

# **TEST REPORT**

**Report Number:** R15701621-E2f

**Applicant :** HID Global Corporation  
611 Center Ridge Dr  
Austin, TX 78753, USA

**Model :** 40TCV2

**FCC ID :** JQ6-SIGNO40TCV2

**IC :** 2236B-SIGNO40TCV2

**EUT Description :** Signo V2 Reader

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

**Date Of Issue:**

2025-07-07

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## REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-06-11	Initial Issue	Manish Baral
V2	2025-07-07	Revised Section 6.5 and report number	Chandler Stanley

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** HID Global Corporation  
611 Center Ridge Dr  
Austin, TX 78753, USA

**EUT DESCRIPTION:** Signo V2 Reader

**MODEL:** 40TCV2

**SERIAL NUMBER:** H250013339

**SAMPLE RECEIPT DATE:** 2025-03-10

**DATE TESTED:** 2025-03-18 TO 2025-03-27

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



Brian Kiewra  
Project Engineer  
Consumer, Medical and IT Segment  
UL LLC

Prepared By:



Manish Baral  
Engineer  
Consumer, Medical and IT Segment  
UL LLC

## 2. TEST RESULTS SUMMARY

This report contains info 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/info provided by the customer:

- 1) Antenna gain and type (see section 6.3)
- 2) Worst-case 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		
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions	Compliant	None
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Compliant	None.

### 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 C63.10-2020, 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.

	<b>Address</b>	<b>ISED CABID</b>	<b>ISED Company Number</b>	<b>FCC Registration</b>
<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	UNCERTAINTY
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%
Time	3.39%

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

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

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

#### MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

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

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

## 6. EQUIPMENT UNDER TEST

### 6.1. EUT DESCRIPTION

Signo Reader is a smartcard reader typically installed near doorway as part of physical access system, to control access to that door. A user will approach the door and present a BLE or RFID credentials to the reader with intention of entering the door. The reader will read the credential and send its data to a connected access control panel, which determine whether or not grant the user access to the door. Optionally, a personal identification number (PIN) may also be required, in which case the user will enter the PIN on the reader's keypad.

The EUT supports the following technologies:

Wireless technologies	Frequency Band(s)	Operating mode(s)
NFC	13.56MHz	Type A 106, 212, 424 & 848 Kbps
	125KHz	4 Kbps
Bluetooth	2.4 GHz	LE 1 & 2 Mbps

Notes:

1. The EUT operated in a 1x1 SISO mode.
2. The EUT only supports 1 type(s) of NFC tag.

### 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 1Mbps	-0.58	0.87
2402 - 2480	BLE 2Mbps	-0.57	0.88

### 6.3. DESCRIPTION OF AVAILABLE ANTENNAS

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

The radio utilizes an antenna with the following type and maximum gain:

Type	Frequency Range (MHz)	Maximum Gain (dBi)
Inverted F	2402-2480	-1.04

### 6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 10.1

The test utility software used during testing was Rev H

## 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 PSD as worst-case scenario. All PSD was taken at max power.

The EUT is meant to be powered via an auxiliary device (access controller) that does not come with the product. Therefore, for AC Lines, the scan was run using a DC power supply as representative. There are two power cables that can be used to power the EUT, a terminal and pigtail cable. Through pretesting, the terminal cable was found to be worst-case and was therefore used for all testing.

Radiated emissions between 1GHz and 18GHz were performed on the data-rate with the highest power and PSD on low, middle and high channels. Band edge was performed on both data-rates: 1 Mbps and 2 Mbps.

The EUT only operates in one orientation, vertical. Therefore, all final radiated measurements were made with the EUT in the default position, where the EUT is standing up.

## 6.6. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	IdeaPad Flex 5 14IAU7	PW0DWR8R	TX2- RTL8852BE

### I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Power	1	Proprietary	Unshielded	<3m	Supplies Power

### SETUP DIAGRAMS

Please refer to 15701621-EP2f for setup diagrams

## 7. MEASUREMENT METHOD

On Time and Duty Cycle: ANSI C63.10-2020 Section 11.6

6 dB BW: ANSI C63.10-2020 Subclause -11.8.2

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

Output Power: ANSI C63.10-2020 Subclause -11.9.1.2 Method PKPM1 Peak-reading power meter  
ANSI C63.10-2020 Subclause -11.9.2.3.2 Method AVGPM-G (Measurement using a gated RF average-reading power meter)

PSD: ANSI C63.10-2020 Subclause -11.10.2 Method PKPSD (peak PSD)

Conducted emissions non-restricted frequency bands: ANSI C63.10-2020 Subclause -11.11 and 6.10.4

Radiated emissions restricted frequency bands: ANSI C63.10-2020 Subclause -11.12.1 and 6.10.5

General radiated emissions: ANSI C63.10 Subclause - 6.3-6.6

## 8. TEST AND MEASUREMENT EQUIPMENT

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

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

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
<b>0.009-30MHz</b>					
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-02
<b>30-1000 MHz</b>					
90628	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-02	2026-01-02
<b>1-18 GHz</b>					
89509	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-05-23	2025-05-23
<b>18-40 GHz</b>					
204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-826	2023-07-20	2025-07-20
<b>Gain-Loss Chains</b>					
207638	Gain-loss string: 0.009-30MHz	Various	Various	2024-05-22	2025-05-22
207639	Gain-loss string: 25-1000MHz	Various	Various	2024-05-22	2025-05-22
207640	Gain-loss string: 1-18GHz	Various	Various	2024-05-22	2025-05-22
225795	Gain-loss string: 18-40GHz	Various	Various	2024-05-22	2025-05-22
<b>Receiver &amp; Software</b>					
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-04-16	2025-04-16
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
<b>Additional Equipment used</b>					
241204	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

### Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
<b>Common Equipment</b>					
<b>Conducted Room 1</b>					
90411	Spectrum Analyzer	Keysight Technologies	N9030A	2024-08-01	2025-08-01
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
211056	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2024-08-01	2025-08-01
91212	True RMS Multimeter	Agilent	U1232A	2024-08-01	2025-08-01
-	DC Power Supply	Keysight Technologies	E3633A	-	-
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
<b>Attenuators/Cables</b>					
246811	SMA Coaxial 10dB Attenuator	CentricRF	C18S2-20	2024-03-07	2025-03-31
CBL105	SMA Cable	-	-	2025-03-07	2026-03-07

Note – All equipment was in calibration during time of testing

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
70374	EMI Test Receiver	ROHDE & SCHWARZ	ESCI7	2024-07-30	2025-07-30
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2024-04-04	2025-04-04
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2024-08-01	2025-08-01
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2024-04-04	2025-04-04
236852	CW-AC Power Source	Ametek	CW2501	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		

## 9. ANTENNA PORT TEST RESULTS

### 9.1. ON TIME AND DUTY CYCLE

#### LIMITS

None; for reporting purposes only.

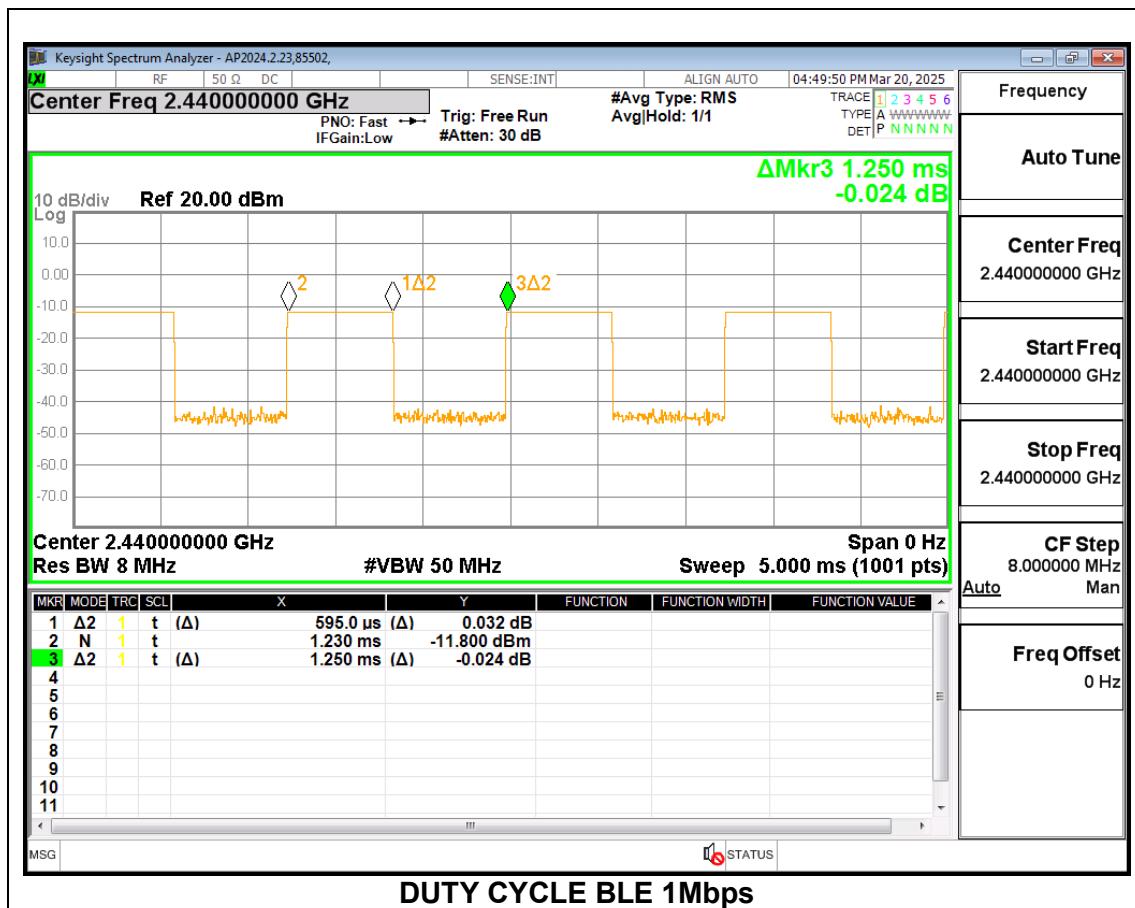
#### PROCEDURE

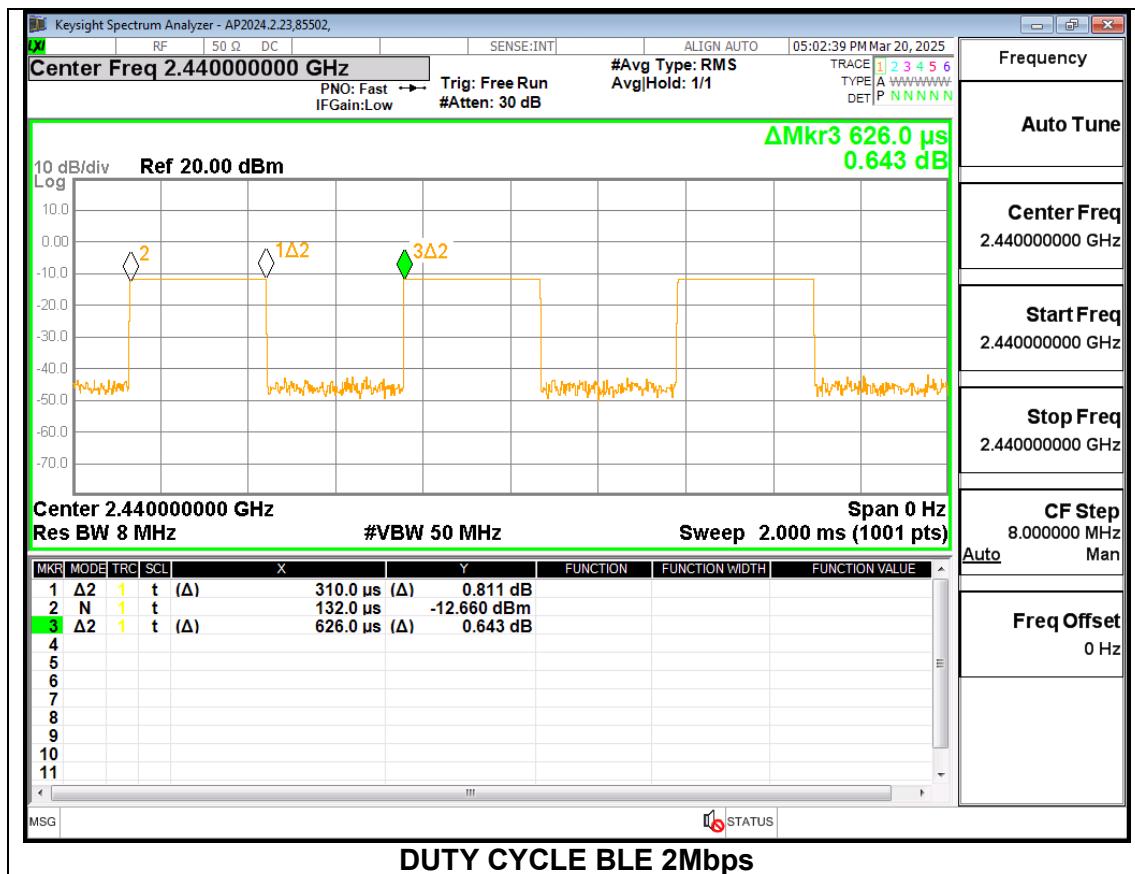
KDB 558074 Zero-Span Spectrum Analyzer Method.

#### 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)
<b>2.4GHz Band</b>						
BLE 1Mbps	0.595	1.250	0.476	47.60	6.45	1.681
BLE 2Mbps	0.310	0.626	0.495	49.52	6.10	3.226

#### DUTY CYCLE PLOTS





## 9.2. 99% BANDWIDTH

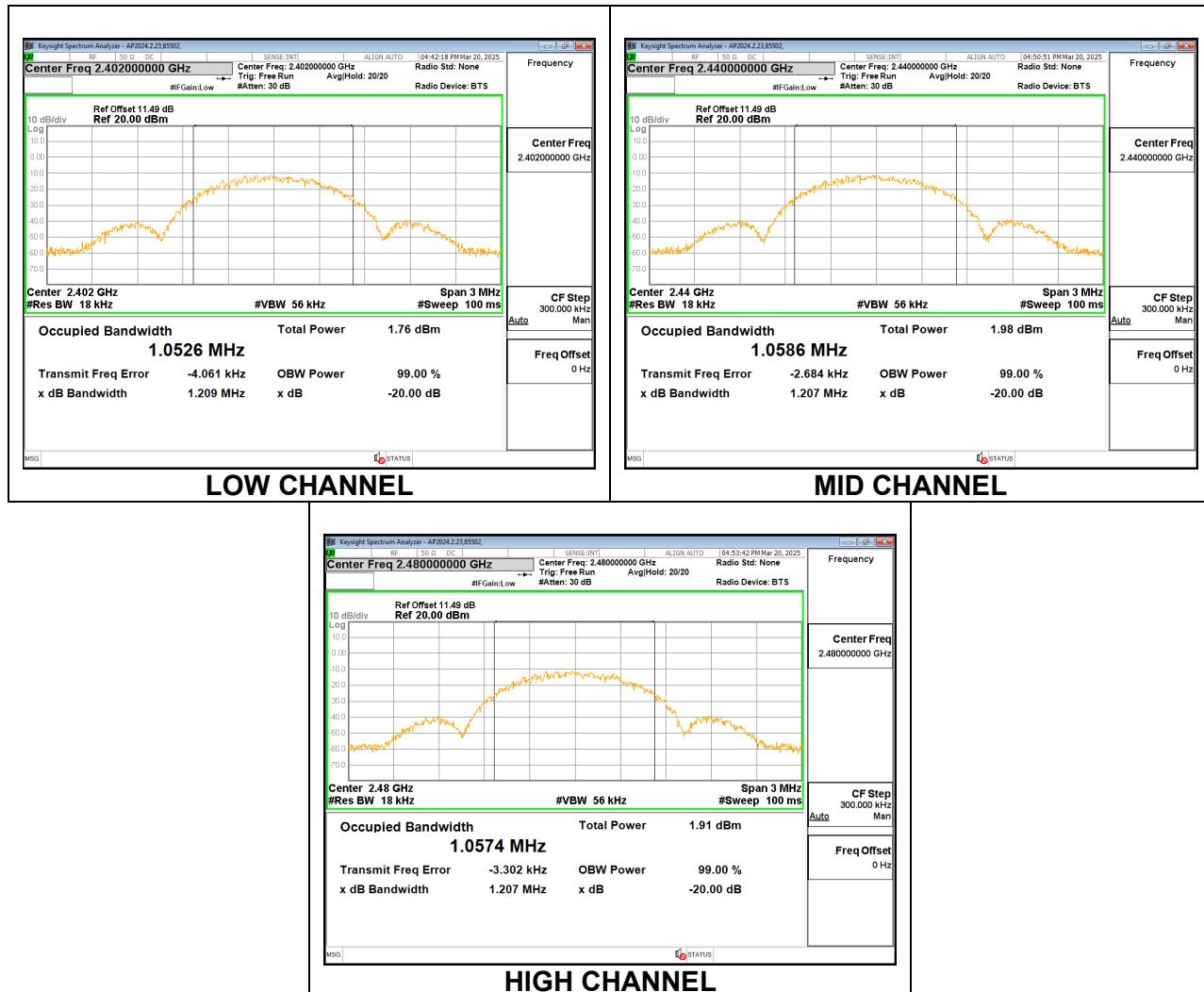
### LIMITS

None; for reporting purposes only.

### RESULTS

#### 9.2.1. BLE (1Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0526
Middle	2440	1.0586
High	2480	1.0574



### 9.2.2. BLE (2Mbps)

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	2.0540
Middle	2440	2.0598
High	2480	2.0606



### 9.3. 6 dB BANDWIDTH

#### LIMITS

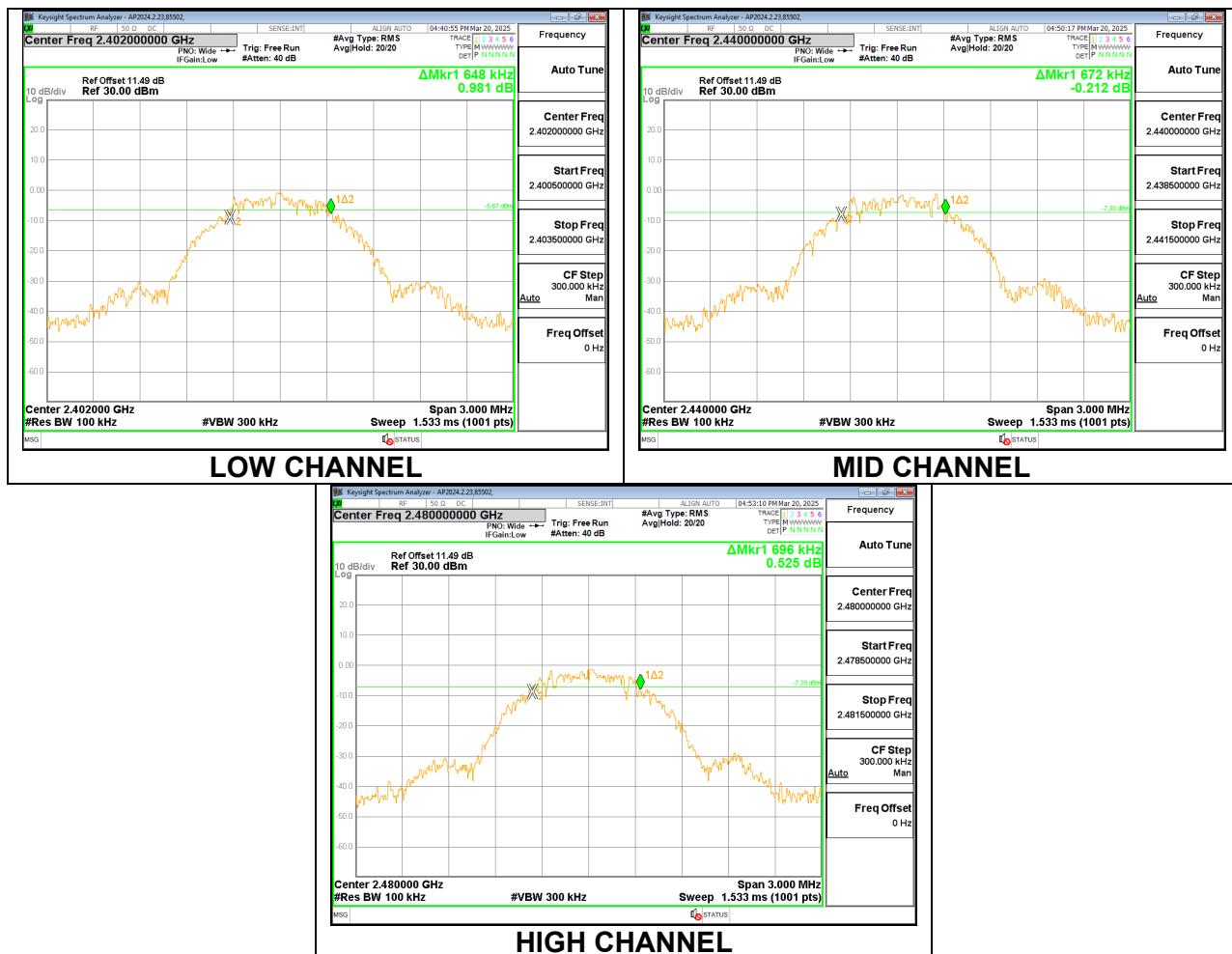
FCC §15.247 (a) (2)  
RSS-247 5.2 (a)

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

#### RESULTS

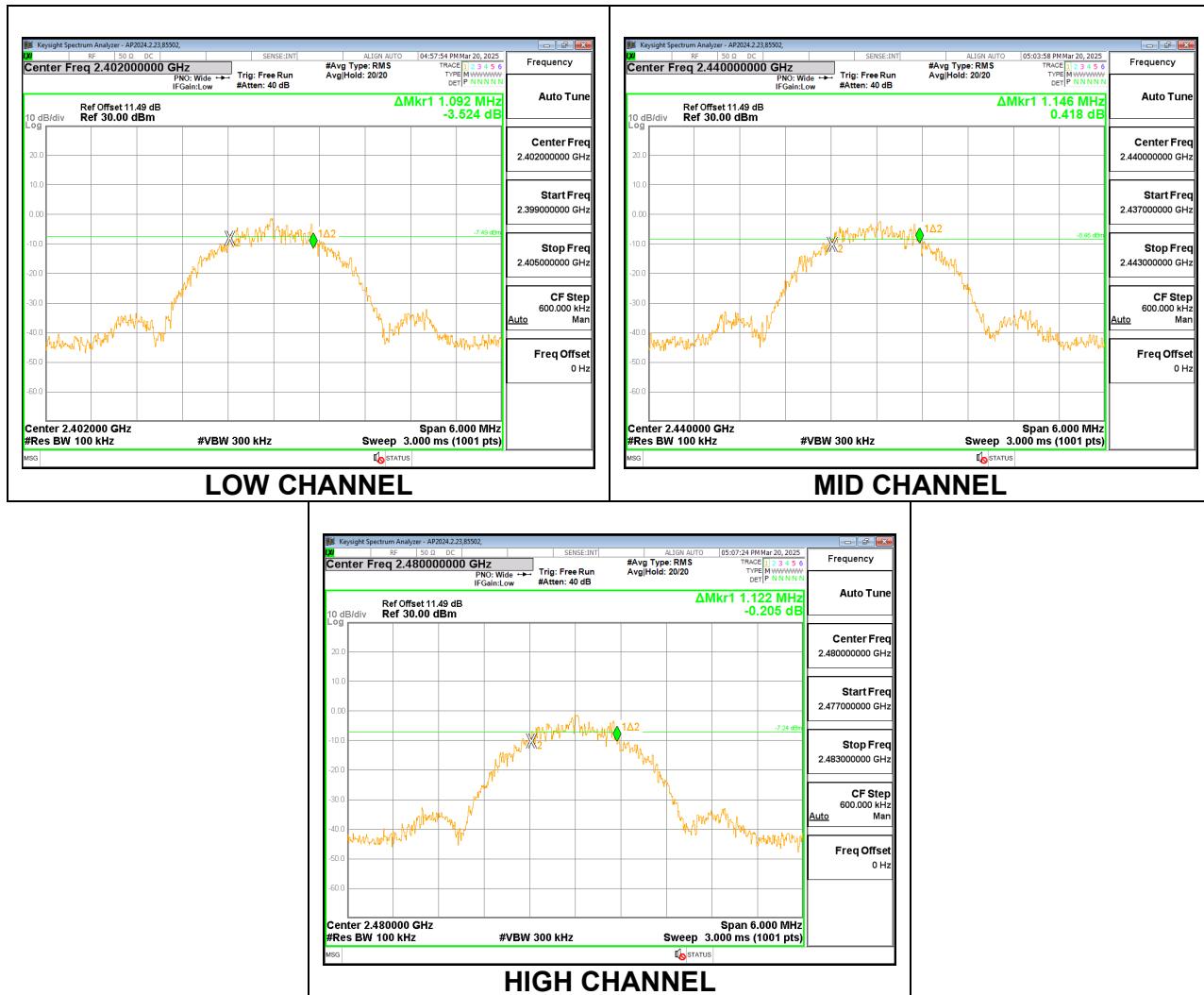
##### 9.3.1. BLE (1Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	0.6480	0.5
Middle	2440	0.6720	0.5
High	2480	0.6960	0.5



### 9.3.2. BLE (2Mbps)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low	2402	1.0920	0.5
Middle	2440	1.1460	0.5
High	2480	1.1220	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 21.10 dB (including 1.22 dB EUT cable and 19.88 dB attenuation pad) was entered as an offset in the power meter.

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

### RESULTS

#### 9.4.1. BLE (1Mbps)

Tested By:	85502
Date:	3/20/2025

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-0.230	30	-30.230
Middle	2440	-0.250	30	-30.250
High	2480	-0.200	30	-30.200

#### 9.4.2. BLE (2Mbps)

Tested By:	85502
Date:	3/20/2025

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-0.250	30	-30.250
Middle	2440	-0.250	30	-30.250
High	2480	-0.250	30	-30.250

## 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 21.10 dB (including 1.22 dB EUT cable and 19.88 dB attenuation pad) was entered as an offset 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.

### RESULTS

#### 9.5.1. BLE (1Mbps)

Tested By:	85502
Date:	3/20/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	-0.6
Middle	2440	-0.58
High	2480	-0.58

#### 9.5.2. BLE (2Mbps)

Tested By:	85502
Date:	3/20/2025

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	-0.57
Middle	2440	-0.57
High	2480	-0.57

## 9.6. POWER SPECTRAL DENSITY

### LIMITS

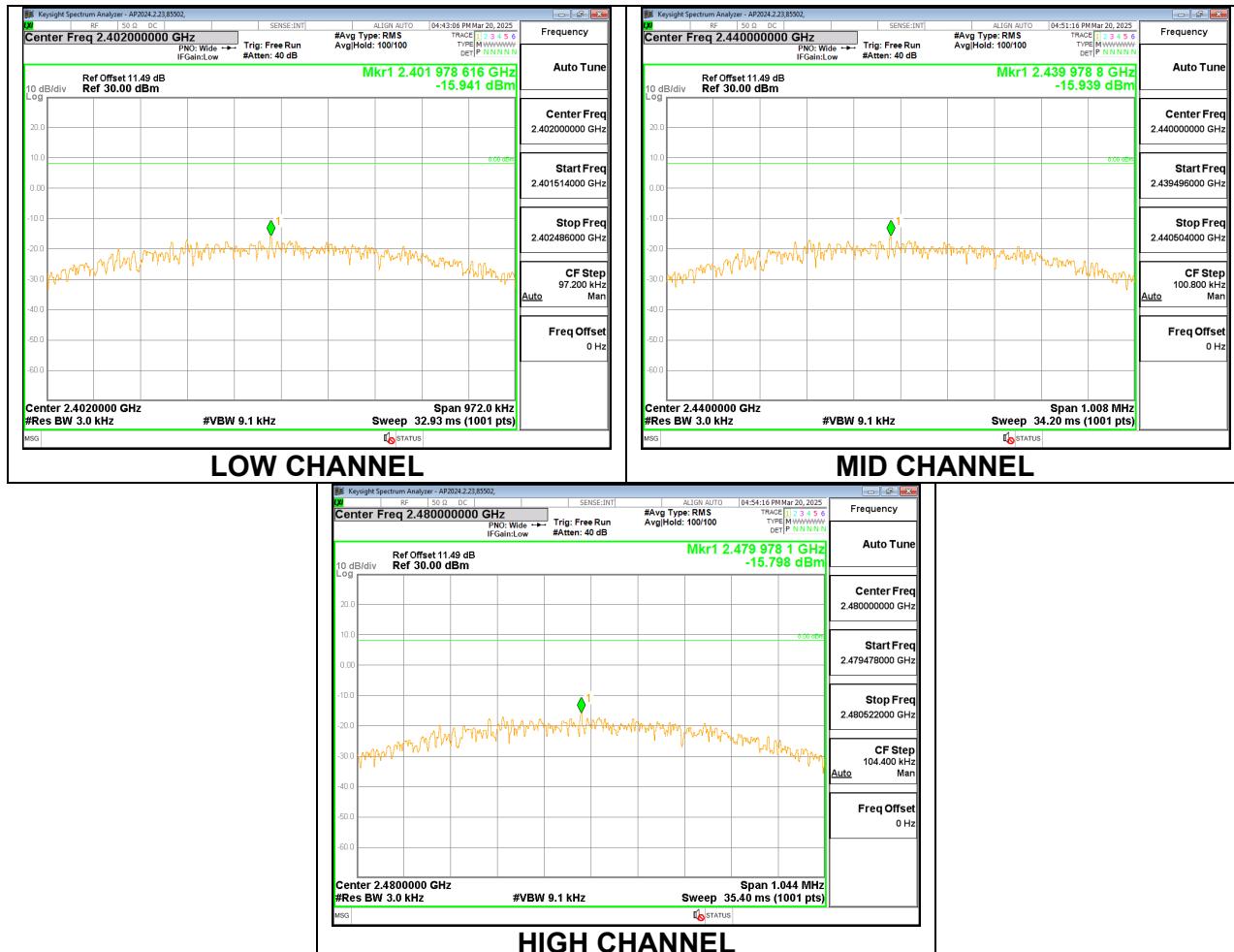
FCC §15.247 (e)  
RSS-247 (5.2) (b)

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

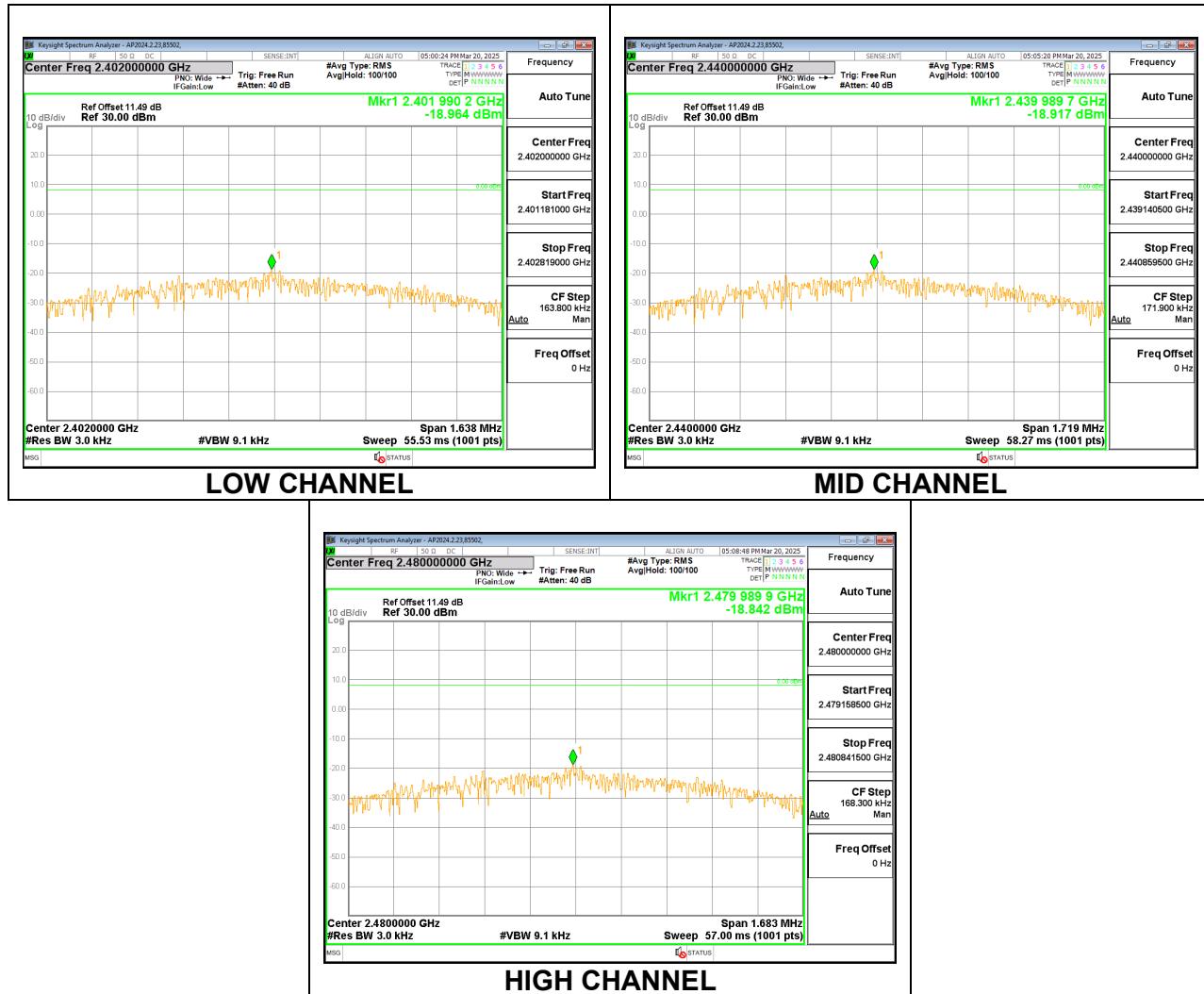
#### 9.6.1. BLE (1Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-15.94	8	-23.94
Middle	2440	-15.94	8	-23.94
High	2480	-15.80	8	-23.80



### 9.6.2. BLE (2Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-18.96	8	-26.96
Middle	2440	-18.92	8	-26.92
High	2480	-18.84	8	-26.84



## 9.7. CONDUCTED SPURIOUS EMISSIONS

### LIMITS

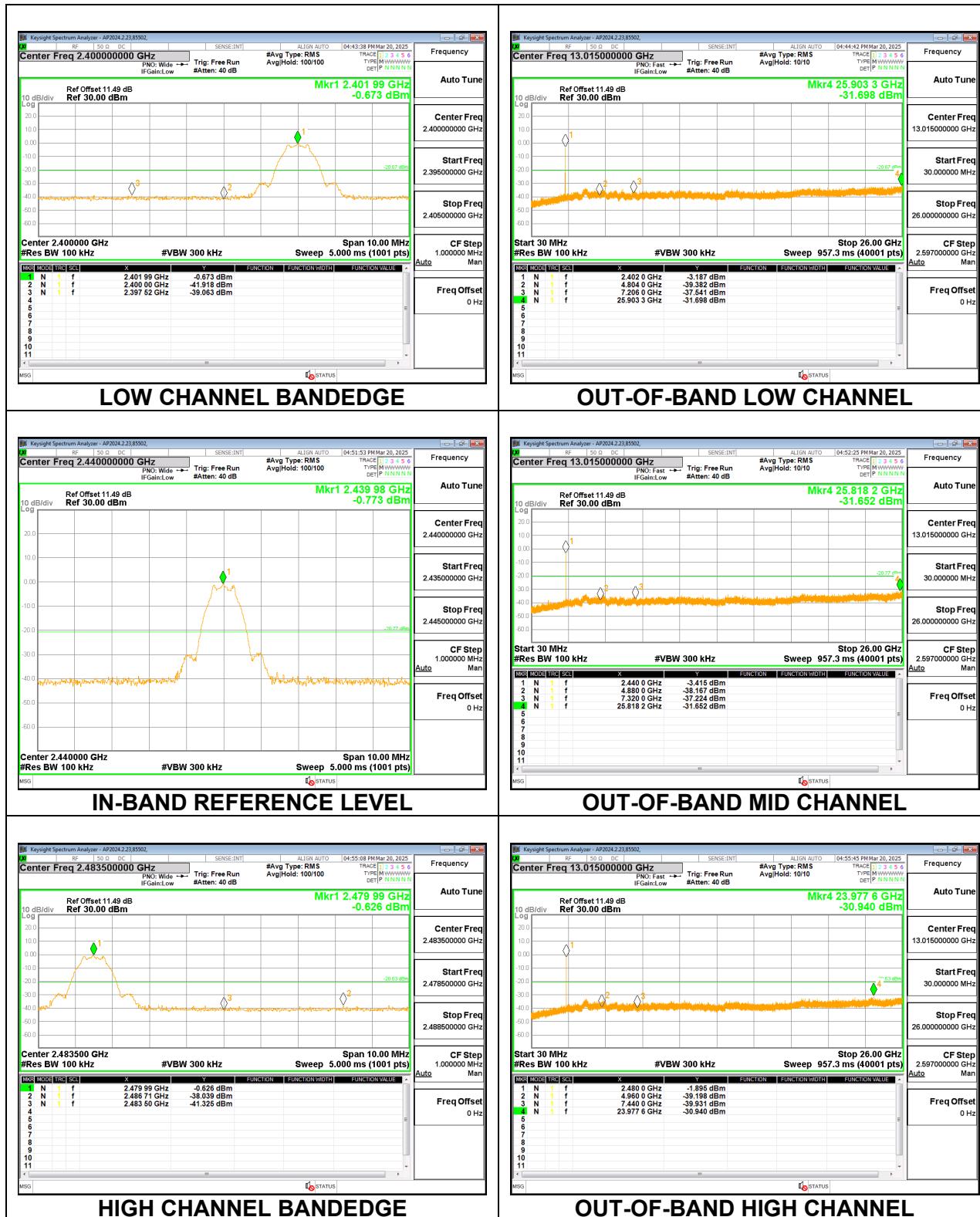
FCC §15.247 (d)

RSS-247 5.5

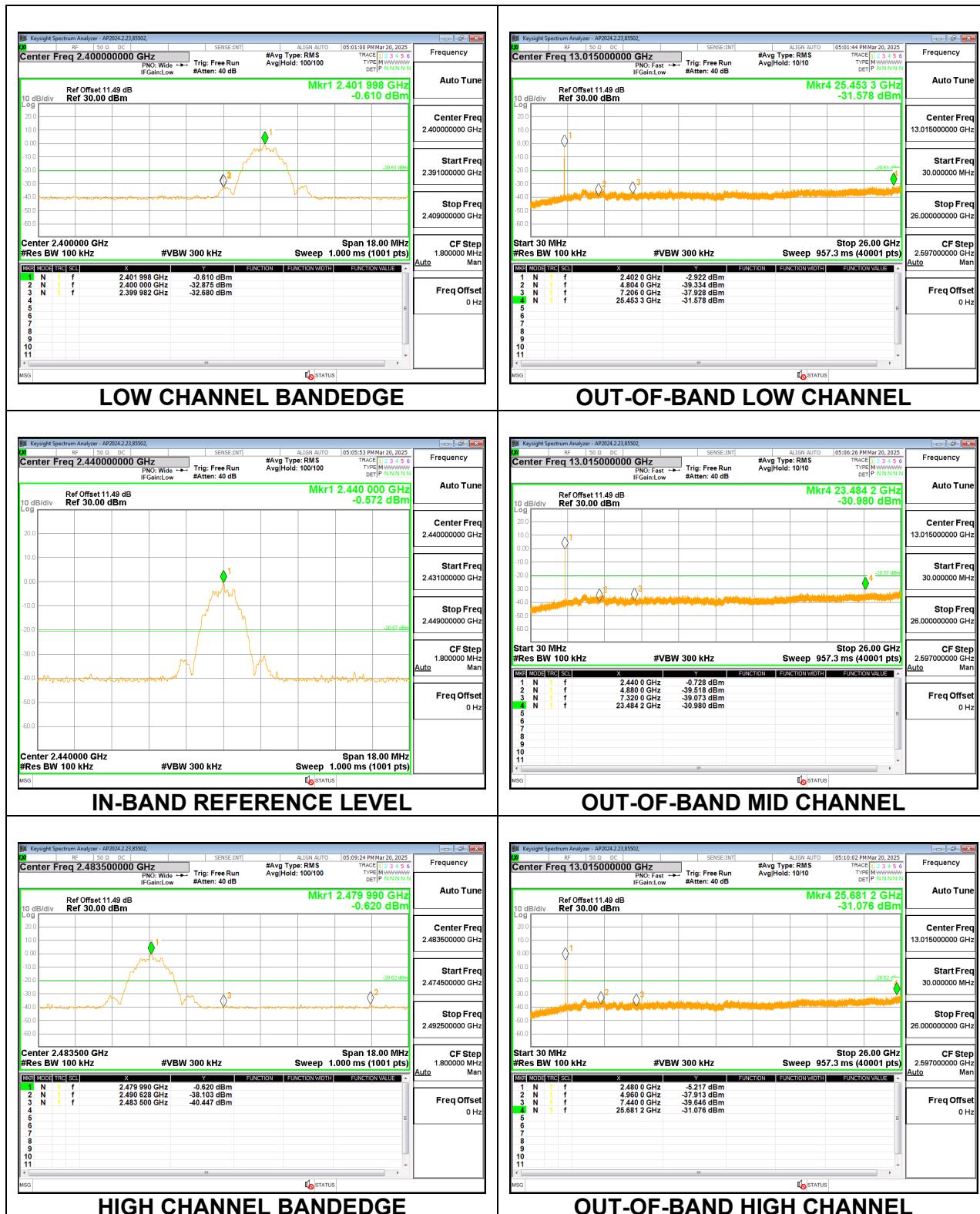
Output power was measured based on the use of a peak measurement, therefore the required attenuation is -20 dBc.

### RESULTS

## 9.7.1. BLE (1Mbps)



## 9.7.2. BLE (2Mbps)



## 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 Clause 8.9 and 8.10

Frequency Range (kHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuV/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 linear voltage average measurements.

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

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

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

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

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

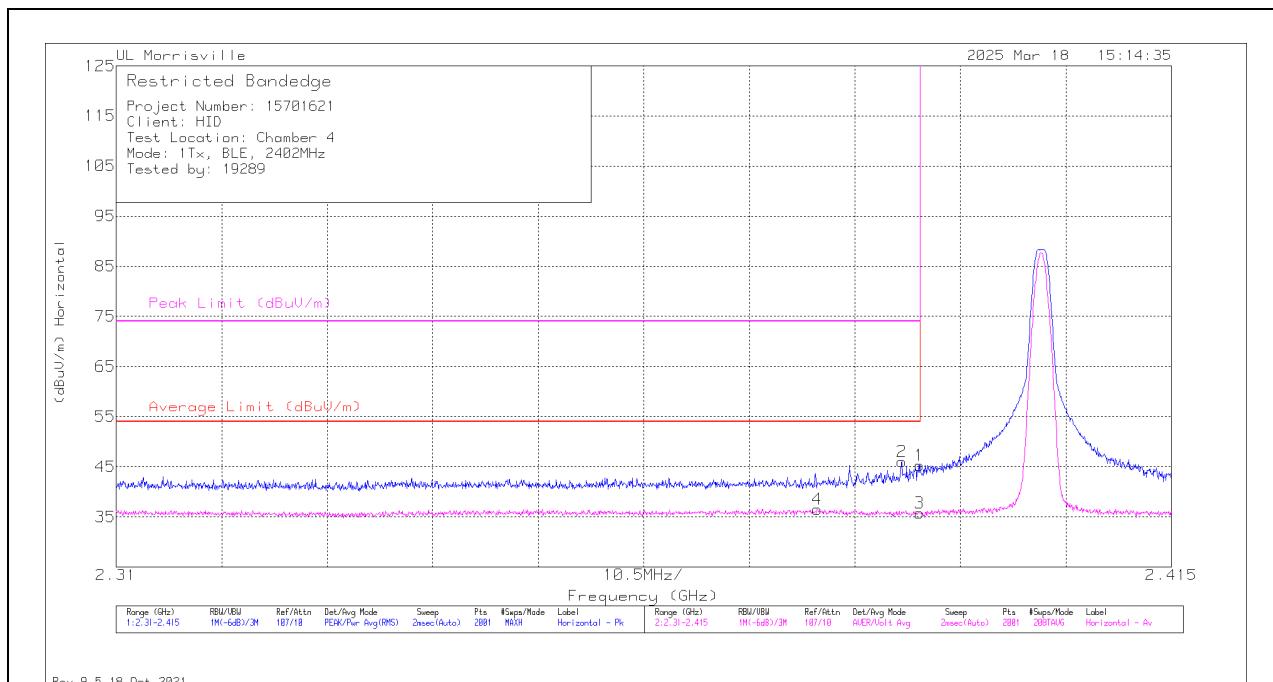
OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

## 10.2. TRANSMITTER ABOVE 1 GHz

### 10.2.1. BLE (1Mbps)

#### BANDEDGE (LOW CHANNEL)

#### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	36.47	Pk	32	-23.2	0	45.27	-	-	74	-28.73	223	206	H
2	*** 2.38817	37.18	Pk	32	-23.2	0	45.98	-	-	74	-28.02	223	206	H
3	*** 2.38996	20.57	ADV	32	-23.2	6.45	35.82	54	-18.18	-	-	223	206	H
4	*** 2.37977	21.16	ADV	32	-23	6.45	36.61	54	-17.39	-	-	223	206	H

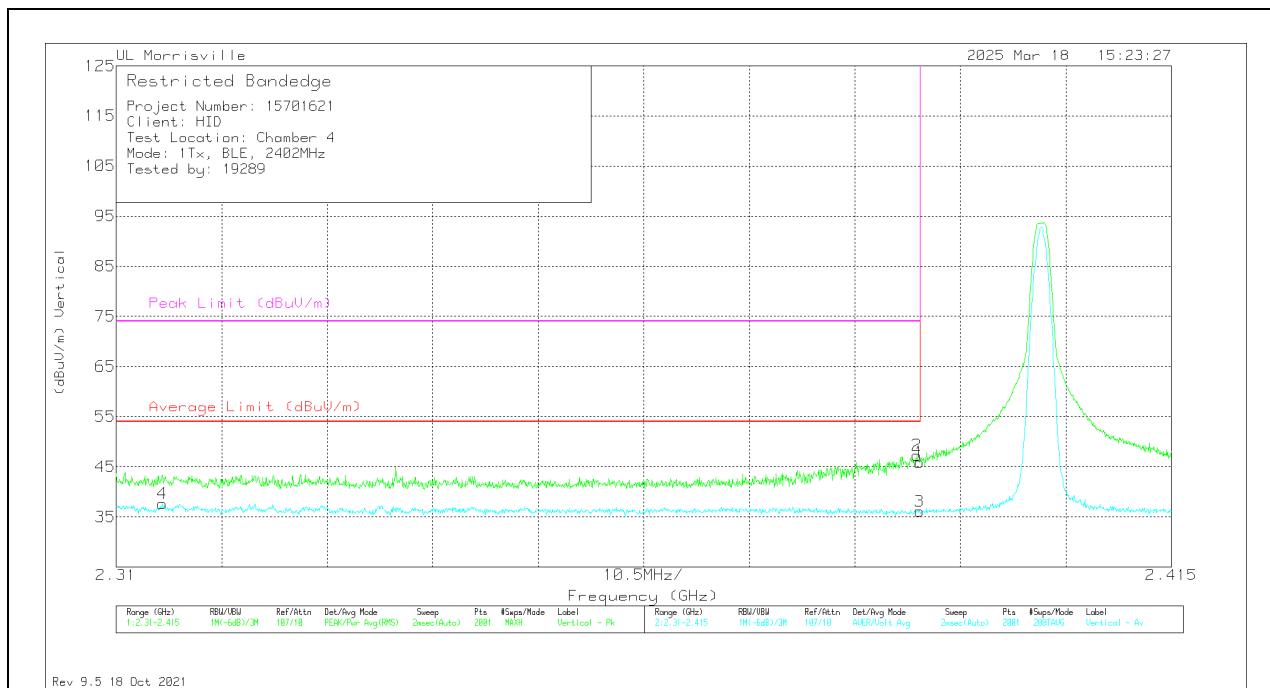
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	37.14	Pk	32	-23.2	0	45.94	-	-	74	-28.06	7	351	V
2	* *** 2.3897	38.43	Pk	32	-23.2	0	47.23	-	-	74	-26.77	7	351	V
3	* *** 2.38996	20.89	ADV	32	-23.2	6.45	36.14	54	-17.86	-	-	7	351	V
4	* *** 2.31462	22.33	ADV	32	-23.1	6.45	37.68	54	-16.32	-	-	7	351	V

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

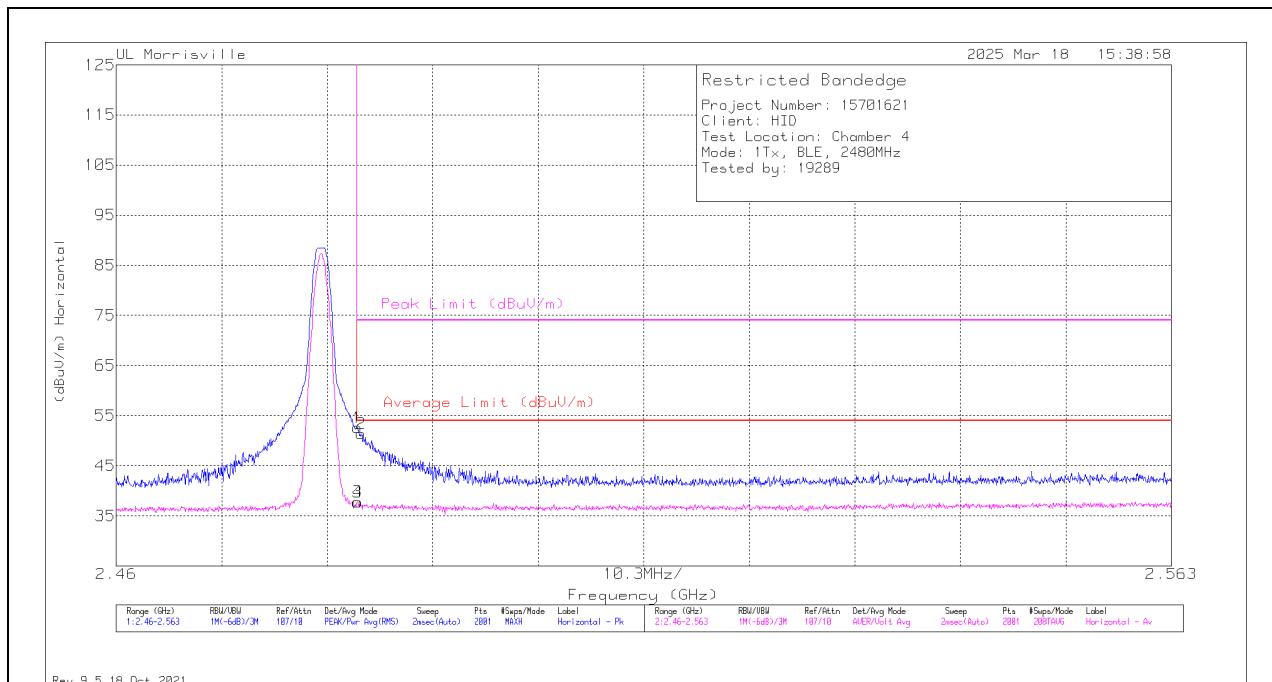
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	43.1	Pk	32.3	-22.8	0	52.6	-	-	74	-21.4	152	306	H
2	* *** 2.4839	41.94	Pk	32.3	-22.8	0	51.44	-	-	74	-22.56	152	306	H
3	* *** 2.48354	21.91	ADV	32.3	-22.8	6.45	34.86	54	-16.14	-	-	152	306	H
4	* *** 2.48359	21.92	ADV	32.3	-22.8	6.45	37.87	54	-16.13	-	-	152	306	H

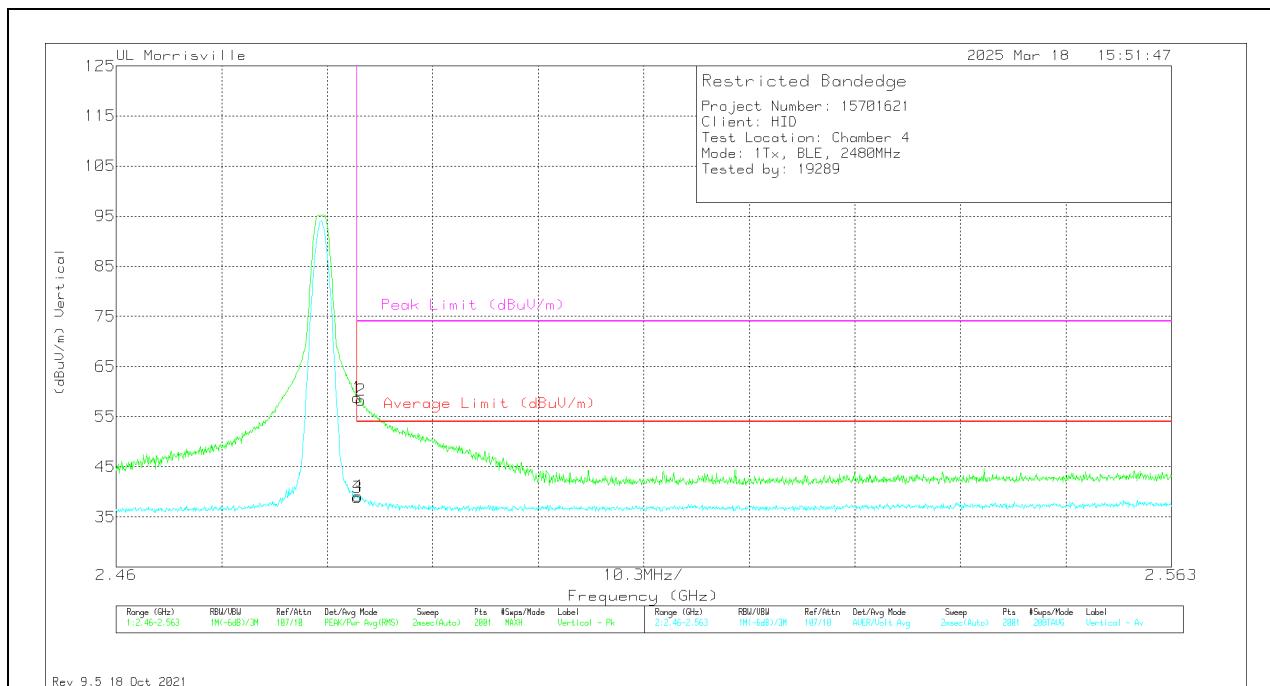
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	49.29	Pk	32.3	-22.8	0	58.79	-	-	74	-15.21	12	342	V
2	* *** 2.4839	48.81	Pk	32.3	-22.8	0	58.31	-	-	74	-15.69	12	342	V
3	* *** 2.48354	22.96	ADV	32.3	-22.8	6.45	38.91	54	-15.09	-	-	12	342	V
4	* *** 2.48359	23.25	ADV	32.3	-22.8	6.45	39.20	54	-14.80	-	-	12	342	V

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

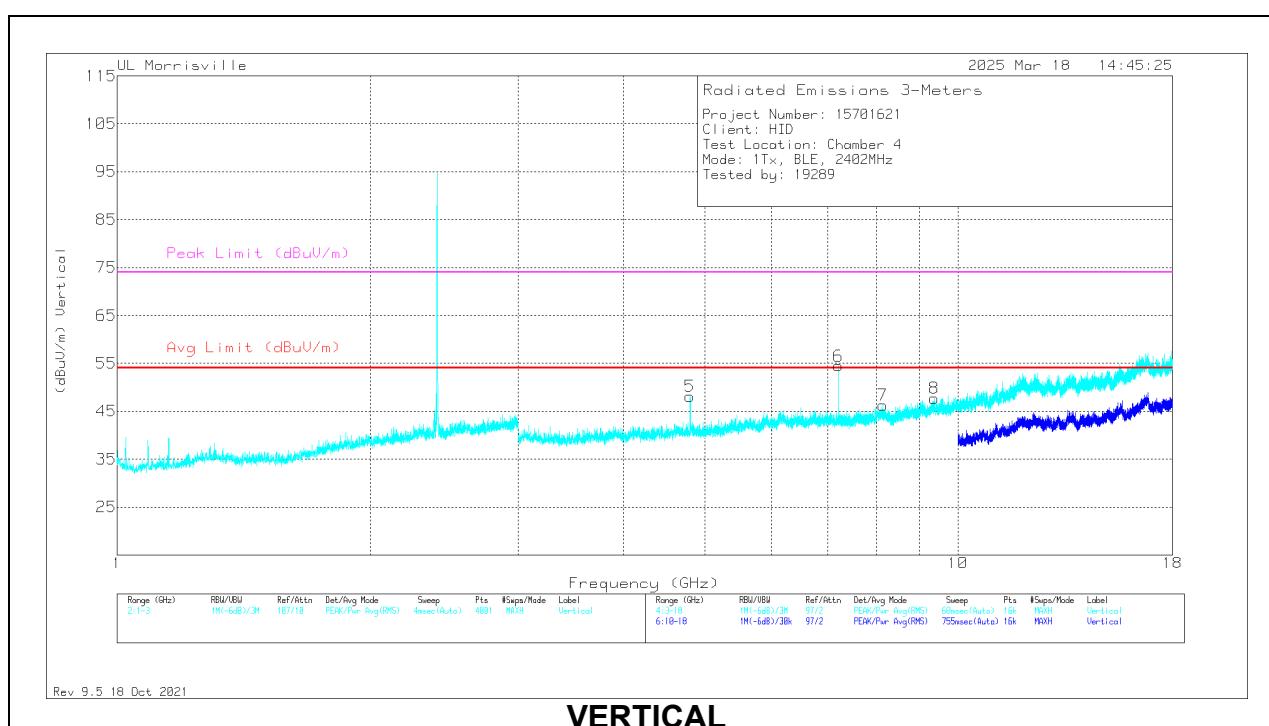
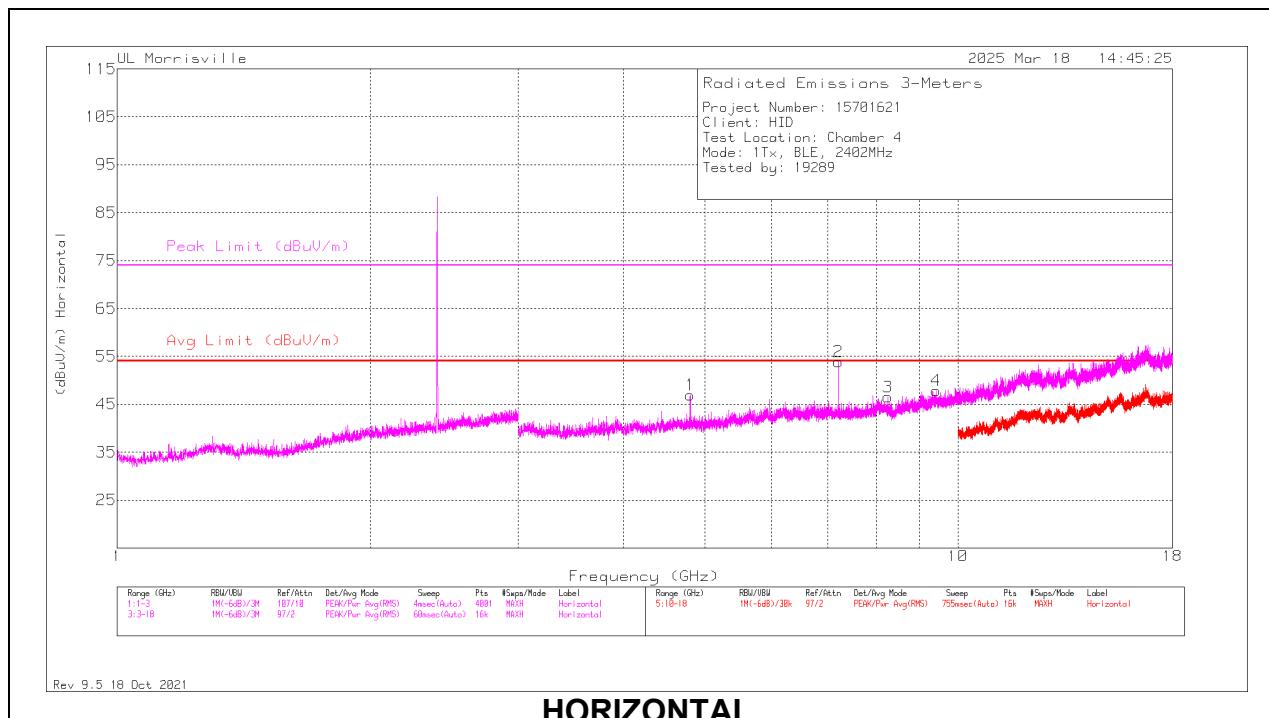
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL RESULTS



## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.80375	44.19	Pk	34.1	-31.4	0	46.89	54	-7.11	74	-27.11	0-360	100	H
3	* *** 8.26031	37.09	Pk	35.8	-26.4	0	46.49	54	-7.51	74	-27.51	0-360	100	H
4	* *** 9.42188	36.38	Pk	36.6	-25.1	0	47.88	54	-6.12	74	-26.12	0-360	100	H
5	* *** 4.80364	48	PK2	34.1	-31.4	0	50.7	-	-	74	-23.3	94	205	V
	* *** 4.80362	36.54	ADV	34.1	-31.4	6.45	45.69	54	-8.31	-	-	94	205	V
7	* *** 8.14688	37.52	Pk	35.8	-27	0	46.32	54	-7.68	74	-27.68	0-360	200	V
8	* *** 9.37125	35.88	Pk	36.5	-24.7	0	47.68	54	-6.32	74	-26.32	0-360	200	V
2	7.20469	46.01	Pk	35.6	-27.7	0	53.91	-	-	-	-	0-360	100	H
6	7.20656	46.66	Pk	35.6	-27.8	0	54.46	-	-	-	-	0-360	200	V

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

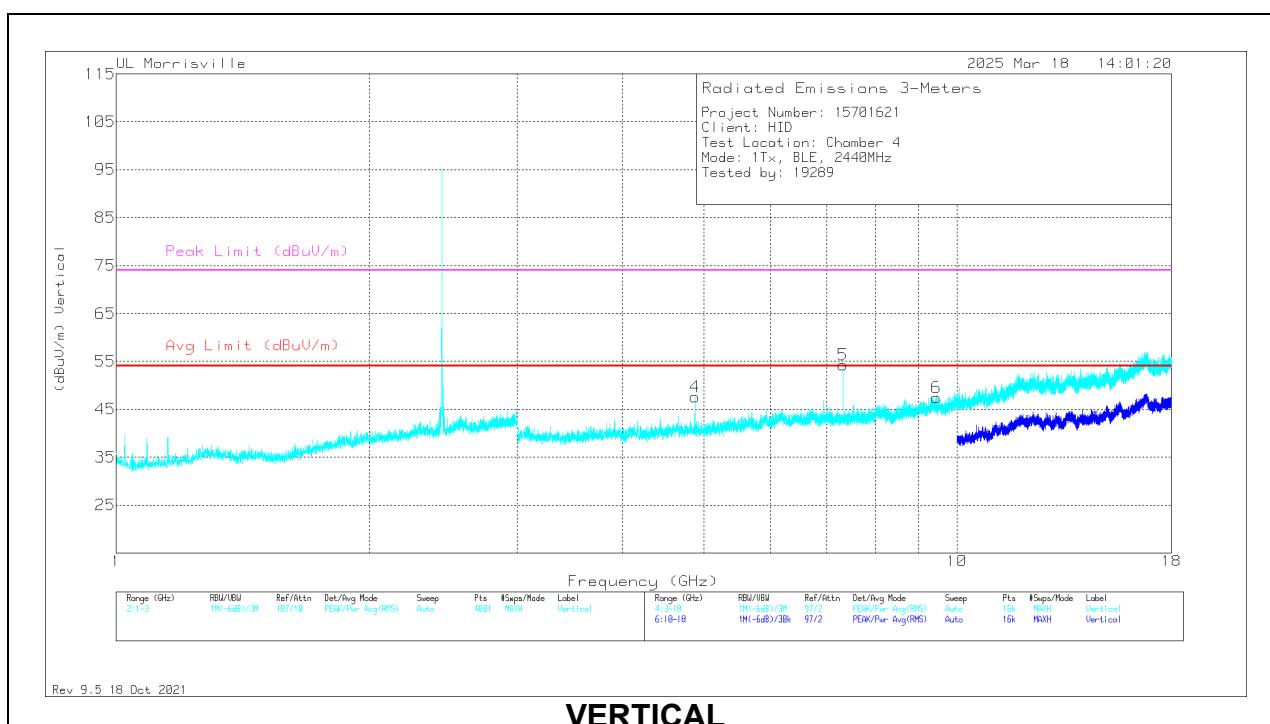
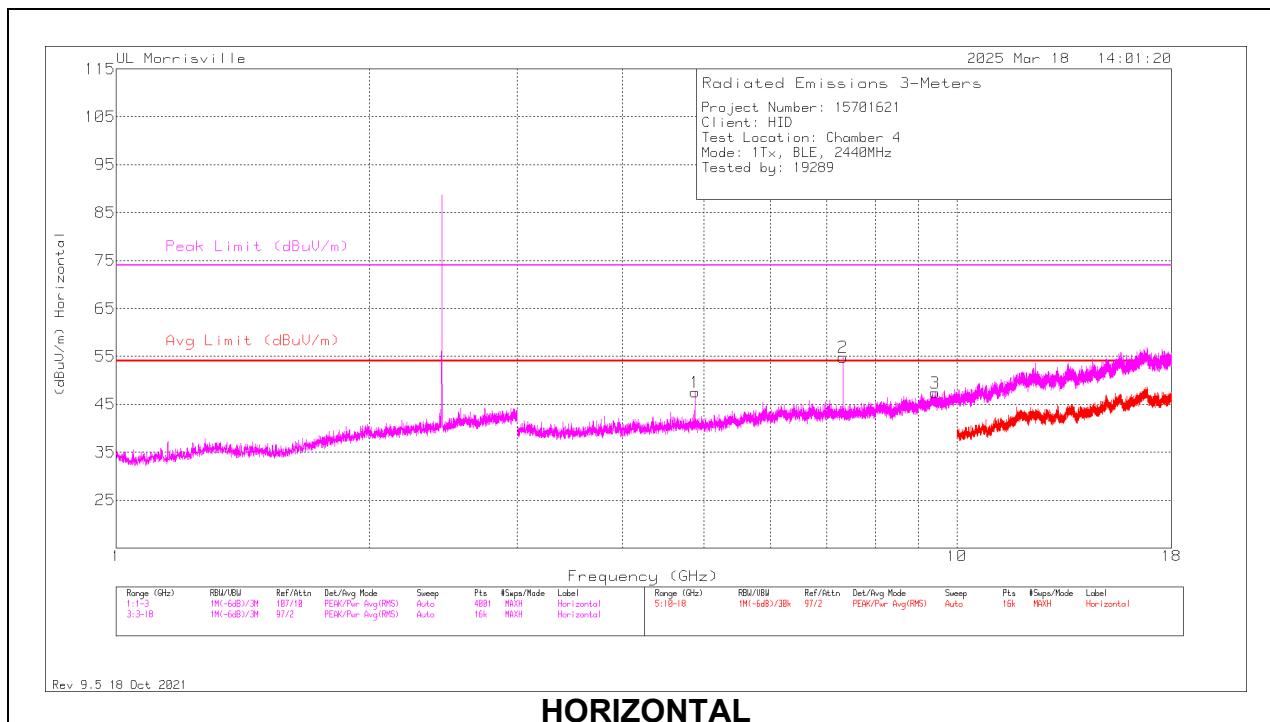
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

## MID CHANNEL RESULTS



## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.87969	44.52	Pk	34	-31	0	47.52	54	-6.48	74	-26.48	0-360	100	H
2	* *** 7.31997	49.47	PK2	35.6	-27.7	0	57.37	-	-	74	-16.63	235	152	H
	* *** 7.32061	38.49	ADV	35.6	-27.7	6.45	52.84	54	-1.16	-	-	235	152	H
3	* *** 9.42563	35.69	Pk	36.7	-25	0	47.39	54	-6.61	74	-26.61	0-360	100	H
4	* *** 4.87969	44.56	Pk	34	-31	0	47.56	54	-6.44	74	-26.44	0-360	200	V
5	* *** 7.32083	49.65	PK2	35.6	-27.7	0	57.55	-	-	74	-16.45	288	386	V
	* *** 7.31945	37.53	ADV	35.6	-27.7	6.45	51.88	54	-2.12	-	-	288	386	V
6	* *** 9.44813	35.79	Pk	36.7	-25	0	47.49	54	-6.51	74	-26.51	0-360	200	V

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

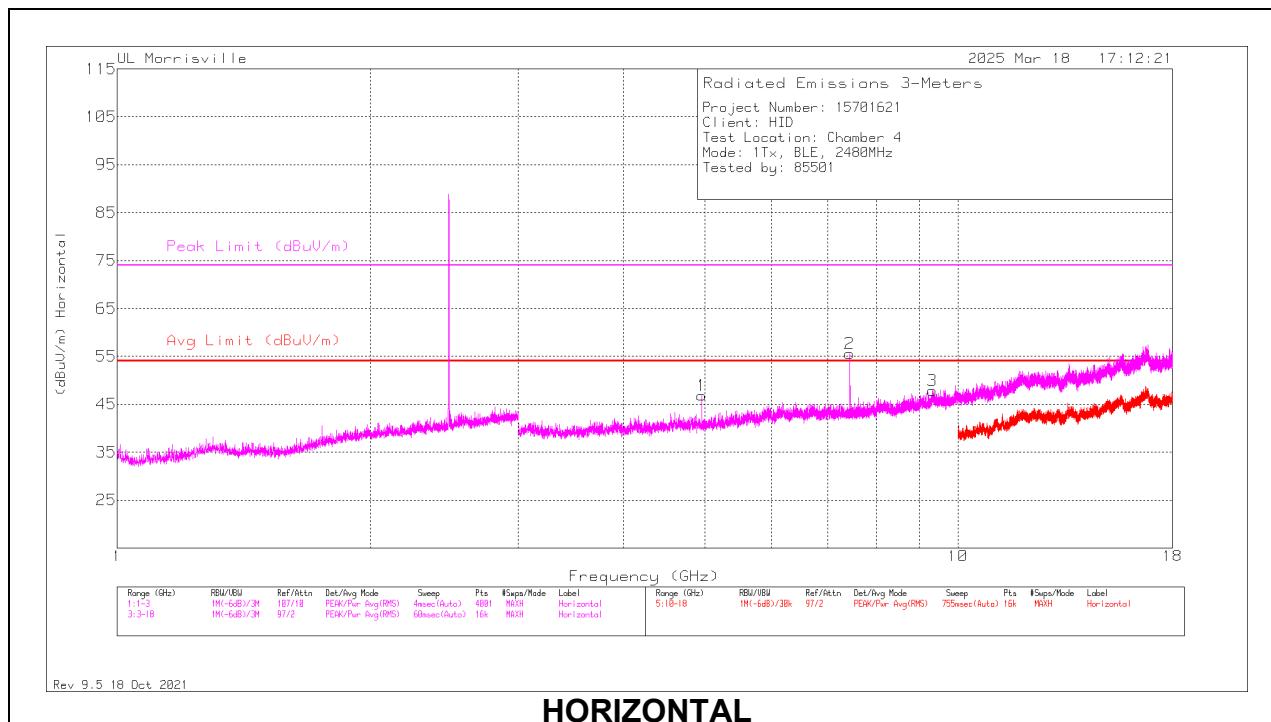
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

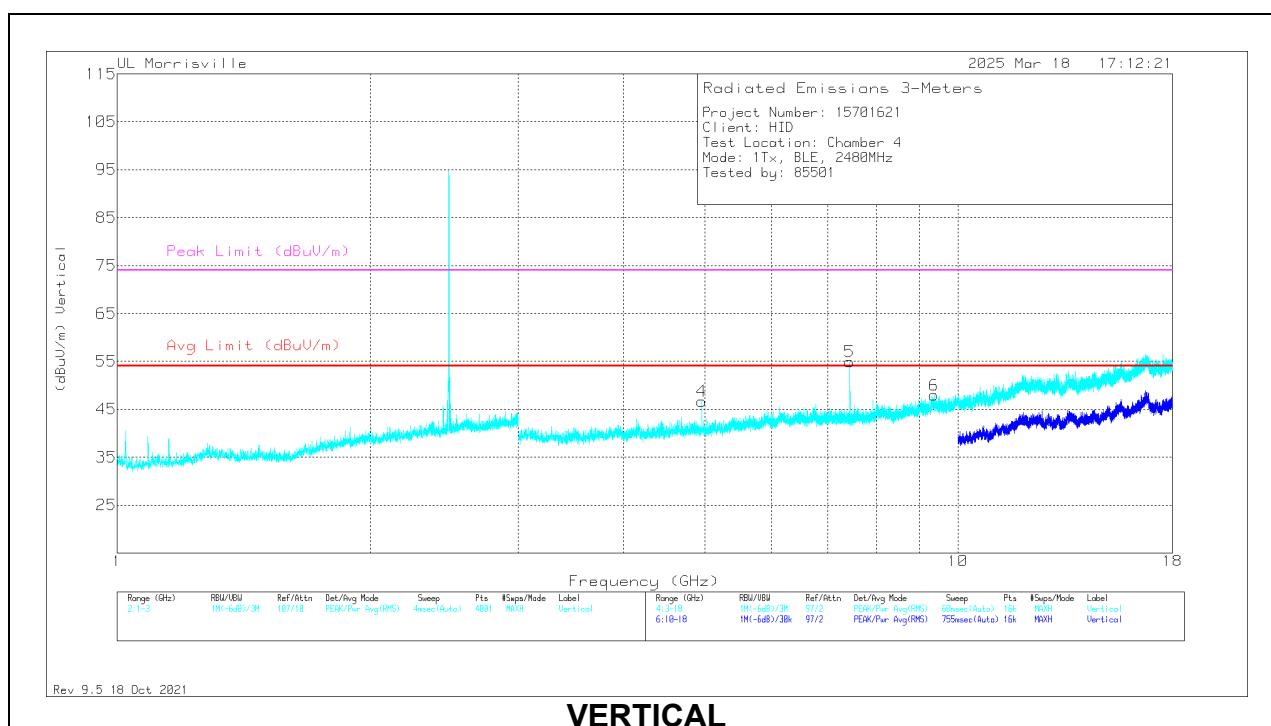
PK2 - Maximum Peak

ADV - Linear Voltage Average

## HIGH CHANNEL RESULTS



## HORIZONTAL



## VERTICAL

## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.96031	43.76	Pk	33.9	-30.8	0	46.86	54	-7.14	74	-27.14	0-360	100	H
2	* *** 7.43922	48.64	PK2	35.7	-27.9	0	56.44	-	-	74	-17.56	250	152	H
	* *** 7.43939	37.37	ADV	35.7	-27.9	6.45	51.62	54	-2.38	-	-	250	152	H
3	* *** 9.32906	35.56	Pk	36.5	-24.2	0	47.86	54	-6.14	74	-26.14	0-360	100	H
4	* *** 4.96031	43.55	Pk	33.9	-30.8	0	46.65	54	-7.35	74	-27.35	0-360	200	V
5	* *** 7.4393	48.79	PK2	35.7	-27.9	0	56.59	-	-	74	-17.41	294	209	V
	* *** 7.43944	37.04	ADV	35.7	-27.9	6.45	51.29	54	-2.71	-	-	294	209	V
6	* *** 9.36656	36.02	Pk	36.5	-24.6	0	47.92	54	-6.08	74	-26.08	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

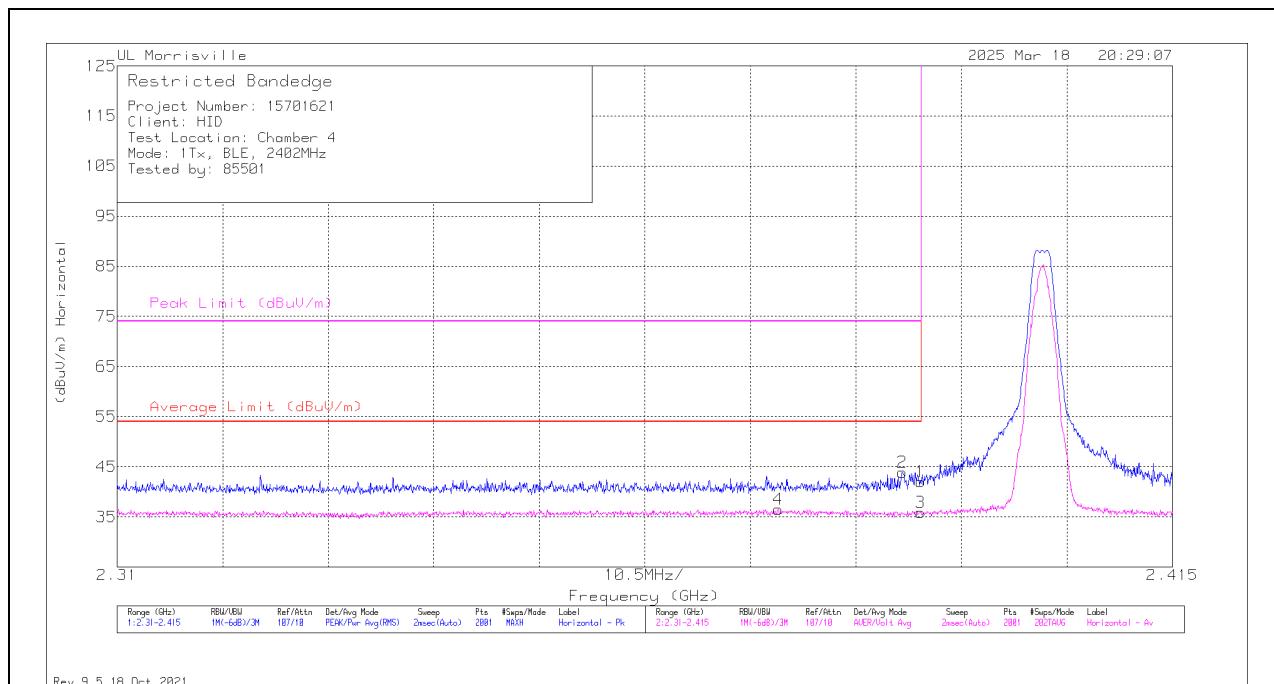
PK2 - Maximum Peak

ADV - Linear Voltage Average

## 10.2.2. BLE (2Mbps)

### BANDEDGE (LOW CHANNEL)

#### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	33.17	Pk	32	-23.2	0	41.97	-	-	74	-32.03	193	362	H
2	* *** 2.38812	35.06	Pk	32	-23.2	0	43.86	-	-	74	-30.14	193	362	H
3	* *** 2.38996	20.96	ADV	32	-23.2	6.10	35.88	54	-18.12	-	-	193	362	H
4	* *** 2.37578	21.29	ADV	32	-22.9	6.10	36.51	54	-17.49	-	-	193	362	H

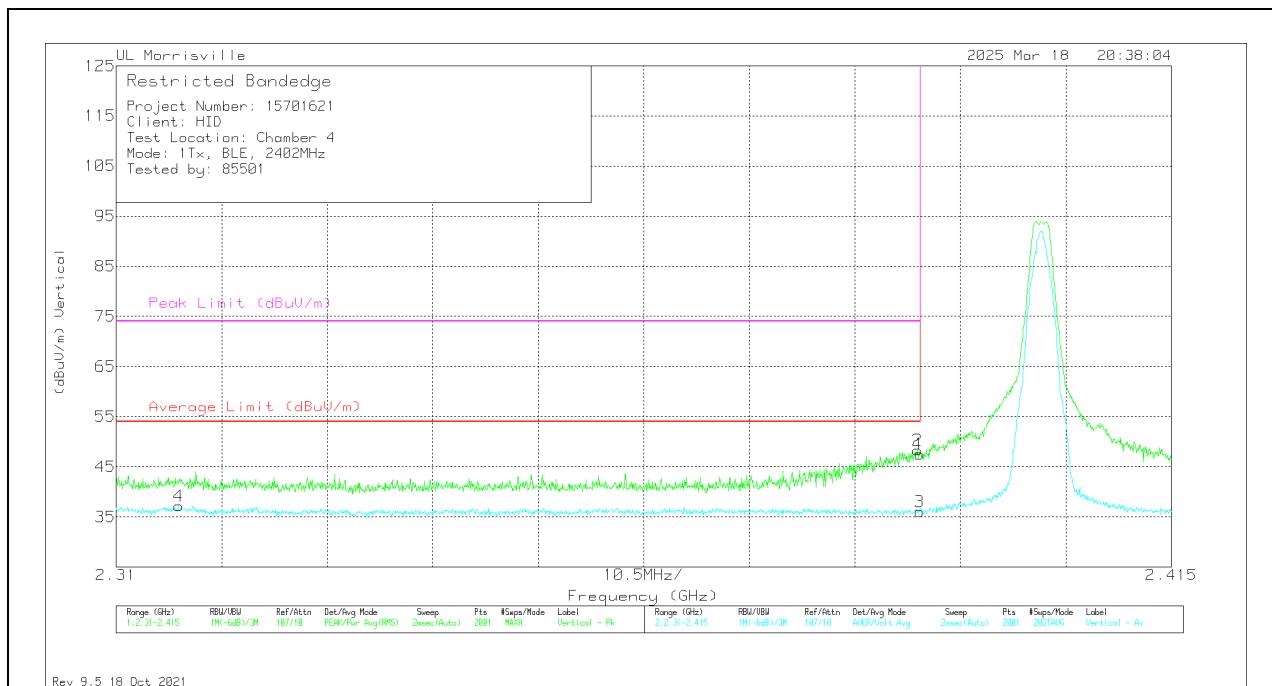
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	38.73	PK	32	-23.2	0	47.53	-	-	74	-26.47	41	107	V
2	* ** 2.38975	39.53	PK	32	-23.2	0	48.33	-	-	74	-25.67	41	107	V
3	* ** 2.38996	21.11	ADV	32	-23.2	6.10	36.03	54	-17.97	-	-	41	107	V
4	* ** 2.31625	22.17	ADV	32	-23.1	6.10	37.19	54	-16.81	-	-	41	107	V

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

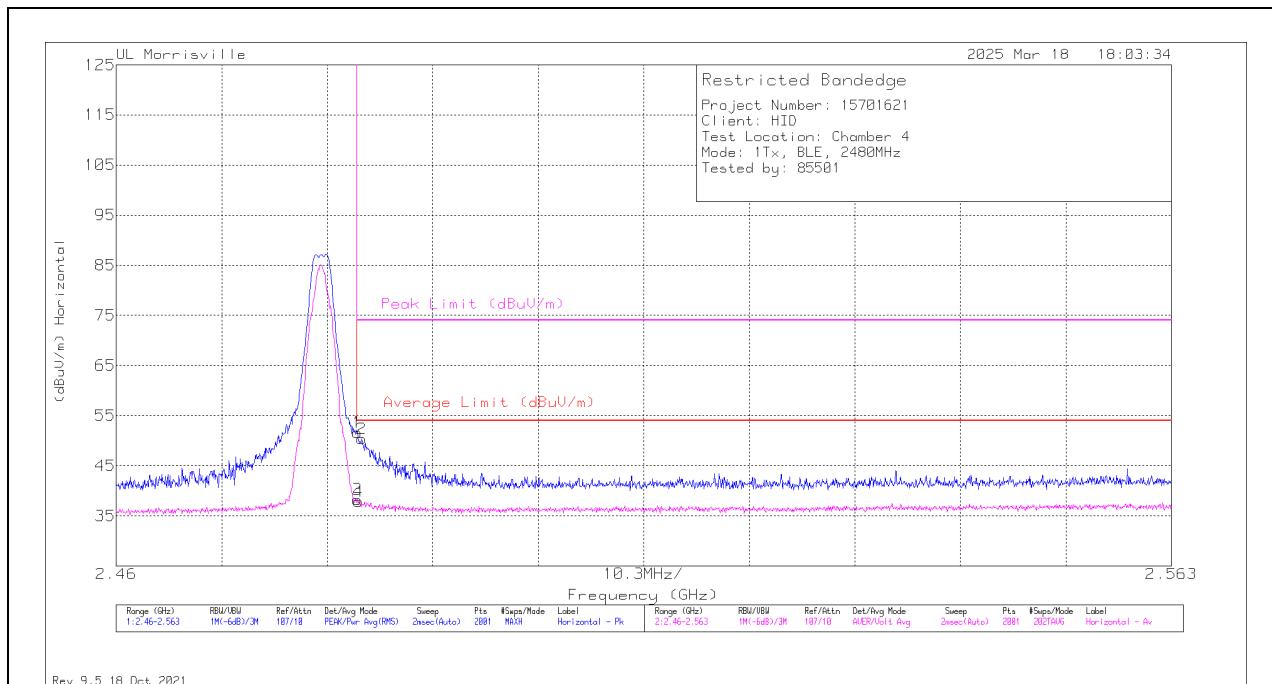
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## BANDEDGE (HIGH CHANNEL)

### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	42.16	Pk	32.3	-22.8	0	51.66	-	-	74	-22.34	210	206	H
2	* *** 2.48395	40.85	Pk	32.3	-22.8	0	50.35	-	-	74	-23.65	210	206	H
3	* *** 2.48354	22.6	ADV	32.3	-22.8	6.10	38.22	54	-15.78	-	-	210	206	H
4	* *** 2.48364	22.21	ADV	32.3	-22.8	6.10	37.83	54	-16.17	-	-	210	206	H

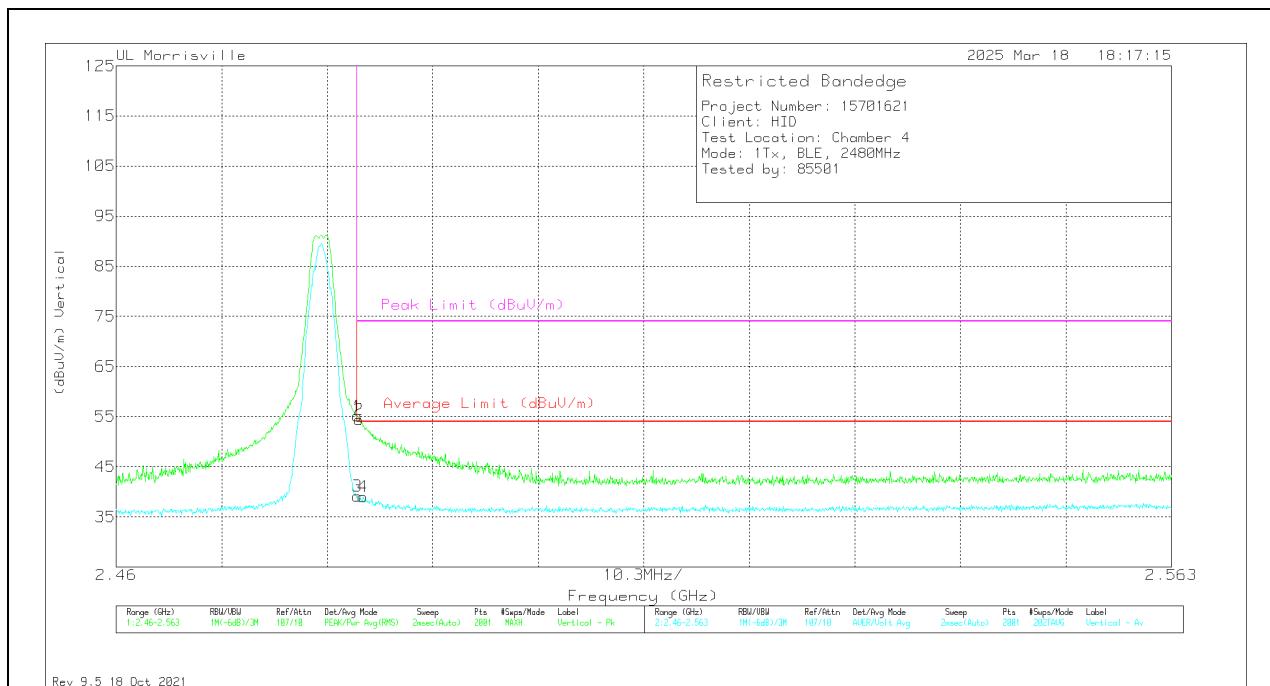
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Margin (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* *** 2.48354	45.6	Pk	32.3	-22.8	0	55.1	-	-	74	-18.9	258	191	V
2	* *** 2.48369	44.96	Pk	32.3	-22.8	0	54.46	-	-	74	-19.54	258	191	V
3	* *** 2.48354	23.49	ADV	32.3	-22.8	6.10	39.11	54	-14.89	-	-	258	191	V
4	* *** 2.4841	23.36	ADV	32.3	-22.8	6.10	38.98	54	-15.02	-	-	258	191	V

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

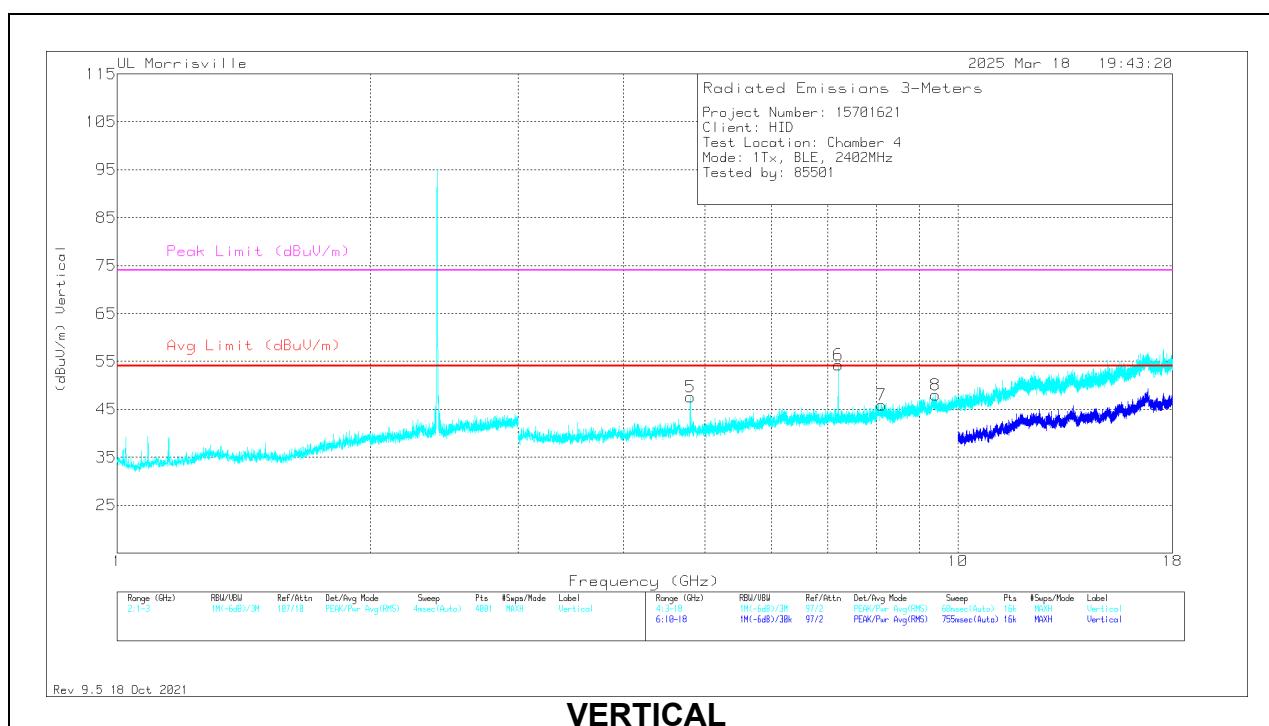
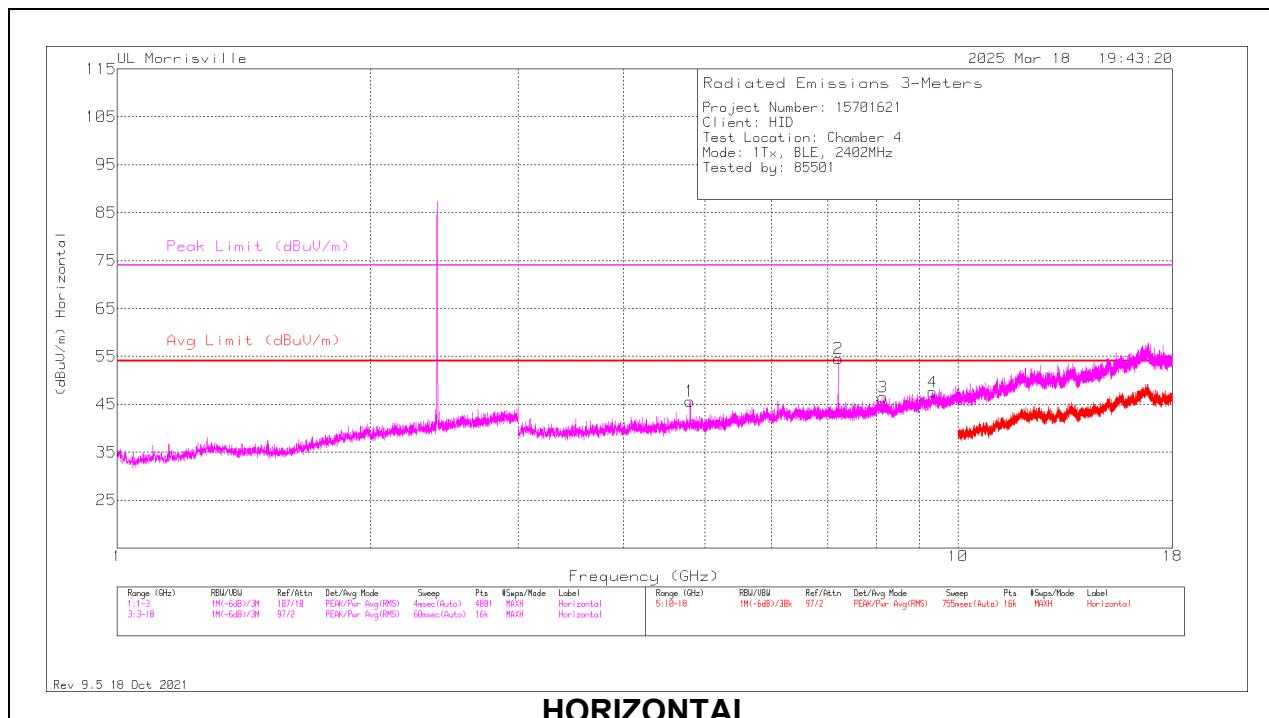
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL RESULTS



## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.80281	42.94	Pk	34.1	-31.4	0	45.64	54	-8.36	74	-28.36	0-360	100	H
3	* *** 8.14969	37.68	Pk	35.8	-27	0	46.48	54	-7.52	74	-27.52	0-360	100	H
4	* *** 9.33375	35.23	Pk	36.5	-24.2	0	47.53	54	-6.47	74	-26.47	0-360	100	H
5	* *** 4.80469	44.91	Pk	34.1	-31.4	0	47.61	54	-6.39	74	-26.39	0-360	200	V
7	* *** 8.115	36.87	Pk	35.8	-26.8	0	45.87	54	-8.13	74	-28.13	0-360	200	V
8	* *** 9.40242	37.52	PK2	36.6	-25.2	0	48.92	-	-	74	-25.08	95	258	V
	* *** 9.40311	24.79	ADV	36.6	-25.2	6.10	42.29	54	-11.71	-	-	95	258	V
2	7.2075	46.7	Pk	35.6	-27.8	0	54.5	-	-	-	-	0-360	100	H
6	7.2075	46.45	Pk	35.6	-27.8	0	54.25	-	-	-	-	0-360	200	V

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

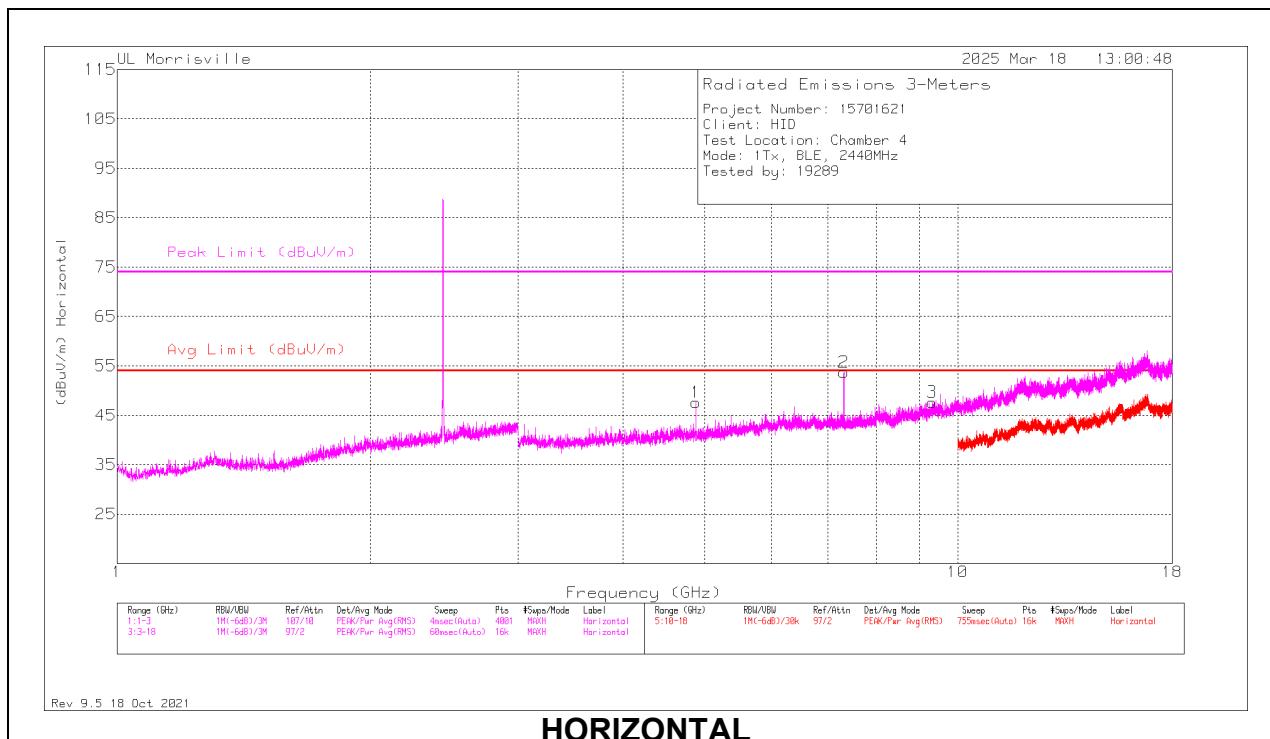
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

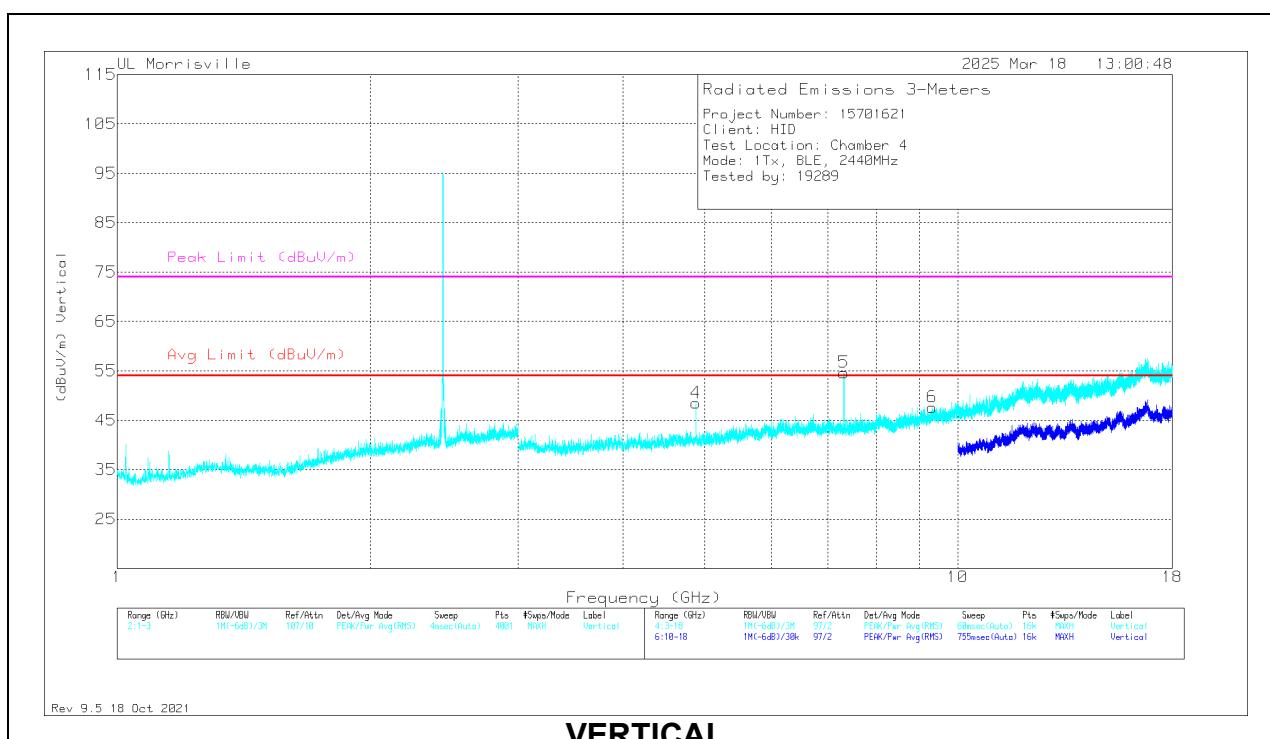
PK2 - Maximum Peak

ADV - Linear Voltage Average

## MID CHANNEL RESULTS



## HORIZONTAL



## VERTICAL

## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.88063	44.6	Pk	34	-31	0	47.6	54	-6.4	74	-26.4	0-360	100	H
2	* *** 7.32148	49.65	PK2	35.6	-27.7	0	57.55	-	-	74	-16.45	236	145	H
	* *** 7.32105	36.37	ADV	35.6	-27.7	6.10	50.37	54	-3.63	-	-	236	145	H
3	* *** 9.31875	35.84	Pk	36.4	-24.6	0	47.64	54	-6.36	74	-26.36	0-360	100	H
4	* *** 4.88109	48.04	PK2	34	-31	0	51.04	-	-	74	-22.96	359	214	V
	* *** 4.88099	35.31	ADV	34	-31	6.10	44.41	54	-9.59	-	-	359	214	V
5	* *** 7.32155	49.26	PK2	35.6	-27.7	0	57.16	-	-	74	-16.84	283	388	V
	* *** 7.32103	36.25	ADV	35.6	-27.7	6.10	50.25	54	-3.75	-	-	283	388	V
6	* *** 9.3225	35.77	Pk	36.4	-24.5	0	47.67	54	-6.33	74	-26.33	0-360	200	V

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

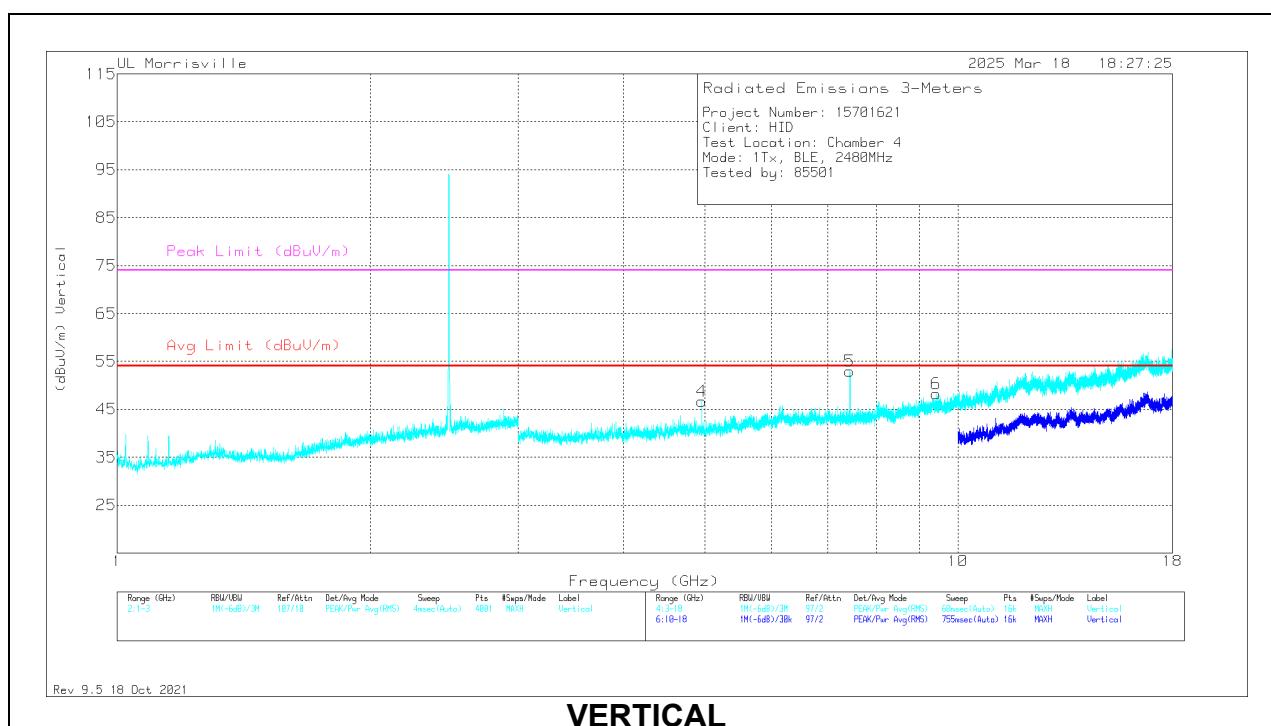
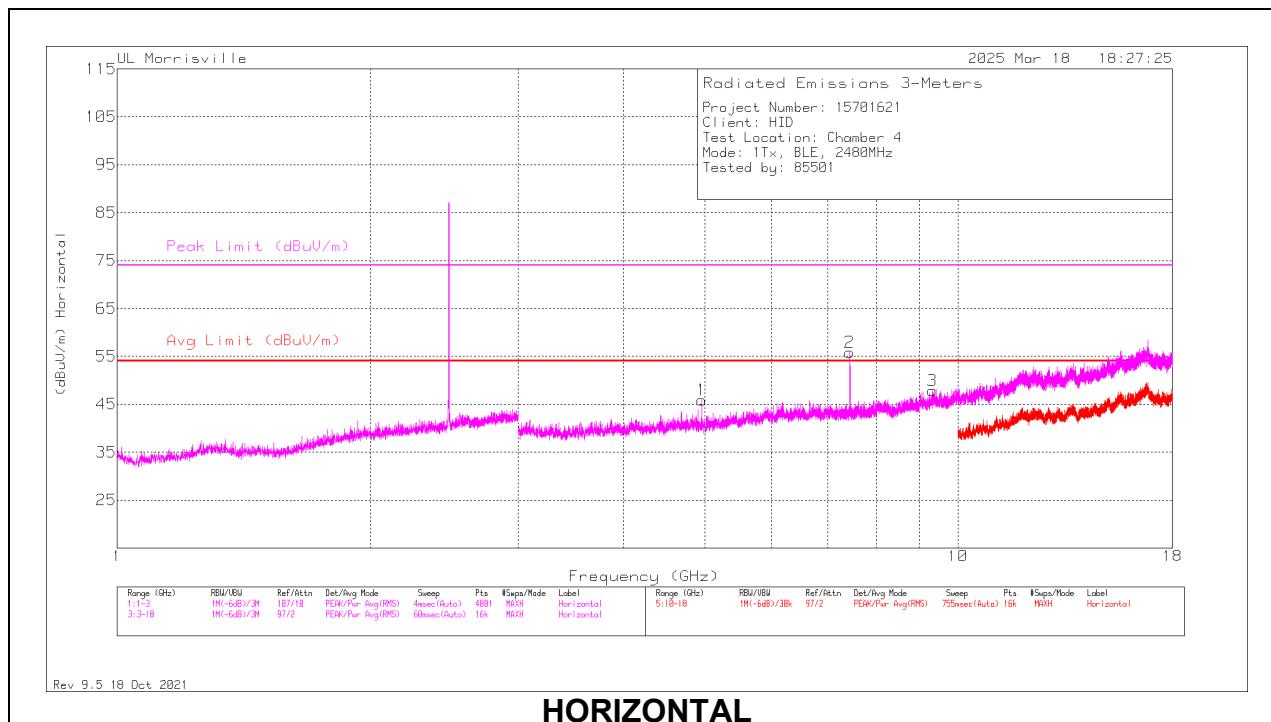
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

## HIGH CHANNEL RESULTS



## RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* *** 4.96031	42.8	Pk	33.9	-30.8	0	45.9	54	-8.1	74	-28.1	0-360	100	H
2	* *** 7.43851	48.27	PK2	35.7	-27.9	0	56.07	-	-	74	-17.93	256	161	H
	* *** 7.43879	36.02	ADV	35.7	-27.9	6.10	49.92	54	-4.08	-	-	256	161	H
3	* *** 9.32813	35.56	Pk	36.5	-24.2	0	47.86	54	-6.14	74	-26.14	0-360	100	H
4	* *** 4.96125	43.43	Pk	33.9	-30.7	0	46.63	54	-7.37	74	-27.37	0-360	200	V
5	* *** 7.44136	48.64	PK2	35.7	-27.9	0	56.44	-	-	74	-17.56	298	217	V
	* *** 7.43899	36.42	ADV	35.7	-27.9	6.10	50.32	54	-3.68	-	-	298	217	V
6	* *** 9.43076	37.25	PK2	36.7	-25.1	0	48.85	-	-	74	-25.15	33	173	V
	* *** 9.43077	24.43	ADV	36.7	-25.1	6.10	42.13	54	-11.87	-	-	33	173	V

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

\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

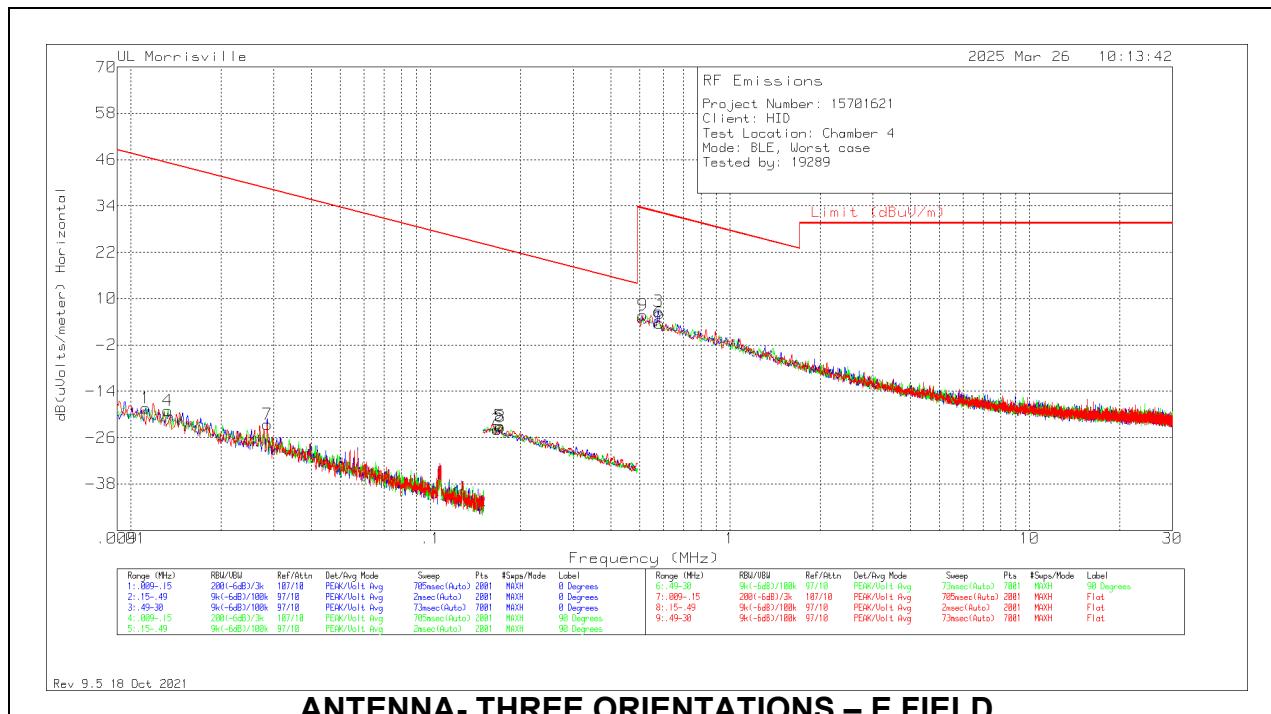
Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

### 10.3. WORST CASE BELOW 30MHZ

#### SPURIOUS EMISSIONS BELOW 30 MHZ (WORST-CASE CONFIGURATION)



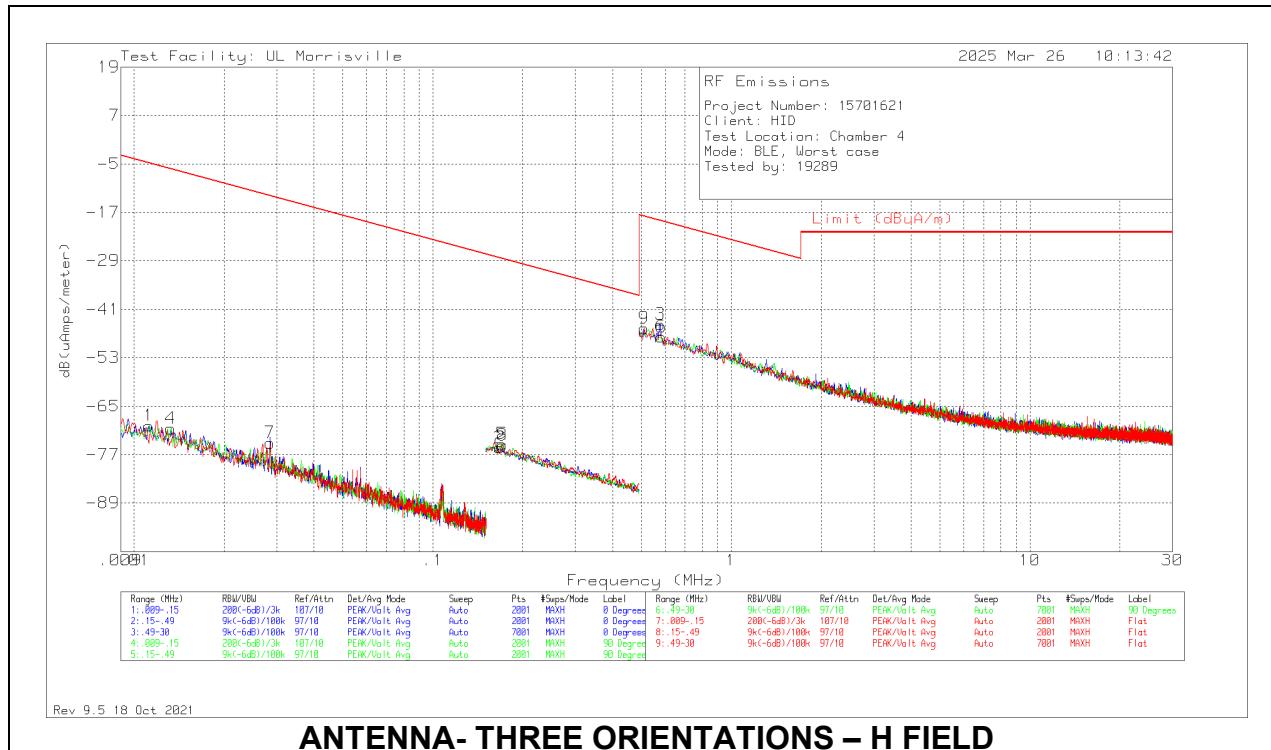
Rev. 9.5 18 Oct 2021

#### ANTENNA- THREE ORIENTATIONS – E FIELD

#### Below 30MHz E Field Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	65682 (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	.0112	43.28	Pk	18.3	.1	-80	-18.32	46.62	66.62	-64.94	0-360	0 degs
4	.01326	43.57	Pk	17.3	.1	-80	-19.03	45.15	65.15	-64.18	0-360	90 degs
7	.02853	44.09	Pk	13.2	.1	-80	-22.61	38.5	58.5	-61.11	0-360	Flat
2	.1676	45.91	Pk	10.2	.1	-80	-23.79	23.12	43.12	-46.91	0-360	0 degs
5	.17066	46.86	Pk	10.2	.1	-80	-22.84	22.96	42.96	-45.8	0-360	90 degs
8	.17142	46.48	Pk	10.2	.1	-80	-23.22	22.92	42.92	-46.14	0-360	Flat
9	.51108	35.58	Pk	10.1	.1	-40	5.78	33.43	-	-27.65	0-360	Flat
3	.57854	36.46	Pk	10.2	.1	-40	6.76	32.36	-	-25.6	0-360	0 degs
6	.58275	33.36	Pk	10.2	.1	-40	3.66	32.29	-	-28.63	0-360	90 degs

Pk - Peak detector



## ANTENNA- THREE ORIENTATIONS – H FIELD

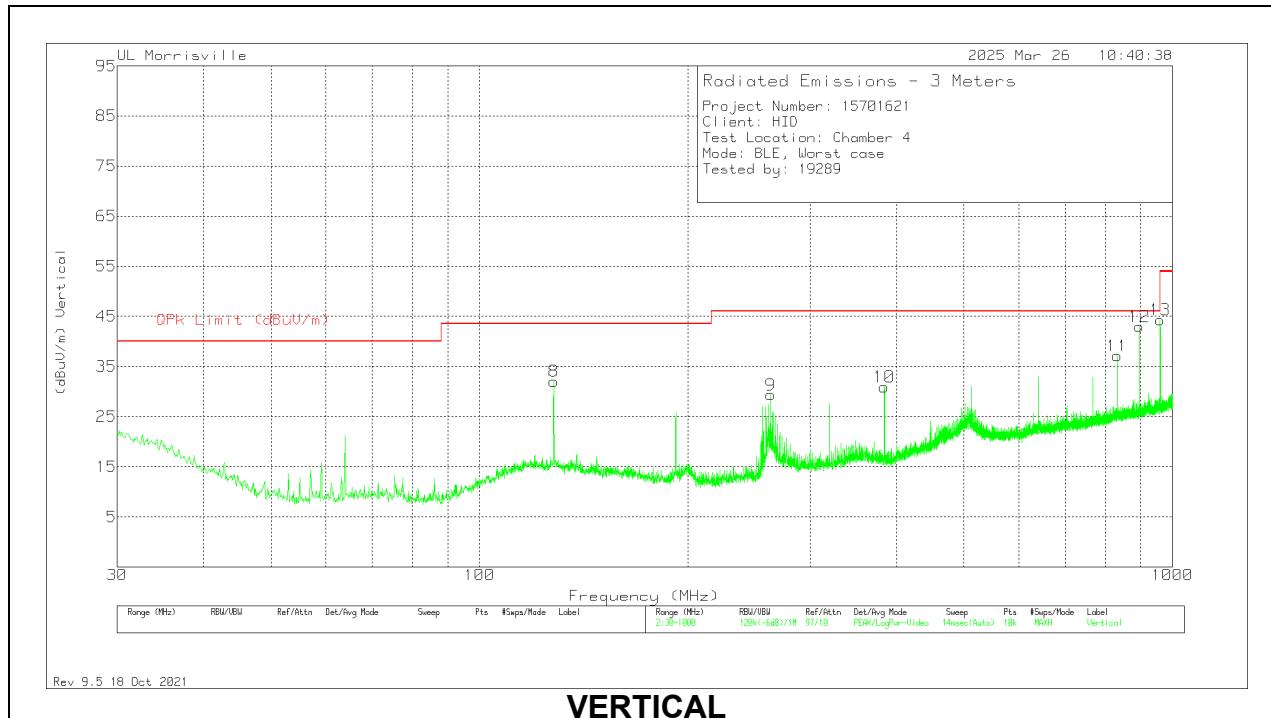
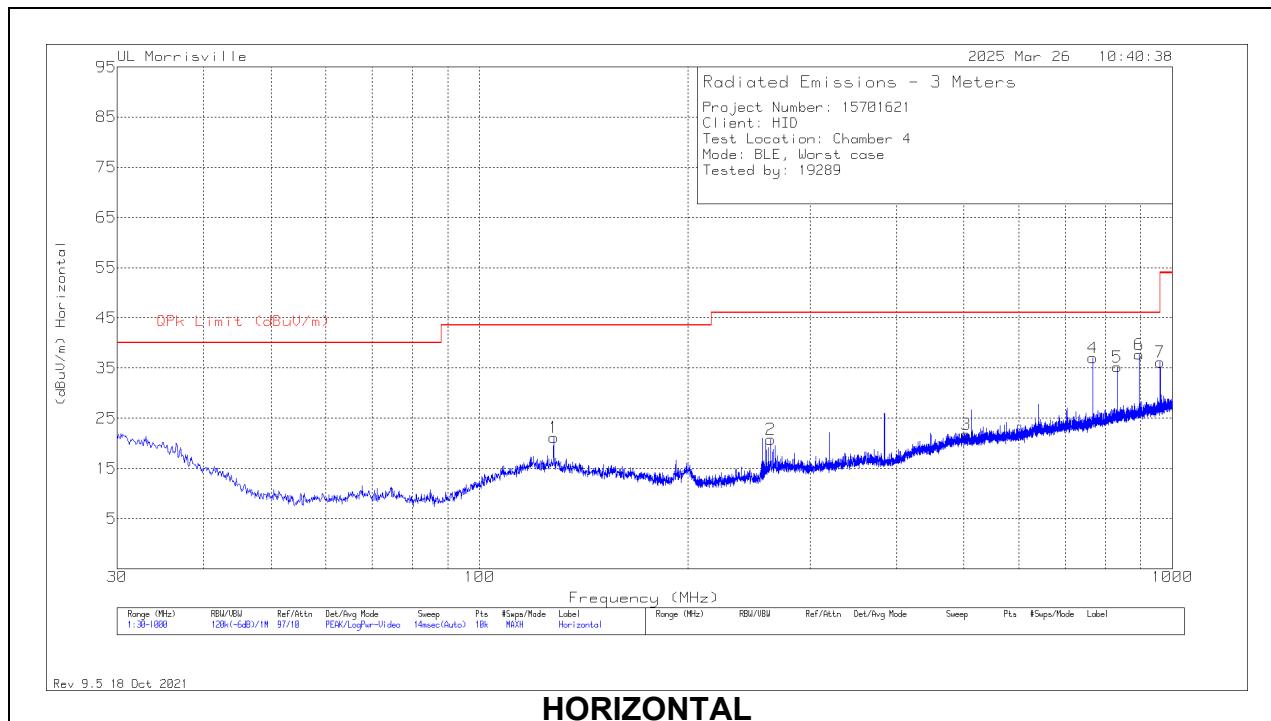
### Below 30MHz H Field Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	65682 (dBuV/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.0112	43.28	Pk	-33.2	.1	-80	-69.82	-4.88	15.12	-64.94	0-360	0 degs
4	.01326	43.57	Pk	-34.2	.1	-80	-70.53	-6.35	13.65	-64.18	0-360	90 degs
7	.02853	44.09	Pk	-38.3	.1	-80	-74.11	-13	7	-61.11	0-360	Flat
2	.1676	45.91	Pk	-41.3	.1	-80	-75.29	-28.38	-8.38	-46.91	0-360	0 degs
5	.17066	46.86	Pk	-41.3	.1	-80	-74.34	-28.54	-8.54	-45.8	0-360	90 degs
8	.17142	46.48	Pk	-41.3	.1	-80	-74.72	-28.58	-8.58	-46.14	0-360	Flat
9	.51108	35.58	Pk	-41.4	.1	-40	-45.72	-18.07	-	-27.65	0-360	Flat
3	.57854	36.46	Pk	-41.3	.1	-40	-44.74	-19.14	-	-25.6	0-360	0 degs
6	.58275	33.36	Pk	-41.3	.1	-40	-47.84	-19.21	-	-28.63	0-360	90 degs

Pk - Peak detector

## 10.4. WORST CASE BELOW 1 GHZ

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



## Below 1GHz Data

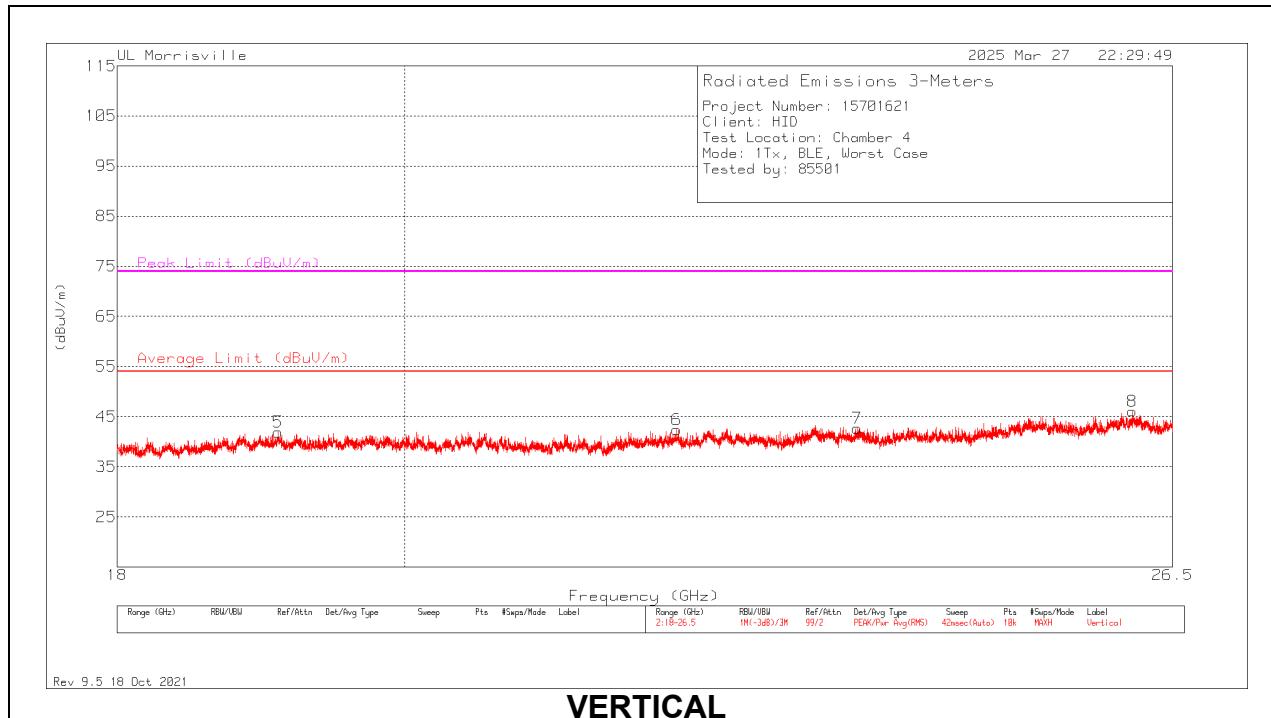
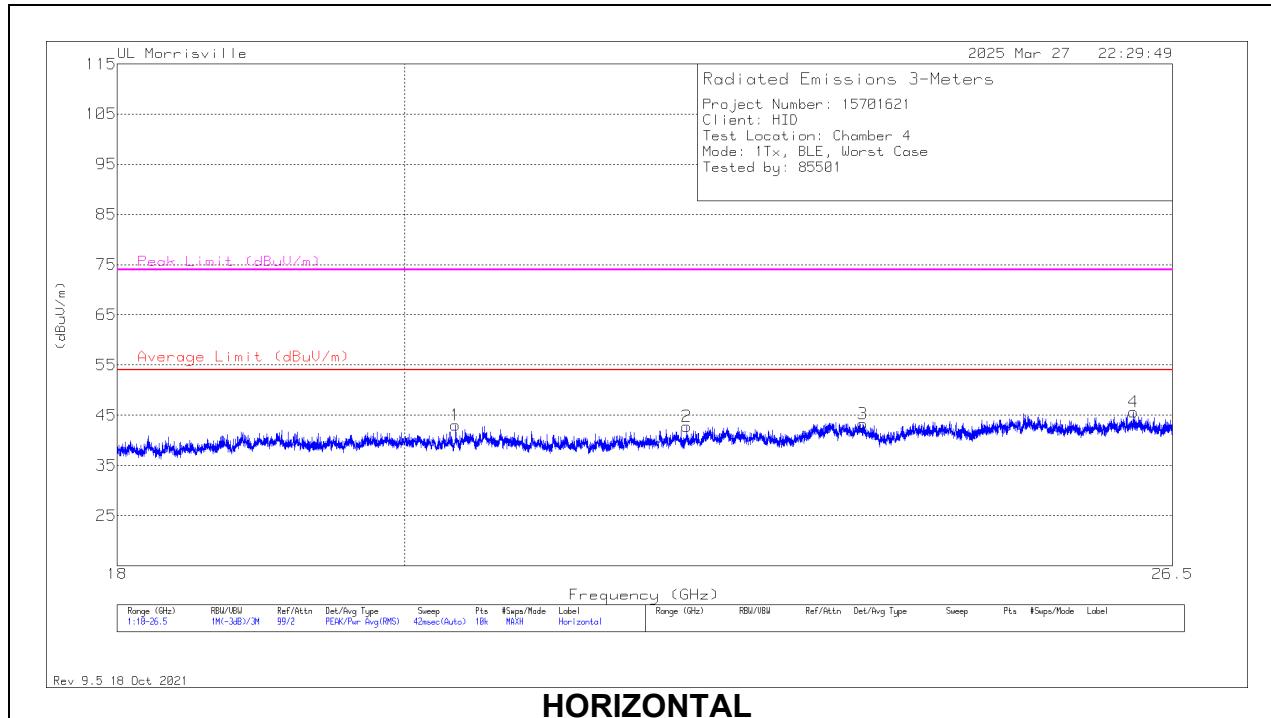
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90628 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	127.97	32.38	Pk	20	-31.2	21.18	43.52	-22.34	0-360	100	H
8	127.97	43.21	Pk	20	-31.2	32.01	43.52	-11.51	0-360	100	V
2	263.091	32.53	Pk	18.7	-30.4	20.83	46.02	-25.19	0-360	100	H
9	263.091	41.05	Pk	18.7	-30.4	29.35	46.02	-16.67	0-360	100	V
10	383.953	39.73	Pk	21.1	-29.9	30.93	46.02	-15.09	0-360	100	V
3	503.457	27.57	Pk	23.8	-29.6	21.77	46.02	-24.25	0-360	100	H
4	767.976	38.6	Pk	26.9	-28.5	37	46.02	-9.02	0-360	100	H
5	831.996	35.43	Pk	27.7	-27.9	35.23	46.02	-10.79	0-360	100	H
11	831.996	37.32	Pk	27.7	-27.9	37.12	46.02	-8.9	0-360	100	V
6	896.016	36.83	Pk	28.1	-27.2	37.73	46.02	-8.29	0-360	100	H
12	895.99394	42.85	Qp	28.1	-27.2	43.75	46.02	-2.27	277	109	V
7	960.036	33.78	Pk	28.9	-26.5	36.18	53.97	-17.79	0-360	100	H
13	960.036	41.89	Pk	28.9	-26.5	44.29	53.97	-9.68	0-360	100	V

Pk - Peak detector

Qp - Quasi-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)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* *** 20.37551	50.05	Pk	33.6	-40.6	0	43.05	54	-10.95	74	-30.95	0-360	250	H
2	* *** 22.17988	47.89	Pk	34.3	-39.4	0	42.79	54	-11.21	74	-31.21	0-360	100	H
3	* *** 23.65533	47.43	Pk	34.5	-38.6	0	43.33	54	-10.67	74	-30.67	0-360	100	H
5	* *** 19.09554	48.74	Pk	33.7	-40.5	0	41.94	54	-12.06	74	-32.06	0-360	300	V
6	* *** 22.09659	47.66	Pk	34.3	-39.6	0	42.36	54	-11.64	74	-31.64	0-360	250	V
7	* *** 23.60859	46.73	Pk	34.6	-38.7	0	42.63	54	-11.37	74	-31.37	0-360	200	V
8	26.11159	46.69	Pk	35.2	-35.8	0	46.09	54	-7.91	74	-27.91	0-360	150	V
4	26.12519	45.85	Pk	35.2	-35.4	0	45.65	54	-8.35	74	-28.35	0-360	200	H

\* - 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)

RSS-Gen 8.8

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

<sup>\*</sup> 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.

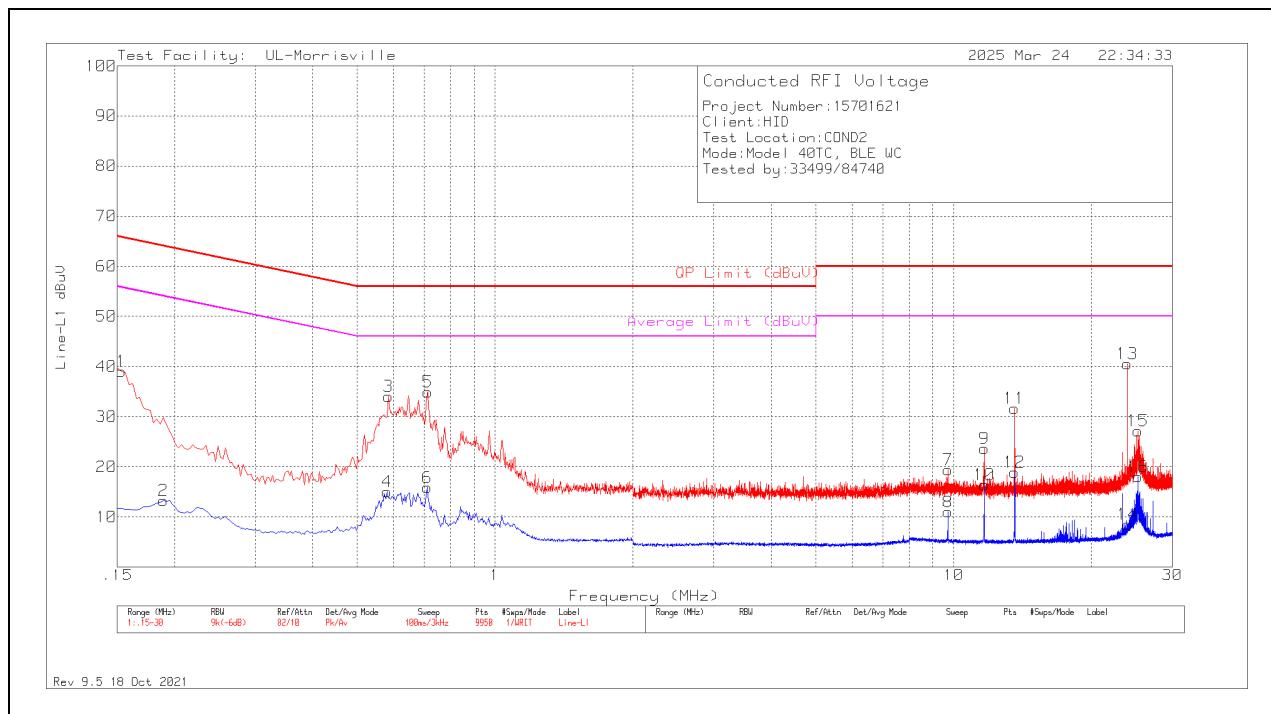
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both lines.

### RESULTS

## 11.1. AC Power Line Norm

### LINE 1 RESULTS



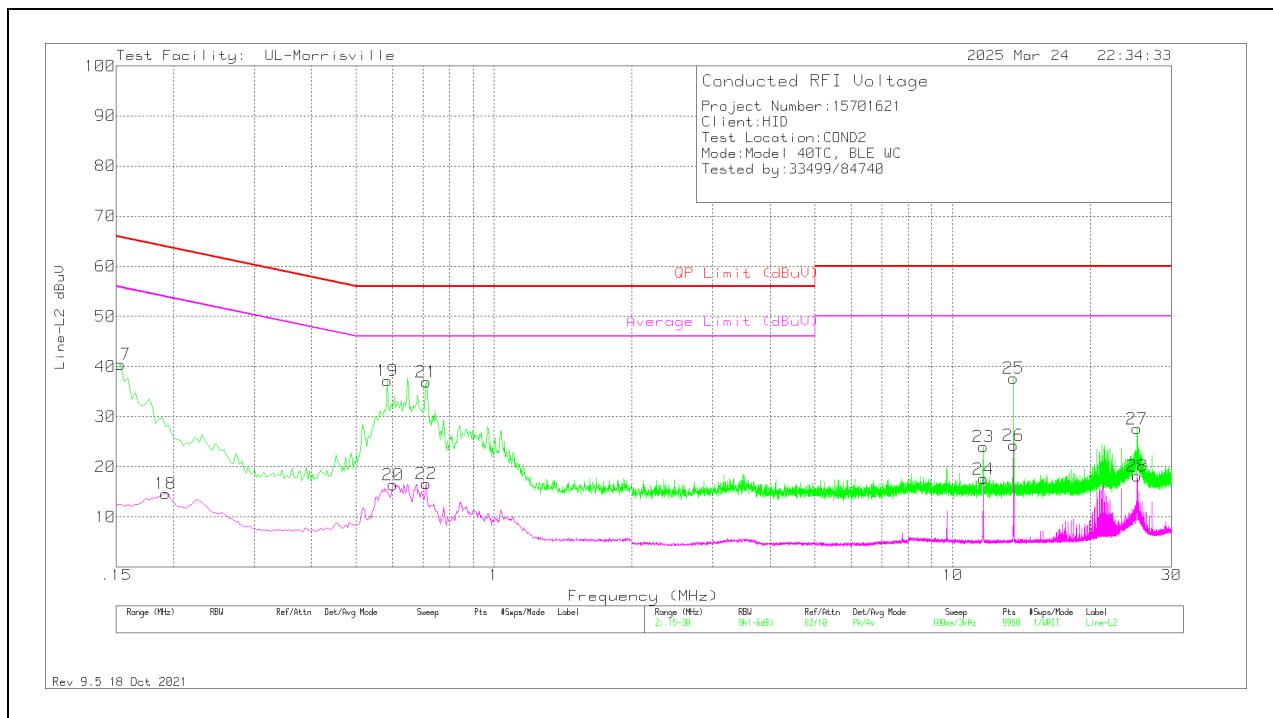
Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.153	29.05	PK	.2	9.8	39.05	65.84	-26.79	-	-
2	.189	3.22	Av	.2	9.8	13.22	-	-	54.08	-40.86
4	.582	5.18	Av	0	9.8	14.98	-	-	46	-31.02
3	.585	24.19	PK	0	9.8	33.99	56	-22.01	-	-
6	.711	6.03	Av	0	9.8	15.83	-	-	46	-30.17
5	.714	25.16	PK	0	9.8	34.96	56	-21.04	-	-
7	9.717	9.25	PK	.1	10	19.35	60	-40.65	-	-
8	9.717	.85	Av	.1	10	10.95	-	-	50	-39.05
9	11.661	13.5	PK	.1	10	23.6	60	-36.4	-	-
10	11.661	6.32	Av	.1	10	16.42	-	-	50	-33.58
11*	13.56	21.54	PK	.1	10	31.64	60	-28.36	-	-
12*	13.56	8.84	Av	.1	10	18.94	-	-	50	-31.06
13	23.919	30.08	PK	.3	10.2	40.58	60	-19.42	-	-
14	23.958	-2	Av	.3	10.2	8.5	-	-	50	-41.5
15	25.26	16.6	PK	.4	10.2	27.2	60	-32.8	-	-
16	25.263	7.39	Av	.4	10.2	17.99	-	-	50	-32.01

Pk - Peak detector

Av - Average detection

\* - Indicates 13.56MHz signal from badge readers in the lab.

## LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)	
17	.153	30.38	Pk	.2	9.8	40.38	65.84	-25.46	-	-	
18	.192	4.64	Av	.2	9.8	14.64	-	-	53.95	-39.31	
19	.585	27.38	Pk	0	9.8	37.18	56	-18.82	-	-	
20	.603	6.58	Av	0	9.8	16.38	-	-	46	-29.62	
21	.711	27.16	Pk	0	9.8	36.96	56	-19.04	-	-	
22	.711	6.8	Av	0	9.8	16.6	-	-	46	-29.4	
24	11.658	7.48	Av	.1	10	17.58	-	-	50	-32.42	
23	11.661	13.88	Pk	.1	10	23.98	60	-36.02	-	-	
25	13.563	27.59	Pk	.1	10	37.69	60	-22.31	-	-	
26	13.563	14.18	Av	.1	10	24.28	-	-	50	-25.72	
27	25.26	16.99	Pk	.4	10.2	27.59	60	-32.41	-	-	
28	25.266	7.51	Av	.4	10.2	18.11	-	-	50	-31.89	

Pk - Peak detector

Av - Average detection

\* - Indicates 13.56MHz signal from badge readers in the lab.

## 12. SETUP PHOTOS

Please refer to 15701621-EP2f for setup photos

**END OF TEST REPORT**