

TEST REPORT

Report Number: 14982489-E5V2

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

Model : A3082 (Parent Model)
A3289, A3290, A3291 (Variant Models)

Brand : APPLE

FCC ID : BCG-E8692A (Parent Model)
BCG-E8693A, BCG-E8694A, BCG-E8695A (Variant Models)

IC : 579C-E8692A (Parent Model)
579C-E8693A, 579C-E8694A, 579C-E8695A (Variant Models)

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 3
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2024/08/14

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



REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024/08/05	Initial Issue	Chris Xiong
V2	2024/08/14	Addressed TCB Question on Section 9	Tony Li

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. TEST SUMMARY	7
3. TEST METHODOLOGY	7
4. FACILITIES AND ACCREDITATION	7
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	8
5.1. METROLOGICAL TRACEABILITY	8
5.2. DECISION RULES.....	8
5.3. MEASUREMENT UNCERTAINTY.....	8
5.4. SAMPLE CALCULATION	9
6. EQUIPMENT UNDER TEST	10
6.1. EUT DESCRIPTION	10
6.2. MAXIMUM OUTPUT POWER.....	10
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	10
6.4. SOFTWARE AND FIRMWARE.....	10
6.5. WORST-CASE CONFIGURATION AND MODE.....	11
6.6. DESCRIPTION OF TEST SETUP.....	12
7. MEASUREMENT METHOD.....	15
8. TEST AND MEASUREMENT EQUIPMENT	16
9. ANTENNA PORT TEST RESULTS	18
9.1. ON TIME AND DUTY CYCLE.....	18
9.2. 99% BANDWIDTH.....	19
9.2.1. HIGH POWER	20
9.3. 6 dB BANDWIDTH.....	21
9.3.1. HIGH POWER	22
9.4. OUTPUT POWER.....	23
9.4.1. HIGH POWER	24
9.4.2. LOW POWER	25
9.5. AVERAGE POWER.....	26
9.5.1. HIGH POWER	27
9.5.2. LOW POWER	28
9.6. POWER SPECTRAL DENSITY	29
9.6.1. HIGH POWER	30
9.7. CONDUCTED SPURIOUS EMISSIONS.....	31

9.7.1.	HIGH POWER	32
9.7.2.	LOW POWER	34
10.	RADIATED TEST RESULTS	36
10.1.	TRANSMITTER ABOVE 1 GHz.....	38
10.1.1.	ANT4, 802.15.4 HIGH POWER BANDEDGE	38
10.1.2.	ANT4, 802.15.4 LOW POWER BANDEDGE	42
10.1.3.	ANT4, 802.15.4 HIGH POWER, HARMONICS AND SPURIOUS EMISSIONS.....	46
10.1.4.	ANT4, 802.15.4 LOW POWER, HARMONICS AND SPURIOUS EMISSIONS.....	52
10.1.5.	ANT3, 802.15.4 HIGH POWER BANDEDGE	58
10.1.6.	ANT3, 802.15.4 LOW POWER BANDEDGE	62
10.1.7.	ANT3, 802.15.4 HIGH POWER, HARMONICS AND SPURIOUS EMISSIONS.....	66
10.1.8.	ANT3, 802.15.4 LOW POWER, HARMONICS AND SPURIOUS EMISSIONS.....	72
10.2.	WORST CASE BELOW 1 GHZ	78
10.3.	WORST CASE 18-26 GHZ.....	80
11.	AC POWER LINE CONDUCTED EMISSIONS	82
11.1.	AC Power Line With AC/DC Adapter	83
11.2.	AC Power Line with Laptop	85
12.	SETUP PHOTOS	87

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: SMARTPHONE

MODEL: A3082 (Parent Model)
A3289, A3290, A3291 (Variant Models)

BRAND: APPLE

SERIAL NUMBER: FJWNV71QMD

SAMPLE RECEIPT DATE: 2024/04/04

DATE TESTED: 2024/04/05 – 2024/08/12

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

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

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



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

Prepared By:



Chris Xiong
Senior Test Engineer
Consumer Technology Division
UL Verification Services Inc.

2. TEST SUMMARY

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

3. TEST METHODOLOGY

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

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
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☒	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U _{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.47 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	1.3 (PK), 0.450 (AV)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable

Loss (dB) – Preamp Gain (dB)

$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) +

LISN Insertion Loss.

$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5G NR1, 5G NR2, IEEE 802.11a/b/g/n/ac/ax/be, Bluetooth (BT), Ultra-Wideband (UWB), Global Positioning System (GPS), Near-Field Communication (NFC), Narrow-Band (NB) UNII, 802.15.4, 802.15.4ab-Narrow Band (NB), WPT (wireless Power Transfer) and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

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	2405 - 2475	802.15.4	21.32	135.52
	Low Power			10.73	11.83
ANT 3	High Power	2405 - 2475	802.15.4	21.34	136.14
	Low Power			10.81	12.05

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) type is IFA type.

The antenna(s) gains, as provided by the manufacturer, are as follows:

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

SMA Cable used for RF conducted testing has a loss as follows:

Loss used for Antenna 4 is 2.0 dB

Loss used for Antenna 3 is 2.1 dB

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware and software version installed during testing was 22.1.76.242

6.5. WORST-CASE CONFIGURATION AND MODE

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

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

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

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

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

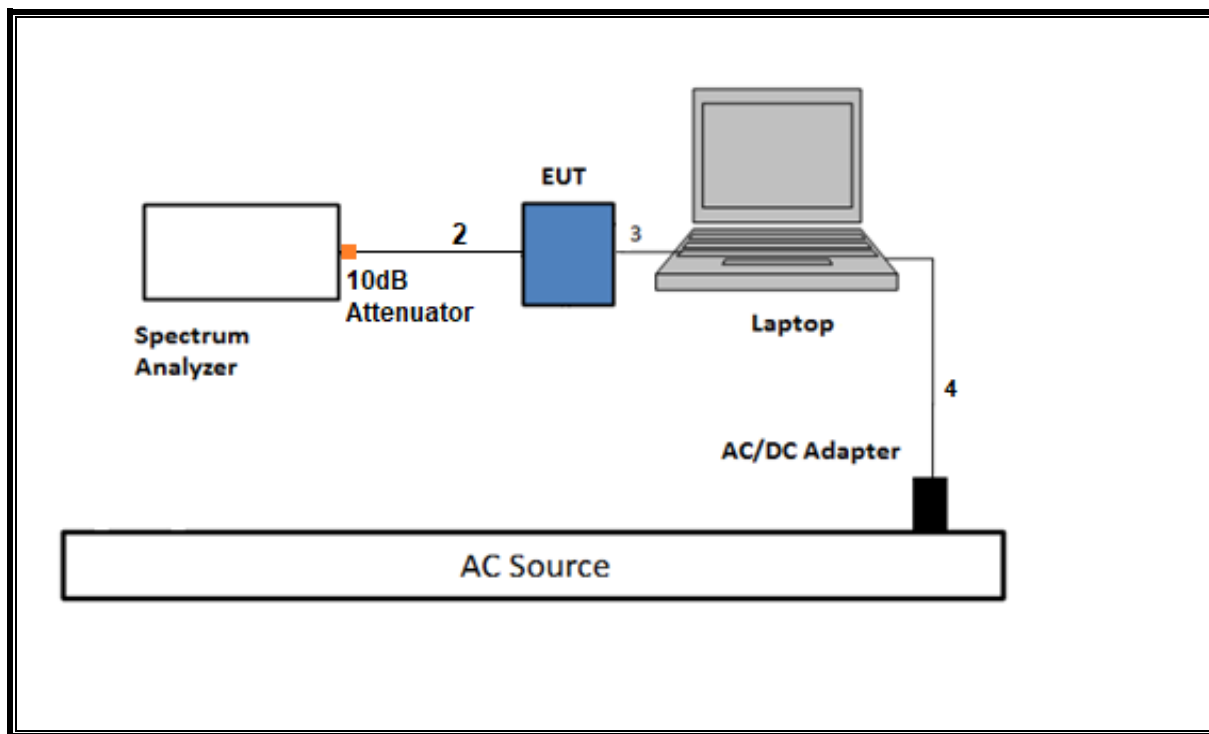
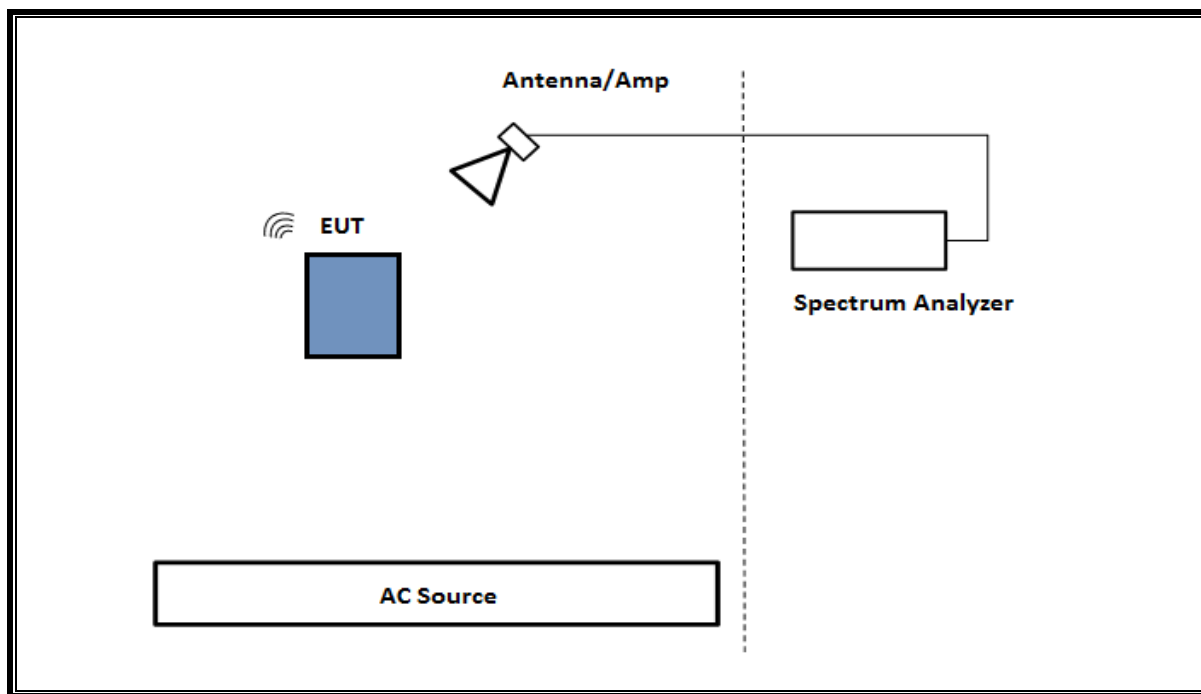
Note: In the Radiated Plots and emissions data, ANT0=ANT4 and ANT1=ANT 3.

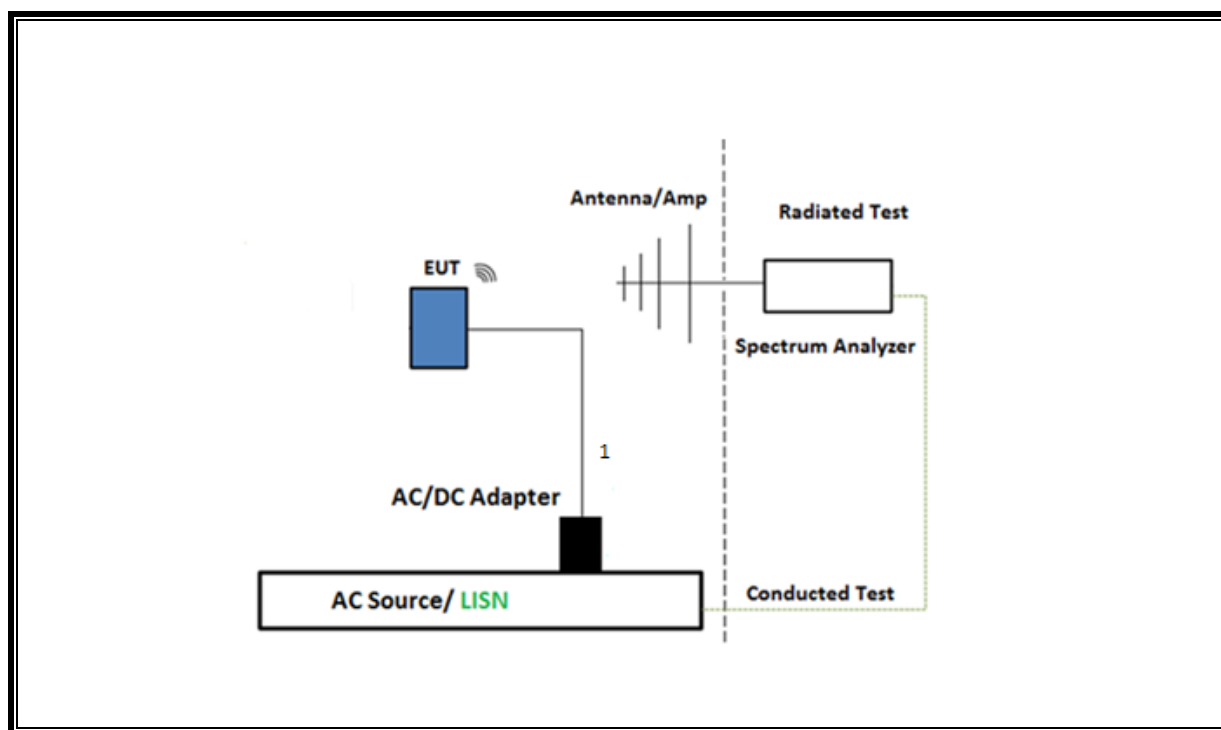
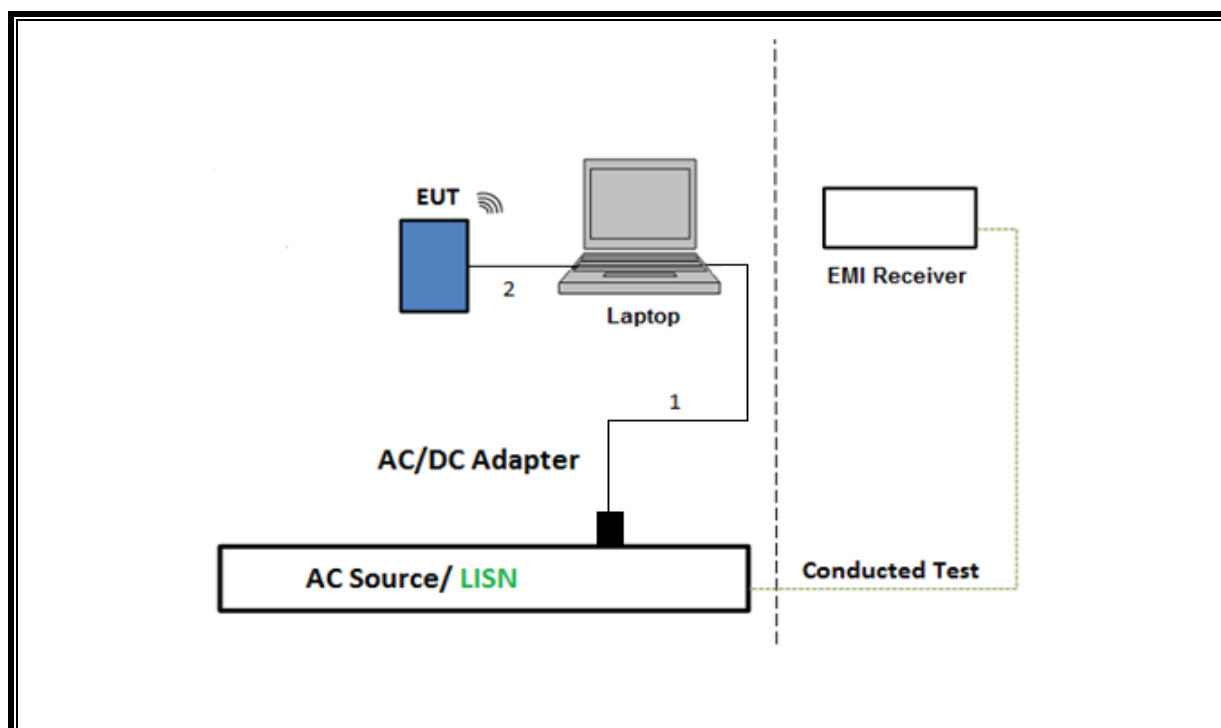
6.6. DESCRIPTION OF TEST SETUP

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	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

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

SETUP DIAGRAM FOR CONDUCTED TESTS**SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz (1 to 26GHz)**

SETUP DIAGRAM FOR 30-1000MHz 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 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, 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 Section 6.4 & 13

8. TEST AND MEASUREMENT EQUIPMENT

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

Description	Manufacturer	Model	ID Num	Cal Due
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	125178	2025/01/31
Spectrum Analyzer, PXA, 3Hz to 50GHz w/Ext. Mixer	Keysight Technologies Inc	N9030A	80400	2025/02/28
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236353	2024/08/31
10dB Fixed Attenuator, 2 Watts Up to 26.5 GHz	Pasternack Enterprises	PE7024-10	236355	2024/08/31
Power Meter, P-Series single channel	Keysight Technologies Inc	N1911A	90719	2025/01/31
Power Sensor, P - Series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90389	2025/01/31
*Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2024/07/31
*Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	2024/07/31
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	223083	2024/10/31
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225474	2025/04/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	191429	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	84797	2024/09/30
RF Filter Box, 1-18GHz, 12 Ports	UL-FR1	Frankenstein	217255	2024/10/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201497	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230300	2025/01/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223461	2025/02/28
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225575	2025/04/27
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	222740	2024/08/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201501	2024/11/30
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	2024/08/30
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	41112	2024/10/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201499	2025/02/11
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	224478	2025/01/31
Antenna, Horn 1-18GHz	ETS-Lindgren	3117	230299	2025/01/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223461	2024/08/29
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	2025/01/30
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp	JB3	222008	2024/10/23
Link File, @3m, 9kHz-1000MHz Hybrid Path Loss	UL-FR1	Port 0 Factors	232001	2025/02/28
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	81139	2024/08/31
RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	171583	2025/03/31

AC Line Conducted				
Description	Manufacturer	Model	ID Num	Cal Due
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	2025/02/28
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	2025/01/31
Transient Limiter	TE	TBFL1	207996	2024/08/31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 2023, May 1
Conducted Software	UL	UL EMC	2020.8.16
AC Line Conducted Software	UL	UL EMC	Ver 9.5, 2023, Mar 3

*Testing was completed before equipment calibration date

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

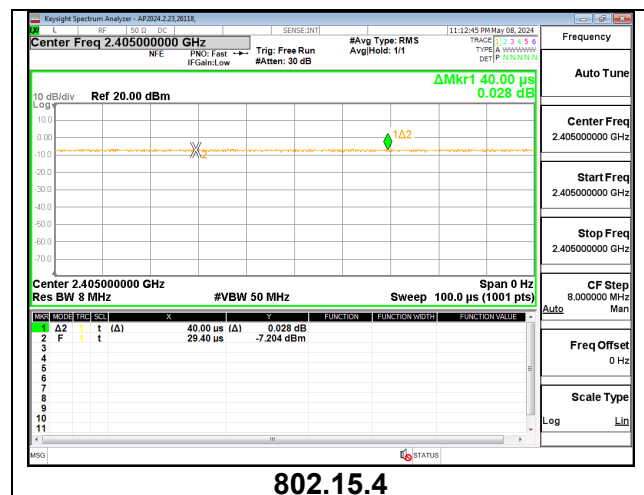
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
802.15.4, 2405MHz	0.40	0.40	1.000	100.00%	0.00	0.010

DUTY CYCLE PLOTS



9.2. 99% BANDWIDTH**LIMITS**

None; for reporting purposes only.

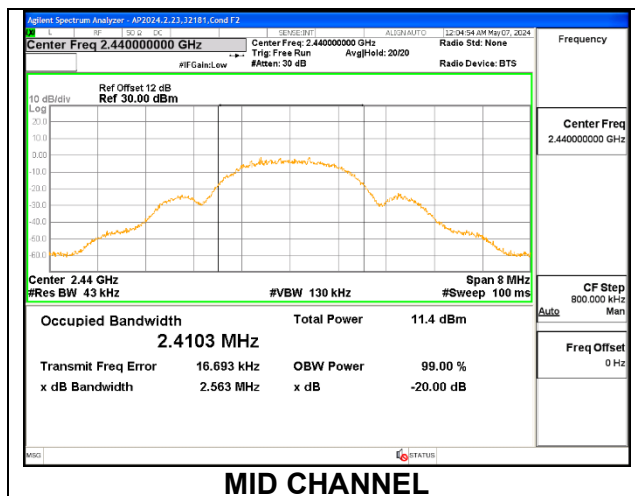
RESULTS

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

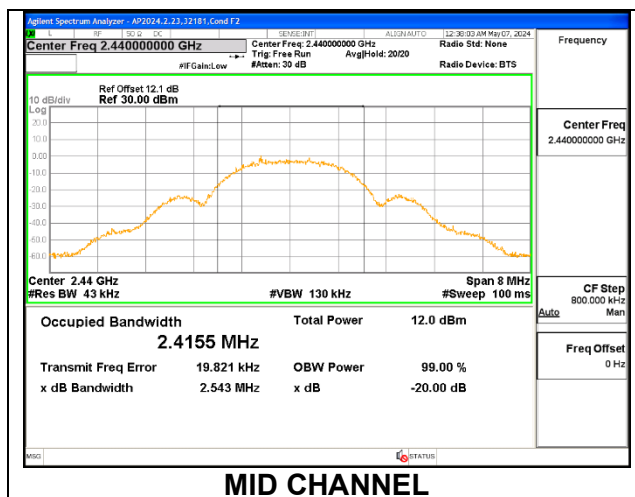
9.2.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.4059
Middle	2440	2.4103
High	2475	2.4310

ANT 3

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.418
Middle	2440	2.4155
High	2475	2.418



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.

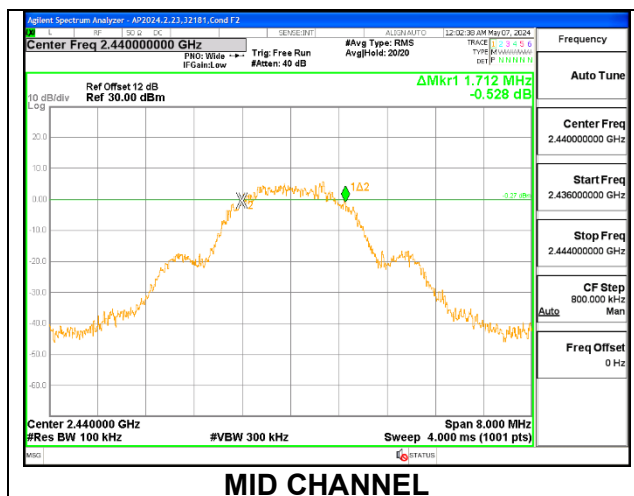
RESULTS

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.

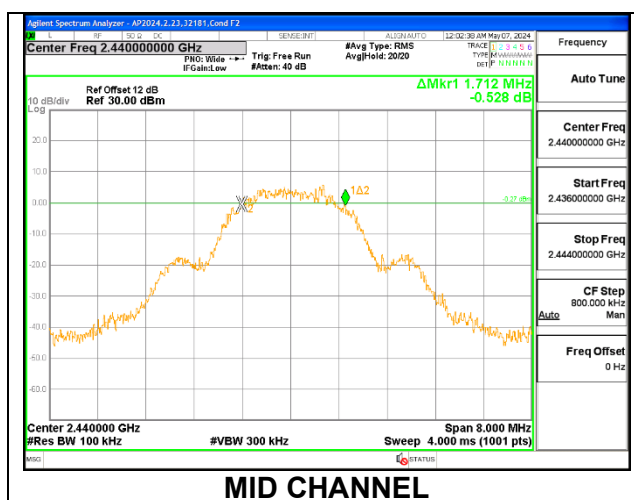
9.3.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.544	0.5
Middle	2440	1.712	0.5
High	2475	1.696	0.5

**ANT 3**

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.704	0.5
Middle	2440	1.712	0.5
High	2475	1.696	0.5



9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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

TEST PROCEDURE

Measurements perform using a wideband RF power meter.

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

DIRECTIONAL ANTENNA GAIN

For 1 TX:

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

RESULTS

9.4.1. **HIGH POWER****ANT 4**

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	21.27	30	-8.73
Middle	2440	21.32	30	-8.68
High	2475	21.31	30	-8.69

ANT 3

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	21.32	30	-8.68
Middle	2440	21.29	30	-8.71
High	2475	21.34	30	-8.66

9.4.2. LOW POWER**ANT 4**

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	10.66	30	-19.34
Middle	2440	10.73	30	-19.27
High	2475	10.62	30	-19.38

ANT 3

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	10.72	30	-19.28
Middle	2440	10.81	30	-19.19
High	2475	10.79	30	-19.21

9.5. AVERAGE POWER

TEST PROCEDURE

Measurements perform using a wideband RF power meter.

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

RESULTS

9.5.1. **HIGH POWER****ANT 4**

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	20.42
Middle	2440	20.46
High	2475	20.45

ANT 3

Tested By:	28502
Date:	8/4/2024

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	20.46
Middle	2440	20.43
High	2475	20.48

9.5.2. **LOW POWER****ANT 4**

Tested By:	28502
Date:	8/4/2024

Channel	Frequency	AV power
	(MHz)	(dBm)
Low	2405	9.80
Middle	2440	9.86
High	2475	9.75

ANT 3

Tested By:	28502
Date:	8/4/2024

Channel	Frequency	AV power
	(MHz)	(dBm)
Low	2405	9.85
Middle	2440	9.95
High	2475	9.92

9.6. POWER SPECTRAL DENSITY

LIMITS

None; for reporting purposes only.

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

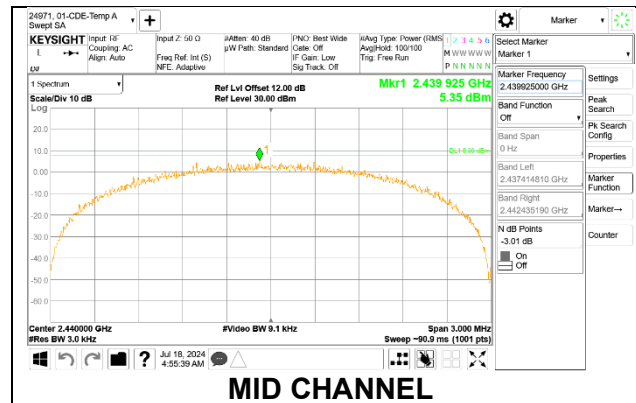
Only Mid channel plot is reported to show setting parameter complies with testing method/procedure.

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

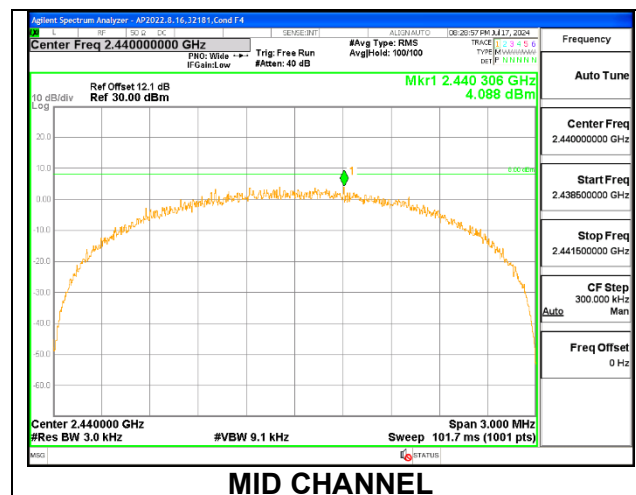
9.6.1. HIGH POWER

ANT 4

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	4.180	8	-3.82
Middle	2440	5.350	8	-2.65
High	2475	5.640	8	-2.36

**ANT 3**

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	4.057	8	-3.94
Middle	2440	4.088	8	-3.91
High	2475	4.291	8	-3.71



9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

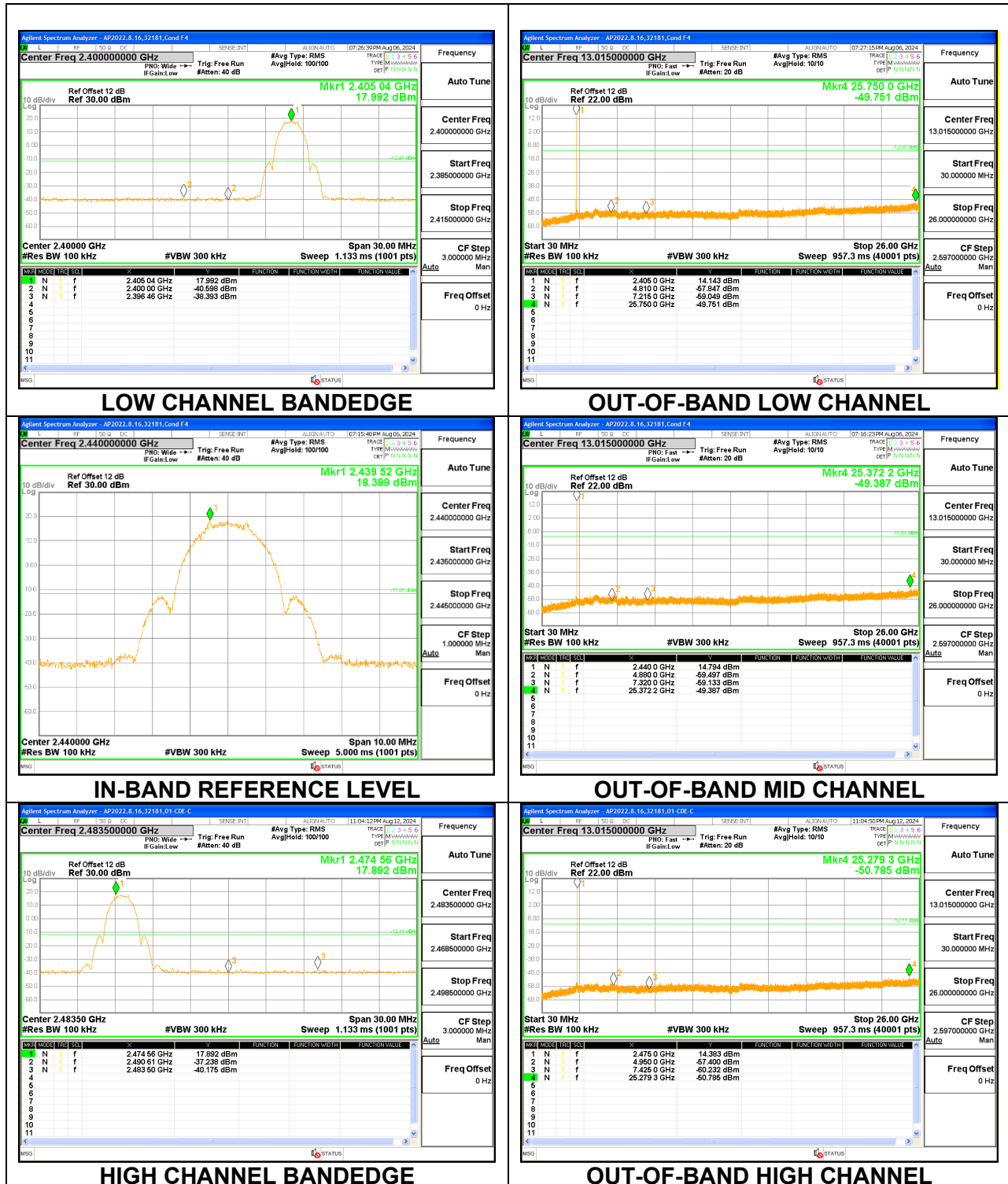
RSS-247 5.5

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

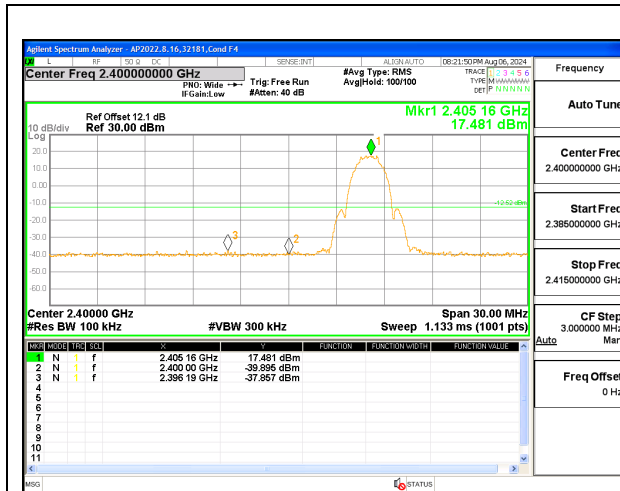
RESULTS

9.7.1. HIGH POWER

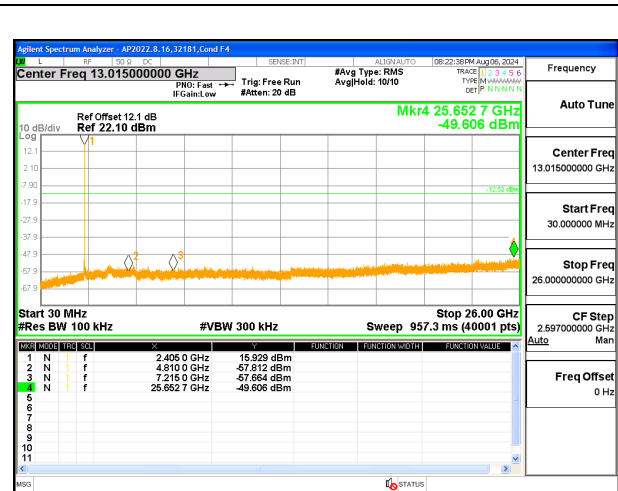
ANT 4



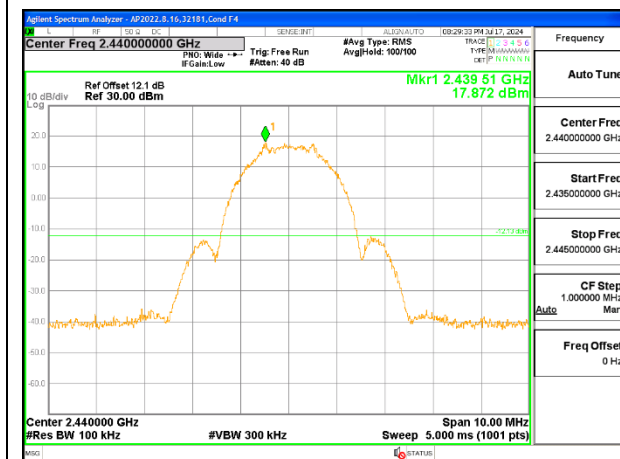
ANT 3



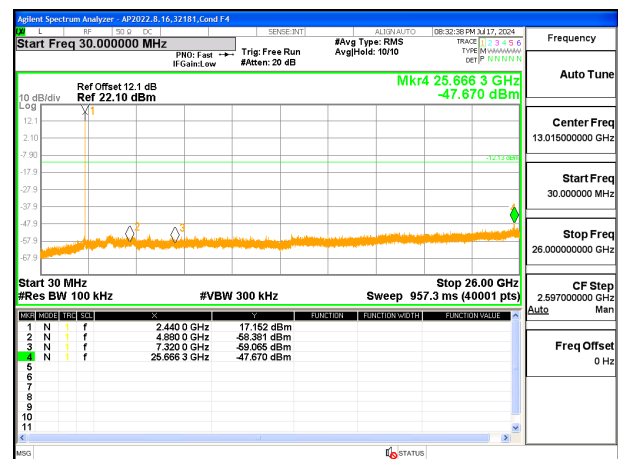
LOW CHANNEL BANDEDGE



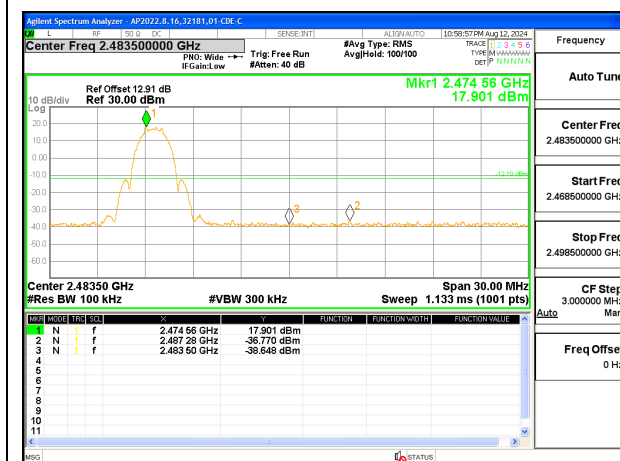
OUT-OF-BAND LOW CHANNEL



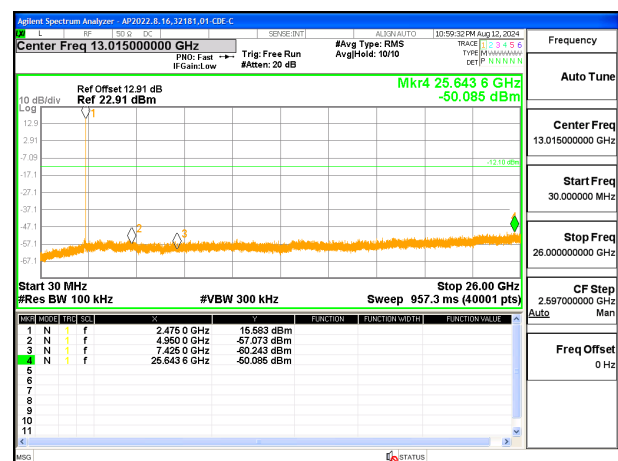
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



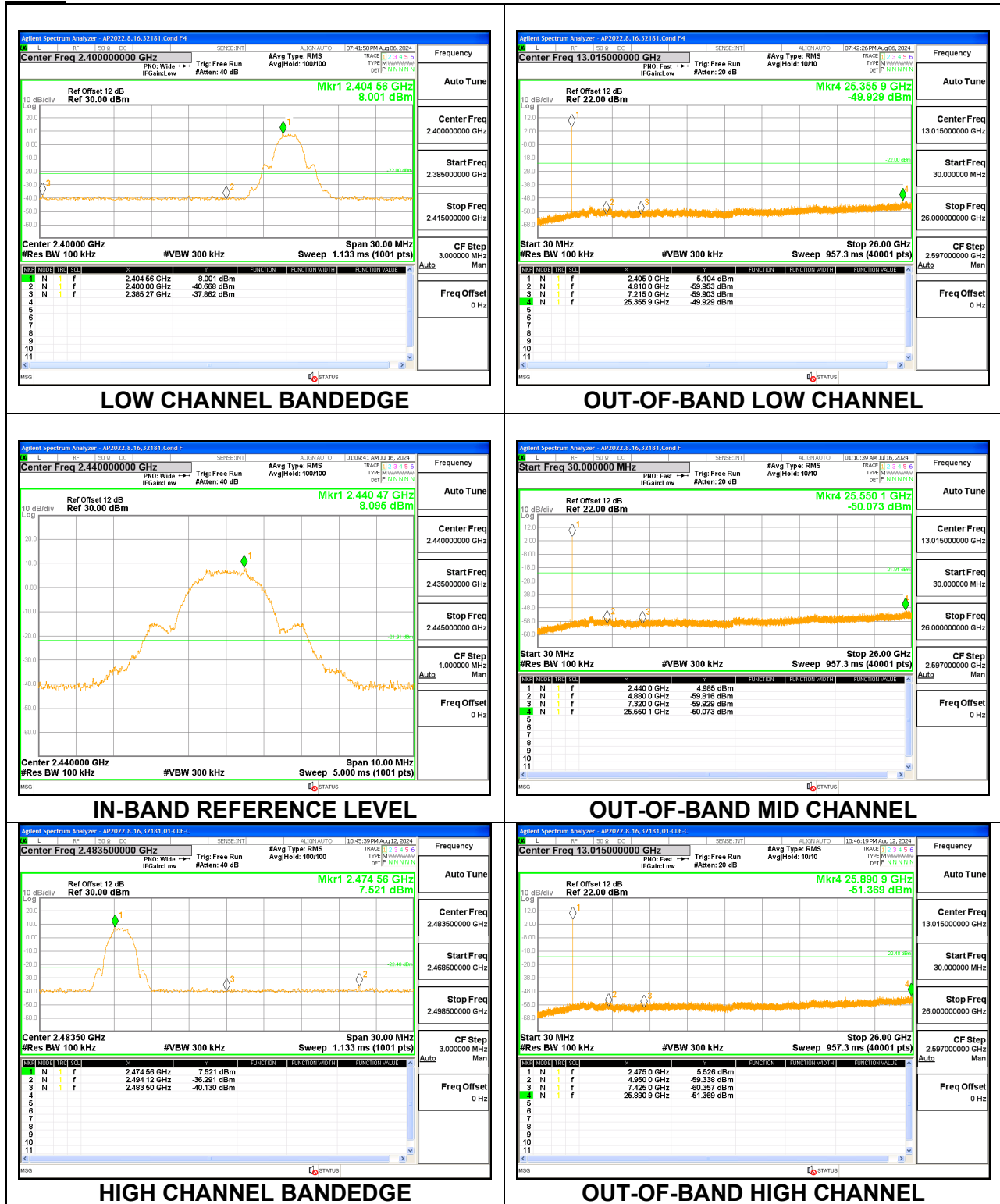
HIGH CHANNEL BANDEDGE



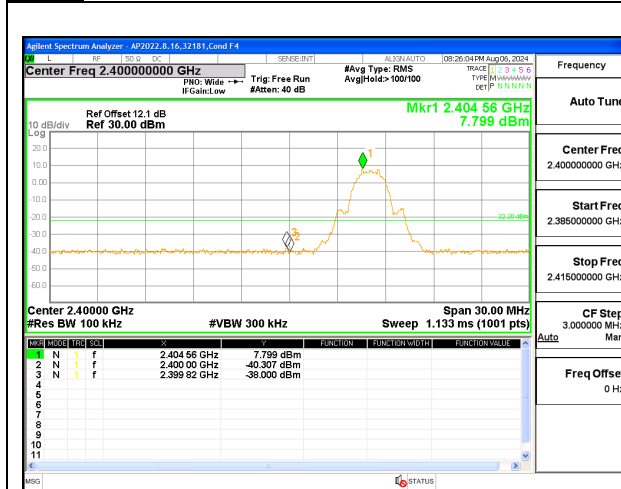
OUT-OF-BAND HIGH CHANNEL

9.7.2. LOW POWER

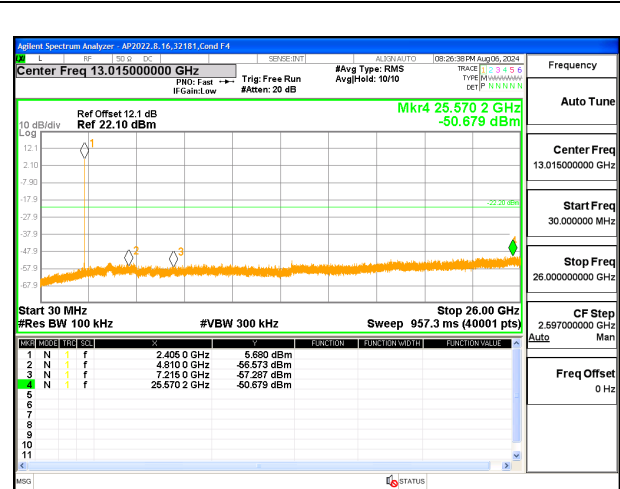
ANT 4



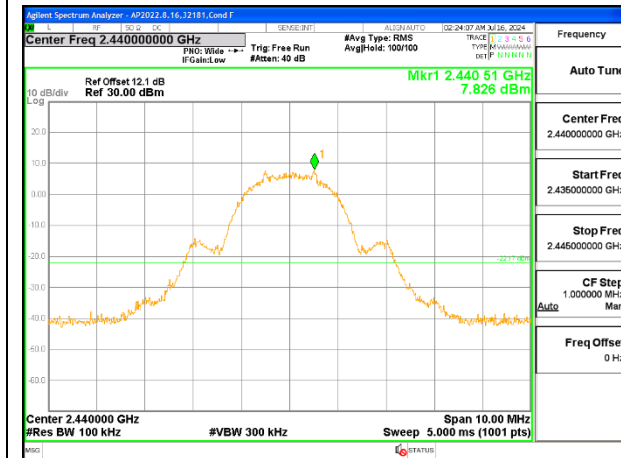
ANT 3



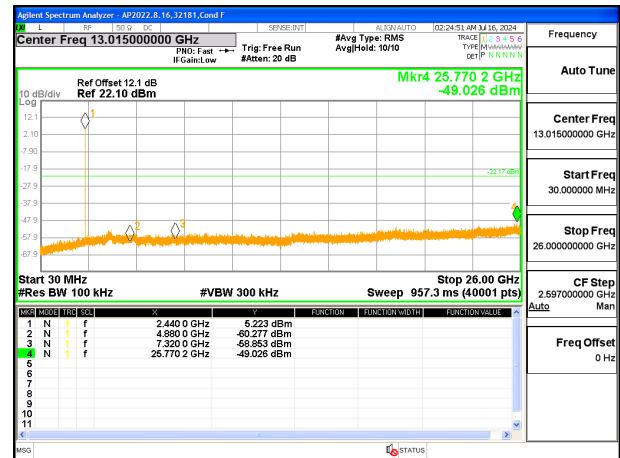
LOW CHANNEL BANDEDGE



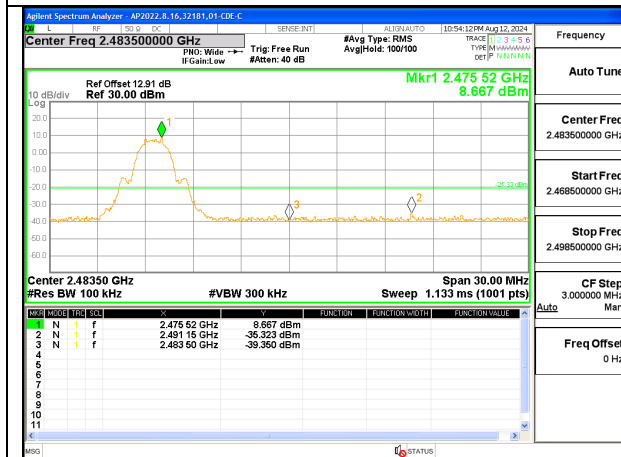
OUT-OF-BAND LOW CHANNEL



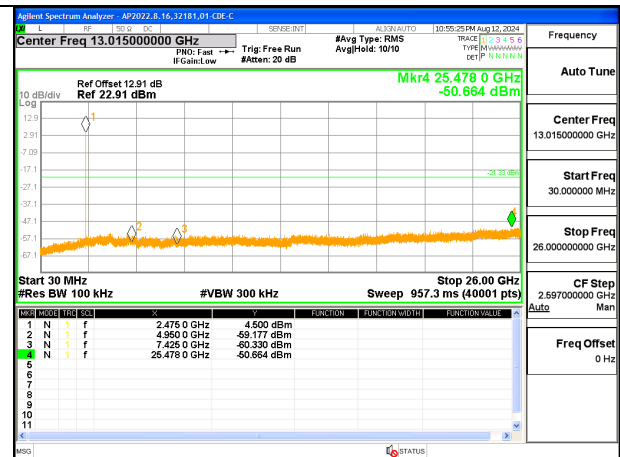
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

10. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

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

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

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

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

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

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

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

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

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

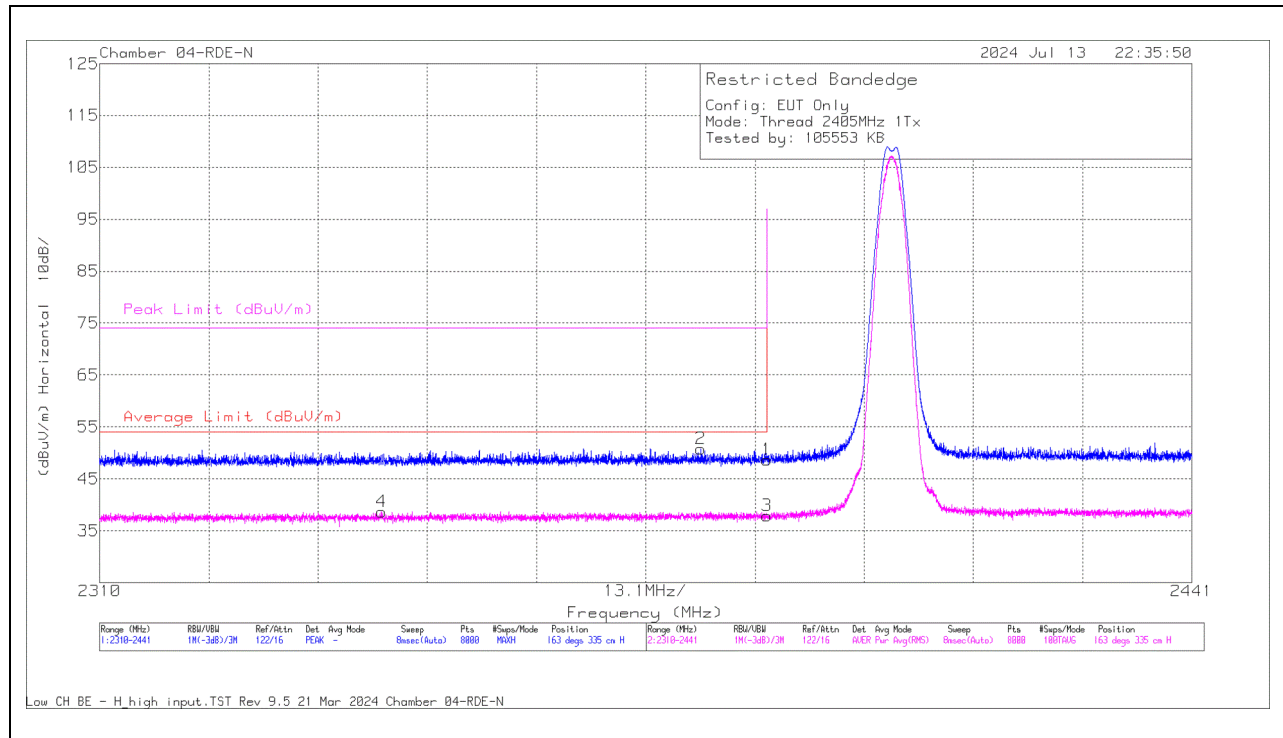
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. ANT4, 802.15.4 HIGH POWER BANDEDGE

Low Channel

HORIZONTAL RESULT



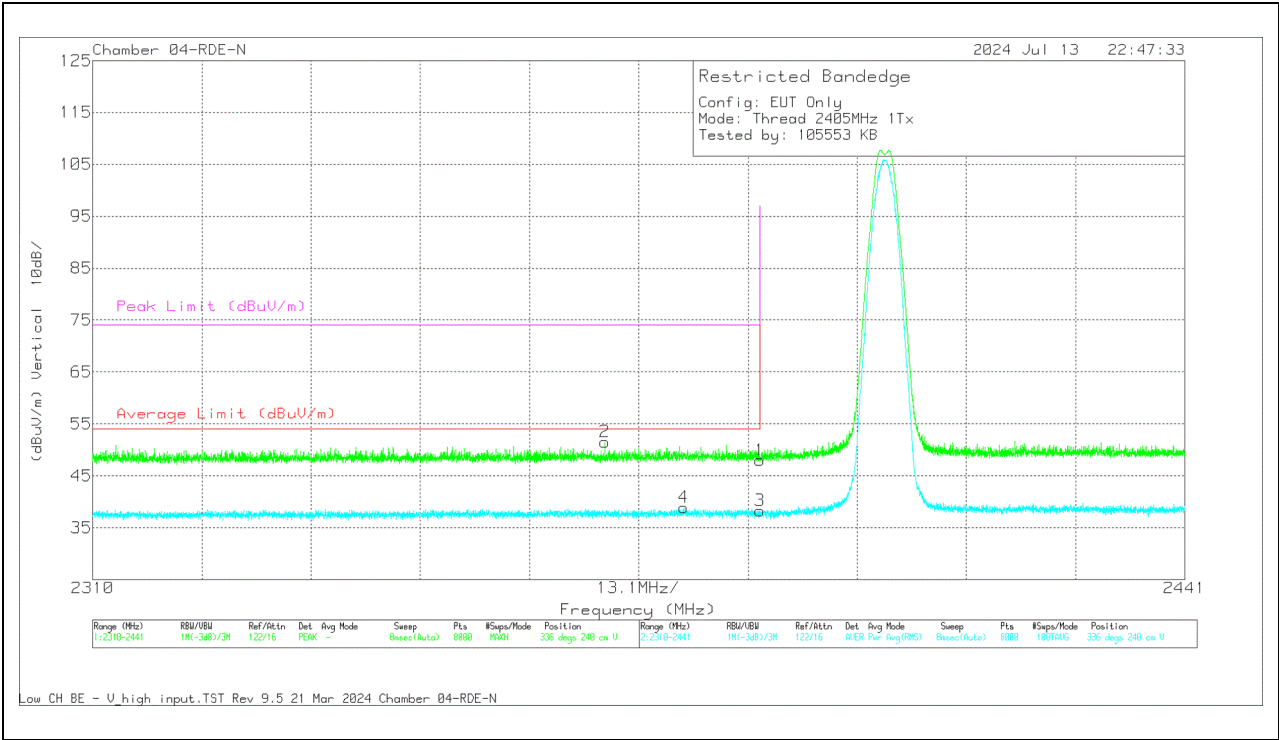
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2343.802	34.26	RMS	31.6	-27.2	38.66	54	-15.34	-	-	163	335	H
2	2382.124	46.04	Pk	31.8	-27.07	50.77	-	-	74	-23.23	163	335	H
1	2390	44.05	Pk	31.8	-27.17	48.68	-	-	74	-25.32	163	335	H
3	2390	33.25	RMS	31.8	-27.17	37.88	54	-16.12	-	-	163	335	H

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



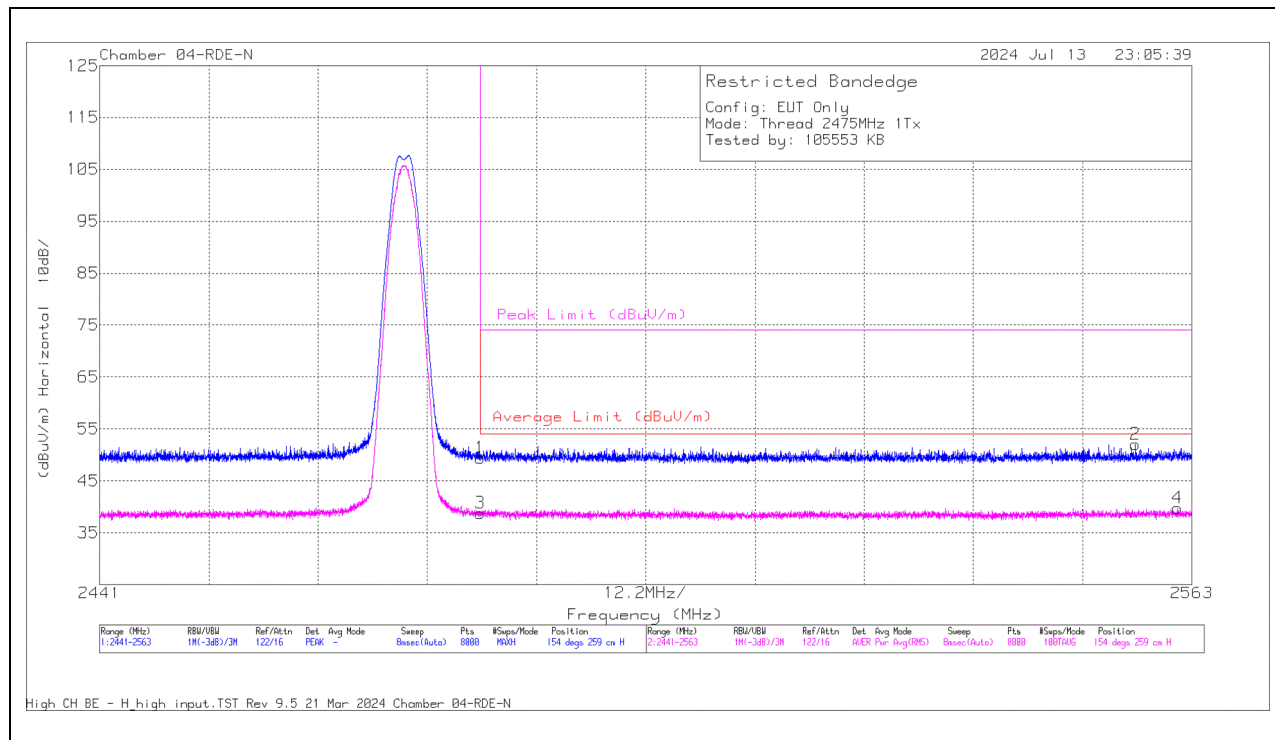
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2371.447	46.84	Pk	31.7	-27.06	51.48	-	-	74	-22.52	336	240	V
4	2380.896	34.17	RMS	31.8	-27.09	38.88	54	-15.12	-	-	336	240	V
1	2390	43.34	Pk	31.8	-27.17	47.97	-	-	74	-26.03	336	240	V
3	2390	33.62	RMS	31.8	-27.17	38.25	54	-15.75	-	-	336	240	V

Pk - Peak detector
RMS - RMS detection

High CHANNEL

HORIZONTAL RESULT



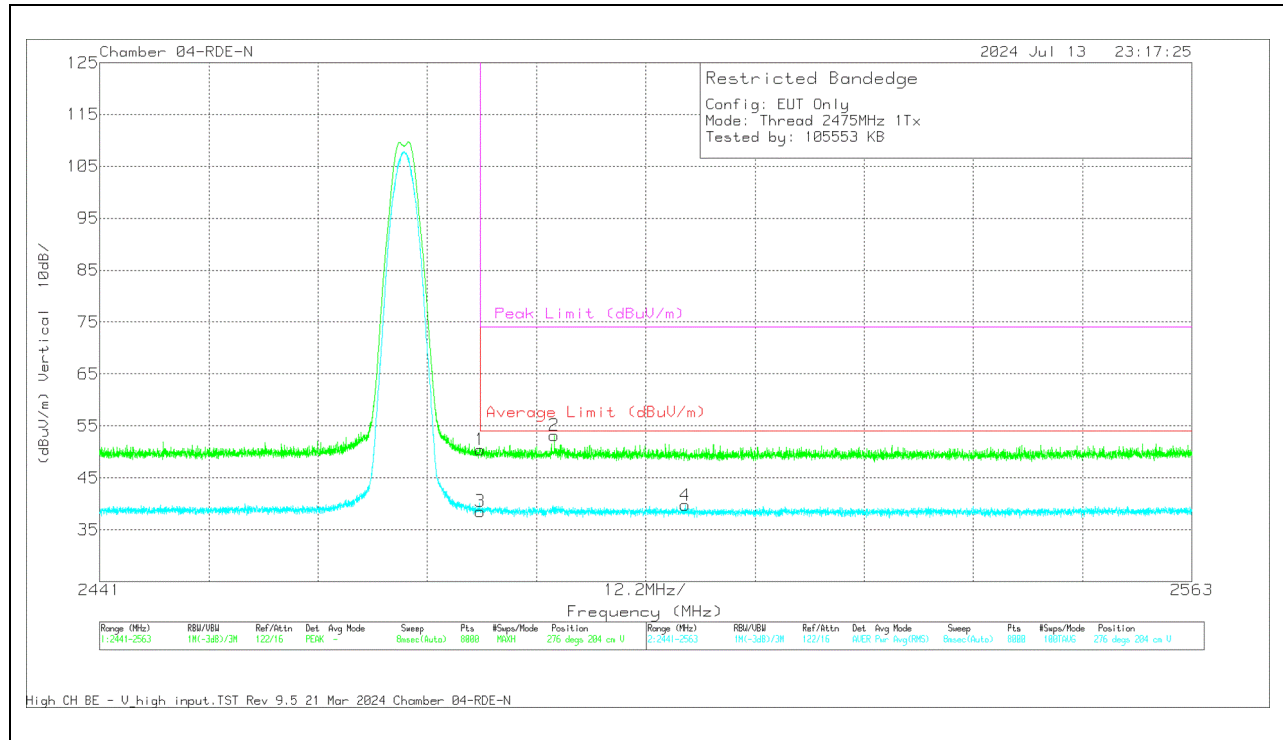
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	44.22	Pk	32.2	-27	49.42	-	-	74	-24.58	154	259	H
3	2483.5	33.58	RMS	32.2	-27	38.78	54	-15.22	-	-	154	259	H
2	2556.717	46.71	Pk	32.2	-26.86	52.05	-	-	74	-21.95	154	259	H
4	2561.43	34.27	RMS	32.2	-26.75	39.72	54	-14.28	-	-	154	259	H

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	45.23	Pk	32.2	-27	50.43	-	-	74	-23.57	276	204	V
3	2483.5	33.34	RMS	32.2	-27	38.54	54	-15.46	-	-	276	204	V
2	2491.774	47.94	Pk	32.2	-26.96	53.18	-	-	74	-20.82	276	204	V
4	2506.385	34.39	RMS	32.2	-26.89	39.7	54	-14.3	-	-	276	204	V

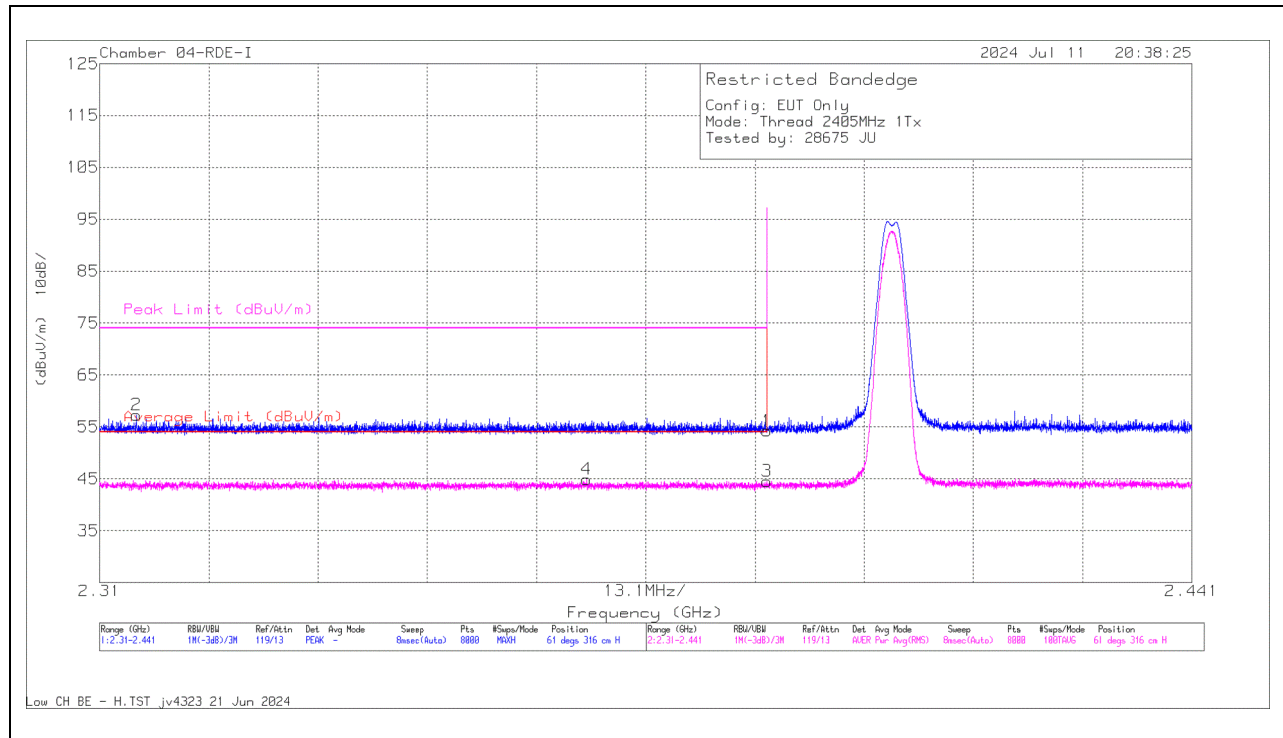
Pk - Peak detector

RMS - RMS detection

10.1.2. ANT4, 802.15.4 LOW POWER BANDEDGE

LOW CHANNEL

HORIZONTAL RESULT



Trace Markers

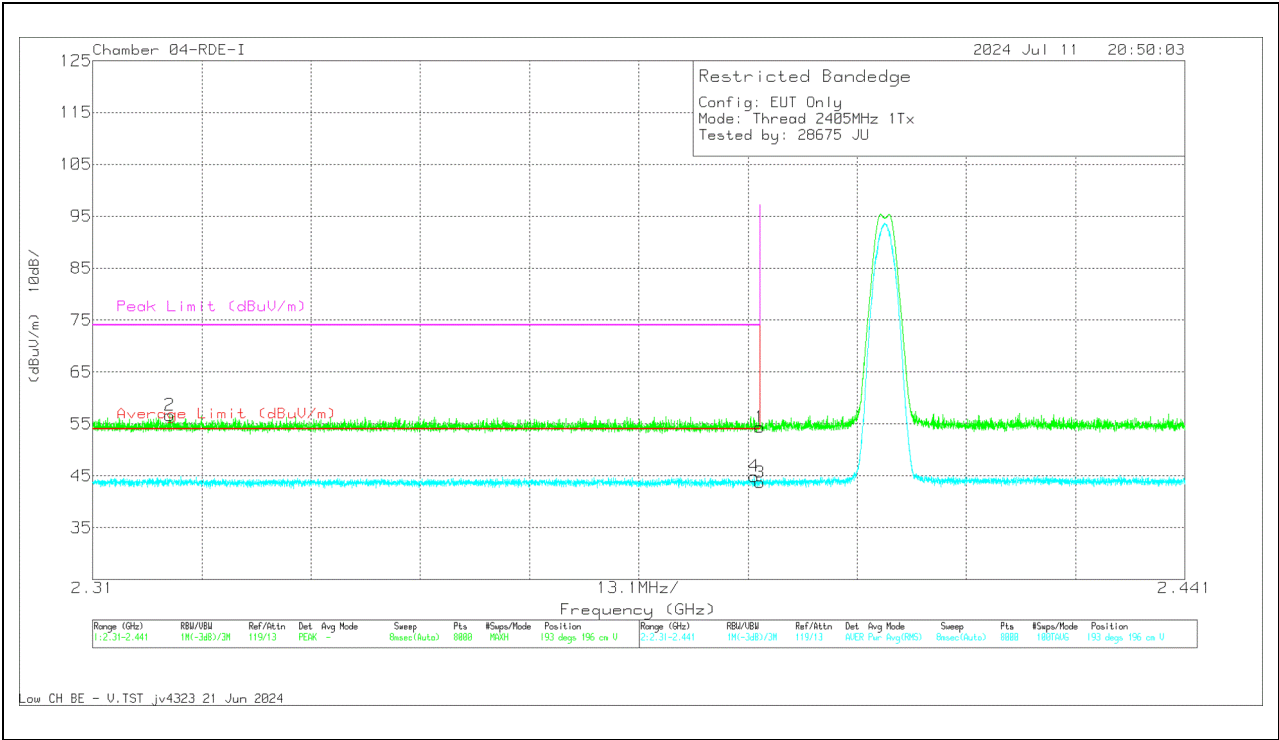
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP Pad(dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.02	Pk	31.7	-19.5	54.22	-	-	74	-19.78	61	316	H
2	* 2.314405	44.93	Pk	31.7	-19.3	57.33	-	-	74	-16.67	61	316	H
3	* 2.39	32.28	RMS	31.7	-19.5	44.48	54	-9.52	-	-	61	316	H
4	* 2.368417	32.61	RMS	31.7	-19.4	44.91	54	-9.09	-	-	61	316	H

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

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



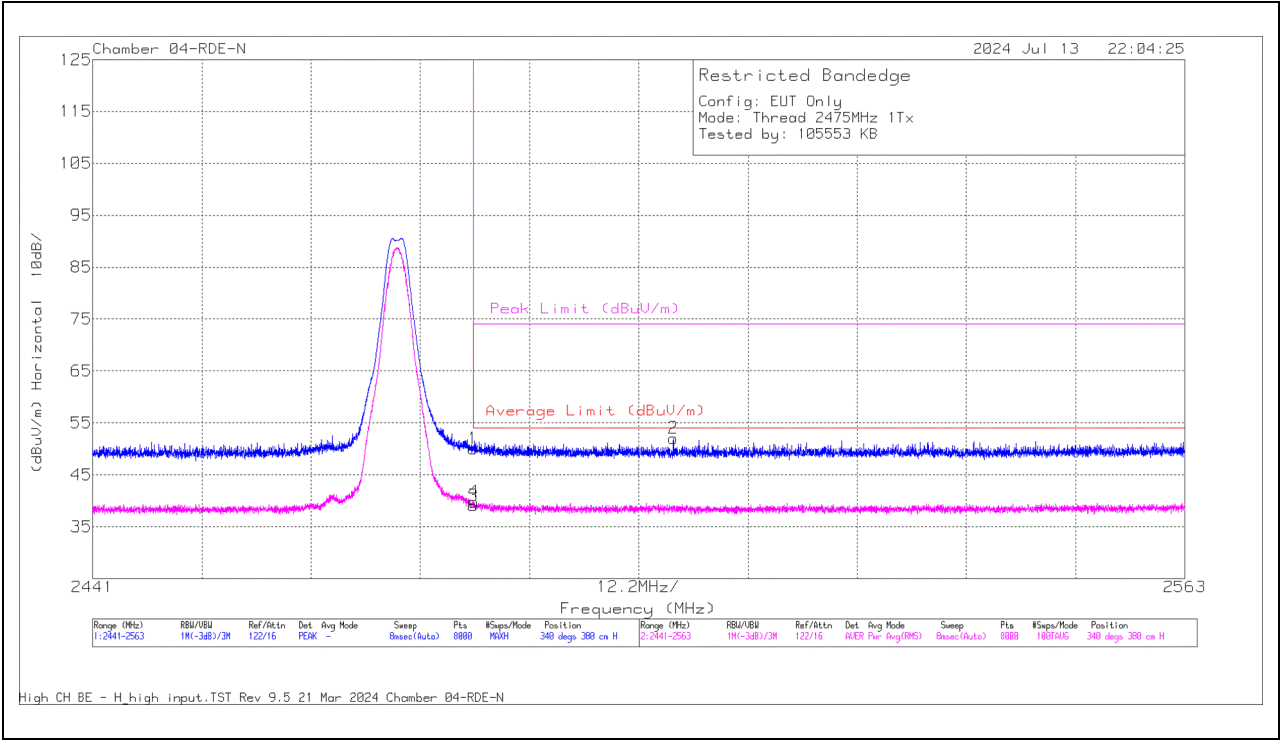
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	84797 ACF (dB/m)	CBL AMP Pad(dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	42.16	Pk	31.7	-19.5	54.36	-	-	74	-19.64	193	196	V
2	* 2.319204	44.25	Pk	31.7	-19.3	56.65	-	-	74	-17.35	193	196	V
3	* 2.39	31.51	RMS	31.7	-19.5	43.71	54	-10.29	-	-	193	196	V
4	* 2.389363	32.7	RMS	31.7	-19.5	44.9	54	-9.1	-	-	193	196	V

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

HIGH CHANNEL

HORIZONTAL RESULT

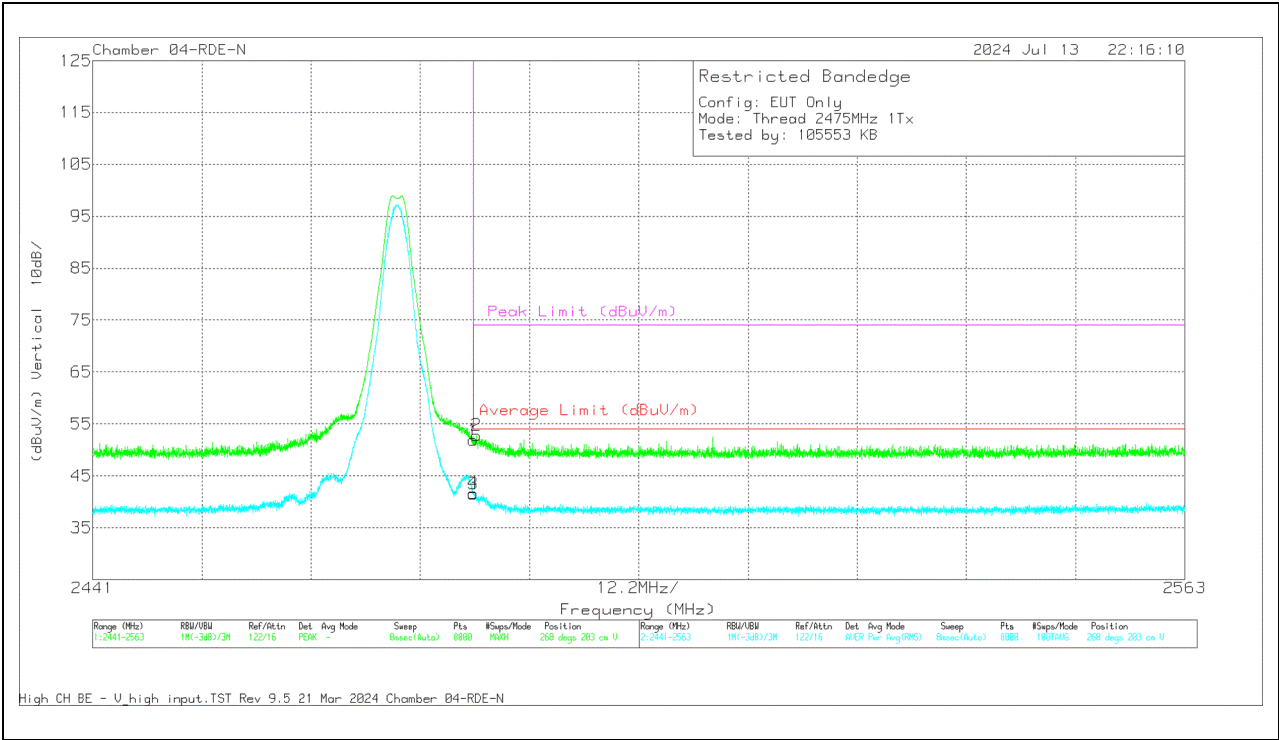


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	44.83	Pk	32.2	-27	50.03	-	-	74	-23.97	340	380	H
3	2483.5	33.87	RMS	32.2	-27	39.07	54	-14.93	-	-	340	380	H
4	2483.568	34.58	RMS	32.2	-27	39.78	54	-14.22	-	-	340	380	H
2	2505.867	46.68	Pk	32.2	-26.88	52	-	-	74	-22	340	380	H

Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT



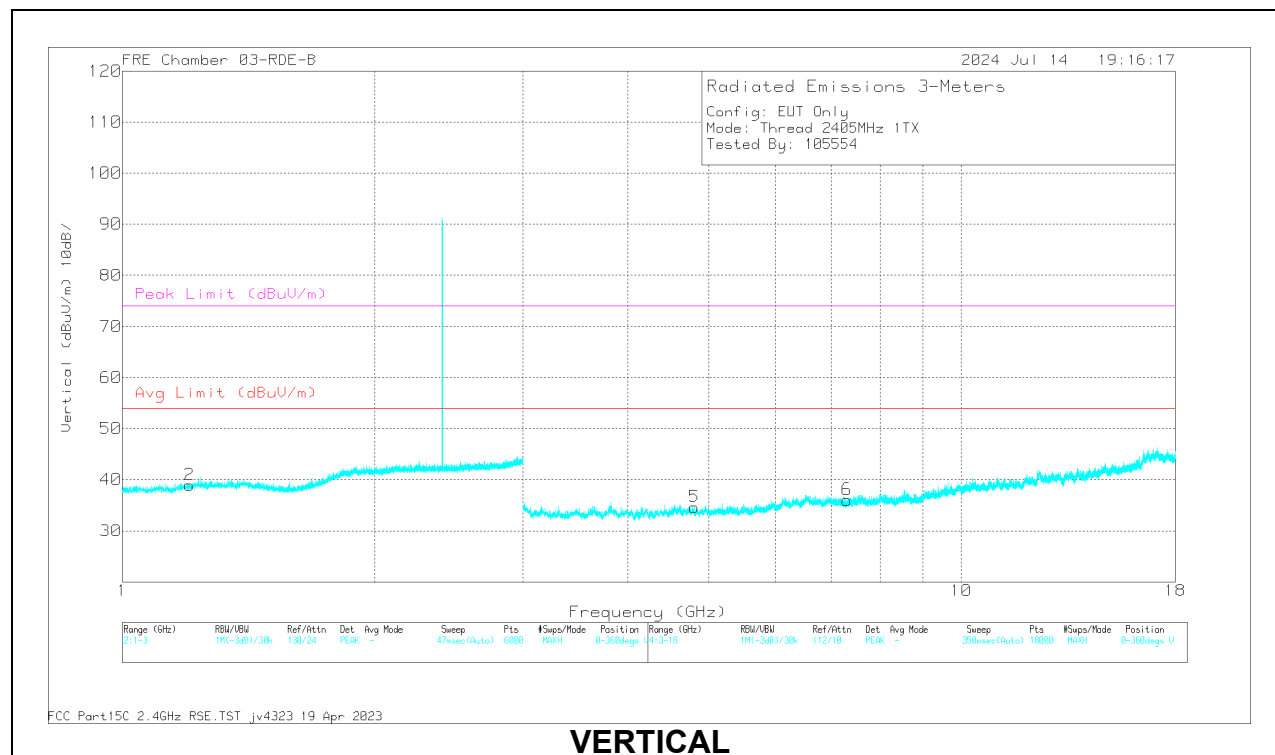
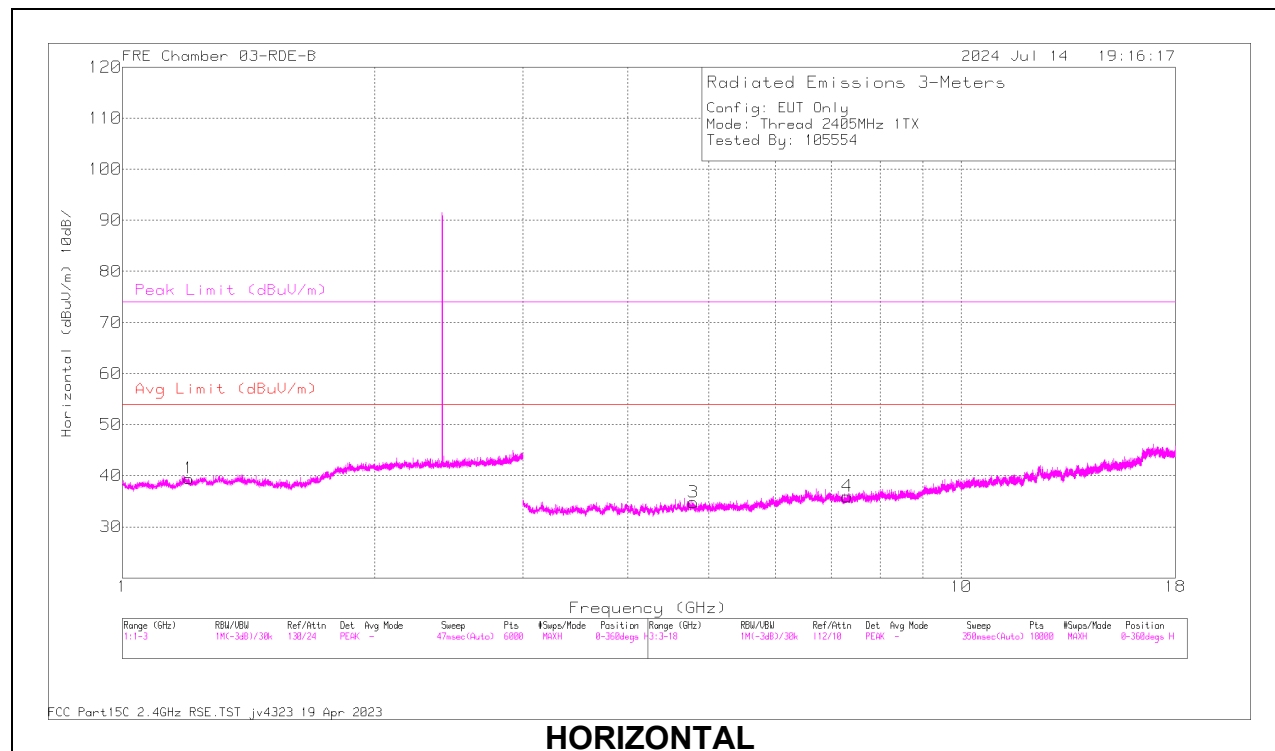
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	46.74	Pk	32.2	-27	51.94	-	-	74	-22.06	268	203	V
3	2483.5	36.32	RMS	32.2	-27	41.52	54	-12.48	-	-	268	203	V
4	2483.523	36.47	RMS	32.2	-27	41.67	54	-12.33	-	-	268	203	V
2	2483.873	47.6	Pk	32.2	-26.99	52.81	-	-	74	-21.19	268	203	V

Pk - Peak detector
RMS - RMS detection

10.1.3. ANT4, 802.15.4 HIGH POWER, HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



Radiated Emissions

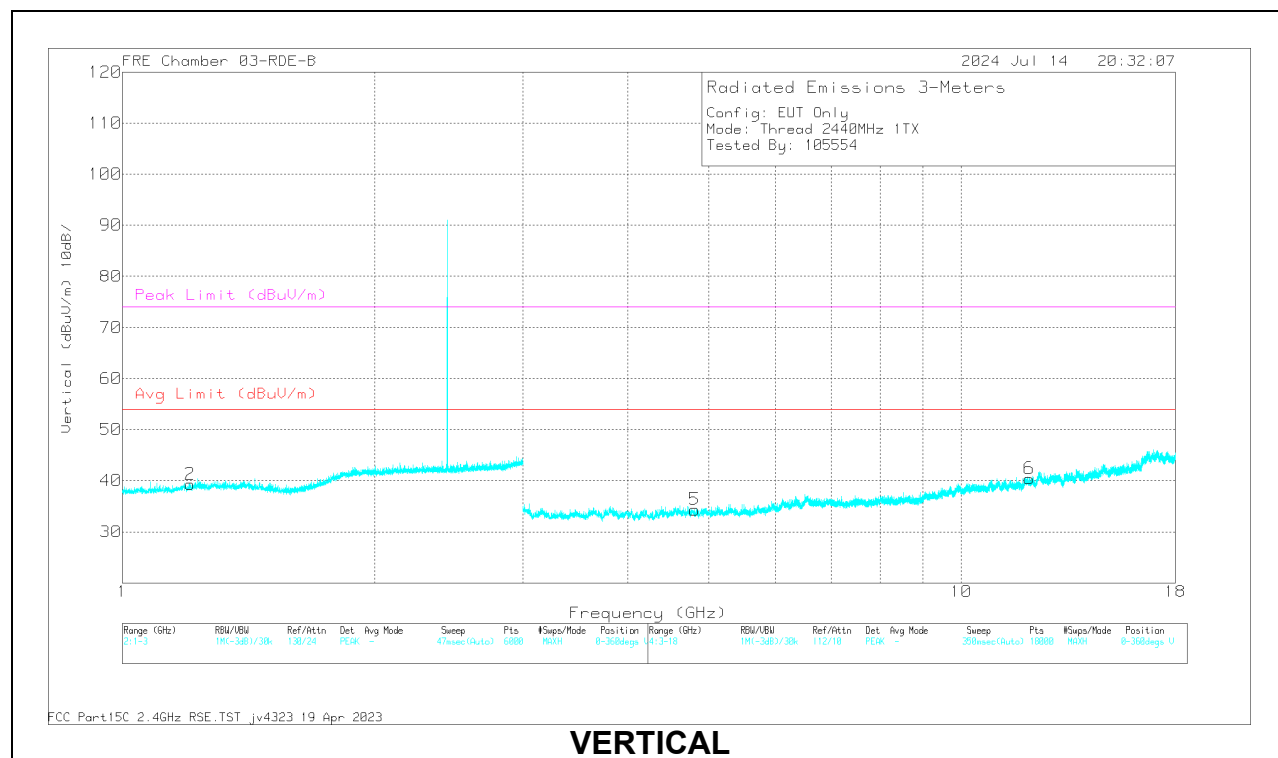
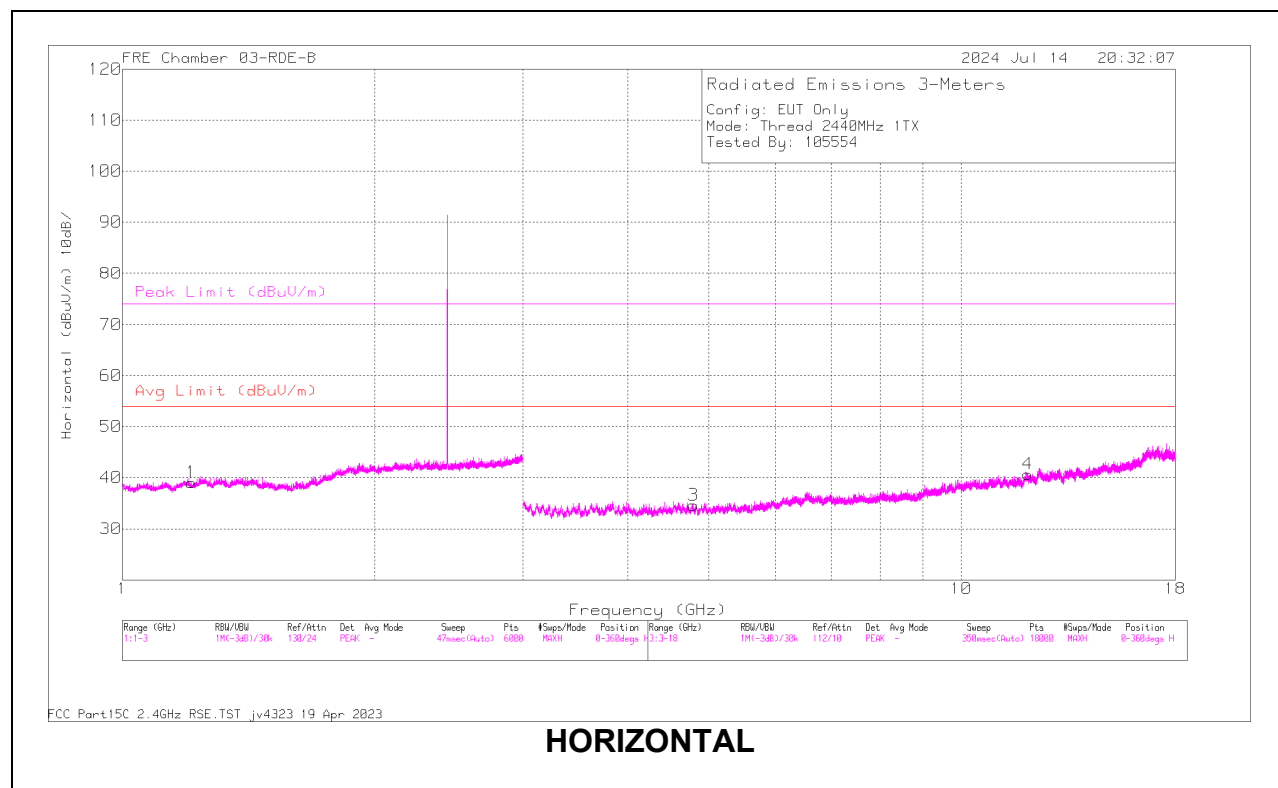
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.199267	61.75	PK2	28.4	-41.3	48.85	-	-	74	-25.15	153	132	H
	* 1.200199	50.4	MAv1	28.5	-41.3	37.6	54	-16.4	-	-	153	132	H
2	* 1.201386	61.74	PK2	28.5	-41.3	48.94	-	-	74	-25.06	215	101	V
	* 1.200703	50.32	MAv1	28.5	-41.3	37.52	54	-16.48	-	-	215	101	V
3	* 4.790036	59.19	PK2	34.2	-49.4	43.99	-	-	74	-30.01	286	293	H
	* 4.790436	48.08	MAv1	34.2	-49.4	32.88	54	-21.12	-	-	286	293	H
4	* 7.311817	57.86	PK2	35.8	-48	45.66	-	-	74	-28.34	286	385	H
	* 7.310639	46.37	MAv1	35.8	-48.04	34.13	54	-19.87	-	-	286	385	H
5	* 4.808224	59.13	PK2	34.2	-49.32	44.01	-	-	74	-29.99	176	304	V
	* 4.809631	47.58	MAv1	34.2	-49.4	32.38	54	-21.62	-	-	176	304	V
6	* 7.314134	58.2	PK2	35.8	-48	46	-	-	74	-28	218	317	V
	* 7.312124	46.76	MAv1	35.8	-48	34.56	54	-19.44	-	-	218	317	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



Radiated Emissions

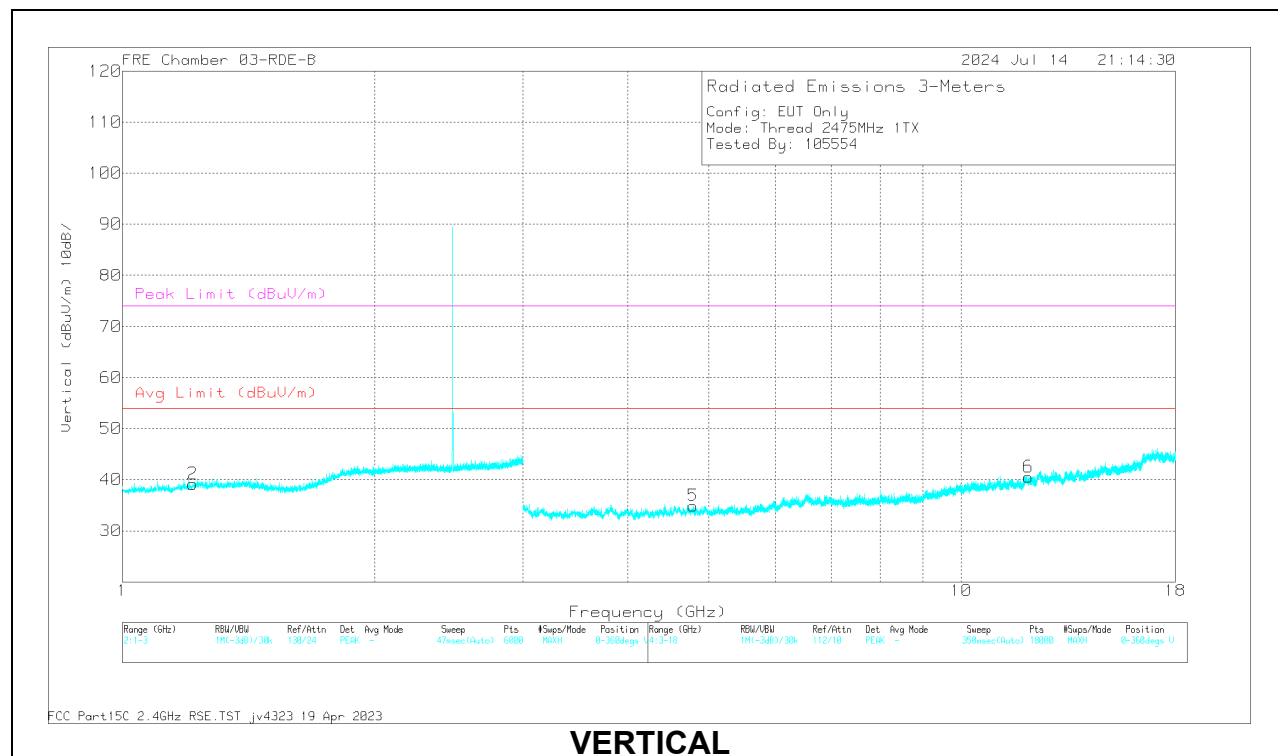
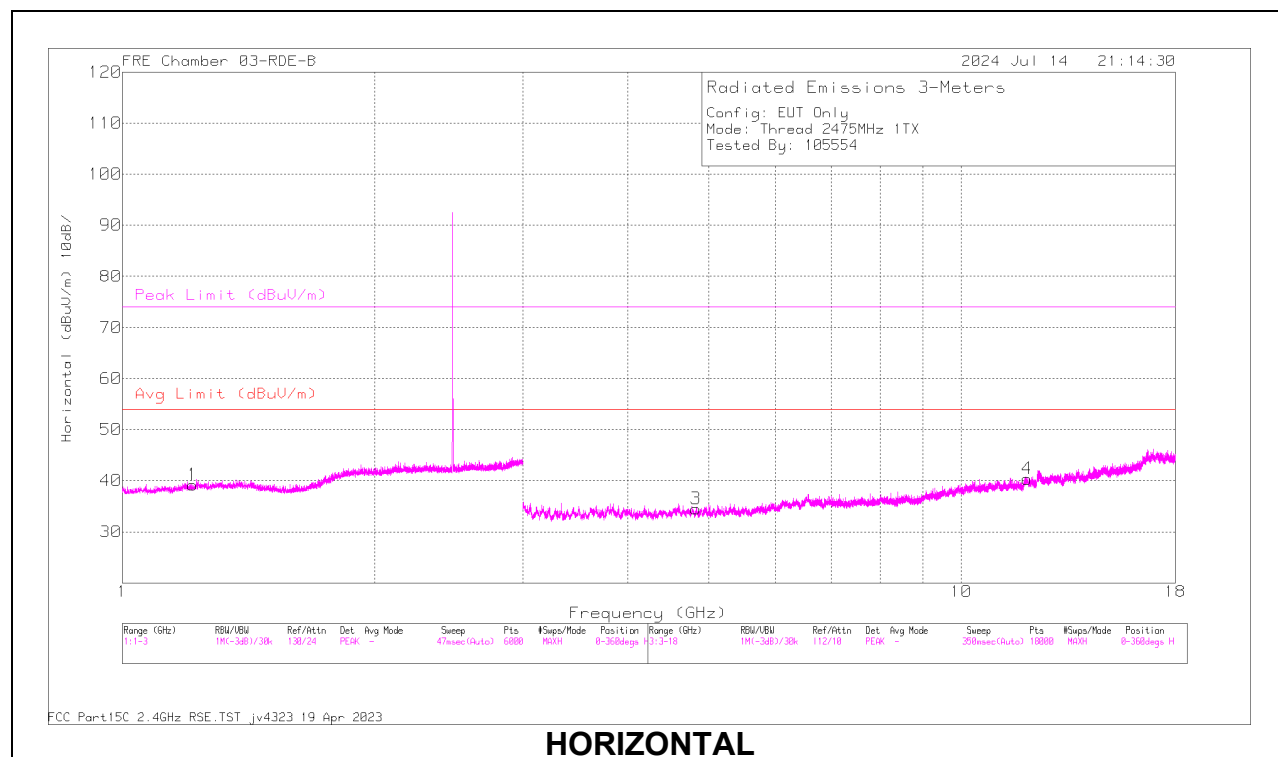
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.209783	61.99	PK2	28.5	-41.22	49.27	-	-	74	-24.73	5	292	H
	* 1.209542	50.26	MAv1	28.5	-41.25	37.51	54	-16.49	-	-	5	292	H
2	* 1.204621	61.75	PK2	28.5	-41.24	49.01	-	-	74	-24.99	185	102	V
	* 1.204069	50.28	MAv1	28.5	-41.29	37.49	54	-16.51	-	-	185	102	V
3	* 4.787857	59.83	PK2	34.2	-49.4	44.63	-	-	74	-29.37	129	126	H
	* 4.788662	48.27	MAv1	34.2	-49.4	33.07	54	-20.93	-	-	129	126	H
4	* 11.997137	56.98	PK2	38.7	-45.31	50.37	-	-	74	-23.63	114	398	H
	* 11.997023	45.36	MAv1	38.7	-45.3	38.76	54	-15.24	-	-	114	398	H
5	* 4.811752	59.01	PK2	34.2	-49.4	43.81	-	-	74	-30.19	170	297	V
	* 4.81043	47.55	MAv1	34.2	-49.4	32.35	54	-21.65	-	-	170	297	V
6	* 12.050661	57.03	PK2	38.7	-45.7	50.03	-	-	74	-23.97	203	155	V
	* 12.05086	45.49	MAv1	38.7	-45.7	38.49	54	-15.51	-	-	203	155	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230300 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.21265	62.68	PK2	28.5	-41.27	49.91	-	-	74	-24.09	42	140	H
	* 1.210758	49.92	MAV1	28.5	-41.28	37.14	54	-16.86	-	-	42	140	H
2	* 1.214707	61.87	PK2	28.5	-41.27	49.1	-	-	74	-24.9	106	385	V
	* 1.214747	50.41	MAV1	28.5	-41.27	37.64	54	-16.36	-	-	106	385	V
3	* 4.828634	60.03	PK2	34.2	-49.3	44.93	-	-	74	-29.07	355	289	H
	* 4.828139	48.01	MAV1	34.2	-49.3	32.91	54	-21.09	-	-	355	289	H
4	* 11.986479	57.04	PK2	38.6	-45.2	50.44	-	-	74	-23.56	260	334	H
	* 11.986977	45.52	MAV1	38.6	-45.2	38.92	54	-15.08	-	-	260	334	H
5	* 4.785664	60.18	PK2	34.2	-49.47	44.91	-	-	74	-29.09	63	284	V
	* 4.78442	48.21	MAV1	34.2	-49.4	33.01	54	-20.99	-	-	63	284	V
6	* 12.025326	56.85	PK2	38.7	-45.7	49.85	-	-	74	-24.15	344	215	V
	* 12.024329	45.42	MAV1	38.7	-45.63	38.49	54	-15.51	-	-	344	215	V

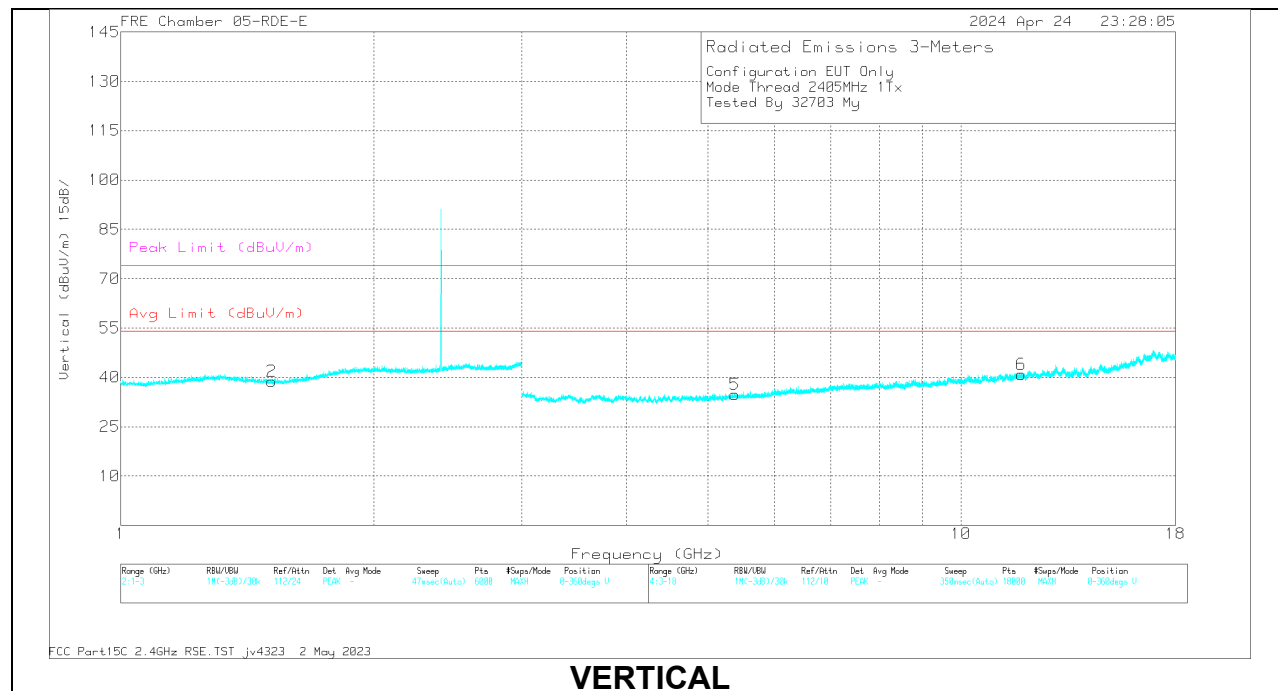
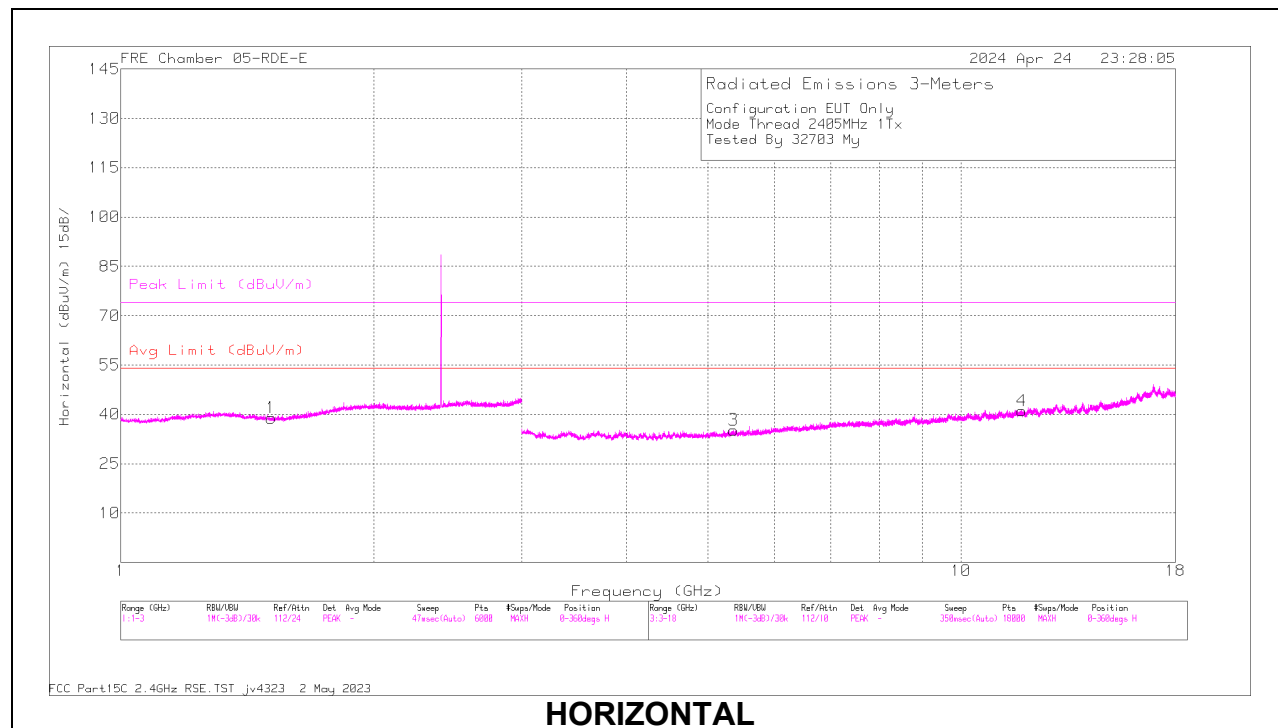
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

10.1.4. ANT4, 802.15.4 LOW POWER, HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



Radiated Emissions

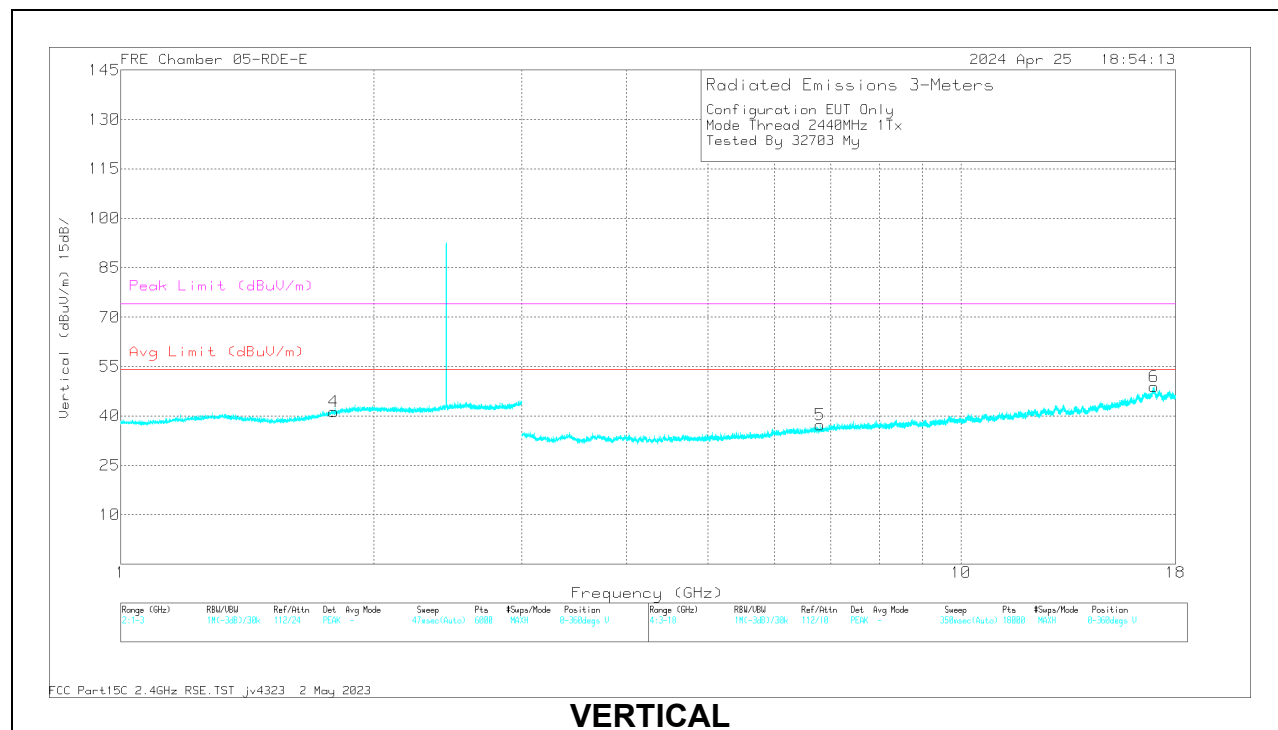
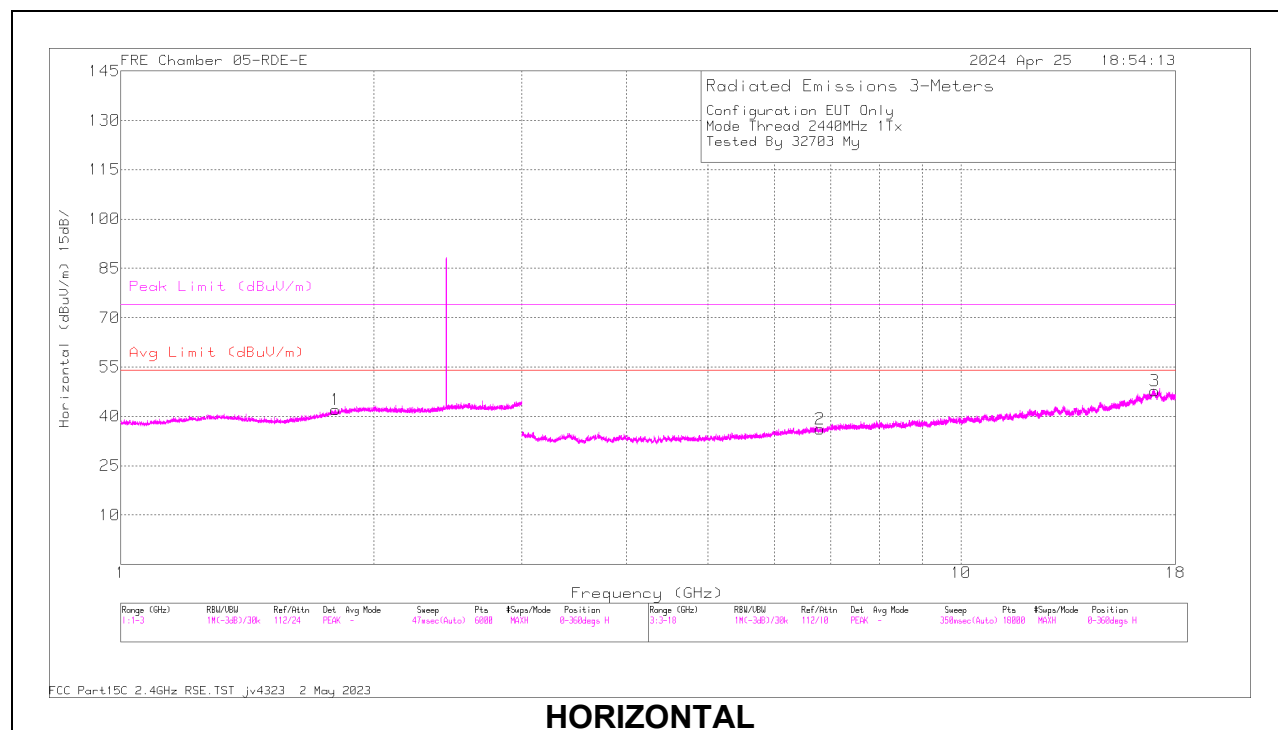
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22740 ACF (dB/m) 3m	DCCF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.512623	58.58	PK2	27.8	0	-37.6	48.78	-	-	74	-25.22	95	102	H
	* 1.511326	46.85	MAv1	27.8	0	-37.53	37.12	54	-16.88	-	-	95	102	H
2	* 1.511856	58.26	PK2	27.8	0	-37.59	48.47	-	-	74	-25.53	95	200	V
	* 1.512296	46.84	MAv1	27.8	0	-37.6	37.04	54	-16.96	-	-	95	200	V
3	* 5.365429	54.94	PK2	34.4	0	-44.61	44.73	-	-	74	-29.27	95	101	H
	* 5.365742	43.05	MAv1	34.4	0	-44.55	32.9	54	-21.1	-	-	95	101	H
4	* 11.810283	54.06	PK2	38.4	0	-41.7	50.76	-	-	74	-23.24	95	199	H
	* 11.811321	42.57	MAv1	38.4	0	-41.7	39.27	54	-14.73	-	-	95	199	H
5	* 5.380856	54.32	PK2	34.4	0	-44.79	43.93	-	-	74	-30.07	95	199	V
	* 5.381264	43.27	MAv1	34.4	0	-44.77	32.9	54	-21.1	-	-	95	199	V
6	* 11.802516	54.24	PK2	38.4	0	-41.8	50.84	-	-	74	-23.16	95	199	V
	* 11.799911	42.7	MAv1	38.4	0	-41.9	39.2	54	-14.8	-	-	95	199	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



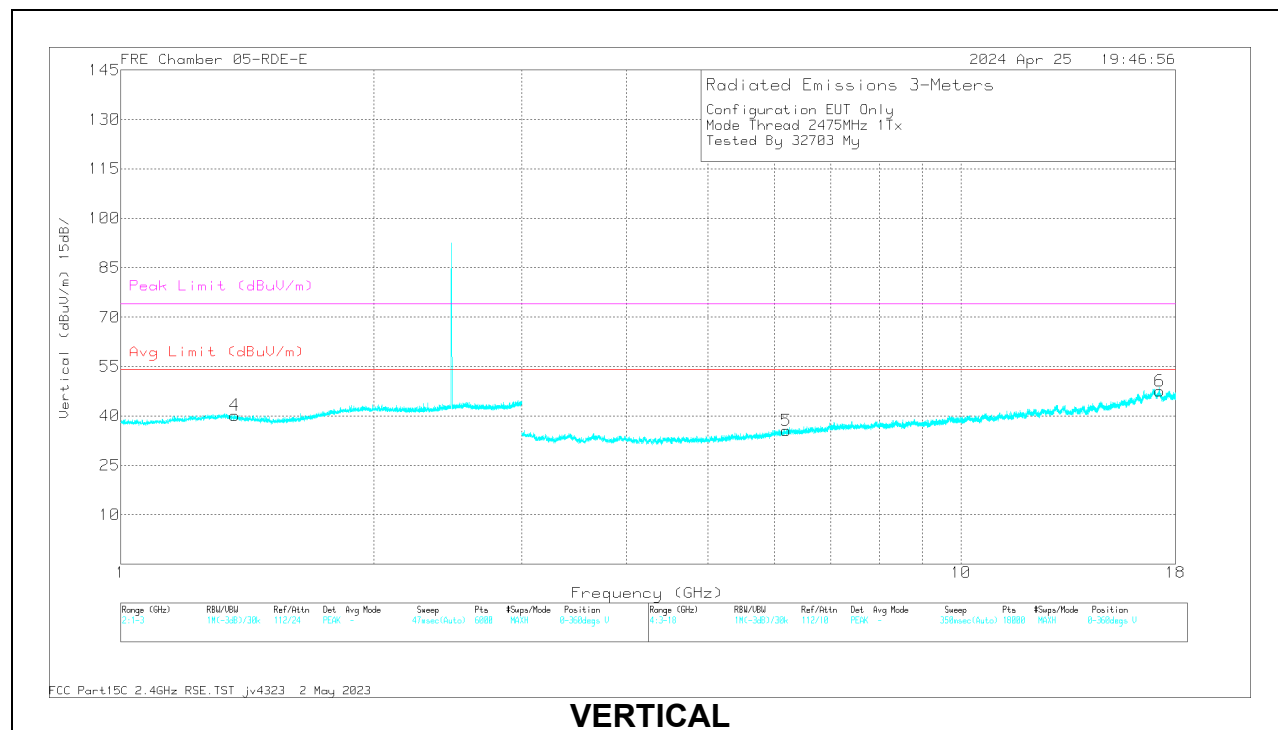
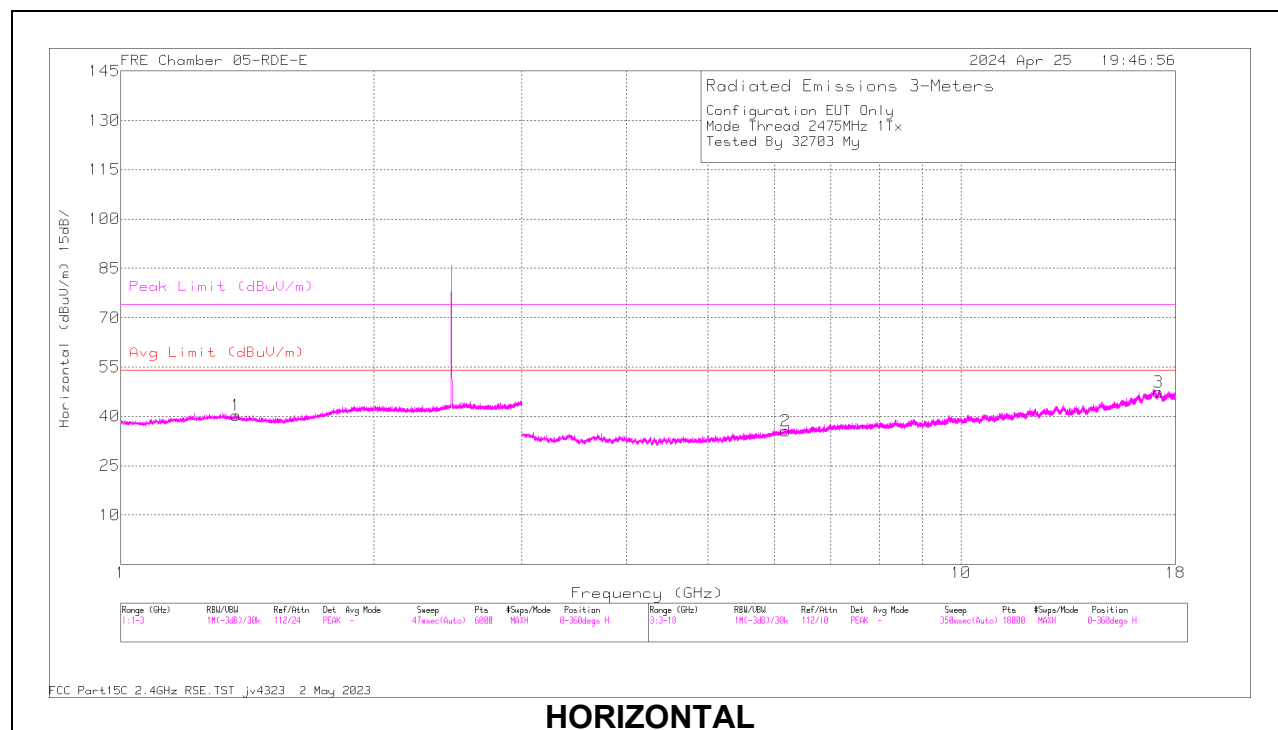
Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22740 ACF (dB/m) 3m	DCCF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	1.792031	59.23	PK2	30.5	0	-37.8	51.93	-	-	74	-22.07	16	115	V
	1.793953	47.24	MAv1	30.5	0	-37.8	39.94	-	-	-	-	16	115	V
1	1.798905	58.54	PK2	30.6	0	-37.71	51.43	-	-	74	-22.57	13	112	H
	1.802391	47.21	MAv1	30.6	0	-37.7	40.11	-	-	-	-	13	112	H
2	6.795157	43.44	MAv1	35.5	0	-43.9	35.04	-	-	-	-	16	199	H
	6.796872	43.17	MAv1	35.5	0	-43.9	34.77	-	-	-	-	10	111	V
5	6.798118	54.73	PK2	35.5	0	-44	46.23	-	-	74	-27.77	16	199	H
	6.799612	54.55	PK2	35.5	0	-43.94	46.11	-	-	74	-27.89	10	111	V
6	16.978213	55.01	PK2	42.3	0	-39.78	57.53	-	-	74	-16.47	13	190	V
	16.978623	43.8	MAv1	42.3	0	-39.74	46.36	-	-	-	-	13	190	V
3	17.011504	43.58	MAv1	42.3	0	-40.15	45.73	-	-	-	-	12	189	H
	17.013373	55.99	PK2	42.3	0	-40.3	57.99	-	-	74	-16.01	12	189	H

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	222740 ACF (dB/m) 3m	DCCF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.370529	58.89	PK2	28.8	0	-37.6	50.09	-	-	74	-23.91	10	110	H
	* 1.370825	47.19	MAv1	28.8	0	-37.6	38.39	54	-15.61	-	-	10	110	H
4	* 1.366112	58.89	PK2	28.8	0	-37.6	50.09	-	-	74	-23.91	12	192	V
	* 1.367892	47.07	MAv1	28.8	0	-37.6	38.27	54	-15.73	-	-	12	192	V
2	6.18582	55.21	PK2	35.2	0	-43.8	46.61	-	-	74	-27.39	13	192	H
	6.186704	42.72	MAv1	35.2	0	-43.87	34.05	-	-	-	-	13	192	H
5	6.189477	54.25	PK2	35.2	0	-43.85	45.6	-	-	74	-28.4	13	192	V
	6.190665	42.69	MAv1	35.2	0	-43.8	34.09	-	-	-	-	13	192	V
3	17.237205	55.02	PK2	41.7	0	-40.02	56.7	-	-	74	-17.3	16	193	V
	17.237221	43.62	MAv1	41.7	0	-40.02	45.3	-	-	-	-	16	193	V

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

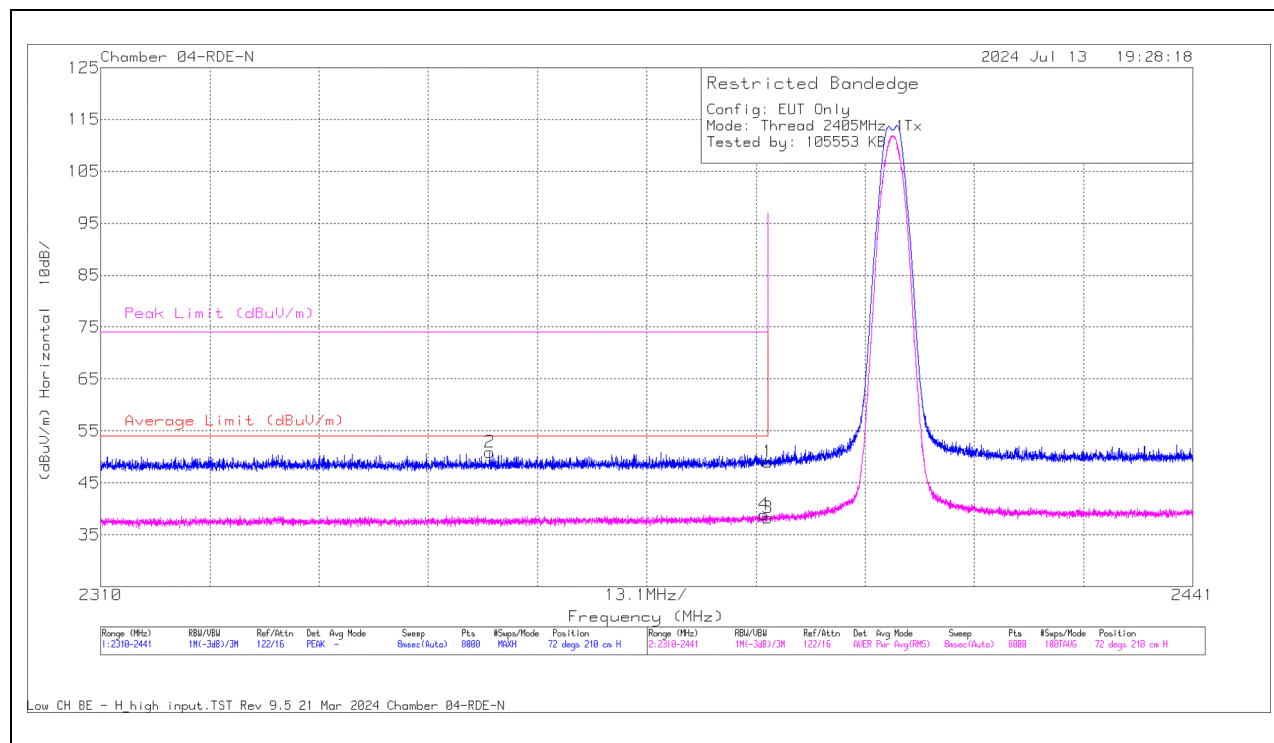
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.1.5. ANT3, 802.15.4 HIGH POWER BANDEGE

Low Channel

HORIZONTAL RESULT



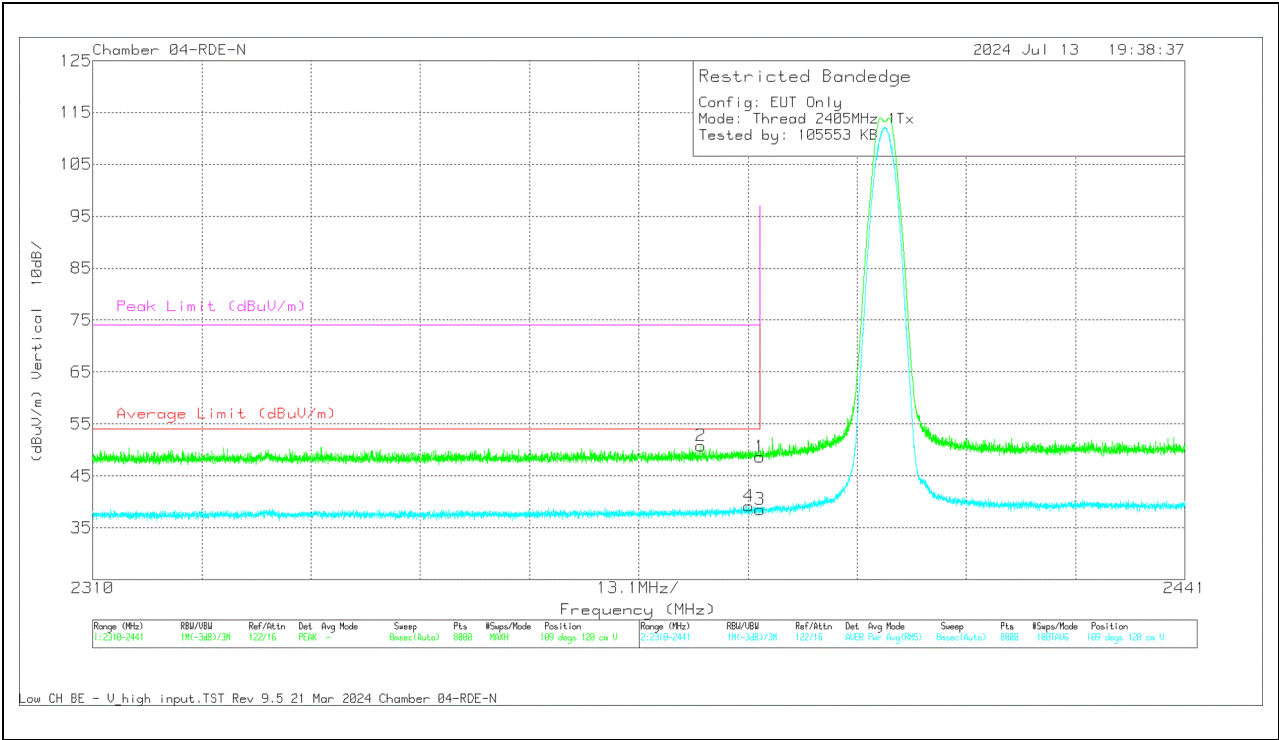
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2356.691	46.42	Pk	31.6	-27.08	50.94	-	-	74	-23.06	72	210	H
4	2389.576	34.28	RMS	31.8	-27.17	38.91	54	-15.09	-	-	72	210	H
1	2390	44.36	Pk	31.8	-27.17	48.99	-	-	74	-25.01	72	210	H
3	2390	33.64	RMS	31.8	-27.17	38.27	54	-15.73	-	-	72	210	H

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



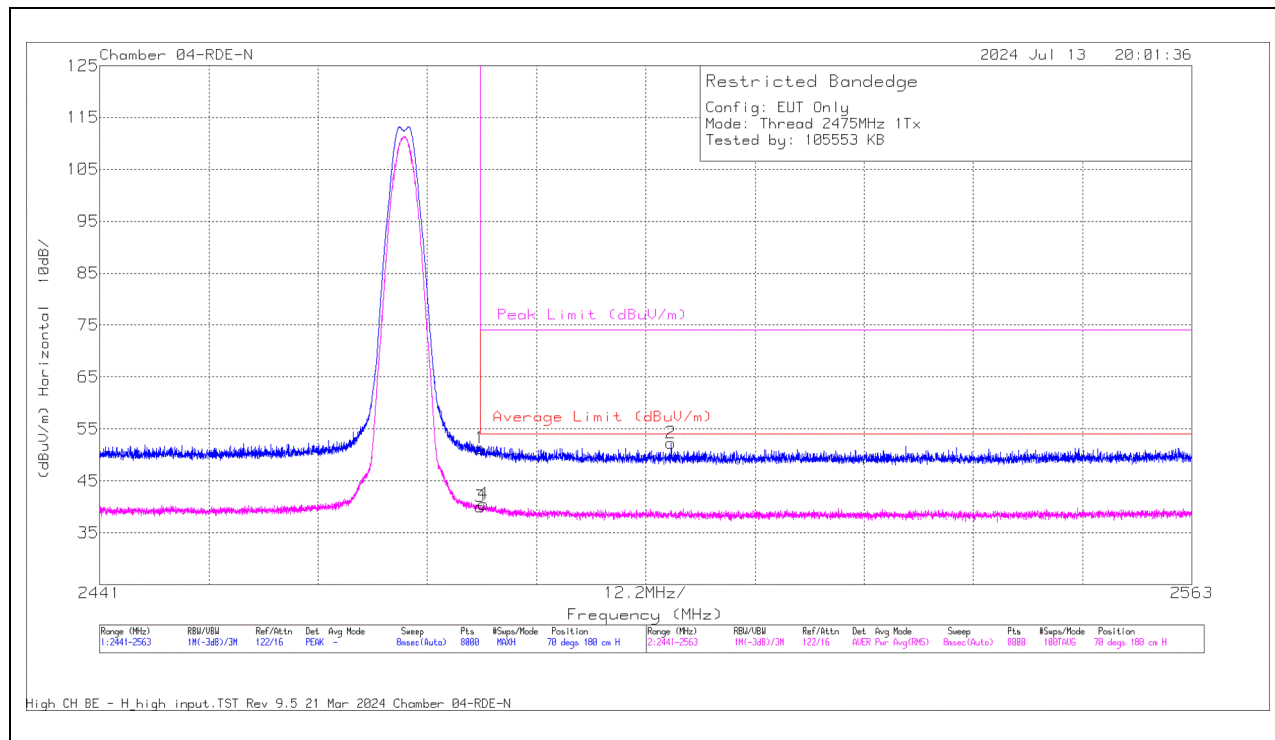
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2382.976	46.02	Pk	31.8	-27.06	50.76	-	-	74	-23.24	109	120	V
4	2388.724	34.55	RMS	31.8	-27.16	39.19	54	-14.81	-	-	109	120	V
1	2390	44	Pk	31.8	-27.17	48.63	-	-	74	-25.37	109	120	V
3	2390	33.9	RMS	31.8	-27.17	38.53	54	-15.47	-	-	109	120	V

Pk - Peak detector
RMS - RMS detection

High CHANNEL

HORIZONTAL RESULT



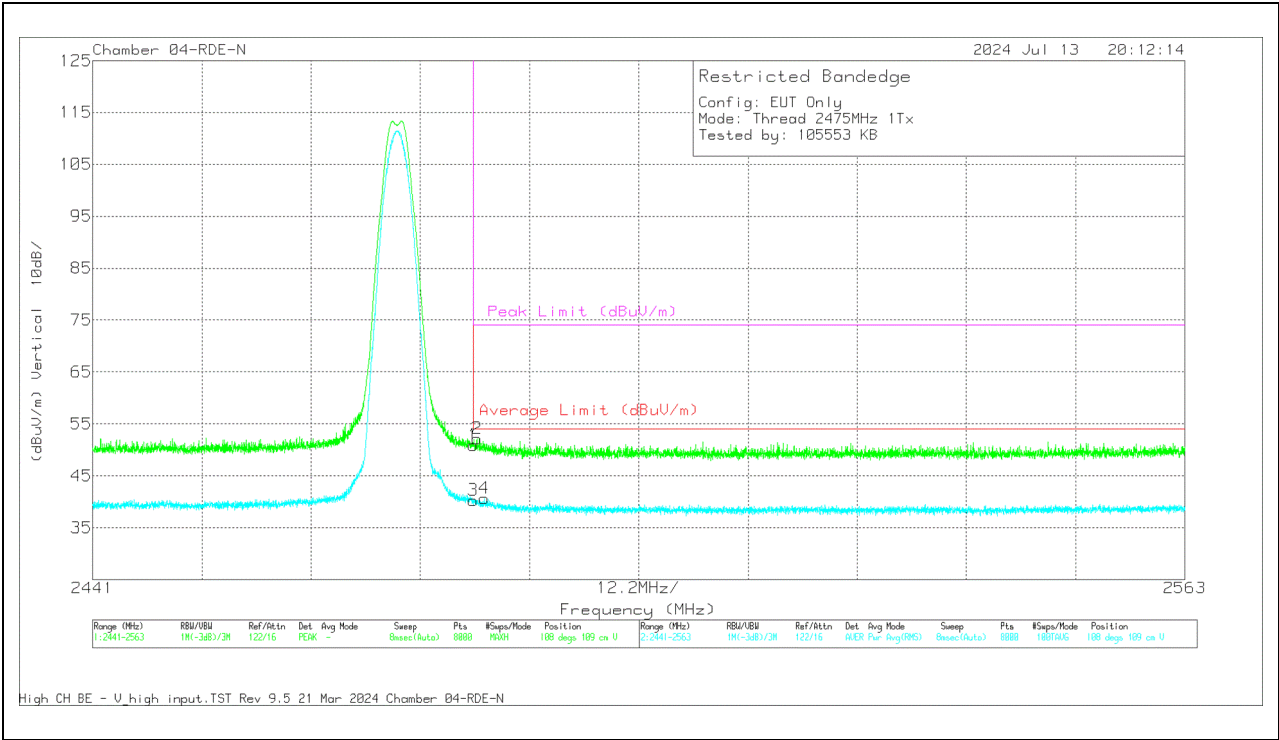
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	46.07	Pk	32.2	-27	51.27	-	-	74	-22.73	70	180	H
3	2483.5	34.82	RMS	32.2	-27	40.02	54	-13.98	-	-	70	180	H
4	2483.904	35.33	RMS	32.2	-26.99	40.54	54	-13.46	-	-	70	180	H
2	2504.845	46.93	Pk	32.2	-26.87	52.26	-	-	74	-21.74	70	180	H

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Trace Markers

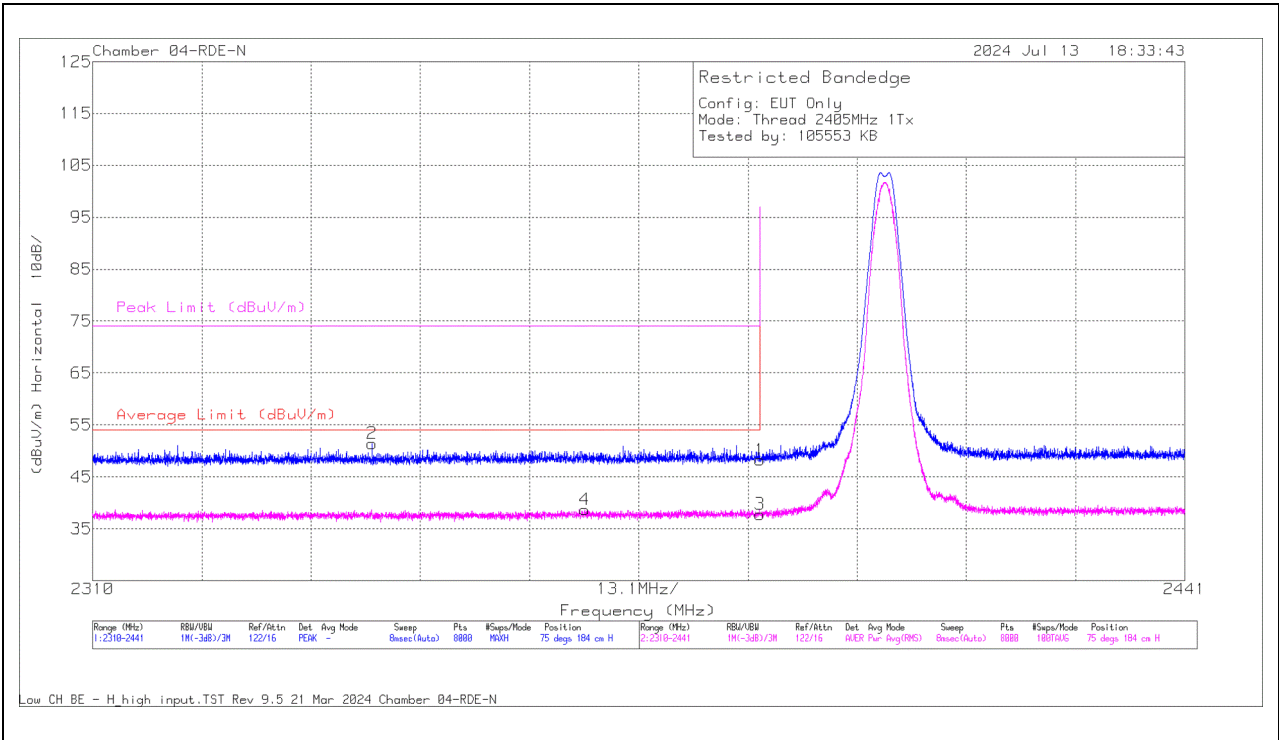
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	45.75	Pk	32.2	-27	50.95	-	-	74	-23.05	108	109	V
3	2483.5	35.05	RMS	32.2	-27	40.25	54	-13.75	-	-	108	109	V
2	2483.965	46.95	Pk	32.2	-26.99	52.16	-	-	74	-21.84	108	109	V
4	2484.758	35.45	RMS	32.2	-26.97	40.68	54	-13.32	-	-	108	109	V

Pk - Peak detector
RMS - RMS detection

10.1.6. ANT3, 802.15.4 LOW POWER BANDEDGE

LOW CHANNEL

HORIZONTAL RESULT

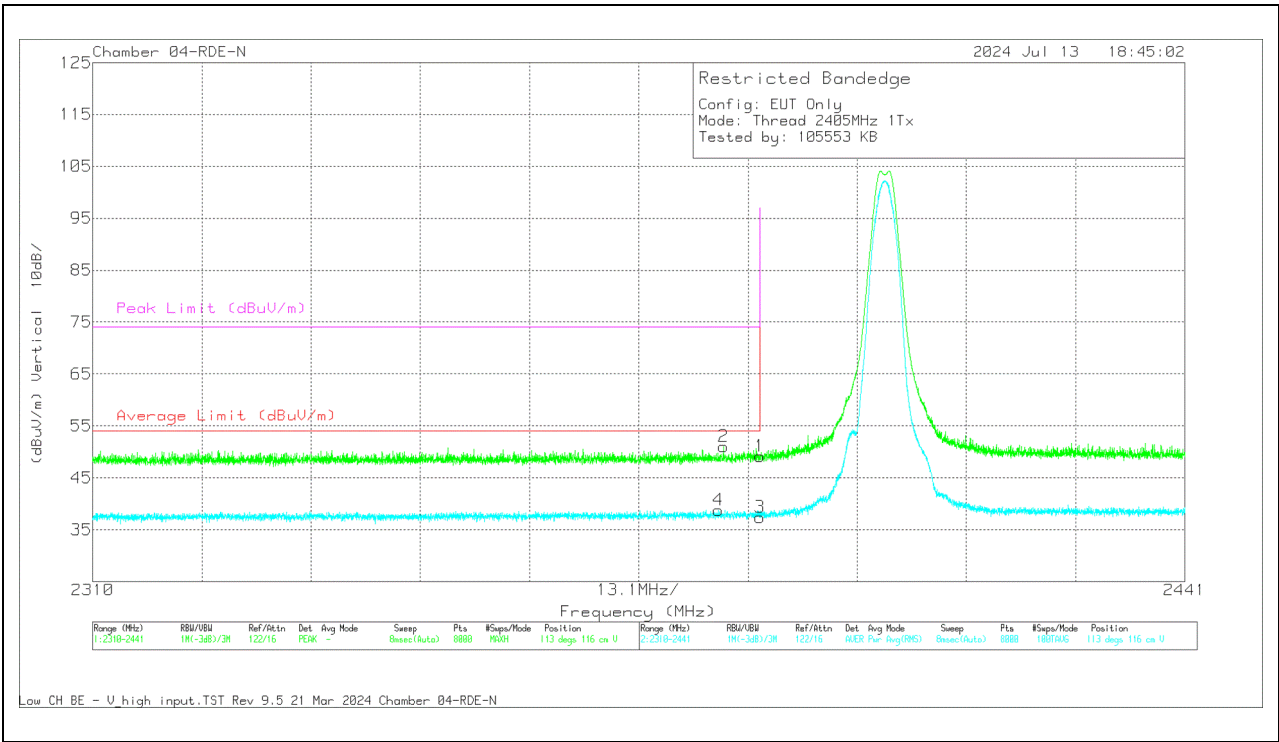


Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2343.524	46.97	Pk	31.6	-27.2	51.37	-	-	74	-22.63	75	184	H
4	2369.055	34	RMS	31.7	-27.01	38.69	54	-15.31	-	-	75	184	H
1	2390	43.59	Pk	31.8	-27.17	48.22	-	-	74	-25.78	75	184	H
3	2390	33.18	RMS	31.8	-27.17	37.81	54	-16.19	-	-	75	184	H

Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT



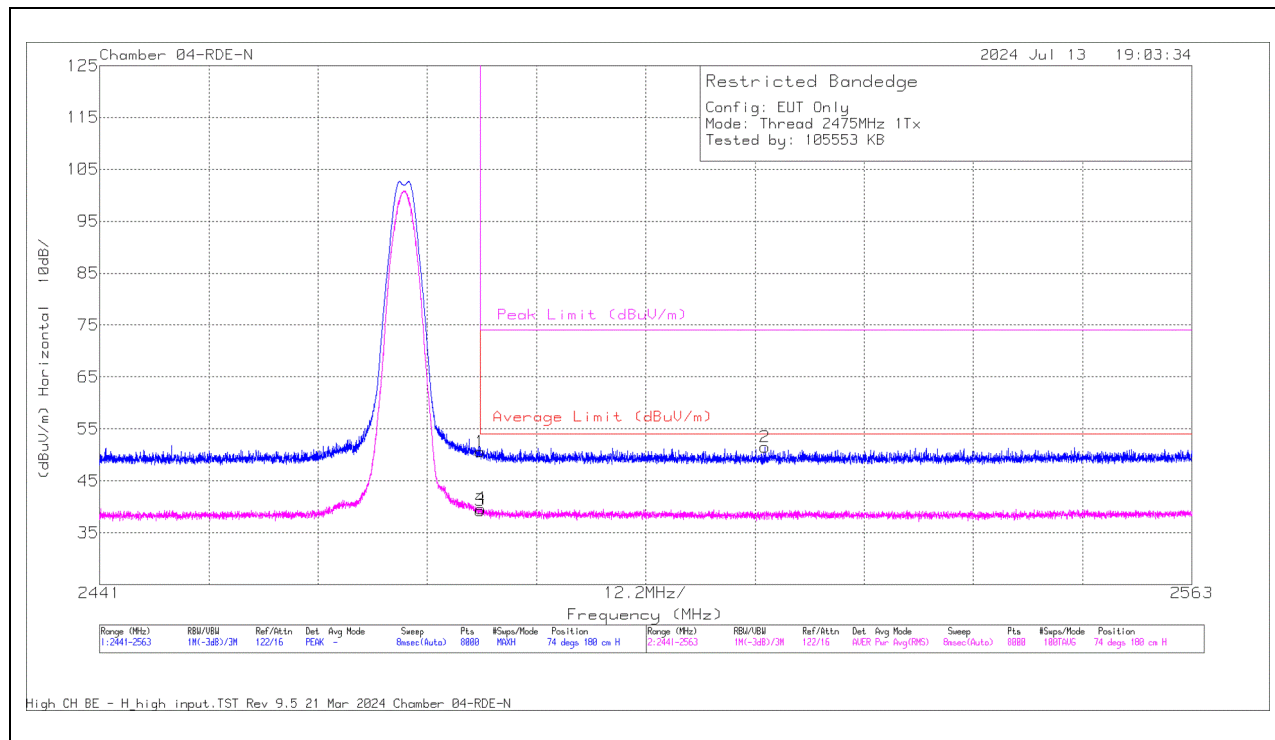
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	2385.089	34.05	RMS	31.8	-27.08	38.77	54	-15.23	-	-	113	116	V
2	2385.662	46.36	Pk	31.8	-27.09	51.07	-	-	74	-22.93	113	116	V
1	2390	44.54	Pk	31.8	-27.17	49.17	-	-	74	-24.83	113	116	V
3	2390	32.75	RMS	31.8	-27.17	37.38	54	-16.62	-	-	113	116	V

Pk - Peak detector
RMS - RMS detection

HIGH CHANNEL

HORIZONTAL RESULT



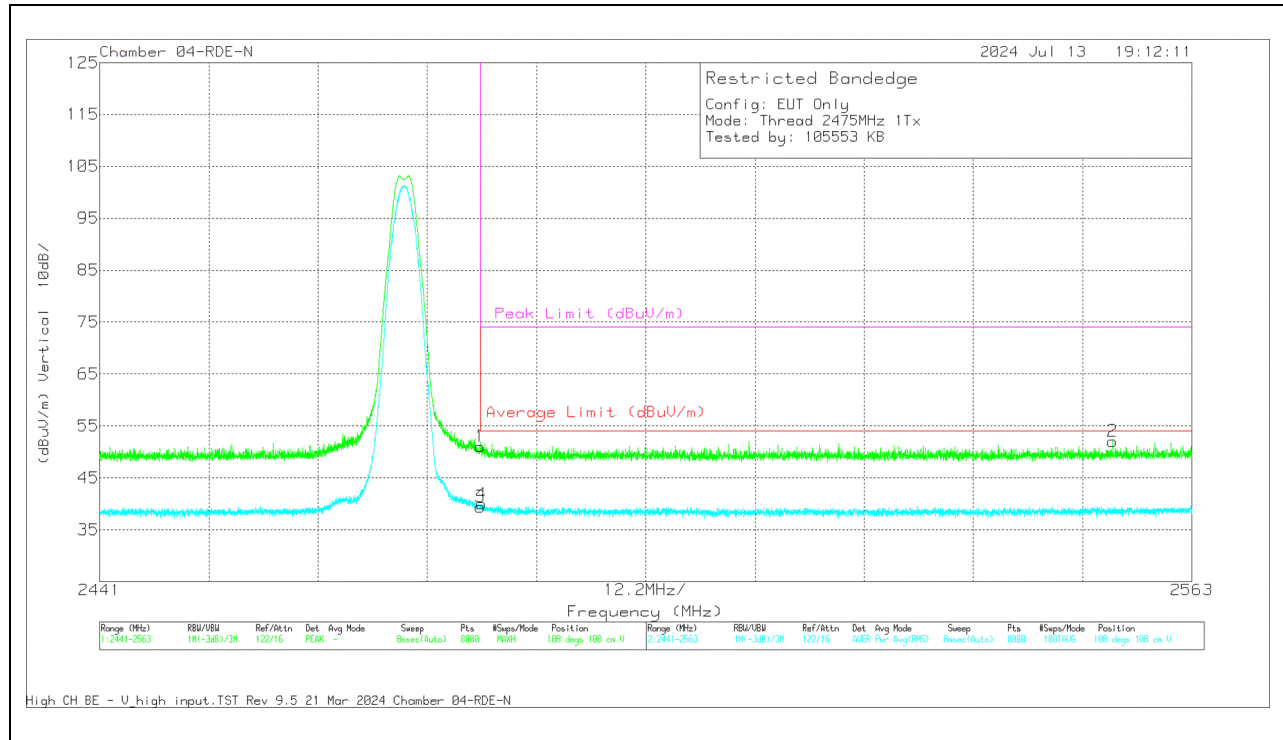
Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	45.39	Pk	32.2	-27	50.59	-	-	74	-23.41	74	180	H
3	2483.5	34.1	RMS	32.2	-27	39.3	54	-14.7	-	-	74	180	H
4	2483.599	34.39	RMS	32.2	-27	39.59	54	-14.41	-	-	74	180	H
2	2515.354	46.19	Pk	32.2	-26.92	51.47	-	-	74	-22.53	74	180	H

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT



Trace Markers

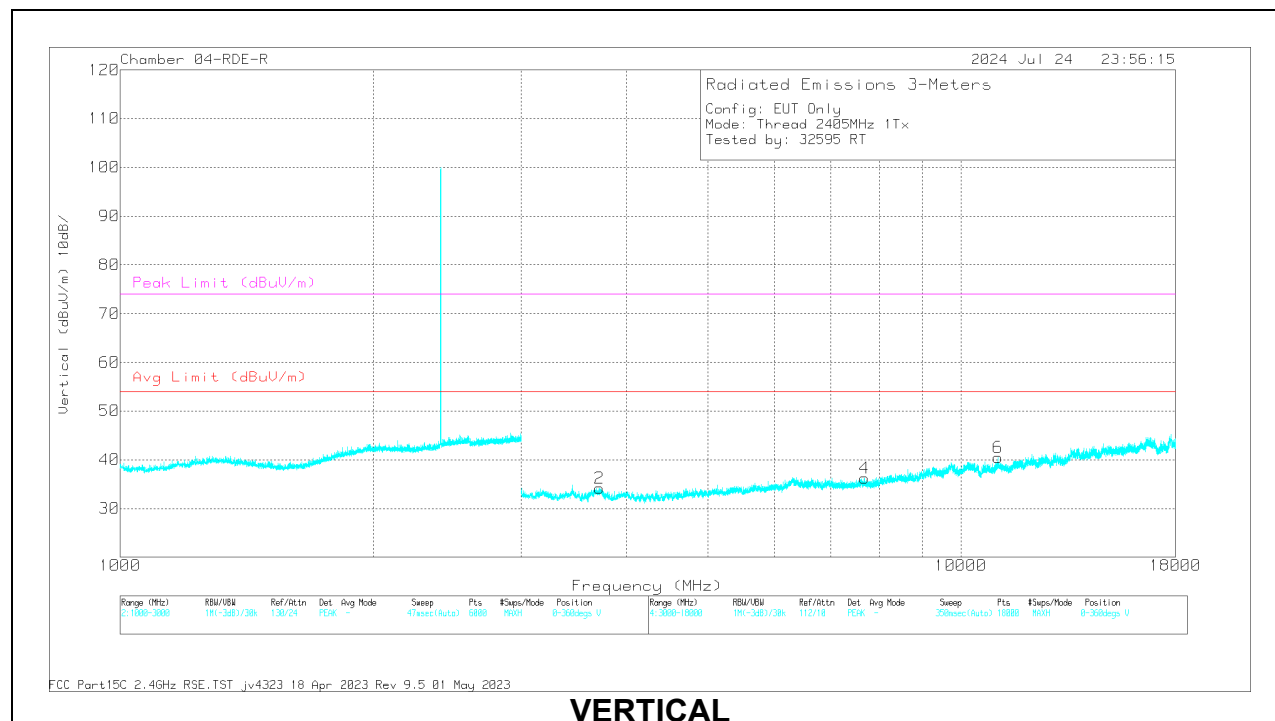
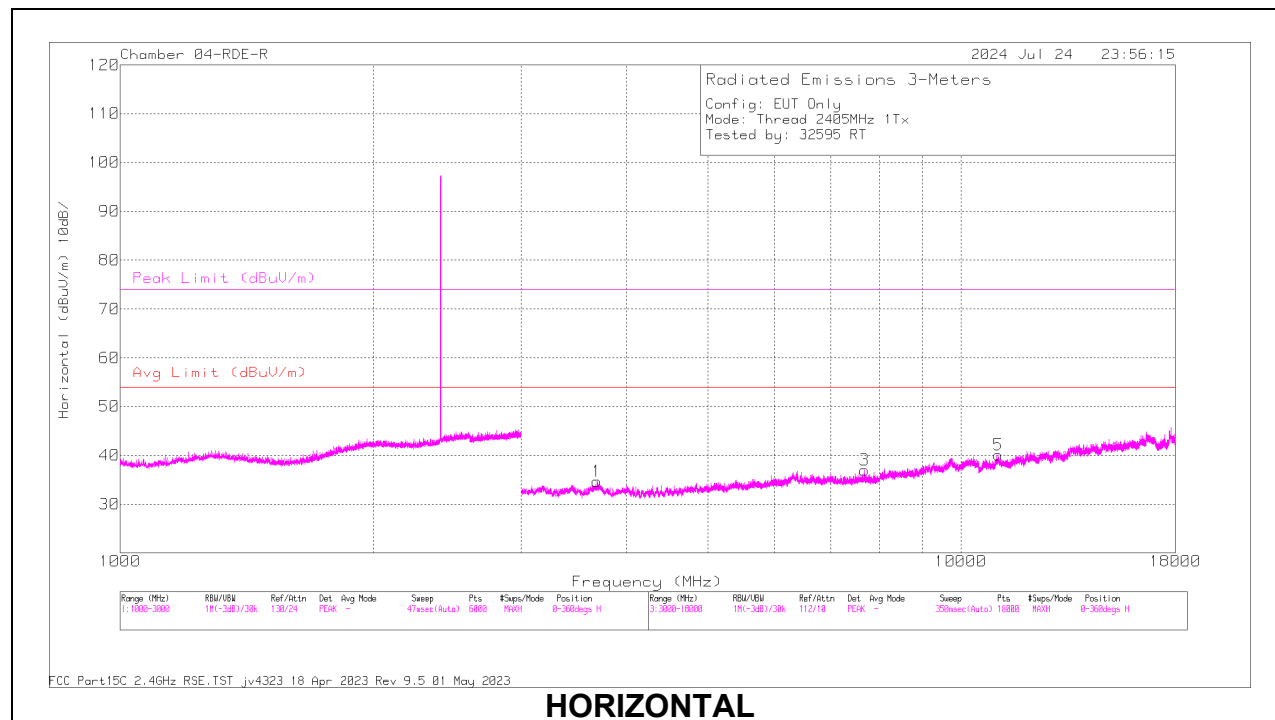
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	223083 ACF (dB/m) 3m	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	45.82	Pk	32.2	-27	51.02	-	-	74	-22.98	108	108	V
3	2483.5	34.23	RMS	32.2	-27	39.43	54	-14.57	-	-	108	108	V
4	2483.645	34.75	RMS	32.2	-27	39.95	54	-14.05	-	-	108	108	V
2	2554.139	46.71	Pk	32.2	-26.85	52.06	-	-	74	-21.94	108	108	V

Pk - Peak detector

RMS - RMS detection

10.1.7. ANT3, 802.15.4 HIGH POWER, HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



Radiated Emissions

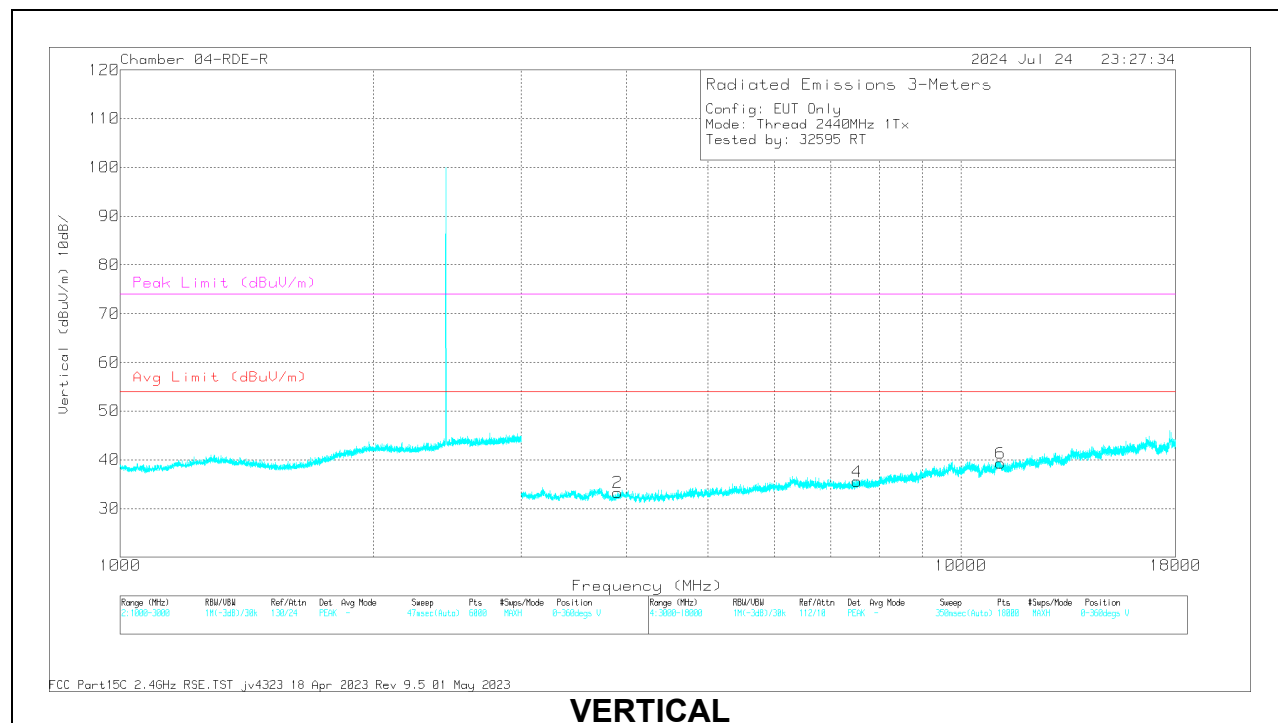
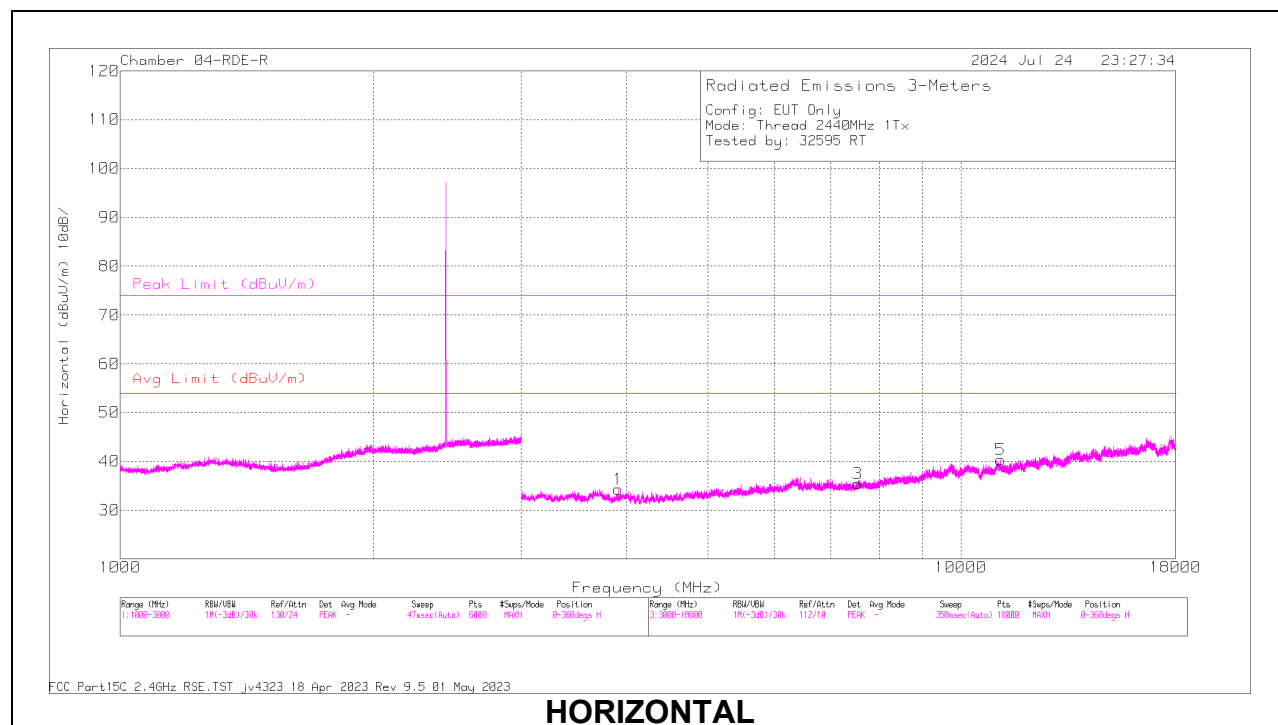
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3695.142	58.07	PK2	33	-47.35	43.72	-	-	74	-30.28	328	221	H
	* 3693.659	46.48	MAv1	33	-47.31	32.17	54	-21.83	-	-	328	221	H
3	* 7677.922	54.5	PK2	35.8	-44.37	45.93	-	-	74	-28.07	171	113	H
	* 7674.405	42.82	MAv1	35.8	-44.41	34.21	54	-19.79	-	-	171	113	H
5	* 11080.571	53.82	PK2	37.8	-42.77	48.85	-	-	74	-25.15	239	246	H
	* 11081.014	42.28	MAv1	37.8	-42.72	37.36	54	-16.64	-	-	239	246	H
2	* 3712.209	57.93	PK2	33	-47.01	43.92	-	-	74	-30.08	229	216	V
	* 3712.26	46.23	MAv1	33	-47	32.23	54	-21.77	-	-	229	216	V
4	* 7678.605	54.46	PK2	35.8	-44.34	45.92	-	-	74	-28.08	263	325	V
	* 7677.121	42.71	MAv1	35.8	-44.39	34.12	54	-19.88	-	-	263	325	V
6	* 11074.214	53.8	PK2	37.8	-42.77	48.83	-	-	74	-25.17	283	244	V
	* 11076.507	42.03	MAv1	37.8	-42.76	37.07	54	-16.93	-	-	283	244	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



Radiated Emissions

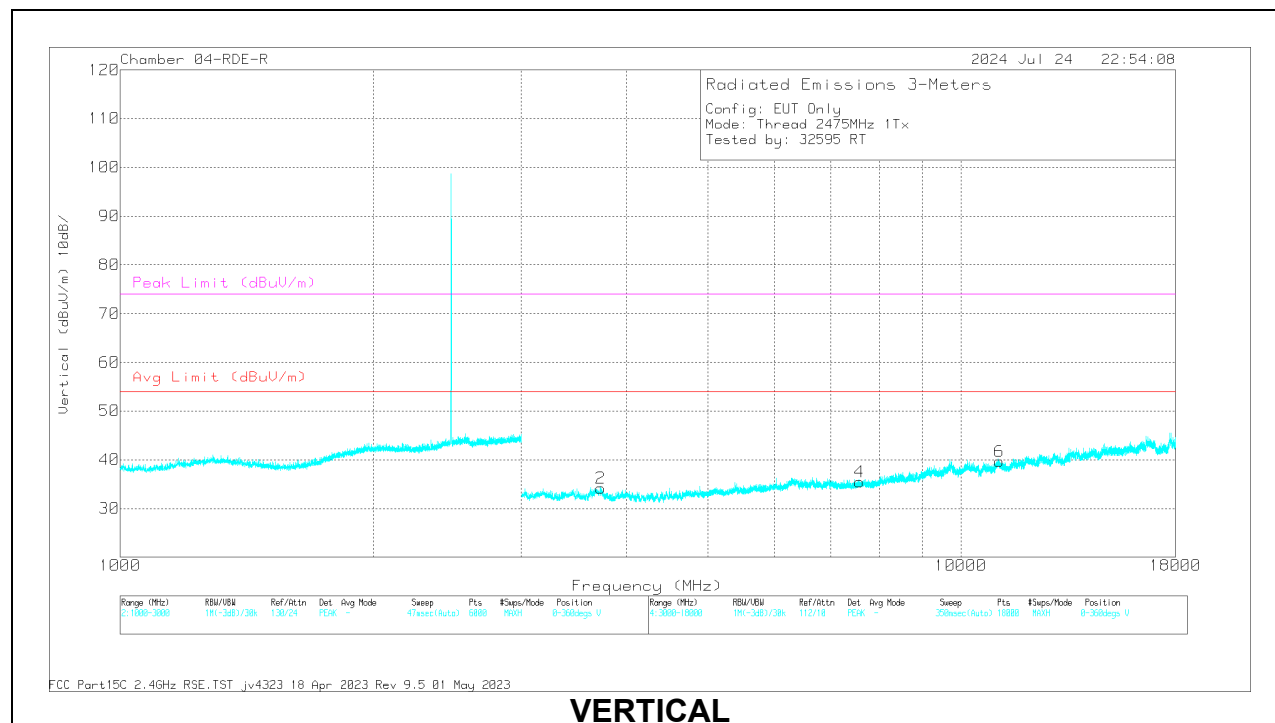
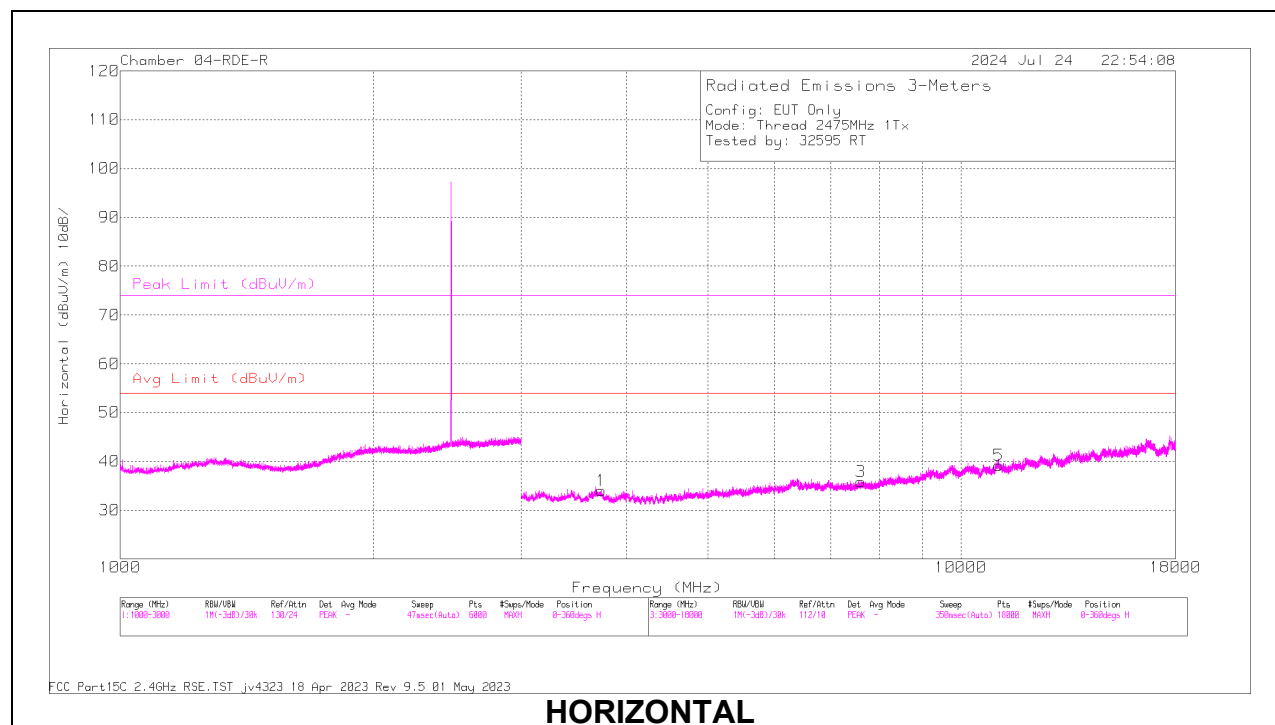
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3913.172	58.43	PK2	33.3	-47.8	43.93	-	-	74	-30.07	272	354	H
	* 3915.002	46.07	MAv1	33.3	-47.86	31.51	54	-22.49	-	-	272	354	H
3	* 7538.343	54.58	PK2	35.7	-44.98	45.3	-	-	74	-28.7	48	191	H
	* 7539.525	43.01	MAv1	35.7	-45.01	33.7	54	-20.3	-	-	48	191	H
5	* 11145.237	53.84	PK2	37.9	-42.84	48.9	-	-	74	-25.1	170	115	H
	* 11146.373	42.04	MAv1	37.9	-42.89	37.05	54	-16.95	-	-	170	115	H
2	* 3907.44	58.07	PK2	33.3	-47.69	43.68	-	-	74	-30.32	84	175	V
	* 3910.298	45.94	MAv1	33.3	-47.71	31.53	54	-22.47	-	-	84	175	V
4	* 7530.012	54.3	PK2	35.7	-44.98	45.02	-	-	74	-28.98	209	169	V
	* 7527.323	43.27	MAv1	35.7	-45.04	33.93	54	-20.07	-	-	209	169	V
6	* 11139.595	53.37	PK2	37.9	-42.86	48.41	-	-	74	-25.59	132	304	V
	* 11141.681	42.12	MAv1	37.9	-42.83	37.19	54	-16.81	-	-	132	304	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	41112 3m ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3734.5	58.16	PK2	33.1	-46.96	44.3	-	-	74	-29.7	73	148	H
	* 3731.486	46.32	MAv1	33.1	-46.98	32.44	54	-21.56	-	-	73	148	H
3	* 7602.443	54.43	PK2	35.7	-44.67	45.46	-	-	74	-28.54	214	285	H
	* 7599.561	43.27	MAv1	35.7	-44.69	34.28	54	-19.72	-	-	214	285	H
5	* 11098.469	54.01	PK2	37.8	-43.17	48.64	-	-	74	-25.36	14	247	H
	* 11100.509	42.62	MAv1	37.8	-43.26	37.16	54	-16.84	-	-	14	247	H
2	* 3728.926	58.16	PK2	33.1	-46.92	44.34	-	-	74	-29.66	183	126	V
	* 3725.921	46.39	MAv1	33	-46.93	32.46	54	-21.54	-	-	183	126	V
4	* 7582.698	55.03	PK2	35.7	-44.74	45.99	-	-	74	-28.01	87	122	V
	* 7580.352	43.04	MAv1	35.7	-44.8	33.94	54	-20.06	-	-	87	122	V
6	* 11104.5	54.5	PK2	37.8	-43.35	48.95	-	-	74	-25.05	277	273	V
	* 11104.058	42.31	MAv1	37.8	-43.36	36.75	54	-17.25	-	-	277	273	V

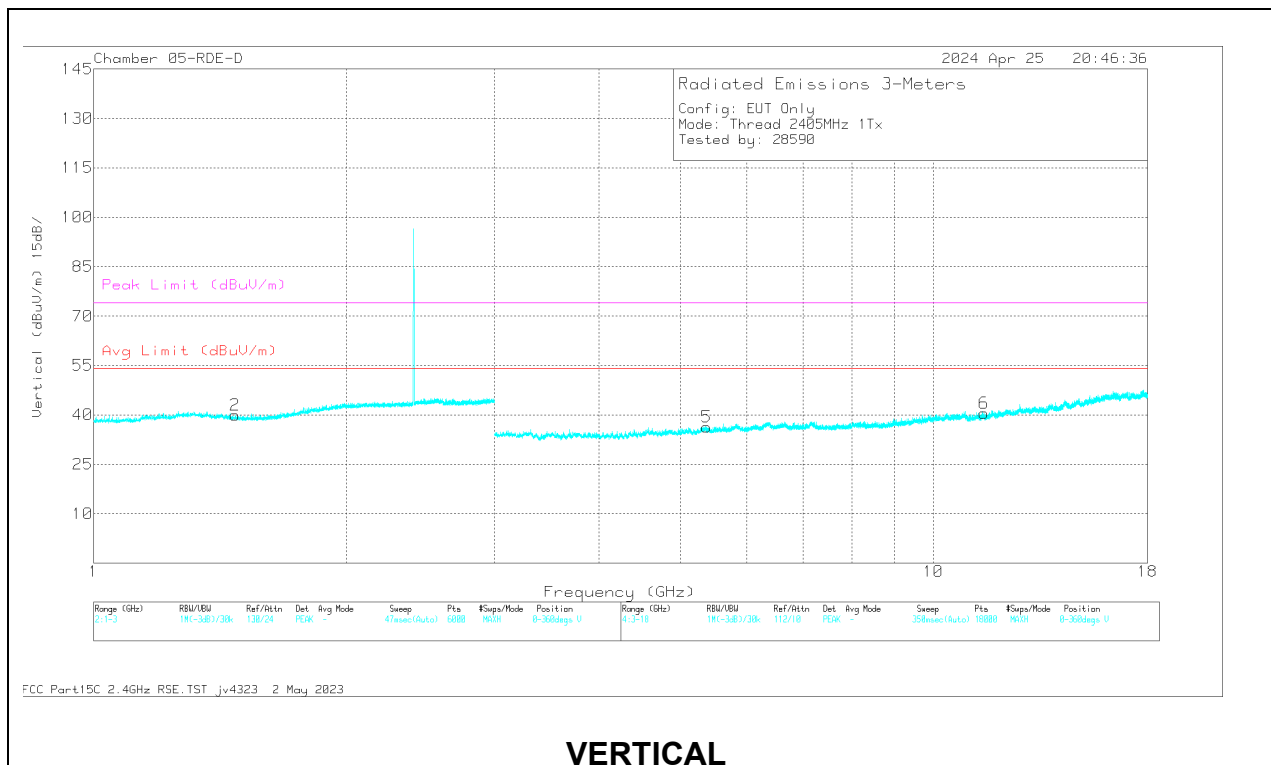
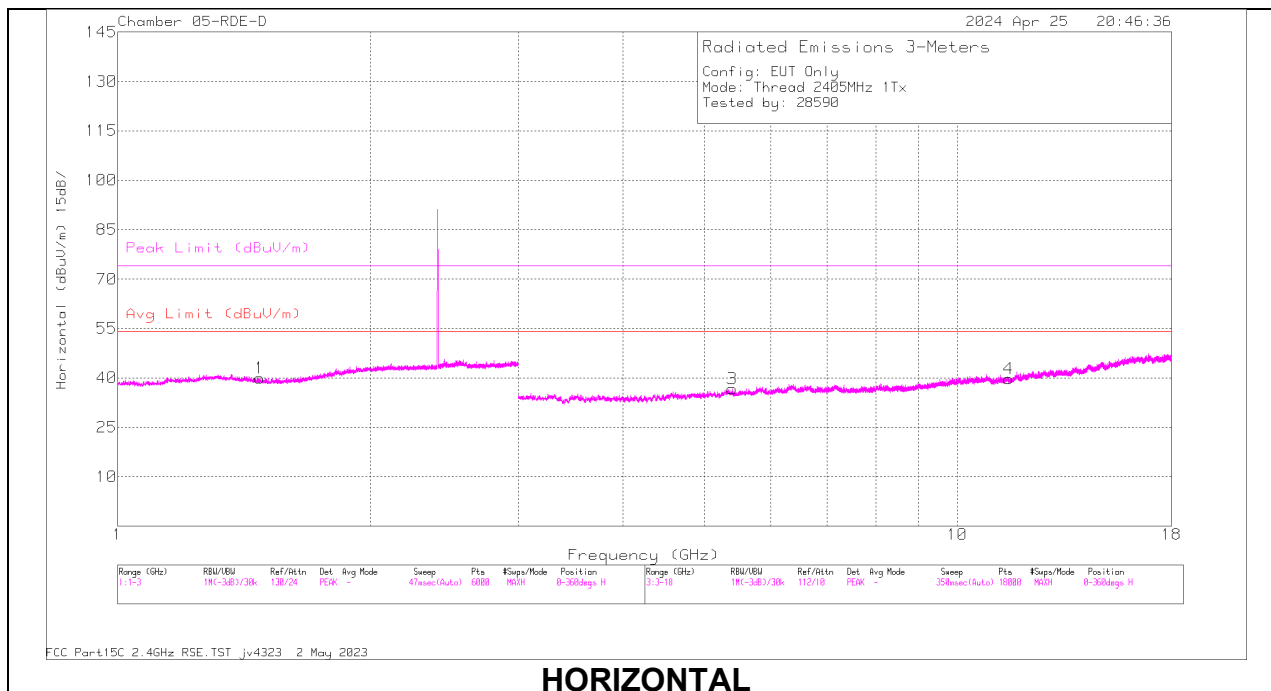
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.1.8. ANT3, 802.15.4 LOW POWER, HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



Radiated Emissions

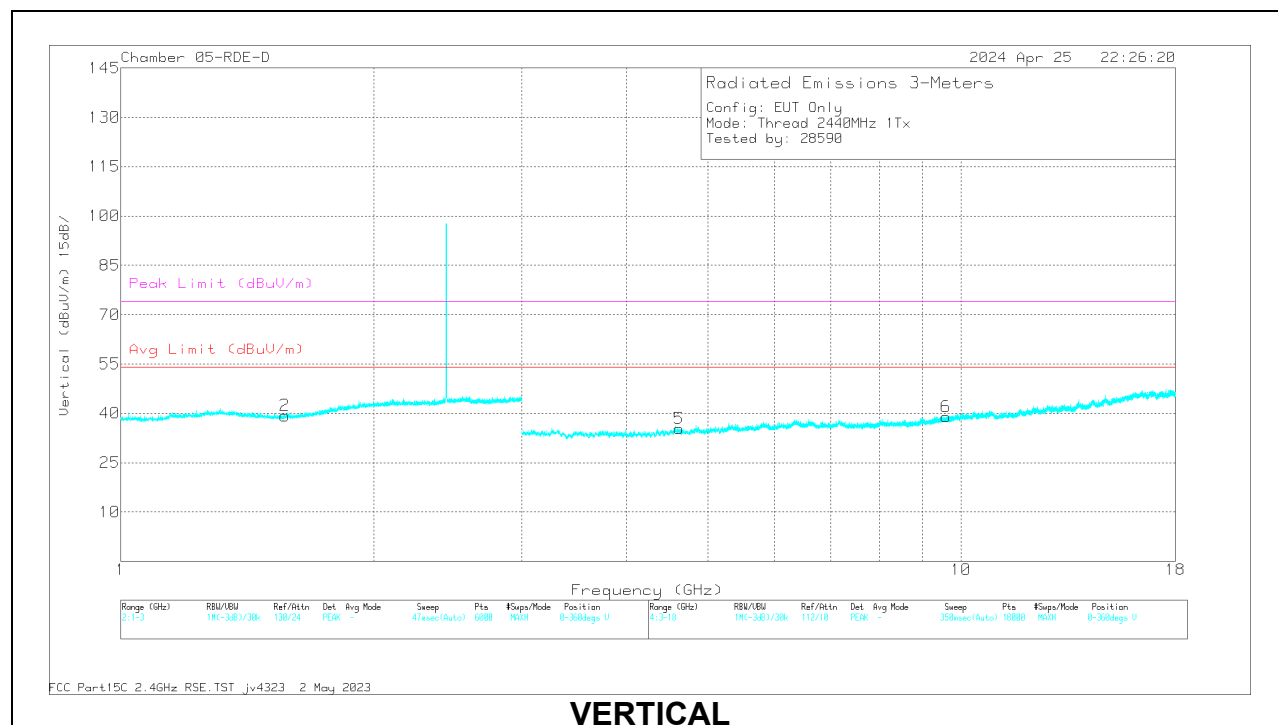
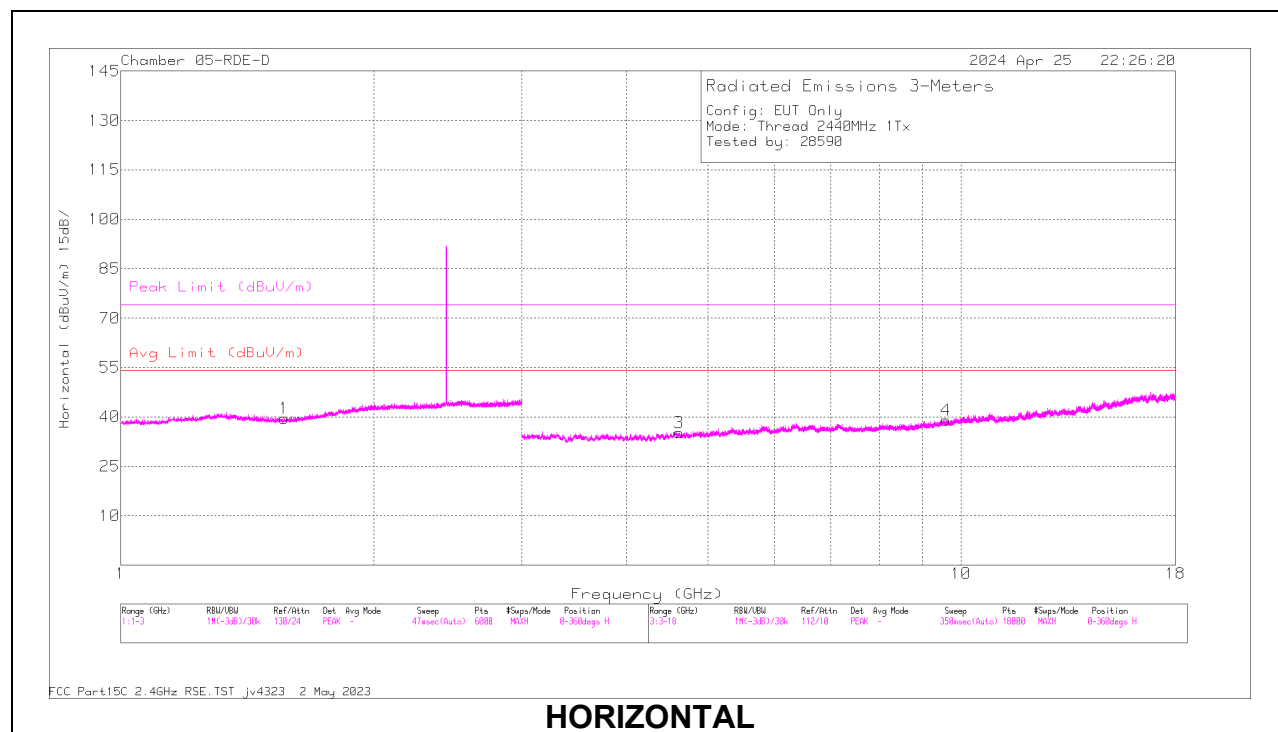
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	22740 ACF (dB/m) 3m	DCCF (dB)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.370529	58.89	PK2	28.8	0	-37.6	50.09	-	-	74	-23.91	10	110	H
	* 1.370825	47.19	MAv1	28.8	0	-37.6	38.39	54	-15.61	-	-	10	110	H
4	* 1.366112	58.89	PK2	28.8	0	-37.6	50.09	-	-	74	-23.91	12	192	V
	* 1.367892	47.07	MAv1	28.8	0	-37.6	38.27	54	-15.73	-	-	12	192	V
2	6.18582	55.21	PK2	35.2	0	-43.8	46.61	-	-	74	-27.39	13	192	H
	6.188704	42.72	MAv1	35.2	0	-43.87	34.05	-	-	-	-	13	192	H
5	6.189477	54.25	PK2	35.2	0	-43.85	45.6	-	-	74	-28.4	13	192	V
	6.190665	42.69	MAv1	35.2	0	-43.8	34.09	-	-	-	-	13	192	V
3	17.235649	44.1	MAv1	41.7	0	-40	45.8	-	-	-	-	6	346	V
	17.237205	55.02	PK2	41.7	0	-40.02	56.7	-	-	74	-17.3	16	193	V
6	17.237221	43.62	MAv1	41.7	0	-40.02	45.3	-	-	-	-	16	193	V
	17.237987	55.58	PK2	41.7	0	-40.1	57.18	-	-	74	-16.82	6	346	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

MID CHANNEL RESULTS



Radiated Emissions

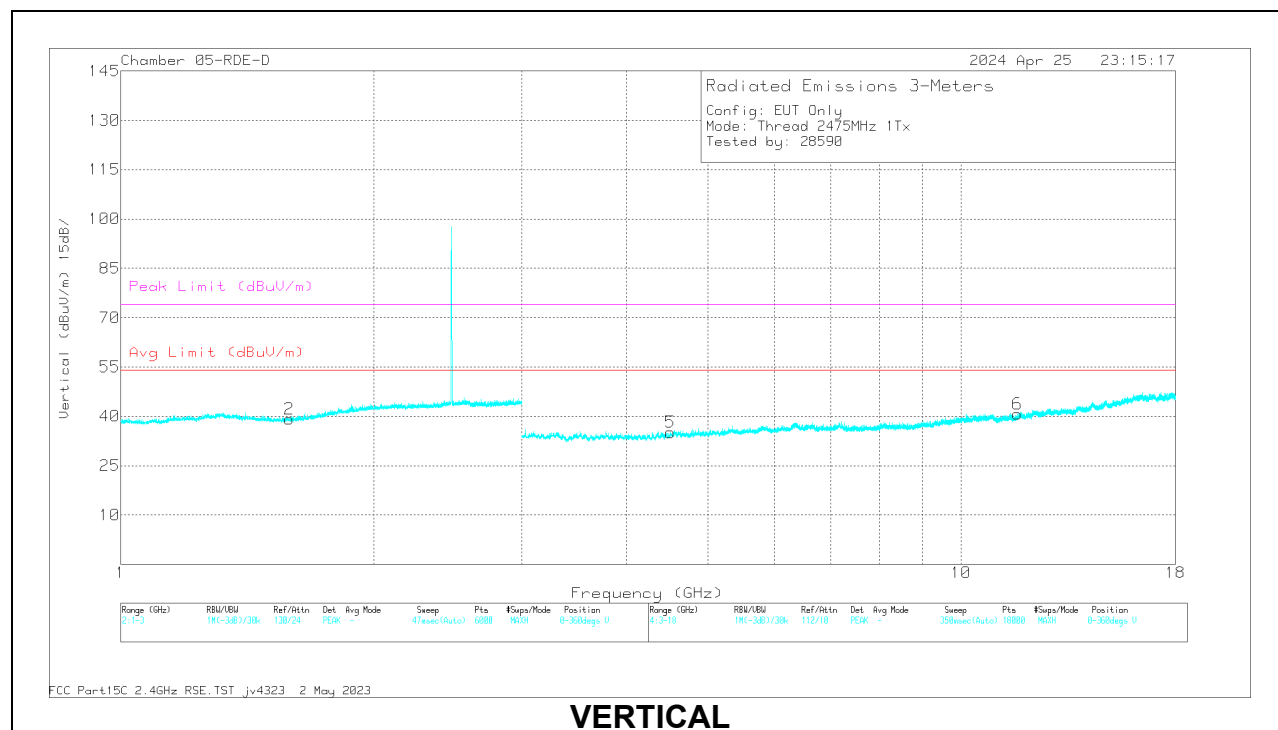
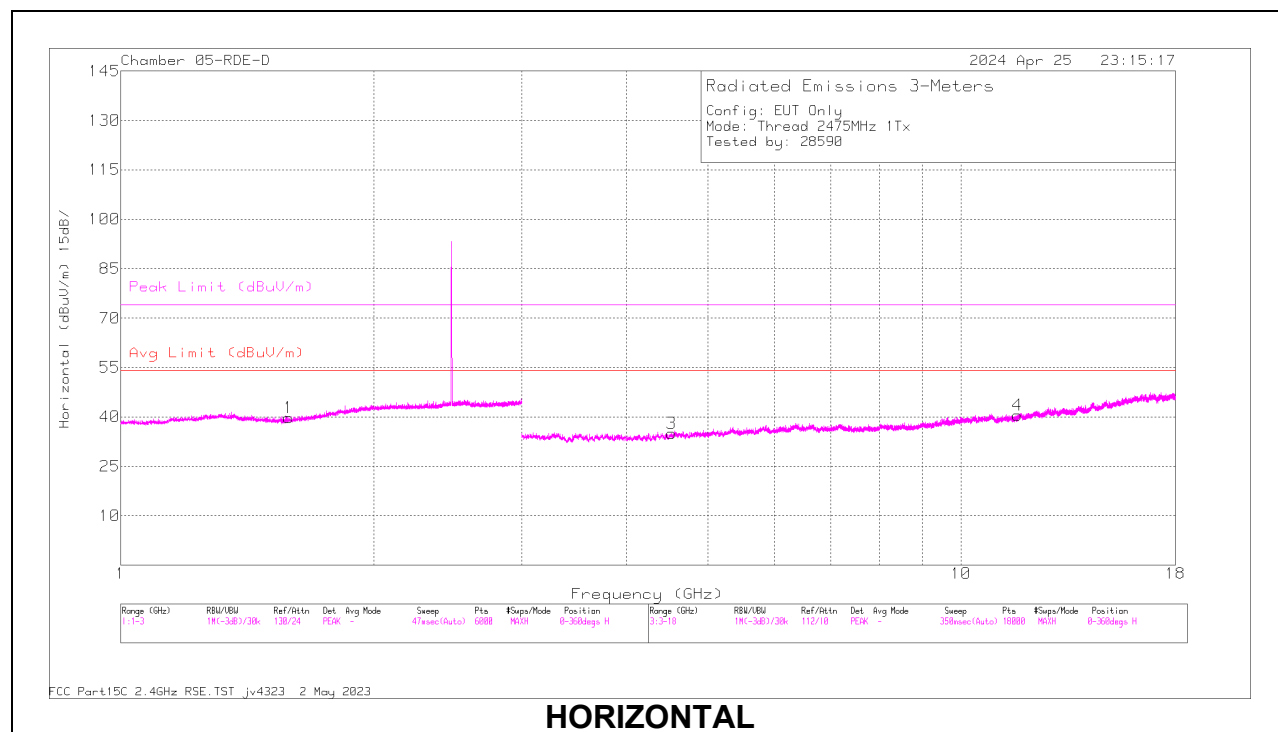
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	230299 ACF (dB/m) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.566921	62.01	PK2	28	-40.69	49.32	-	-	74	-24.68	360	185	H
	* 1.564815	50.29	MAv1	28	-40.62	37.67	54	-16.33	-	-	360	185	H
2	* 1.566974	62.17	PK2	28	-40.7	49.47	-	-	74	-24.53	16	101	V
	* 1.565942	50.41	MAv1	28	-40.6	37.81	54	-16.19	-	-	16	101	V
3	* 4.620824	60.47	PK2	34.2	-48.3	46.37	-	-	74	-27.63	27	110	H
	* 4.62088	47.99	MAv1	34.2	-48.3	33.89	54	-20.11	-	-	27	110	H
5	* 4.621216	59.66	PK2	34.2	-48.3	45.56	-	-	74	-28.44	76	200	V
	* 4.621157	47.88	MAv1	34.2	-48.3	33.78	54	-20.22	-	-	76	200	V
4	9.595168	46.55	MAv1	36.9	-46.18	37.27	-	-	-	-	91	159	H
	9.597874	58.64	PK2	36.9	-46.01	49.53	-	-	74	-24.47	91	159	H
6	9.60275	46.68	MAv1	36.9	-46.08	37.5	-	-	-	-	130	101	V
	9.604094	58.08	PK2	36.9	-46.11	48.87	-	-	74	-25.13	130	101	V

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

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

HIGH CHANNEL RESULTS



Radiated Emissions

Marker	Frequency(G Hz)	MeterReading(dBuV)	Det	230299 ACF (dB/m) 3mH	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin(dB)	Peak Limit (dBuV/m)	PK Margin(dB)	Azimuth(Degs)	Height(cm)	Polarity
1	* 1.583607	61.78	PK2	28	-40.6	49.18	-	-	74	-24.82	352	101	H
	* 1.583005	50.68	MAv1	28	-40.6	38.08	54	-15.92	-	-	352	101	H
2	* 1.585641	62.08	PK2	28	-40.6	49.48	-	-	74	-24.52	258	116	V
	* 1.586962	50.21	MAv1	28	-40.6	37.61	54	-16.39	-	-	258	116	V
3	* 4.526149	58.88	PK2	34.1	-47.9	45.08	-	-	74	-28.92	212	101	H
	* 4.526534	47.03	MAv1	34.1	-47.9	33.23	54	-20.77	-	-	212	101	H
4	* 11.678	55.86	PK2	38.2	-43.9	50.16	-	-	74	-23.84	231	199	H
	* 11.677897	44.27	MAv1	38.2	-43.9	38.57	54	-15.43	-	-	231	199	H
5	* 4.510575	58.71	PK2	34.1	-47.7	45.11	-	-	74	-28.89	252	238	V
	* 4.512444	47.06	MAv1	34.1	-47.7	33.46	54	-20.54	-	-	252	238	V
6	* 11.674005	56	PK2	38.1	-44	50.1	-	-	74	-23.9	252	200	V
	* 11.673506	44.22	MAv1	38.1	-44	38.32	54	-15.68	-	-	252	200	V

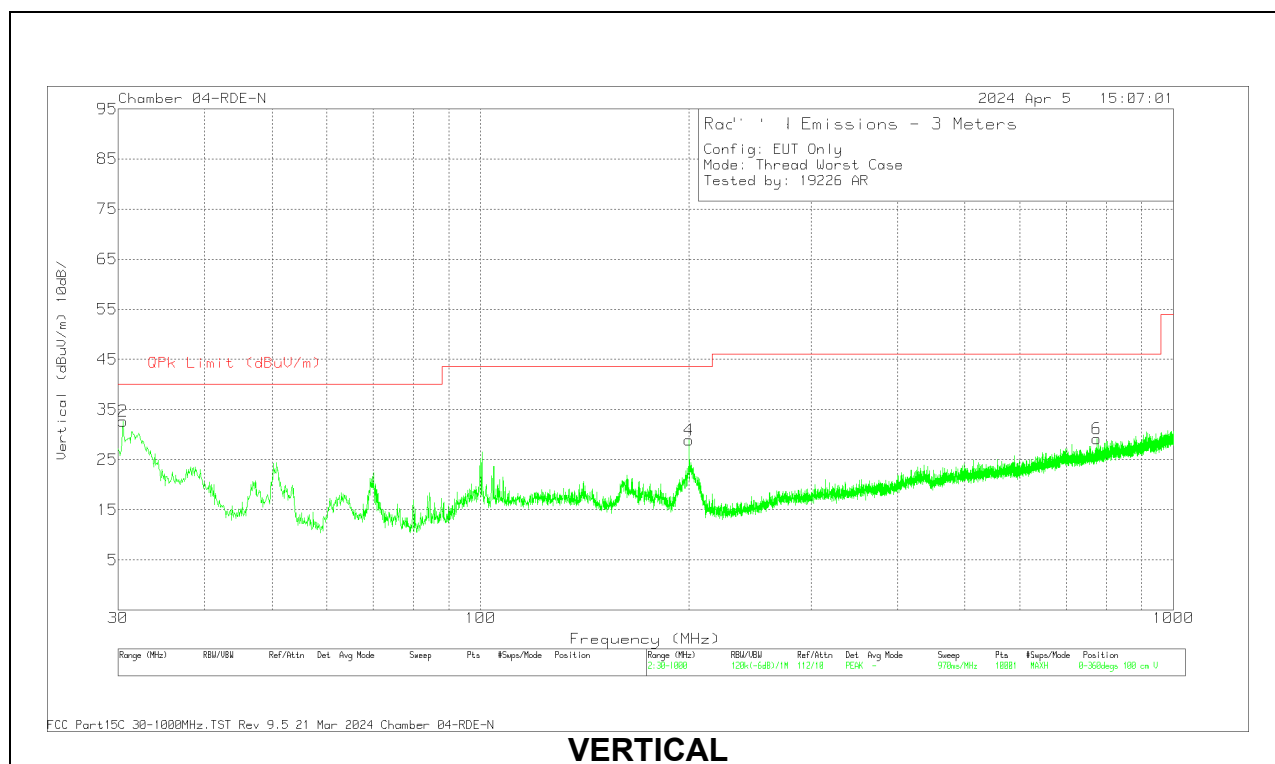
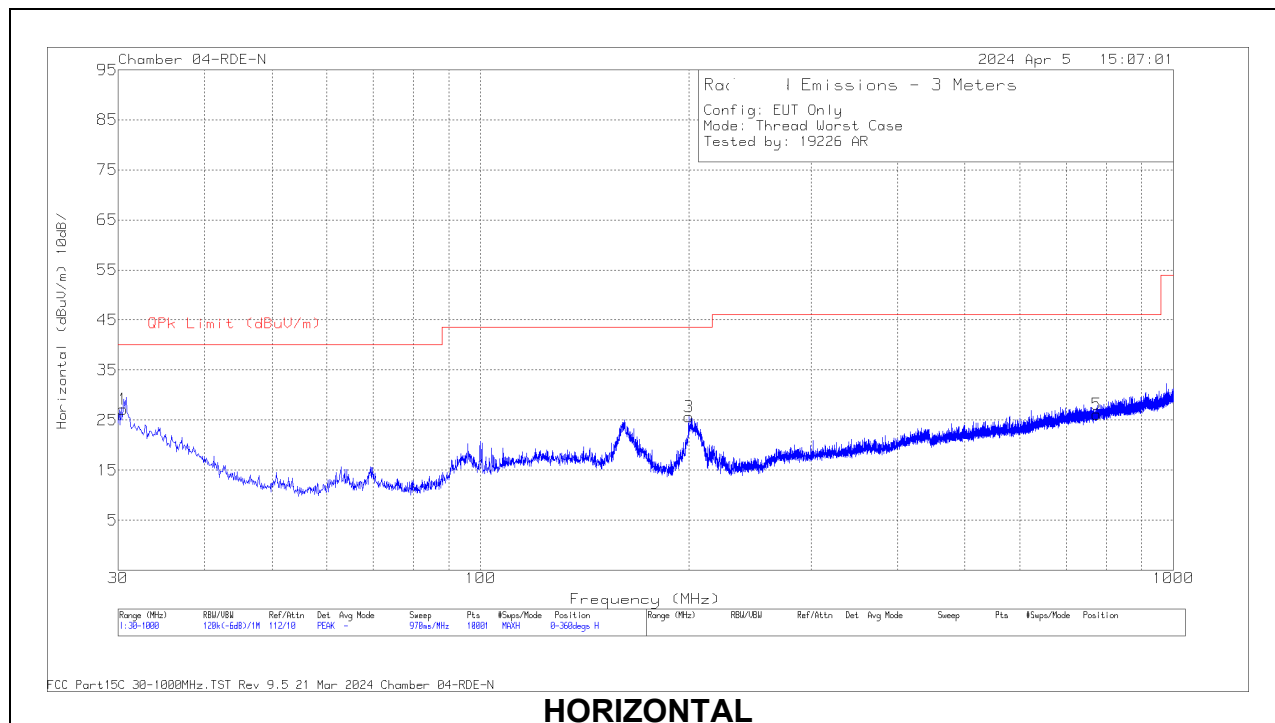
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2. WORST CASE BELOW 1 GHZ

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



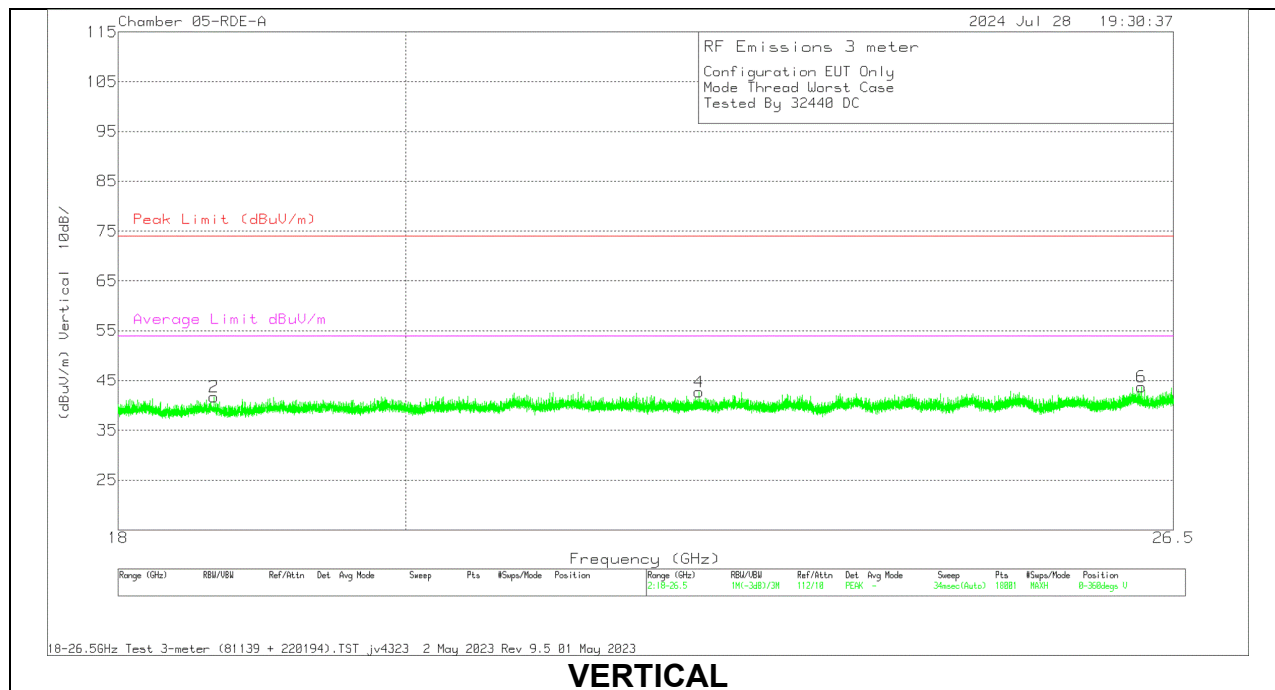
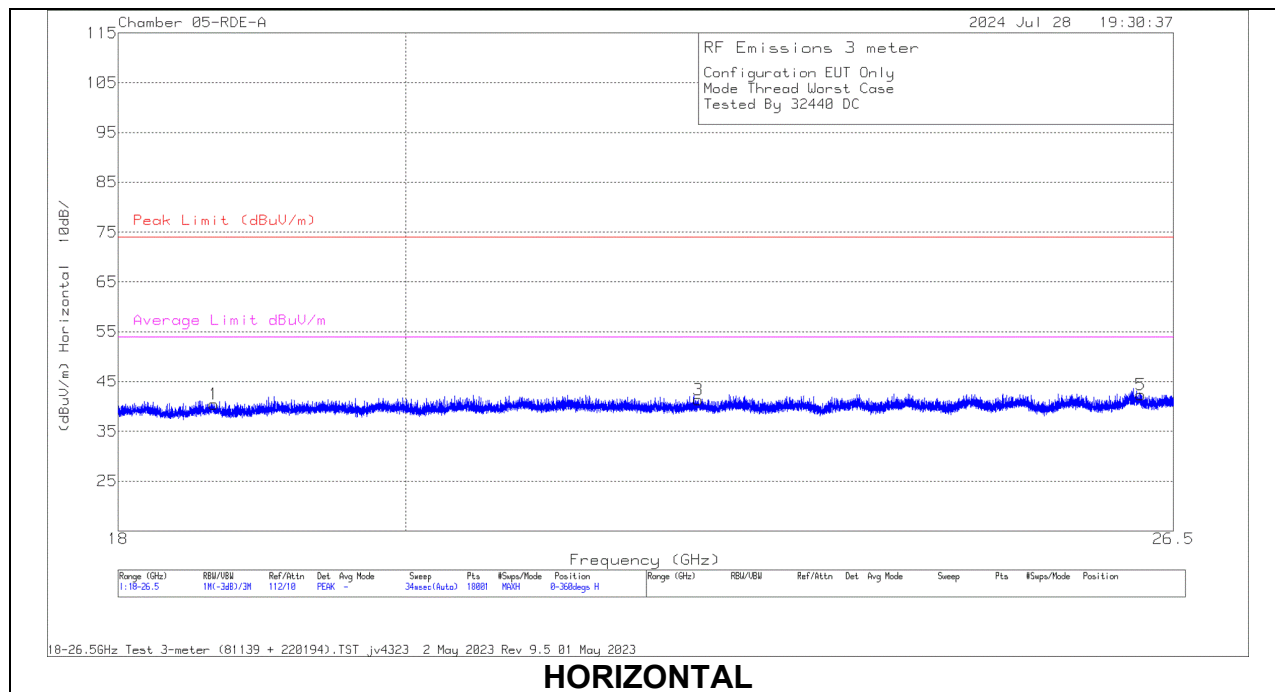
DATA:

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	222008_AN SI 10m Horizontal (dB/m)	Amp Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.485	32.87	Pk	26.7	-32.4	27.17	40	-12.83	0-360	300	H
2	30.485	38.38	Pk	26.7	-32.4	32.68	40	-7.32	0-360	100	V
3	199.944	38.57	Pk	18.4	-31.3	25.67	43.52	-17.85	0-360	100	H
4	199.944	41.83	Pk	18.4	-31.3	28.93	43.52	-14.59	0-360	100	V
5	774.766	28.66	Pk	26.7	-29.2	26.16	46.02	-19.86	0-360	100	H
6	774.766	31.69	Pk	26.7	-29.2	29.19	46.02	-16.83	0-360	100	V

Pk - Peak detector

10.3. WORST CASE 18-26 GHZ

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



DATA:

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	81139 ACF (dB/m)	AMP (dB)	Cbl (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 18.642694	55.74	Pk	32.6	-61.4	13.5	40.44	74	-33.56	54	-13.56	0-360	101	H
3	* 22.264637	53.6	Pk	33.6	-60.5	14.6	41.3	74	-32.7	54	-12.7	0-360	200	H
2	* 18.64175	57.05	Pk	32.6	-61.4	13.5	41.75	74	-32.25	54	-12.25	0-360	199	V
4	* 22.272192	54.97	Pk	33.6	-60.5	14.6	42.67	74	-31.33	54	-11.33	0-360	199	V
5	26.186913	51.63	Pk	34.5	-59.5	15.7	42.33	74	-31.67	54	-11.67	0-360	101	H
6	26.186329	53.09	Pk	34.5	-59.5	15.7	43.79	74	-30.21	54	-10.21	0-360	101	V

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

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

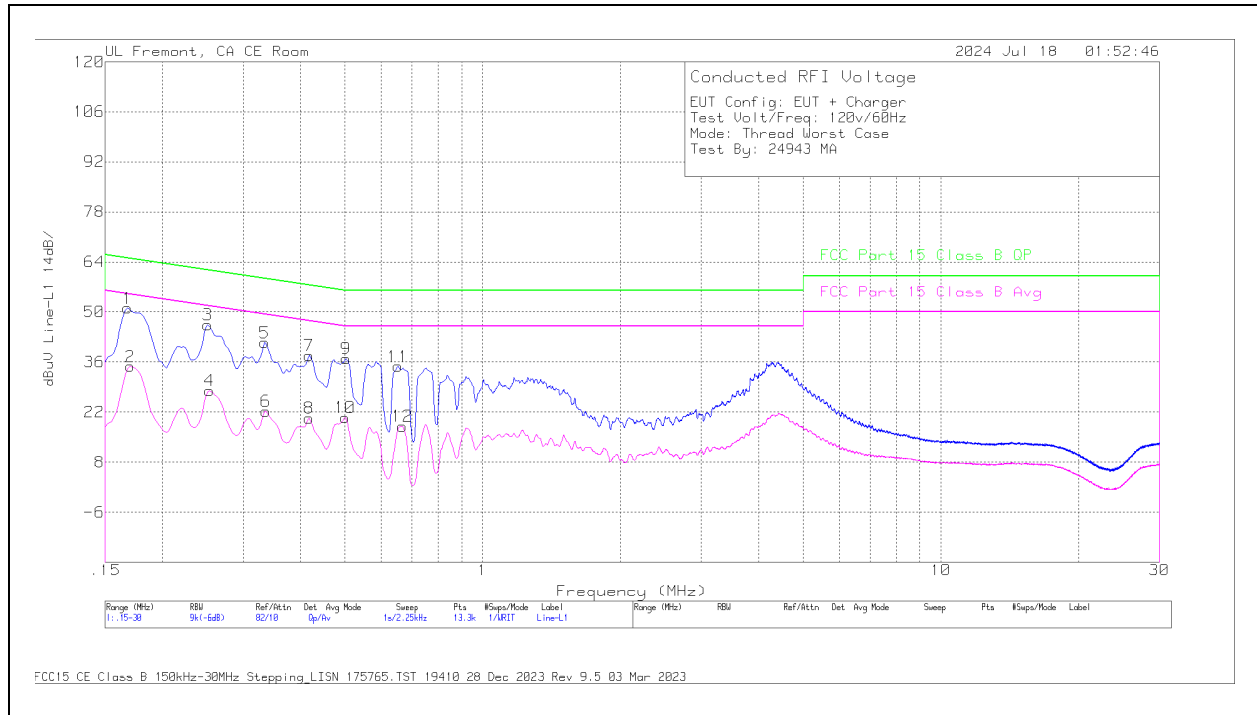
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

11.1. AC Power Line With AC/DC Adapter

LINE 1 RESULTS

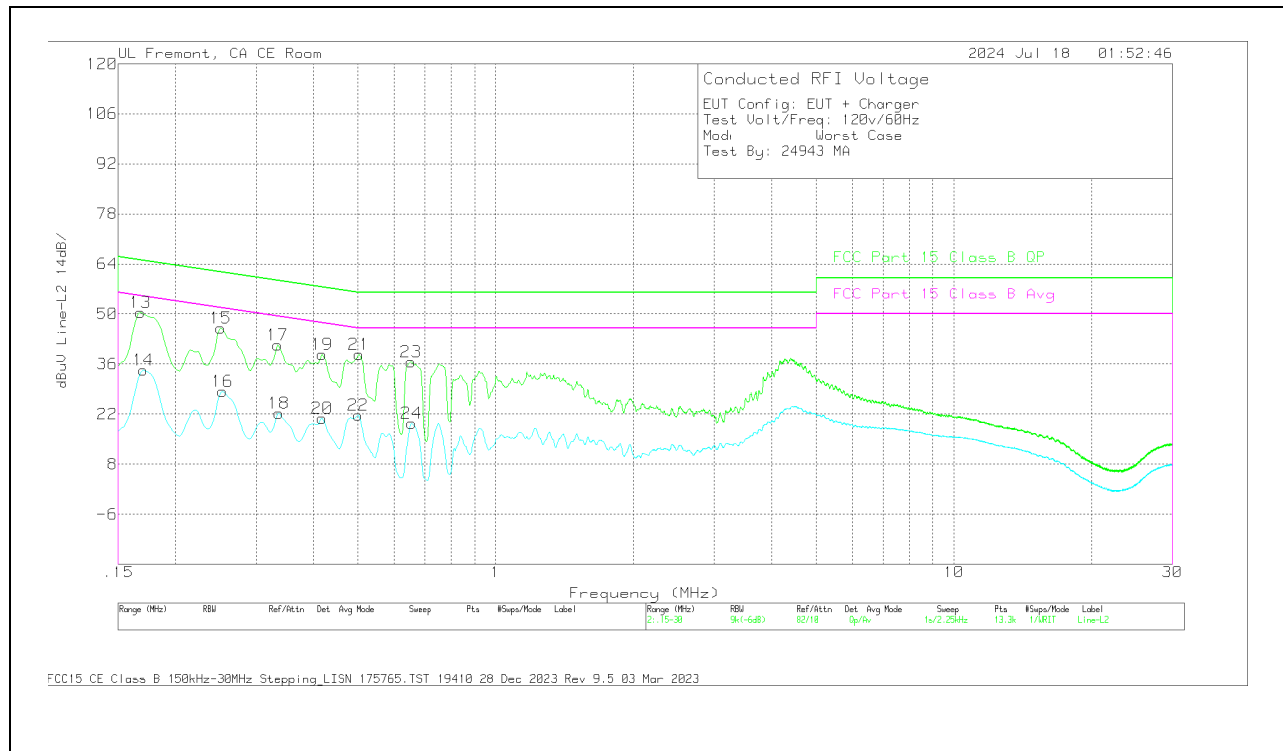


Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15 Class B QP (dBuV)	QP Margin (dB)	FCC Part 15 Class B Avg (dBuV)	Av Margin (dB)
2	.1703	25.15	Av	.1	0	9.5	34.75	-	-	54.95	-20.2
4	.2535	18.61	Av	0	0	9.4	28.01	-	-	51.64	-23.63
6	.3368	12.78	Av	0	0	9.4	22.18	-	-	49.28	-27.1
8	.4178	10.84	Av	0	0	9.4	20.24	-	-	47.49	-27.25
10	.501	11.17	Av	0	0	9.3	20.47	-	-	46	-25.53
12	.6675	8.49	Av	0	.1	9.4	17.99	-	-	46	-28.01
1	.168	41.45	Qp	.1	0	9.5	51.05	65.06	-14.01	-	-
3	.2513	36.99	Qp	0	0	9.4	46.39	61.72	-15.33	-	-
5	.3345	32.01	Qp	0	0	9.4	41.41	59.34	-17.93	-	-
7	.4178	28.36	Qp	0	0	9.4	37.76	57.49	-19.73	-	-
9	.5033	27.61	Qp	0	0	9.3	36.91	56	-19.09	-	-
11	.654	25.25	Qp	0	.1	9.4	34.75	56	-21.25	-	-

Qp - Quasi-Peak detector

Av - Average detection

LINE 2 RESULTS



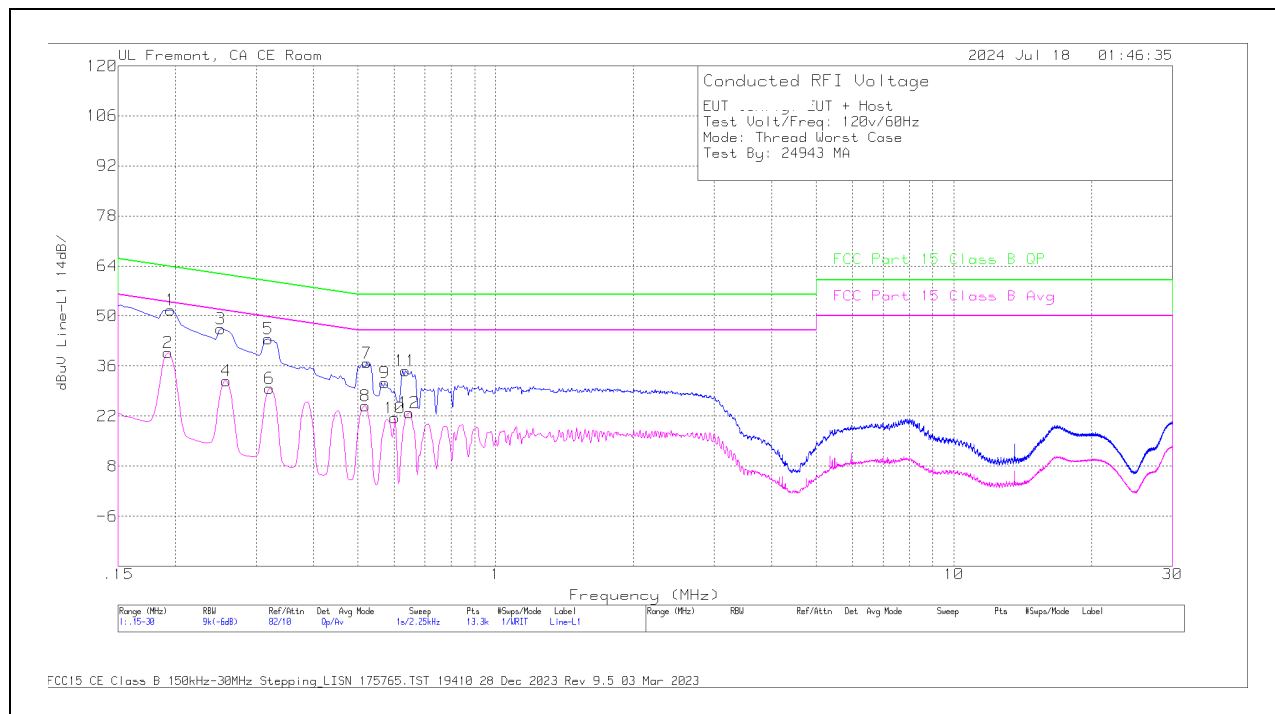
Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av Margin (dB)
14	.1703	24.75	Av	0	0	9.5	34.25	-	-	54.95	-20.7
16	.2535	18.91	Av	0	0	9.4	28.31	-	-	51.64	-23.33
18	.3368	12.67	Av	0	.1	9.4	22.17	-	-	49.28	-27.11
20	.4178	11.37	Av	0	.1	9.4	20.87	-	-	47.49	-26.62
22	.501	12.37	Av	0	0	9.3	21.67	-	-	46	-24.33
24	.6563	9.88	Av	0	.1	9.4	19.38	-	-	46	-26.62
13	.168	40.91	Qp	.1	0	9.5	50.51	65.06	-14.55	-	-
15	.2513	36.7	Qp	0	0	9.4	46.1	61.72	-15.62	-	-
17	.3345	31.86	Qp	0	.1	9.4	41.36	59.34	-17.98	-	-
19	.4178	29.25	Qp	0	.1	9.4	38.75	57.49	-18.74	-	-
21	.5033	29.38	Qp	0	0	9.3	38.68	56	-17.32	-	-
23	.654	27.13	Qp	0	.1	9.4	36.63	56	-19.37	-	-

Qp - Quasi-Peak detector

Av - Average detection

11.2. AC Power Line with Laptop

LINE 1 RESULTS

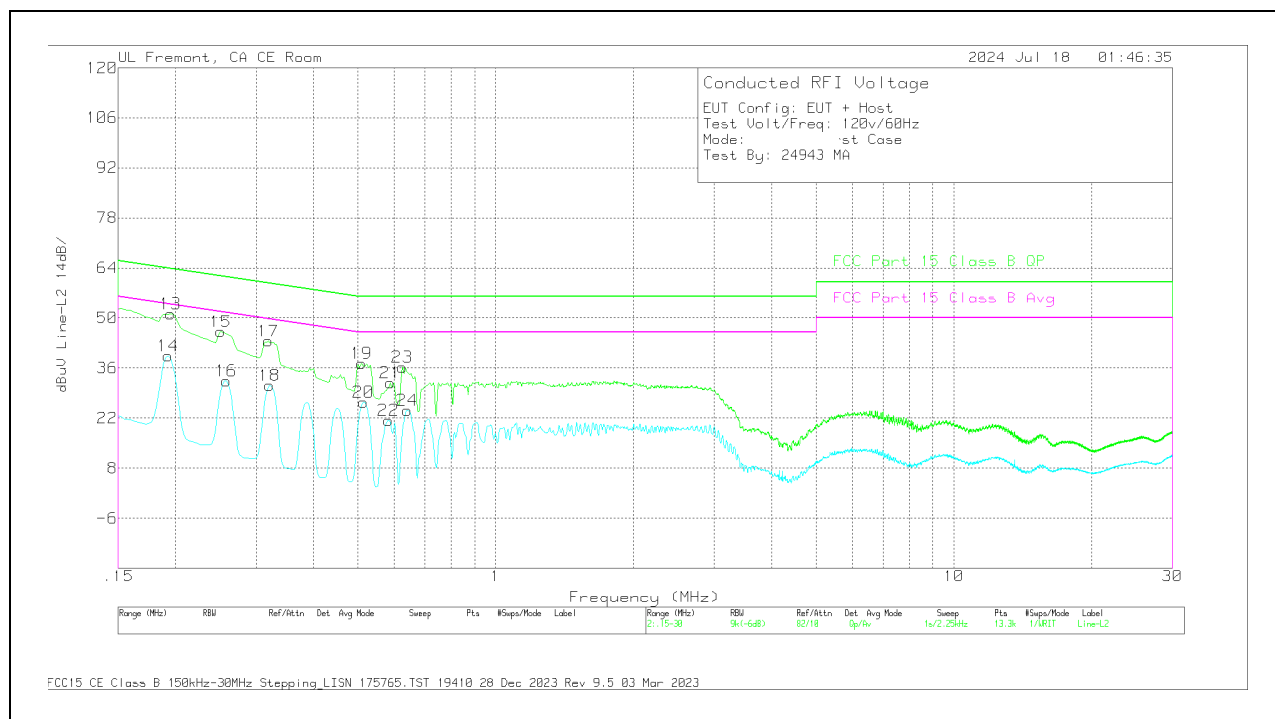


Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	Corrected Reading (dBuV)	FCC Part 15 Class B QP (dBuV)	QP Margin (dB)	FCC Part 15 Class B Avg (dBuV)	Av Margin (dB)
2	.1928	30.09	Av	.1	.1	9.4	39.69	-	-	53.92	-14.23
4	.258	22.48	Av	0	0	9.4	31.88	-	-	51.5	-19.62
6	.321	20.26	Av	0	.1	9.4	29.76	-	-	49.68	-19.92
8	.519	15.57	Av	0	0	9.3	24.87	-	-	46	-21.13
10	.6023	12.05	Av	0	0	9.4	21.45	-	-	46	-24.55
12	.6473	13.46	Av	0	.1	9.4	22.96	-	-	46	-23.04
1	.195	42	Qp	.1	.1	9.4	51.6	63.82	-12.22	-	-
3	.2513	37.08	Qp	0	0	9.4	46.48	61.72	-15.24	-	-
5	.3188	34.07	Qp	0	.1	9.4	43.57	59.74	-16.17	-	-
7	.5235	27.55	Qp	0	0	9.3	36.85	56	-19.15	-	-
9	.573	21.91	Qp	0	.1	9.3	31.31	56	-24.69	-	-
11	.636	25.2	Qp	0	.1	9.4	34.7	56	-21.3	-	-

Qp - Quasi-Peak detector

Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN (dB)	Cbl (dB)	Trns Limiter (dB)	Corrected Reading dBuV	FCC Part 15 Class B QP dBuV	QP Margin (dB)	FCC Part 15 Class B Avg dBuV	Av Margin (dB)
14	.1928	29.87	Av	0	.1	9.4	39.37	-	-	53.92	-14.55
16	.258	23.01	Av	0	0	9.4	32.41	-	-	51.5	-19.09
18	.321	21.59	Av	0	.1	9.4	31.09	-	-	49.68	-18.59
20	.5145	17.09	Av	0	0	9.3	26.39	-	-	46	-19.61
22	.5843	11.91	Av	0	.1	9.4	21.41	-	-	46	-24.59
24	.6405	14.64	Av	0	.1	9.4	24.14	-	-	46	-21.86
13	.195	41.6	Qp	0	.1	9.4	51.1	63.82	-12.72	-	-
15	.2513	36.75	Qp	0	0	9.4	46.15	61.72	-15.57	-	-
17	.3188	34.03	Qp	0	.1	9.4	43.53	59.74	-16.21	-	-
19	.51	27.97	Qp	0	0	9.3	37.27	56	-18.73	-	-
21	.5888	22.37	Qp	0	.1	9.4	31.87	56	-24.13	-	-
23	.6248	26.75	Qp	0	.1	9.4	36.25	56	-19.75	-	-

Qp - Quasi-Peak detector

Av - Average detection

12. SETUP PHOTOS

Please refer to setup photos 14982489-EP1V1

END OF TEST REPORT