

TEST REPORT

Report Number: R15186804-E2

Applicant : Axon Enterprise Inc.
17800 North 85th Street
Scottsdale, AZ 85255, USA

Model : VR1001

FCC ID : X4GS01826

IC : 8803A-S01826

EUT Description : VR19H VR Controller

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C: 2024
ISED RSS-247 ISSUE 3: 2023
ISED RSS-GEN ISSUE 5 + A1 + A2: 2021

Date Of Issue:
2024-05-21

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024-05-10	Initial Issue	Charles Moody
V2	2024-05-21	Replaced mid channel spurious emissions with updated data	Chandler Stanley

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	5
2. TEST RESULTS SUMMARY	6
3. TEST METHODOLOGY	6
4. FACILITIES AND ACCREDITATION	6
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	7
5.1. METROLOGICAL TRACEABILITY	7
5.2. DECISION RULES.....	7
5.3. MEASUREMENT UNCERTAINTY.....	7
5.4. SAMPLE CALCULATION	7
6. EQUIPMENT UNDER TEST	8
6.1. EUT DESCRIPTION	8
6.2. MAXIMUM OUTPUT POWER.....	8
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
6.4. SOFTWARE AND FIRMWARE.....	8
6.5. WORST-CASE CONFIGURATION AND MODE.....	8
6.6. DESCRIPTION OF TEST SETUP.....	9
7. MEASUREMENT METHOD.....	10
8. TEST AND MEASUREMENT EQUIPMENT	11
9. ANTENNA PORT TEST RESULTS.....	13
9.1. ON TIME AND DUTY CYCLE.....	13
9.2. 99% BANDWIDTH.....	14
9.2.1. BLE (1Mbps).....	14
9.3. 6 dB BANDWIDTH.....	15
9.3.1. BLE (1Mbps).....	15
9.4. OUTPUT POWER.....	16
9.4.1. BLE (1Mbps).....	16
9.5. AVERAGE POWER.....	17
9.5.1. BLE (1Mbps).....	17
9.6. POWER SPECTRAL DENSITY	18
9.6.1. BLE (1Mbps).....	18

9.7.	CONDUCTED SPURIOUS EMISSIONS.....	19
9.7.1.	BLE (1Mbps).....	20
10.	RADIATED TEST RESULTS	21
10.1.	LIMITS AND PROCEDURE.....	21
10.2.	TRANSMITTER ABOVE 1 GHz.....	23
10.2.1.	BLE (1Mbps)	23
10.3.	WORST CASE BELOW 30MHZ.....	33
10.4.	WORST CASE BELOW 1 GHZ.....	35
10.5.	WORST CASE 18-26 GHZ.....	37
11.	SETUP PHOTOS	39

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Axon Enterprise Inc.
17800 North 85th Street
Scottsdale, AZ 85255, USA

EUT DESCRIPTION: VR19H VR Controller

MODEL: VR1001

SERIAL NUMBER: T40SP1043, T40SP1059

SAMPLE RECEIPT DATE: 2024-03-12 TO 2024-05-03

DATE TESTED: 2024-04-01 TO 2024-05-06, 2024-05-17

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C: 2024	Refer to Section 2
ISED RSS-247 Issue 3: 2023	Refer to Section 2
ISED RSS-GEN Issue 5 + A1 + A2: 2021	Refer to Section 2

UL LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released For
UL LLC By:



Jeffrey Moser
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UL LLC

Prepared By:



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Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL LLC 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)
2. Supported data rates (see section 6.5)

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		
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		
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	N/A	See Note 1.

NOTE 1: For testing, the EUT was connected to a power adapter to keep the EUT powered throughout testing. The client has declared that in normal operation, the EUT can not transmit and charge simultaneously. However, for our testing, we left the EUT attached to power so that the battery would last throughout the duration of the scan. Therefore AC Mains testing is not required.

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 C63.10-2020, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A1 + A2, and RSS-247 Issue 3.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, 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: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

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}
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%

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 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a VR19H VR Controller which contains a BLE radio used to interact with a virtual reality platform to be used for training. This report covers the full emissions testing of the BLE radio.

6.2. MAXIMUM OUTPUT POWER

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

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	BLE	9.04	8.02

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
The radio utilizes an PIFA antenna, with a maximum gain of 1.77 dBi.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 1107.
The test utility software used during testing was USB tool.

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 power spectral density 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 and high channels, as well as middle channel for radiated spurious emissions.

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

The EUT was tested at it's only supported data rate, as declared by the client, of 1Mbps.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Support Laptop	Lenovo	T14 Gen3	PF4FKVYQ	-
Power Adapter	Bose	S008AHU0500160	745559-0030	-

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-C	1	USB-C to USB-A	Shielded	<3m	Used to connect EUT to support laptop/power adapter

TEST SETUP

The EUT is connected to a support laptop to configure the EUT radio module prior to testing. For final testing, the EUT was disconnected from the support laptop and connected to a power adapter to keep the EUT powered throughout testing. The client has declared that in normal operation, the EUT can not transmit and charge simultaneously. However, for our testing, we left the EUT attached to power so that the battery would last throughout the duration of the scan.

SETUP DIAGRAMS

Please refer to R15186804-EP1 for setup diagrams

7. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10, Section 11.6 : Zero-Span Spectrum Analyzer Method.

6 dB BW: ANSI C63.10 Subclause -11.8.1

Occupied BW (99%): ANSI C63.10-2020 Section 6.9.3

Output Power: ANSI C63.10 Subclause -11.9.1.2 Method PKPM1 Peak-reading power meter
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)

Conducted emissions non-restricted frequency bands: ANSI C63.10 Subclause -11.11 and
6.10.4

Radiated emissions restricted frequency bands: ANSI C63.10 Subclause -11.12.1, 6.3-6.6 and
6.10.5

8. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Common Equipment				
	Conducted Room 1				
90411	Spectrum Analyzer	Keysight Technologies	N9030A	2023-08-02	2024-08-02
179892	Environmental Meter	Fisher Scientific	15-077-963	2023-07-26	2024-06-31
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
	Additional Equipment used				
211055	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2023-08-01	2024-08-01
226559	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2024-02-29	2025-02-28

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	Gain-Loss Chains				
91979	Gain-loss string: 1-18GHz	Various	Various	2023-05-16	2024-05-16
	Receiver & Software				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2023-07-19	2024-07-19
81018	Spectrum Analyzer	Agilent	E4446A	2023-08-01	2024-08-01
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	0.009-30MHz				
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-01-24	2025-01-24
	30-1000 MHz				
159203	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-03-05	2026-03-05
	1-18 GHz				
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-06-19	2025-06-19
	18-40 GHz				
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-826	2023-07-20	2025-07-20
	Gain-Loss Chains				
91975	Gain-loss string: 0.009-30MHz	Various	Various	2023-06-06	2024-06-06
91978	Gain-loss string: 25-1000MHz	Various	Various	2023-06-06	2024-06-06
91977	Gain-loss string: 1-18GHz	Various	Various	2023-06-06	2024-06-06
136042	Gain-loss string: 18-40GHz	Various	Various	2023-06-06	2024-06-06
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-03-05	2025-03-05
90416	Spectrum Analyzer	Keysight	N9030A	2023-06-09	2024-06-30
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
200540	Environmental Meter	Fisher Scientific	15-077-963	2023-07-19	2025-07-19

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

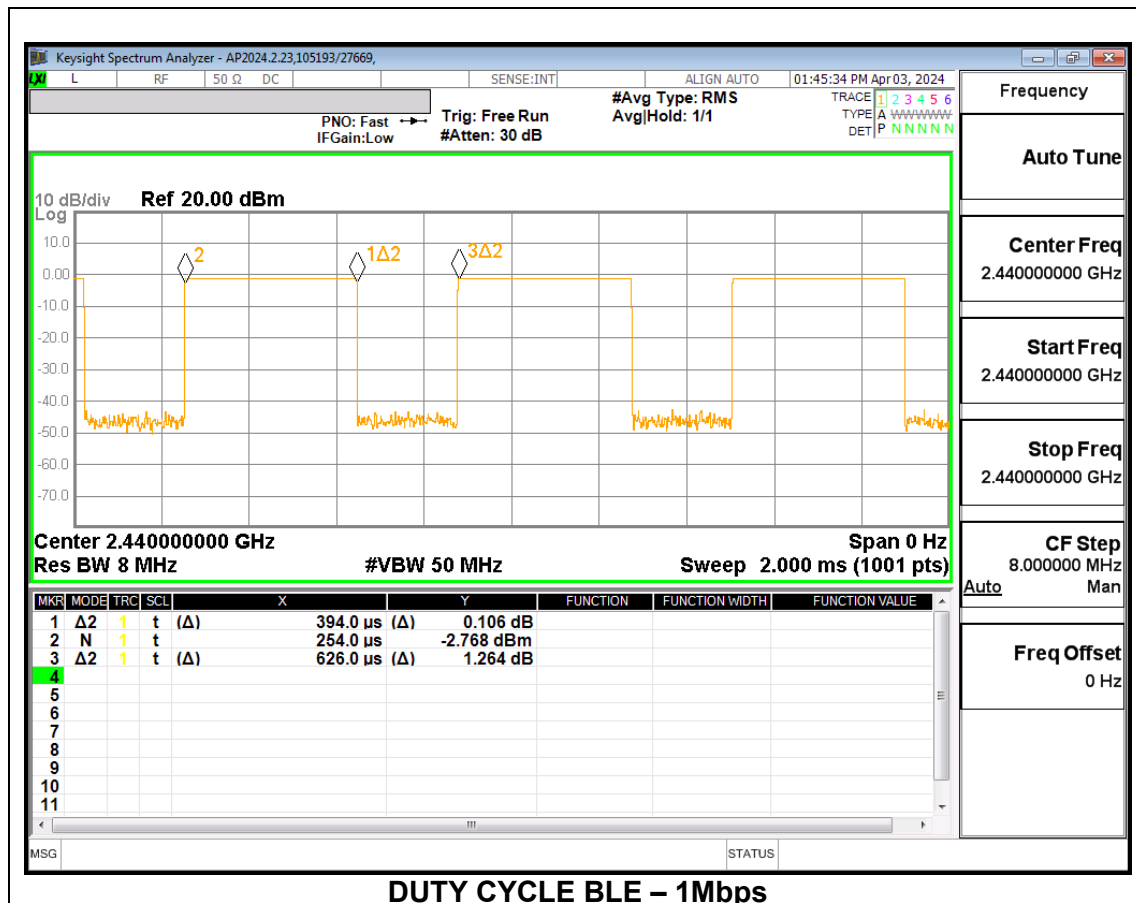
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
BLE	0.394	0.626	0.629	62.94	4.02	2.538

DUTY CYCLE PLOTS



9.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

9.2.1. BLE (1Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0422
Middle	2440	1.0469
High	2480	1.0490



9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

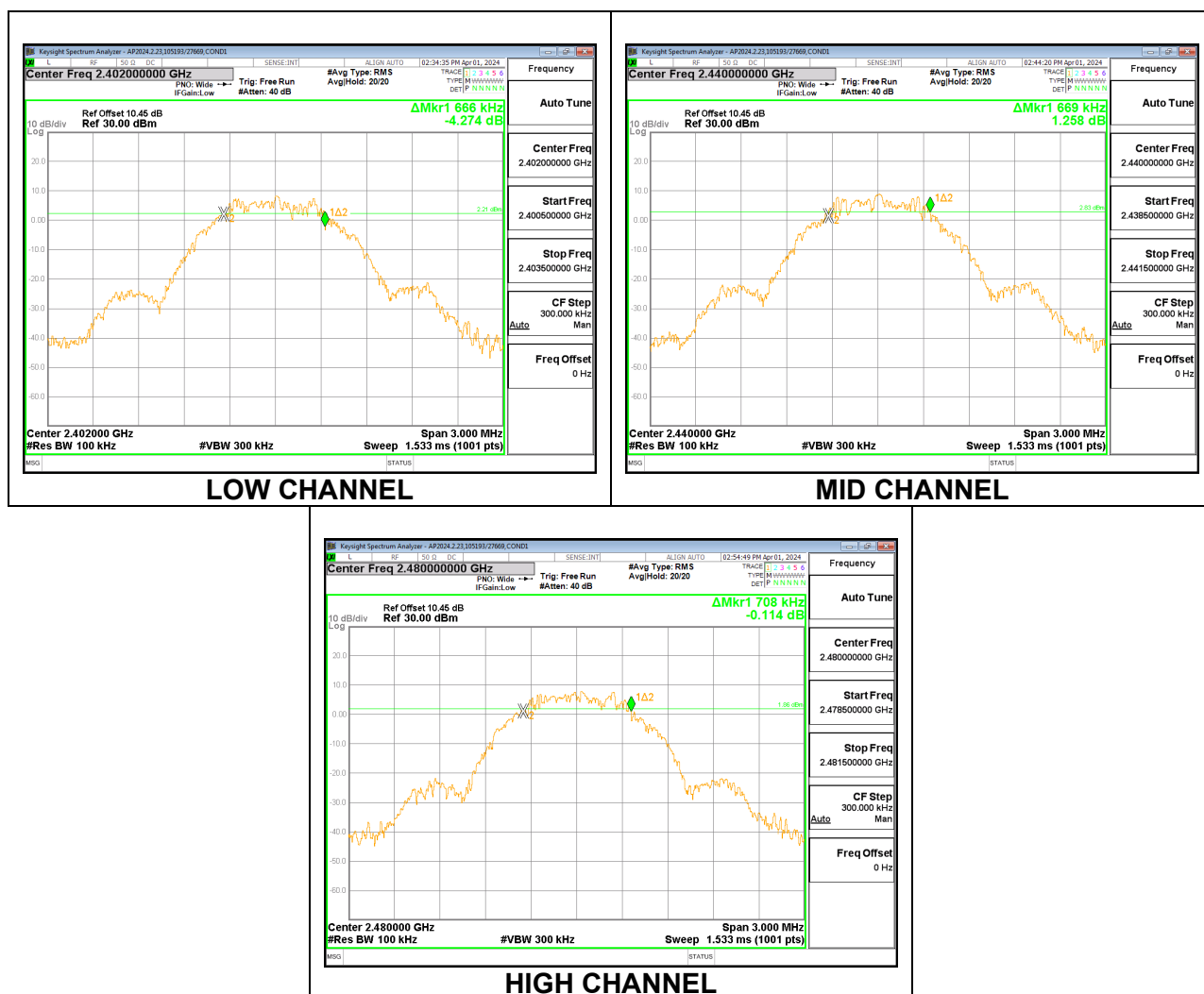
RSS-247 5.2 (a)

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

RESULTS

9.3.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.666	0.5
Middle	2440	0.669	0.5
High	2480	0.708	0.5



9.4. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)
RSS-247 5.4 (d)

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

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.45 dB (including 9.69 dB pad and 0.76 dB cable) was entered as an offset in the power meter to allow for a peak reading of power.

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. Peak output power was read directly from power meter.

RESULTS

9.4.1. BLE (1Mbps)

Tested By:	105193/27669
Date:	2024-04-01

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	8.55	30	-21.450
Middle	2440	9.04	30	-20.960
High	2480	8.82	30	-21.180

9.5. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.45 dB (including 9.69 dB pad and 0.76 dB cable) was entered as an offset in the power meter to allow for a gated average reading of power.

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. BLE (1Mbps)

Tested By:	105193/27669
Date:	2024-04-01

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	8.32
Middle	2440	8.82
High	2480	8.52

9.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

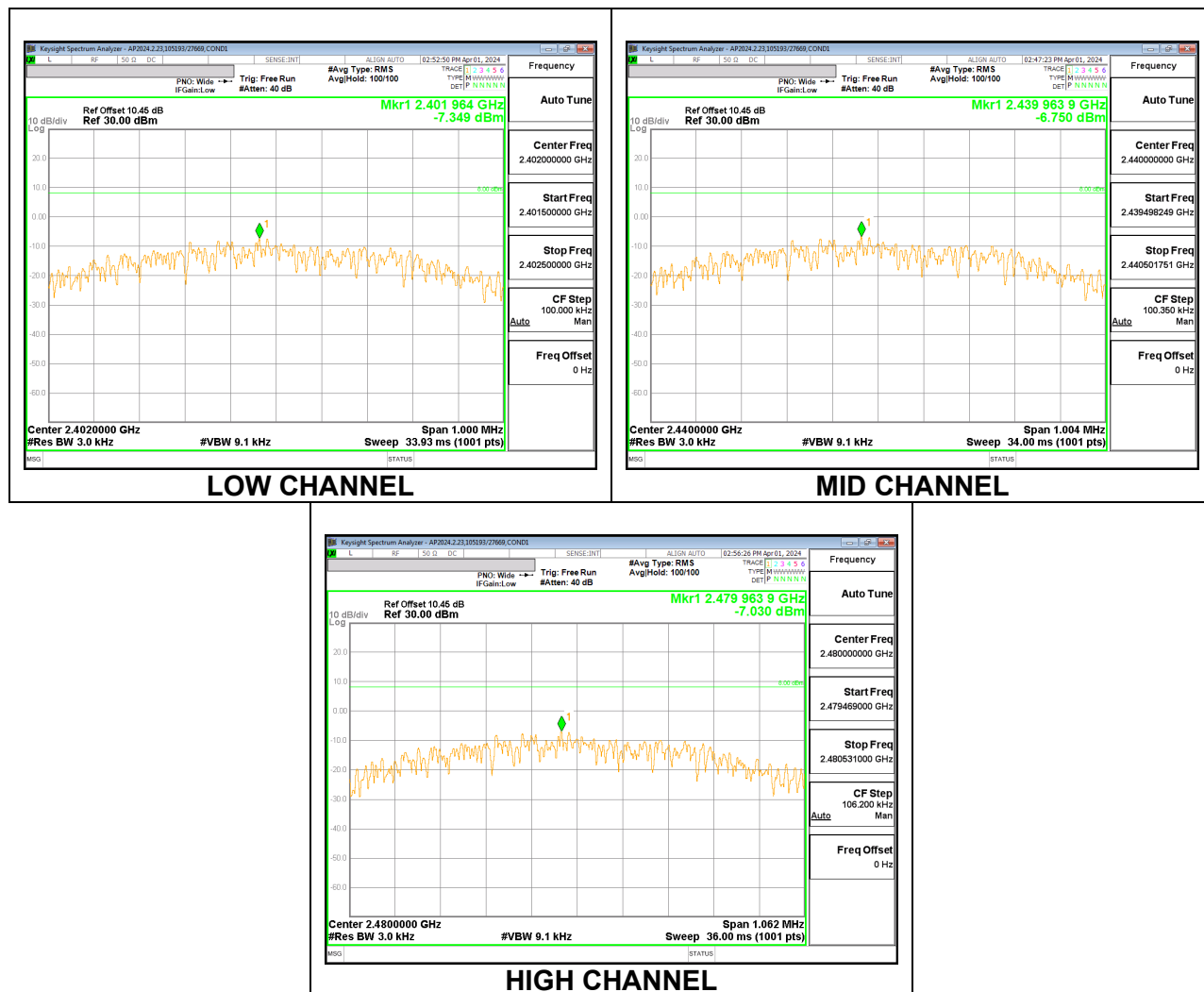
RSS-247 (5.2) (b)

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

9.6.1. BLE (1Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-7.349	8	-15.35
Middle	2440	-6.750	8	-14.75
High	2480	-7.030	8	-15.03



9.7. CONDUCTED SPURIOUS EMISSIONS

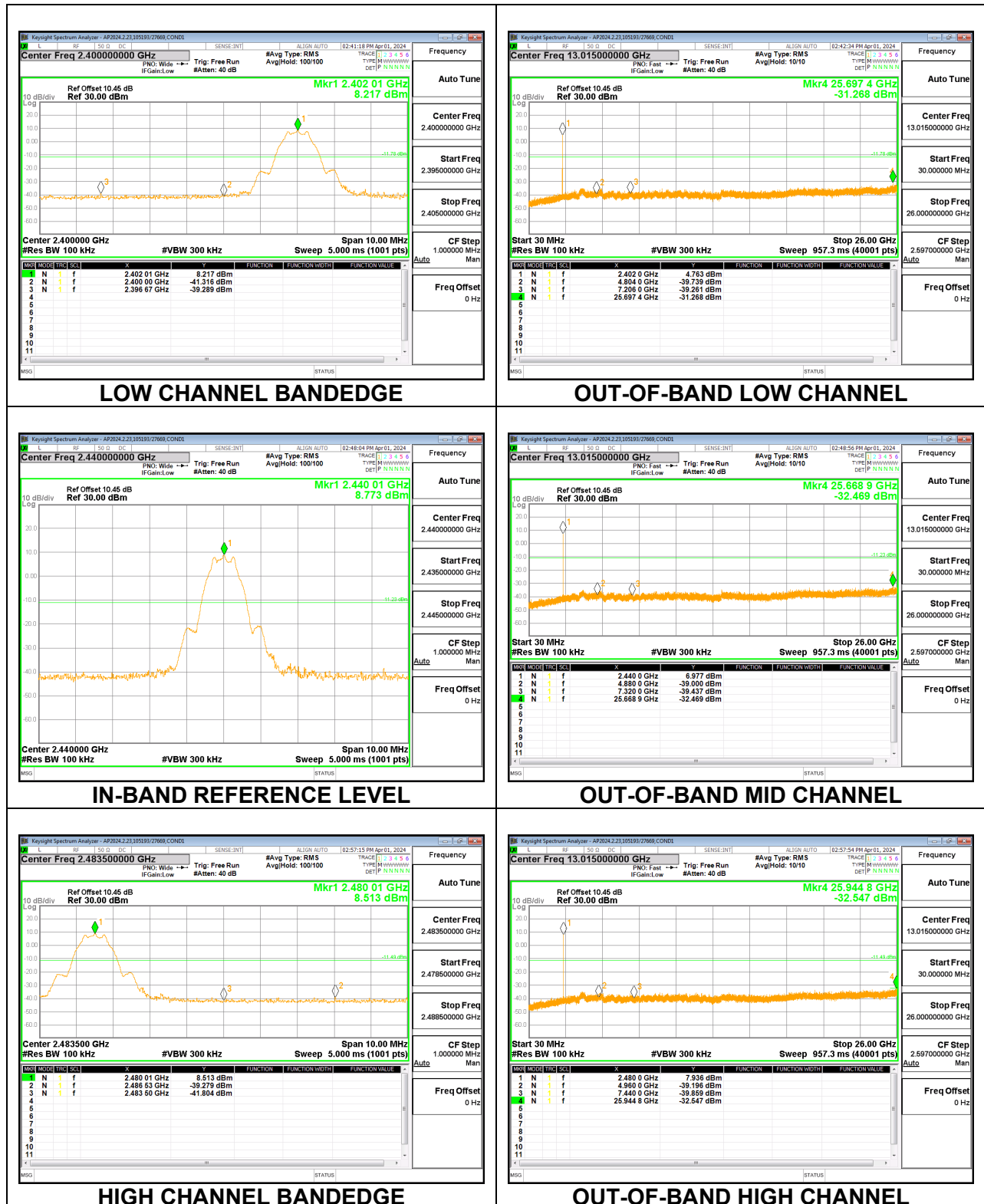
LIMITS

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. BLE (1Mbps)



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuA/m) at 3 m
0.009-0.490	6.37/F(kHz) @ 300 m	-
0.490-1.705	63.7/F(kHz) @ 30 m	-
1.705 - 30	0.08 @ 30m	-
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
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 3 MHz 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. Linear Voltage Averaging was used.

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 power spectral density 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.

3D antenna use - For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel).

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

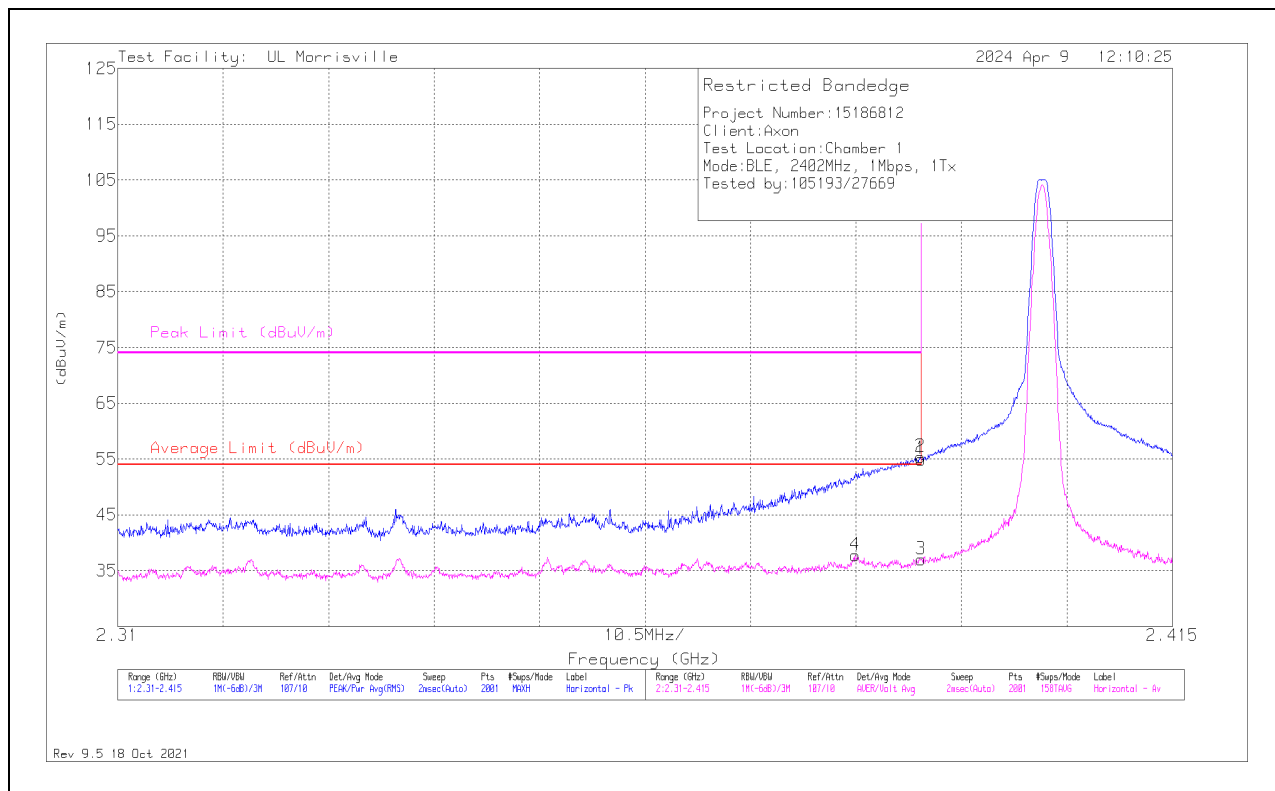
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



NOTE: Correct order number for this scan should be 15186804.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	47.05	Pk	32.1	-24.2	0	54.95	-	-	74	-19.05	150	283	H
2	*** 2.38991	47.48	Pk	32.1	-24.2	0	55.38	-	-	74	-18.62	150	283	H
3	*** 2.38996	25.03	ADV	32.1	-24.2	4.02	36.95	54	-17.05	-	-	150	283	H
4	*** 2.38345	25.79	ADV	32.1	-24.2	4.02	37.71	54	-16.29	-	-	150	283	H

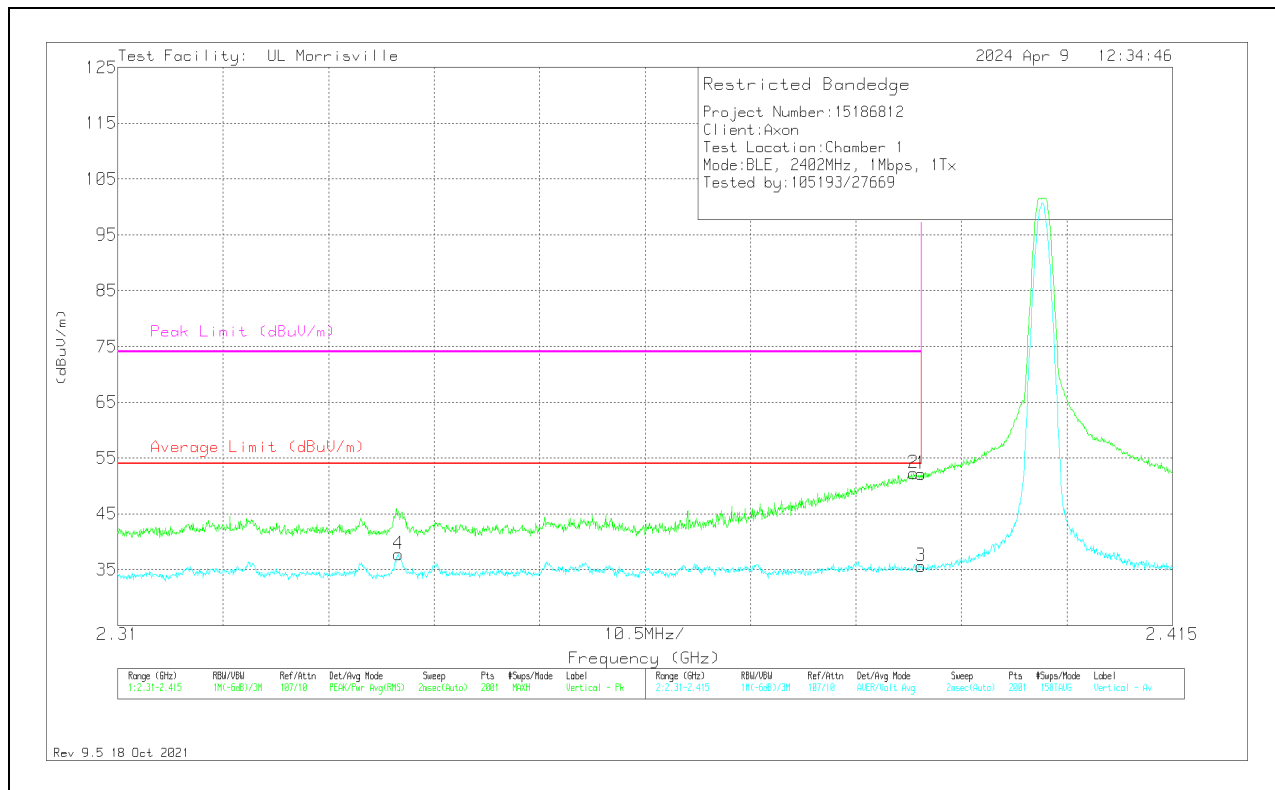
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



NOTE: Correct order number for this scan should be 15186804.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.38996	44.29	Pk	32.1	-24.2	0	52.19	-	-	74	-21.81	116	246	V
2	*** 2.38922	44.39	Pk	32.1	-24.2	0	52.29	-	-	74	-21.71	116	246	V
3	*** 2.38996	23.72	ADV	32.1	-24.2	4.02	35.64	54	-18.36	-	-	116	246	V
4	*** 2.33793	25.82	ADV	32	-24.1	4.02	37.74	54	-16.26	-	-	116	246	V

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

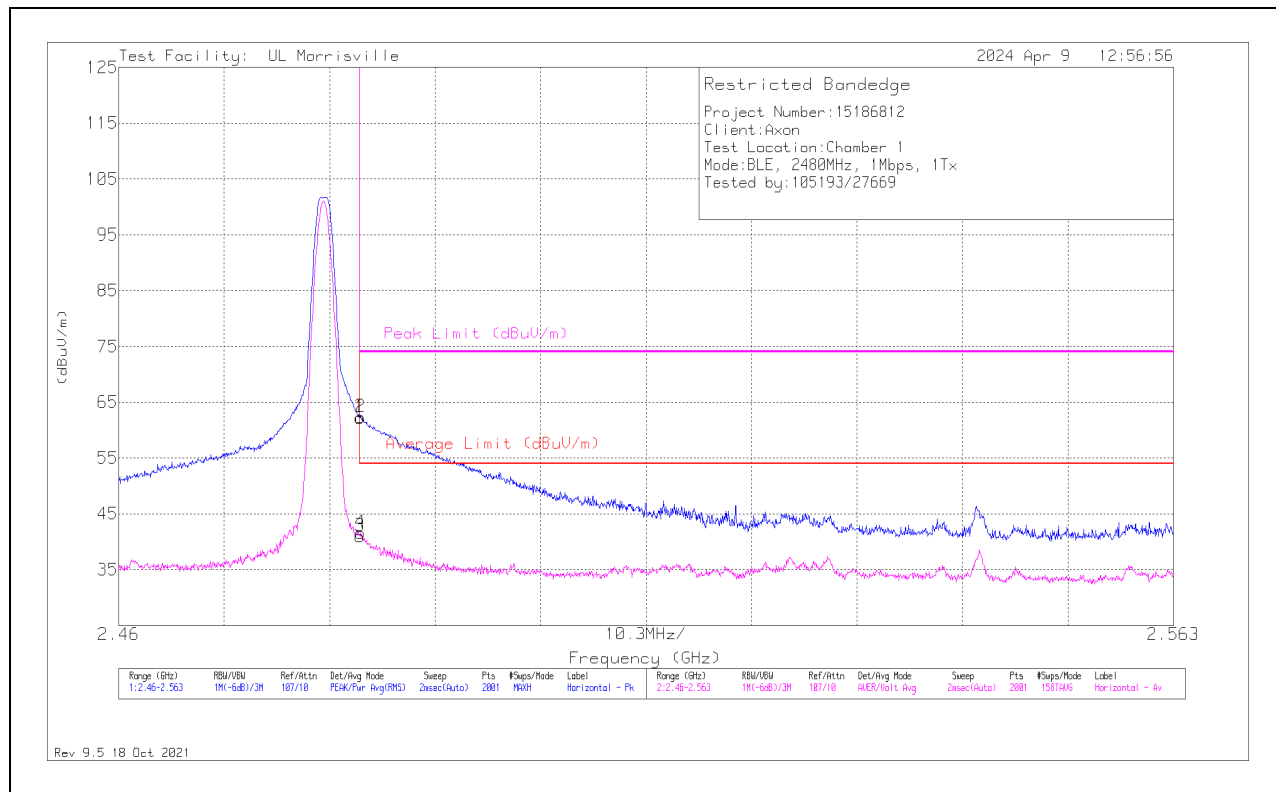
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



NOTE: Correct order number for this scan should be 15186804.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	54.44	Pk	32.3	-24.5	0	62.24	-	-	74	-11.76	88	237	H
2	*** 2.48364	54.5	Pk	32.3	-24.5	0	62.3	-	-	74	-11.7	88	237	H
3	*** 2.48354	29.12	ADV	32.3	-24.5	4.02	40.94	54	-13.06	-	-	88	237	H
4	*** 2.48364	29.74	ADV	32.3	-24.5	4.02	41.56	54	-12.44	-	-	88	237	H

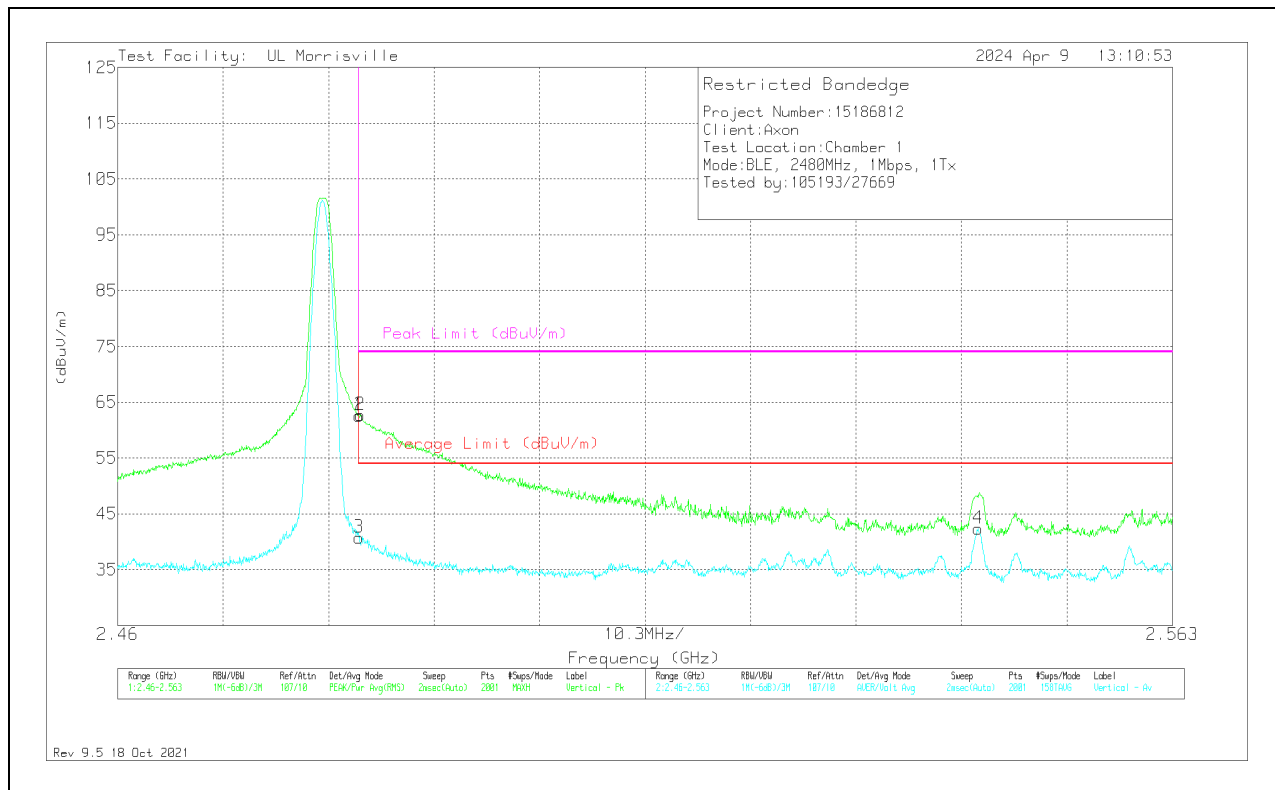
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



NOTE: Correct order number for this scan should be 15186804.

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	54.78	Pk	32.3	-24.5	0	62.58	-	-	74	-11.42	213	109	V
2	* ** 2.48369	54.92	Pk	32.3	-24.5	0	62.72	-	-	74	-11.28	213	109	V
3	* ** 2.48354	28.89	ADV	32.3	-24.5	4.02	40.71	54	-13.29	-	-	213	109	V
4	** 2.544	31.06	ADV	32.3	-25	4.02	42.38	54	-11.62	-	-	213	109	V

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

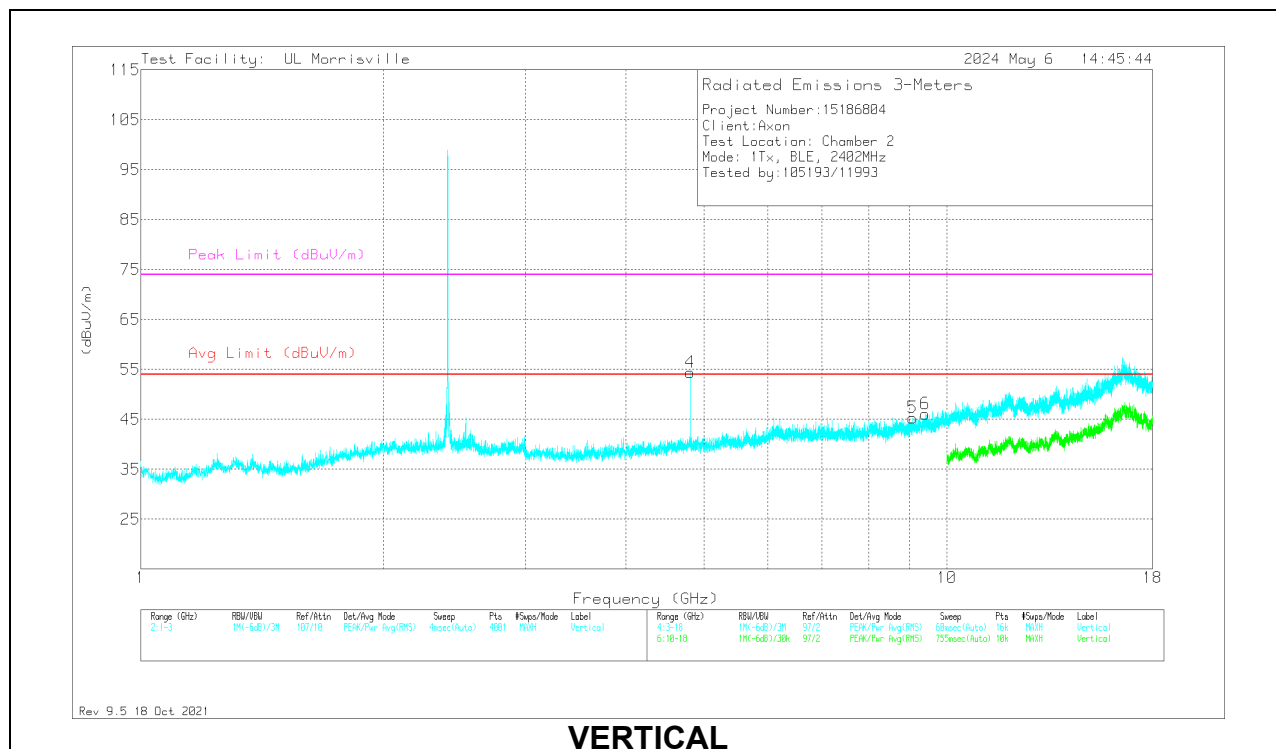
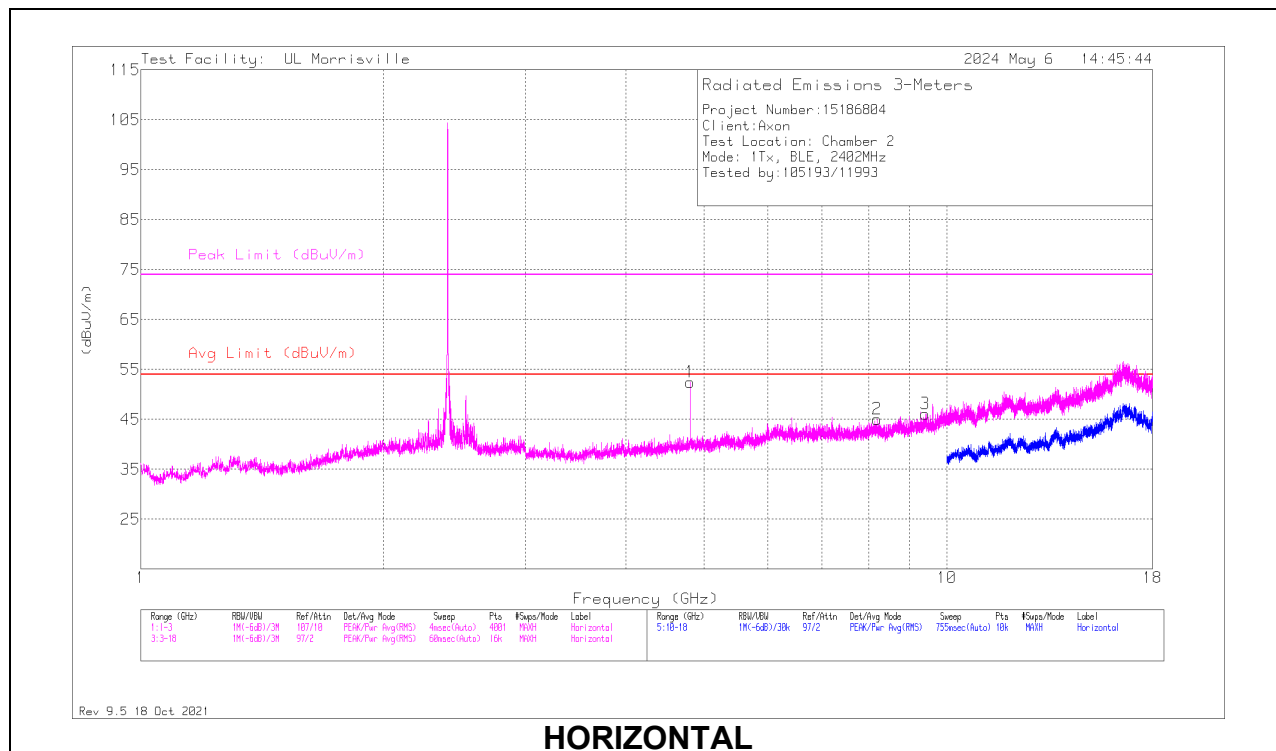
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.80347	50.25	PK2	34.2	-30	0	54.45	-	-	74	-19.55	155	101	H
	* ** 4.80391	42.58	ADV	34.2	-30	4.02	50.8	54	-3.2	-	-	155	101	H
2	* ** 8.1975	35.85	Pk	35.8	-26.6	0	45.05	54	-8.95	74	-28.95	0-360	101	H
3	* ** 9.40172	35.34	Pk	36.2	-25.4	0	46.14	54	-7.86	74	-27.86	0-360	199	H
4	* ** 4.8041	53.34	PK2	34.2	-30	0	57.54	-	-	74	-16.46	2	255	V
	* ** 4.80355	45.31	ADV	34.2	-30	4.02	53.53	54	-4.7	-	-	2	255	V
5	* ** 9.06844	34.58	Pk	35.9	-25.2	0	45.28	54	-8.72	74	-28.72	0-360	200	V
6	* ** 9.40313	35.18	Pk	36.2	-25.3	0	46.08	54	-7.92	74	-27.92	0-360	101	V

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

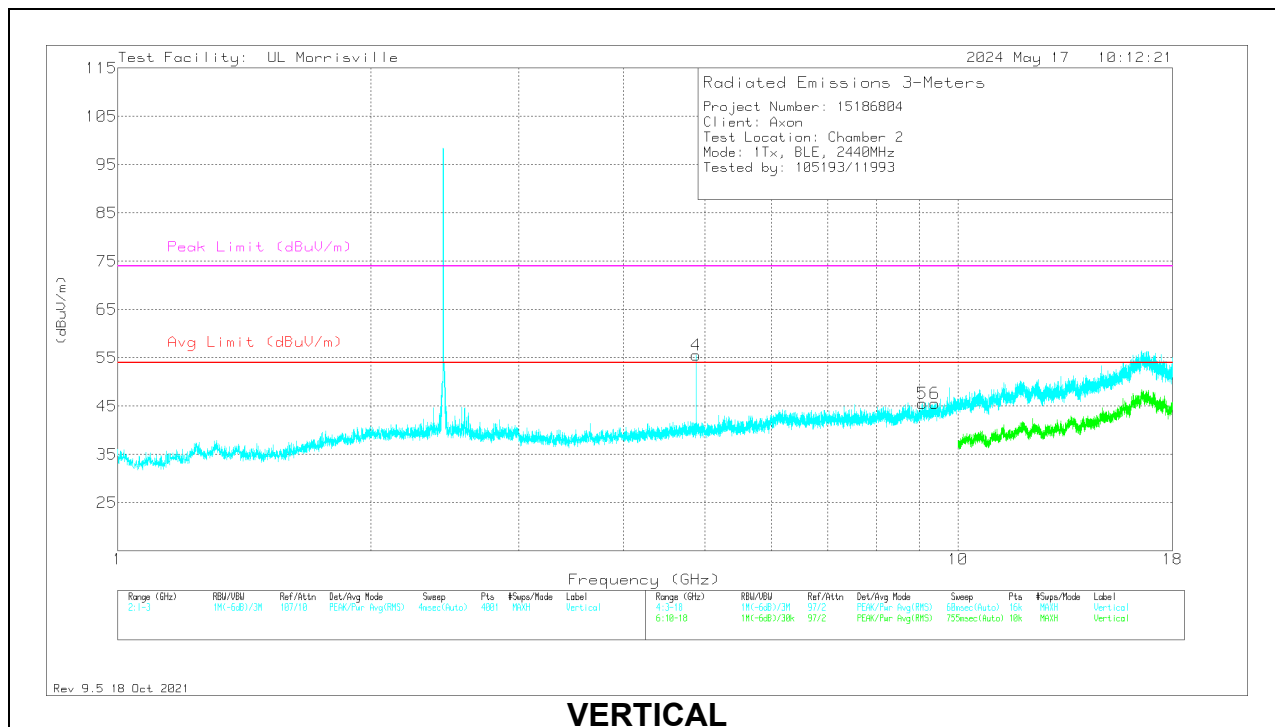
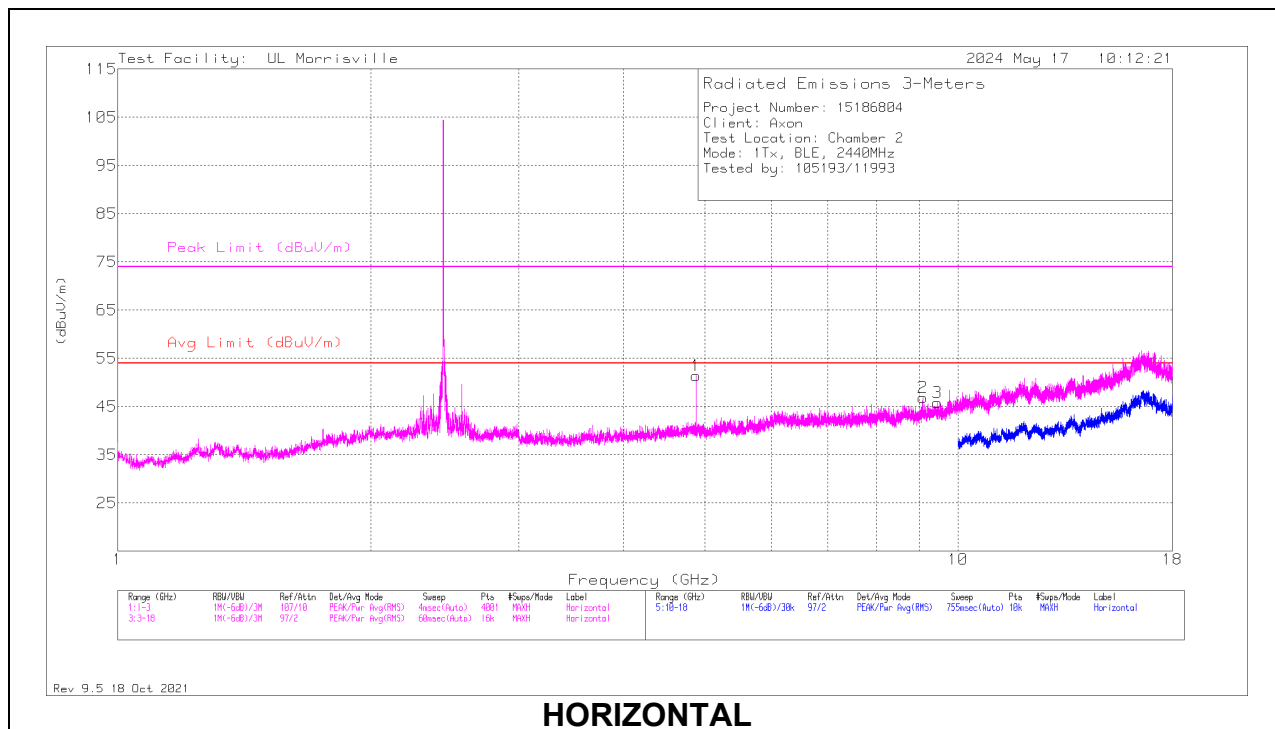
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Method: Maximum Peak

ADV - Linear Voltage Average

MID CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 4.87954	49.84	PK2	34.1	-30.4	0	53.54	-	-	74	-20.46	150	163	H
	*** 4.88028	41.63	ADV	34.1	-30.4	4.02	49.35	54	-4.65	-	-	150	163	H
2	*** 9.08063	36.16	Pk	35.9	-25.2	0	46.86	54	-7.14	74	-27.14	0-360	101	H
3	*** 9.45938	34.66	Pk	36.3	-25.1	0	45.86	54	-8.14	74	-28.14	0-360	101	H
4	*** 4.87992	51.71	PK2	34.1	-30.4	0	55.41	-	-	74	-18.59	175	166	V
	*** 4.87992	43.87	ADV	34.1	-30.4	4.02	51.59	54	-2.41	-	-	175	166	V
5	*** 9.06563	34.88	Pk	35.9	-25.2	0	45.58	54	-8.42	74	-28.42	0-360	101	V
6	*** 9.39281	35.13	Pk	36.2	-25.7	0	45.63	54	-8.37	74	-28.37	0-360	101	V

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

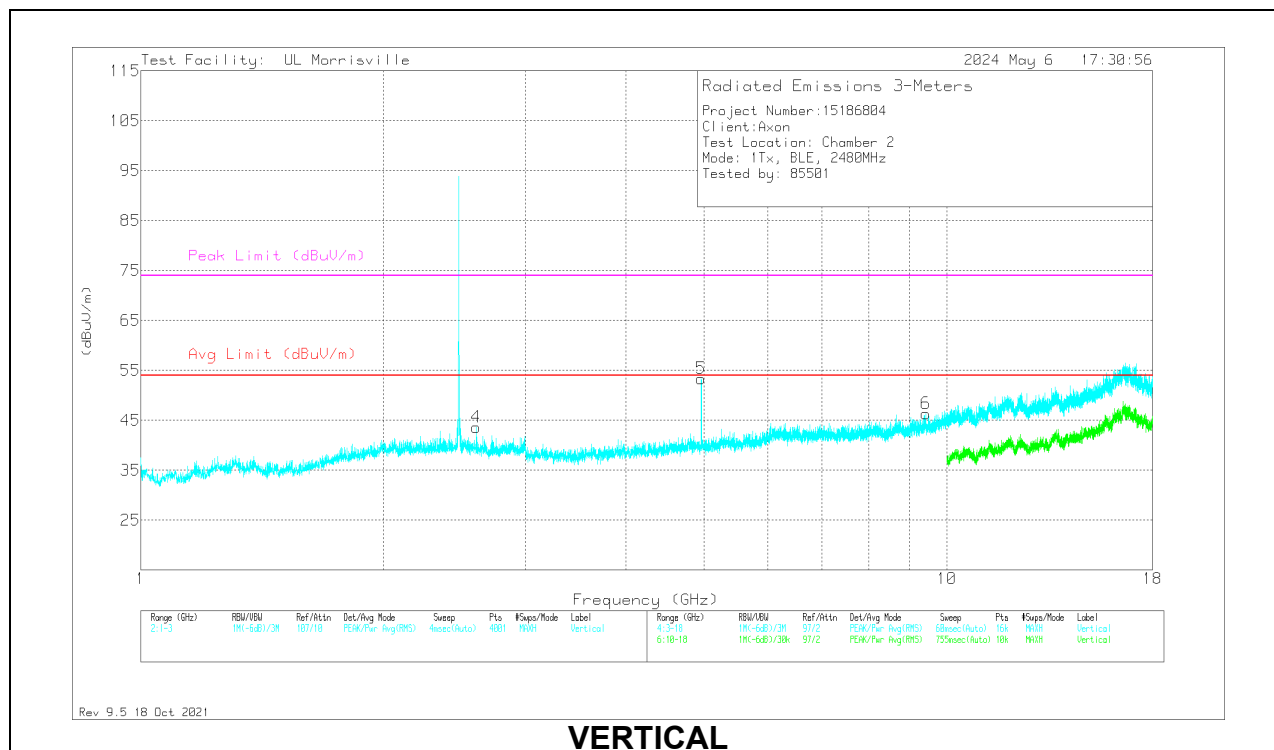
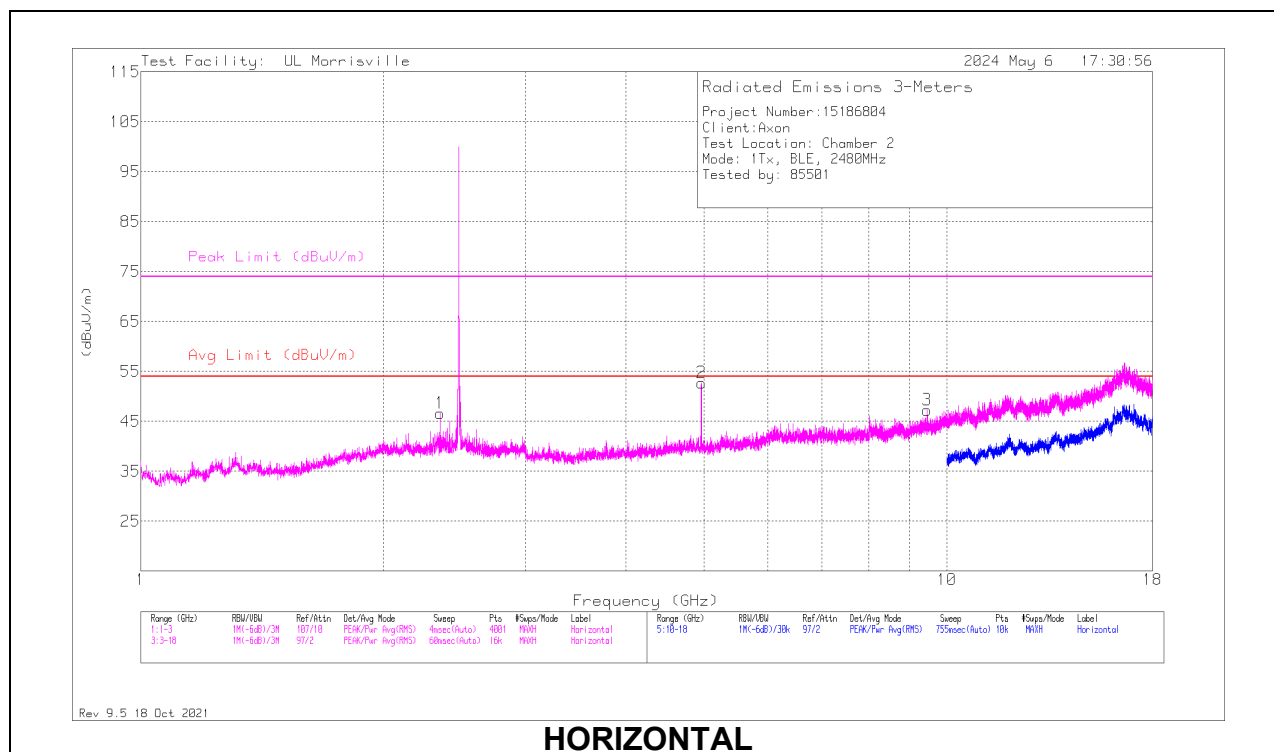
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.3525	38.39	Pk	32.1	-23.9	0	46.59	54	-7.41	74	-27.41	0-360	199	H
4	** 2.6085	36.67	Pk	32.4	-25.4	0	43.67	54	-10.33	74	-30.33	0-360	101	V
2	* ** 4.96046	50.62	PK2	34	-30.3	0	54.32	-	-	74	-19.68	156	101	H
	* ** 4.95963	41.92	ADV	34	-30.3	4.02	49.64	54	-4.36	-	-	156	101	H
3	* ** 9.45656	36.14	Pk	36.3	-25.2	0	47.24	54	-6.76	74	-26.76	0-360	101	H
5	* ** 4.9595	49.92	PK2	34	-30.3	0	53.62	-	-	74	-20.38	174	102	V
	* ** 4.96002	41.41	ADV	34	-30.3	4.02	49.13	54	-4.87	-	-	174	102	V
6	* ** 9.42188	35.67	Pk	36.2	-25.5	0	46.37	54	-7.63	74	-27.63	0-360	200	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

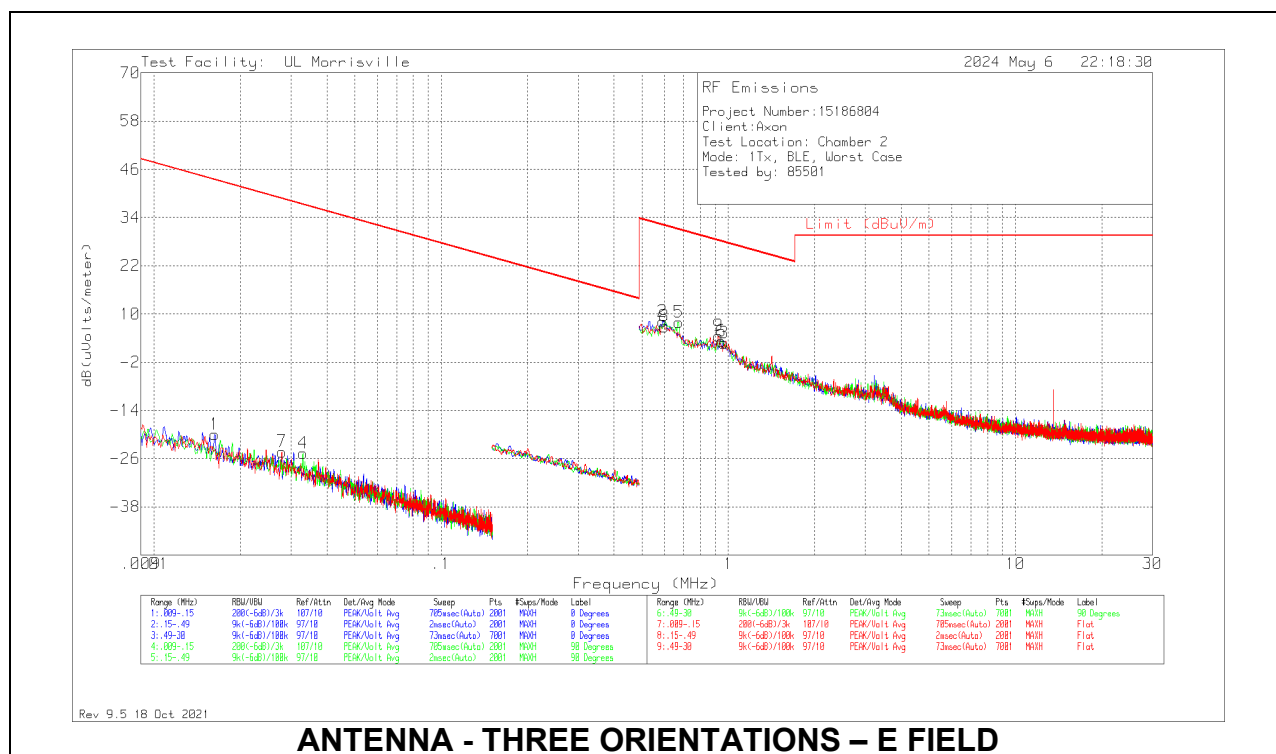
Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

10.3. WORST CASE BELOW 30MHZ

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)

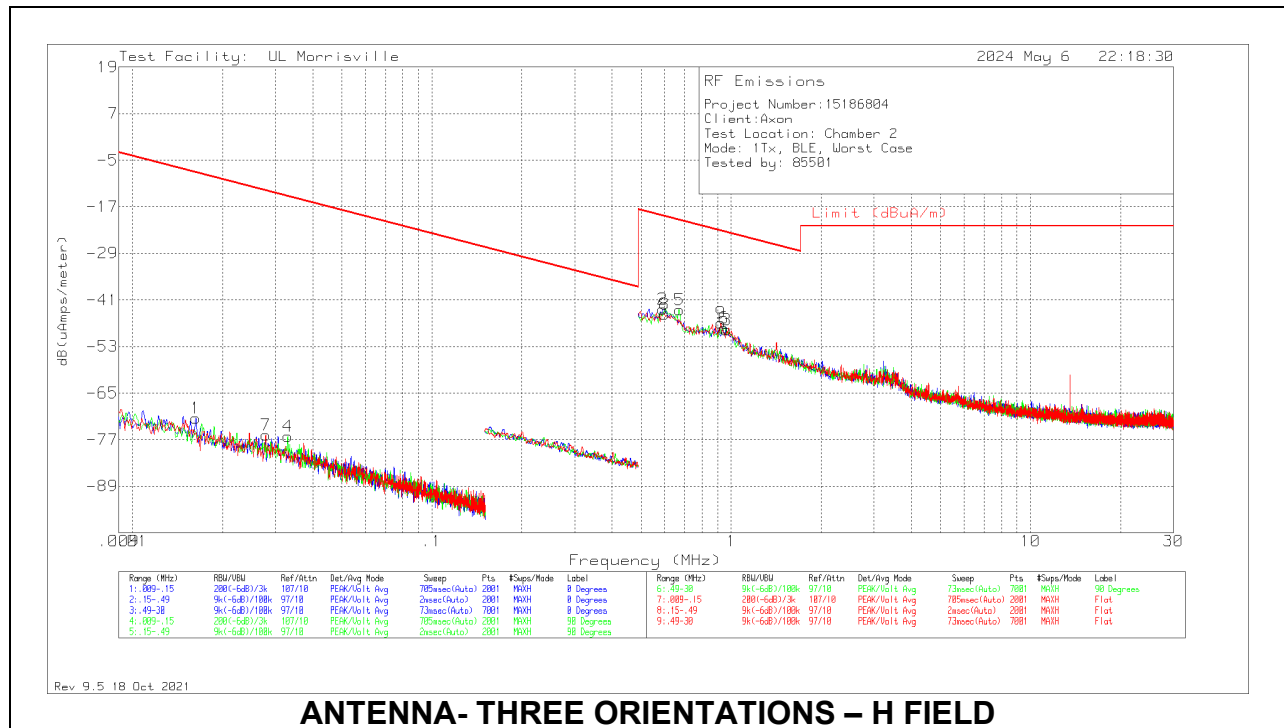


ANTENNA - THREE ORIENTATIONS – E FIELD

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.01624	44.38	Pk	15.6	.1	-80	-19.92	43.39	63.39	-63.31	0-360	0 degs
7	.02789	42.03	Pk	13.6	.1	-80	-24.27	38.7	58.7	-62.97	0-360	Flat
4	.033	41.99	Pk	13.2	.1	-80	-24.71	37.23	57.23	-61.94	0-360	90 degs
2	.59118	36.84	Pk	11.2	.1	-40	8.14	32.17	-	-24.03	0-360	0 degs
8	.59962	35.58	Pk	11.2	.1	-40	6.88	32.05	-	-25.17	0-360	Flat
5	.67129	36.68	Pk	11.2	.1	-40	7.98	31.07	-	-23.09	0-360	90 degs
9	.92425	33.19	Pk	11.2	.2	-40	4.59	28.29	-	-23.7	0-360	Flat
6	.94533	31.91	Pk	11.2	.2	-40	3.31	28.09	-	-24.78	0-360	90 degs
3	.96641	31.25	Pk	11.3	.2	-40	2.75	27.9	-	-25.15	0-360	0 degs

Pk - Peak detector



ANTENNA- THREE ORIENTATIONS – H FIELD

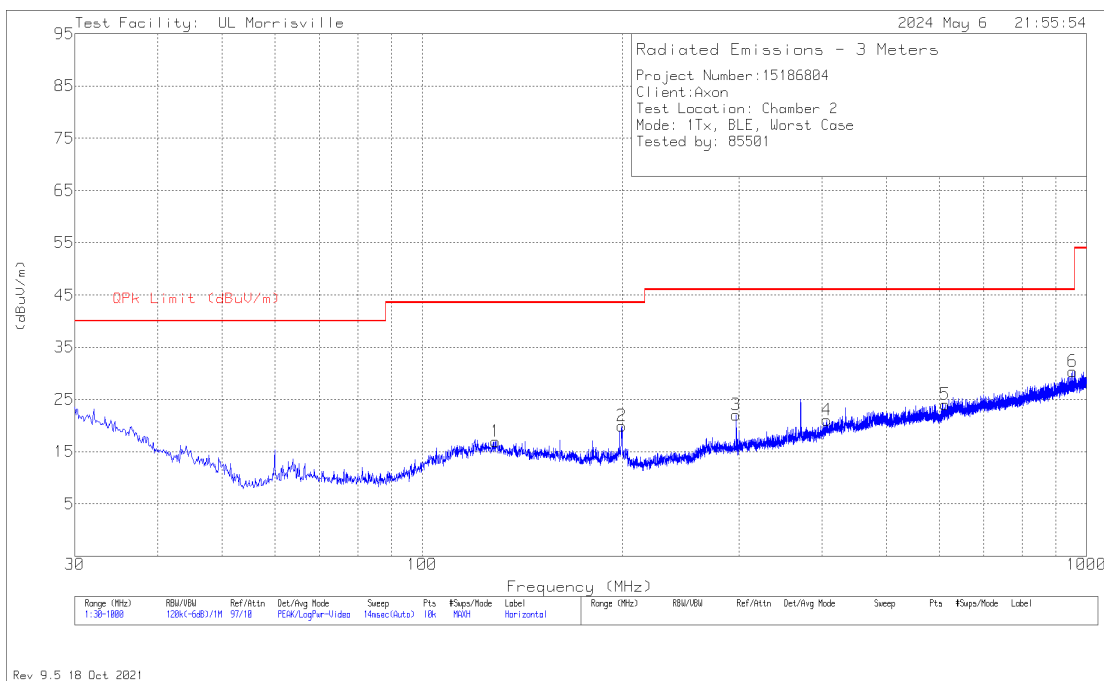
Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.01624	44.38	Pk	-35.9	.1	-80	-71.42	-8.11	11.89	-63.31	0-360	0 degs
7	.02789	42.03	Pk	-37.9	.1	-80	-75.77	-12.8	7.2	-62.97	0-360	Flat
4	.033	41.99	Pk	-38.3	.1	-80	-76.21	-14.27	5.73	-61.94	0-360	90 degs
2	.59118	36.84	Pk	-40.3	.1	-40	-43.36	-19.33	0	-24.03	0-360	0 degs
8	.59962	35.58	Pk	-40.3	.1	-40	-44.62	-19.45	0	-25.17	0-360	Flat
5	.67129	36.68	Pk	-40.3	.1	-40	-43.52	-20.43	0	-23.09	0-360	90 degs
9	.92425	33.19	Pk	-40.3	.2	-40	-46.91	-23.21	0	-23.7	0-360	Flat
6	.94533	31.91	Pk	-40.3	.2	-40	-48.19	-23.41	0	-24.78	0-360	90 degs
3	.96641	31.25	Pk	-40.2	.2	-40	-48.75	-23.6	0	-25.15	0-360	0 degs

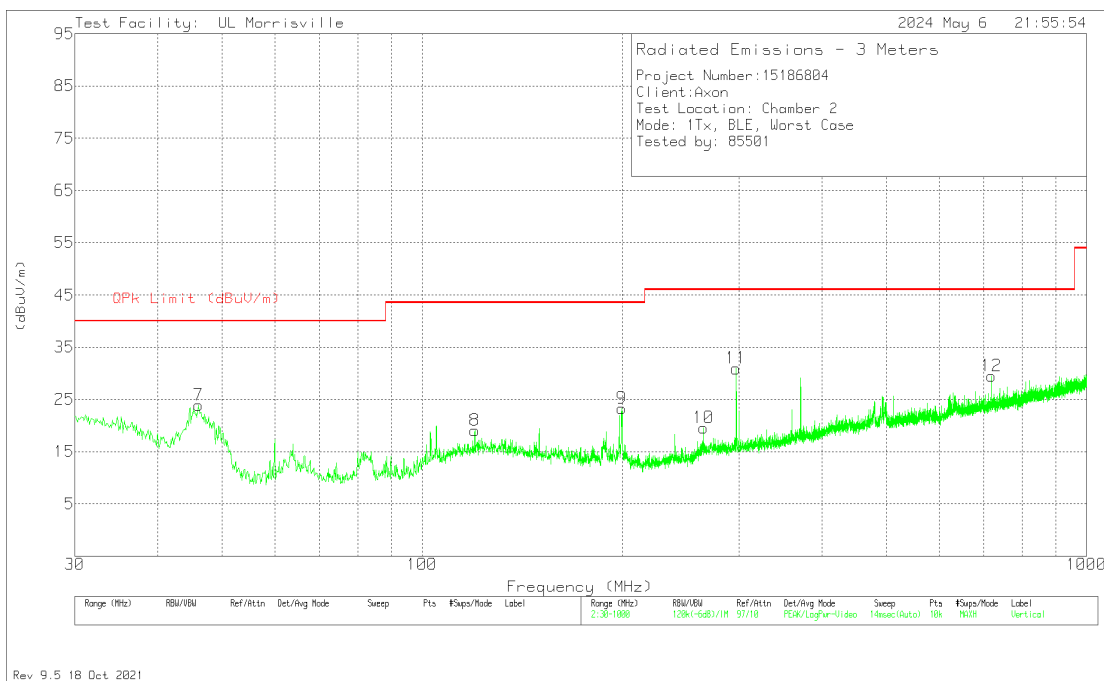
Pk - Peak detector

10.4. WORST CASE BELOW 1 GHZ

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



HORIZONTAL



VERTICAL

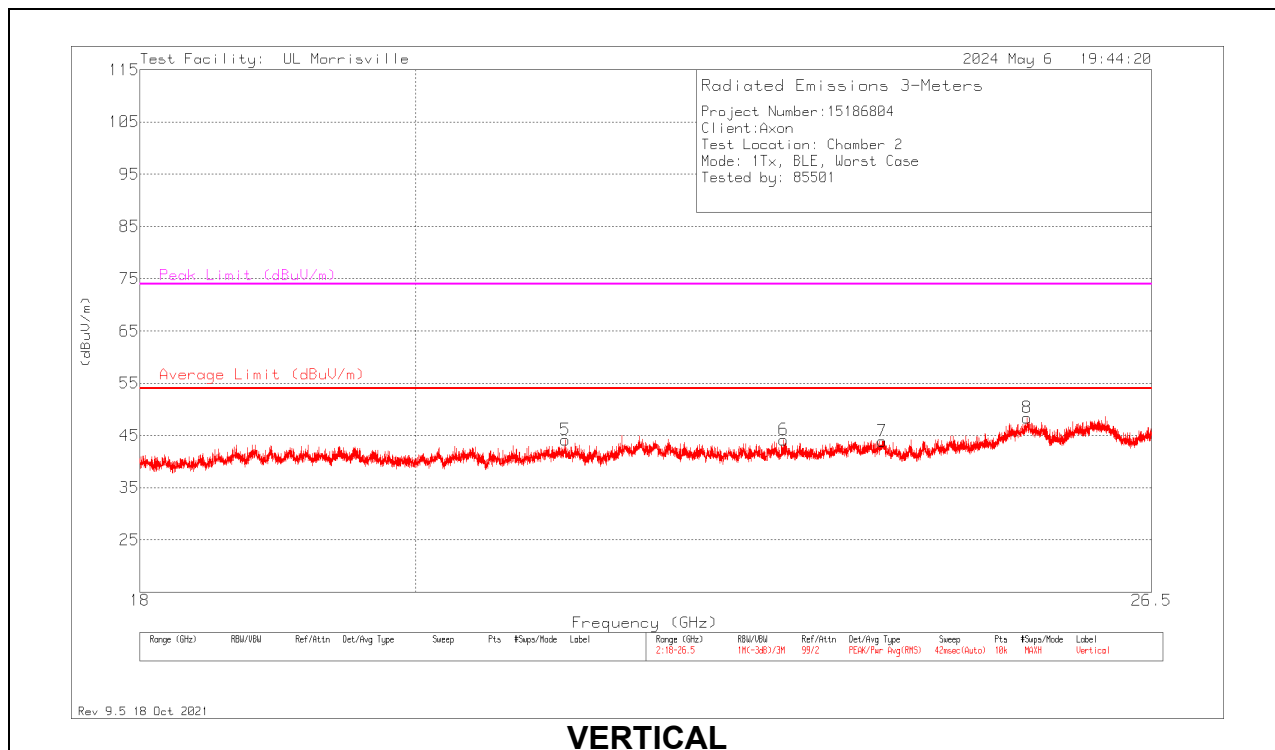
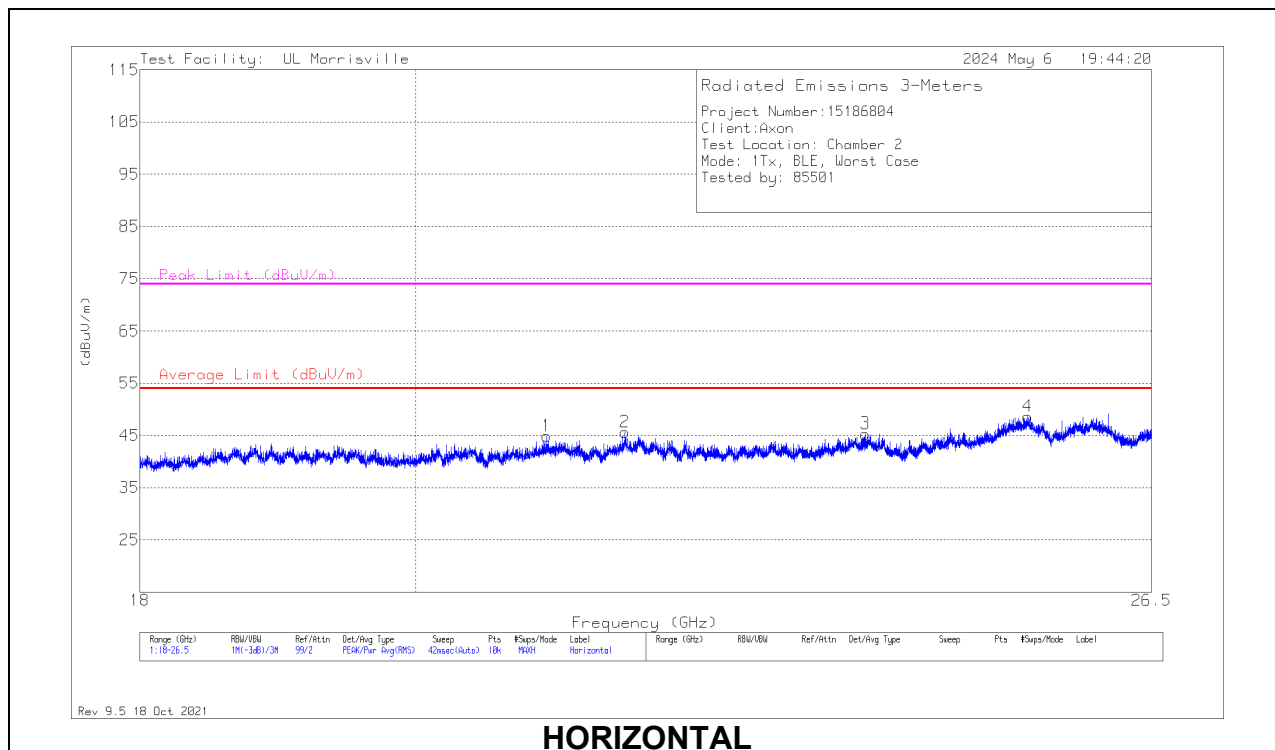
Below 1GHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	159203 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 128.843	27.47	Pk	20.2	-30.7	16.97	43.52	-26.55	0-360	99	H
4	* ** 406.554	27.55	Pk	22.4	-28.9	21.05	46.02	-24.97	0-360	299	H
5	* ** 612.194	26.49	Pk	25.5	-28	23.99	46.02	-22.03	0-360	299	H
6	** 953.925	26.59	Pk	29.5	-25.7	30.39	46.02	-15.63	0-360	199	H
8	* ** 120.016	29.56	Pk	20.2	-30.7	19.06	43.52	-24.46	0-360	299	V
10	* ** 265.128	29.6	Pk	19.4	-29.5	19.5	46.02	-26.52	0-360	101	V
12	** 720.058	30.13	Pk	27	-27.7	29.43	46.02	-16.59	0-360	199	V
7	46.102	39.35	Pk	16.1	-31.6	23.85	-	-	0-360	101	V
2	199.944	31.07	Pk	18.9	-30	19.97	-	-	0-360	299	H
9	199.944	34.41	Pk	18.9	-30	23.31	-	-	0-360	101	V
3	296.944	31.61	Pk	19.9	-29.5	22.01	-	-	0-360	199	H
11	296.944	40.51	Pk	19.9	-29.5	30.91	-	-	0-360	101	V

Pk - Peak detector

10.5. WORST CASE 18-26 GHZ

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



18 – 26GHz Data

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 21.0291	49.18	Pk	33.6	-37.9	44.88	54	-9.12	74	-29.12	0-360	101	H
3	* ** 23.75562	48.22	Pk	34.4	-37.3	45.32	54	-8.68	74	-28.68	0-360	101	H
5	* ** 21.18038	48.81	Pk	33.6	-38.3	44.11	54	-9.89	74	-29.89	0-360	150	V
6	* ** 23.0247	47.6	Pk	34	-37.5	44.1	54	-9.9	74	-29.9	0-360	299	V
7	* ** 23.90861	46.5	Pk	34.4	-37	43.9	54	-10.1	74	-30.1	0-360	200	V
2	21.66738	49.54	Pk	33.9	-37.8	45.64	-	-	-	-	0-360	199	H
8	25.27247	50.78	Pk	35.7	-36.5	49.98	-	-	-	-	41	352	V
4	25.27148	50.3	Pk	35.7	-36.5	49.5	-	-	-	-	271	265	H

Pk - Peak detector

11. SETUP PHOTOS

Please refer to R15186804-EP1 for setup photos

END OF TEST REPORT