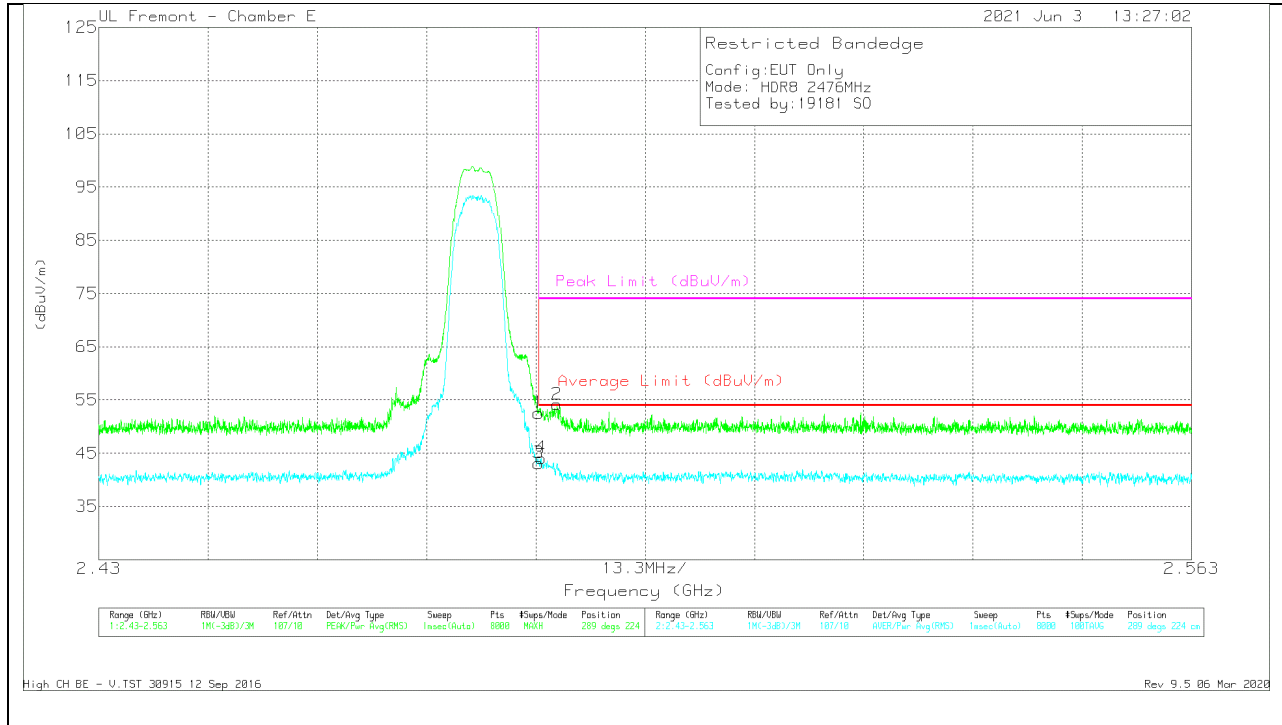
Pk - Peak detector

RMS - RMS detection

High CH BE - H.TST 30915 12 Sep 2016

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VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Filtr/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	45.36	Pk	32.6	-25.4	52.56	-	-	74	-21.44	289	224	V
3	* 2.48351	35.94	RMS	32.6	-25.4	43.14	54	-10.86	-	-	289	224	V
4	* 2.48385	36.91	RMS	32.6	-25.4	44.11	54	-9.89	-	-	289	224	V
2	* 2.48577	47	Pk	32.6	-25.4	54.2	-	-	74	-19.8	289	224	V

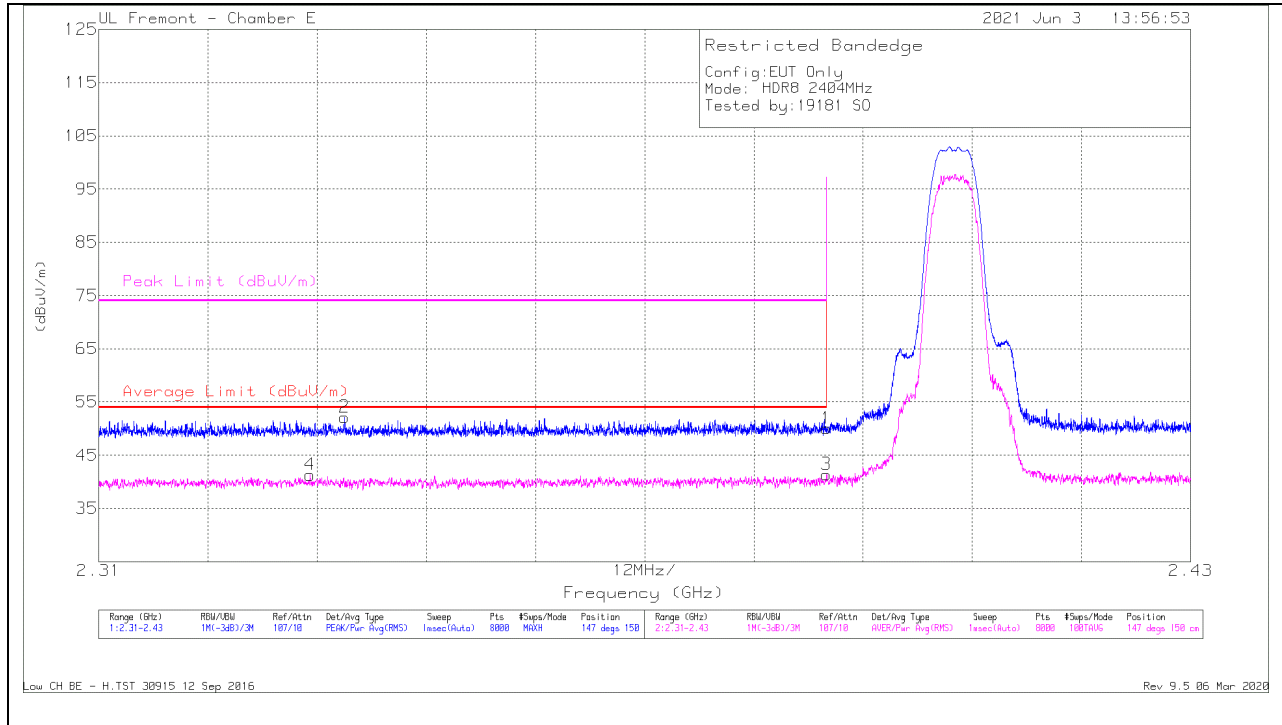
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

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ANT 3

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT

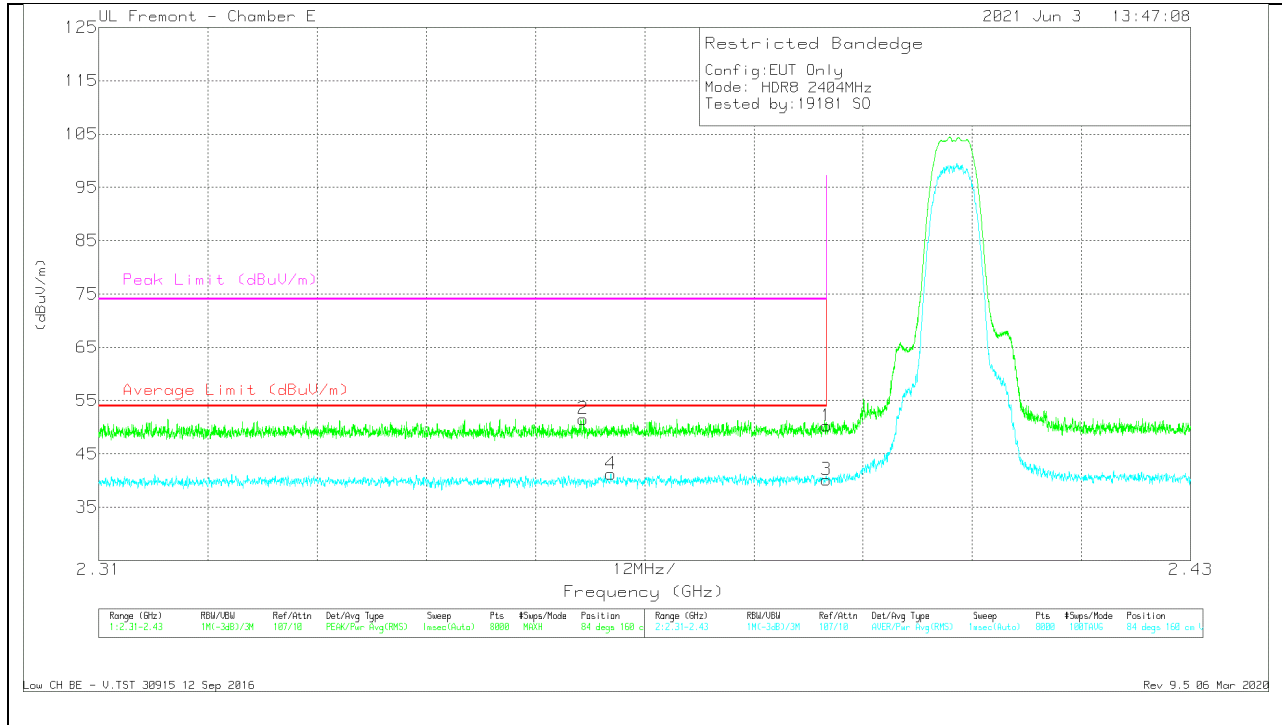


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2.33322	34.72	RMS	32.1	-25.5	41.32	54	-12.68	-	-	147	150	H
2	* 2.33702	45.44	Pk	32.1	-25.4	52.14	-	-	74	-21.86	147	150	H
1	* 2.38999	43.24	Pk	32.2	-25.4	50.04	-	-	74	-23.96	147	150	H
3	* 2.38999	34.58	RMS	32.2	-25.4	41.38	54	-12.62	-	-	147	150	H

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

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VERTICAL RESULT

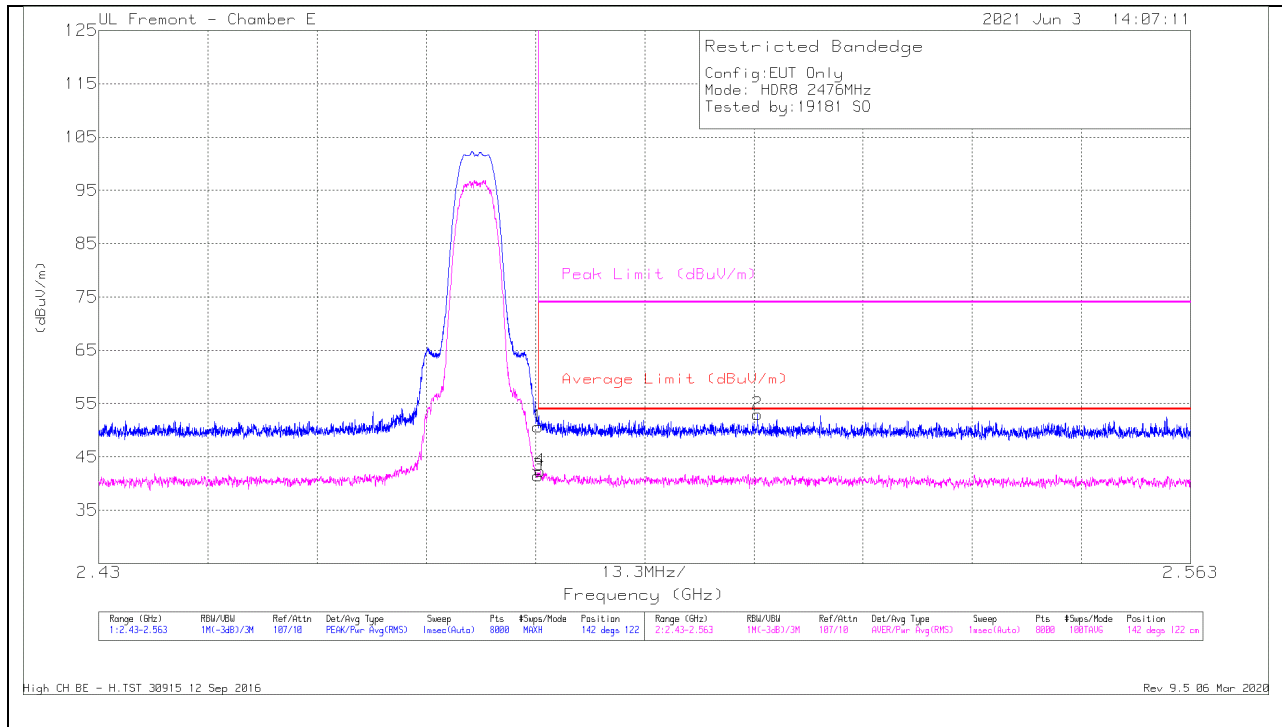


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cb/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.36326	44.96	Pk	32	-25.4	51.56	-	-	74	-22.44	84	160	V
4	* 2.36627	34.66	RMS	32.1	-25.5	41.26	54	-12.74	-	-	84	160	V
1	* 2.38999	43.47	Pk	32.2	-25.4	50.27	-	-	74	-23.73	84	160	V
3	* 2.38999	33.37	RMS	32.2	-25.4	40.17	54	-13.83	-	-	84	160	V

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

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HORIZONTAL RESULT

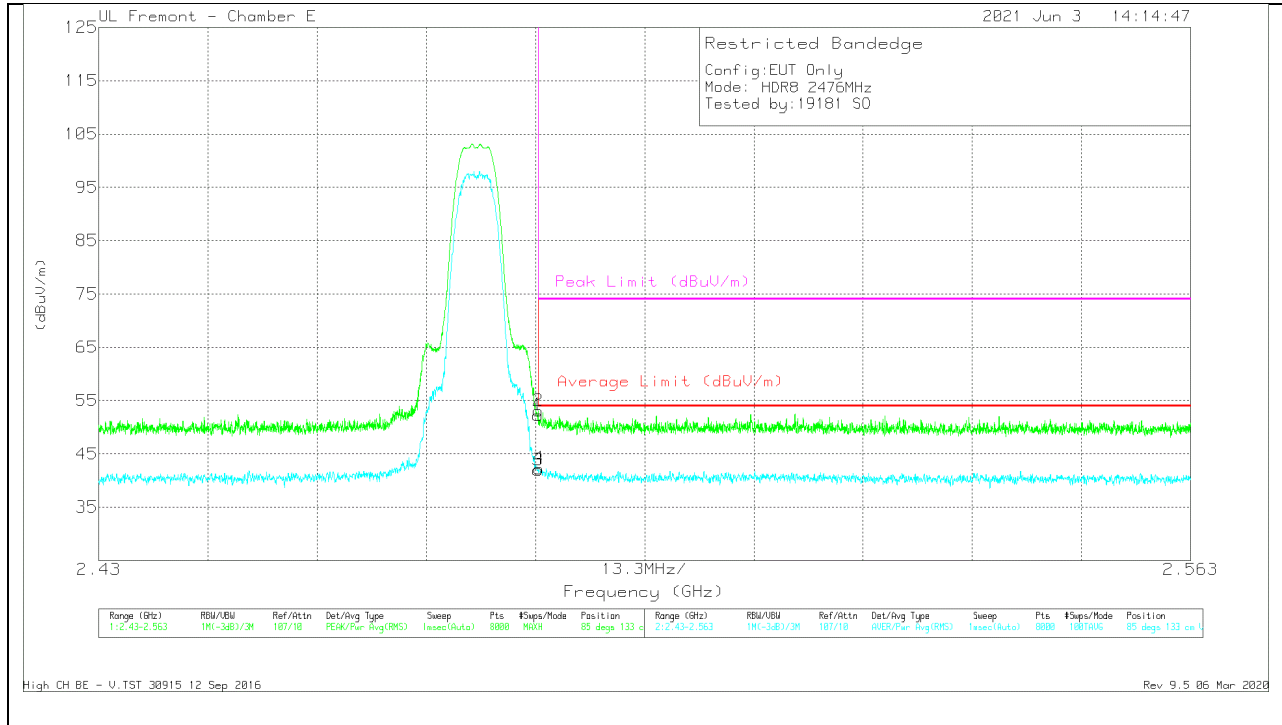


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE0078107 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	43.49	Pk	32.6	-25.4	50.69	-	-	74	-23.31	142	122	H
3	* 2.48351	34.27	RMS	32.6	-25.4	41.47	54	-12.53	-	-	142	122	H
4	* 2.48377	35.19	RMS	32.6	-25.4	42.39	54	-11.61	-	-	142	122	H
2	2.51023	45.72	Pk	32.7	-25.4	53.02	-	-	74	-20.98	142	122	H

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

High CH BE - H.TST 30915 12 Sep 2016
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VERTICAL RESULT



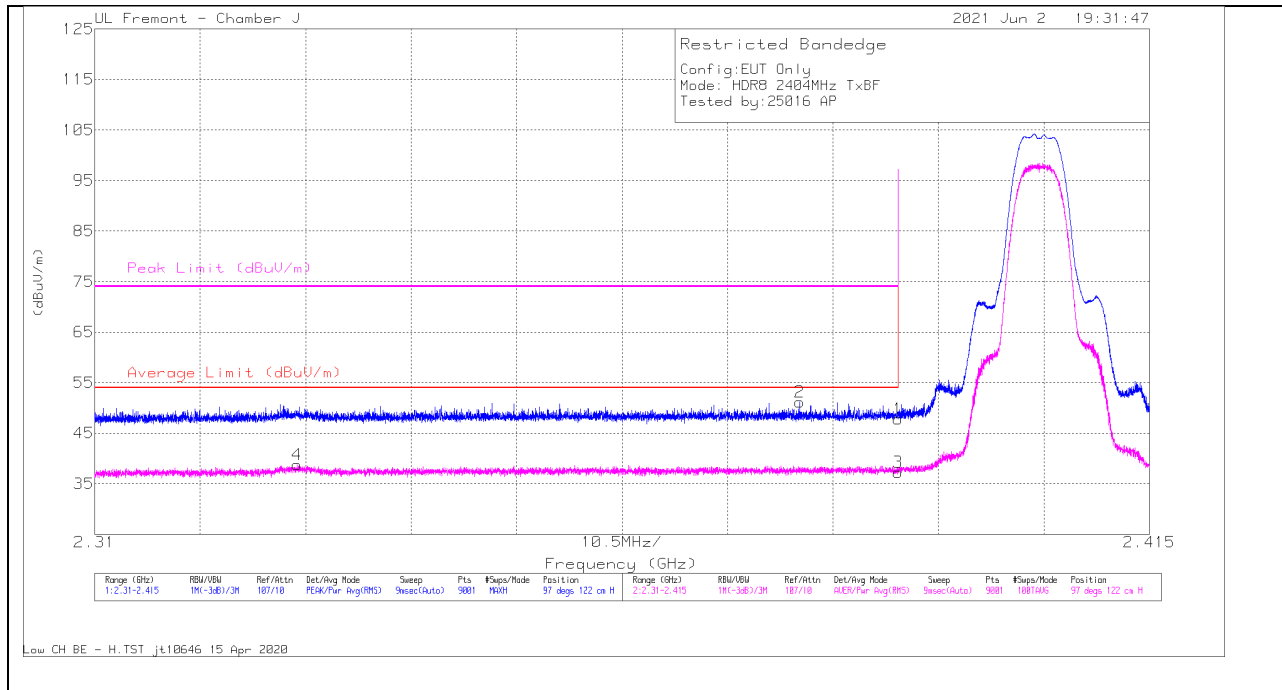
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE007810 7 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	45.08	Pk	32.6	-25.4	52.28	-	-	74	-21.72	85	133	V
3	* 2.48351	34.76	RMS	32.6	-25.4	41.96	54	-12.04	-	-	85	133	V
2	* 2.48354	45.87	Pk	32.6	-25.4	53.07	-	-	74	-20.93	85	133	V
4	* 2.48361	35.06	RMS	32.6	-25.4	42.26	54	-11.74	-	-	85	133	V

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

10.2.8. LOW POWER HDR TXBF (HDR8)

BANDEDGE (LOW CHANNEL)

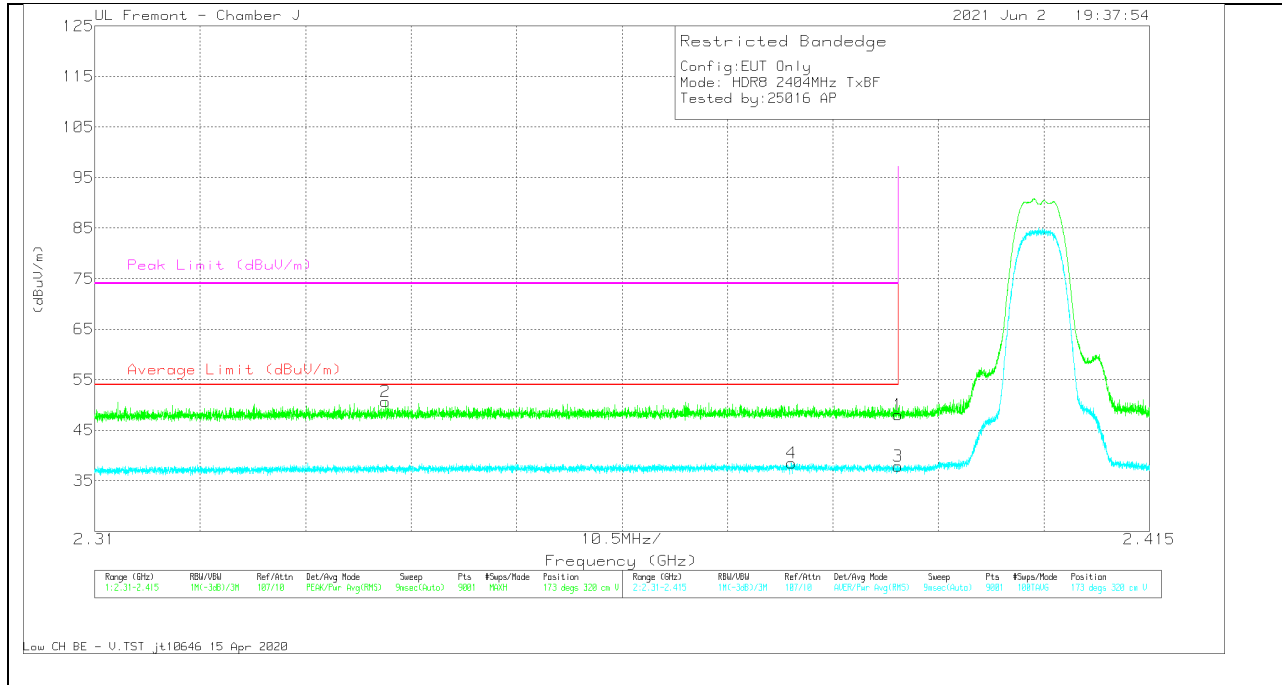
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE010003 4 (dBm)	Amp/Cb/FI tr/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	40.91	Pk	32.1	-25.2	47.81	-	-	74	-26.19	97	122	H
2	* 2.38019	44.31	Pk	32.1	-25.2	51.21	-	-	74	-22.79	97	122	H
3	* 2.38999	30.38	RMS	32.1	-25.2	37.28	54	-16.72	-	-	97	122	H
4	* 2.33014	32.29	RMS	31.8	-25.3	38.79	54	-15.21	-	-	97	122	H

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

VERTICAL RESULT

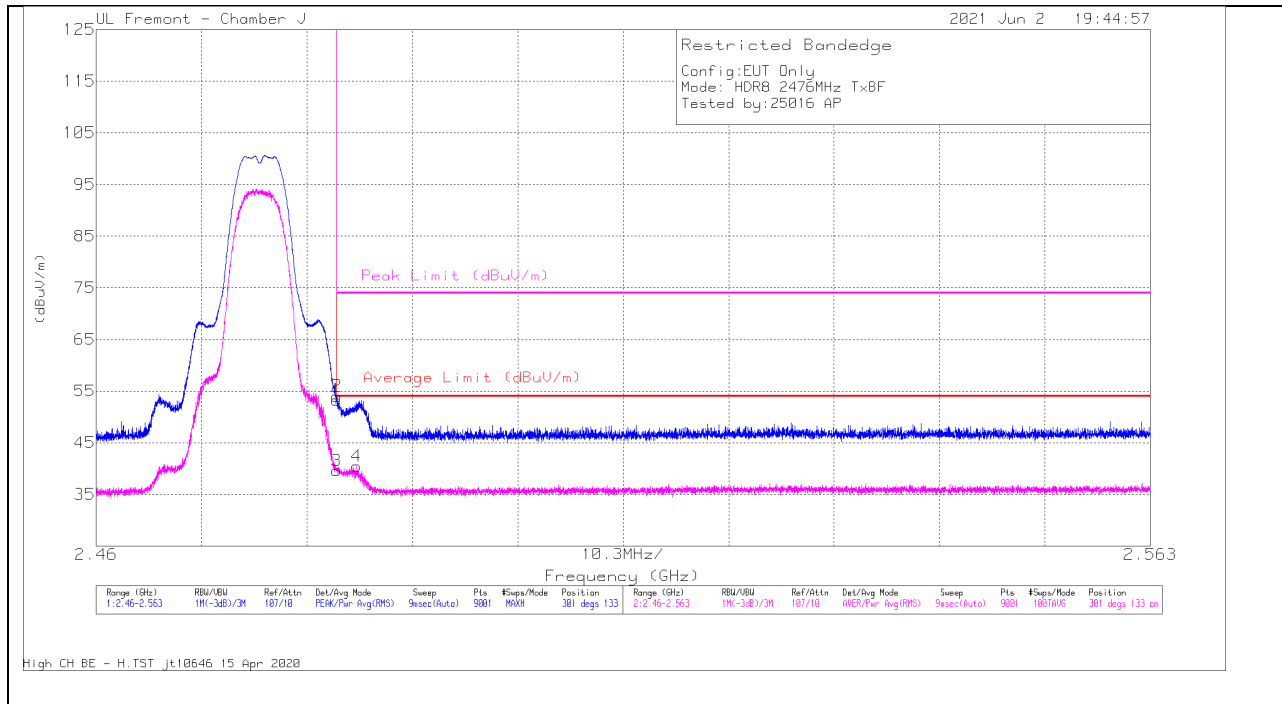


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRED10003 4 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.38999	41.2	Pk	32.1	-25.2	48.1	-	-	74	-25.9	173	320	V
2	* 2.33893	44.08	Pk	31.9	-25.3	50.68	-	-	74	-23.32	173	320	V
3	* 2.38999	30.97	RMS	32.1	-25.2	37.87	54	-16.13	-	-	173	320	V
4	* 2.37936	31.64	RMS	32.1	-25.2	38.54	54	-15.46	-	-	173	320	V

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

BANDEDGE (HIGH CHANNEL)

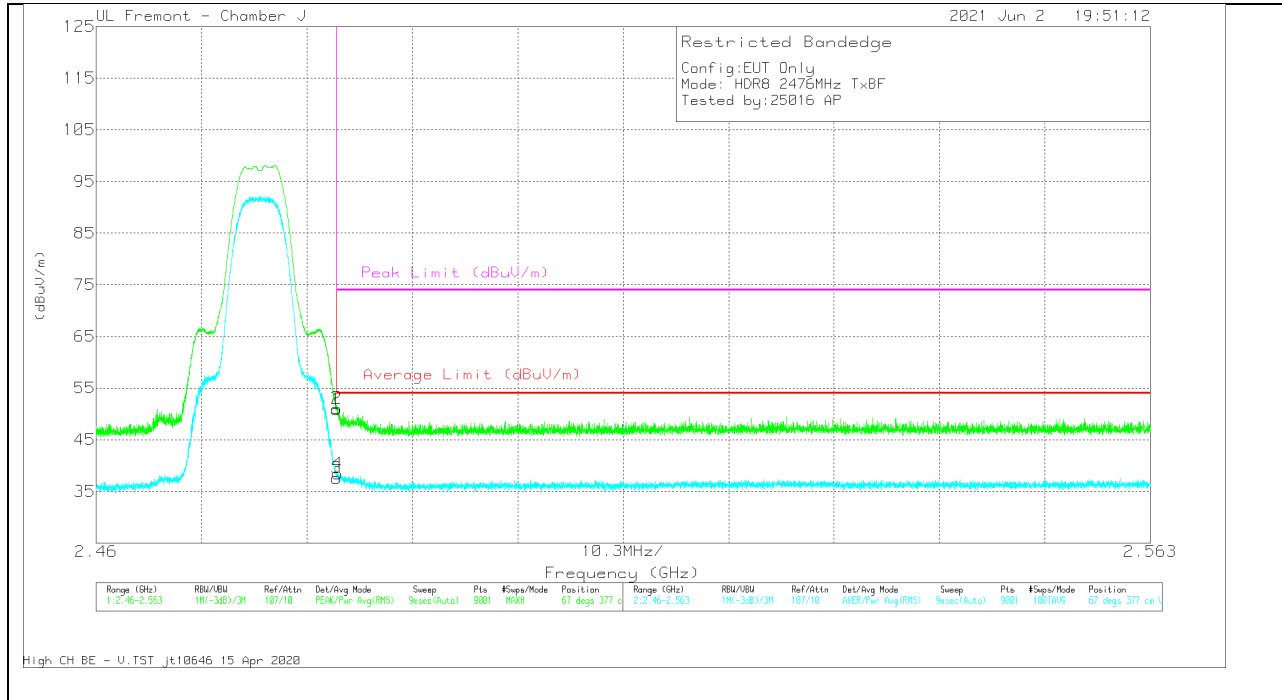
HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Dot	AF PRED10003 4 (dBm)	Amp/Cb/FI tr/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	45.97	Pk	32.5	-25.2	53.27	-	-	74	-20.73	301	133	H
2	* 2.48352	46.72	Pk	32.5	-25.2	54.02	-	-	74	-19.98	301	133	H
3	* 2.48351	32.3	RMS	32.5	-25.2	39.6	54	-14.4	-	-	301	133	H
4	* 2.48543	33.13	RMS	32.5	-25.2	40.43	54	-13.57	-	-	301	133	H

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

VERTICAL RESULT

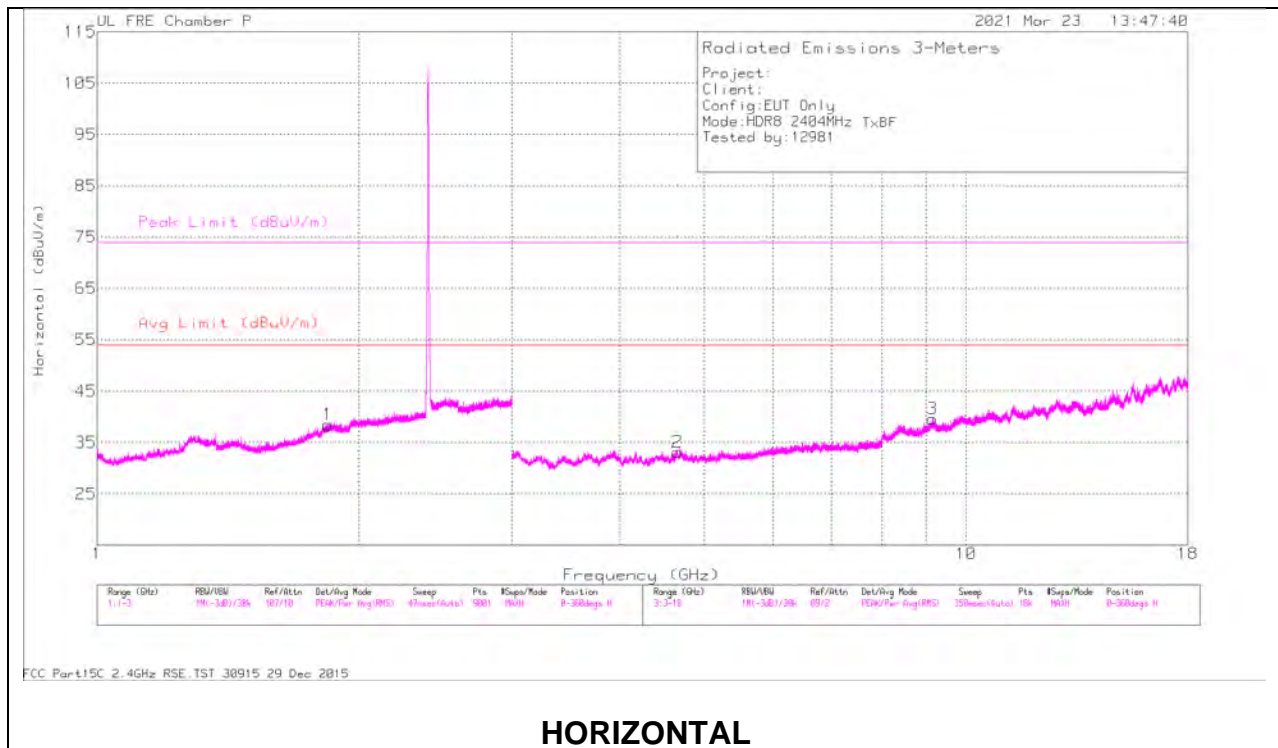


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRED10003 4 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.48351	43.54	Pk	32.5	-25.2	50.84	-	-	74	-23.16	67	377	V
2	* 2.48352	43.78	Pk	32.5	-25.2	51.08	-	-	74	-22.92	67	377	V
3	* 2.48351	30.31	RMS	32.5	-25.2	37.61	54	-16.39	-	-	67	377	V
4	* 2.48359	31.17	RMS	32.5	-25.2	38.47	54	-15.53	-	-	67	377	V

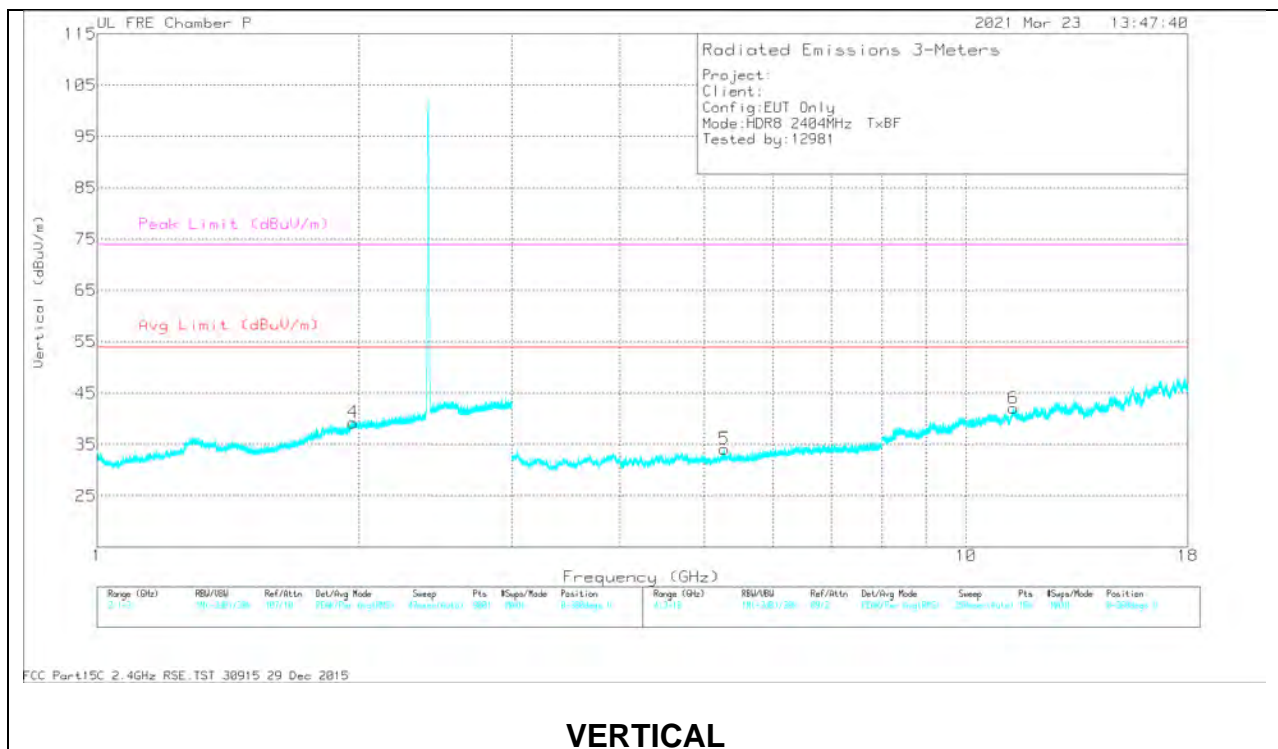
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 Pk - Peak detector
 RMS - RMS detection

10.2.9. HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS**Range 1: Horizontal 1000 - 3000MHz**

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.84336	35.46	PK2	30.7	-17.5	48.66	-	-	-	-	36	111	H
1.8448	23.46	MAv1	30.7	-17.5	36.66	-	-	-	-	36	111	H

Range 2: Vertical 1000 - 3000MHz

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.97011	34.84	PK2	31	-17.2	48.64	-	-	-	-	112	165	V
1.97041	23.25	MAv1	31	-17.2	37.05	-	-	-	-	112	165	V

Range 3: Horizontal 3000 - 18000MHz

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4.6523	52.49	PK2	34.1	-41.7	44.89	-	-	74	-29.11	133	209	H
4.65315	40.98	MAv1	34.1	-41.6	33.48	54	-20.52	-	-	133	209	H
9.14922	48.64	PK2	36	-35.4	49.24	-	-	74	-24.76	159	240	H
9.14845	36.75	MAv1	36	-35.4	37.35	54	-16.65	-	-	159	240	H

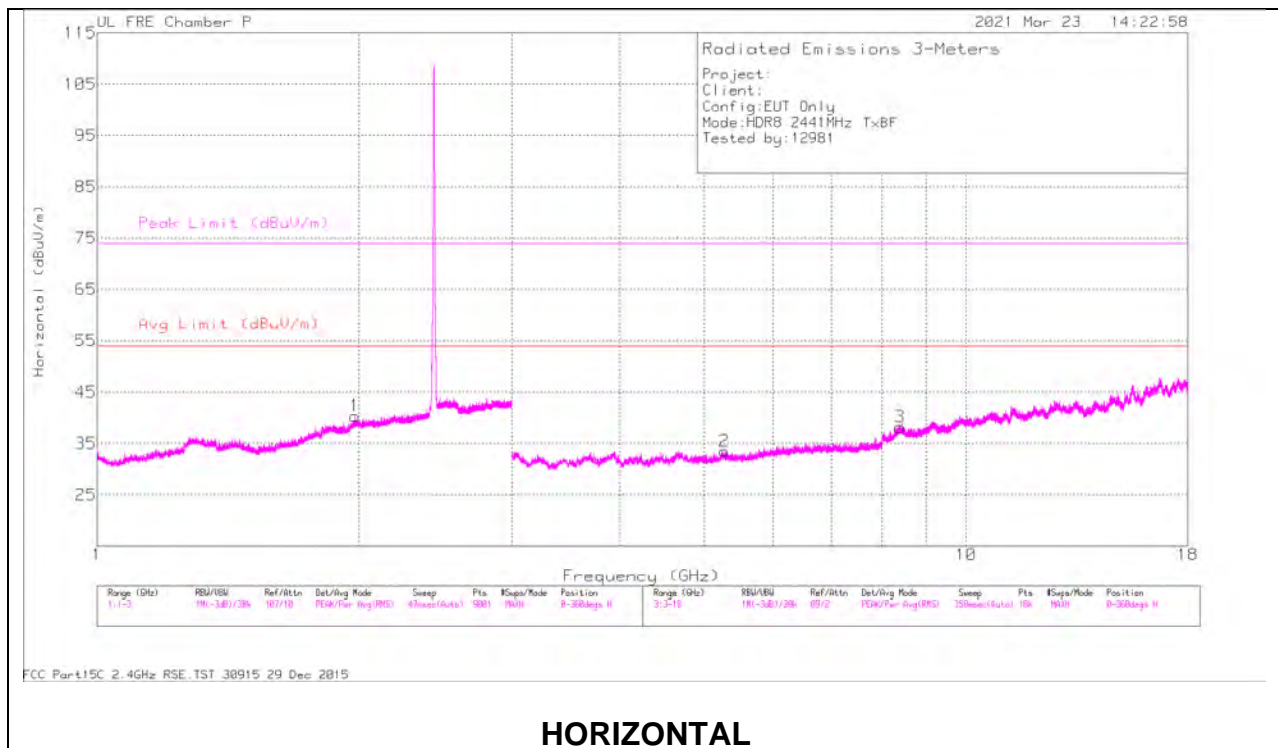
Range 4: Vertical 3000 - 18000MHz

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5.26695	50.98	PK2	34.2	-39.2	45.98	-	-	-	-	231	160	V
5.2676	38.36	MAv1	34.2	-39.2	33.36	-	-	-	-	231	160	V
11.34397	46.54	PK2	37.9	-33	51.44	-	-	74	-22.56	208	174	V
11.34421	34.58	MAv1	37.9	-33	39.48	54	-14.52	-	-	208	174	V

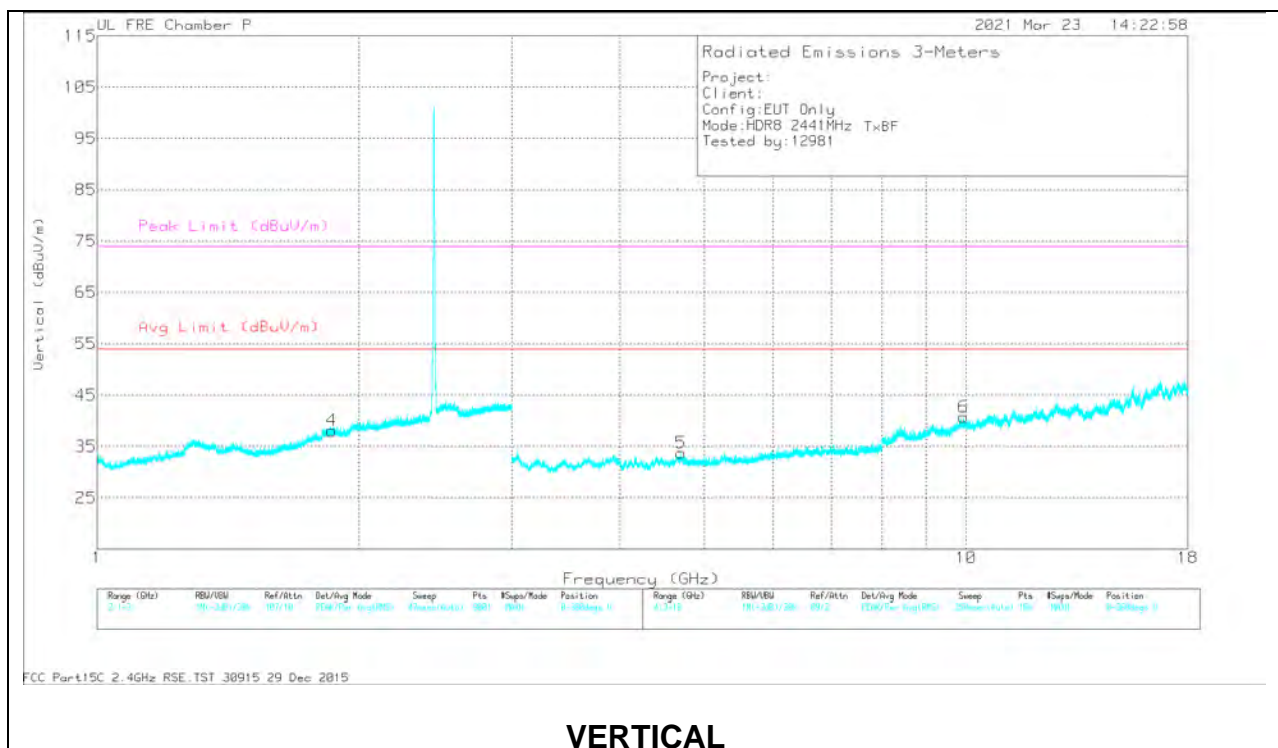
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Range 1: Horizontal 1000 - 3000MHz

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.98004	35.01	PK2	31.1	-17.1	49.01	-	-	-	-	321	253	H
1.98155	23.21	MAv1	31.1	-17.1	37.21	-	-	-	-	321	253	H

Range 2: Vertical 1000 - 3000MHz

Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1.86157	34.72	PK2	30.8	-17.5	48.02	-	-	-	-	281	148	V
1.86226	23.61	MAv1	30.8	-17.5	36.91	-	-	-	-	281	148	V

Range 3: Horizontal 3000 - 18000MHz

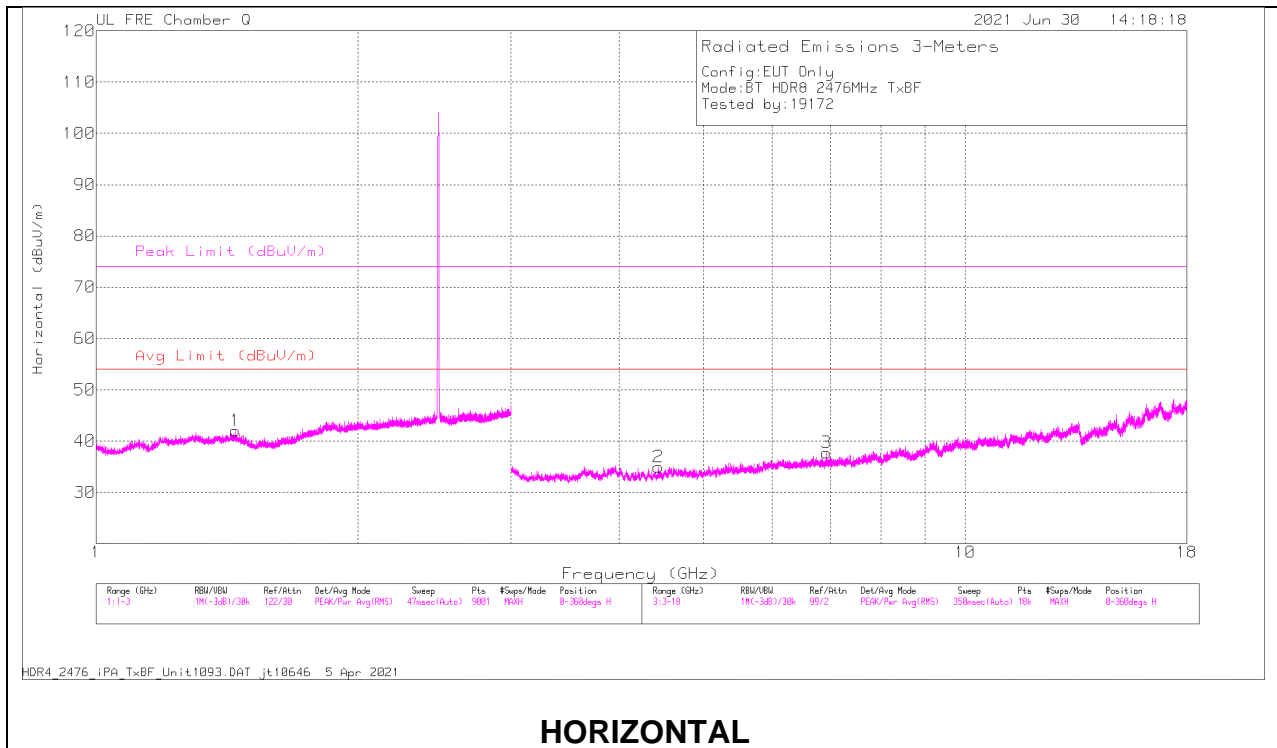
Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5.26837	49.78	PK2	34.2	-39.1	44.88	-	-	-	-	266	264	H
5.27017	38.59	MAv1	34.2	-39.2	33.59	-	-	-	-	266	264	H
8.40133	47.42	PK2	35.7	-35.6	47.52	-	-	74	-26.48	157	186	H
8.4019	36	MAv1	35.7	-35.6	36.1	54	-17.9	-	-	157	186	H

Range 4: Vertical 3000 - 18000MHz

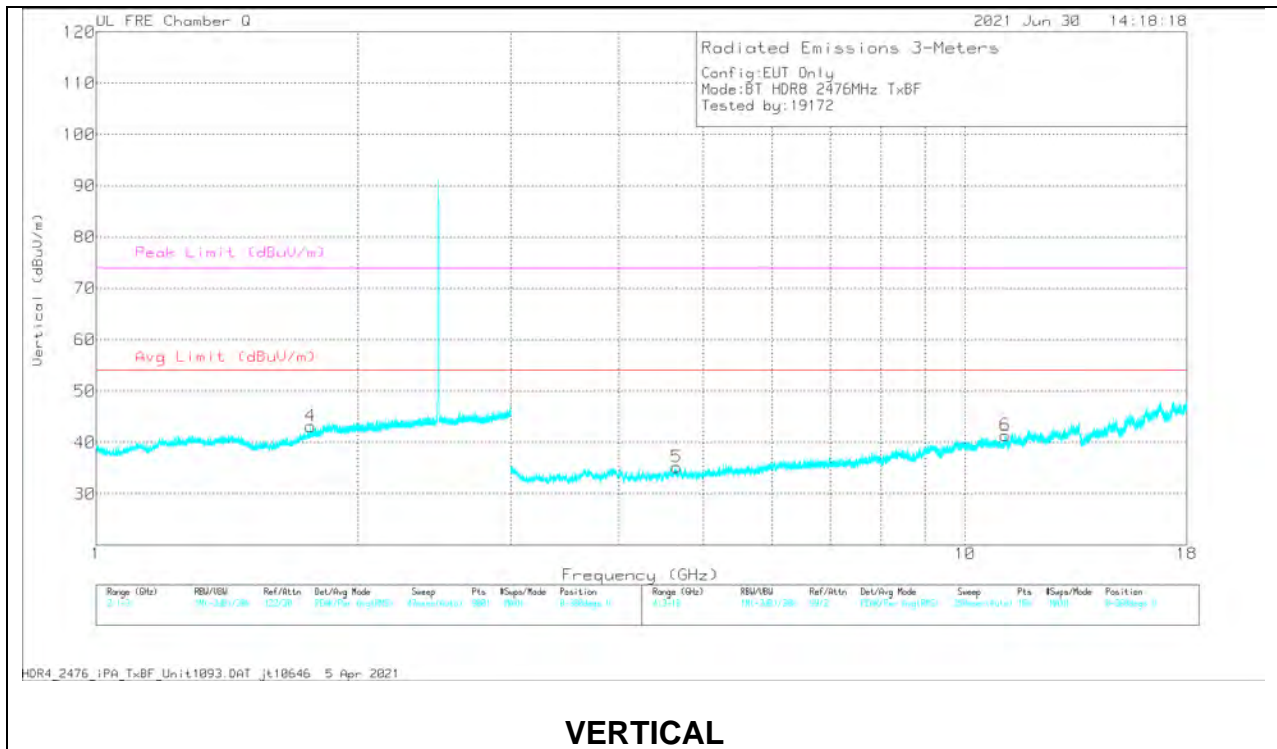
Frequency (GHz)	Meter Reading (dBuV)	Det	AF 200896 (dB/m)	Amp/Cbl/Filtr/ Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4.70008	52.49	PK2	33.8	-40.9	45.39	-	-	74	-28.61	153	229	V
4.70019	40.64	MAv1	33.8	-41	33.44	54	-20.56	-	-	153	229	V
9.94452	46.59	PK2	37	-34.6	48.99	-	-	-	-	168	141	V
9.94218	35.23	MAv1	37	-34.6	37.63	-	-	-	-	168	141	V

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

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

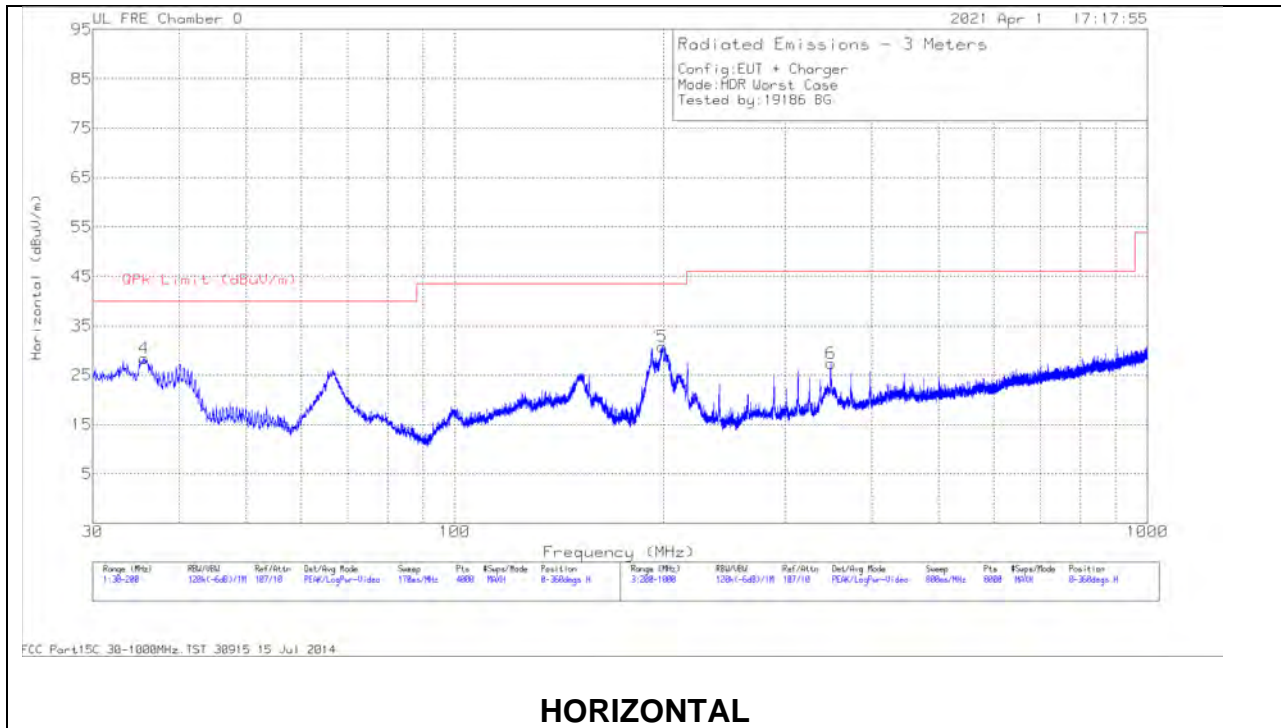
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF PRE021383 1 (dB/m)	Amp/Cbl/Filtr /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	1.44523	57.53	PK2	28.5	-35.2	50.83	-	-	74	-23.17	245	352	H
	1.44847	45.79	MAv1	28.5	-35.2	39.09	54	-14.91	-	-	245	352	H
4	1.76389	45.62	MAv1	29.8	-35.1	40.32	-	-	-	-	47	374	V
	1.76501	57.47	PK2	29.8	-35.1	52.17	-	-	-	-	47	374	V
2	4.43455	40.11	MAv1	33.6	-41.5	32.21	-	-	-	-	52	250	H
	4.43726	52	PK2	33.5	-41.5	44	-	-	-	-	52	250	H
5	4.66103	51.88	PK2	34	-41.5	44.38	-	-	74	-29.62	203	219	V
	4.66189	39.96	MAv1	34	-41.6	32.36	54	-21.64	-	-	203	219	V
3	6.92463	36.96	MAv1	35.5	-38.3	34.16	-	-	-	-	325	228	H
	6.92625	48.92	PK2	35.6	-38.3	46.22	-	-	-	-	325	228	H
6	11.12791	46.45	PK2	38	-34	50.45	-	-	74	-23.55	135	124	V
	11.1307	34.91	MAv1	38	-34	38.91	54	-15.09	-	-	135	124	V

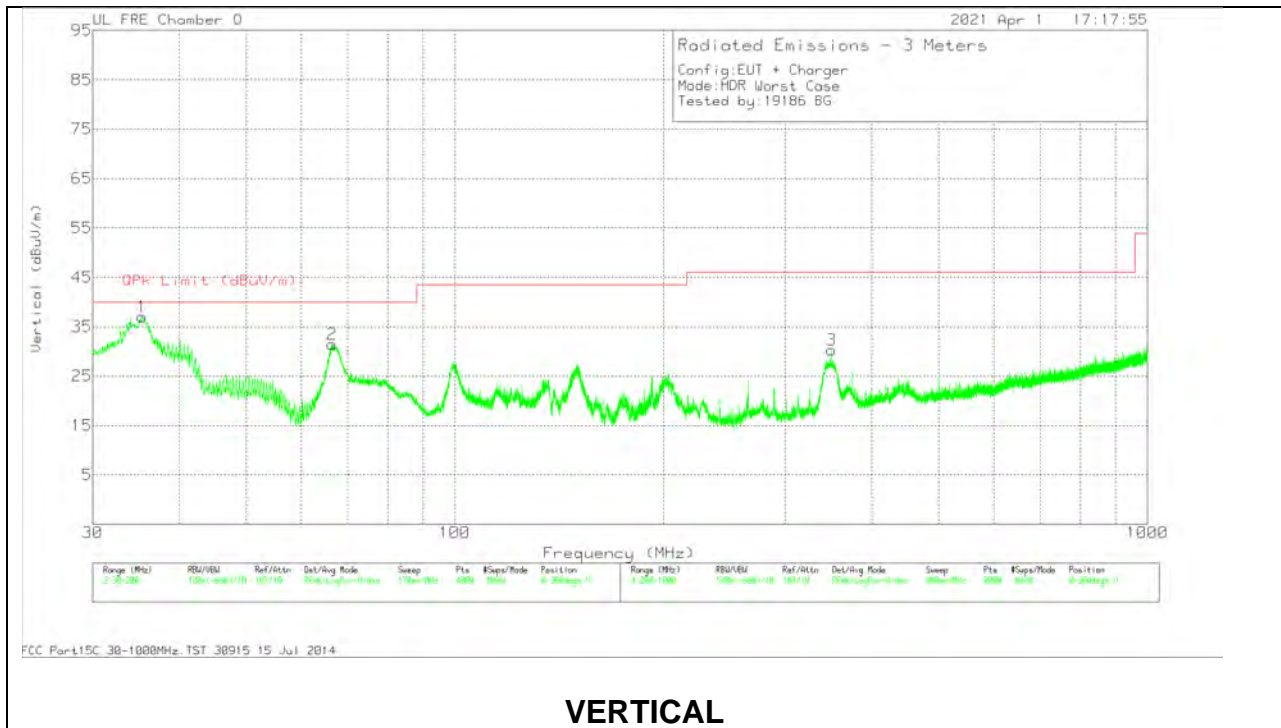
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

10.3. WORST CASE BELOW 1 GHz

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



HORIZONTAL



VERTICAL

Below 1GHz Data**Range 1: Horizontal 30 - 200MHz**

Frequency (MHz)	Meter Reading (dBuV)	Det	AF 202329 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
35.5439	32.65	Qp	23.1	-32.5	23.25	40	-16.75	73	355	H
199.192	37.11	Qp	18.2	-31.5	23.81	43.52	-19.71	32	127	H

Range 2: Vertical 30 - 200MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	AF 202329 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
35.4734	43.01	Qp	23.2	-32.5	33.71	40	-6.29	314	102	V
66.3633	46.63	Qp	13.8	-32.2	28.23	40	-11.77	355	104	V

Range 3: Horizontal 200 - 1000MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	AF 202329 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
349.2637	30.39	Qp	20.1	-30.9	19.59	46.02	-26.43	186	107	H

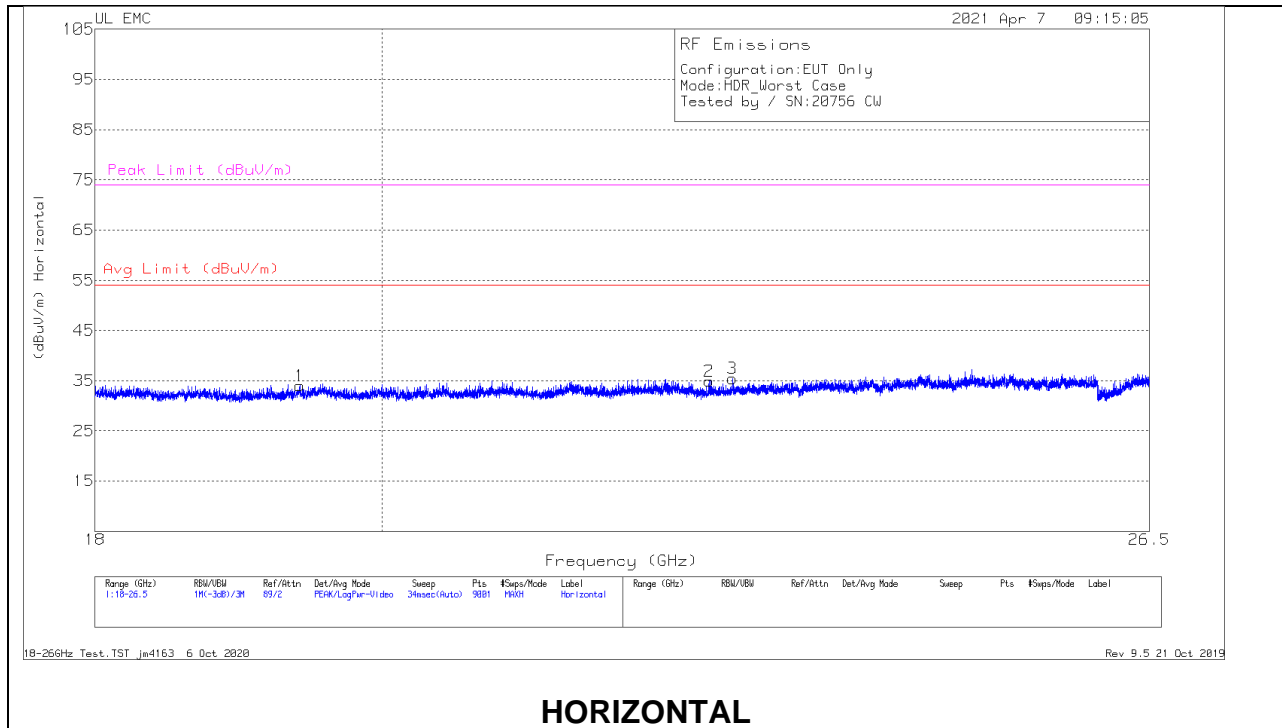
Range 4: Vertical 200 - 1000MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	AF 202329 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
350.0205	38.68	Qp	20.1	-30.9	27.88	46.02	-18.14	78	213	V

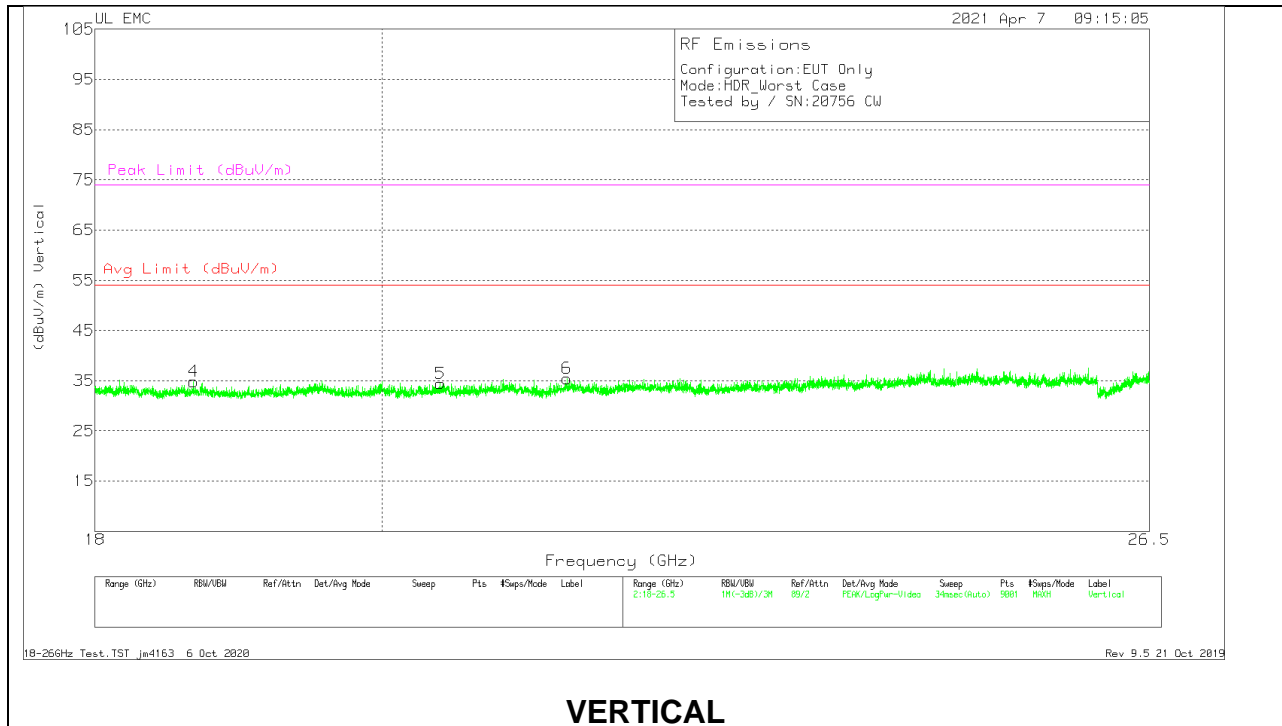
Qp - Quasi-Peak detector

10.4. WORST CASE 18-26 GHz

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



HORIZONTAL



VERTICAL

18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T447 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.40344	67.6	Pk	32.7	-56.8	-9.5	34	54	-20	74	-40
2	22.54655	68.41	Pk	33.6	-57.6	-9.5	34.91	54	-19.09	74	-39.09
3	22.74111	69.02	Pk	33.6	-57.7	-9.5	35.42	54	-18.58	74	-38.58
4	18.66206	70.65	Pk	32.4	-58.7	-9.5	34.85	54	-19.15	74	-39.15
5	20.43005	67.76	Pk	33	-56.8	-9.5	34.46	54	-19.54	74	-39.54
6	21.40189	68.74	Pk	33.2	-57	-9.5	35.44	54	-18.56	74	-38.56

Pk - Peak detector

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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.

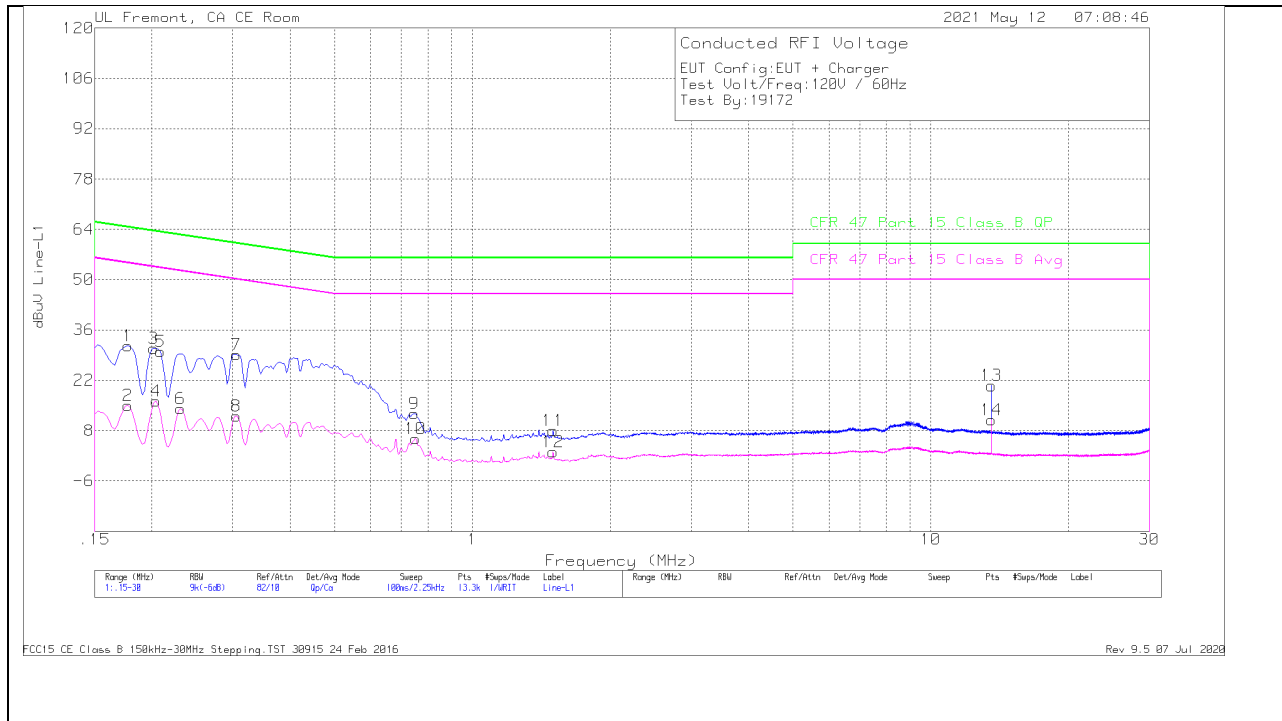
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

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	PRE0186446 L1	LC Cables C1&C3 dB	Limiter	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
1	.177	21.44	Qp	0	0	10.1	31.54	64.63	-33.09	-	-
2	.177	4.97	Ca	0	0	10.1	15.07	-	-	54.63	-39.56
3	.20175	20.83	Qp	0	0	10.1	30.93	63.54	-32.61	-	-
4	.204	6.09	Ca	0	0	10.1	16.19	-	-	53.45	-37.26
5	.2085	19.87	Qp	0	0	10.1	29.97	63.26	-33.29	-	-
6	.231	4.1	Ca	0	0	10.1	14.2	-	-	52.41	-38.21
7	.30525	19.11	Qp	0	0	10.1	29.21	60.1	-30.89	-	-
8	.30525	1.95	Ca	0	0	10.1	12.05	-	-	50.1	-38.05
9	.74625	2.59	Qp	0	0	10.1	12.69	56	-43.31	-	-
10	.75075	-4.41	Ca	0	.1	10.1	5.79	-	-	46	-40.21
11	1.5	-2.24	Qp	0	.1	10.1	7.96	56	-48.04	-	-
12	1.5	-8.06	Ca	0	.1	10.1	2.14	-	-	46	-43.86
*13	13.56	10.01	Qp	.1	.2	10.2	20.51	60	-39.49	-	-
*14	13.56	.5	Ca	.1	.2	10.2	11	-	-	50	-39

Qp - Quasi-Peak detector

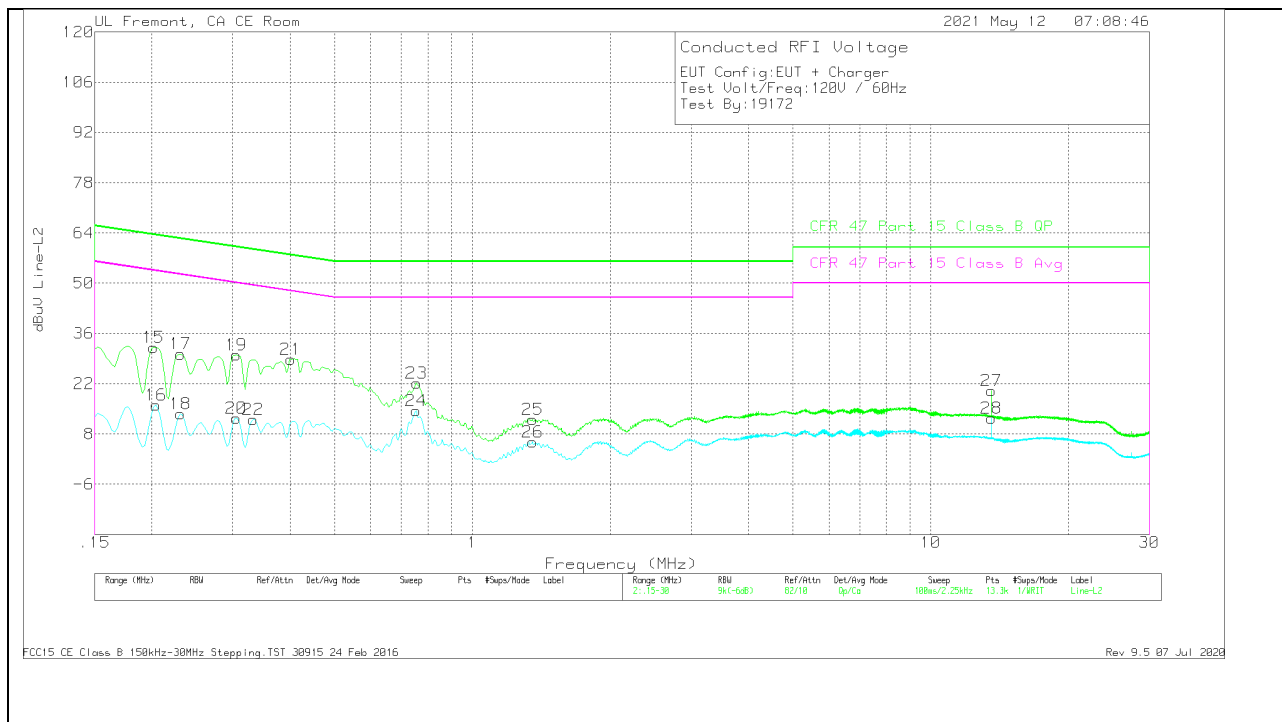
Ca - CISPR average detection

*Indicates UL RFID Signal. Not from device.

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LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE0186446 L2	LC Cables C2&C3 dB	Limiter	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)
15	.20175	22.07	Qp	0	0	10.1	32.17	63.54	-31.37	-	-
16	.204	5.96	Ca	0	0	10.1	16.06	-	-	53.45	-37.39
17	.231	20.18	Qp	0	0	10.1	30.28	62.41	-32.13	-	-
18	.231	3.47	Ca	0	0	10.1	13.57	-	-	52.41	-38.84
19	.30525	19.85	Qp	0	0	10.1	29.95	60.1	-30.15	-	-
20	.30525	2.31	Ca	0	0	10.1	12.41	-	-	50.1	-37.69
21	.402	18.71	Qp	0	0	10.1	28.81	57.81	-29	-	-
22	.33225	1.95	Ca	0	0	10.1	12.05	-	-	49.39	-37.34
23	.75525	12.03	Qp	0	0	10.1	22.13	56	-33.87	-	-
24	.753	4.31	Ca	0	0	10.1	14.41	-	-	46	-31.59
25	1.35375	1.78	Qp	0	.1	10.1	11.98	56	-44.02	-	-
26	1.35263	-4.49	Ca	0	.1	10.1	5.71	-	-	46	-40.29
*27	13.56	9.52	Qp	.1	.2	10.2	20.02	60	-39.98	-	-
*28	13.56	1.96	Ca	.1	.2	10.2	12.46	-	-	50	-37.54

Qp - Quasi-Peak detector

Ca - CISPR average detection

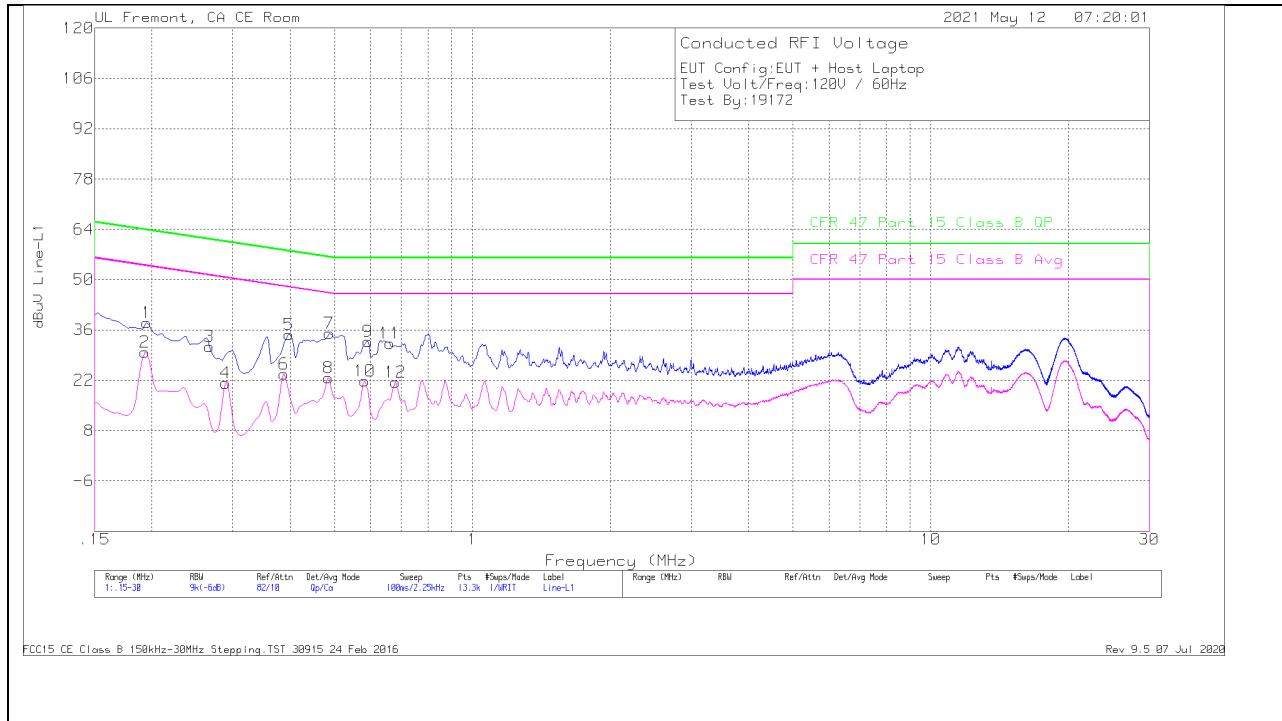
*Indicates UL RFID Signal. Not from device.

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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	PRE0186446 L1	LC Cables C1&C3 dB	Limiter	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR)Margin (dB)
1	.195	27.87	Qp	0	0	10.1	37.97	63.82	-25.85	-	-
2	.19275	19.79	Ca	0	0	10.1	29.89	-	-	53.92	-24.03
3	.267	21.34	Qp	0	0	10.1	31.44	61.21	-29.77	-	-
4	.2895	11.11	Ca	0	0	10.1	21.21	-	-	50.54	-29.33
5	.3975	24.69	Qp	0	0	10.1	34.79	57.91	-23.12	-	-
6	.3885	13.6	Ca	0	0	10.1	23.7	-	-	48.1	-24.4
7	.4875	24.9	Qp	0	0	10.1	35	56.21	-21.21	-	-
8	.48525	12.6	Ca	0	0	10.1	22.7	-	-	46.25	-23.55
9	.591	22.77	Qp	0	0	10.1	32.87	56	-23.13	-	-
10	.582	11.69	Ca	0	0	10.1	21.79	-	-	46	-24.21
11	.66075	22.15	Qp	0	0	10.1	32.25	56	-23.75	-	-
12	.67875	11.41	Ca	0	0	10.1	21.51	-	-	46	-24.49

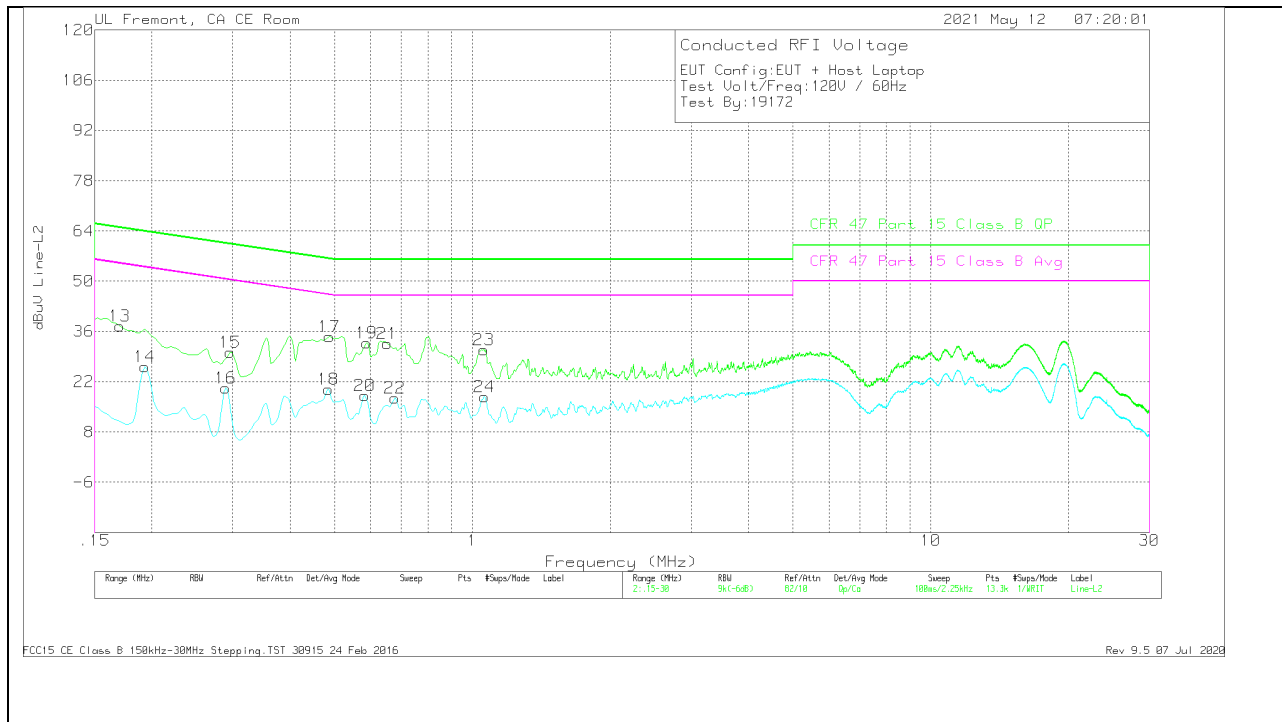
Qp - Quasi-Peak detector

Ca - CISPR average detection

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LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	PRE0186446 L2	LC Cables C2&C3 dB	Limiter	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	.17025	27.48	Qp	0	0	10.1	37.58	64.95	-27.37	-	-
14	.19275	16.09	Ca	0	0	10.1	26.19	-	-	53.92	-27.73
15	.29625	20.16	Qp	0	0	10.1	30.26	60.35	-30.09	-	-
16	.2895	10.16	Ca	0	0	10.1	20.26	-	-	50.54	-30.28
17	.4875	24.46	Qp	0	0	10.1	34.56	56.21	-21.65	-	-
18	.48525	9.79	Ca	0	0	10.1	19.89	-	-	46.25	-26.36
19	.58875	22.63	Qp	0	0	10.1	32.73	56	-23.27	-	-
20	.582	8.08	Ca	0	0	10.1	18.18	-	-	46	-27.82
21	.65175	22.51	Qp	0	0	10.1	32.61	56	-23.39	-	-
22	.6765	7.38	Ca	0	0	10.1	17.48	-	-	46	-28.52
23	1.059	20.75	Qp	0	.1	10.1	30.95	56	-25.05	-	-
24	1.06125	7.6	Ca	0	.1	10.1	17.8	-	-	46	-28.2

Qp - Quasi-Peak detector

Ca - CISPR average detection

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12. SETUP PHOTOS

Please refer to 13573771-EP1V1 for setup photos

END OF TEST REPORT