TEST REPORT

Report Number: 14916801-E2V3

Applicant	:	SRAM LLC 1000 W Fulton Market 4th Floor Chicago, IL 60607, United States
Model	:	55503
Brand	:	SRAM
FCC ID	:	C9O-PMB3
IC	:	10161A-PMB3
EUT Description	:	Pressure Sensor
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:
2024-12-19

Prepared by:
UL VERIFICATION SERVICES
47173 Benicia Street
Fremont, CA 94538 U.S.A.
TEL: (510) 319-4000
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ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024-11-05	Initial Issue	
V2	2024-12-13	Updated Section 4, 10.3 and 10.5	Kiya Kedida
V3	2024-12-19	Updated Section 10.3 and 10.5	Kiya Kedida

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SRAM LLC
1000 W Fulton Market 4th Floor
Chicago, IL 60607, United States

EUT DESCRIPTION: Pressure Sensor

MODEL: 55503

BRAND: SRAM

SERIAL NUMBER: Conducted: AHK12038
Radiated: AHK10425

SAMPLE RECEIPT DATE: 2024-10-18

DATE TESTED: 2024-08-08 to 2024-10-21

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

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

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

This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.

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Approved & Released For
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2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.
Below is a list of the data provided by the customer:
1) Antenna gain and type (see section 6.3)

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	Compliant	None.
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power	Compliant	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	Compliant	None.
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Compliant	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Compliant	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	NA	A.C. line conducted was not evaluated because the E.U.T. uses the battery

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3. TEST METHODOLOGY

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

4. FACILITIES AND ACCREDITATION

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

	Address	ISED CABID	ISED Company Number	FCC Registration
☒	Building 1: 47173 Benicia Street, Fremont, CA 94538, 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			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

PARAMETER	U_{Lab}
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Power Spectral Density	2.47 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB (PK) / 0.45 dB (AV)
Unwanted Emissions, Conducted	1.94 dB
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB
Time Domain Measurements	3.39%
Temperature	0.57˚C
Humidity	3.39%
DC Supply Voltages	0.57%

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

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:
Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Pressure Sensor.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak and average conducted output powers as follows:

Frequency Range (MHz)	Mode	Peak		Average	
		Output Power (dBm)	Output Power (mW)	Output Power (dBm)	Output Power (mW)
2405 - 2475	AIREA	8.05	6.38	7.90	6.17

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna gain and type, as provided by the manufacturer, are as follows:

The radio utilizes a ceramic chip antenna, with a maximum gain of -0.5 dBi.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version B-1.0.

The test utility software used during testing was nRF Connect version 4.26.0.

6.5. WORST-CASE CONFIGURATION AND MODE

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

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

The fundamental of the EUT was investigated in three orthogonal orientations X,Y, & Z. It was determined that X orientation was the worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

The worst-case data rate as provided by the client was 250kbps.

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List			
Description	**Manufacturer**	**Model**	**Serial Number**
Phone	Apple	iPhone 6s	FK1TR0AVGRY1
Phone	Apple	iPhone Xr	F71Z4FB4KXKN
DC Power Supply	TDK.Lambda	ZUP36-6U	PRE0074768

I/O CABLES (CONDUCTED EMISSIONS)

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Unshielded	1.5	AC Main to DC Supply
2	DC	1	DC	Unshielded	0.5	Power Supply to EUT
3	Antenna Port	1	SMA	Unshielded	0.1	EUT to Analyzer/ Power Meter

TEST SETUP

The EUT is normally powered by a Li-Ion battery at 3V. The phone is used for setting up purposes and was removed during testing.

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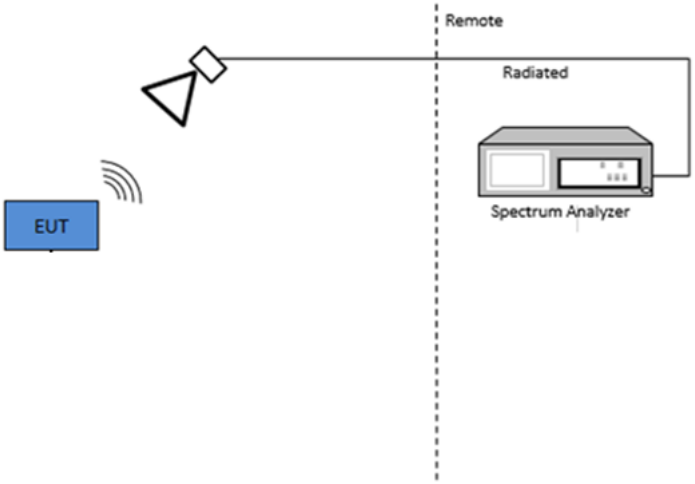
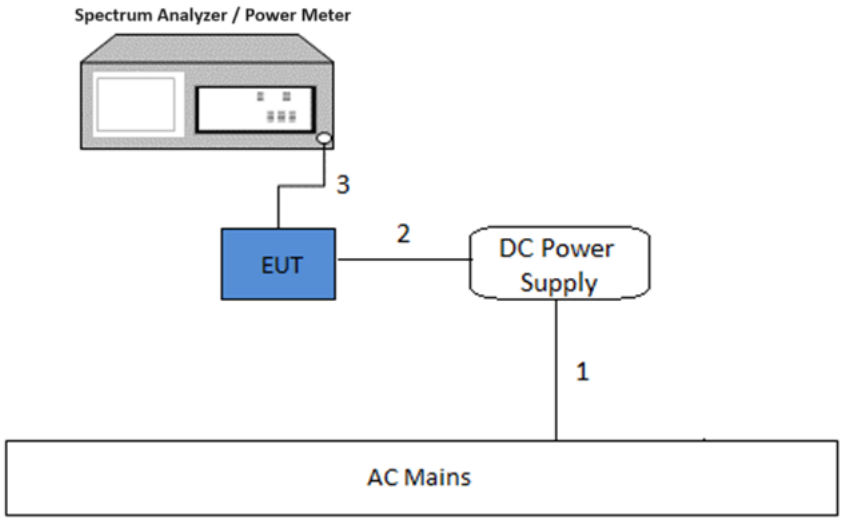
SETUP DIAGRAM

Radiated Configuration



Conducted Configuration



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7. MEASUREMENT METHOD

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

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

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

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

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

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

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

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

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

Band-edge: ANSI C63.10 Section 6.10

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

** A.C line conducted was not evaluated because the EUT is powered by a Li-Ion 3VDC battery.*

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8. TEST AND MEASUREMENT EQUIPMENT

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

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**	**Last Cal**
Antenna, Broadband Hybrid, 30MHz to 3GHz	SunAR RF Motion	JB3	203089	2025-04-30	2023-04-09
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	175953	2025-03-31	2024-03-25
Amplifier, 9KHz to 1GHz, 32dB	SONOMA INSTRUMENT	310	29654	2025-02-28	2024-02-05
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	80404	2024-08-31	2023-08-08
RF Filter Box, 1-18GHz	FREMONT	n/a	197920	2025-03-31	2024-03-30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	225688	2025-02-11	2024-02-11
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	191429	2025-02-28	2024-02-11
Antenna, Broadband Hybrid, 30MHz to 3GHz	SunAR RF Motion	JB3	203089	2025-04-30	2023-04-09
Antenna, Horn 18 to 26.5GHz	ARA	MWH-1826/B	199659	2024-12-31	2022-12-06
Amplifier 18-26.5GHz, +5Vdc, 60dB min	AMPLICAL	AMP18G26.5-60	234683	2025-05-31	2024-05-13
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO METRICS	EM-6872	219911	2024-12-31	2023-12-05
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO METRICS	EM-6871	219909	2025-06-30	2024-06-20
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent Technologies	N9030A	85201	2025-01-31	2024-01-30
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent Technologies	N9030A	80396	2025-02-28	2024-02-21
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90733	2025-01-31	2024-01-25
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90391	2025-06-30	2024-06-17
10dB Fixed Attenuator	Pasternack Enterprises	PE7087-10	N/A	Verified	Verified
UL TEST SOFTWARE LIST					
Radiated Software	UL	UL EMC	Ver 2023-01-18, 2023-03-03, 2023-05-01		
Antenna Port Software	UL	UL RF	Ver 2022.8.16		

NOTES:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. 10dB fixed attenuator was verified before testing by transmitting signal through attenuator to a network analyze and see the rated attenuation value of 10dB loss on the reading.

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

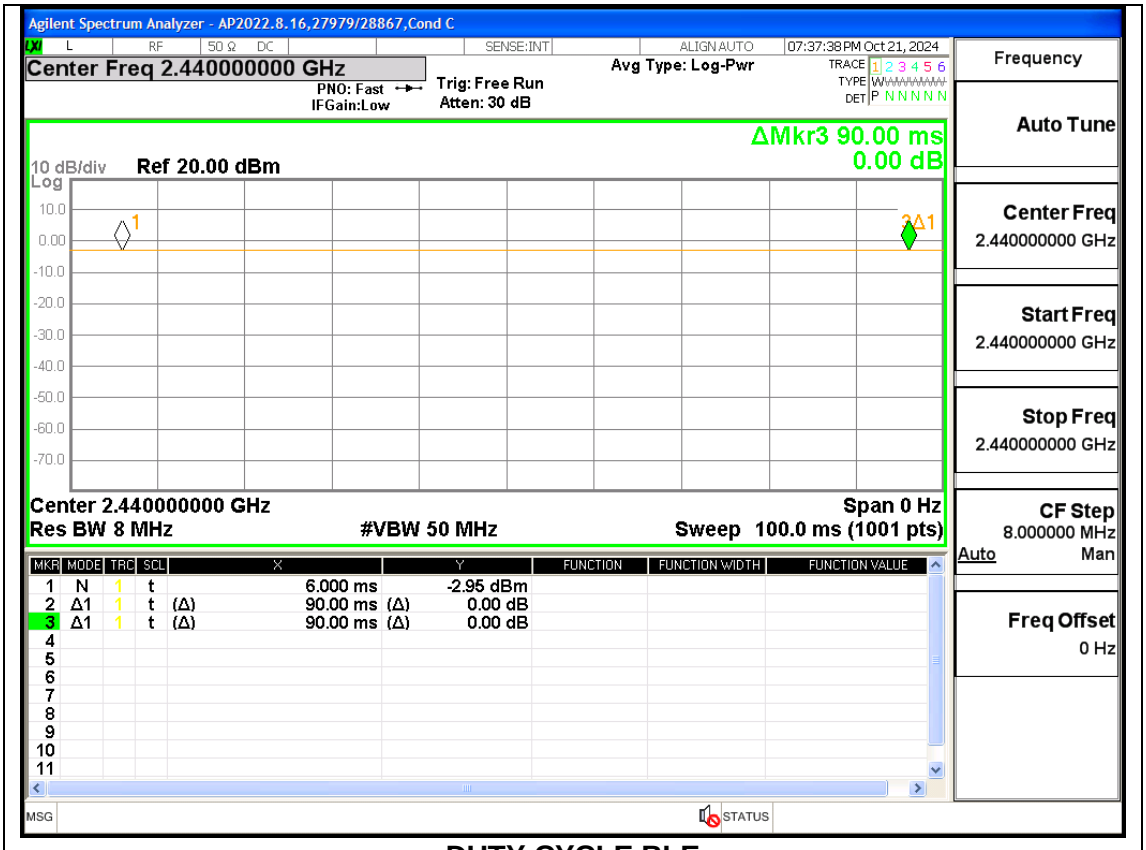
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
AIREA	90.00	90.00	1.000	100.00	0.00	0.010

DUTY CYCLE PLOTS



DUTY CYCLE BLE

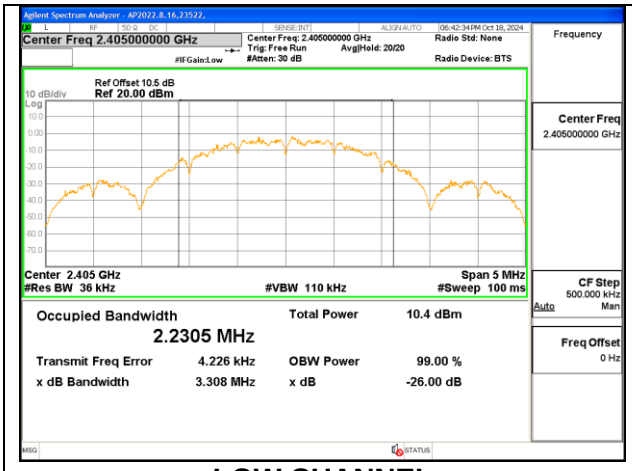
9.2. 99% BANDWIDTH

LIMITS

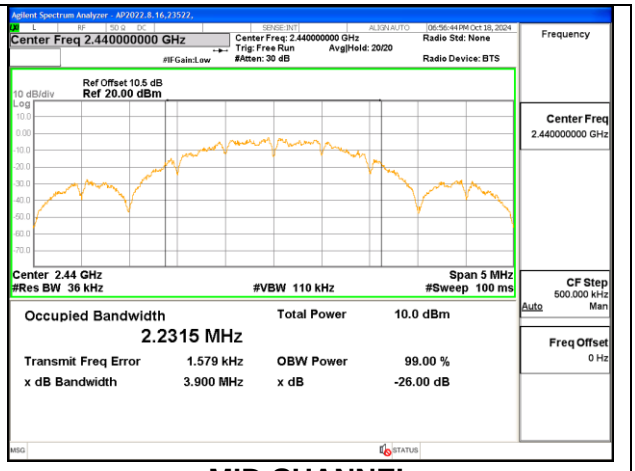
None; for reporting purposes only.

RESULTS

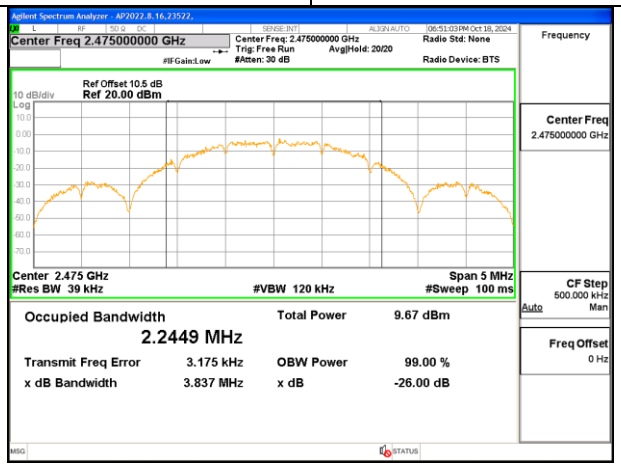
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2405	2.2305
Middle	2440	2.2315
High	2475	2.2449



LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

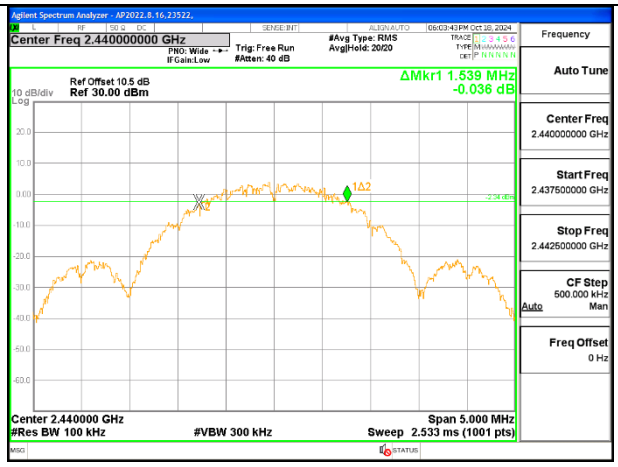
RSS-247 5.2 (a)

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

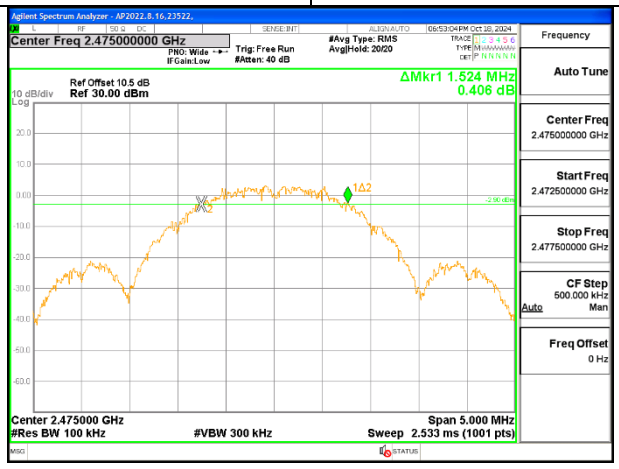
RESULTS

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2405	1.530	0.5
Middle	2440	1.539	0.5
High	2475	1.524	0.5

LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

RSS-247 5.4 (d)

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

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

RESULTS

Tested By:	45256 JB
Date:	2024-10-18

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2405	8.05	30	-21.950
Middle	2440	7.89	30	-22.110
High	2475	7.66	30	-22.340

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9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

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

RESULTS

Tested By:	45256 JB
Date:	2024-10-18

Channel	Frequency (MHz)	AV power (dBm)
Low	2405	7.9
Middle	2440	7.74
High	2475	7.51

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9.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

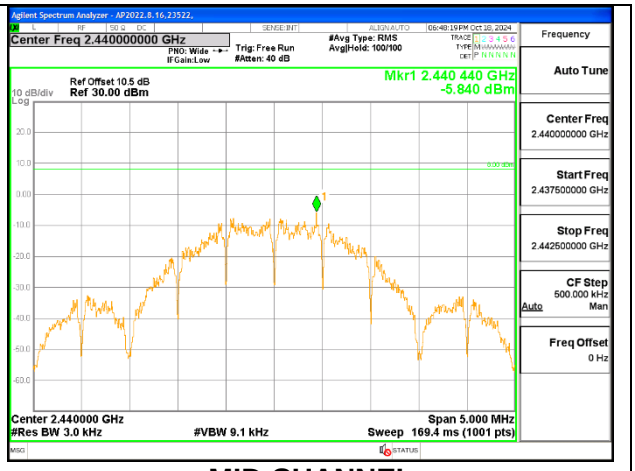
RSS-247 (5.2) (b)

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

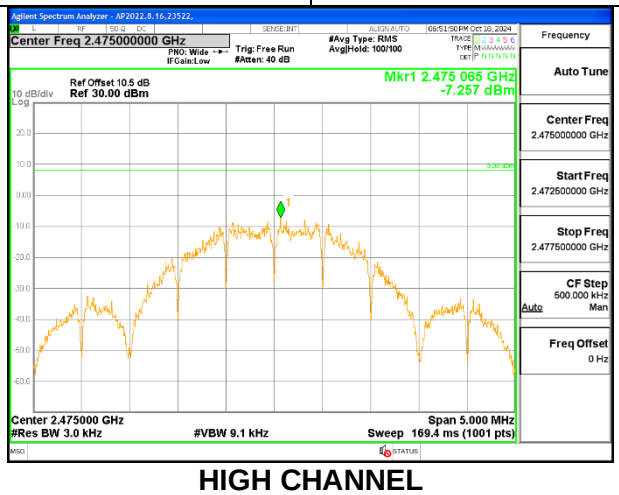
RESULTS

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2405	-6.239	8	-14.24
Middle	2440	-5.840	8	-13.84
High	2475	-7.257	8	-15.26

LOW CHANNEL



MID CHANNEL



HIGH CHANNEL

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9.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

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

RESULTS

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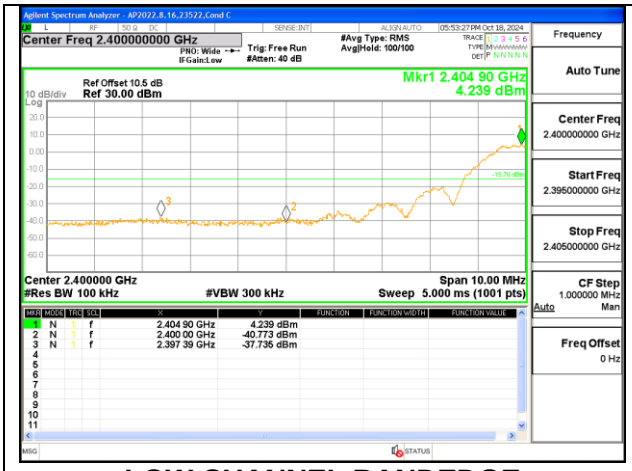
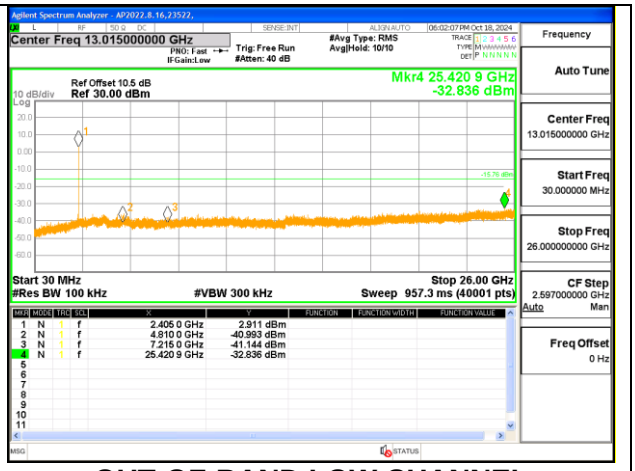
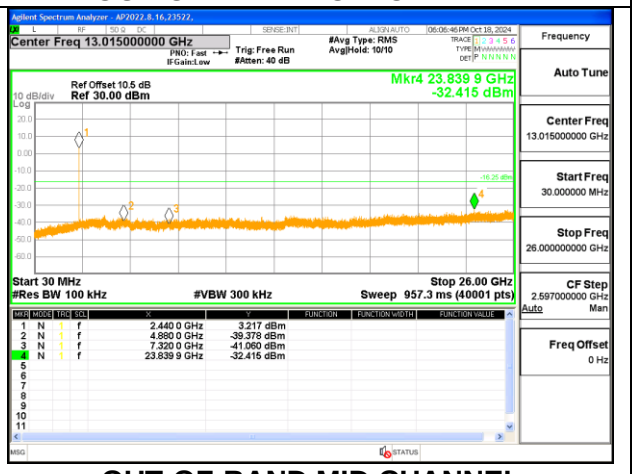


LOW CHANNEL BANDEDGE

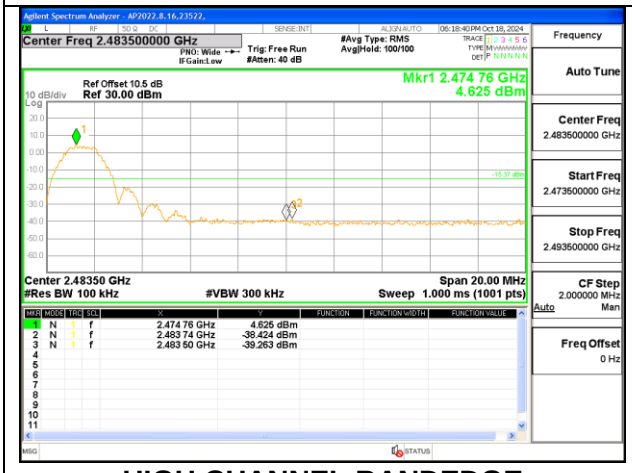


OUT-OF-BAND LOW CHANNEL

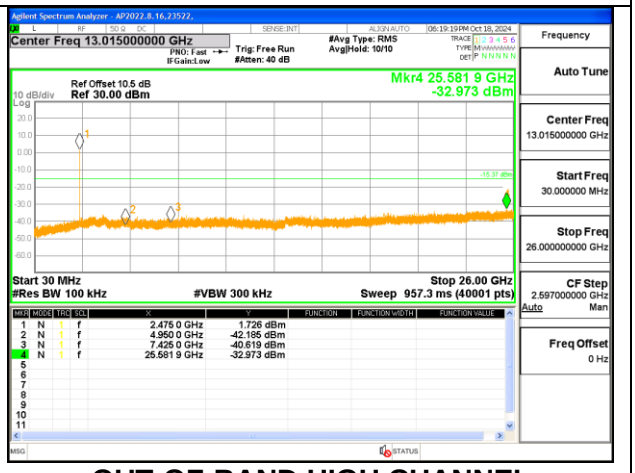
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

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10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

RSS-GEN, Section 8.9 and 8.10.

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

TEST PROCEDURE

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

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

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

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

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

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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.

For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.

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

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

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

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

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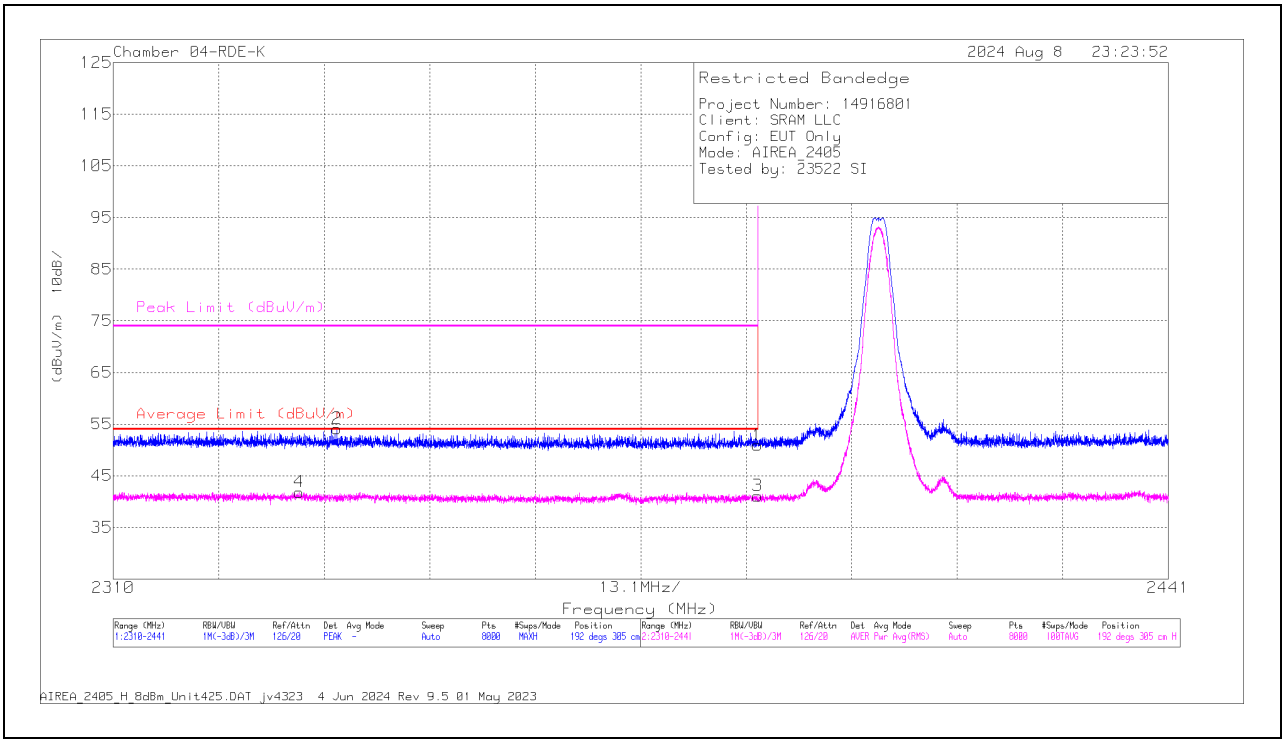
10.2. TRANSMITTER ABOVE 1 GHz

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2333.075	44.65	RMS	32.6	-35.4	41.85	54	-12.15	-	-	192	305	H
2	* 2337.759	56.9	Pk	32.5	-35.3	54.1	-	-	74	-19.9	192	305	H
1	* 2390	53.92	Pk	32.2	-35.2	50.92	-	-	74	-23.08	192	305	H
3	* 2390	44.12	RMS	32.2	-35.2	41.12	54	-12.88	-	-	192	305	H

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

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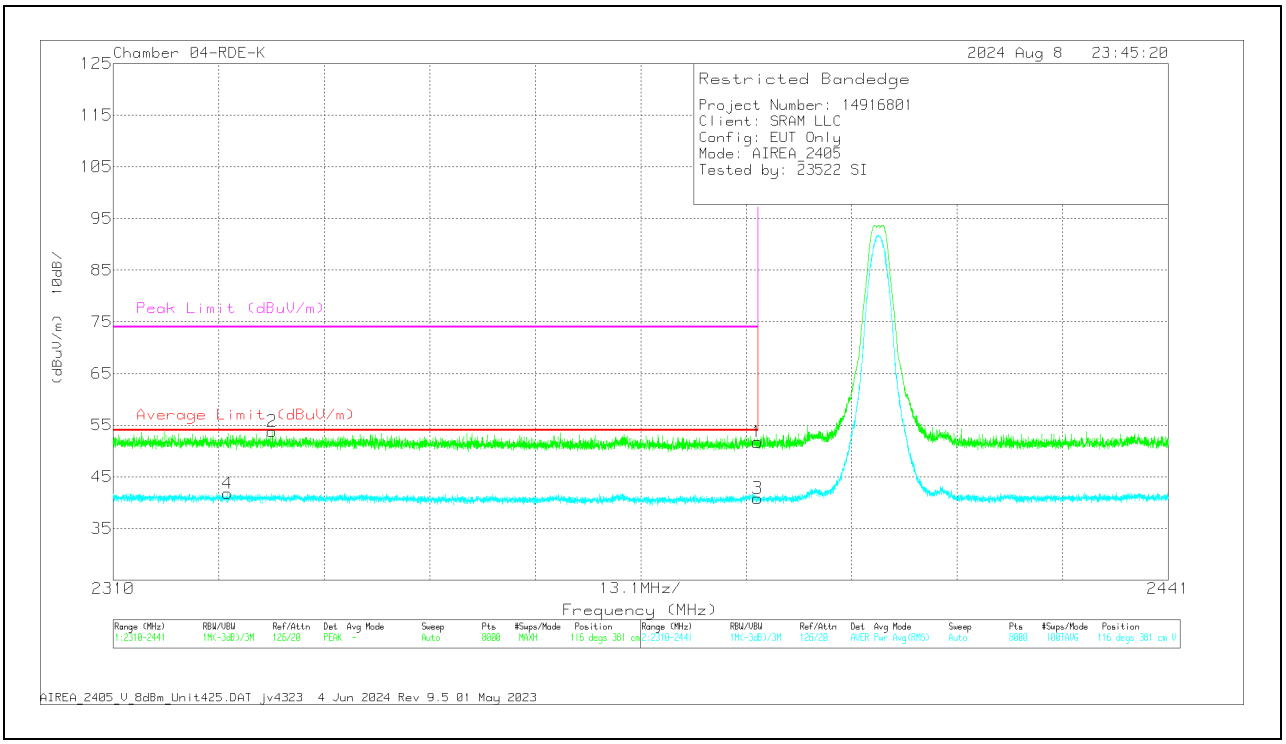
VERTICAL RESULT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 2324.199	44.48	RMS	32.7	-35.4	41.78	54	-12.22	-	-	116	381	V
2	* 2329.734	56.54	Pk	32.6	-35.4	53.74	-	-	74	-20.26	116	381	V
1	* 2390	54.75	Pk	32.2	-35.2	51.75	-	-	74	-22.25	116	381	V
3	* 2390	43.84	RMS	32.2	-35.2	40.84	54	-13.16	-	-	116	381	V

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

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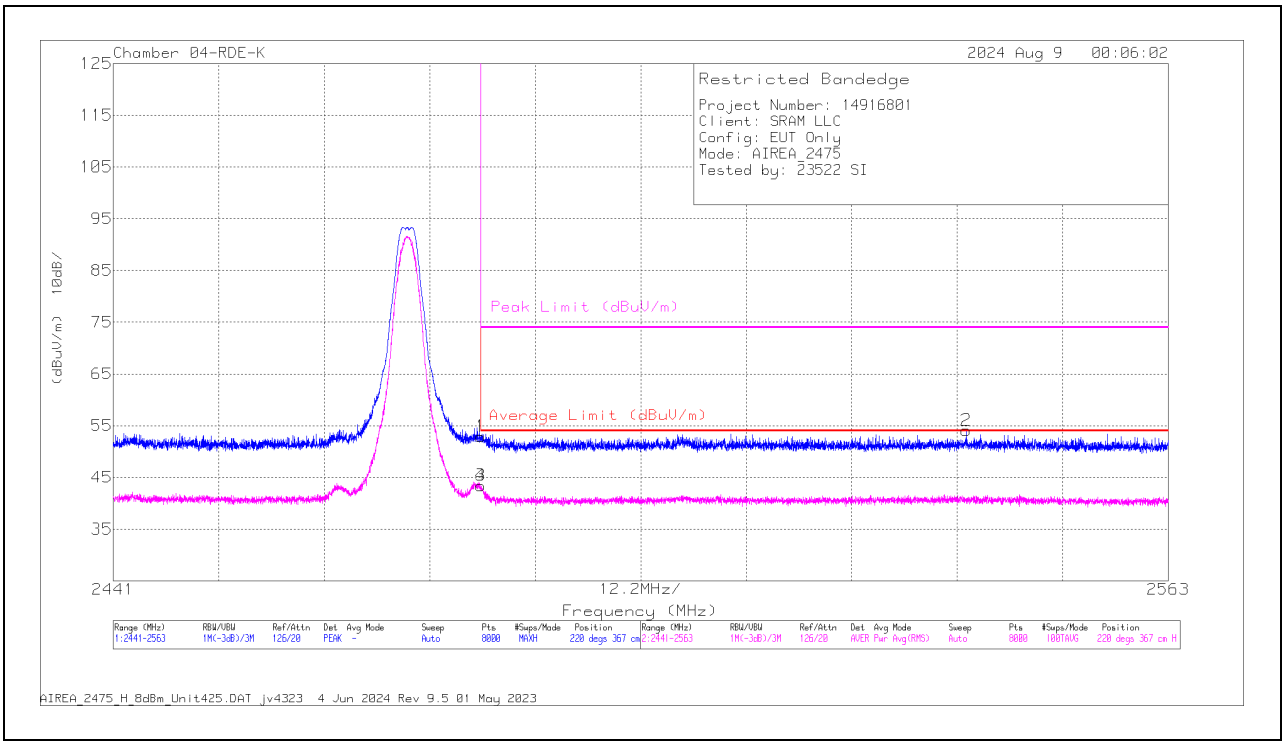
BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2483.5	55.5	Pk	32.2	-34.8	52.9	-	-	74	-21.1	220	367	H
3	* 2483.5	46.03	RMS	32.2	-34.8	43.43	54	-10.57	-	-	220	367	H
4	* 2483.523	46.04	RMS	32.2	-34.8	43.44	54	-10.56	-	-	220	367	H
2	* 2539.635	56.4	Pk	32.3	-34.6	54.1	-	-	74	-19.9	220	367	H

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

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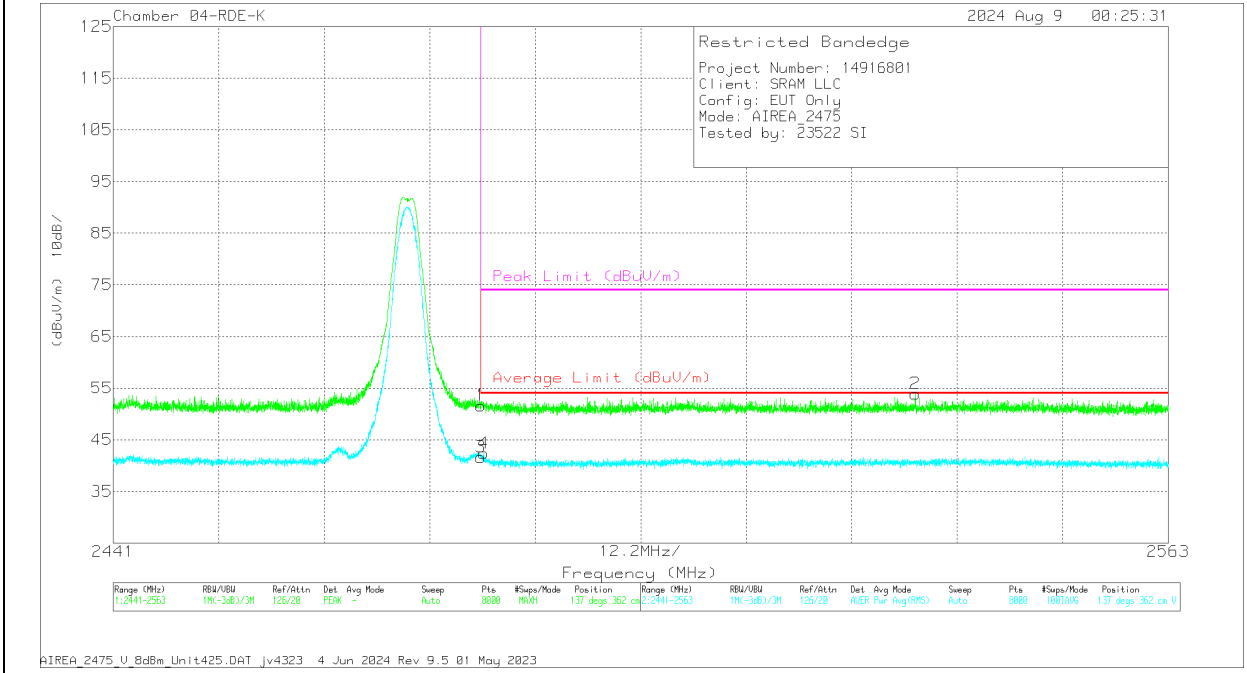
VERTICAL RESULT



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Pad (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2483.5	54.19	Pk	32.2	-34.8	51.59	-	-	74	-22.41	137	362	V
3	2483.5	44.23	RMS	32.2	-34.8	41.63	54	-12.37	-	-	137	362	V
4	2483.828	44.99	RMS	32.2	-34.8	42.39	54	-11.61	-	-	137	362	V
2	2533.747	56.21	Pk	32.3	-34.6	53.91	-	-	74	-20.09	137	362	V

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

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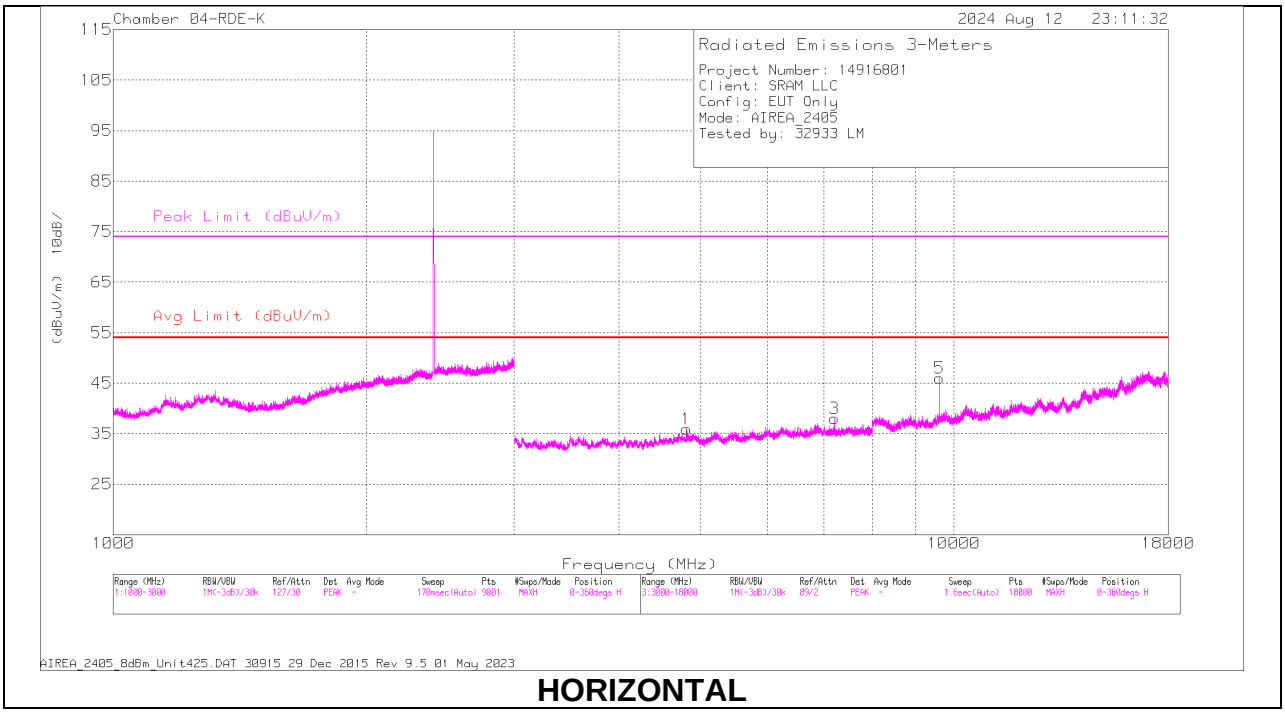
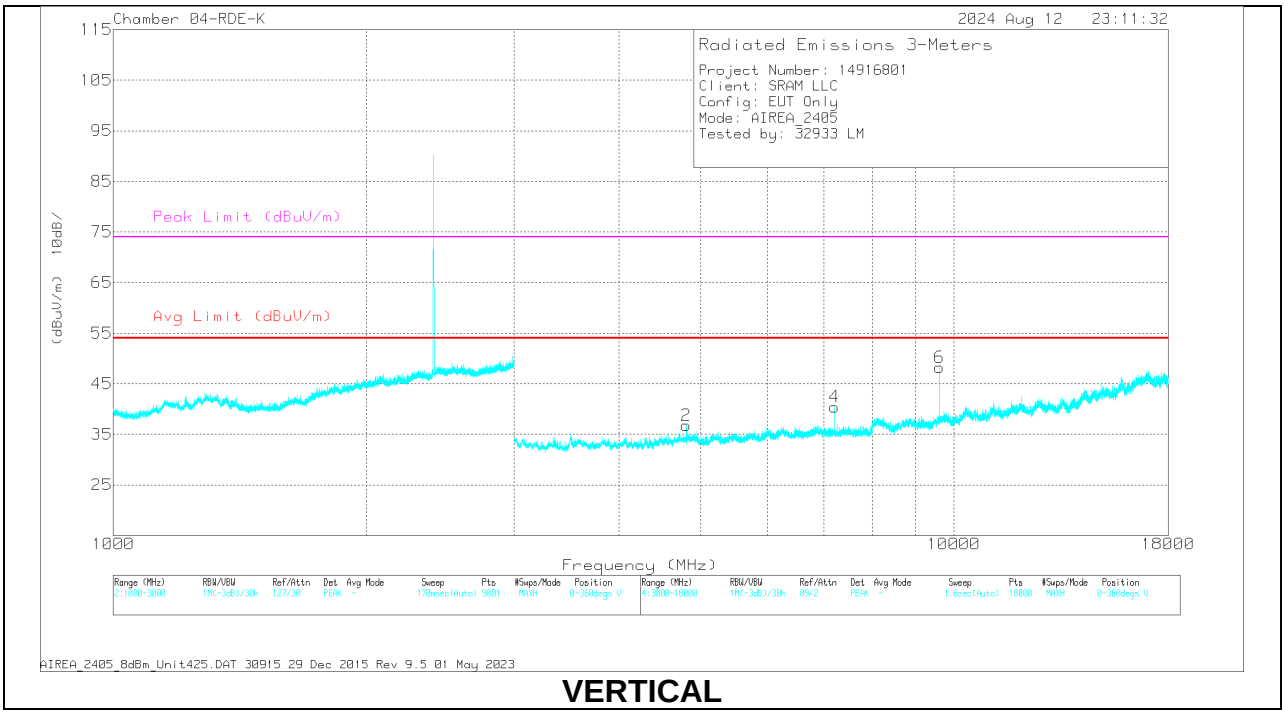
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4811.297	52.32	PK2	34.9	-40.9	46.32	-	-	74	-27.68	266	328	H
	* 4809.038	41.42	MAv1	34.9	-40.9	35.42	54	-18.58	-	-	266	328	H
2	* 4809.226	50.15	PK2	34.9	-40.9	44.15	-	-	74	-29.85	188	114	V
	* 4807.318	38.77	MAv1	34.9	-41	32.67	54	-21.33	-	-	188	114	V
3	7215.072	48.69	PK2	36.1	-39	45.79	-	-	-	-	112	137	H
4	7215.16	49.49	PK2	36.1	-39	46.59	-	-	-	-	20	310	V
5	9615.848	48.54	PK2	36.8	-37.3	48.04	-	-	-	-	349	121	H
6	9623.045	48.84	PK2	36.8	-37.2	48.44	-	-	-	-	308	193	V

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

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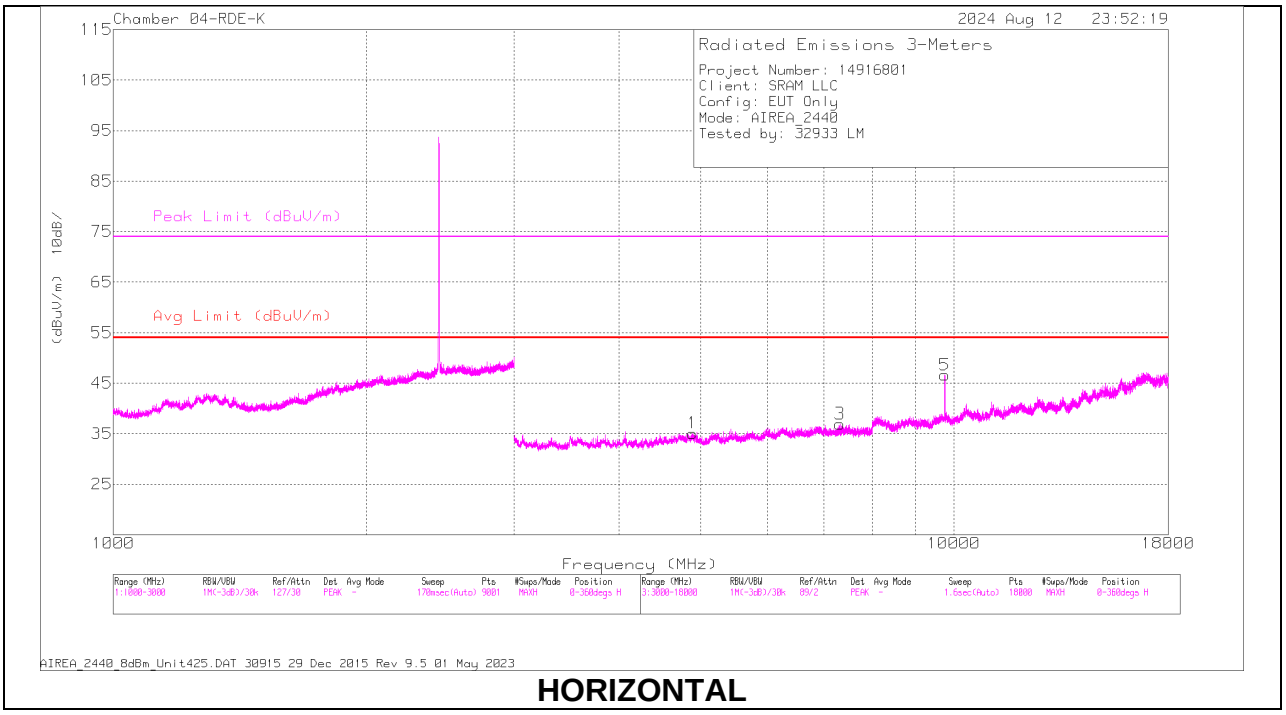
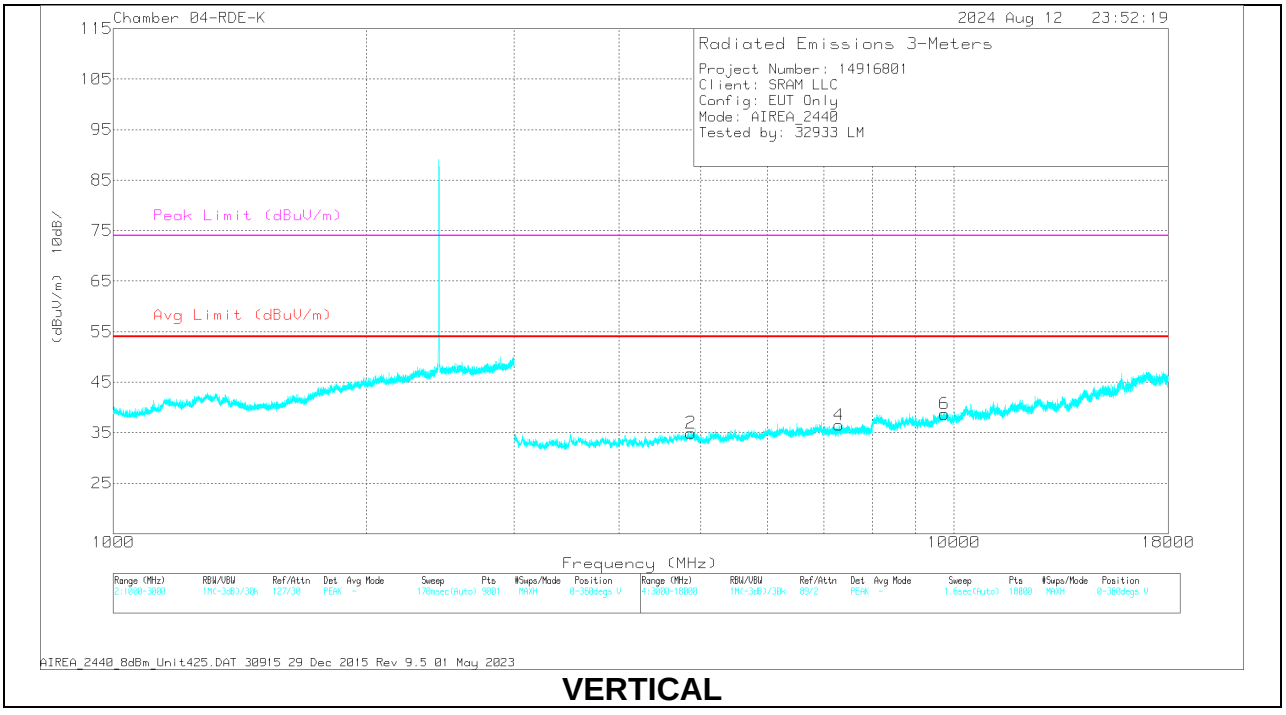
MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4871.252	39.47	MAv1	34.5	-41	32.97	54	-21.03	-	-	226	155	V
	* 4872.838	56.22	PK2	34.5	-41	49.72	-	-	74	-24.28	226	155	V
1	* 4885.674	51.94	PK2	34.4	-41	45.34	-	-	74	-28.66	88	237	H
	* 4888.366	39.77	MAv1	34.4	-40.9	33.27	54	-20.73	-	-	88	237	H
4	* 7307.083	48.7	PK2	35.9	-38.5	46.1	-	-	74	-27.9	220	334	V
	* 7309.662	37.15	MAv1	36	-38.5	34.65	54	-19.35	-	-	220	334	V
3	* 7318.969	48.87	PK2	36	-38.5	46.37	-	-	74	-27.63	13	193	H
	* 7319.589	37.19	MAv1	36.1	-38.5	34.79	54	-19.21	-	-	13	193	H
6	9741.636	49.02	PK2	36.8	-37.1	48.72	-	-	-	-	163	240	V
5	9754.837	49.45	PK2	36.9	-37.2	49.15	-	-	-	-	194	373	H

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

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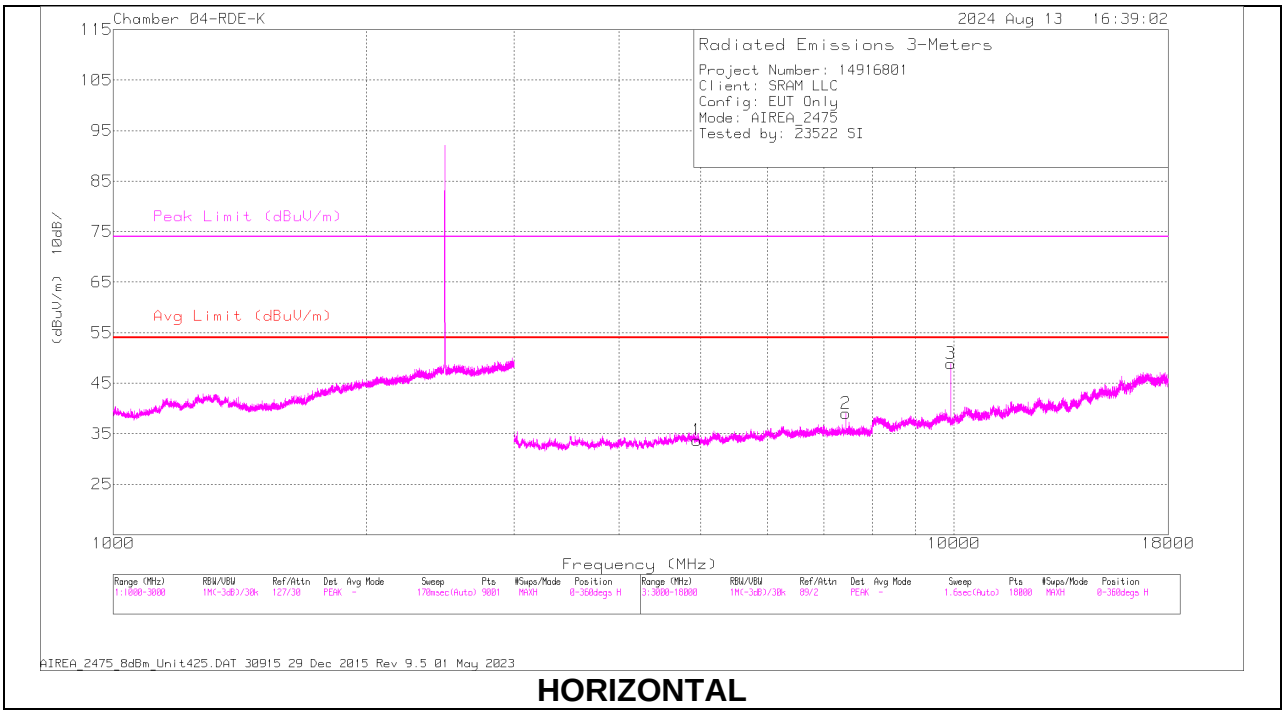
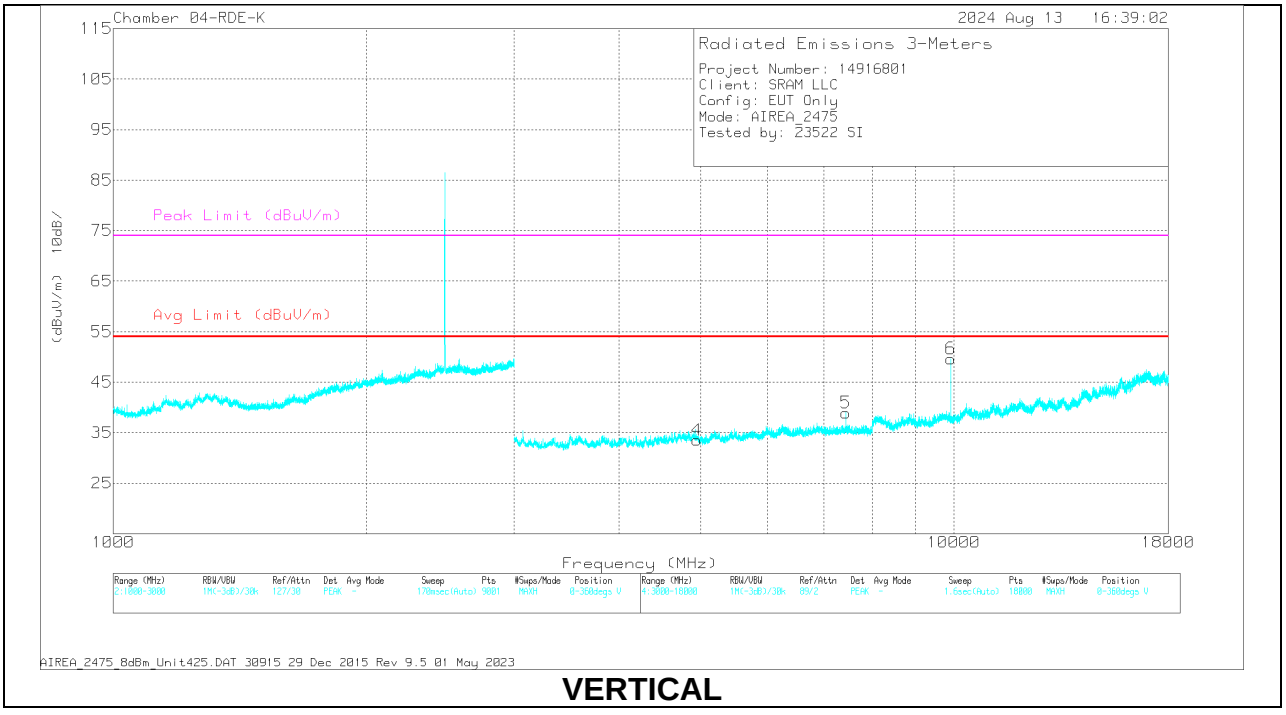
HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	80404 3m ACF(dB/m)	Amp/Cbl/Fltr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
4	* 4948.051	40.01	MAv1	34.1	-41	33.11	54	-20.89	-	-	185	262	V
	* 4949.149	51.5	PK2	34.1	-41	44.6	-	-	74	-29.4	185	262	V
1	* 4950.383	39.89	MAv1	34.1	-41	32.99	54	-21.01	-	-	65	221	H
	* 4951.657	51.36	PK2	34.1	-41	44.46	-	-	74	-29.54	65	221	H
2	* 7438.976	48.61	PK2	35.8	-38.3	46.11	-	-	74	-27.89	350	293	H
	* 7440.196	37.16	MAv1	35.8	-38.3	34.66	54	-19.34	-	-	350	293	H
5	* 7440.932	37.09	MAv1	35.9	-38.3	34.69	54	-19.31	-	-	215	165	V
	* 7441.204	48.77	PK2	35.8	-38.3	46.27	-	-	74	-27.73	215	165	V
3	9921.011	48.48	PK2	37.1	-37.1	48.48	-	-	-	-	286	237	H
6	9921.73	48.62	PK2	37.1	-37.1	48.62	-	-	-	-	39	388	V

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

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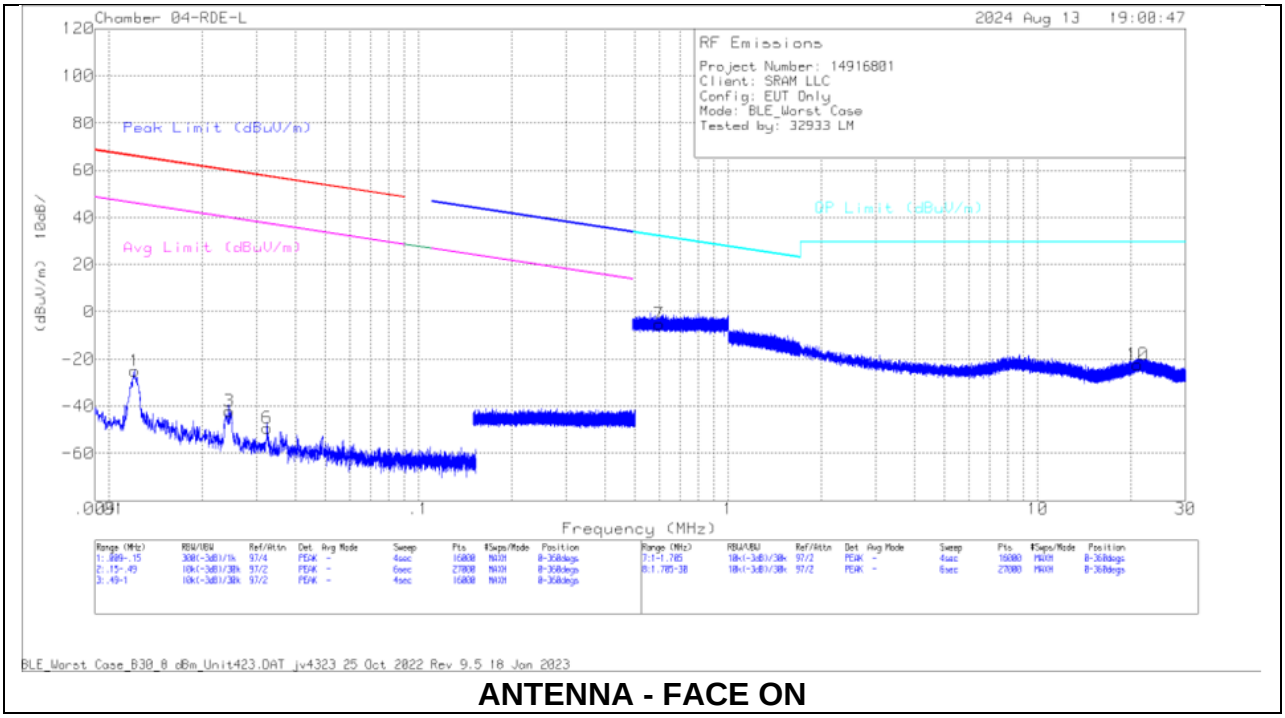
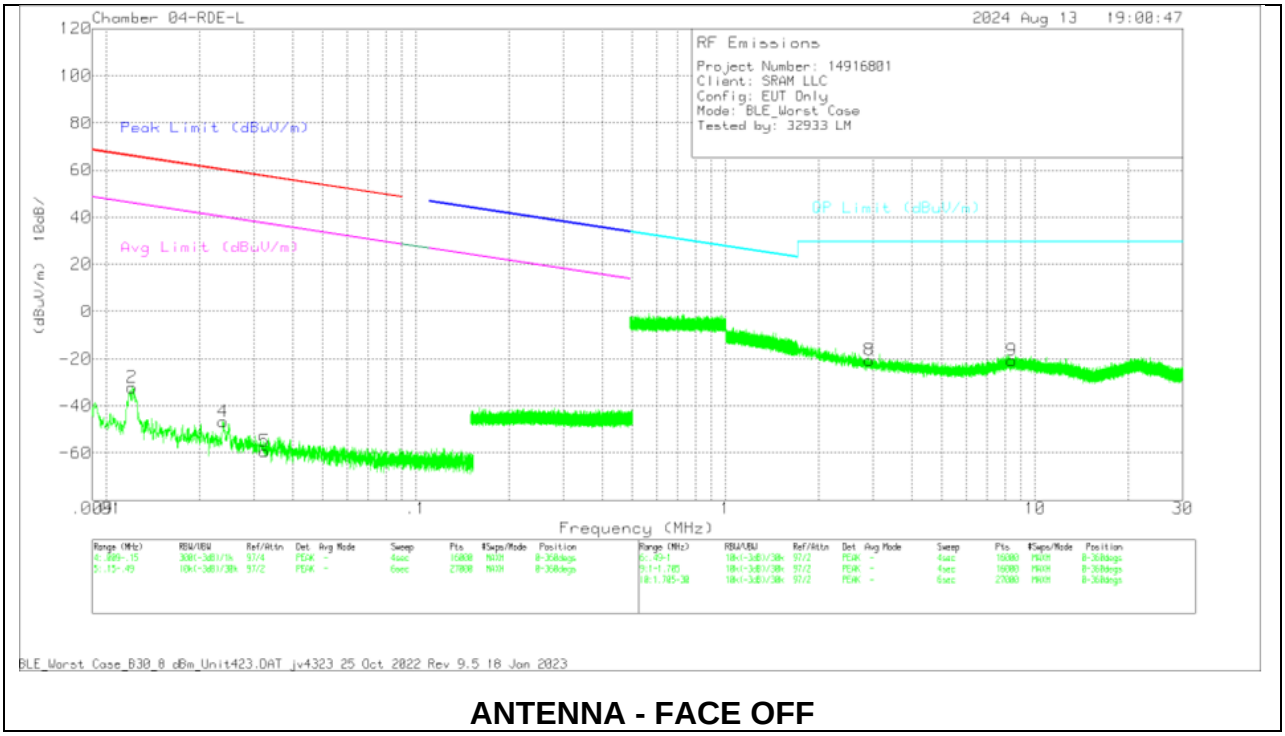
10.3. WORST CASE BELOW 30 MHz

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



ANTENNA - FACE ON



ANTENNA - FACE OFF

UL VERIFICATION SERVICES
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Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP (dB)	Dist Corr 300m(dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
1	.0121	24.88	Pk	60	-29.4	-80	-24.52	65.91	-90.43	45.91	-70.43	0-360	0-deg
2	.0162	22.28	Pk	59.5	-30.2	-80	-28.42	63.38	-91.8	43.38	-71.8	0-360	0-deg
3	.0248	9.38	Pk	58.5	-31.3	-80	-43.42	59.69	-103.11	39.69	-83.11	0-360	0-deg
4	.0119	15.32	Pk	60.1	-29.4	-80	-33.98	66.07	-100.05	46.07	-80.05	0-360	90-degs
5	.0165	1.91	Pk	59.5	-30.3	-80	-48.89	63.25	-112.14	43.25	-92.14	0-360	90-degs
6	.0237	4.83	Pk	58.6	-31.2	-80	-47.77	60.1	-107.87	40.1	-87.87	0-360	90-degs

Pk - Peak detector

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna E(ACF) (dB/m)	CBL/AMP(dB)	Dist Corr 30m (dB) 40Log	Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Polarity (Degs)
7	1.174	15.88	Pk	46	-31.8	-40	-9.92	26.23	-36.15	0-360	0-deg
9	2.3212	10.24	Pk	40.8	-31.8	-40	-20.76	29.5	-50.26	0-360	0-deg
8	1.174	12.87	Pk	46	-31.8	-40	-12.93	26.23	-39.16	0-360	90-degs
10	2.3212	11.14	Pk	40.8	-31.8	-40	-19.86	29.5	-49.36	0-360	90-degs

Pk - Peak detector

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

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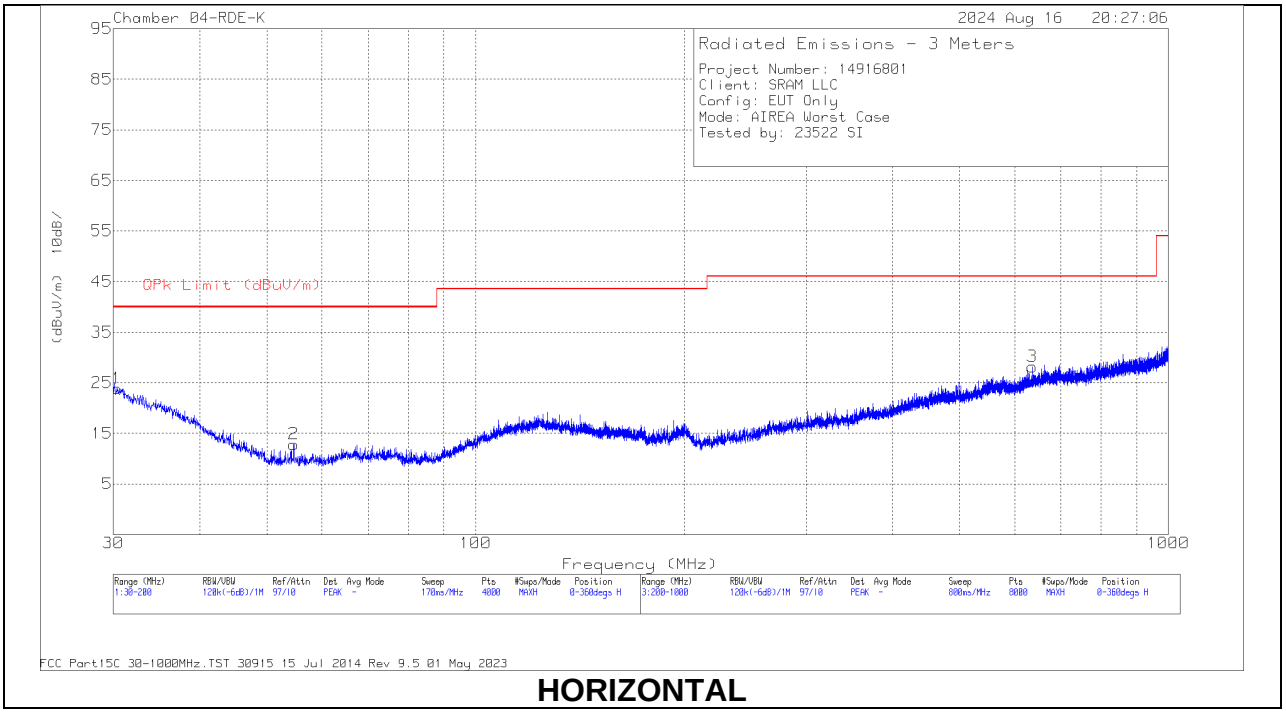
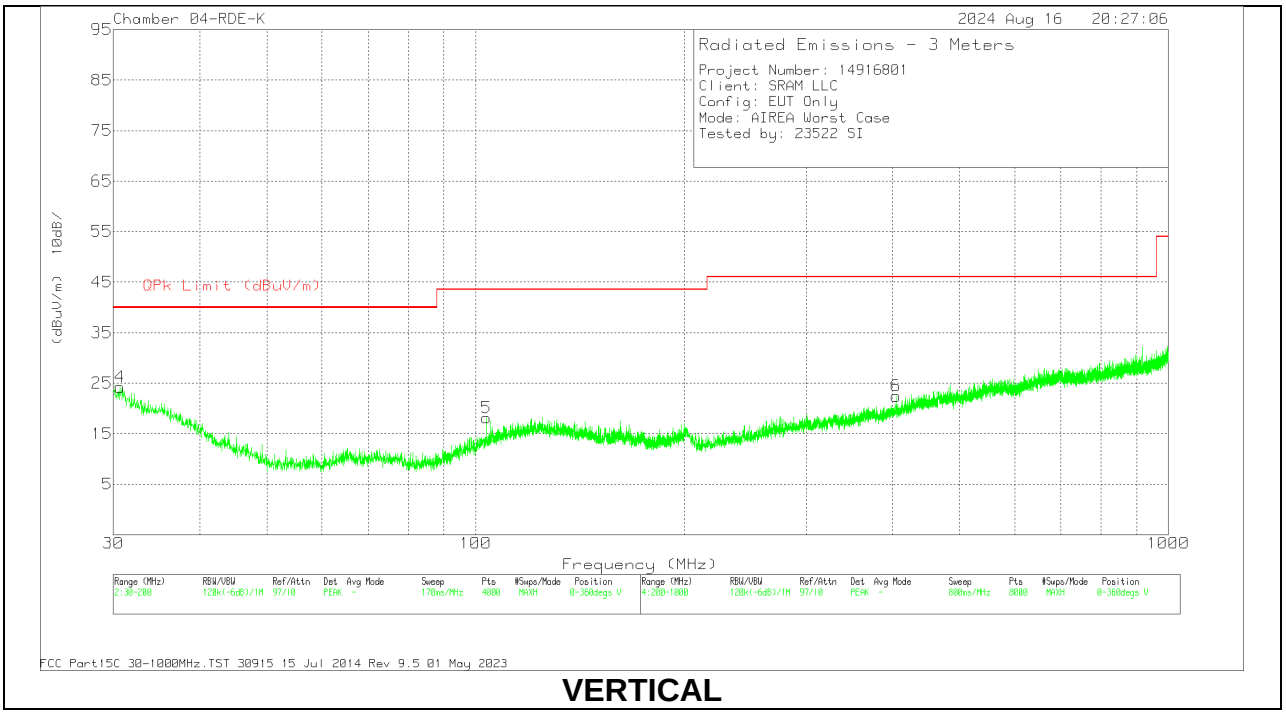
10.4. WORST CASE BELOW 1 GHz

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



HORIZONTAL



VERTICAL

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Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	203089 ACF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.3826	28.15	Pk	26.8	-31.1	23.85	40	-16.15	0-360	399	H
4	31.1916	25.81	Pk	26.3	-31.1	21.01	40	-18.99	188	107	V
	31.1916	21.47	Qp	26.3	-31.1	16.67	40	-23.33	188	107	V
2	54.6564	30.75	Pk	13	-30.9	12.85	40	-27.15	0-360	199	H
5	103.629	31.33	Pk	17.5	-30.7	18.13	43.52	-25.39	0-360	101	V
6	404.427	29.96	Pk	21.5	-29	22.46	46.02	-23.56	0-360	99	V
3	636.257	31.18	Pk	25.3	-28.3	28.18	46.02	-17.84	0-360	199	H

Pk - Peak detector
Qp - Quasi-Peak detector

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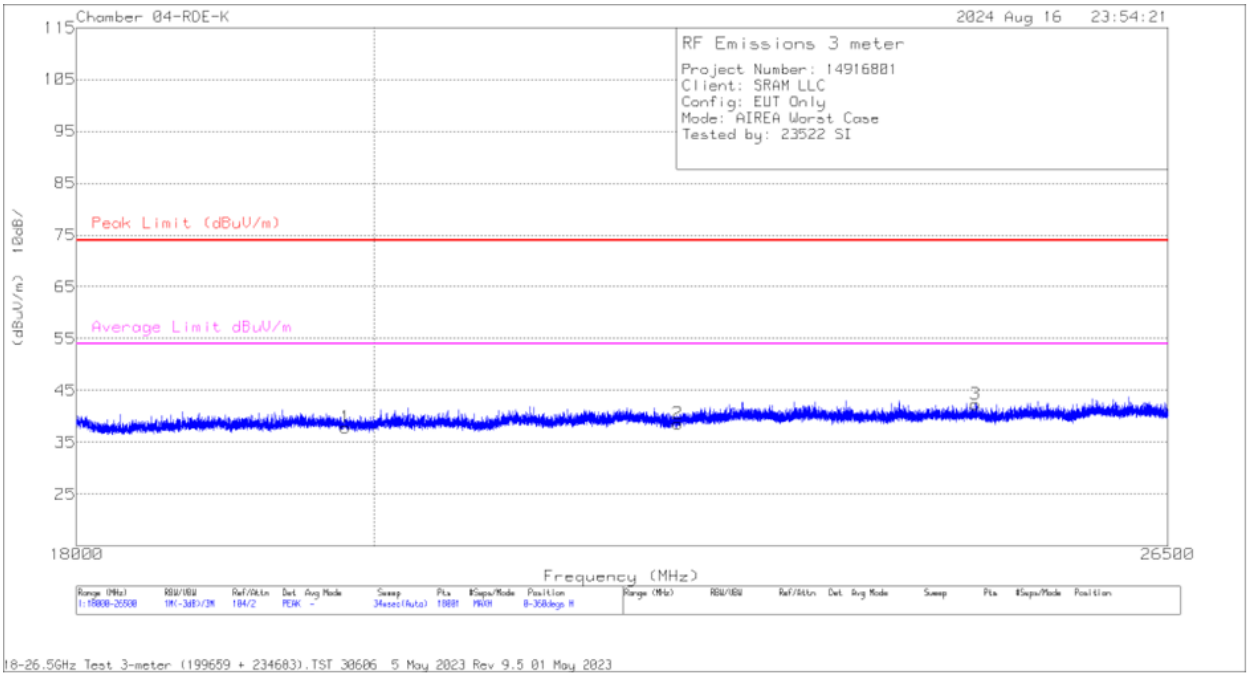
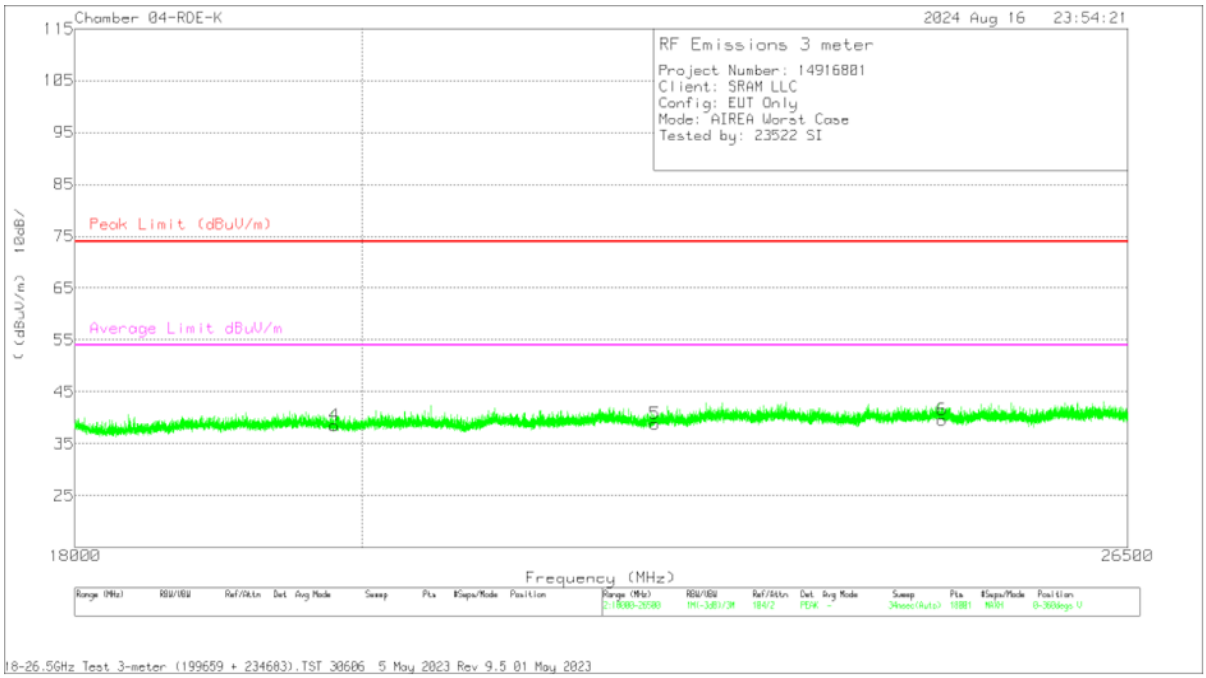
10.5. WORST CASE 18-26 GHz

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



HORIZONTAL



VERTICAL

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

18 – 26GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Horn ACF (dB/m)	234683 Amp/Cbl (dB)	Cable (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Average Limit dBuV/m	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	19800.11	48.77	Pk	32.7	-62.6	19	37.87	74	-36.13	54	-16.13	0-360	101	H
4	19800.582	49.47	Pk	32.7	-62.6	19	38.57	74	-35.43	54	-15.43	0-360	101	V
2	22275.026	47.95	Pk	33.3	-62.6	20	38.65	74	-35.35	54	-15.35	0-360	101	H
5	22275.026	48.22	Pk	33.3	-62.6	20	38.92	74	-35.08	54	-15.08	0-360	200	V
3	24750.886	49.6	Pk	33.9	-62.2	21.1	42.4	74	-31.6	54	-11.6	0-360	199	H
6	24750.886	46.88	Pk	33.9	-62.2	21.1	39.68	74	-34.32	54	-14.32	0-360	200	V

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

UL VERIFICATION SERVICES
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