

TEST REPORT

Report Number : R14777340-E2

Applicant : Sony Corporation
1-7-1 Konan Minato-Ku
Tokyo, 108-0075, Japan

FCC ID : PY7-76732V

EUT Description : GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax,
GPS, WPT & NFC

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
2023-06-17

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-06-17	Initial Issue	B. Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Sony Corporation
1-7-1 Konan Minato-ku
Tokyo, 108-0075, Japan

EUT DESCRIPTION: GSM/WCDMA/LTE/5G Phone with BT, DTS/UNII a/b/g/n/ac/ax,
GPS, WPT & NFC

SERIAL NUMBER: QV7700F8G9, QV7700GSHJ, QV77002AHJ

SAMPLE RECEIPT DATE: 2023-05-03

DATE TESTED: 2023-05-09 to 2023-05-31

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
47 CFR Part 15 Subpart C	Complies

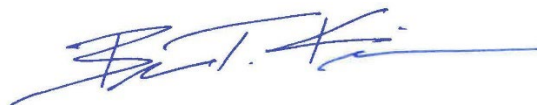
UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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:

Prepared By:



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Staff Engineer
Consumer, Medical and IT Segment
UL LLC

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Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains data provided by the applicant 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) Cable loss (see sections 9.3 and 9.4)

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
15.247 (a) (2)	6dB BW	Compliant	None
15.247 (b) (3)	Output Power		
See Comment	Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	PSD	Compliant	None
15.247 (d)	Conducted Spurious Emissions		
15.209, 15.205	Radiated Emissions		
15.207	AC Mains Conducted Emissions		

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01.

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
<input type="checkbox"/>	Building: 12 Laboratory Dr RTP, NC 27709, U.S.A	US0067	2180C	825374
<input checked="" type="checkbox"/>	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:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\text{Final Voltage (dBuV)} = \text{Measured Voltage (dBuV)} + \text{Cable Loss (dB)} + \text{Limiter Factor (dB)} + \text{LISN Insertion Loss}$$

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

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE/5G Phone with BT, DTS,/UNII a/b/g/n/ac/ax, GPS, WPT & NFC. This report covers BLE testing.

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)
Chain 0			
2402 - 2480	BLE - 125kbps	10.01	10.02
2402 - 2480	BLE - 500kbps	10.03	10.07
2402 - 2480	BLE - 1Mbps	10.04	10.09
2402 - 2480	BLE - 2Mbps	10.10	10.23
Chain 1			
2402 - 2480	BLE - 125kbps	10.12	10.28
2402 - 2480	BLE - 500kbps	10.13	10.30
2402 - 2480	BLE - 1Mbps	10.16	10.38
2402 - 2480	BLE - 2Mbps	10.16	10.38

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna(s) gain and type, as provided by the manufacturer' are as follows:
 The radio utilizes two antennas for diversity, with the following types and maximum gains:

Chain	Designation in Documentation	Type	Frequency Range (MHz)	Maximum Gain (dBi)
0	WLAN Main/Bluetooth#1	Loop	2402-2480	-0.16
1	WLAN Sub/Bluetooth#2	Monopole	2402-2480	-3.78

6.4. SOFTWARE AND FIRMWARE

The software version used during testing was 2.127.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emission were performed with the EUT set to transmit at the channel and data rate with highest PSD as a worst-case scenario. This was found to be a data rate of 125Kbps for chain 0 and chain 1.

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, with mid channel added for radiated emissions. Bandedge was run at both 2 Mbps and 125 kbps as worst case for Chain 0 and chain 1 based on power and PSD. Radiated spurious emissions run on 125kbps for Chain 0 and chain 1 as worst-case based on PSD.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that the X orientation was worst-case orientation for chain 0 and Y orientation was worst-case for chain 1. Therefore, all final radiated testing was performed with the EUT in the X and Y orientations.

Data rates as provided by the client were 125 kbps, 500 kbps, 1 Mbps, and 2 Mbps.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	Inspiron 15 3000	5KPQJP3	
AC Adaptor	Sony	XQZ-UC1	1821W34209742	NA
Headphones	Sony	MDR-EX15AP	NA	NA

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	Non-Shielded	<3m	Connected to power supply
2	3.5mm	1	AUX	Non-Shielded	<3m	Connected to headphones

TEST SETUP

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

SETUP DIAGRAM

Please refer to R14777340-EP2 for setup diagrams

7. 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.
SA0026	Spectrum Analyzer	Keysight Technologies	N9030A	2022-08-02	2023-08-02
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
134477	RF Power Meter	Keysight Technologies	N1912A	2022-08-30	2023-08-30
135121	RF Power Meter	Keysight Technologies	N1911A	2022-07-02	2023-07-02
135124	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-07-07	2023-07-07
135125	Peak and Avg Power Sensor, 50MHz to 18GHz	Keysight Technologies	N1921A	2022-09-27	2023-09-27
MY61466084	DC Regulated Power Supply	Keysight Technologies	E3633A	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2022.8.16		
MM0167 (PRE0126458)	True RMS Multimeter	Agilent	U1232A	2021-08-17	2023-08-17

Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Attenuators					
226559	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2023-02-16	2024-02-16
226561	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C18S2-10	2023-02-16	2024-02-16
Cables					
CBL101	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz, 39.3", Connectors 2	Carlisle Interconnect Technologies	UFA147A-0-0180-200200	2023-01-24	2024-01-24

Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
0.009-30MHz					
135144	Active Loop Antenna	ETS-Lindgren	6502	2023-01-17	2024-01-17
30-1000 MHz					
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2023-01-06	2024-01-06
1-18 GHz					
86408	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-05-24	2023-05-31
18-40 GHz					
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-626	2022-07-11	2023-07-11
Gain-Loss Chains					
207638	Gain-loss string: 0.009-30MHz	Various	Various	2022-05-20	2023-05-31
207639	Gain-loss string: 25-1000MHz	Various	Various	2022-05-20	2023-05-31
207640	Gain-loss string: 1-18GHz	Various	Various	2022-05-20	2023-05-31
225795	Gain-loss string: 18-40GHz	Various	Various	2022-10-12	2023-10-12
Receiver & Software					
72823	Spectrum Analyzer	Agilent	E4446A	2022-06-08	2023-06-08
197955	Spectrum Analyzer	Rohde & Schwarz	ESW	2023-04-10	2024-04-10
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
Additional Equipment used					
21642	Environmental Meter	Fisher Scientific	15-077-963 (s/n 210701692)	2021-08-16	2023-08-16

Note: All equipment within calibration at time of use.

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2023-04-04	2024-04-04
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2022-07-20	2023-07-20
LISN003	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2022-08-01	2023-08-01
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2022-08-03	2023-08-03
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2023-04-04	2024-04-04
PS214	AC Power Source	Elgar	CW2501M (s/n 1523A02396)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2022-09-12	2023-09-12
LISN008	LISN, 50-ohm/50-uH, 2-conductor, 25A (For support gear only.)	Solar Electronics	8012-50-R-24-BNC	NA	NA

8. 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

Output Power: ANSI C63.10 Subclause -11.9.2.3.1 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)

Radiated 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 and 6.10.5

General Radiated Spurious Emissions: ANSI C63.10-2013 Section 6.3 to 6.6

AC Power-line conducted emissions: ANSI C63.10-2013, Section 6.2.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

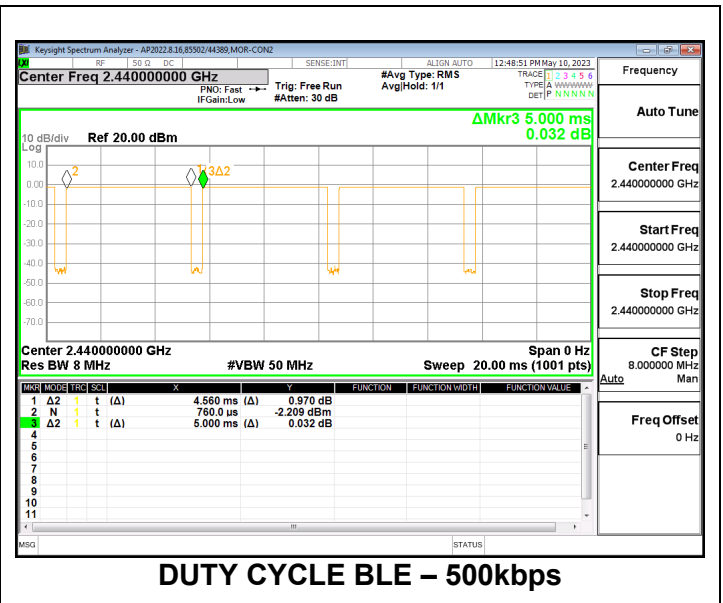
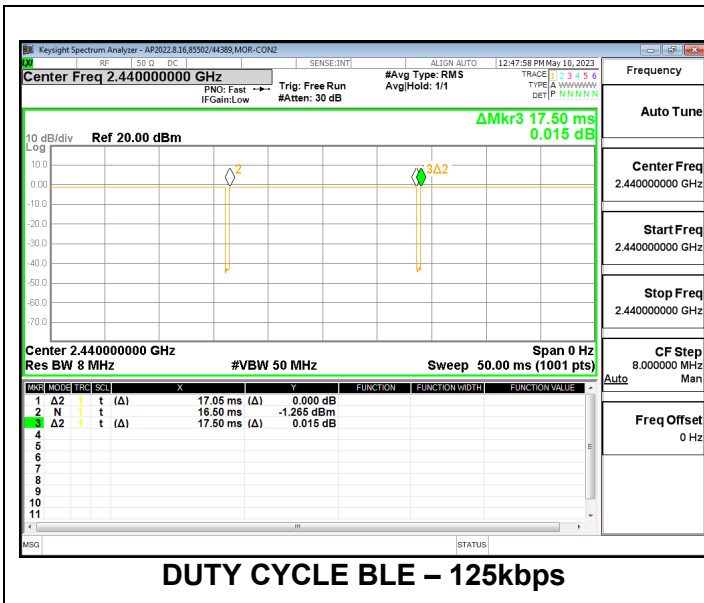
None; for reporting purposes only.

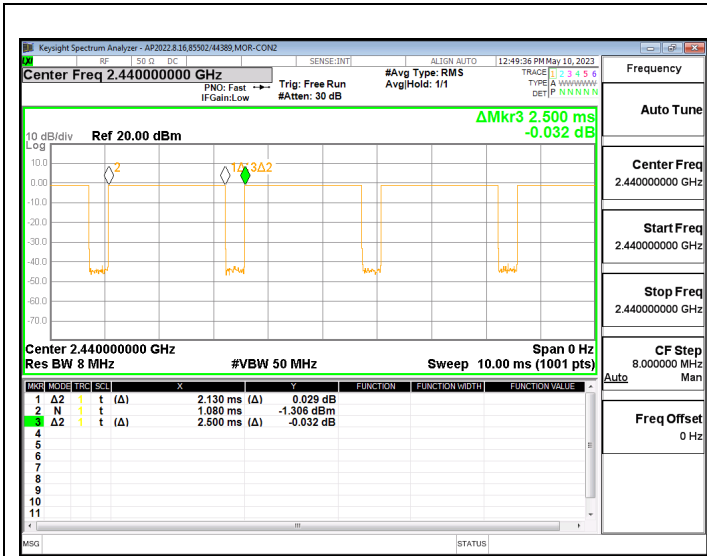
PROCEDURE

ANSI C63.10, Section 11.6 Zero-Span Spectrum Analyzer Method.

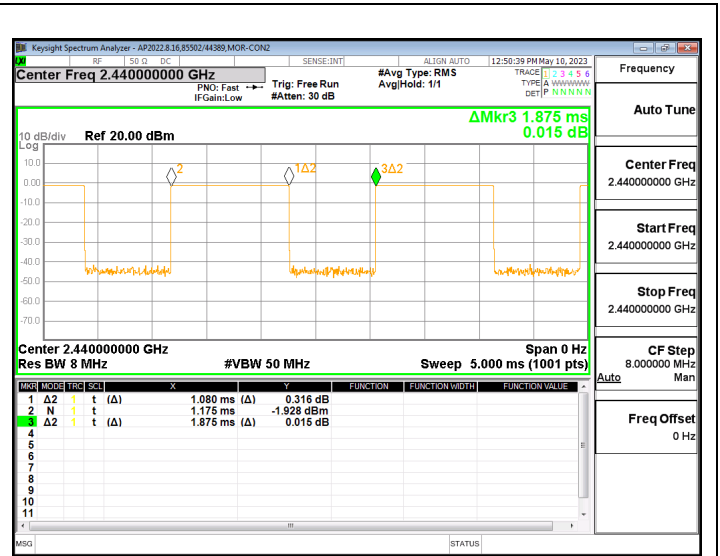
ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
BLE - 125kpbs	17.05	17.50	0.97	97.43	0.23	0.059
BLE - 500kpbs	4.56	5.00	0.91	91.20	0.80	0.219
BLE - 1Mbps	2.13	2.50	0.85	85.20	1.39	0.469
BLE - 2Mbps	1.08	1.88	0.58	57.57	4.80	0.926





DUTY CYCLE BLE – 1Mbps



DUTY CYCLE BLE – 2Mbps

9.2. 6 dB BANDWIDTH

LIMITS

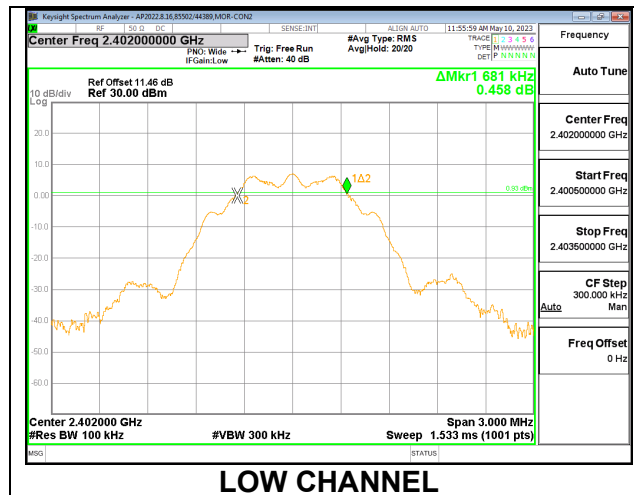
FCC §15.247 (a) (2)

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

9.2.1. BLE (125Kbps)

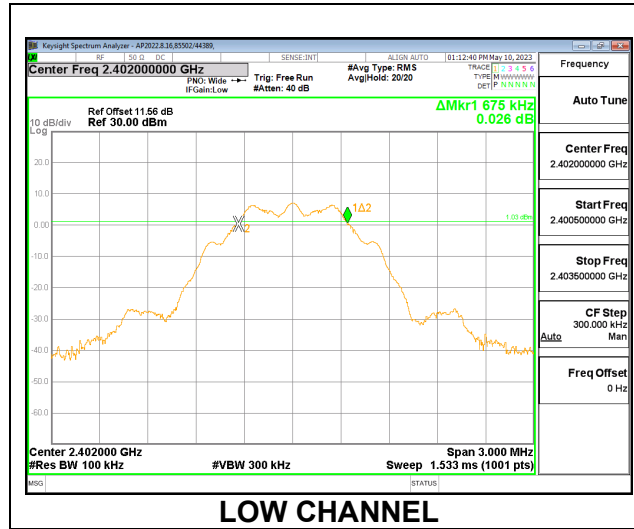
Chain 0

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.681	0.5
Middle	2440	0.684	0.5
High	2480	0.684	0.5



Chain 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.675	0.5
Middle	2440	0.678	0.5
High	2480	0.684	0.5



9.2.2. BLE (500Kbps)

Chain 0

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.675	0.5
Middle	2440	0.672	0.5
High	2480	0.687	0.5

Chain 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.690	0.5
Middle	2440	0.687	0.5
High	2480	0.690	0.5

9.2.3. BLE (1Mbps)

Chain 0

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.687	0.5
Middle	2440	0.672	0.5
High	2480	0.708	0.5

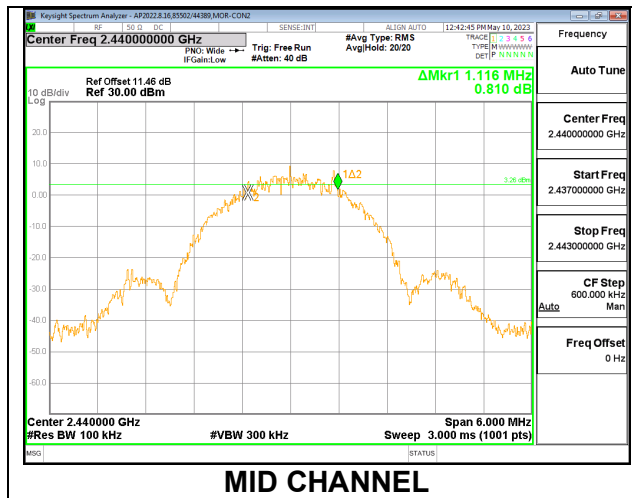
Chain 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.675	0.5
Middle	2440	0.696	0.5
High	2480	0.669	0.5

9.2.4. BLE (2Mbps)

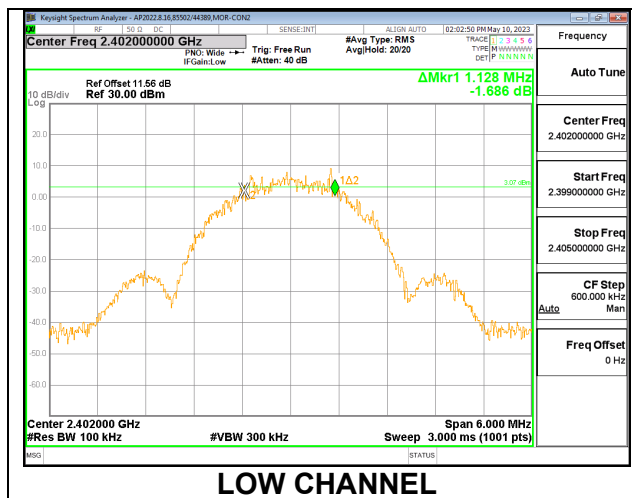
Chain 0

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.116	0.5
Middle	2440	1.116	0.5
High	2480	1.128	0.5



Chain 1

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.128	0.5
Middle	2440	1.140	0.5
High	2480	1.170	0.5



9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

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 11.46 dB (including 9.72 dB pad and 1.74 dB cable) for chain 0 and 11.56 dB (including 9.72 dB pad and 1.84 dB cable) for chain 1 were entered as offsets in the 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 power meter.

9.3.1. BLE (125Kbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.89	30	-20.110
Middle	2440	9.94	30	-20.060
High	2480	10.01	30	-19.990

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.12	30	-19.880
Middle	2440	10.10	30	-19.900
High	2480	9.87	30	-20.130

9.3.2. BLE (500Kbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.92	30	-20.080
Middle	2440	9.82	30	-20.180
High	2480	10.03	30	-19.970

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.13	30	-19.87
Middle	2440	10.11	30	-19.89
High	2480	9.89	30	-20.11

9.3.3. BLE (1Mbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.92	30	-20.080
Middle	2440	9.86	30	-20.140
High	2480	10.04	30	-19.960

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.16	30	-19.840
Middle	2440	10.13	30	-19.870
High	2480	9.90	30	-20.100

9.3.4. BLE (2Mbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	9.96	30	-20.040
Middle	2440	9.87	30	-20.130
High	2480	10.10	30	-19.900

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	10.11	30	-19.890
Middle	2440	10.16	30	-19.840
High	2480	9.95	30	-20.050

9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband gated RF power meter.

The cable assembly insertion loss of 11.46 dB (including 9.72 dB pad and 1.74 dB cable) for chain 0 and 11.56 dB (including 9.72 dB pad and 1.84 dB cable) for chain 1 were entered as offsets in the 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.

9.4.1. BLE (125Kbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.79
Middle	2440	9.83
High	2480	9.90

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.99
Middle	2440	9.95
High	2480	9.71

9.4.2. BLE (500Kbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.83
Middle	2440	9.71
High	2480	9.91

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.00
Middle	2440	9.95
High	2480	9.74

9.4.3. BLE (1Mbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.84
Middle	2440	9.73
High	2480	9.93

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.02
Middle	2440	9.96
High	2480	9.73

9.4.4. BLE (2Mbps)

Chain 0

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	9.86
Middle	2440	9.76
High	2480	9.97

Chain 1

Tested By:	85502/44389
Date:	2023-05-09

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	10.02
Middle	2440	9.99
High	2480	9.77

9.5. POWER SPECTRAL DENSITY LIMITS

FCC §15.247 (e)

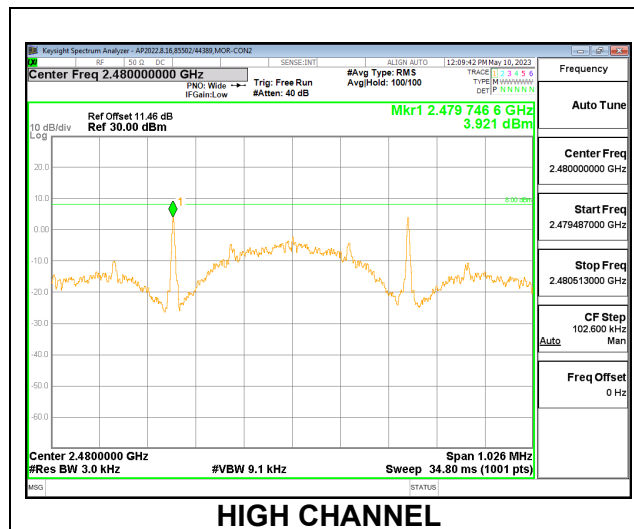
The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

9.5.1. BLE (125Kbps)

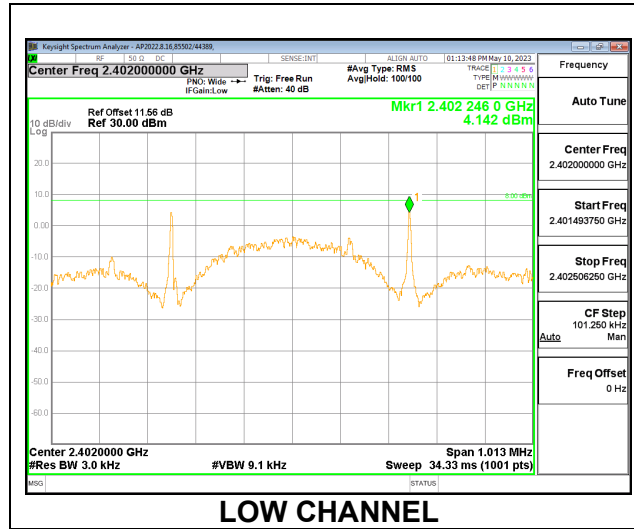
Chain 0

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.794	8	-4.21
Middle	2440	3.865	8	-4.14
High	2480	3.921	8	-4.08



Chain 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	4.142	8	-3.86
Middle	2440	3.932	8	-4.07
High	2480	3.933	8	-4.07



9.5.2. BLE (500Kbps)

Chain 0

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.609	8	-4.39
Middle	2440	3.538	8	-4.46
High	2480	3.682	8	-4.32

Chain 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	3.777	8	-4.22
Middle	2440	3.752	8	-4.25
High	2480	3.596	8	-4.40

9.5.3. BLE (1Mbps)

Chain 0

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-6.016	8	-14.02
Middle	2440	-5.947	8	-13.95
High	2480	-5.754	8	-13.75

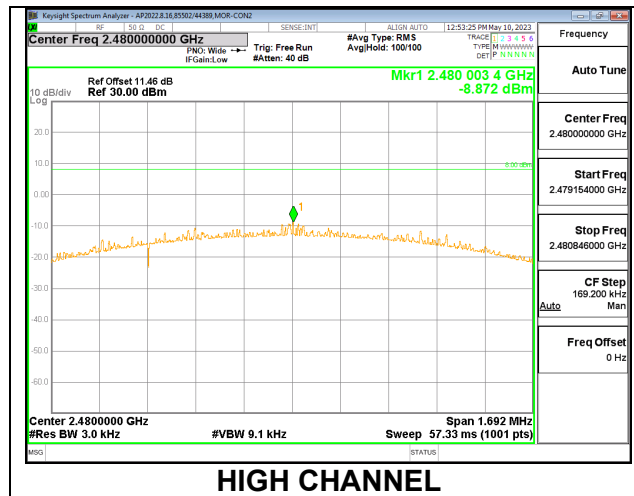
Chain 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-6.050	8	-14.05
Middle	2440	-5.767	8	-13.77
High	2480	-6.235	8	-14.24

9.5.4. BLE (2Mbps)

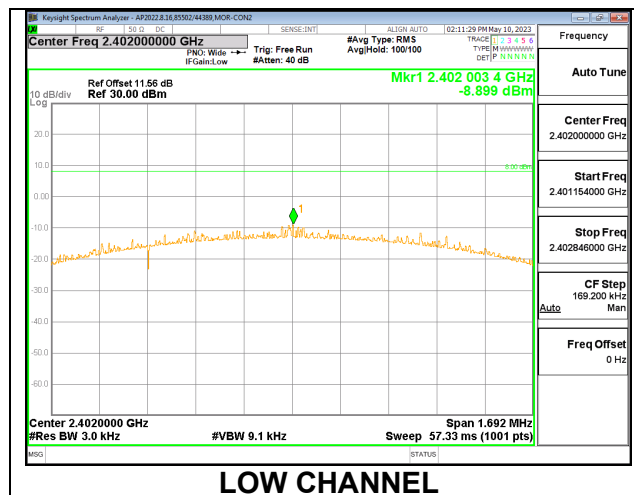
Chain 0

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-9.003	8	-17.00
Middle	2440	-9.072	8	-17.07
High	2480	-8.872	8	-16.87



Chain 1

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-8.899	8	-16.90
Middle	2440	-9.060	8	-17.06
High	2480	-9.294	8	-17.29



9.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

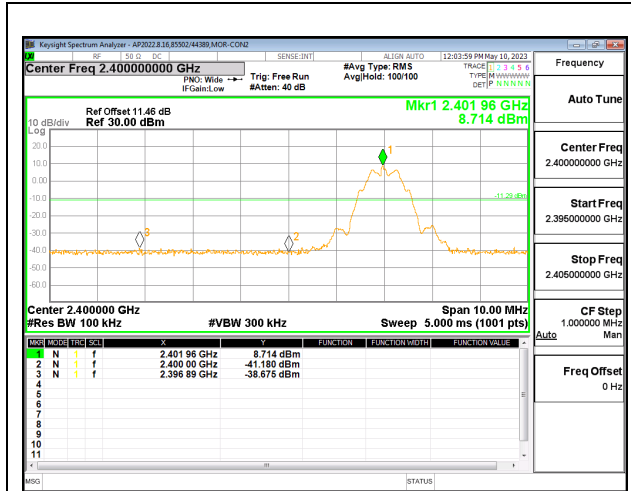
FCC §15.247 (d)

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

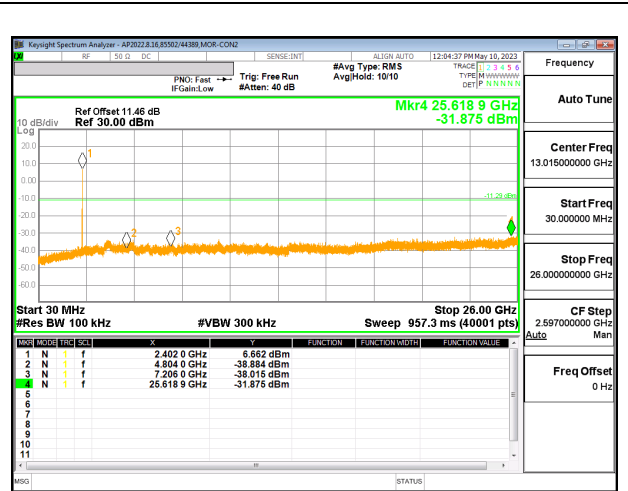
RESULTS

9.6.1. BLE (125Kbps)

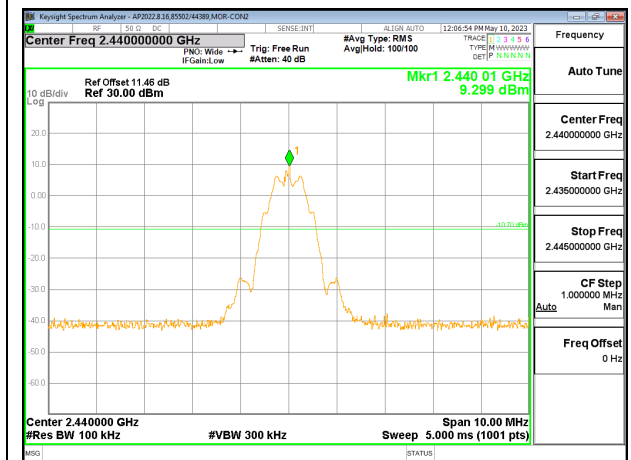
Chain 0



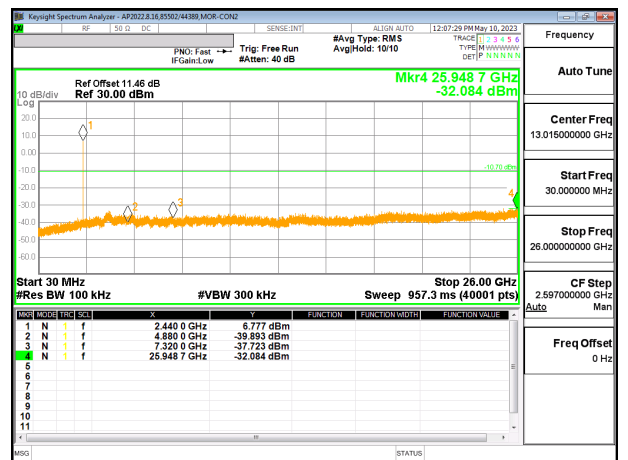
LOW CHANNEL BANDEDGE



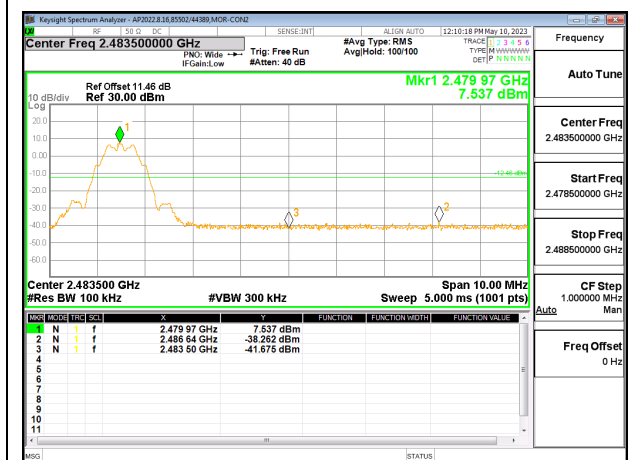
OUT-OF-BAND LOW CHANNEL



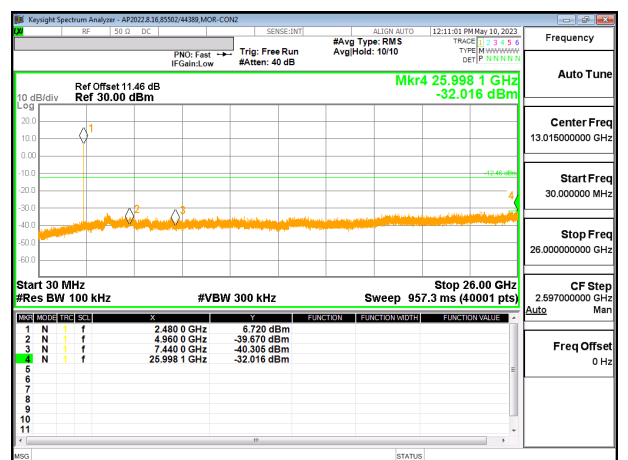
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

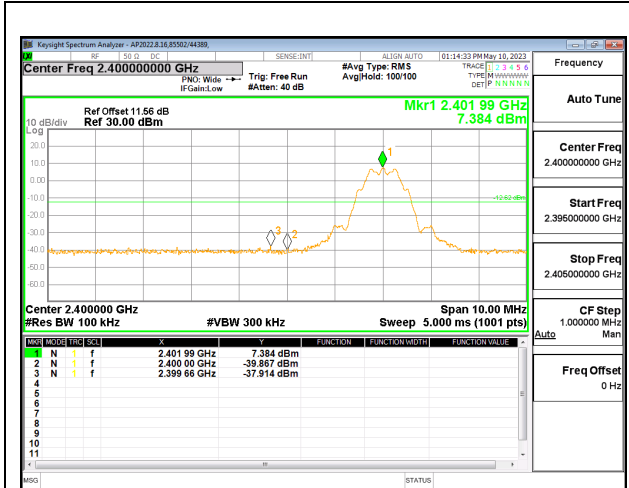


HIGH CHANNEL BANDEDGE

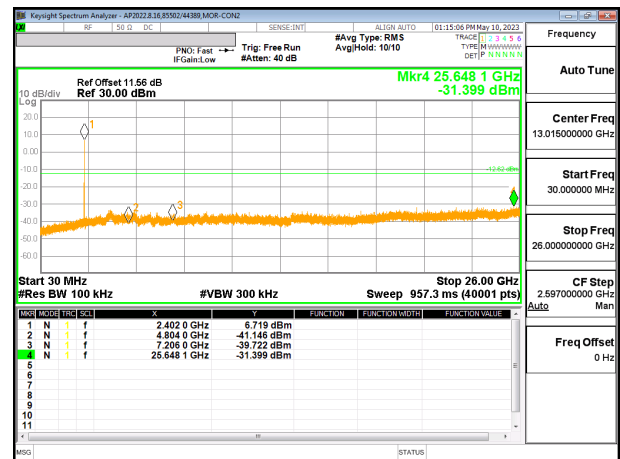


OUT-OF-BAND HIGH CHANNEL

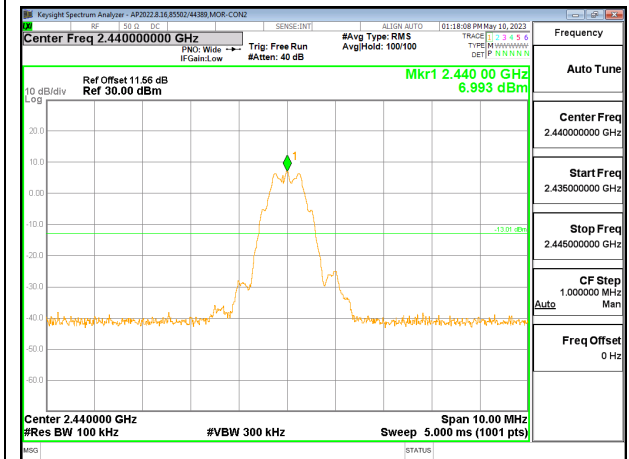
Chain 1



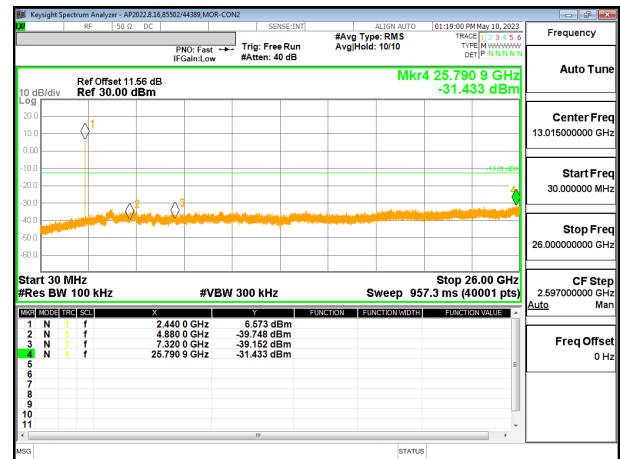
LOW CHANNEL BANDEDGE



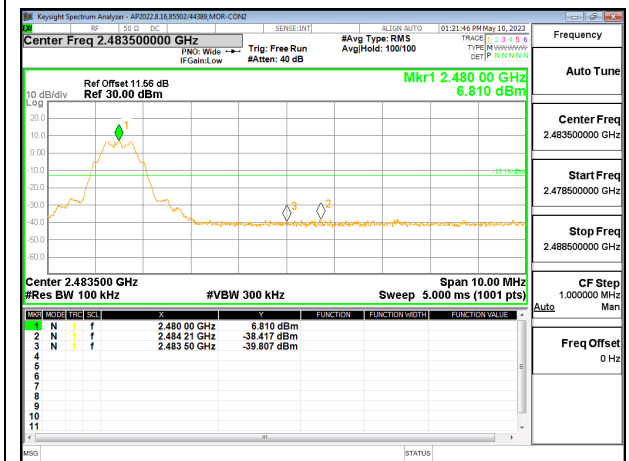
OUT-OF-BAND LOW CHANNEL



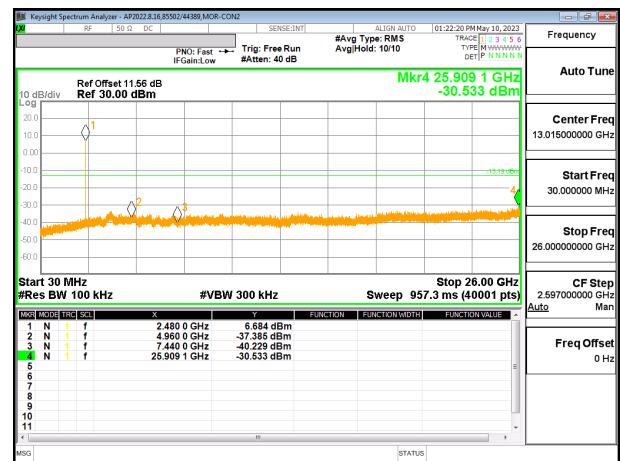
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



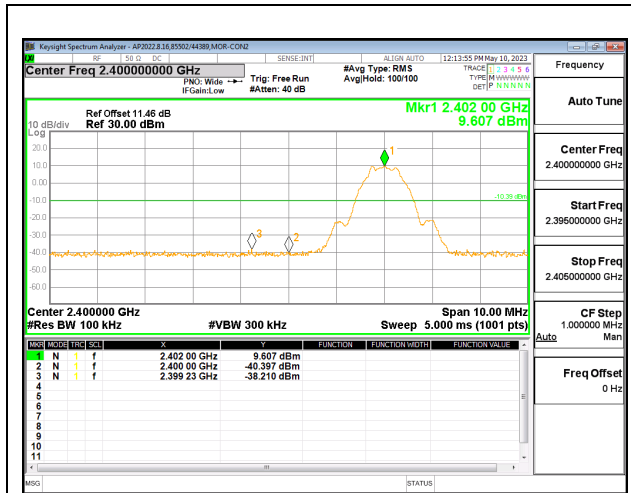
HIGH CHANNEL BANDEDGE



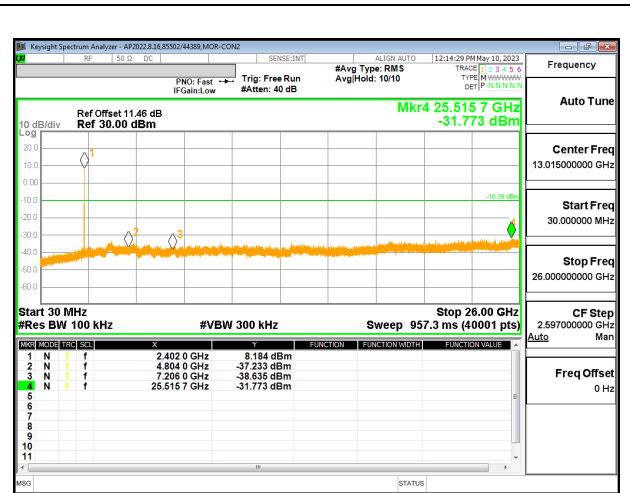
OUT-OF-BAND HIGH CHANNEL

9.6.2. BLE (500Kbps)

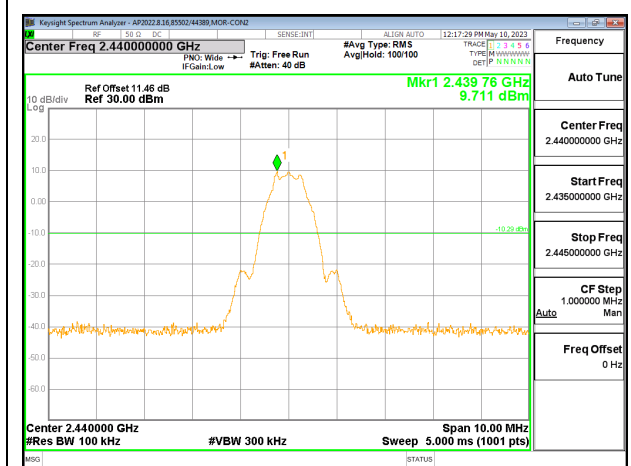
Chain 0



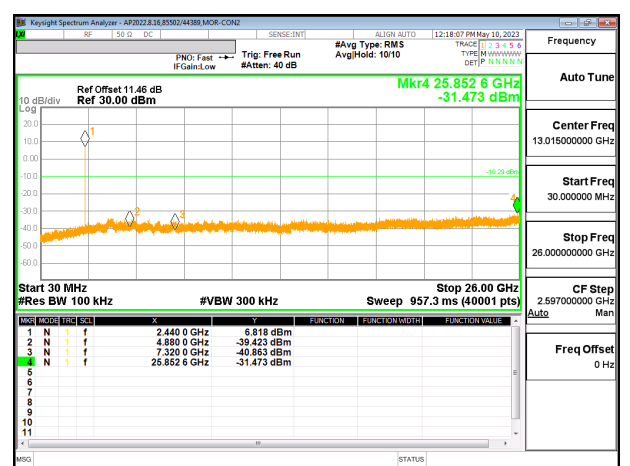
LOW CHANNEL BANDEDGE



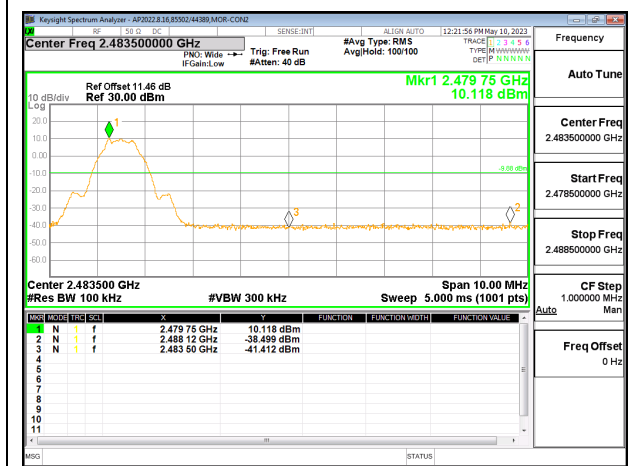
OUT-OF-BAND LOW CHANNEL



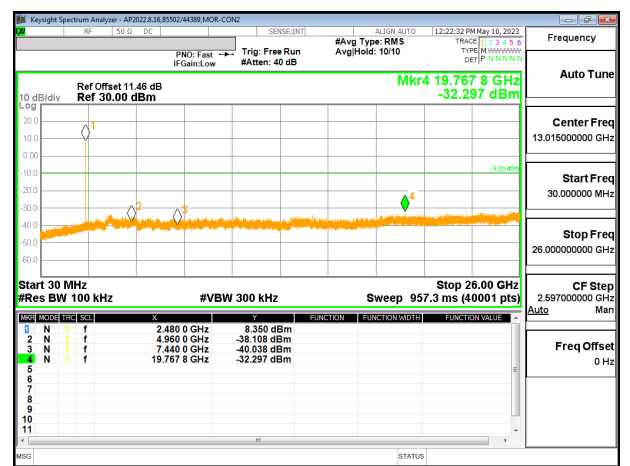
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

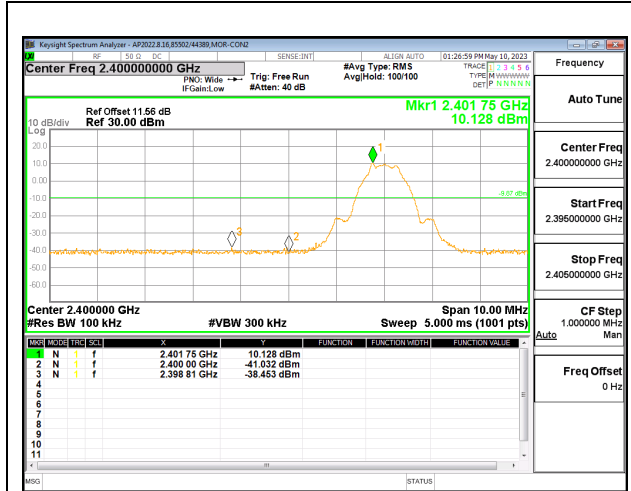


HIGH CHANNEL BANDEDGE

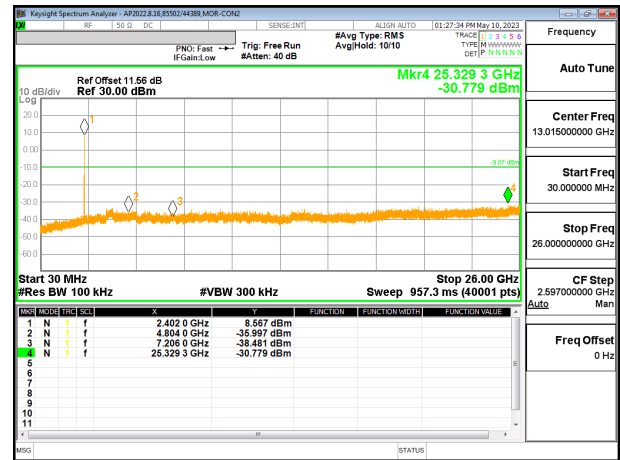


OUT-OF-BAND HIGH CHANNEL

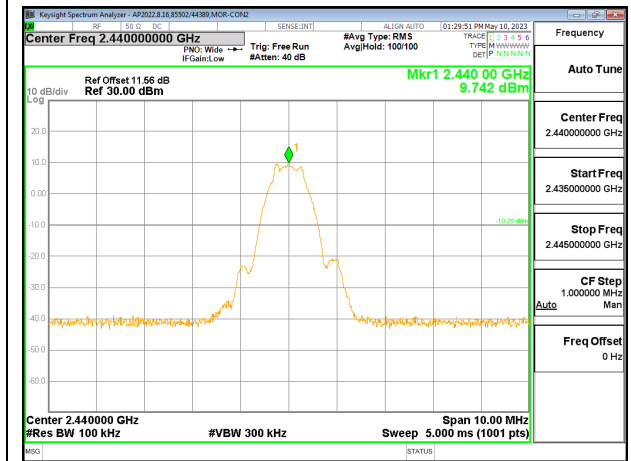
Chain 1



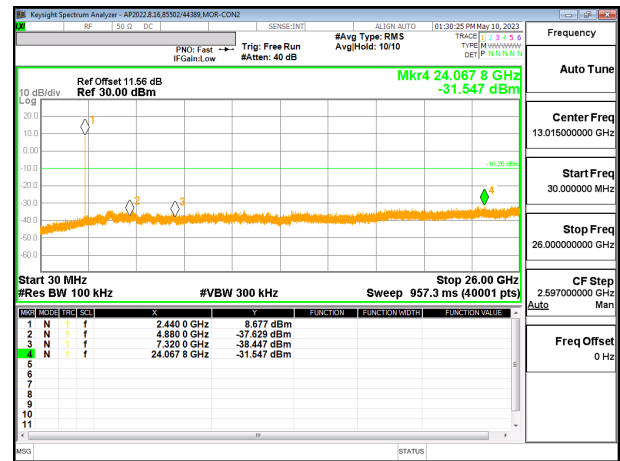
LOW CHANNEL BANDEDGE



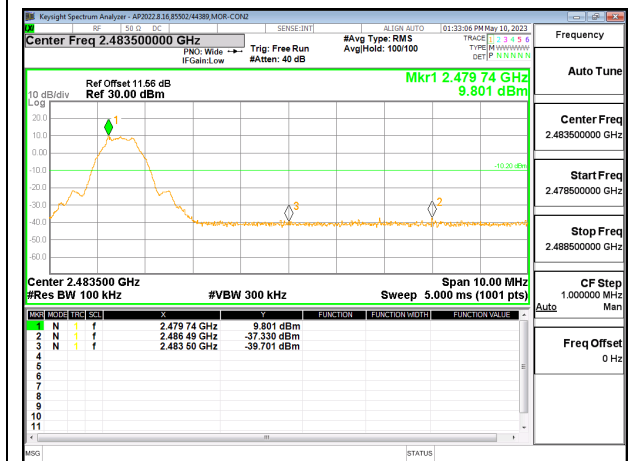
OUT-OF-BAND LOW CHANNEL



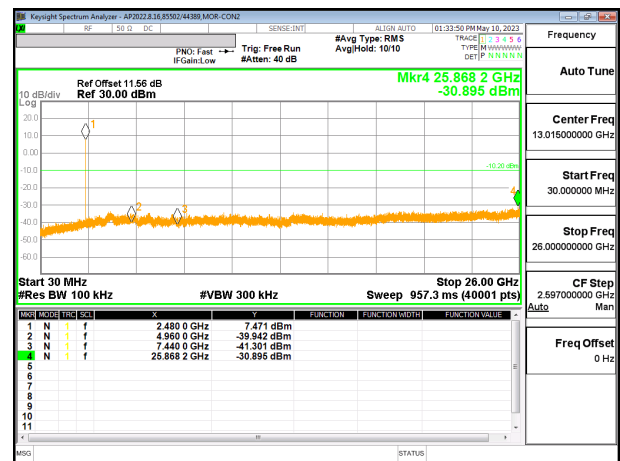
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



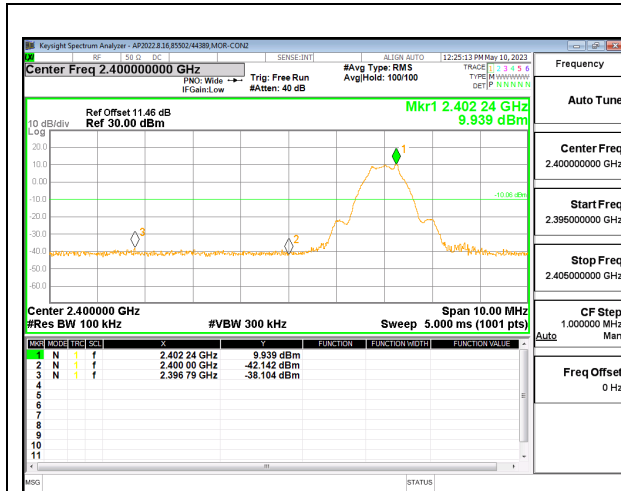
HIGH CHANNEL BANDEDGE



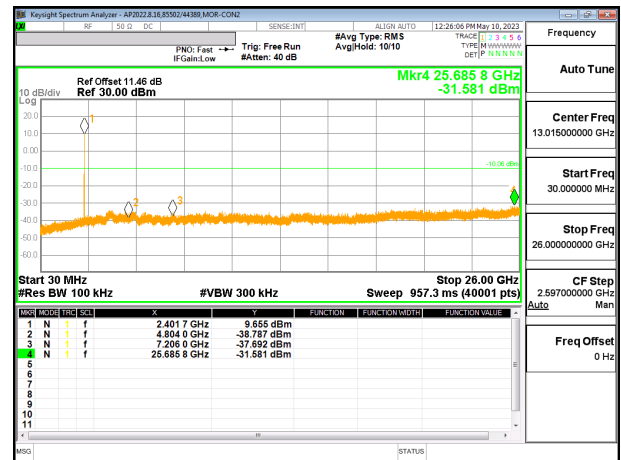
OUT-OF-BAND HIGH CHANNEL

9.6.3. BLE (1Mbps)

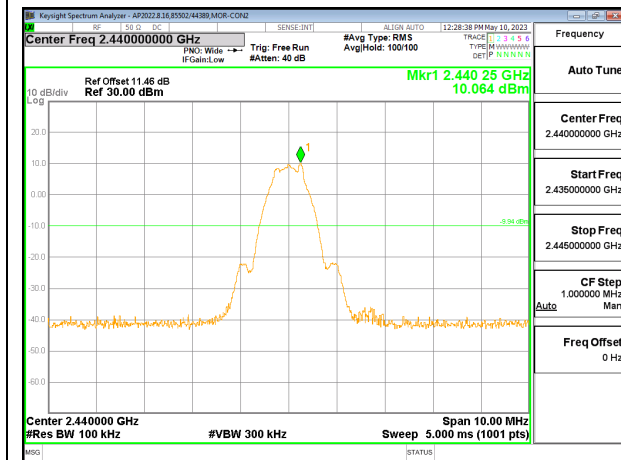
Chain 0



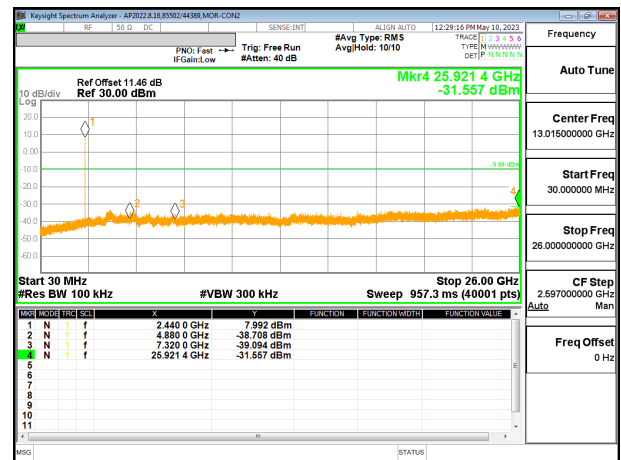
LOW CHANNEL BANDEDGE



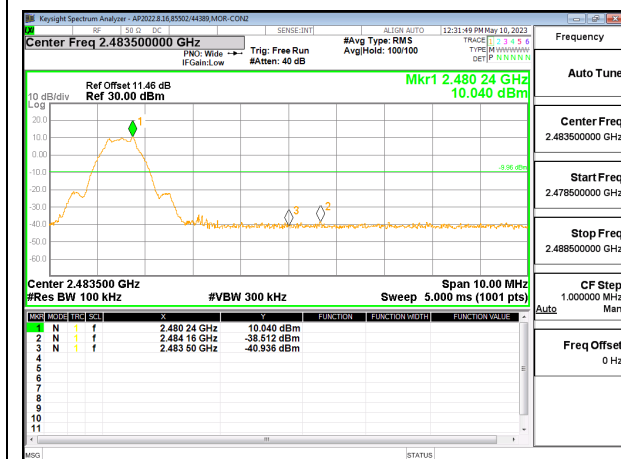
OUT-OF-BAND LOW CHANNEL



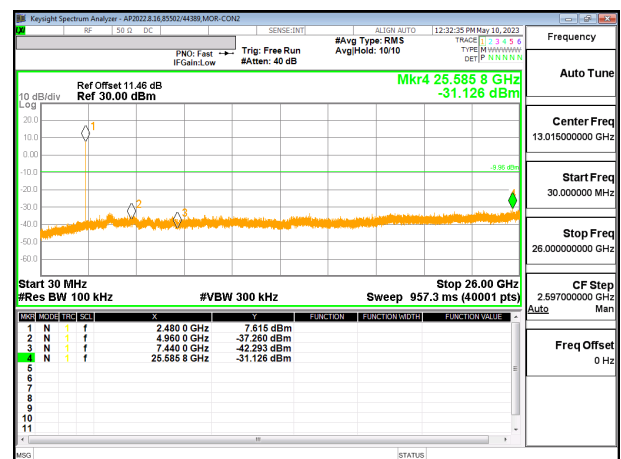
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

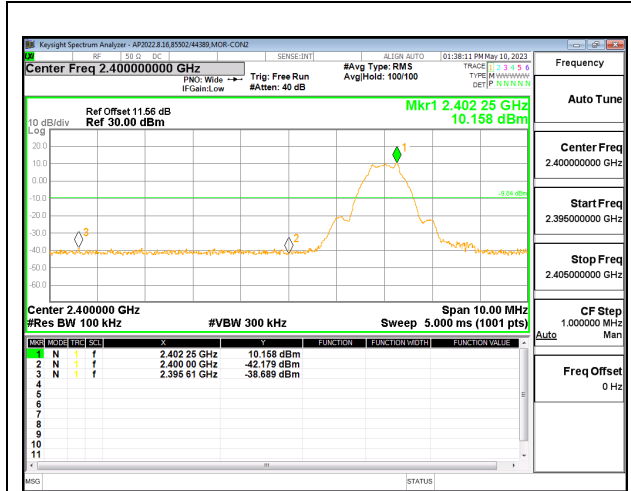


HIGH CHANNEL BANDEDGE

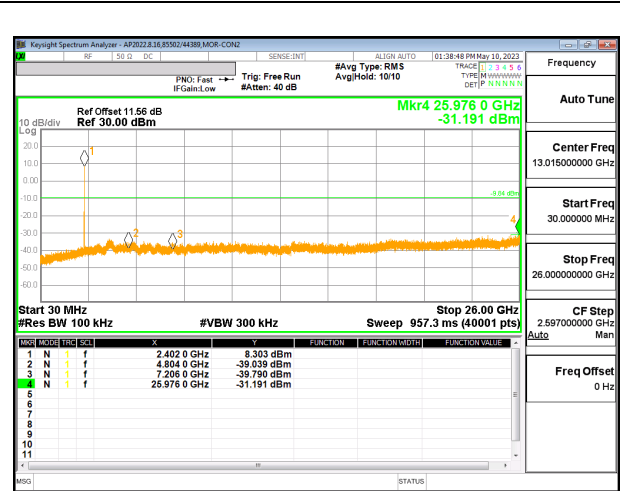


OUT-OF-BAND HIGH CHANNEL

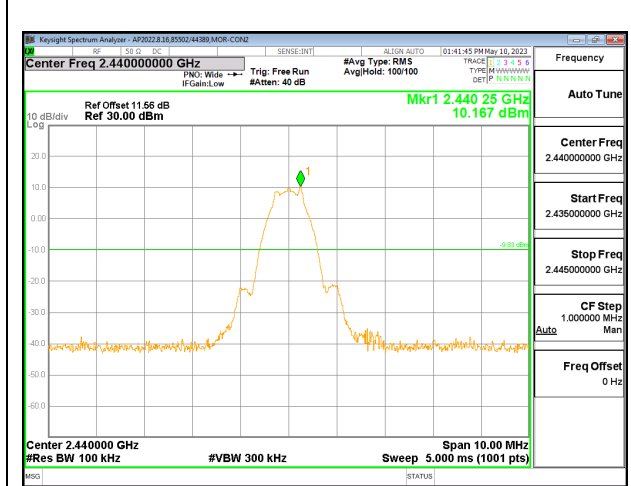
Chain 1



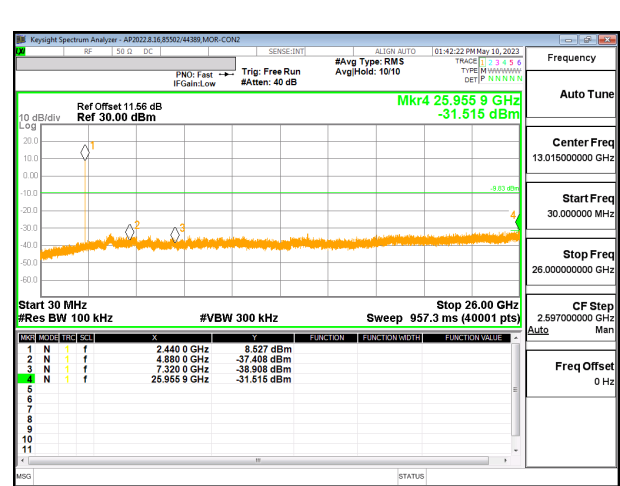
LOW CHANNEL BANDEDGE



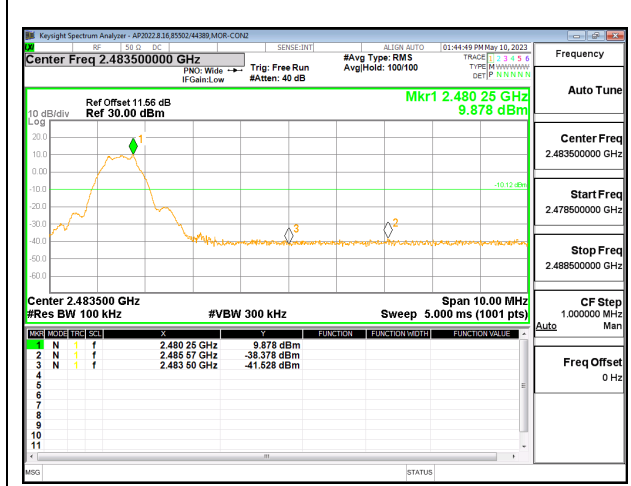
OUT-OF-BAND LOW CHANNEL



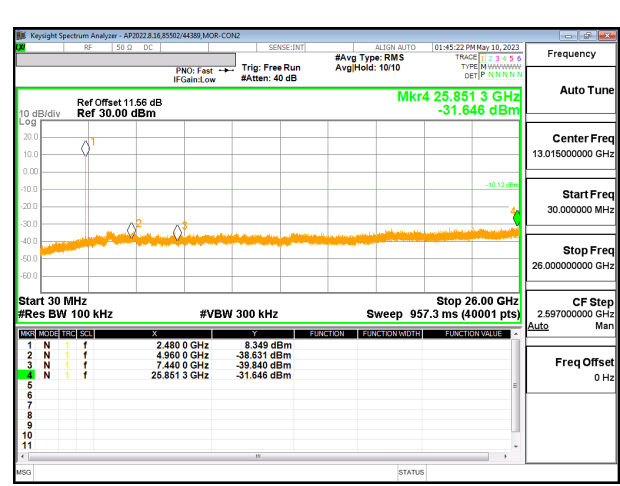
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



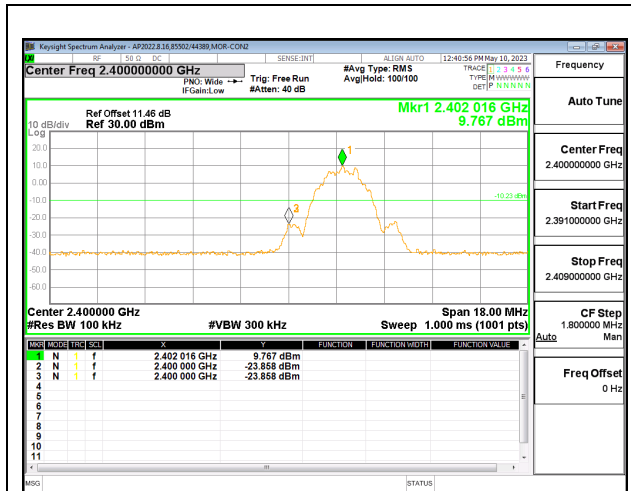
HIGH CHANNEL BANDEDGE



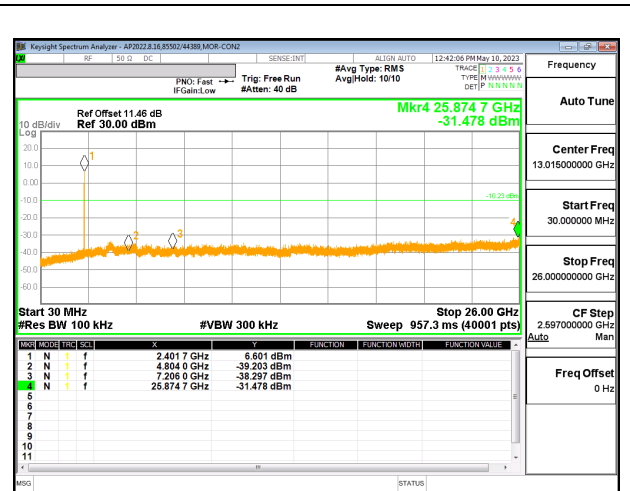
OUT-OF-BAND HIGH CHANNEL

9.6.4. BLE (2Mbps)

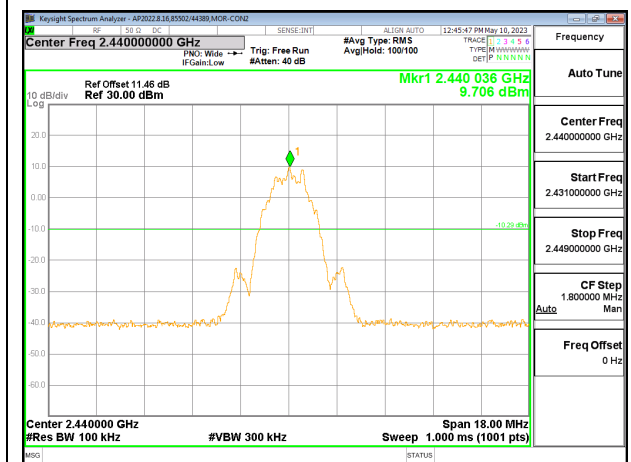
Chain 0



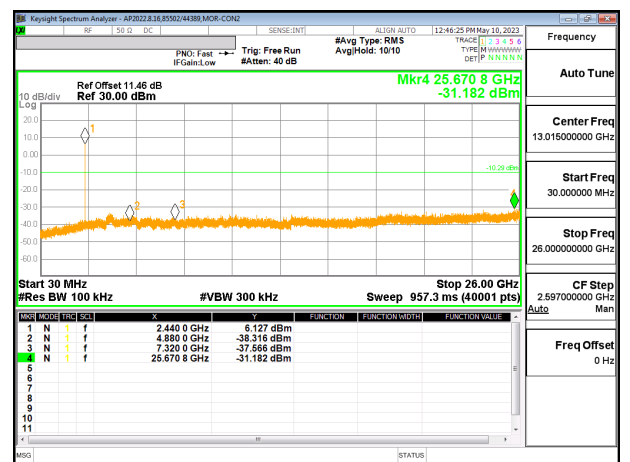
LOW CHANNEL BANDEDGE



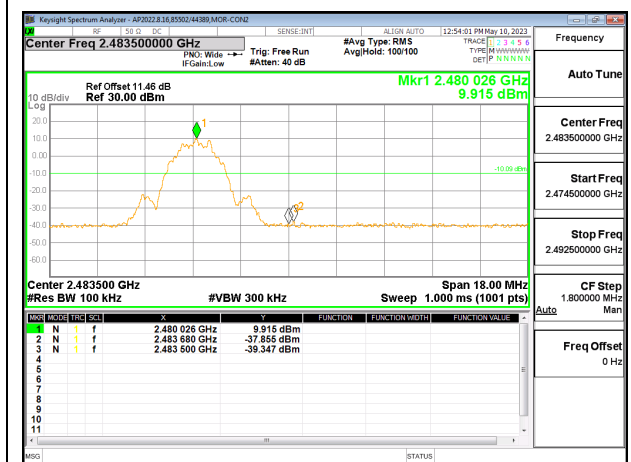
OUT-OF-BAND LOW CHANNEL



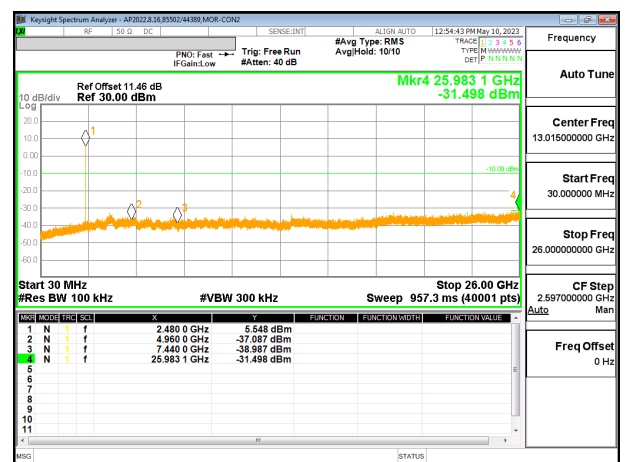
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL

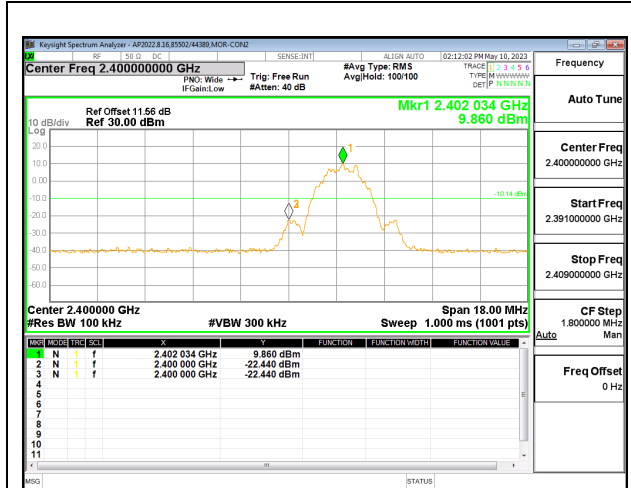


HIGH CHANNEL BANDEDGE

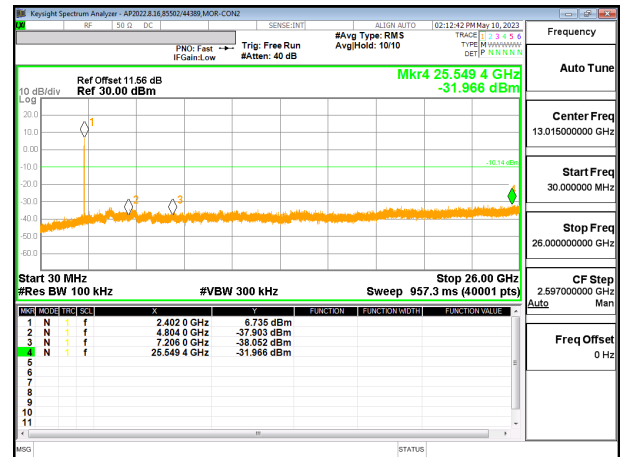


OUT-OF-BAND HIGH CHANNEL

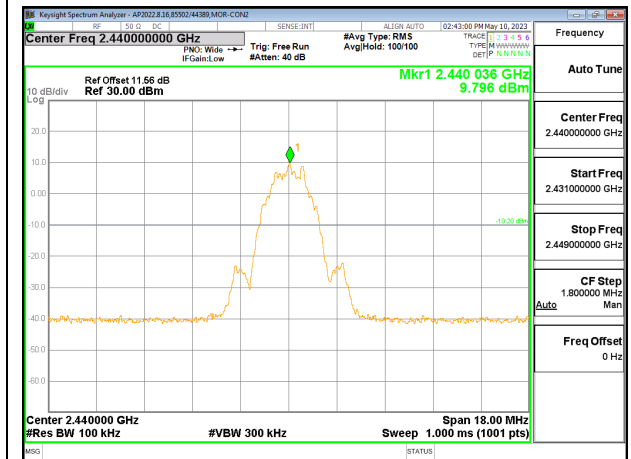
Chain 1



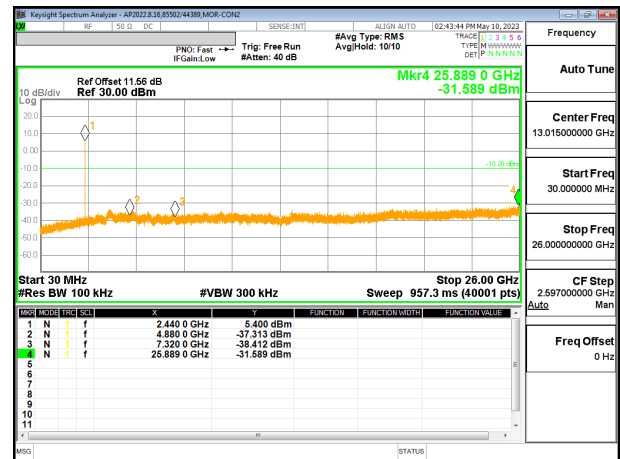
LOW CHANNEL BANDEDGE



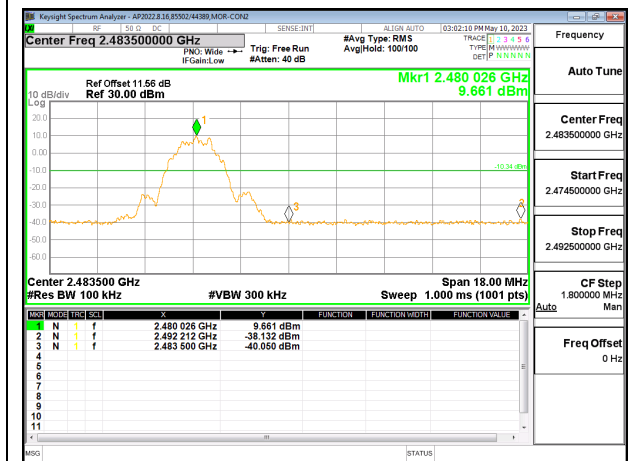
OUT-OF-BAND LOW CHANNEL



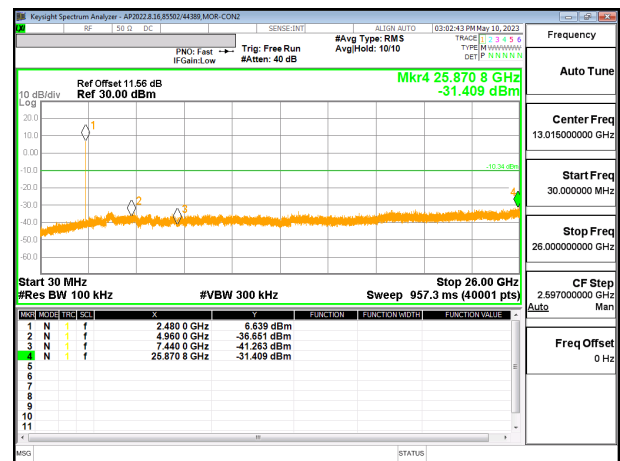
IN-BAND REFERENCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL BANDEDGE



OUT-OF-BAND HIGH CHANNEL

10. RADIATED TEST RESULTS

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

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 PSD 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.

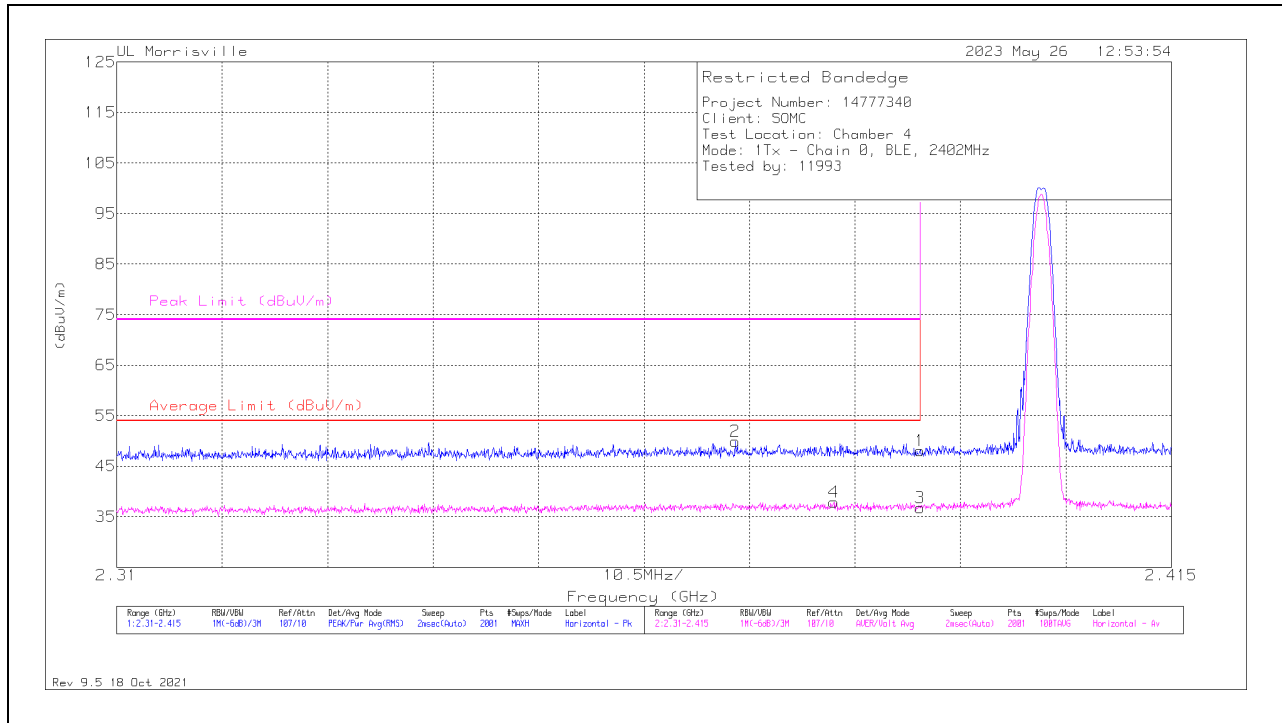
10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (125Kbps)

CHAIN 0

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	29.46	Pk	32.2	-13.6	0	48.06	-	-	74	-25.94	83	127	H
2	*** 2.37158	31.27	Pk	32.2	-13.6	0	49.87	-	-	74	-24.13	83	127	H
3	*** 2.38996	17.9	ADV	32.2	-13.6	.23	36.73	54	-17.27	-	-	83	127	H
4	*** 2.3814	18.99	ADV	32.2	-13.6	.23	37.82	54	-16.18	-	-	83	127	H

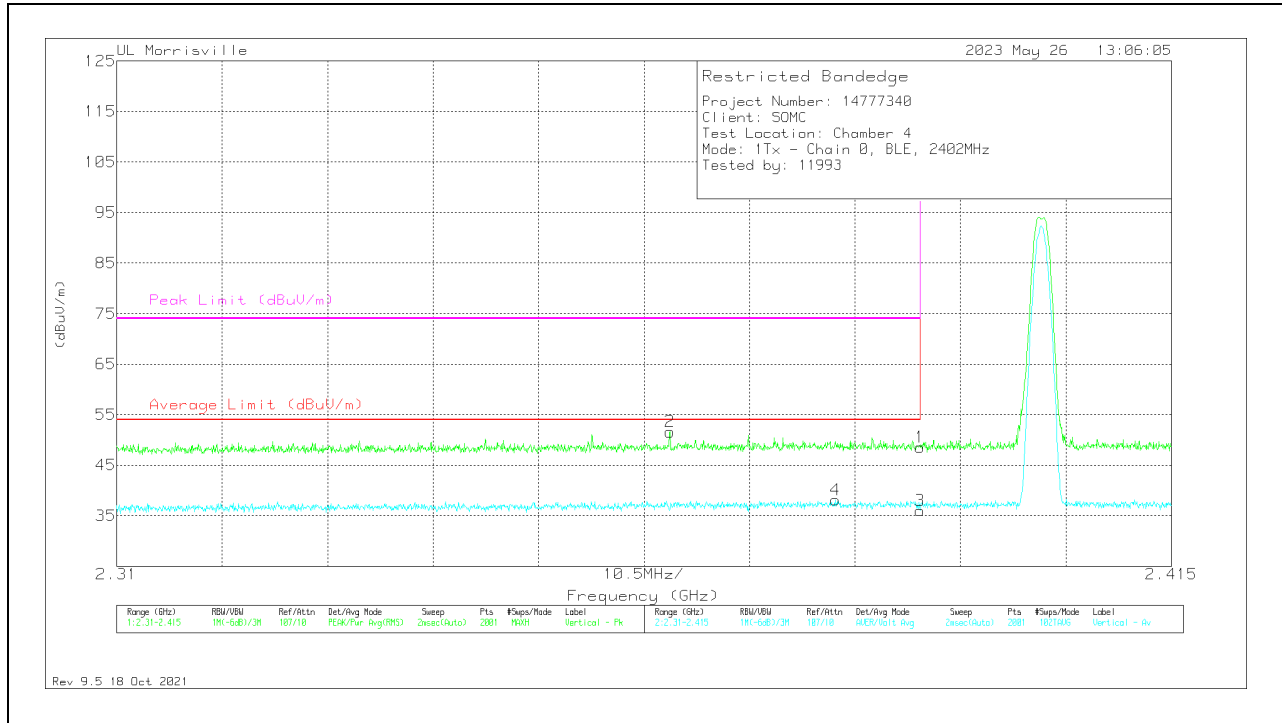
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.01	Pk	32.2	-13.6	0	48.61	-	-	74	-25.39	321	350	V
2	* ** 2.36507	33	Pk	32.2	-13.6	0	51.6	-	-	74	-22.4	321	350	V
3	* ** 2.38996	17.13	ADV	32.2	-13.6	.23	35.96	54	-18.04	-	-	321	350	V
4	* ** 2.38156	19.34	ADV	32.2	-13.6	.23	38.17	54	-15.83	-	-	321	350	V

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

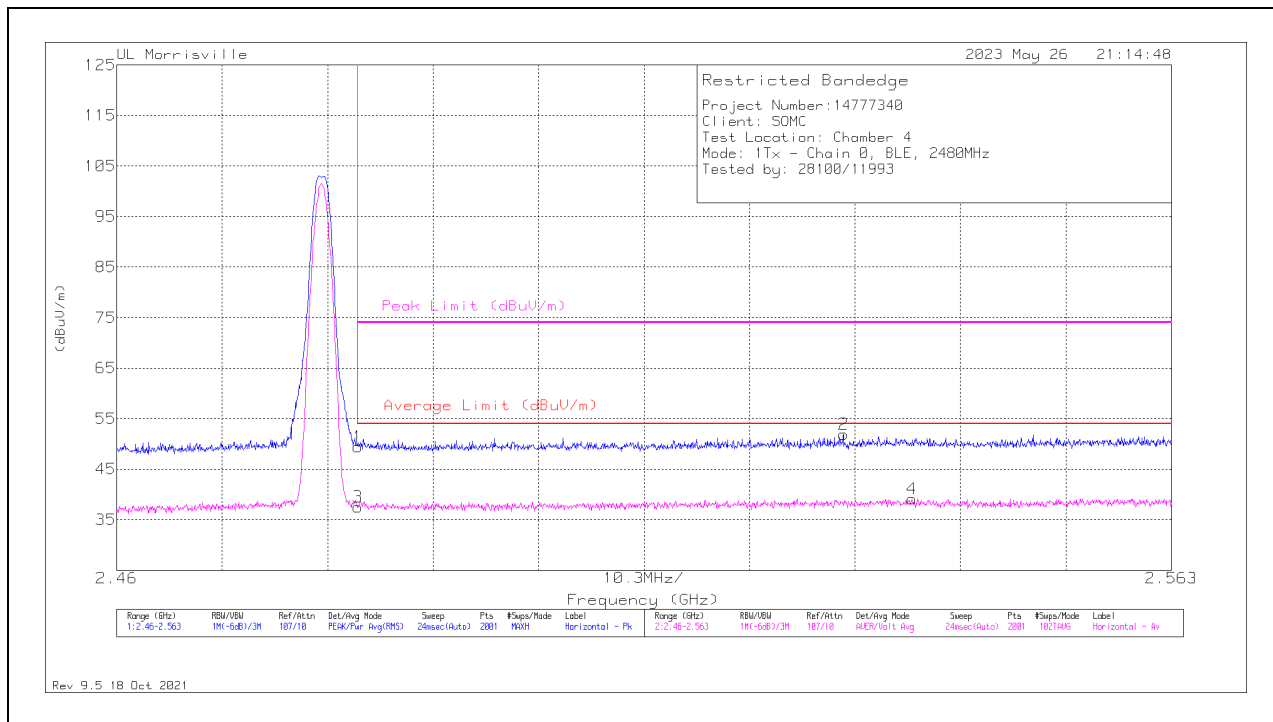
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.53	Pk	32.6	-13.7	0	49.43	-	-	74	-24.57	135	101	H
2	** 2.53097	32.69	Pk	32.7	-13.5	0	51.89	-	-	74	-22.11	135	101	H
3	* ** 2.48354	18.43	ADV	32.6	-13.7	.23	37.56	54	-16.44	-	-	135	100	H
4	** 2.53766	19.5	ADV	32.8	-13.4	.23	39.13	54	-14.87	-	-	135	100	H

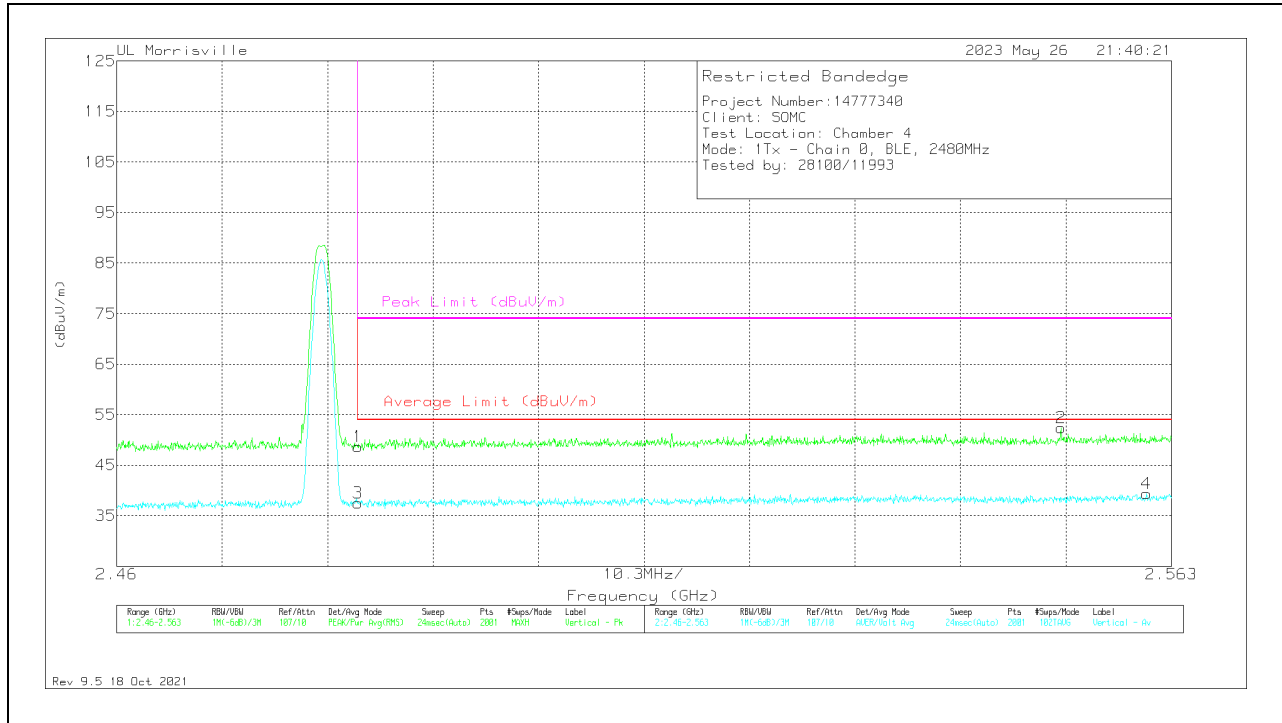
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT

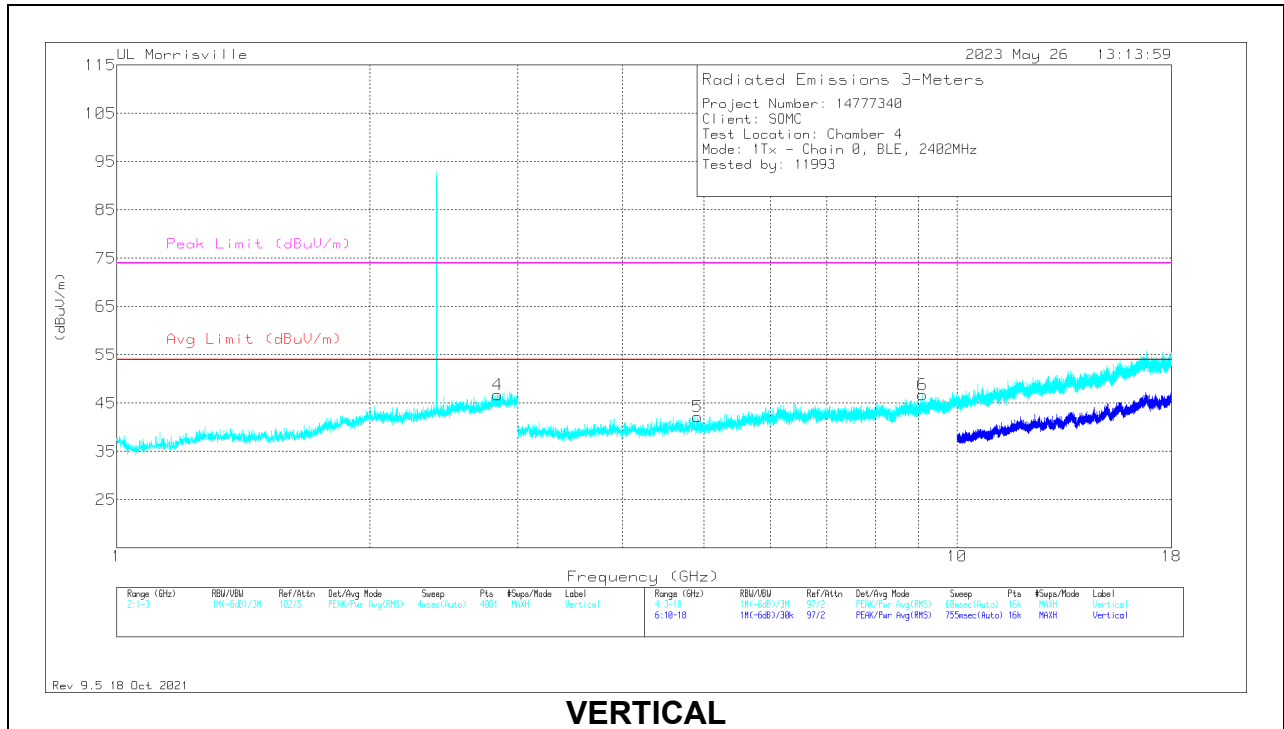
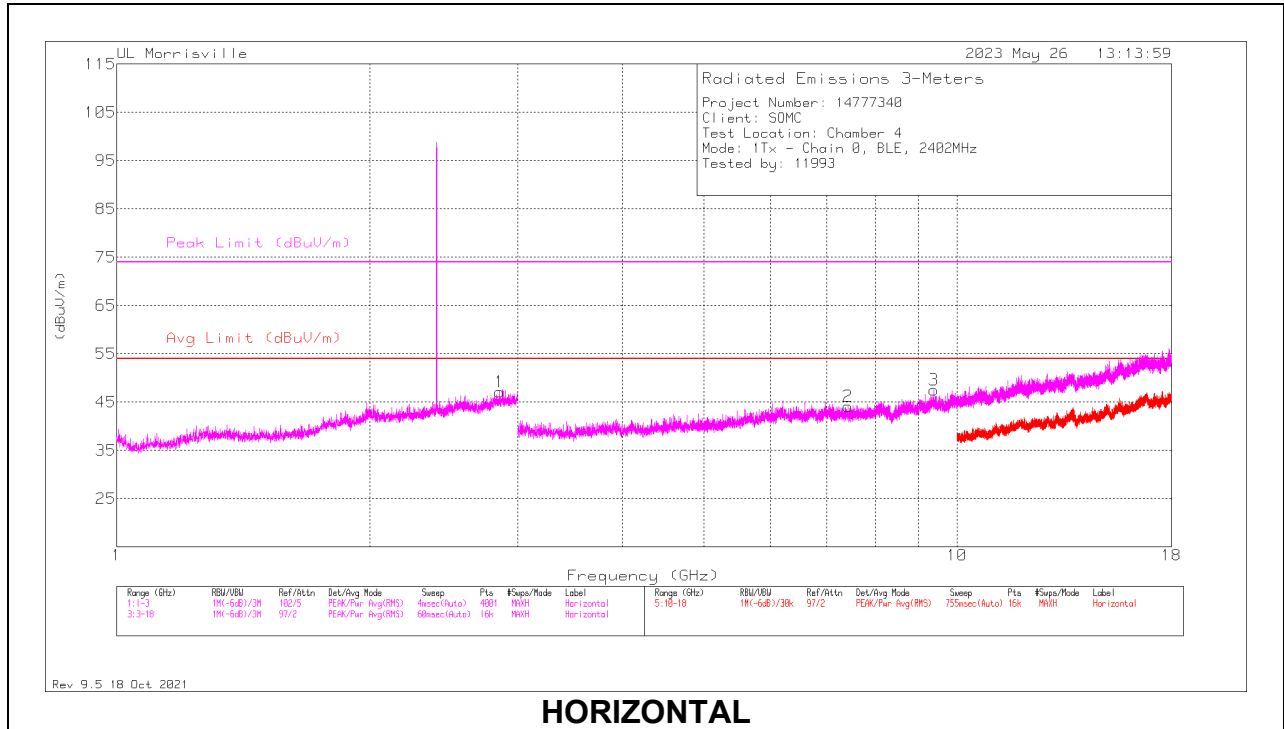


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	29.8	Pk	32.6	-13.7	0	48.7	-	-	74	-25.3	135	101	V
2	** 2.55224	33.1	Pk	32.8	-13.5	0	52.4	-	-	74	-21.6	135	101	V
3	* ** 2.48354	18.4	ADV	32.6	-13.7	.23	37.53	54	-16.47	-	-	135	100	V
4	** 2.56058	19.68	ADV	32.7	-13.3	.23	39.31	54	-14.69	-	-	135	100	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

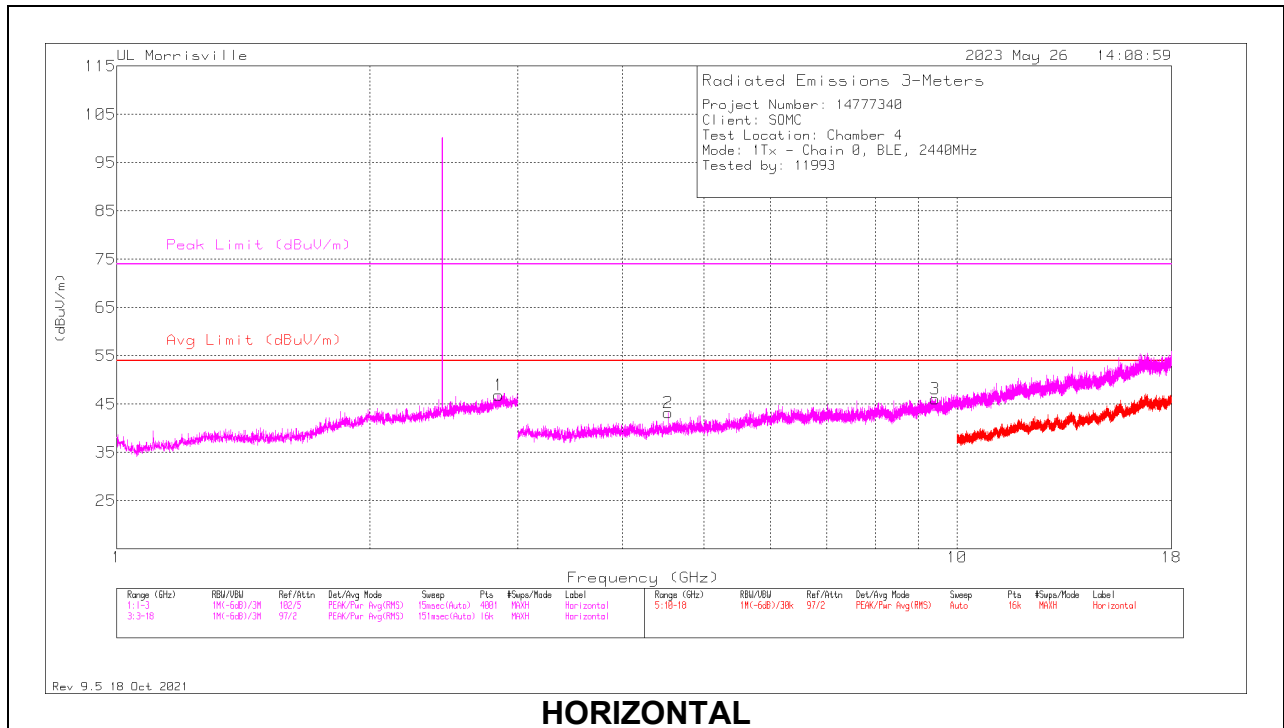
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.8545	27.37	Pk	32.6	-12.8	47.17	54	-6.83	74	-26.83	0-360	100	H
4	*** 2.8405	26.91	Pk	32.6	-12.8	46.71	54	-7.29	74	-27.29	0-360	200	V
2	*** 7.4175	36.83	Pk	35.6	-28.3	44.13	54	-9.87	74	-29.87	0-360	100	H
3	*** 9.38813	36.5	Pk	36.5	-25.5	47.5	54	-6.5	74	-26.5	0-360	100	H
5	*** 4.9125	39.76	Pk	34	-31.6	42.16	54	-11.84	74	-31.84	0-360	200	V
6	*** 9.10781	36.09	Pk	36.2	-25.6	46.69	54	-7.31	74	-27.31	0-360	200	V

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

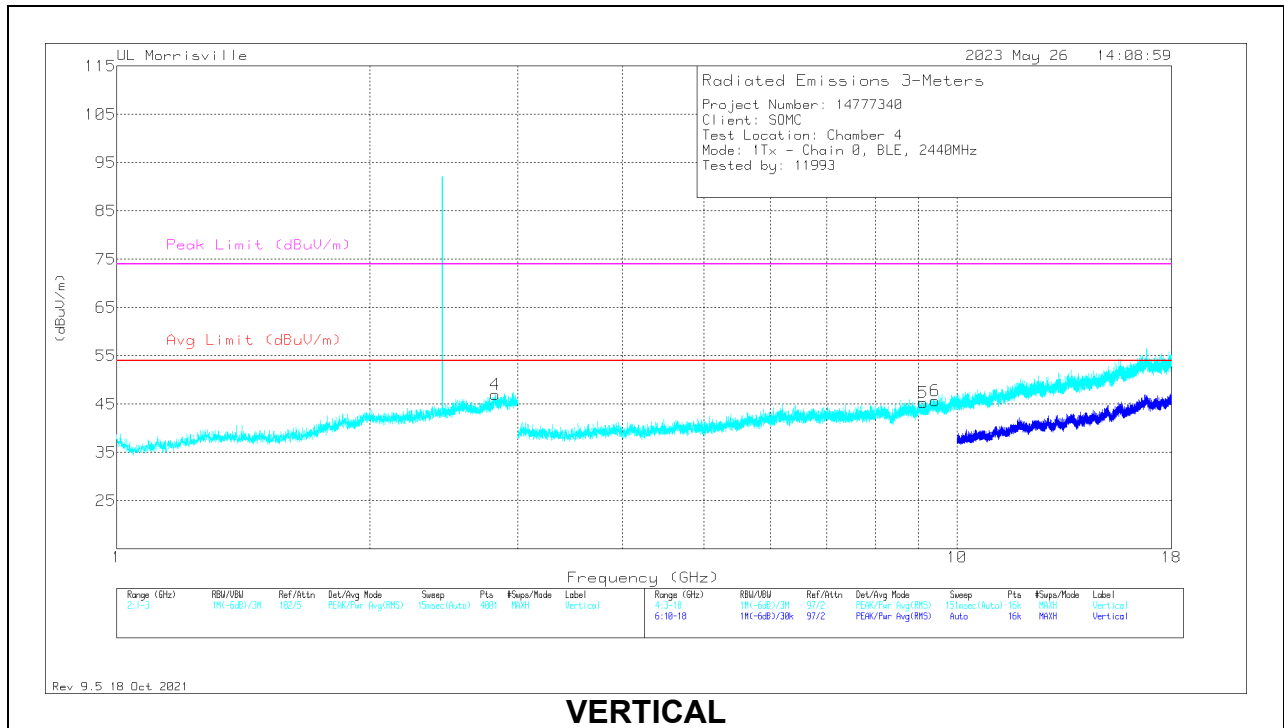
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

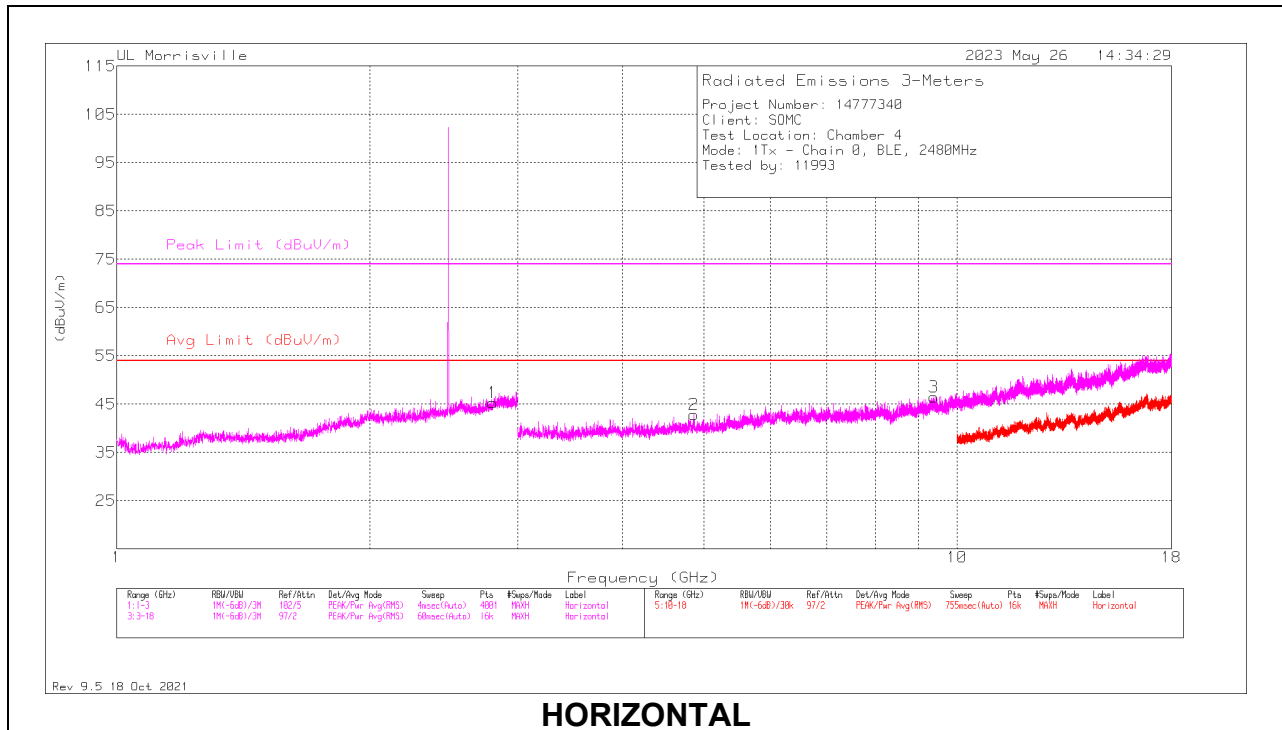
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.848	27.17	Pk	32.5	-12.8	46.87	54	-7.13	74	-27.13	0-360	100	H
4	*** 2.823	27.14	Pk	32.6	-12.8	46.94	54	-7.06	74	-27.06	0-360	200	V
2	*** 4.53375	41.09	Pk	34	-31.9	43.19	54	-10.81	74	-30.81	0-360	100	H
3	*** 9.42563	35.47	Pk	36.5	-25.9	46.07	54	-7.93	74	-27.93	0-360	100	H
5	*** 9.11906	34.78	Pk	36.2	-25.7	45.28	54	-8.72	74	-28.72	0-360	200	V
6	*** 9.42563	35.06	Pk	36.5	-25.9	45.66	54	-8.34	74	-28.34	0-360	200	V

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

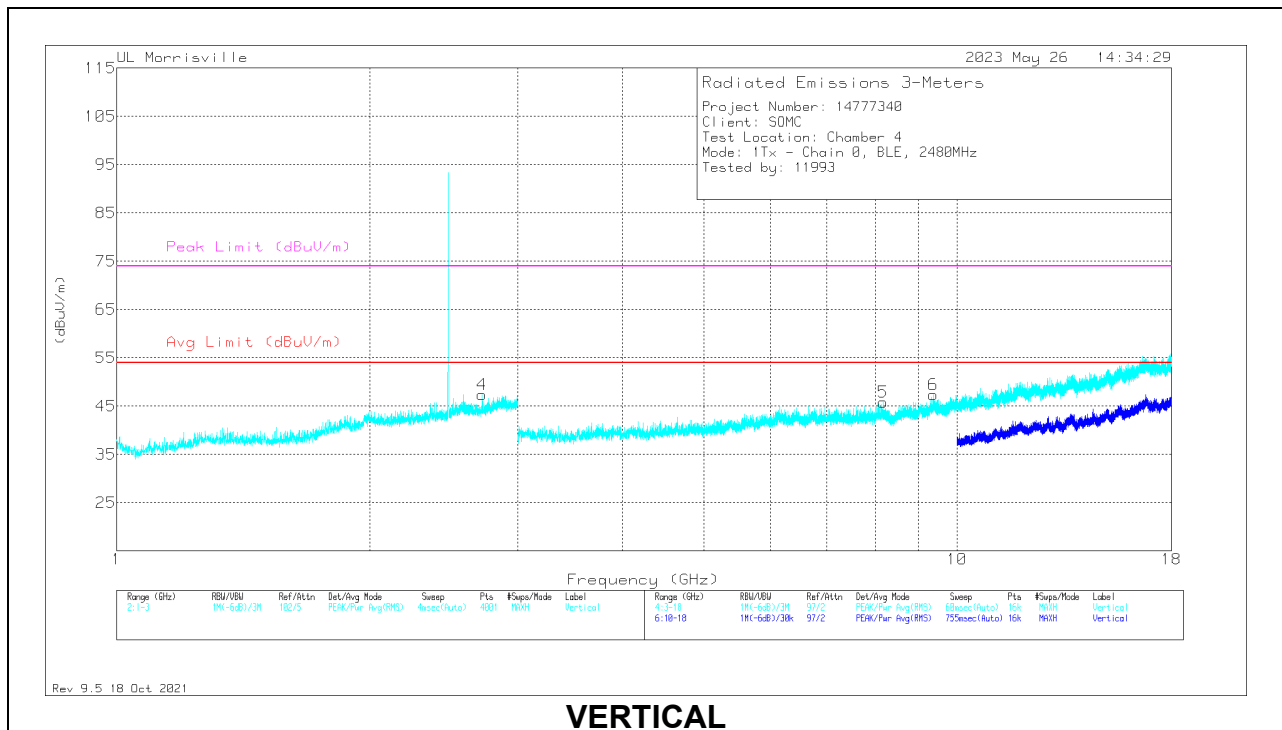
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	*** 2.8015	25.77	Pk	32.6	-13	45.37	54	-8.63	74	-28.63	0-360	100	H
4	*** 2.72	28.29	Pk	32.2	-13.1	47.39	54	-6.61	74	-26.61	0-360	200	V
2	*** 4.86656	40.58	Pk	34.1	-31.8	42.88	54	-11.12	74	-31.12	0-360	100	H
3	*** 9.39375	35.63	Pk	36.5	-25.7	46.43	54	-7.57	74	-27.57	0-360	100	H
5	*** 8.17219	37.5	Pk	35.7	-27.4	45.8	54	-8.2	74	-28.2	0-360	200	V
6	*** 9.37781	36.37	Pk	36.5	-25.5	47.37	54	-6.63	74	-26.63	0-360	200	V

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

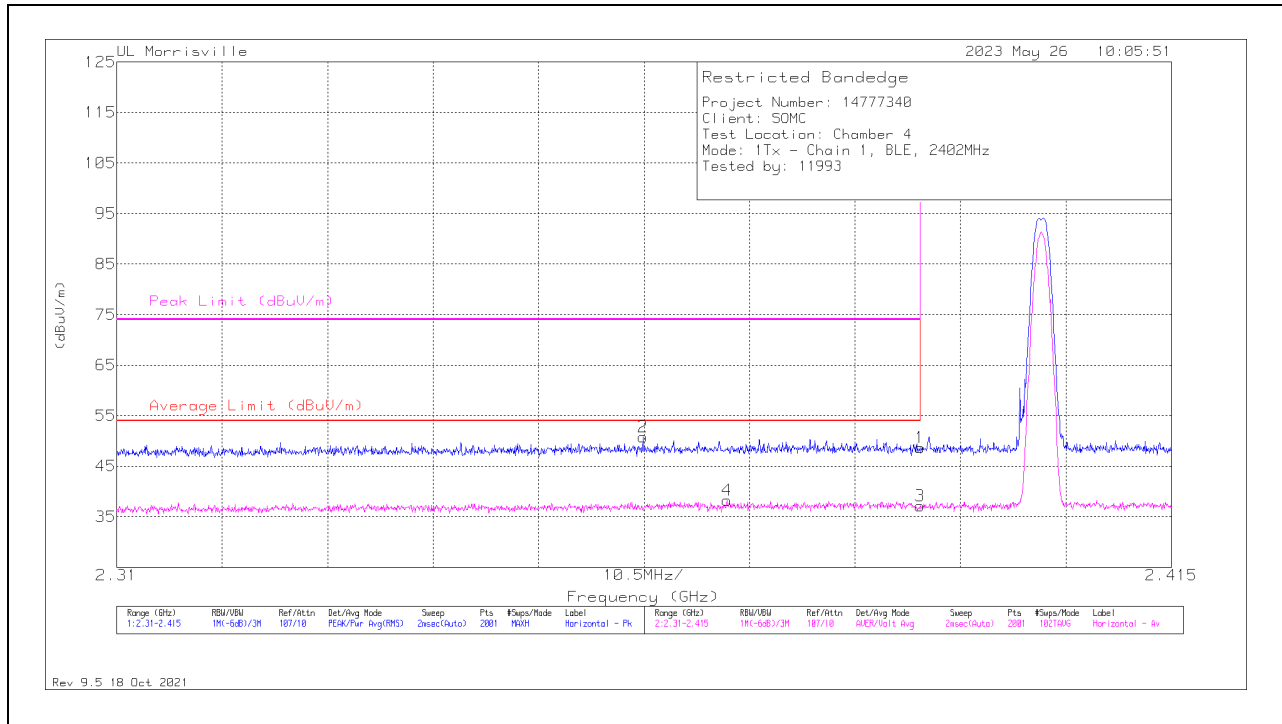
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

CHAIN 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.03	Pk	32.2	-13.6	0	48.63	-	-	74	-25.37	80	101	H
2	* ** 2.3624	32.14	Pk	32.2	-13.6	0	50.74	-	-	74	-23.26	80	101	H
3	* ** 2.38996	18.25	ADV	32.2	-13.6	.23	37.08	54	-16.92	-	-	80	100	H
4	* ** 2.37074	19.4	ADV	32.2	-13.6	.23	38.23	54	-15.77	-	-	80	100	H

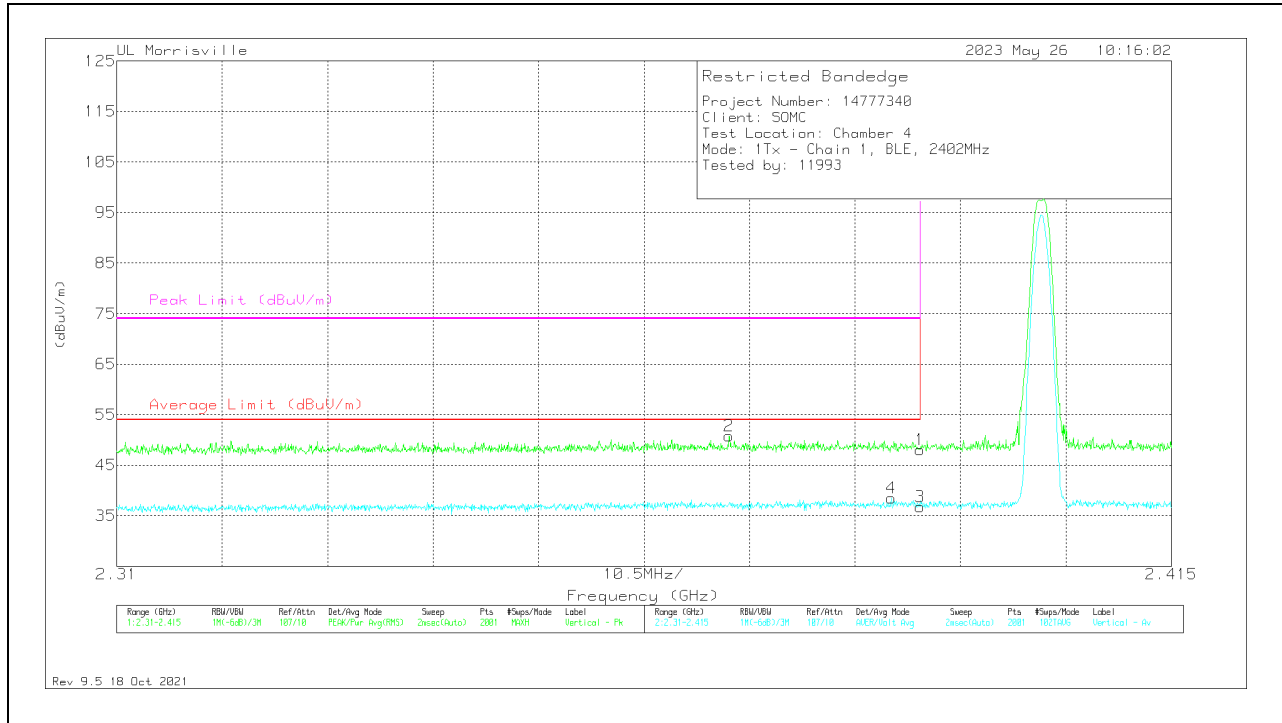
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	29.51	Pk	32.2	-13.6	0	48.11	-	-	74	-25.89	26	101	V
2	** 2.37095	32.18	Pk	32.2	-13.6	0	50.78	-	-	74	-23.22	26	101	V
3	*** 2.38996	17.91	ADV	32.2	-13.6	.23	36.74	54	-17.26	-	-	26	100	V
4	*** 2.38712	19.61	ADV	32.2	-13.6	.23	38.44	54	-15.56	-	-	26	100	V

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

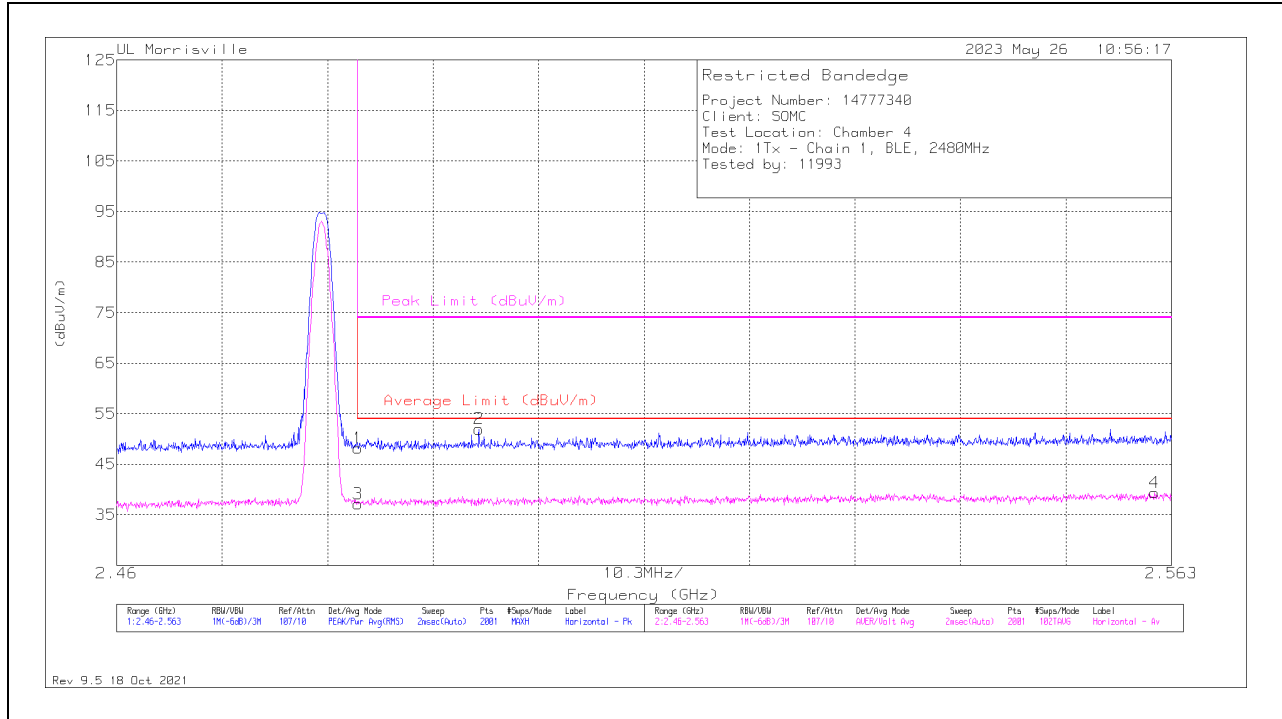
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	29.26	Pk	32.6	-13.7	0	48.16	-	-	74	-25.84	80	101	H
2	* ** 2.49538	32.97	Pk	32.6	-13.6	0	51.97	-	-	74	-22.03	80	101	H
3	* ** 2.48354	17.99	ADV	32.6	-13.7	.23	37.12	54	-16.88	-	-	80	100	H
4	** 2.56135	19.76	ADV	32.7	-13.3	.23	39.39	54	-14.61	-	-	80	100	H

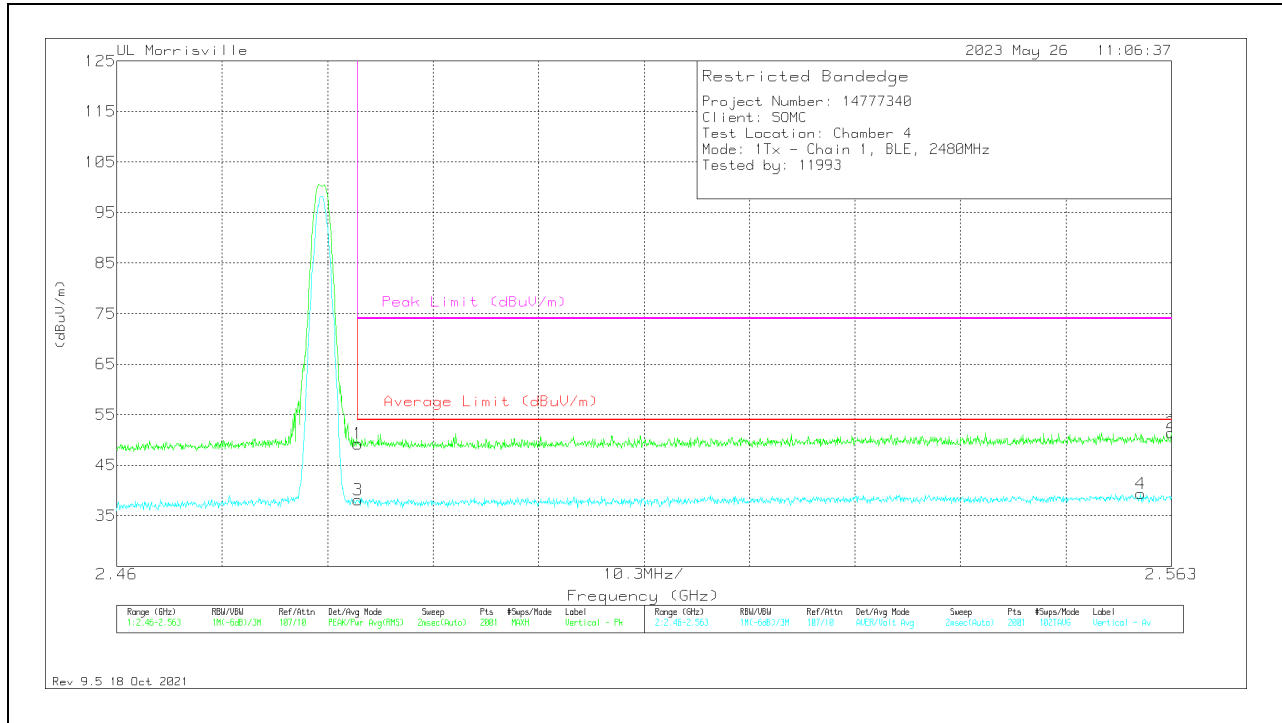
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.34	Pk	32.6	-13.7	0	49.24	-	-	74	-24.76	26	101	V
2	** 2.563	32.05	Pk	32.7	-13.3	0	51.45	-	-	74	-22.55	26	101	V
3	*** 2.48354	19	ADV	32.6	-13.7	.23	38.13	54	-15.87	-	-	26	100	V
4	** 2.56001	19.7	ADV	32.7	-13.3	.23	39.33	54	-14.67	-	-	26	100	V

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

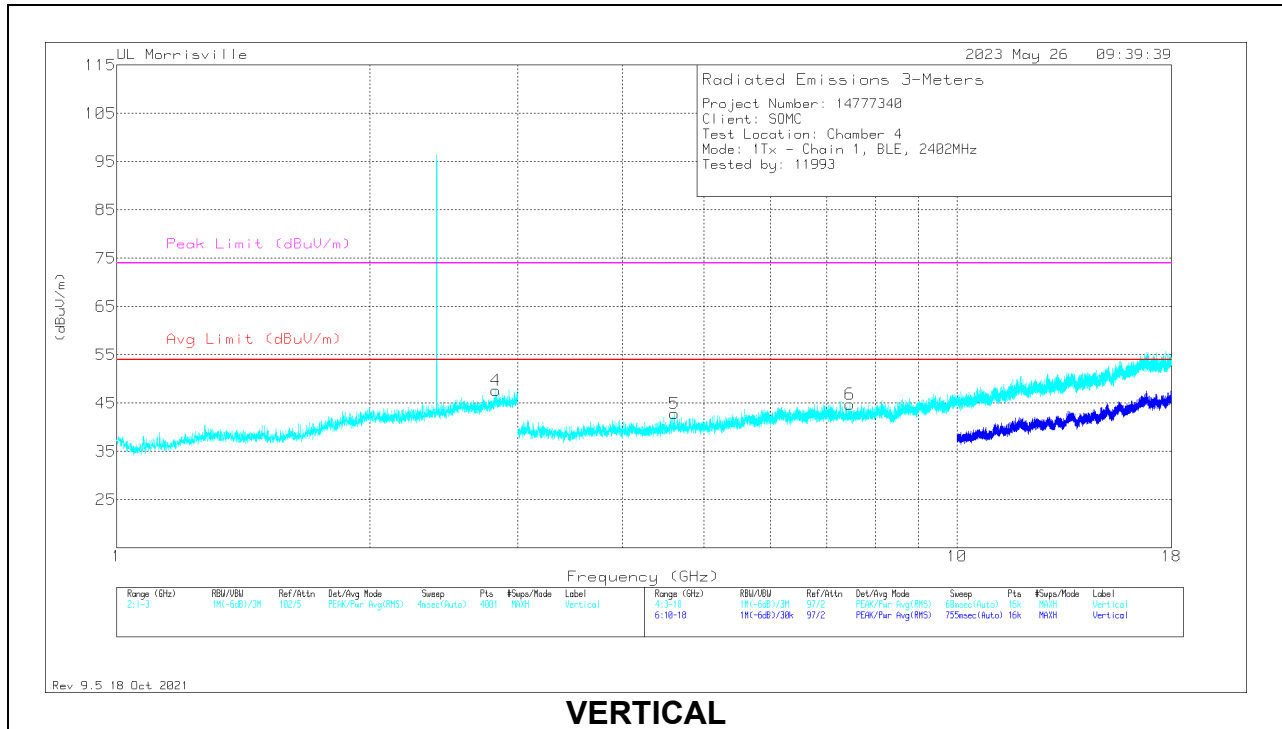
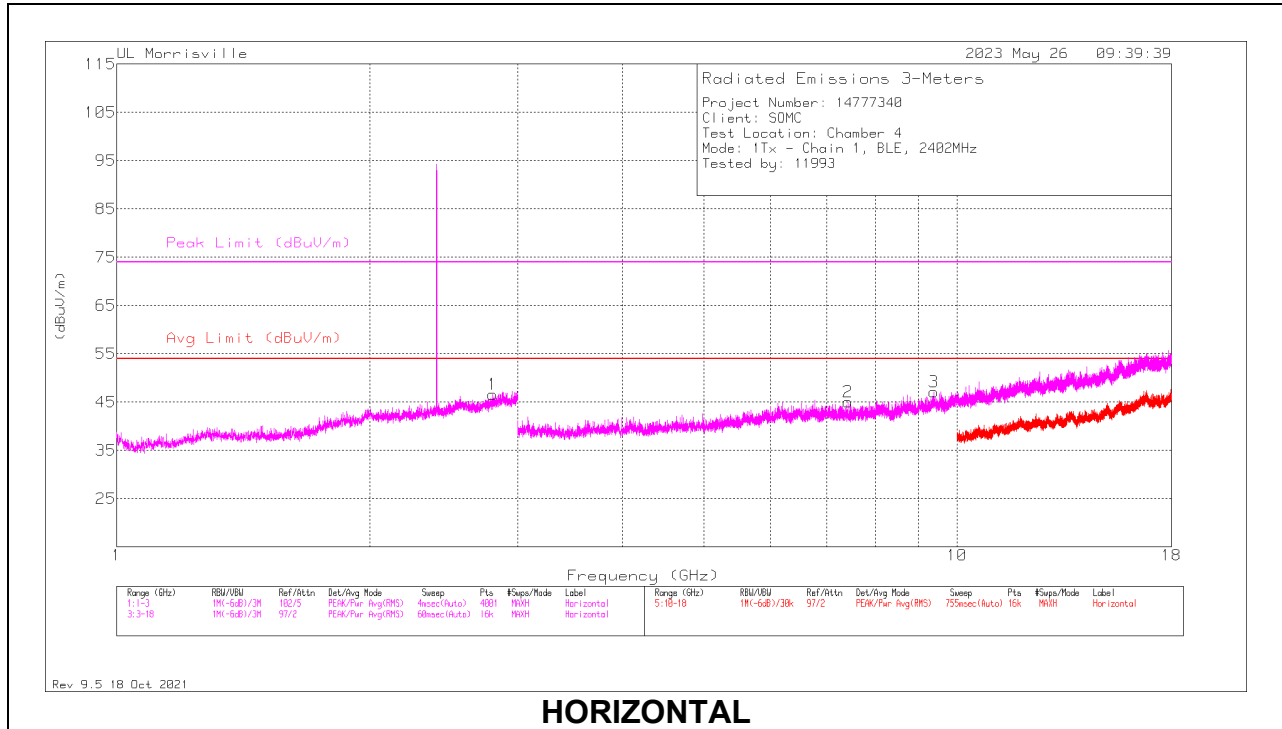
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS



RADIATED EMISSIONS

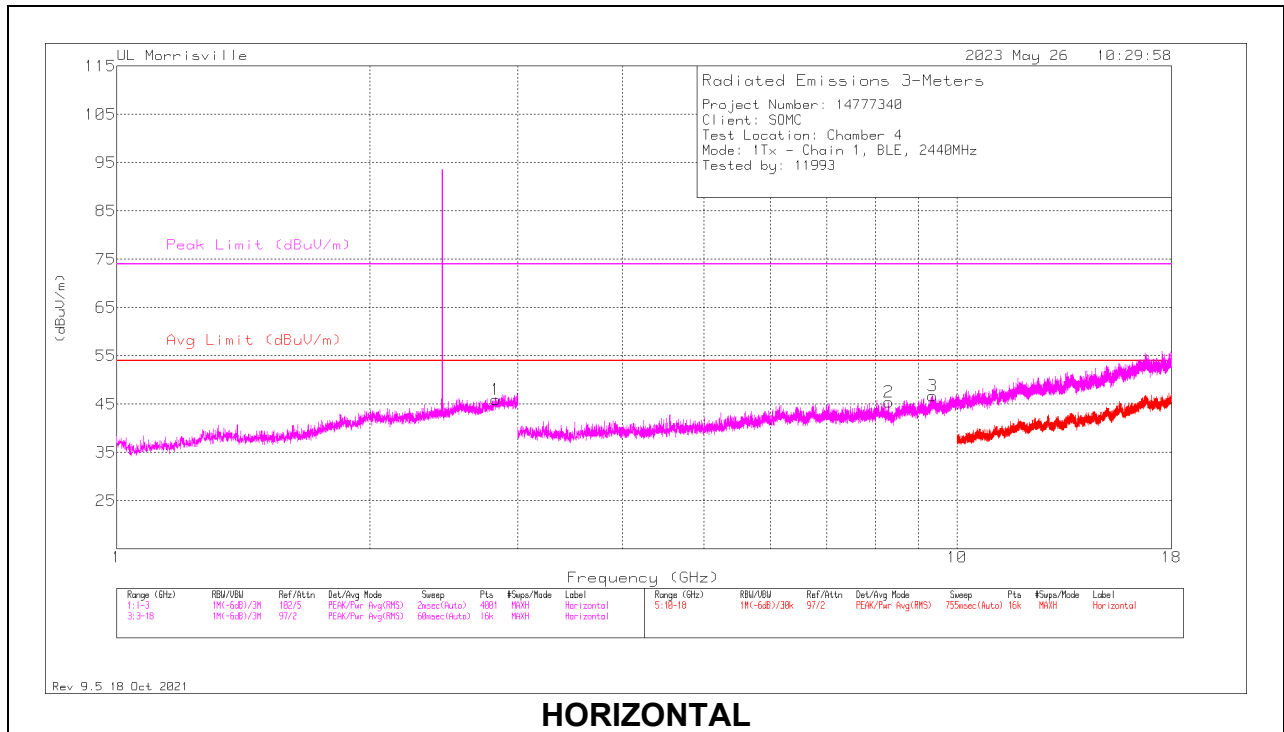
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.8005	26.98	Pk	32.6	-13	46.58	54	-7.42	74	-27.42	0-360	100	H
4	*** 2.8245	27.85	Pk	32.6	-12.8	47.65	54	-6.35	74	-26.35	0-360	200	V
2	*** 7.41656	37.79	Pk	35.6	-28.3	45.09	54	-8.91	74	-28.91	0-360	100	H
3	*** 9.38344	36.06	Pk	36.5	-25.4	47.16	54	-6.84	74	-26.84	0-360	100	H
5	*** 4.60875	40.82	Pk	34.1	-32.1	42.82	54	-11.18	74	-31.18	0-360	200	V
6	*** 7.45688	37.48	Pk	35.6	-28.3	44.78	54	-9.22	74	-29.22	0-360	200	V

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

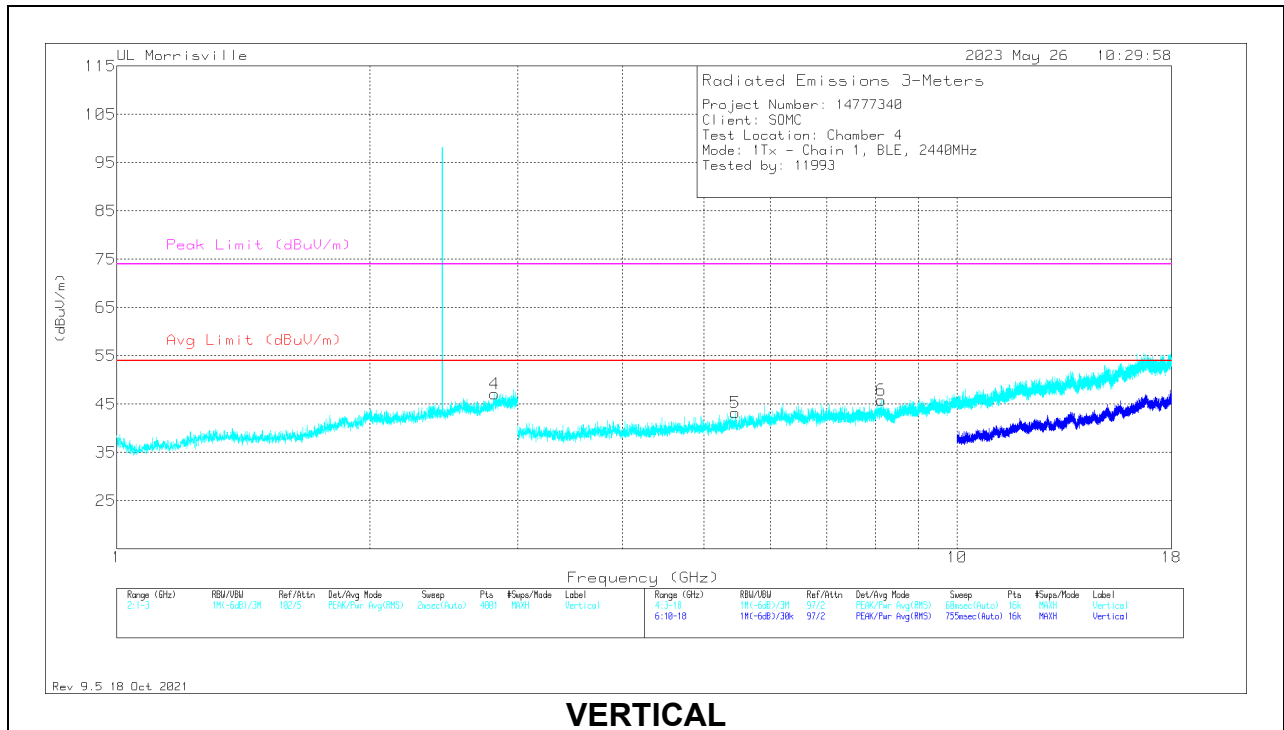
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

MID CHANNEL RESULTS



HORIZONTAL



VERTICAL

RADIATED EMISSIONS

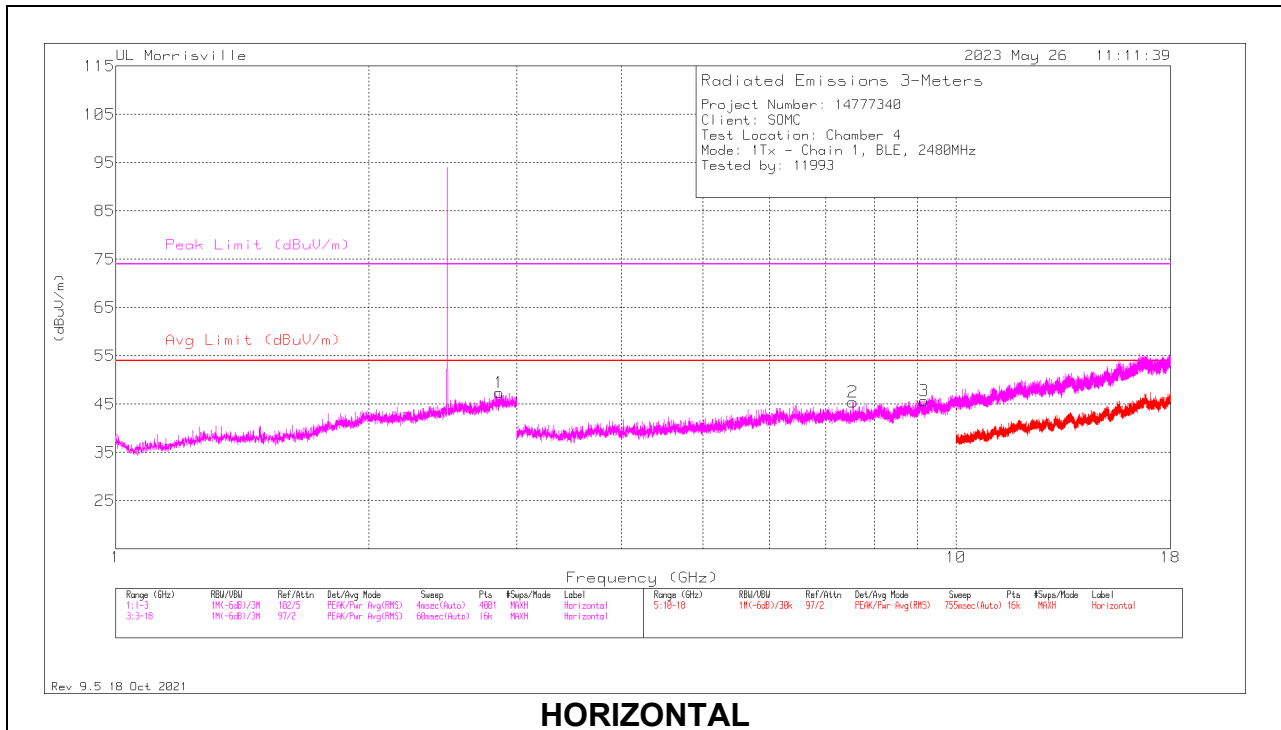
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.8275	26.16	Pk	32.6	-12.8	45.96	54	-8.04	74	-28.04	0-360	100	H
4	*** 2.817	27.19	Pk	32.6	-12.7	47.09	54	-6.91	74	-26.91	0-360	200	V
2	*** 8.29688	36.87	Pk	35.7	-27.1	45.47	54	-8.53	74	-28.53	0-360	100	H
3	*** 9.36188	35.82	Pk	36.4	-25.5	46.72	54	-7.28	74	-27.28	0-360	100	H
5	*** 5.44406	39.08	Pk	34.6	-30.4	43.28	54	-10.72	74	-30.72	0-360	200	V
6	*** 8.12719	37.51	Pk	35.8	-27.5	45.81	54	-8.19	74	-28.19	0-360	200	V

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

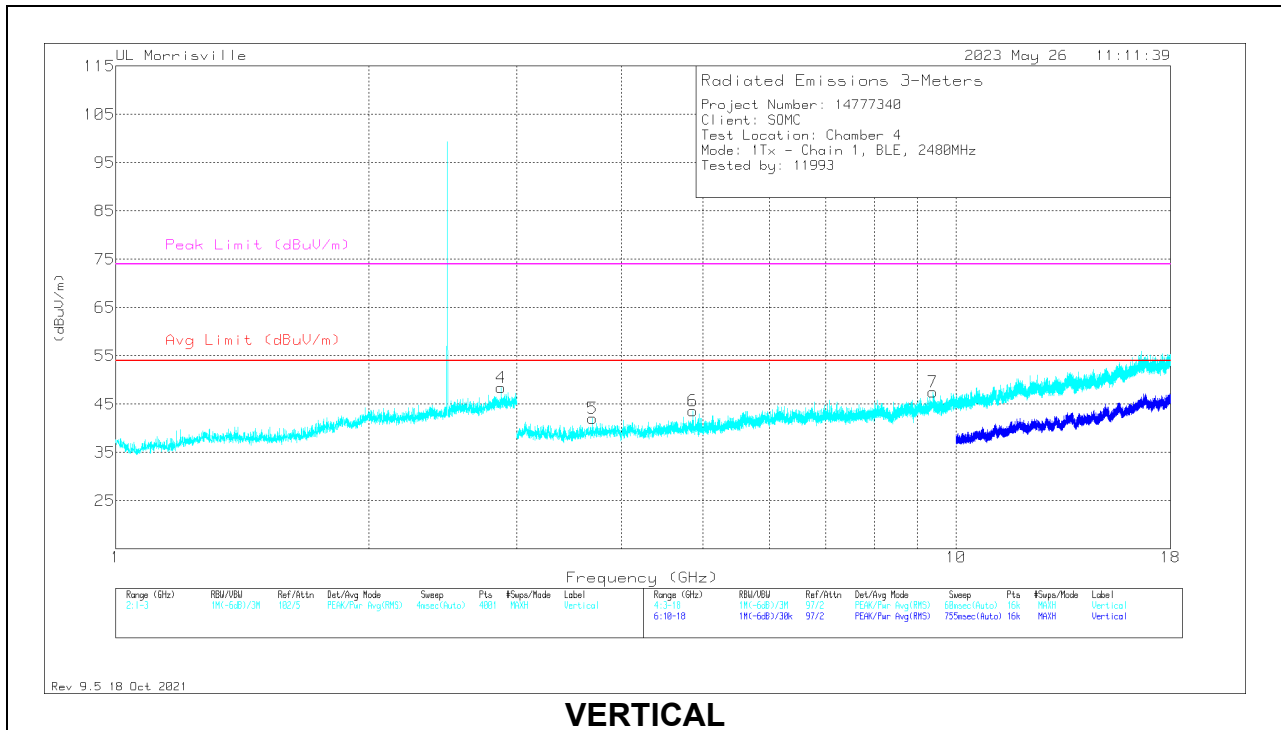
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

HIGH CHANNEL RESULTS



HORIZONTAL



VERTICAL

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	*** 2.86	27.64	Pk	32.6	-12.8	0	47.44	54	-6.56	74	-26.56	0-360	100	H
4	*** 2.8732	27.93	PK2	32.7	-12.7	0	47.93	-	-	74	-26.07	181	318	V
	*** 2.87596	15.67	ADV	32.7	-12.6	.23	36	54	-18	-	-	181	318	V
2	*** 7.54125	37.94	Pk	35.7	-28.2	0	45.44	54	-8.56	74	-28.56	0-360	100	H
3	*** 9.165	35.55	Pk	36.2	-26.1	0	45.65	54	-8.35	74	-28.35	0-360	100	H
5	*** 3.69281	42.24	Pk	33.2	-33.4	0	42.04	54	-11.96	74	-31.96	0-360	200	V
6	*** 4.86188	41.17	Pk	34.1	-31.6	0	43.67	54	-10.33	74	-30.33	0-360	200	V
7	*** 9.38625	36.47	Pk	36.5	-25.4	0	47.57	54	-6.43	74	-26.43	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

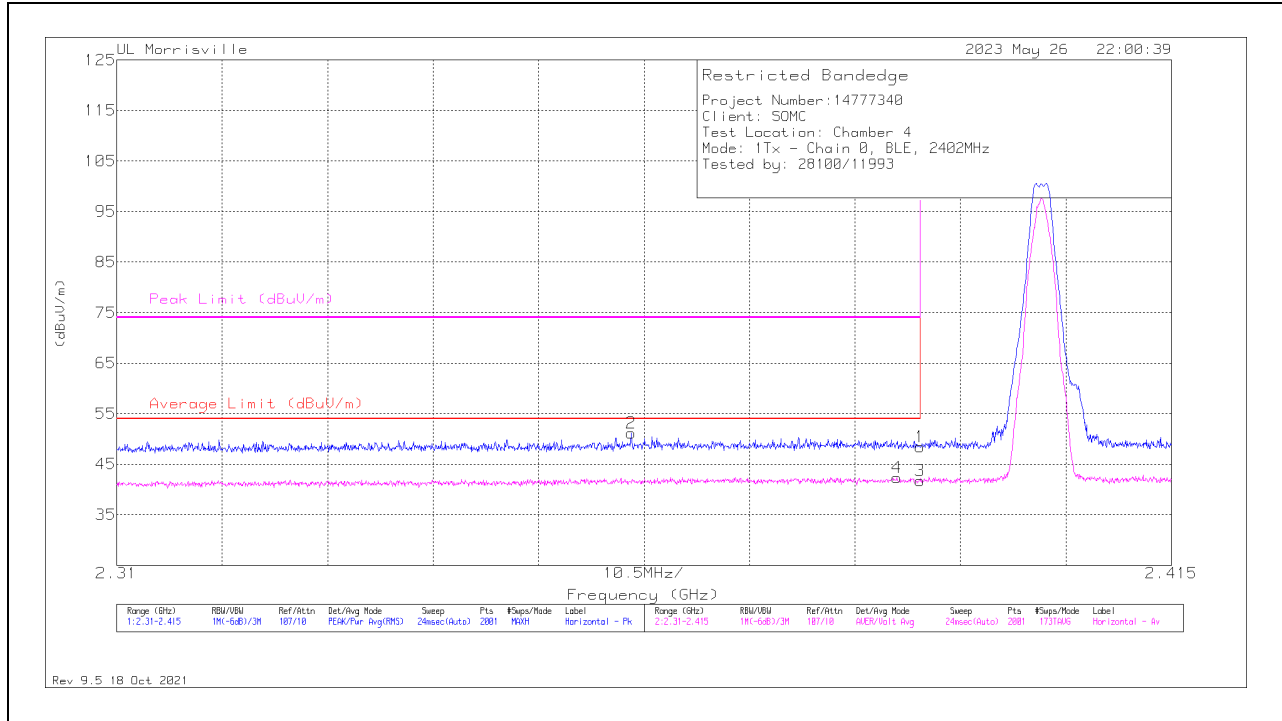
ADV - Linear Voltage Average

10.2.2. BLE (2Mbps)

CHAIN 0

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	29.87	Pk	32.2	-13.6	0	48.47	-	-	74	-25.53	127	121	H
2	* ** 2.36119	32.66	Pk	32.2	-13.7	0	51.16	-	-	74	-22.84	127	121	H
3	* ** 2.38996	18.3	ADV	32.2	-13.6	4.80	41.70	54	-12.30	-	-	127	121	H
4	* ** 2.38765	19.01	ADV	32.2	-13.6	4.80	42.41	54	-11.59	-	-	127	121	H

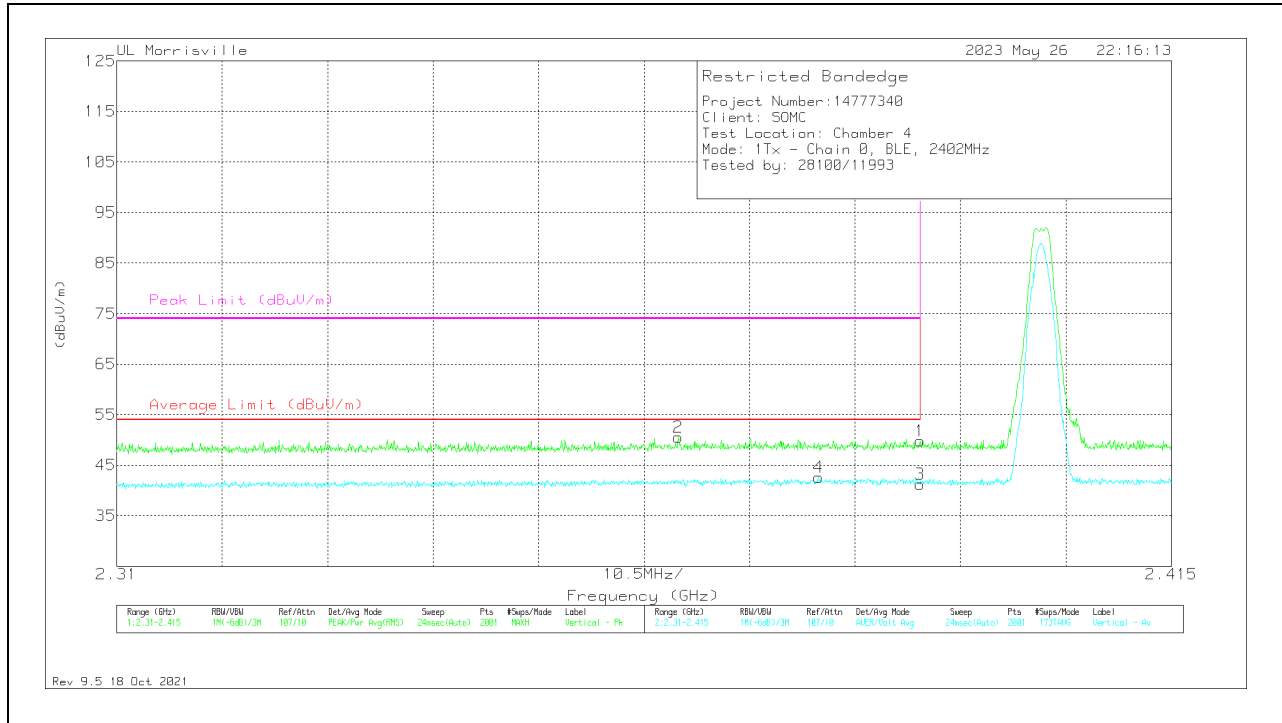
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT

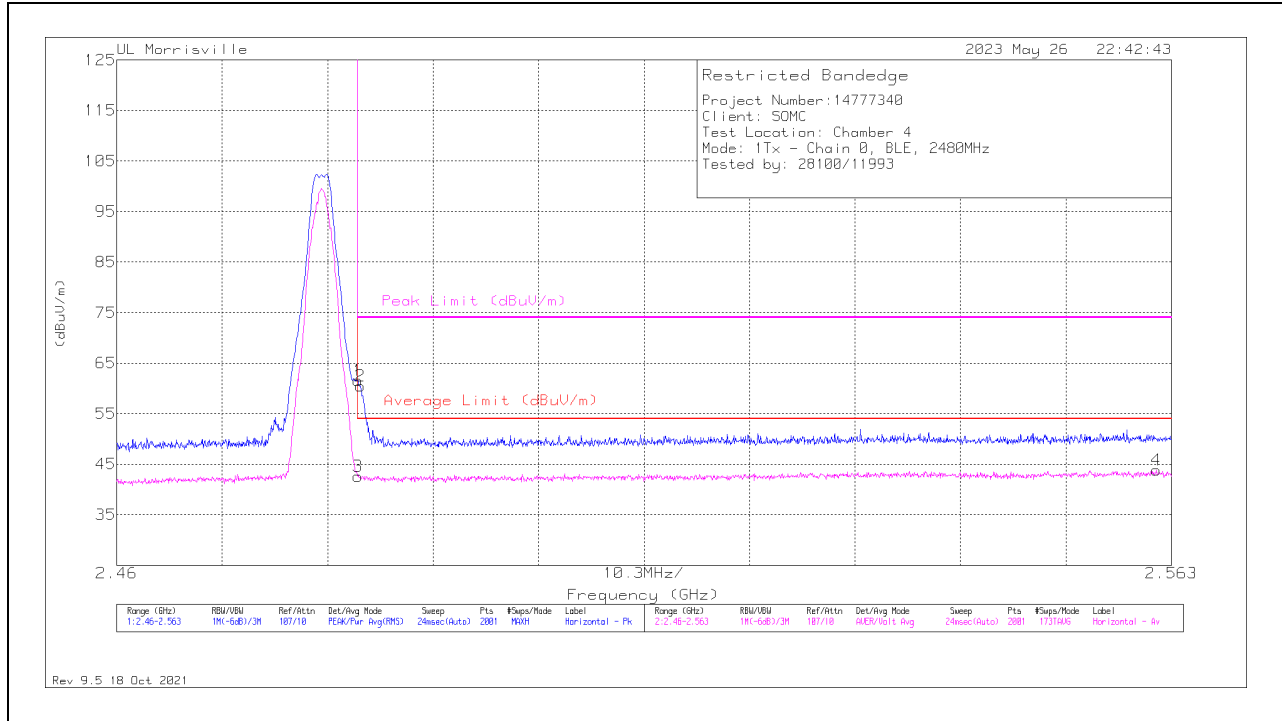


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	31.2	Pk	32.2	-13.6	0	49.8	-	-	74	-24.2	339	340	V
2	* ** 2.36591	31.95	Pk	32.2	-13.6	0	50.55	-	-	74	-23.45	339	340	V
3	* ** 2.38996	17.88	ADV	32.2	-13.6	4.80	41.28	54	-12.72	-	-	339	340	V
4	* ** 2.37988	19.17	ADV	32.2	-13.6	4.80	42.57	54	-11.43	-	-	339	340	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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	42.74	Pk	32.6	-13.7	0	61.64	-	-	74	-12.36	140	102	H
2	* ** 2.48379	41.61	Pk	32.6	-13.7	0	60.51	-	-	74	-13.49	140	102	H
3	* ** 2.48354	18.87	ADV	32.6	-13.7	4.80	42.57	54	-11.43	-	-	140	102	H
4	** 2.56156	19.62	ADV	32.7	-13.3	4.80	43.82	54	-10.18	-	-	140	102	H

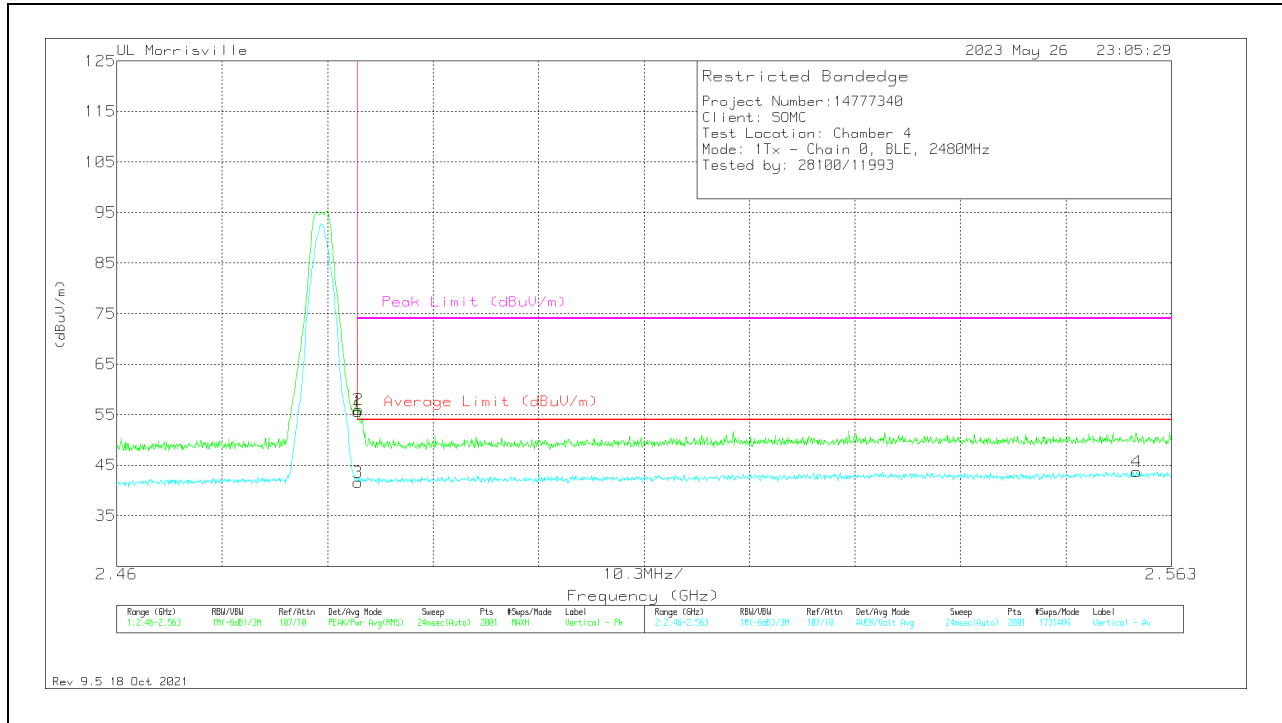
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	36.71	Pk	32.6	-13.7	0	55.61	-	-	74	-18.39	339	315	V
2	* ** 2.48364	37.14	Pk	32.6	-13.7	0	56.04	-	-	74	-17.96	339	315	V
3	* ** 2.48354	17.89	ADV	32.6	-13.7	4.80	41.59	54	-12.41	-	-	339	315	V
4	** 2.5596	19.53	ADV	32.7	-13.3	4.80	43.73	54	-10.27	-	-	339	315	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

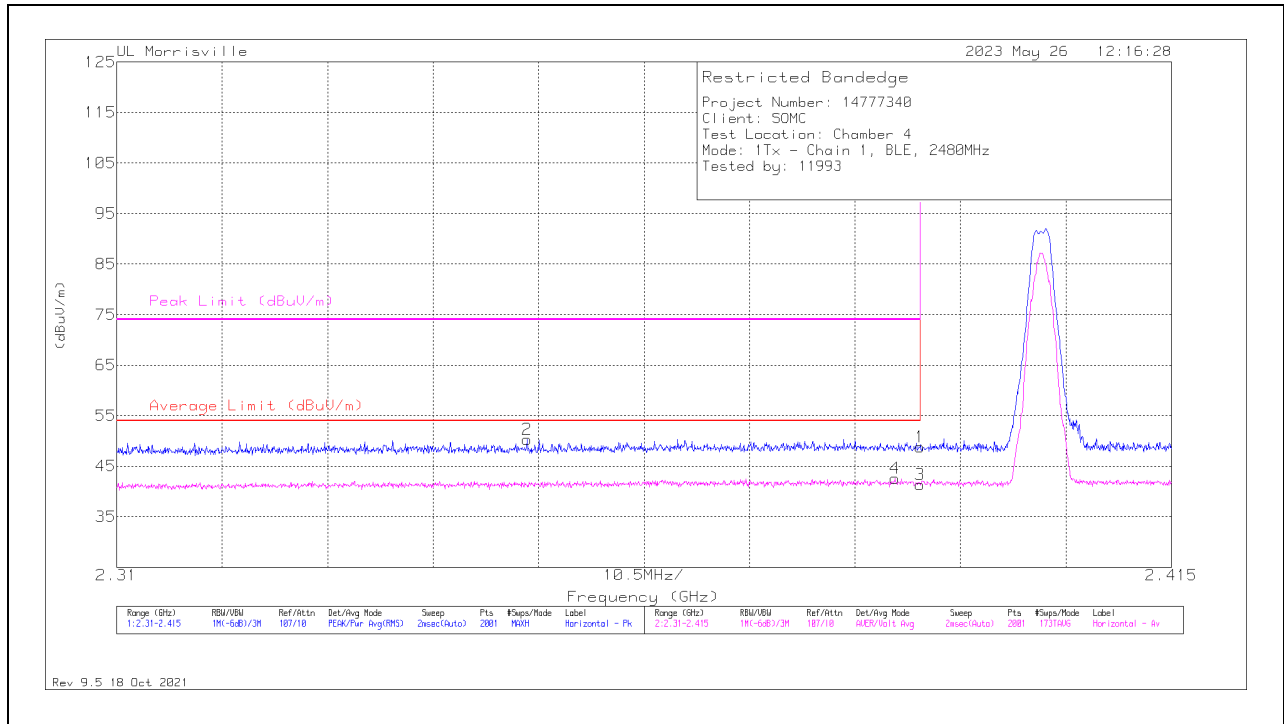
Pk - Peak detector

ADV - Linear Voltage Average

CHAIN 1

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.15	Pk	32.2	-13.6	0	48.75	-	-	74	-25.25	351	339	H
2	* ** 2.35085	32.03	Pk	32.1	-13.8	0	50.33	-	-	74	-23.67	351	339	H
3	* ** 2.38996	18	ADV	32.2	-13.6	4.80	41.40	54	-12.60	-	-	351	339	H
4	* ** 2.38749	19.26	ADV	32.2	-13.6	4.80	42.66	54	-11.34	-	-	351	339	H

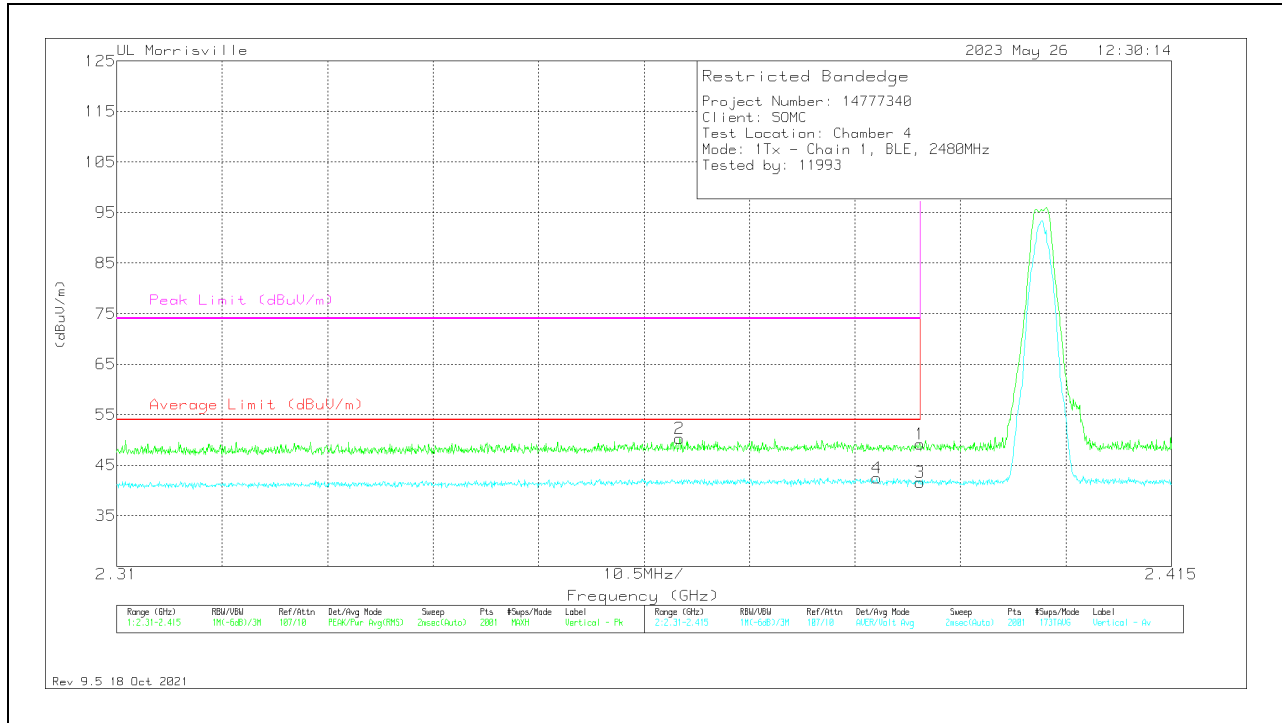
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	30.53	Pk	32.2	-13.6	0	49.13	-	-	74	-24.87	26	100	V
2	* ** 2.36602	31.66	Pk	32.2	-13.6	0	50.26	-	-	74	-23.74	26	100	V
3	* ** 2.38996	18.2	ADV	32.2	-13.6	4.80	41.60	54	-12.40	-	-	26	100	V
4	* ** 2.38565	19.09	ADV	32.2	-13.6	4.80	42.49	54	-11.51	-	-	26	100	V

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

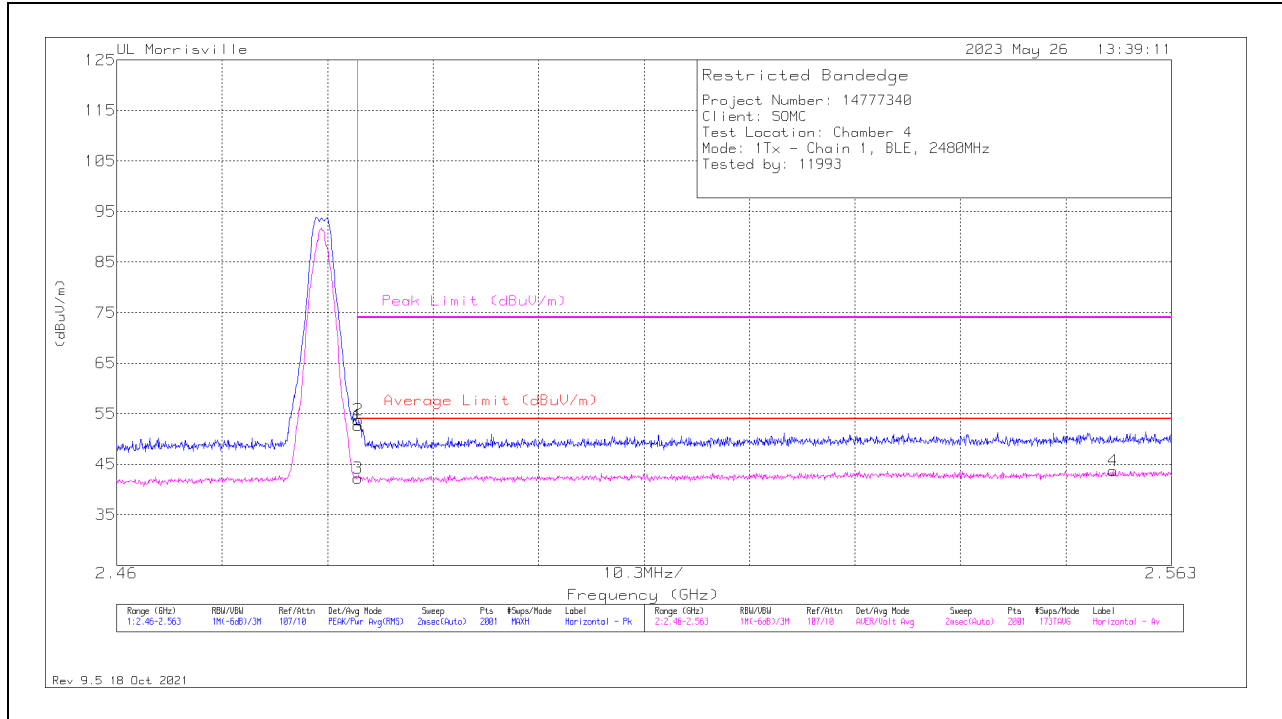
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

BANDEDGE (HIGH CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	33.8	Pk	32.6	-13.7	0	52.7	-	-	74	-21.3	63	358	H
2	* ** 2.48359	34.84	Pk	32.6	-13.7	0	53.74	-	-	74	-20.26	63	358	H
3	* ** 2.48354	18.55	ADV	32.6	-13.7	4.80	42.25	54	-11.75	-	-	63	358	H
4	** 2.55728	19.5	ADV	32.7	-13.3	4.80	43.70	54	-10.30	-	-	63	358	H

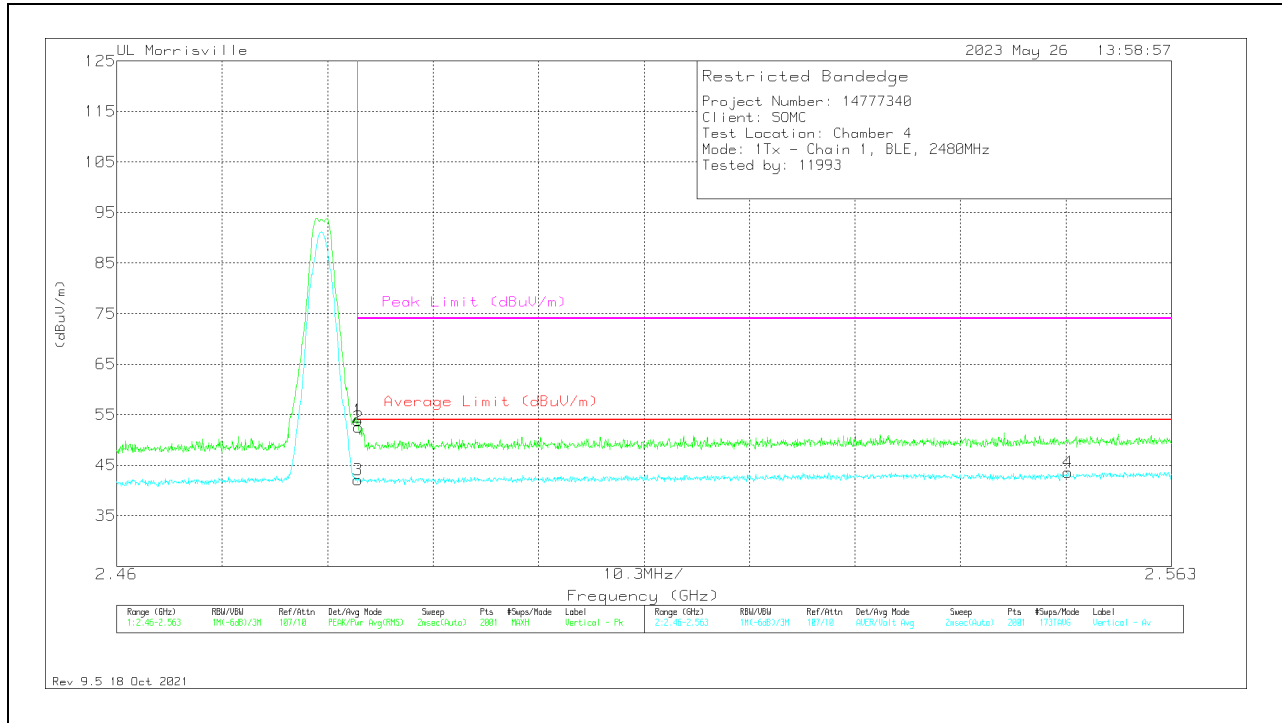
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	86408 (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	34.94	Pk	32.6	-13.7	0	53.84	-	-	74	-20.16	117	131	V
2	* ** 2.48364	33.66	Pk	32.6	-13.7	0	52.56	-	-	74	-21.44	117	131	V
3	*** 2.48354	18.44	ADV	32.6	-13.7	4.80	42.14	54	-11.86	-	-	117	131	V
4	** 2.55291	19.51	ADV	32.8	-13.5	4.80	43.61	54	-10.39	-	-	117	131	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

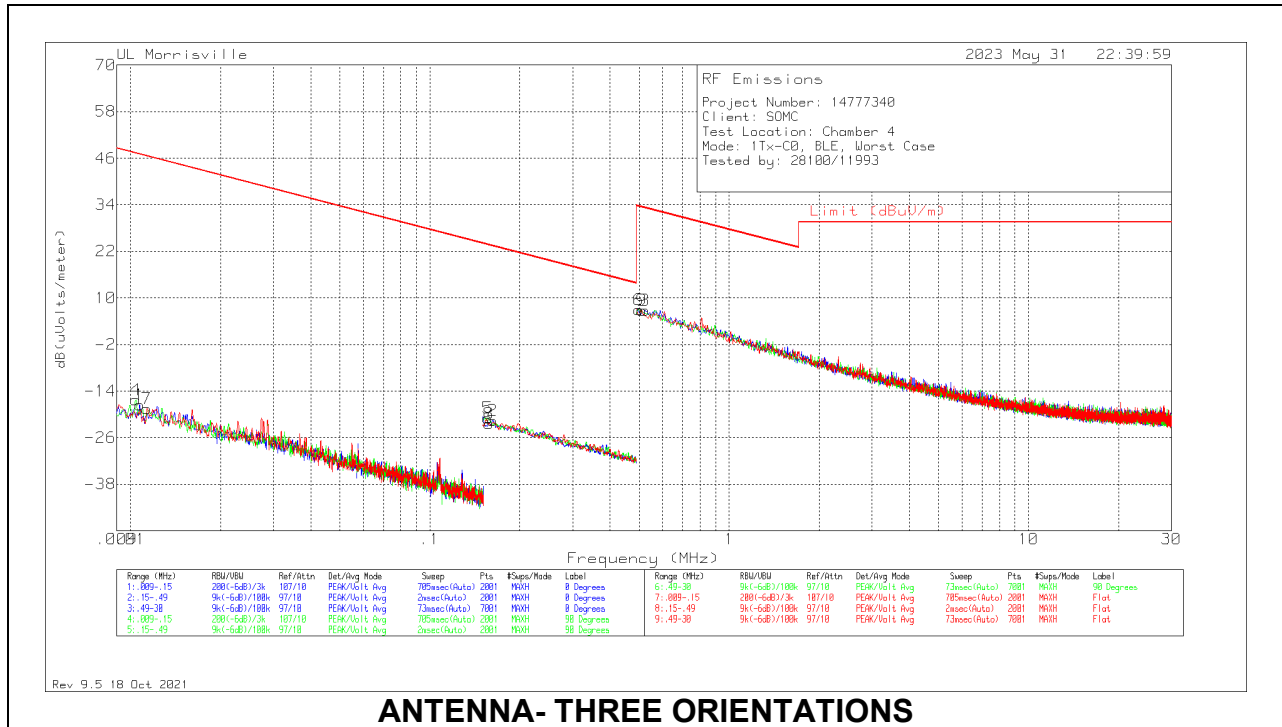
Pk - Peak detector

ADV - Linear Voltage Average

10.3. WORST CASE BELOW 30MHZ

Note: All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz – 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION CHAIN 0)

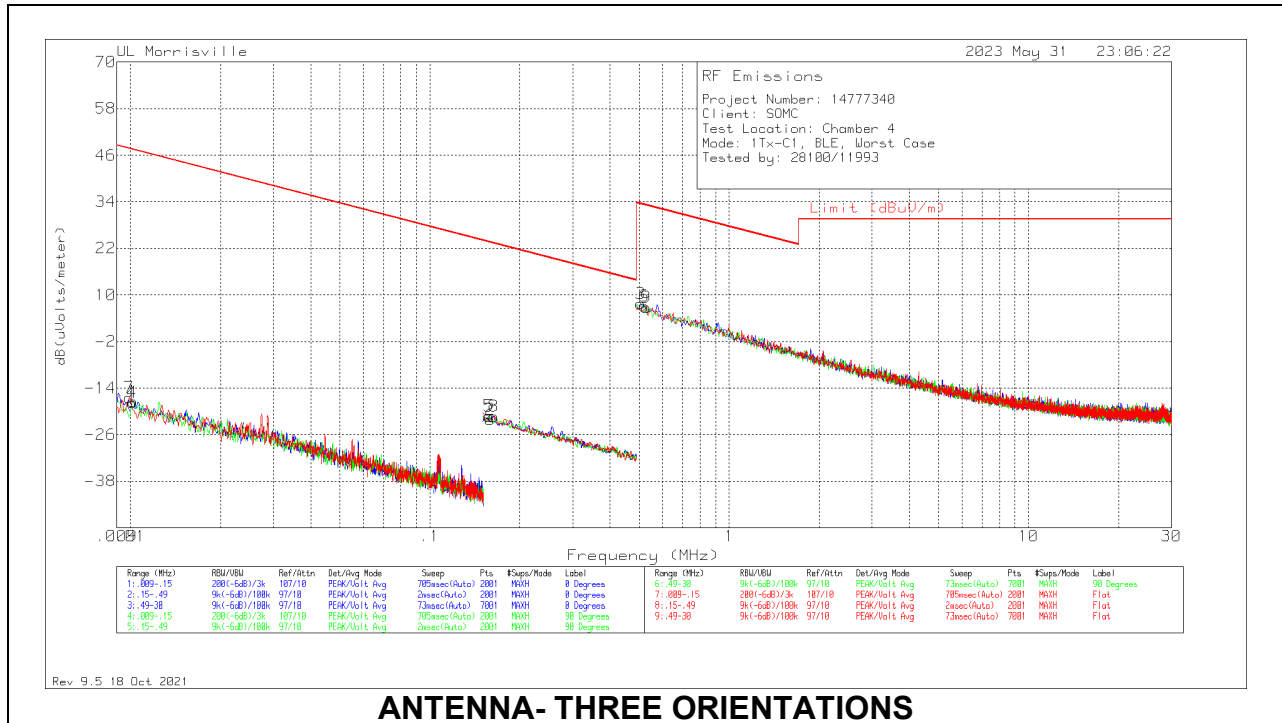


ANTENNA- THREE ORIENTATIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/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
4	.01042	44.59	Pk	19.1	0	-80	-16.31	47.25	67.25	-63.56	0-360	90 degs
1	.01078	43.48	Pk	19	0	-80	-17.52	46.96	66.96	-64.48	0-360	0 degs
7	.01134	42.7	Pk	18.7	0	-80	-18.6	46.51	66.51	-65.11	0-360	Flat
5	.15629	46.71	Pk	12.2	.1	-80	-20.99	23.73	43.73	-44.72	0-360	90 degs
8	.15782	45.28	Pk	12.2	.1	-80	-22.42	23.64	43.64	-46.06	0-360	Flat
2	.16224	46.12	Pk	12.2	.1	-80	-21.58	23.4	43.4	-44.98	0-360	0 degs
6	.49843	34.72	Pk	12.2	.1	-40	7.02	33.65	-	-26.63	0-360	90 degs
9	.51108	34.51	Pk	12.2	.1	-40	6.81	33.43	-	-26.62	0-360	Flat
3	.52373	34.5	Pk	12.2	.1	-40	6.8	33.22	-	-26.42	0-360	0 degs

Pk - Peak detector

SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION CHAIN 1)



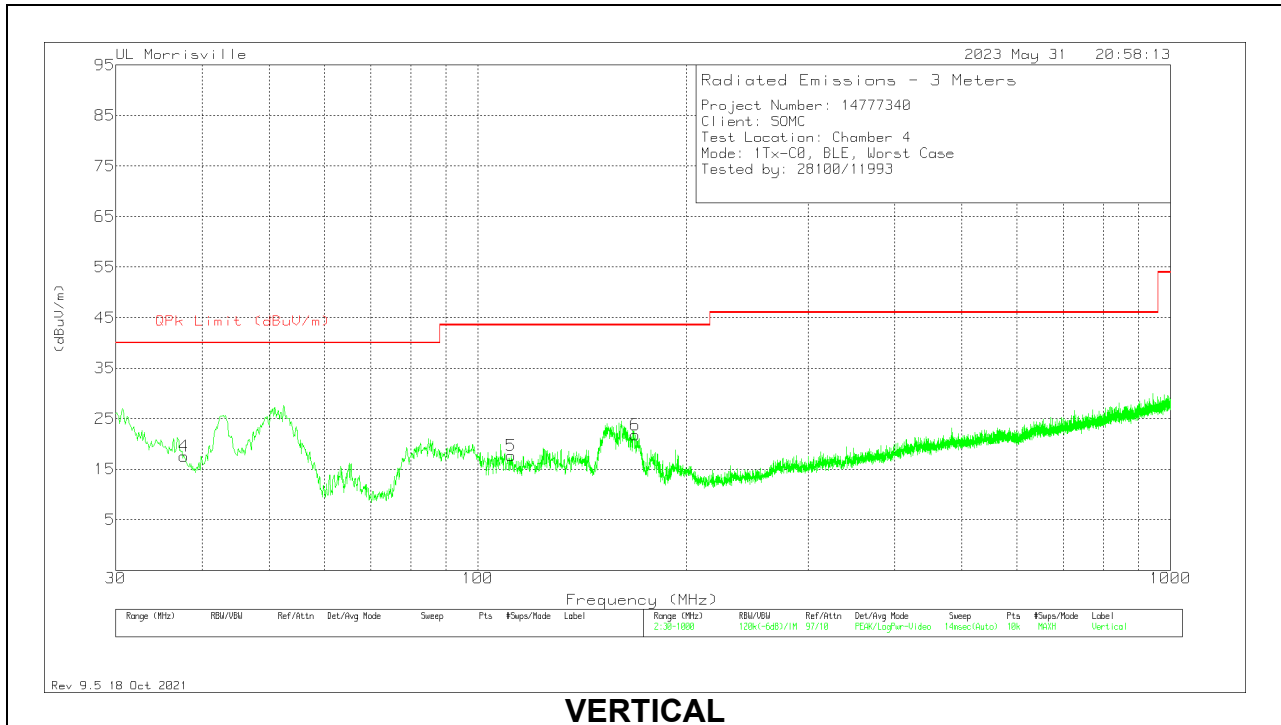
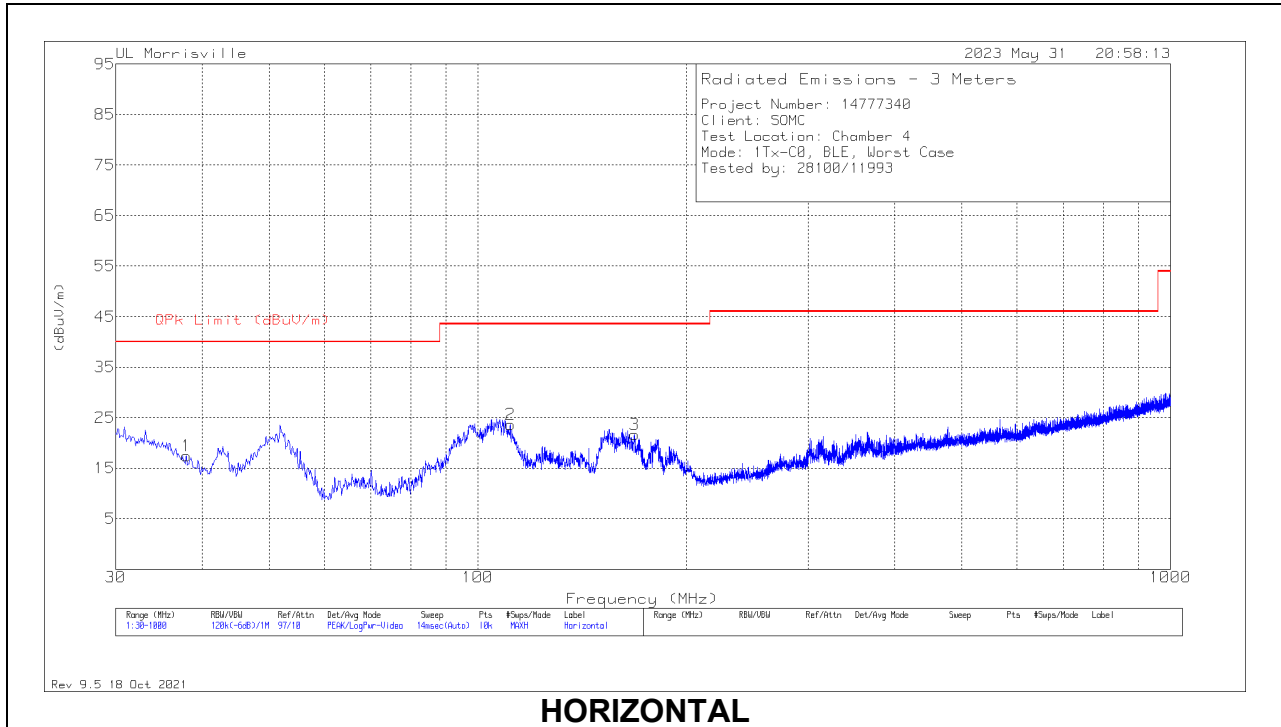
ANTENNA- THREE ORIENTATIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/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
7	.00992	44.13	Pk	19.4	0	-80	-16.47	47.67	67.67	-64.14	0-360	Flat
4	.01014	43.08	Pk	19.2	0	-80	-17.72	47.49	67.49	-65.21	0-360	90 degs
1	.01021	43.39	Pk	19.2	0	-80	-17.41	47.43	67.43	-64.84	0-360	0 degs
5	.15765	46.5	Pk	12.2	.1	-80	-21.2	23.65	43.65	-44.85	0-360	90 degs
2	.15918	45.58	Pk	12.2	.1	-80	-22.12	23.57	43.57	-45.69	0-360	0 degs
8	.16403	46.38	Pk	12.2	.1	-80	-21.32	23.31	43.31	-44.63	0-360	Flat
3	.50686	35.4	Pk	12.2	.1	-40	7.7	33.51	-	-25.81	0-360	0 degs
6	.51951	34.82	Pk	12.2	.1	-40	7.12	33.29	-	-26.17	0-360	90 degs
9	.52794	34.5	Pk	12.2	.1	-40	6.8	33.15	-	-26.35	0-360	Flat

Pk - Peak detector

10.4. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION CHAIN 0)

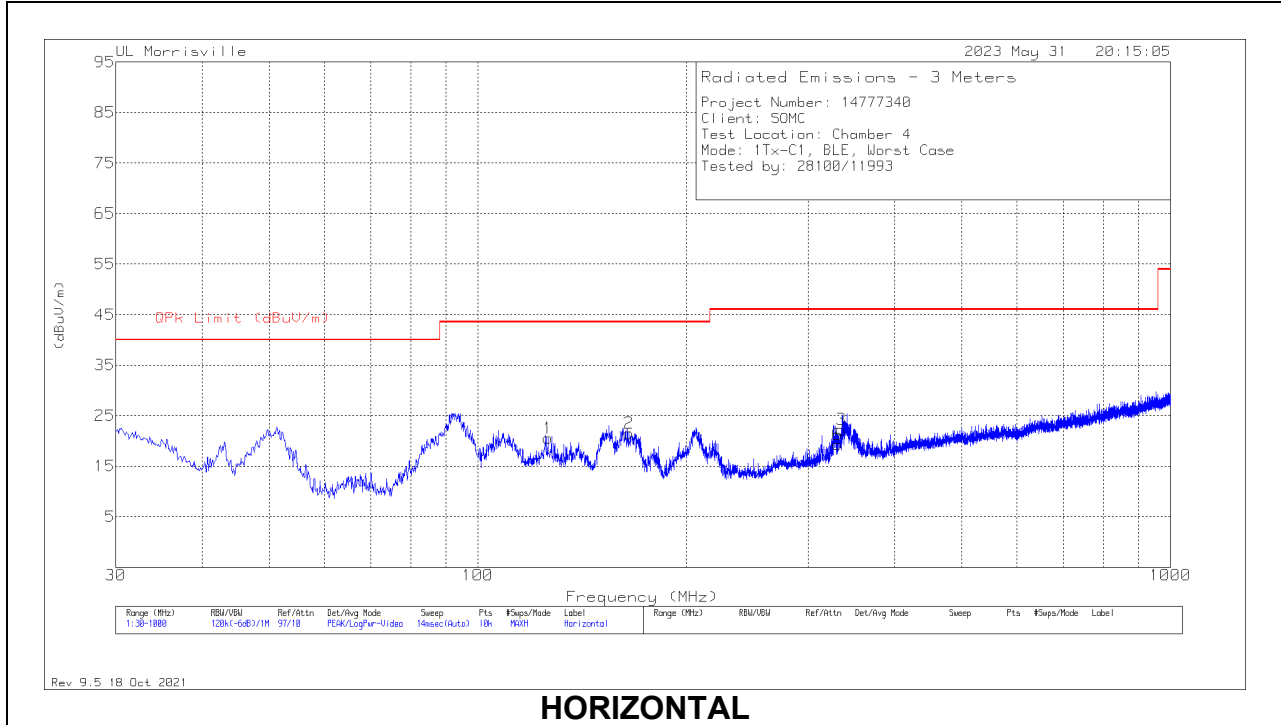


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 37.954	27.99	Pk	21.2	-31.8	17.39	40	-22.61	0-360	300	H
2	* ** 111.383	35.27	Pk	19	-30.6	23.67	43.52	-19.85	0-360	200	H
3	* ** 168.516	33.81	Pk	18	-30.1	21.71	43.52	-21.81	0-360	100	H
4	* ** 37.663	27.88	Pk	21.5	-31.8	17.58	40	-22.42	0-360	100	V
5	* ** 111.771	29.16	Pk	19.1	-30.6	17.66	43.52	-25.86	0-360	200	V
6	* ** 168.613	33.89	Pk	18	-30.1	21.79	43.52	-21.73	0-360	100	V

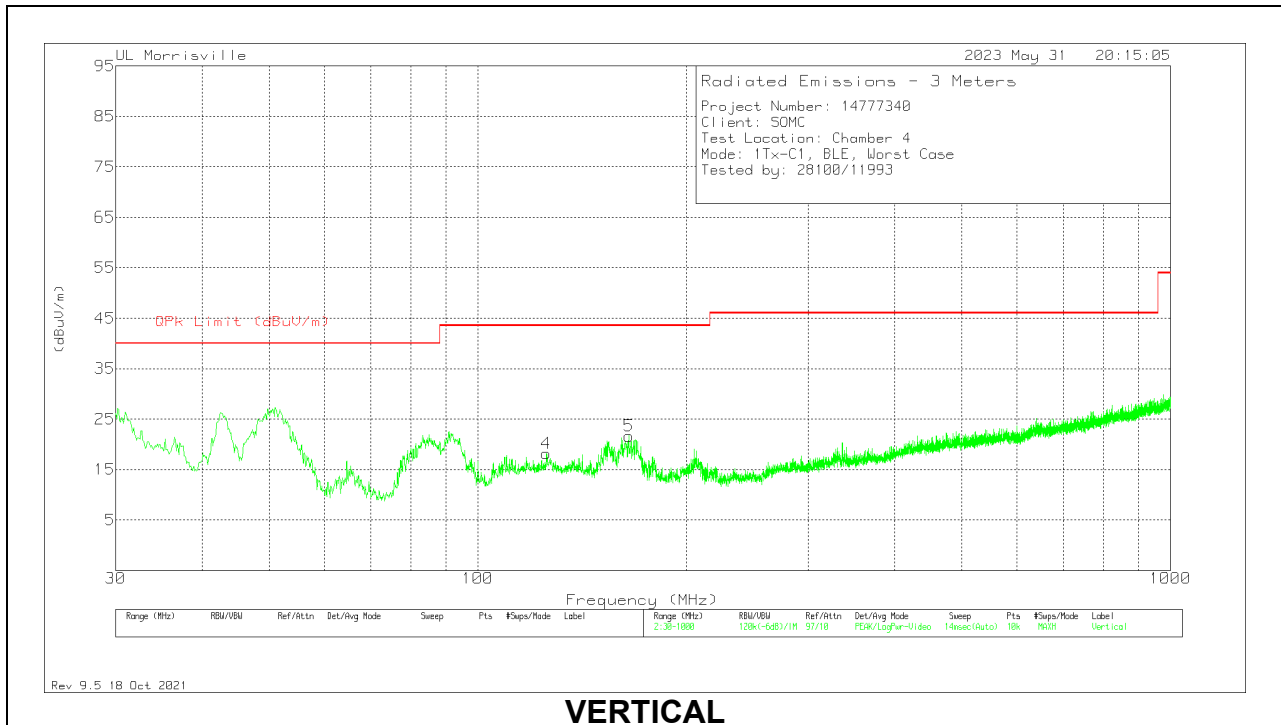
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION CHAIN 1)



HORIZONTAL



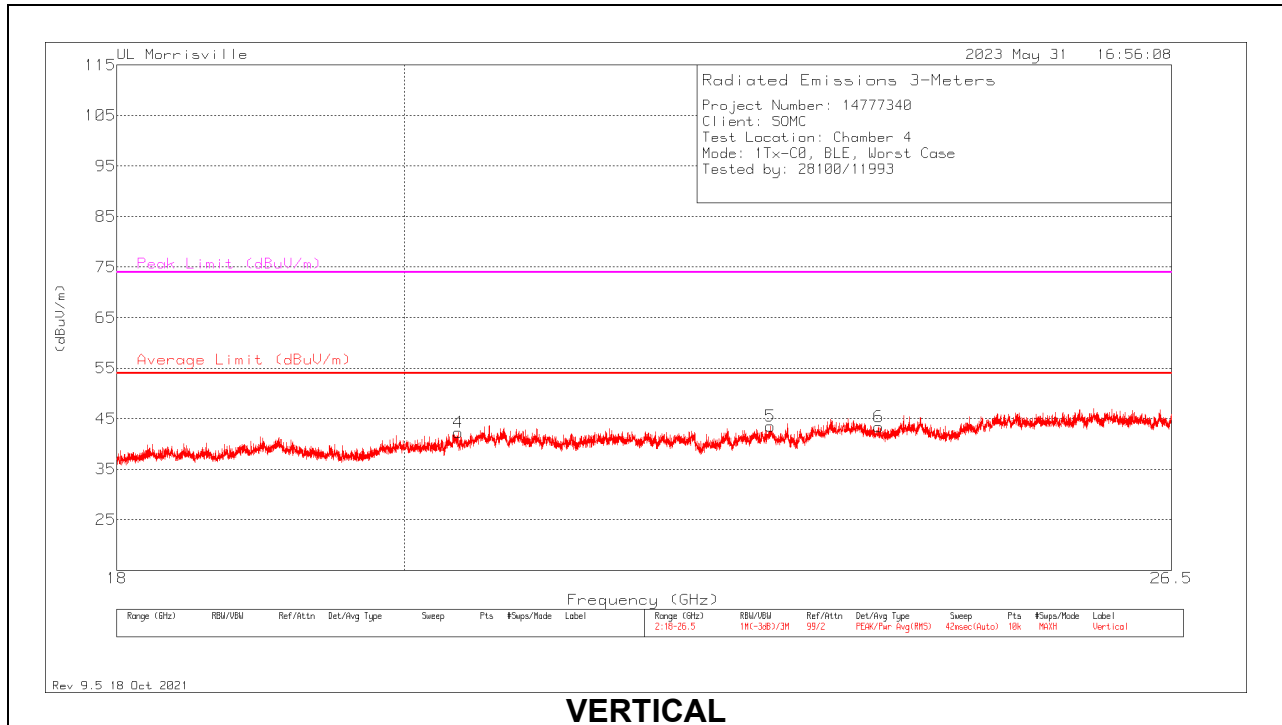
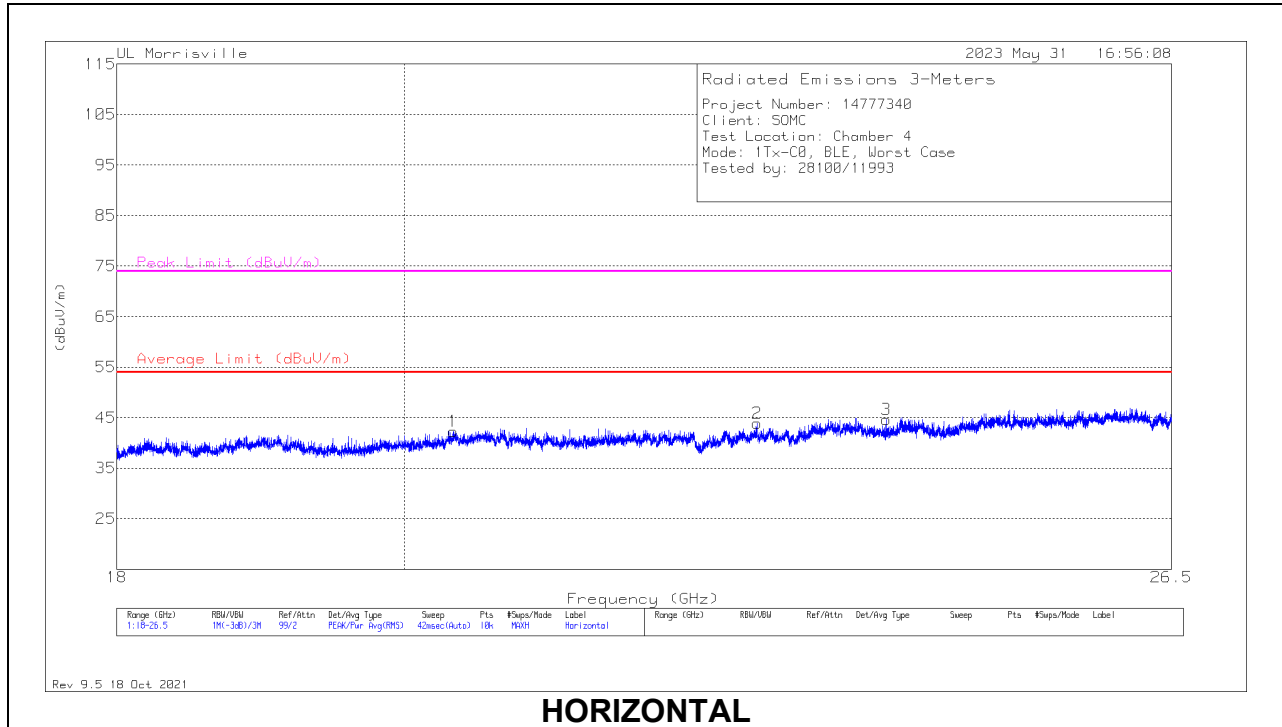
VERTICAL

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 126.224	30.85	Pk	20.1	-30.4	20.55	43.52	-22.97	0-360	200	H
2	*** 165.218	33.29	Pk	18.3	-30.1	21.49	43.52	-22.03	0-360	200	H
3	*** 335.065	31.12	Pk	20.1	-29	22.22	46.02	-23.8	0-360	100	H
6	*** 330.506	28.01	Pk	20.1	-28.8	19.31	46.02	-26.71	0-360	100	H
4	*** 125.545	28.33	Pk	20.1	-30.3	18.13	43.52	-25.39	0-360	200	V
5	*** 165.315	33.5	Pk	18.3	-30.2	21.6	43.52	-21.92	0-360	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
 ** - indicates frequency in Taiwan NCC LP0002 Restricted Band
 Pk - Peak detector

10.5. WORST CASE 18-26 GHZ

SPURIOUS EMISSIONS 18-26 GHZ (WORST-CASE CONFIGURATION CHAIN 0)



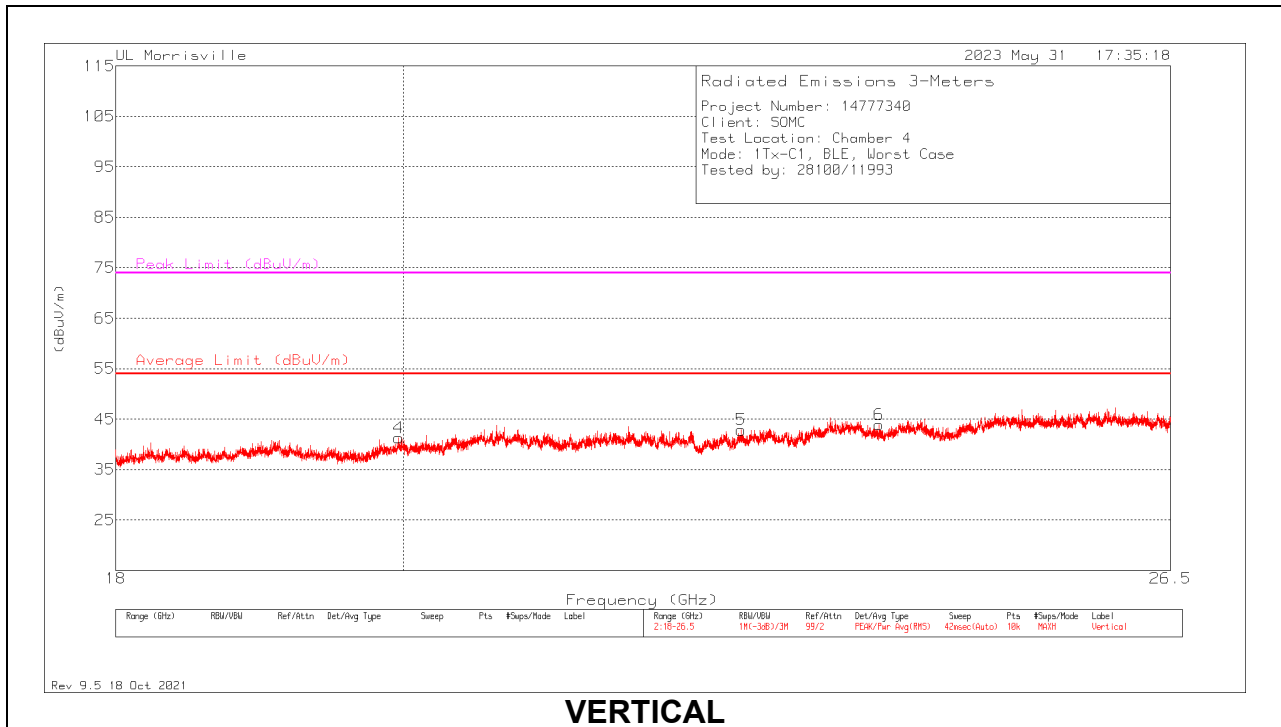
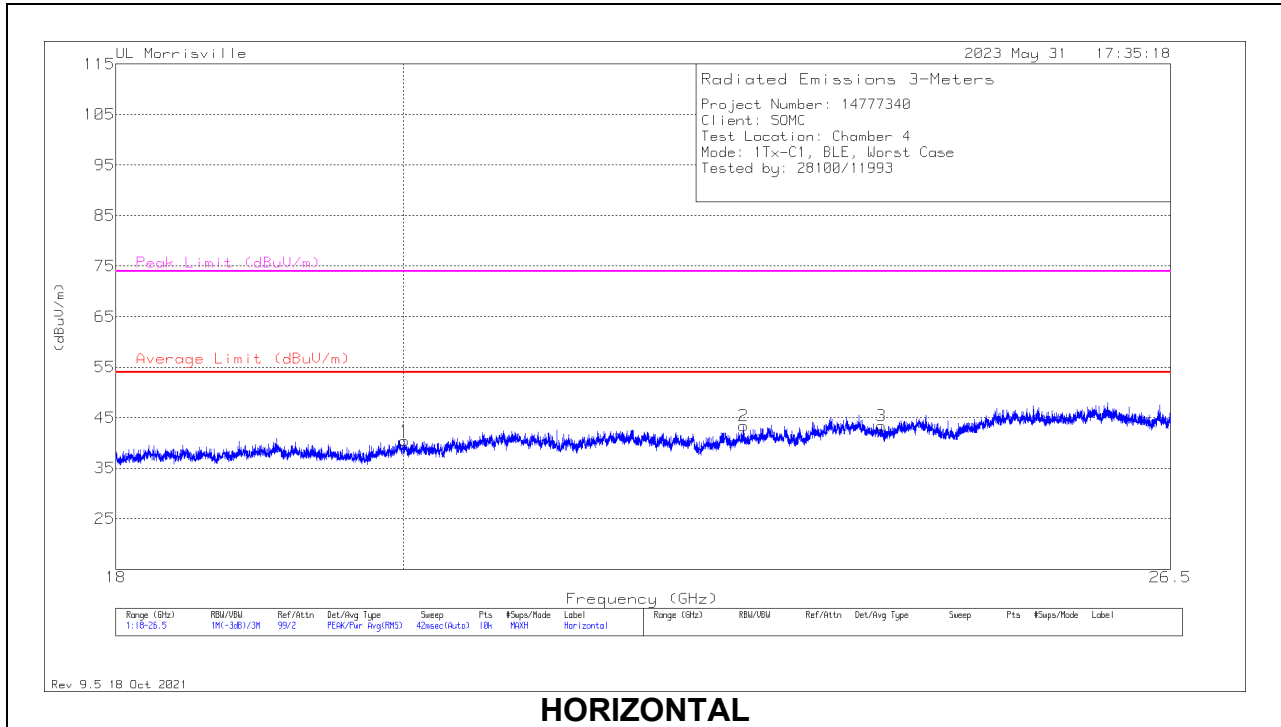
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	204704 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 20.36531	48.78	Pk	34.1	-40.6	42.28	54	-11.72	74	-31.72	0-360	250	H
2	*** 22.76377	49.21	Pk	34.4	-39.7	43.91	54	-10.09	74	-30.09	0-360	100	H
3	*** 23.86951	47.82	Pk	35.1	-38.3	44.62	54	-9.38	74	-29.38	0-360	100	H
4	*** 20.40101	49.09	Pk	34.2	-41	42.29	54	-11.71	74	-31.71	0-360	300	V
5	*** 22.87681	48.32	Pk	34.4	-39.2	43.52	54	-10.48	74	-30.48	0-360	300	V
6	*** 23.80237	46.25	Pk	35.1	-38	43.35	54	-10.65	74	-30.65	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

SPURIOUS EMISSIONS 18-26 GHz (WORST-CASE CONFIGURATION CHAIN 1)



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	*** 20.0126	47.67	Pk	33.6	-40.8	40.47	54	-13.53	74	-33.53	0-360	150	H
2	*** 22.65838	48.28	Pk	34.4	-39.3	43.38	54	-10.62	74	-30.62	0-360	150	H
3	*** 23.83807	46.43	Pk	35.1	-38.1	43.43	54	-10.57	74	-30.57	0-360	250	H
4	*** 19.96755	48.37	Pk	33.6	-40.7	41.27	54	-12.73	74	-32.73	0-360	300	V
5	*** 22.64139	48.04	Pk	34.4	-39.6	42.84	54	-11.16	74	-31.16	0-360	300	V
6	*** 23.81342	46.76	Pk	35.1	-38	43.86	54	-10.14	74	-30.14	0-360	250	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

*Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

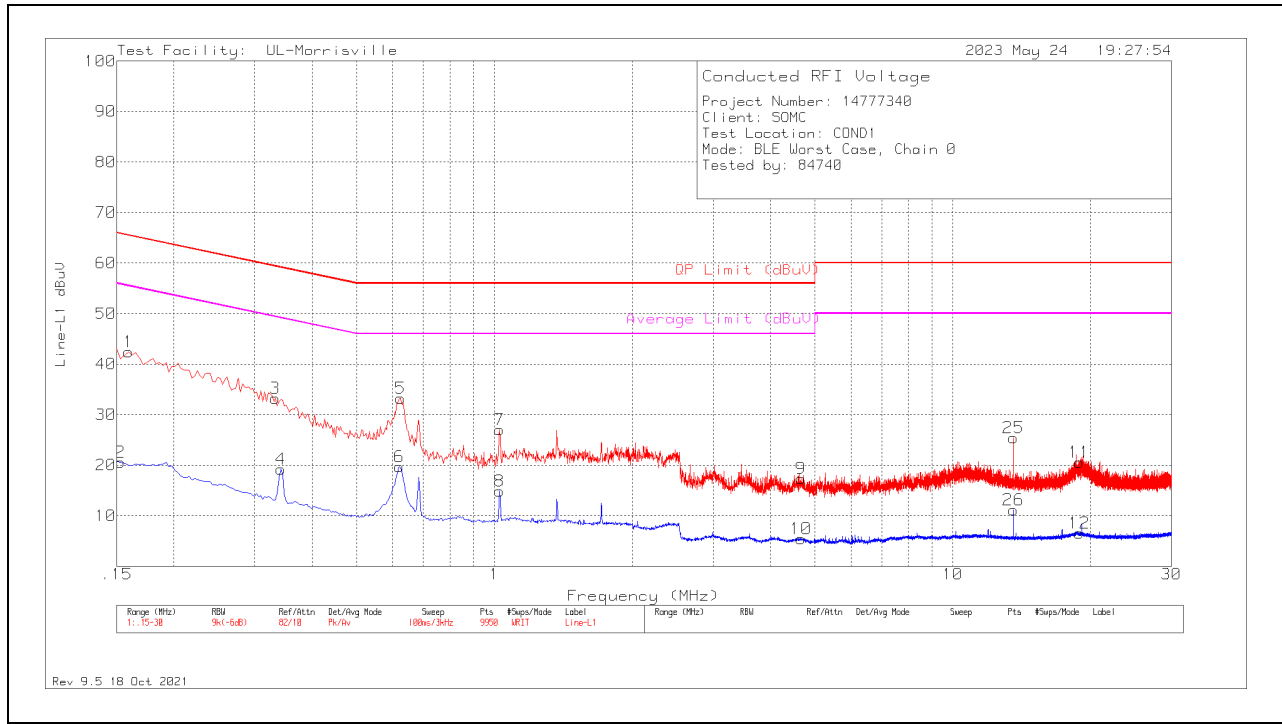
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

RESULTS

11.1.1. AC POWER LINE NORM – CHAIN 0

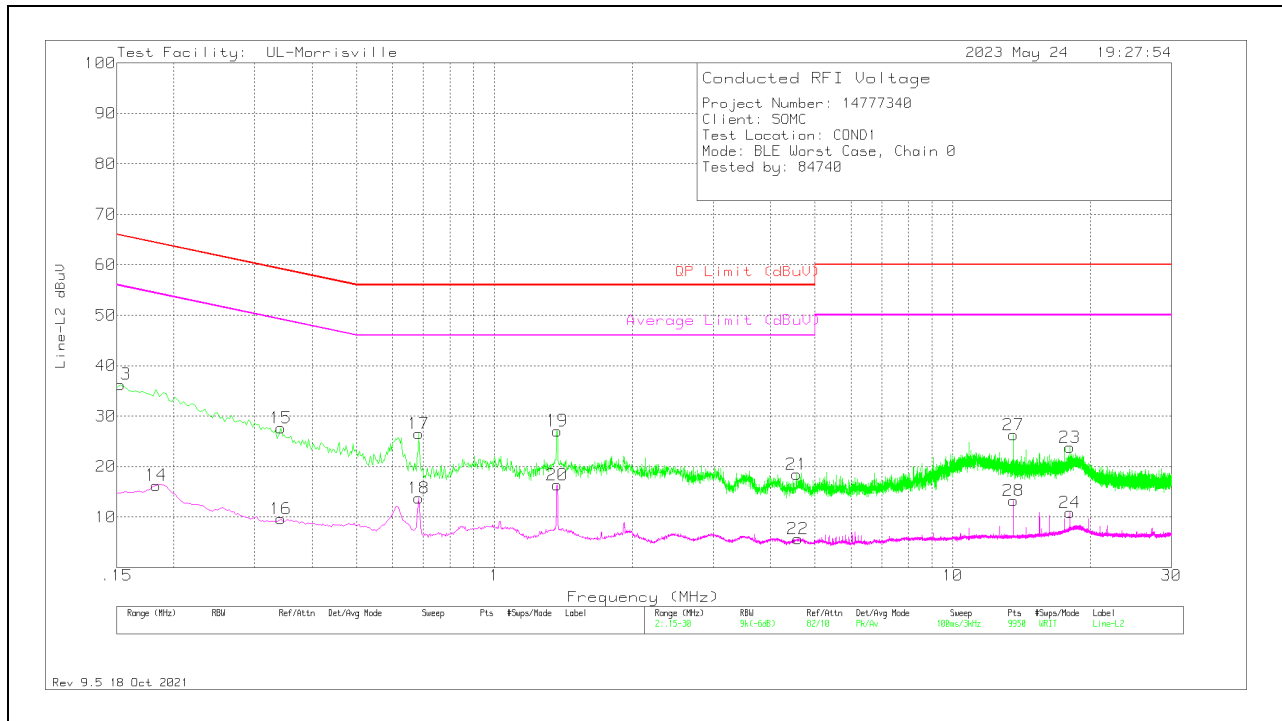
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.159	32.4	Pk	.2	9.8	42.4	65.52	-23.12	-	-
2	.153	10.54	Av	.2	9.8	20.54	-	-	55.84	-35.3
3	.333	23.34	Pk	.1	9.8	33.24	59.38	-26.14	-	-
4	.342	9.27	Av	.1	9.8	19.17	-	-	49.15	-29.98
5	.624	23.41	Pk	0	9.8	33.21	56	-22.79	-	-
6	.621	9.86	Av	0	9.8	19.66	-	-	46	-26.34
7	1.026	17.27	Pk	0	9.8	27.07	56	-28.93	-	-
8	1.026	5.05	Av	0	9.8	14.85	-	-	46	-31.15
9	4.668	7.39	Pk	0	9.9	17.29	56	-38.71	-	-
10	4.671	-4.48	Av	0	9.9	5.42	-	-	46	-40.58
11	18.867	10.39	Pk	.1	10.1	20.59	60	-39.41	-	-
12	18.888	-3.68	Av	.1	10.1	6.52	-	-	50	-43.48
25	13.56	15.31	Pk	.1	10	25.41	60	-34.59	-	-
26	13.56	1.03	Av	.1	10	11.13	-	-	50	-38.87

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS

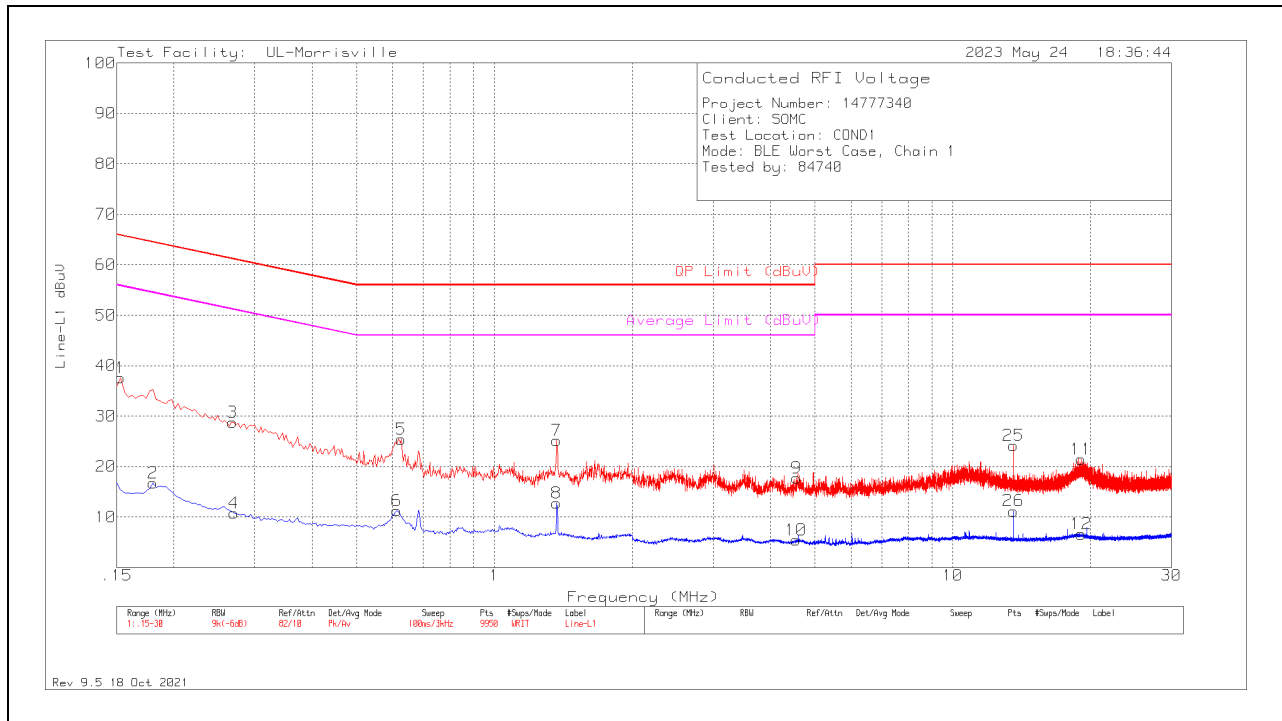


Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.153	26.28	Pk	.2	9.8	36.28	65.84	-29.56	-	-
14	.183	6.29	Av	.2	9.8	16.29	-	-	54.35	-38.06
15	.342	17.74	Pk	.1	9.8	27.64	59.15	-31.51	-	-
16	.342	-23	Av	.1	9.8	9.67	-	-	49.15	-39.48
17	.684	16.7	Pk	0	9.8	26.5	56	-29.5	-	-
18	.684	3.92	Av	0	9.8	13.72	-	-	46	-32.28
19	1.371	17.29	Pk	0	9.8	27.09	56	-28.91	-	-
20	1.371	6.55	Av	0	9.8	16.35	-	-	46	-29.65
21	4.569	8.61	Pk	0	9.9	18.51	56	-37.49	-	-
22	4.59	-4.28	Av	0	9.9	5.62	-	-	46	-40.38
23	18.024	13.64	Pk	.1	10.1	23.84	60	-36.16	-	-
24	18.024	.64	Av	.1	10.1	10.84	-	-	50	-39.16
27	13.563	16.22	Pk	.1	10	26.32	60	-33.68	-	-
28	13.56	3.1	Av	.1	10	13.2	-	-	50	-36.8

Pk - Peak detector
 Av - Average detection

11.1.2. AC POWER LINE NORM – CHAIN 1

LINE 1 RESULTS

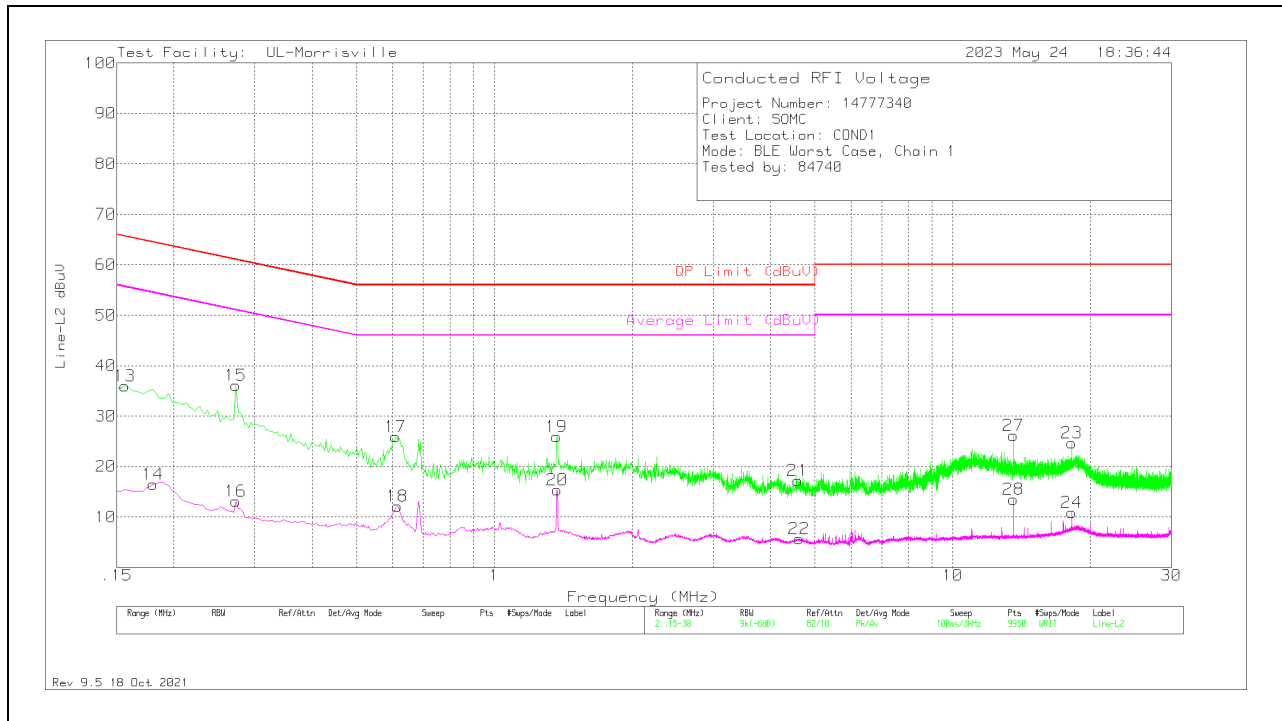


Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.153	27.54	Pk	.2	9.8	37.54	65.84	-28.3	-	-
2	.18	6.78	Av	.2	9.8	16.78	-	-	54.49	-37.71
3	.2685	18.91	Pk	.1	9.8	28.81	61.16	-32.35	-	-
4	.27	.89	Av	.1	9.8	10.79	-	-	51.12	-40.33
5	.627	15.66	Pk	0	9.8	25.46	56	-30.54	-	-
6	.612	1.44	Av	0	9.8	11.24	-	-	46	-34.76
7	1.368	15.35	Pk	0	9.8	25.15	56	-30.85	-	-
8	1.368	2.99	Av	0	9.8	12.79	-	-	46	-33.21
9	4.563	7.87	Pk	0	9.9	17.77	56	-38.23	-	-
10	4.554	-4.49	Av	0	9.9	5.41	-	-	46	-40.59
11	19.05	11.14	Pk	.2	10.1	21.44	60	-38.56	-	-
12	19.077	-3.69	Av	.2	10.1	6.61	-	-	50	-43.39
25	13.563	14.08	Pk	.1	10	24.18	60	-35.82	-	-
26	13.56	1.1	Av	.1	10	11.2	-	-	50	-38.8

Pk - Peak detector
 Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.156	25.93	Pk	.2	9.8	35.93	65.67	-29.74	-	-
14	.18	6.43	Av	.2	9.8	16.43	-	-	54.49	-38.06
15	.273	26.17	Pk	.1	9.8	36.07	61.03	-24.96	-	-
16	.273	3.22	Av	.1	9.8	13.12	-	-	51.03	-37.91
17	.609	16.06	Pk	0	9.8	25.86	56	-30.14	-	-
18	.615	2.31	Av	0	9.8	12.11	-	-	46	-33.89
19	1.368	16.09	Pk	0	9.8	25.89	56	-30.11	-	-
20	1.371	5.55	Av	0	9.8	15.35	-	-	46	-30.65
21	4.599	7.32	Pk	0	9.9	17.22	56	-38.78	-	-
22	4.62	-4.27	Av	0	9.9	5.63	-	-	46	-40.37
23	18.171	14.45	Pk	.1	10.1	24.65	60	-35.35	-	-
24	18.171	.69	Av	.1	10.1	10.89	-	-	50	-39.11
27	13.56	16.01	Pk	.1	10	26.11	60	-33.89	-	-
28	13.56	3.44	Av	.1	10	13.54	-	-	50	-36.46

Pk - Peak detector
 Av - Average detection

12. SETUP PHOTOS

Please refer to R14777340-EP2 for setup photos.

END OF TEST REPORT