

# TEST REPORT

**Report Number:** R14639481-E4

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

**FCC ID :** PY7-83376C

**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 AND E

**Date Of Issue:**

2023-03-28

**Prepared by:**

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## REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2023-03-17	Initial Issue	Charles Moody
V2	2023-03-20	Updated equipment class, measurement equipment, and corrected data reuse measurement.	Charles Moody
V3	2023-03-28	Updated channel number in data reuse section	Charles Moody

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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:** QV7700FJFR, QV7700G9FR, QV7700L2FR

**SAMPLE RECEIPT DATE:** 2023-02-06 TO 2023-02-20

**DATE TESTED:** 2023-03-07 TO 2023-03-15

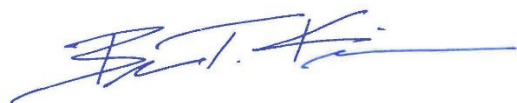
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C and E	Refer to Section 2

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. This report must not be used by the client to claim product certification, approval, or endorsement by a2La, NIST, or any agency of the U.S. government.

Approved & Released For  
UL LLC By:



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Prepared By:



Charles Moody  
Engineer  
Consumer Technology Division  
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.

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Not performed	Radiated spot checks performed to justify data reuse.
See Comment	20/26dB BW		
15.247 (a) (2) 15.407 (e)	6dB BW		
15.247 (a)(1)	Hopping Frequency Separation		
15.225 (e)	Frequency Stability		
15.247 (a)(1)(iii)	Number of Hopping Channels		
15.247 (a)(1)(iii)	Average Time of Occupancy		
See Comment	Average Power		
15.247 (d)	Conducted Spurious Emissions		
15.247 (b) (1,3) 15.407(a)(1-3)(h)(1)	Output Power		
15.247 (e) 15.407 (a) (1-3)	PSD		
15.207	AC Mains Conducted Emissions		
15.209, 15.205, 15.225 (d), 15.407(b)	Radiated Emissions	See Comment	Radiated spot checks performed on worst-case channels only to justify data reuse.

## 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013 and KDB 484596 D01 Referencing Test Data v01.

## 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	$U_{Lab}$
All emissions, radiated	6.01 dB

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

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

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

## 6. EQUIPMENT UNDER TEST

### 6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE 5G PHONE with BT, DTS/UNII a/b/g/n/ac/ax, GPS, WPT & NFC.

### 6.2. WORST-CASE CONFIGURATION AND MODE

Band edge and radiated emissions between 1GHz and 18 GHz were performed with the EUT set to transmit at the worst-case channels and data rates based on the reports of an electrically identical model (see section 7 for data reuse information).

The antenna of the EUT was investigated in three orthogonal orientations X/Y/Z. See the table below for WC Orientations.

Technology	Orientation
2.4 WLAN	X
5.0 WLAN	Y
BLE	X
BT	X
WPT	X
NFC	Z

The Worst-Case scenarios for 1-18GHz are as follows:

Technology	Test Type	Frequency (MHz)	Mode	Data Rate	Chain
2.4 WLAN (DTS)	Band Edge	2462	HE20 242T/RU61	MCS0	MIMO
	RSE	2437	11b	1Mbps	MIMO
5 WLAN (UNII)	5.2 Band Edge	5250	HE160 2x996T/RU68 Low Edge	MCS0	MIMO
	5.3 Band Edge	5250	HE160 2x996T/RU68 High Edge	MCS0	MIMO
	5.6 Band Edge	5500	HE20 52T/RU37	MCS0	MIMO
	5.8 Band Edge	5775	HE80 996T/RU67 High Edge	MCS0	MIMO
	RSE	5500	HE20 52T/RU37	MCS0	MIMO
BLE	Band Edge	2480	BLE (GFSK)	2 Mbps	0
	RSE	2480	BLE (GFSK)	500 kbps	0
BT	Band Edge	2480	GFSK/DH-5	1 Mbps	1
	RSE	2402	GFSK/DH-5	1 Mbps	0

The worst-case scenario for WPT is as follows:

The EUT emissions should be measured from 9kHz to 30MHz in its X orientation. The two devices shall be parallel, with coils off centered, and no separation distance between the two devices. Additionally, a state of 5% charged was the worst-case mode of operation and testing was therefore performed with the battery at 5%.

The worst-case scenario for NFC is as follows:

The EUT emissions should be measured from 9kHz to 1000MHz in its Z orientation. The device shall be in Type B mode at 106Kbps to serve as a worst-case orientation.

### 6.3. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
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	Shielded	<3m	XQZ-UB1
2	3.5mm	2	Aux	Shielded	<3m	Headphones – Used for port population

Refer to R14639481-EP5 for setup diagrams.



## 7. REUSE OF TEST DATA

### 7.1. INTRODUCTION

According to the manufacturer, FCC ID: PY7-12907W and FCC ID: PY7-83376C unlicensed radios (WLAN/BT/BLE/WPT/NFC) are electrically identical. The FCC ID: PY7-12907W test data shall remain representative of FCC ID: PY7-83376C so, FCC ID: PY7-83376C leverages test data from FCC ID: PY7-12907W.

The applicant takes full responsibility that the test data as referenced in this section represents compliance for this FCC ID.

### 7.2. DEVICES DIFFERENCES

Difference between PY7-12907W and PY7-83376C:

Sony Corporation hereby declares that the hardware of WLAN 2.4GHz, WLAN 5GHz, Bluetooth, GPS, WPT, and NFC is identical among PY7-12907W and PY7-83376C. The change is related to the cellular radio. Therefore, the following report/data of PY7-12907W may represent for PY7-83376C.

### 7.3. REFERENCE DETAIL

Equipment Class	Reference FCC ID	Report Title/Section
DSS (BT)	PY7-12907W	R14634918-E2 FCC BT REPORT - FINAL / All sections
DTS (BLE)	PY7-12907W	R14634918-E3 FCC BLE REPORT - FINAL / All sections
DTS (WLAN)	PY7-12907W	R14634918-E4a FCC DTS non-ax WLAN REPORT - FINAL / All sections R14634918-E4b FCC DTS ax WLAN REPORT - FINAL / All sections
NII (WLAN)	PY7-12907W	R14634918-E5a FCC UNII 5.2-5.3GHz non-11ax WLAN REPORT- FINAL / All sections R14634918-E5b FCC UNII 5.2-5.3GHz 11ax WLAN REPORT- FINAL / All sections R14634918-E6a FCC UNII 5.6GHz non-11ax WLAN REPORT- FINAL / All sections R14634918-E6b FCC UNII 5.6GHz 11ax WLAN REPORT- FINAL / All sections R14634918-E7a FCC UNII 5.8GHz non-11ax WLAN REPORT- FINAL / All sections R14634918-E7b FCC UNII 5.8GHz 11ax WLAN REPORT- FINAL / All sections
DCD (WPT)	PY7-12907W	R14634918-E8 FCC WPT REPORT - FINAL / All sections
DXX (NFC)	PY7-12907W	R14634918-E10 FCC NFC REPORT - FINAL / All sections

### 7.4. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device PY7-83376C for radiated spurious. The data from the application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary.

PY7-83376C SPOT CHECK RESULTS									
Technology	Test Item	Channel	Measured Frequency (MHz)	PY7-12907W		PY7-83376C		Delta (dB) <+3dB	
				PK Reading (dBuV/m)	AV Reading (dBuV/m)	PK Reading (dBuV/m)	AV Reading (dBuV/m)	PK	AV
BT (GFSK)	RBE	79	2483	49.44	38.02	47.35	30.37	-2.09	-7.65
	RSE	0	9137	49.52	35.28	50.53	35.69	1.01	0.41
BLE (GFSK)	RBE	39	2483	62.06	47.40	62.29	38.96	0.23	-8.44
	RSE	39	9128	48.82	37.59	50.03	38.09	1.21	0.50
2.4GHz WLAN (HE20)	RBE	11	2483	50.15	37.81	49.16	36.49	-0.99	-1.32
2.4GHz WLAN (11b)	RSE	6	9388	47.86	35.22	47.54	35.70	-0.32	0.48
5GHz WLAN (HE160)	RBE	50	5147	58.45	40.09	53.56	35.75	-4.89	-4.34
	RBE	50	5350	55.34	41.26	57.34	38.79	2.00	-2.47
5GHz WLAN (HE20)	RBE	100	5350	52.02	39.85	48.39	37.33	-3.63	-2.52
	RSE	100	5404	51.01	38.63	50.06	37.24	-0.95	-1.39
5GHz WLAN (HE80)	RBE	155	5937	-41.99 (EIRP)	-	-46.3 (EIRP)	-	-4.31	-
			Note: No AV limit for above scan, therefore no AV measurements just PK.						
WPT	RSE	111.5 kHz	0.5532	13.48	-	3.34	-	-10.14	-
NFC	RSE	13.56	0.7725	4.17	-	1.30	-	-2.87	-
			40.67	30.46	-	31.73	-	1.27	-

## 8. TEST AND MEASUREMENT EQUIPMENT

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

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	<b>0.009-30MHz</b>				
135144	Active Loop Antenna	ETS-Lindgren	6502	2023-01-17	2024-01-17
	<b>30-1000 MHz</b>				
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2022-09-07	2023-09-07
	<b>1-18 GHz</b>				
206211	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2022-03-21	2023-03-21
	<b>Gain-Loss Chains</b>				
91975	Gain-loss string: 0.009-30MHz	Various	Various	2022-05-10	2023-05-10
91978	Gain-loss string: 25-1000MHz	Various	Various	2022-05-10	2023-05-10
91977	Gain-loss string: 1-18GHz	Various	Various	2022-05-10	2023-05-10
	<b>Receiver &amp; Software</b>				
*197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2022-03-08	2023-03-08
SA0026	Spectrum Analyzer	Keysight	N9030A	2022-08-02	2023-08-23
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	<b>Additional Equipment used</b>				
210642	Environmental Meter	Fisher Scientific	15-077-963 s/n 210701942	2021-08-16	2023-08-16
213025	Wideband Radio Communications Tester	Rohde and Schwarz	CMW500	2022-09-13	2023-09-13
169106 (BRF008)	1710-1785MHz notch filter, 2W, F <sub>high</sub> = 9GHz	Micro-Tronics	BRM50713-01	2023-02-15	2024-02-29

\*NOTE: Testing using this spectrum analyzer was performed on 2023-03-08. This testing was performed while the equipment was calibrated. For testing in Chamber 2 after this date, SA0026 was used.

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

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	<b>30-1000 MHz</b>				
90629 (AT0075)	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2023-01-06	2024-01-06
	<b>Gain-Loss Chains</b>				
207639	Gain-loss string: 25-1000MHz	Various	Various	2022-05-20	2023-05-20
	<b>Receiver &amp; Software</b>				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2023-02-02	2024-02-02
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	<b>Additional Equipment used</b>				
200540	Environmental Meter	Fisher Scientific	15-077-963 (s/n 181474409)	2022-08-05	2023-08-05

## 9. ON TIME AND DUTY CYCLE

### LIMITS

None; for reporting purposes only.

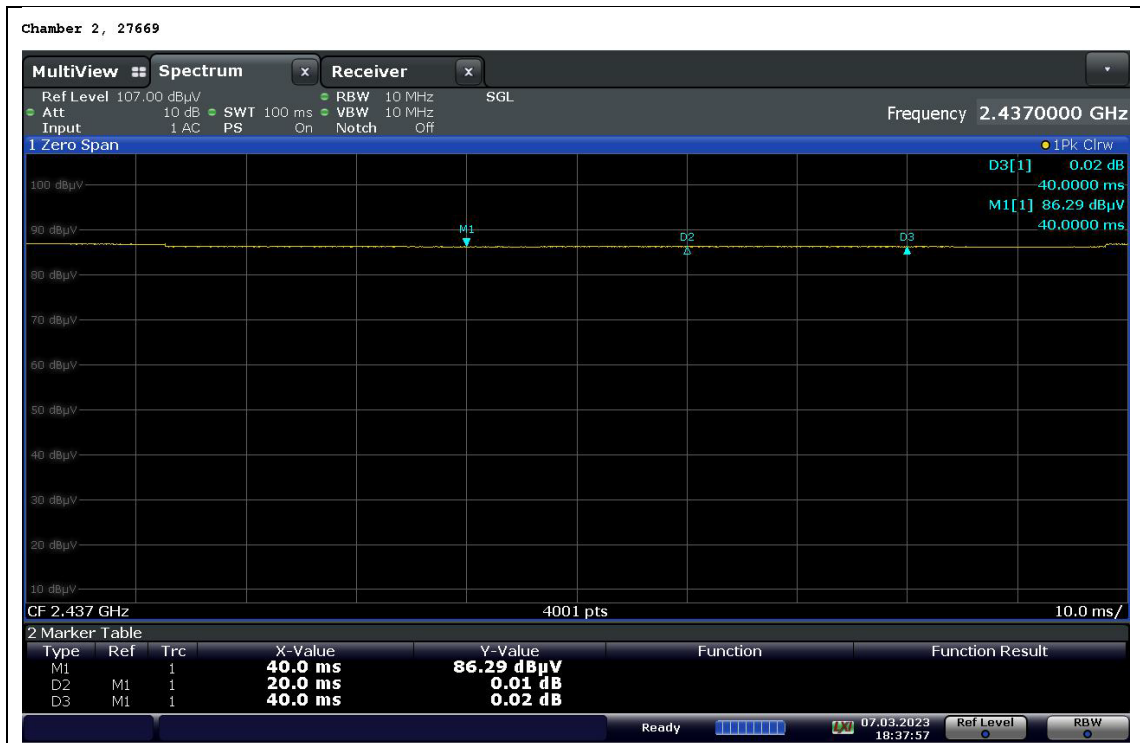
### PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.  
 KDB 789033 Zero-Span Spectrum Analyzer Method

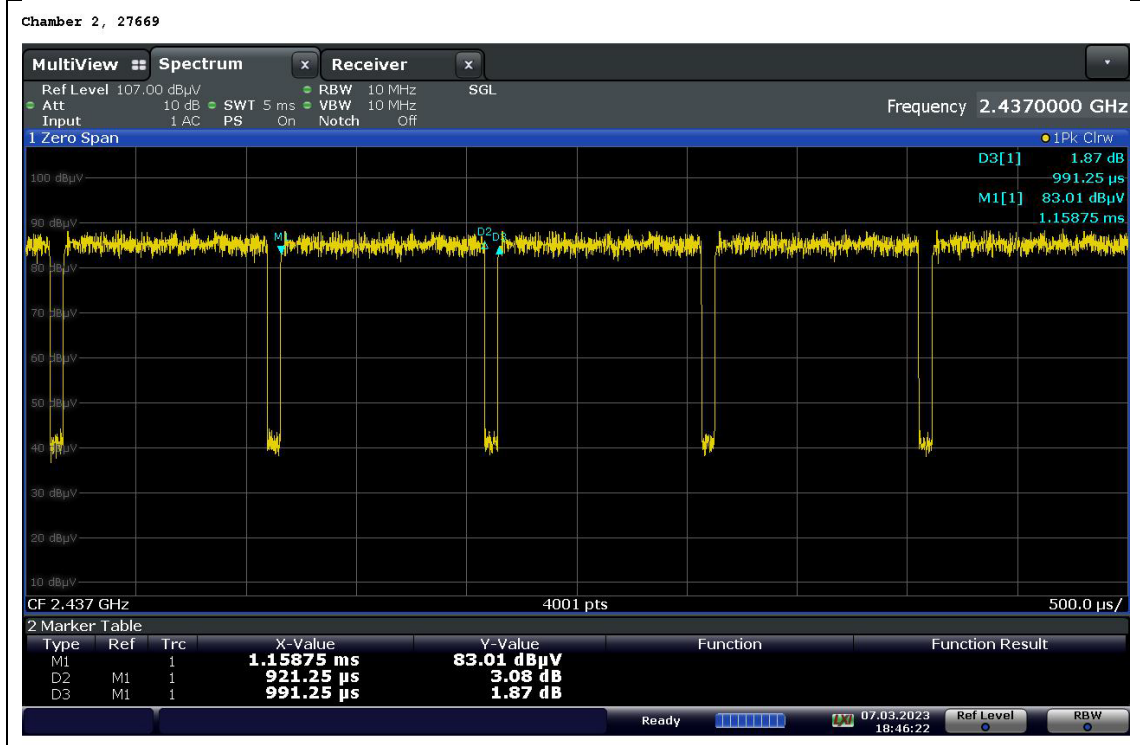
### ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
<b>2.4 WLAN DTS</b>						
802.11b 1Mbps	100.0000	100.0000	1.000	100.00%	0.00	0.010
802.11ax HE20, 242T/RU61	0.9213	0.9913	0.929	92.94%	0.64	1.085
<b>5 WLAN UNII</b>						
802.11ax HE20, 52T/RU37	0.2696	0.2980	0.905	90.48%	0.87	3.709
802.11ax HE80, 996T/RU67	0.3820	0.4210	0.907	90.74%	0.84	2.618
802.11ax HE160, 2x996T/RU68	0.3755	0.4030	0.932	93.18%	0.61	2.663
<b>BLE</b>						
GFSK 500Kbps	4.5475	4.9985	0.910	90.98%	0.82	0.220
GFSK 2Mbps	1.0760	1.8770	0.573	57.33%	4.83	0.929
<b>BT</b>						
GFSK (DH-5) 1Mbps	2.8818	3.7513	0.768	76.82%	2.29	0.347

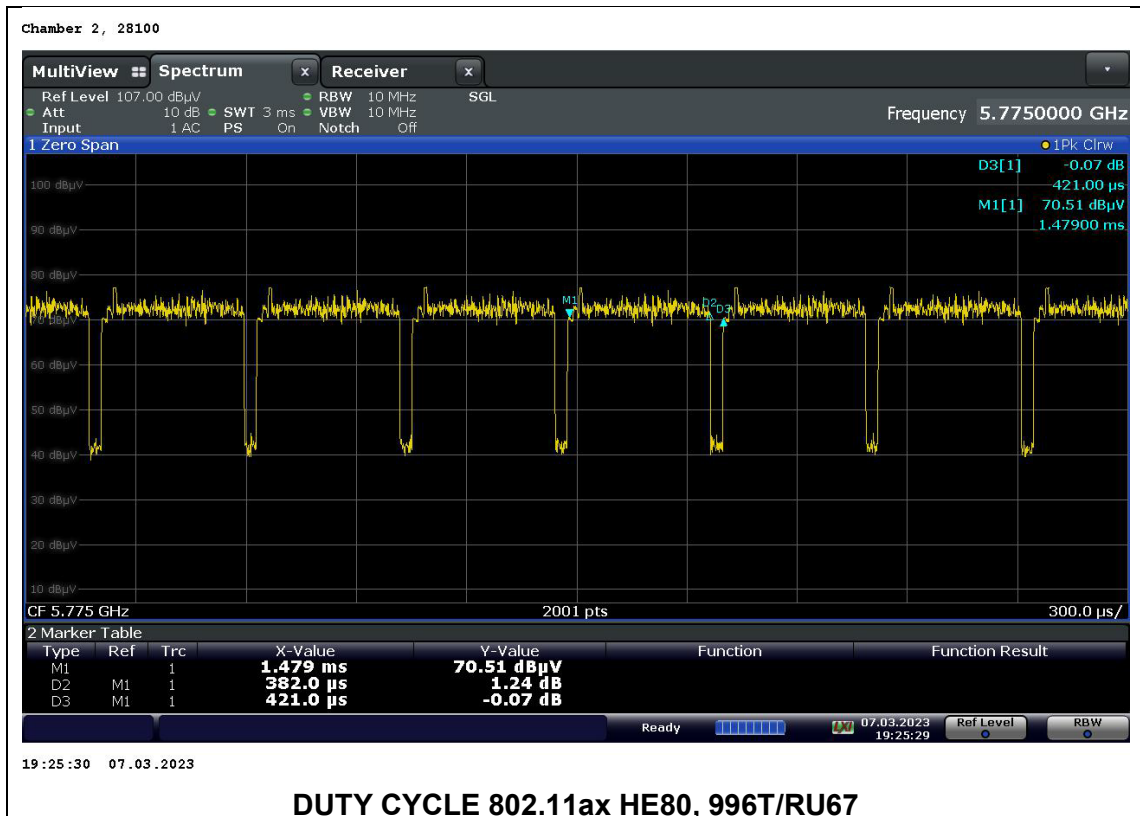
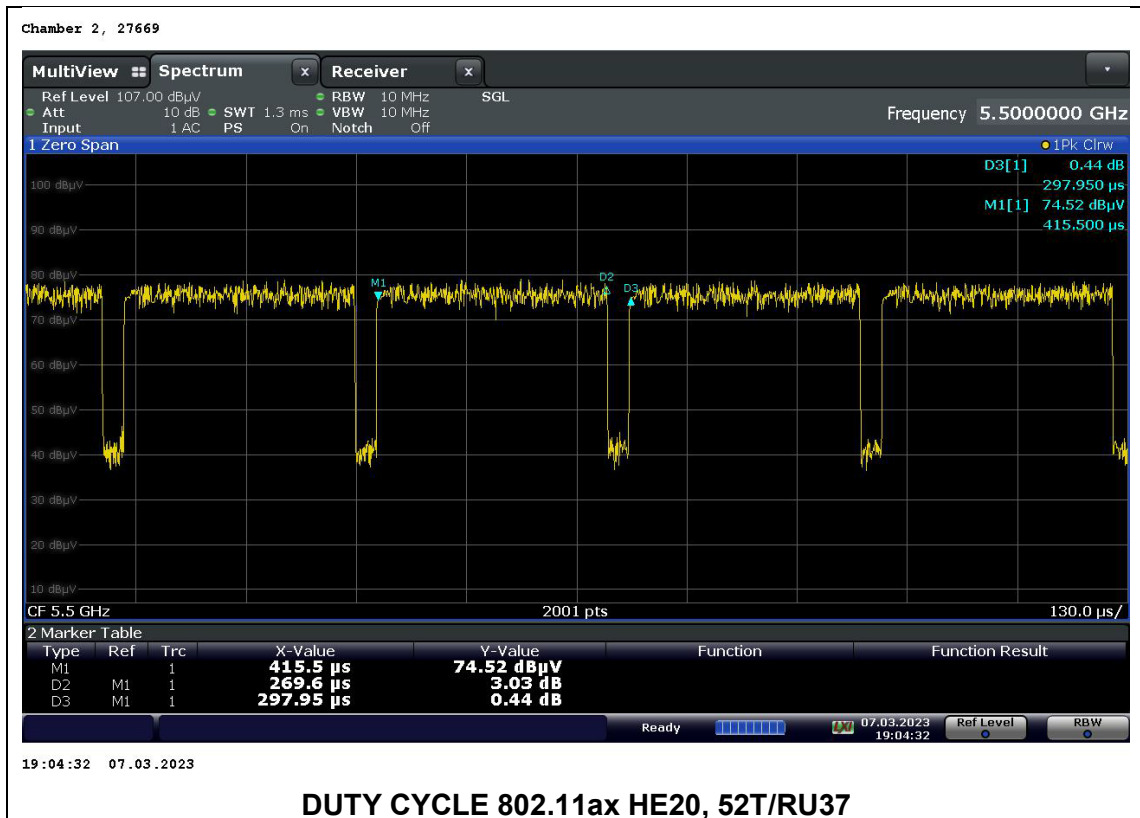
DUTY CYCLE PLOTS

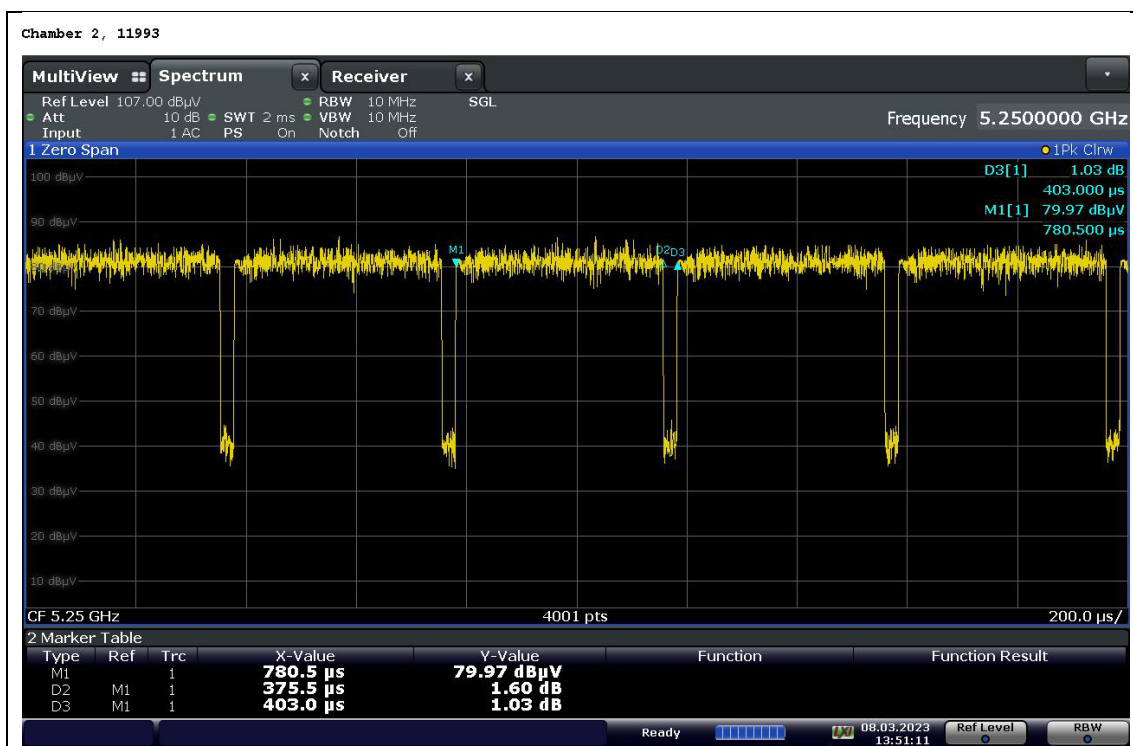


DUTY CYCLE 802.11b, 1Mbps



DUTY CYCLE 802.11ax HE20, 242T/RU61





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**DUTY CYCLE 802.11ax HE160, 2x996T/RU68**



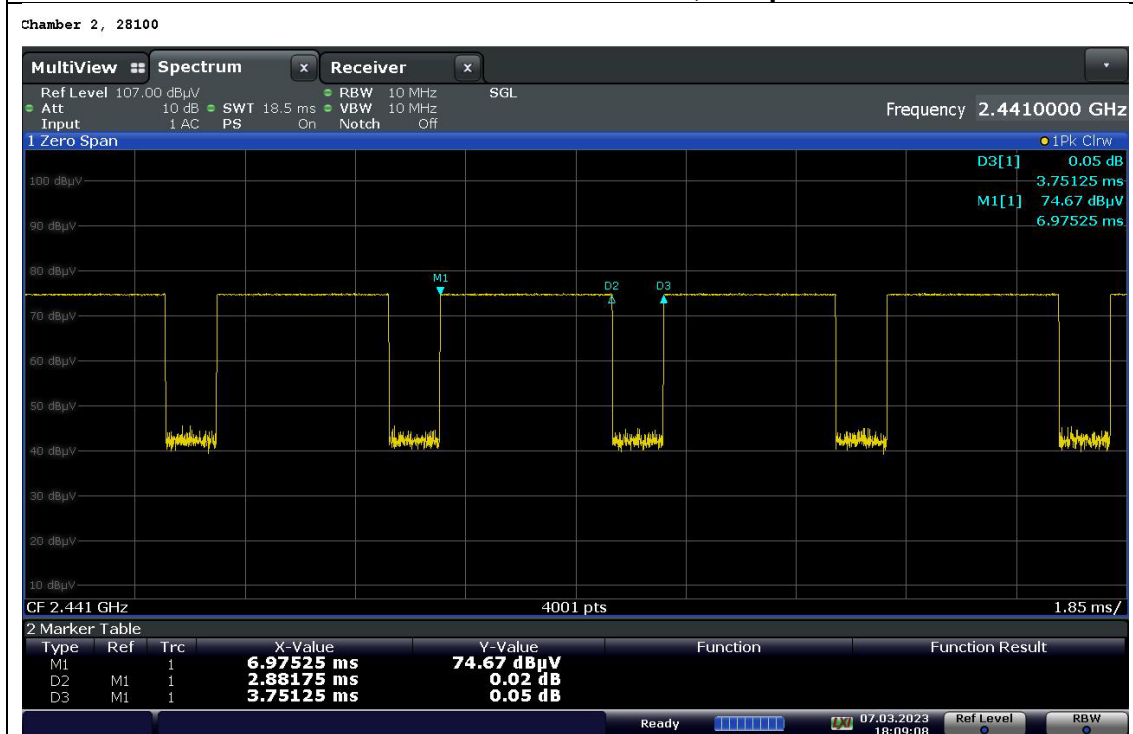
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**DUTY CYCLE BLE GFSK, 500Kbps**





**DUTY CYCLE BLE GFSK, 2Mbps**



**DUTY CYCLE BT GFSK (DH-5) 1Mbps**

## 10. SPOT CHECK DATA

### 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 1.5 m above the ground plane for measurement above 1GHz and at 80 cm above the ground plane for measurements below 1 GHz. 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 above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with a minimum of 1/T video bandwidth with peak detector for BT average measurements, linear voltage averaging for BLE measurements, and linear voltage average detection for WLAN measurements.

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

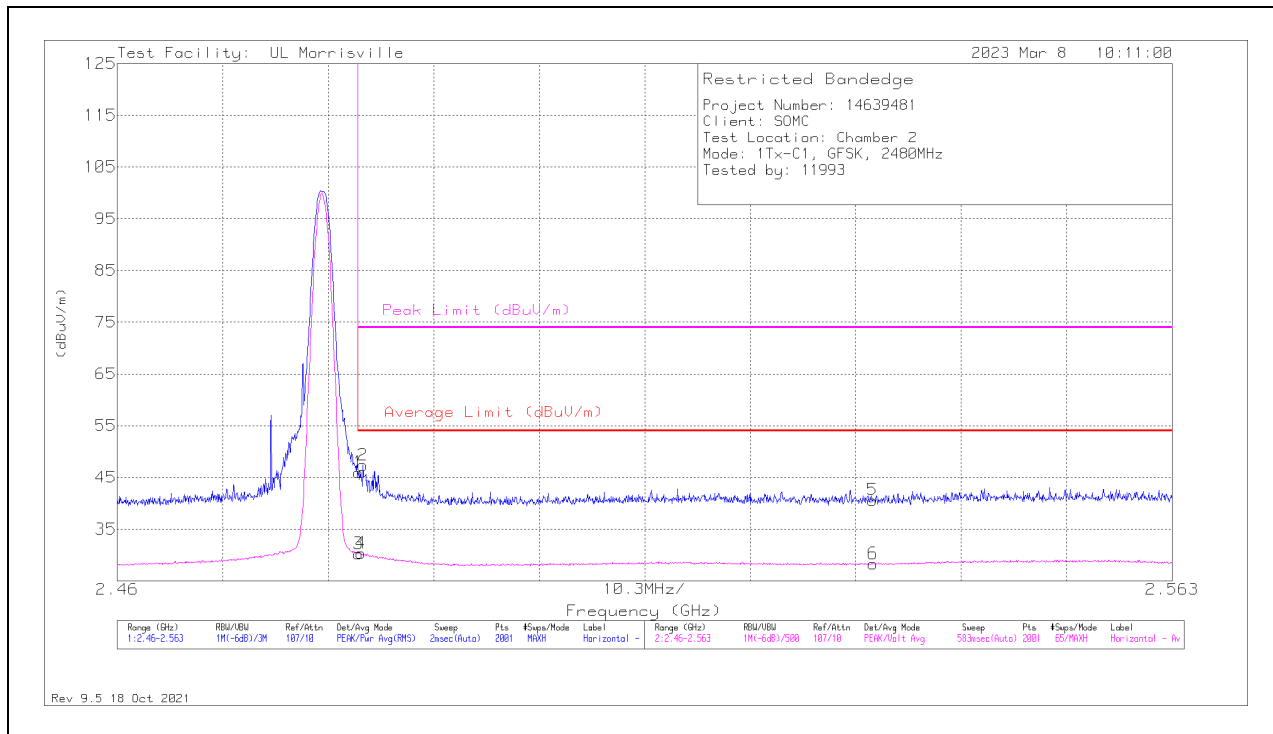
The spectrum from 1 GHz to 18 GHz is investigated with the transmitter set to worst case mode.

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.

# 10.1. BLUETOOTH

## BANDEDGE (HIGH CHANNEL - CHAIN 1, GFSK)

### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	37.77	Pk	32.5	-24.3	45.97	-	-	74	-28.03	92	117	H
2	* ** 2.484	39.25	Pk	32.5	-24.4	47.35	-	-	74	-26.65	92	117	H
5	** 2.53375	32.93	Pk	32.6	-24.9	40.63	-	-	74	-33.37	92	117	H
3	* ** 2.48354	22.07	V1TV	32.5	-24.3	30.27	54	-23.73	-	-	92	117	H
4	* ** 2.48379	22.27	V1TV	32.5	-24.4	30.37	54	-23.63	-	-	92	117	H
6	** 2.5338	20.62	V1TV	32.6	-24.9	28.32	54	-25.68	-	-	92	117	H

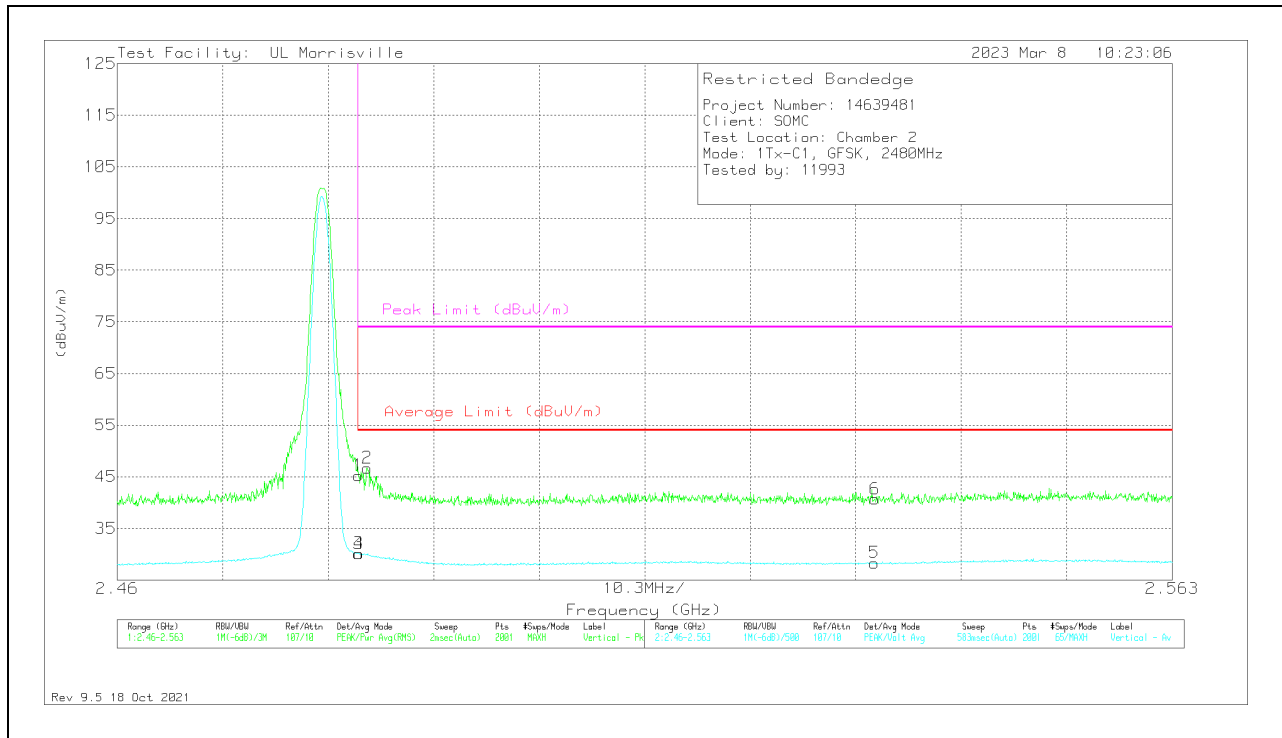
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

### VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	37.06	Pk	32.5	-24.3	45.26	-	-	74	-28.74	42	101	V
2	*** 2.48441	38.61	Pk	32.5	-24.4	46.71	-	-	74	-27.29	42	101	V
6	** 2.53395	32.97	Pk	32.6	-24.9	40.67	-	-	74	-33.33	42	101	V
3	*** 2.48354	21.93	V1TV	32.5	-24.3	30.13	54	-23.87	-	-	42	101	V
4	*** 2.48359	21.93	V1TV	32.5	-24.3	30.13	54	-23.87	-	-	42	101	V
5	** 2.5339	20.63	V1TV	32.6	-24.9	28.33	54	-25.67	-	-	42	101	V

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

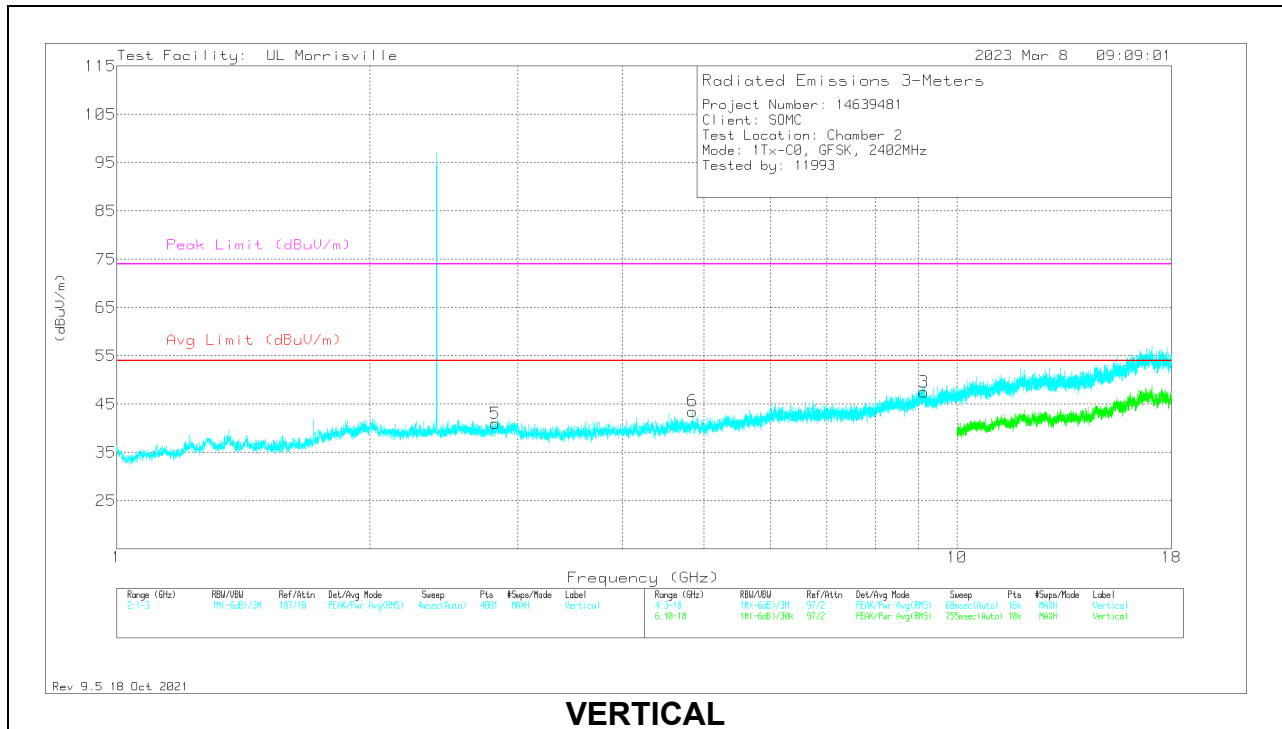
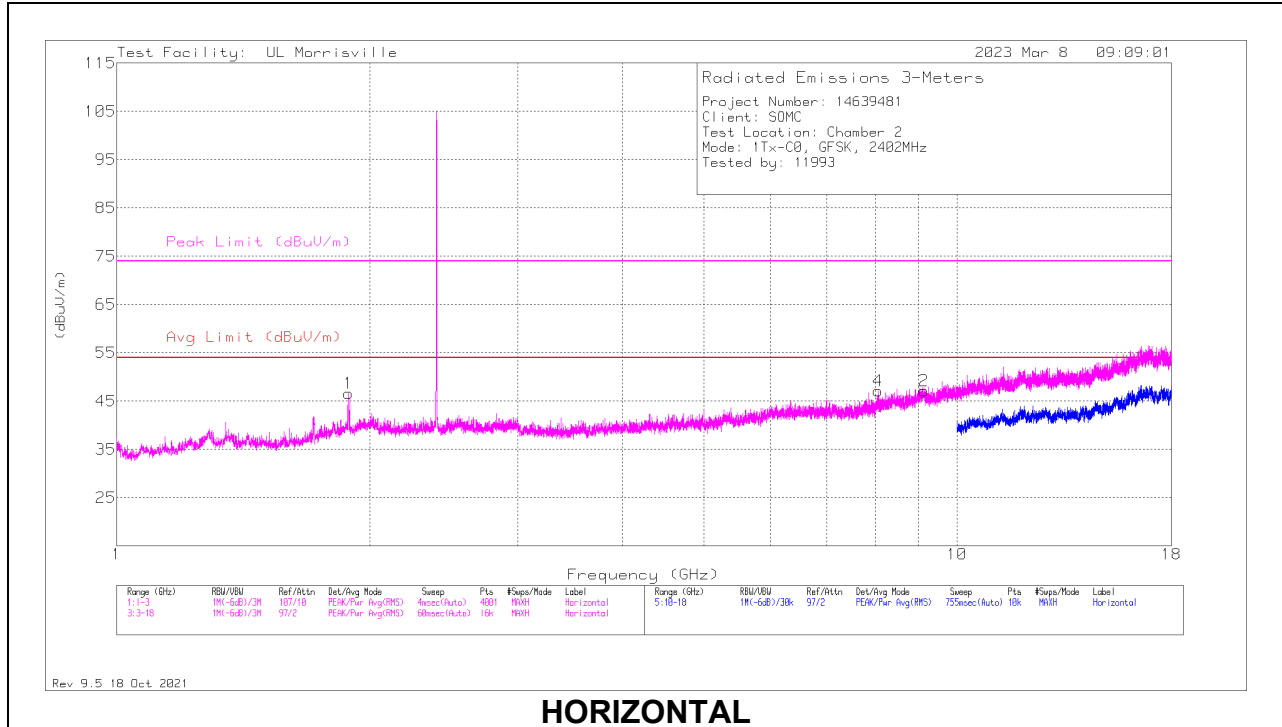
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

V1TV - U-NII: VB=1/Ton, Linear Voltage Average where: Ton is packet duration

# HARMONICS AND SPURIOUS EMISSIONS

## LOW CHANNEL – CHAIN 0, GFSK



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.8885	37.82	Pk	31.4	-22.6	46.62	54	-7.38	74	-27.38	0-360	200	H
5	*** 2.8215	34.17	Pk	32.6	-25.8	40.97	54	-13.03	74	-33.03	0-360	101	V
2	*** 9.13726	38.25	PK2	36.3	-25	49.55	-	-	74	-24.45	333	217	H
	*** 9.13726	24.14	V1TV	36.3	-25	35.44	54	-18.56	-	-	333	217	H
4	*** 8.06063	38.18	Pk	35.9	-26.9	47.18	54	-6.82	74	-26.82	0-360	199	H
3	*** 9.13884	39.13	PK2	36.3	-24.9	50.53	-	-	74	-23.47	324	206	V
	*** 9.13885	24.29	V1TV	36.3	-24.9	35.69	54	-18.31	-	-	324	206	V
6	*** 4.84781	39.76	Pk	34.1	-30.3	43.56	54	-10.44	74	-30.44	0-360	199	V

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

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

Pk - Peak detector

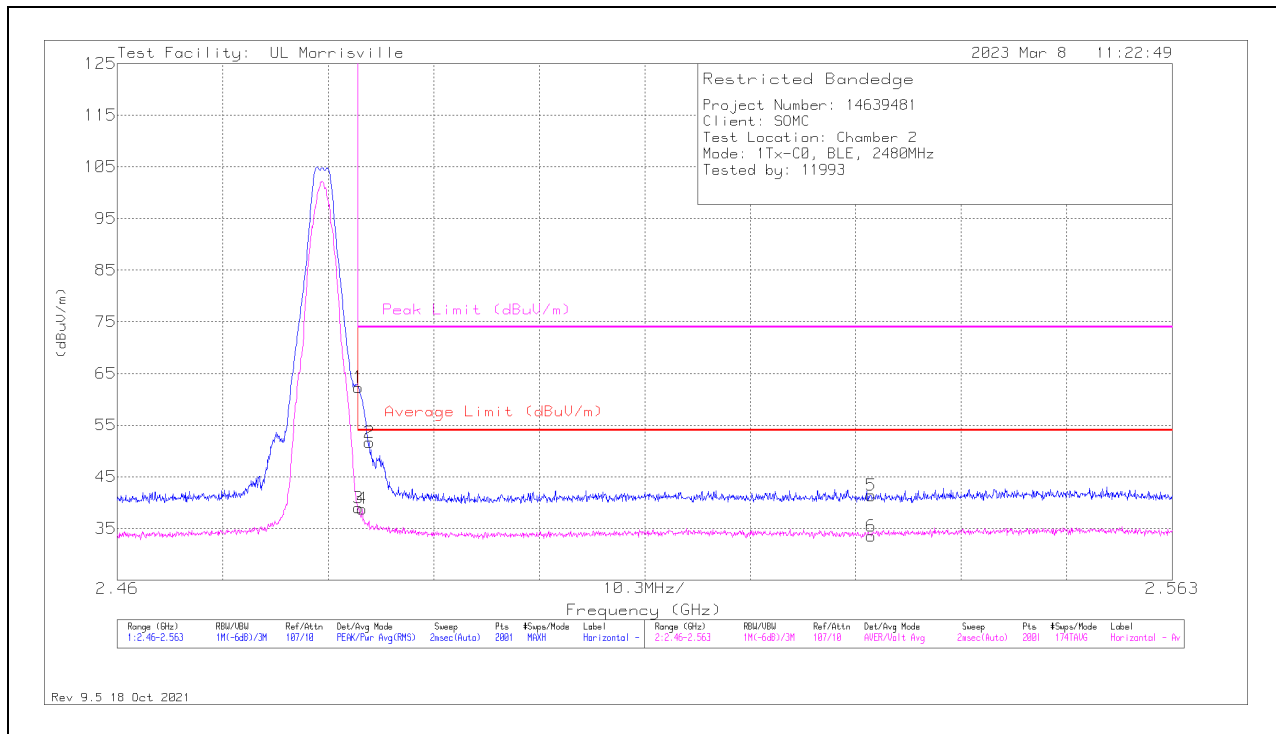
PK2 - KDB558074 Method: Maximum Peak

V1TV - VB=1/Ton, Linear Voltage Average where: Ton is packet duration. VBW is set to 0.347 kHz.

## 10.2. BLE

### BANDEDGE (HIGH CHANNEL – CHAIN 0, 2Mbps)

#### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.48354	54.09	Pk	32.5	-24.3	0	62.29	-	-	74	-11.71	146	114	H
2	* ** 2.48462	43.53	Pk	32.5	-24.4	0	51.63	-	-	74	-22.37	146	114	H
5	** 2.53359	33.67	Pk	32.6	-24.9	0	41.37	-	-	74	-32.63	146	114	H
3	* ** 2.48354	25.93	ADV	32.5	-24.3	4.83	38.96	54	-15.04	-	-	146	114	H
4	* ** 2.4839	25.87	ADV	32.5	-24.4	4.83	38.8	54	-15.2	-	-	146	114	H
6	** 2.53359	20.97	ADV	32.6	-24.9	4.83	33.5	54	-20.5	-	-	146	114	H

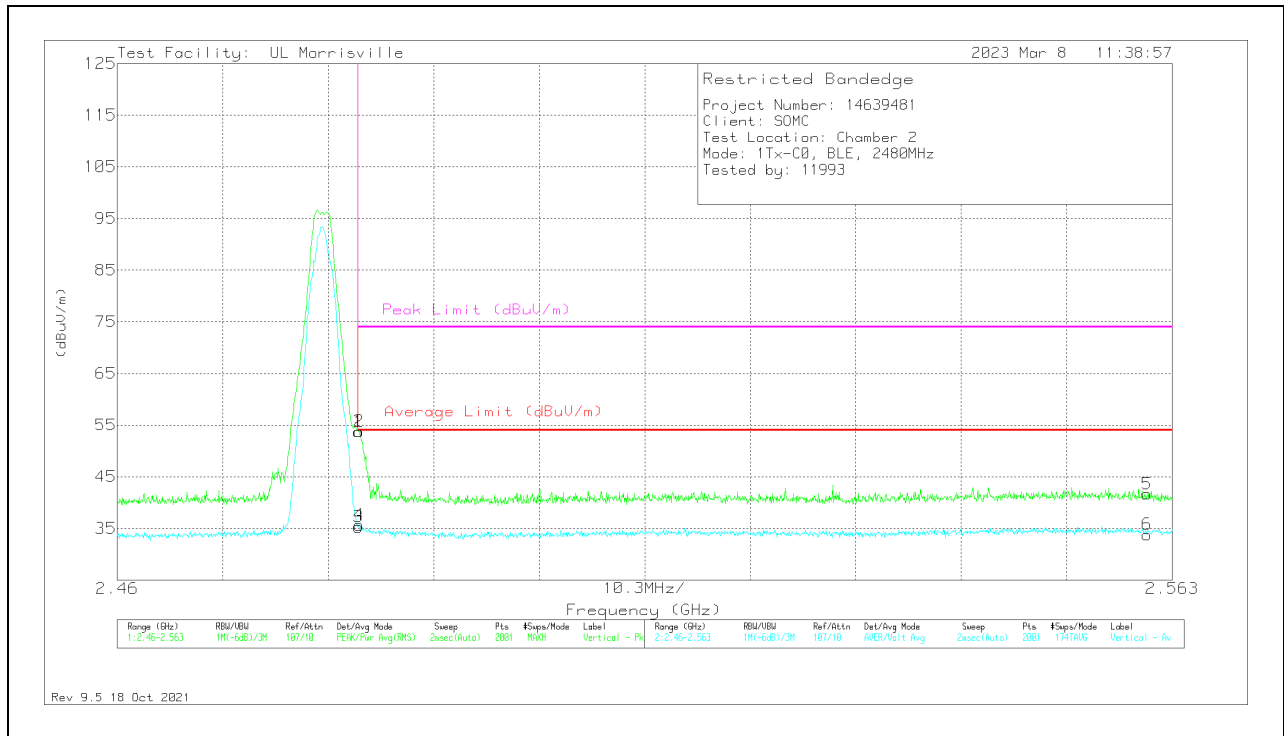
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

ADV - Linear Voltage Average

### VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	45.51	Pk	32.5	-24.3	0	53.71	-	-	74	-20.29	70	109	V
2	* ** 2.48359	45.56	Pk	32.5	-24.3	0	53.76	-	-	74	-20.24	70	109	V
5	** 2.56053	33.85	Pk	32.6	-24.8	0	41.65	-	-	74	-32.35	70	109	V
3	* ** 2.48354	22.27	ADV	32.5	-24.3	4.83	35.3	54	-18.7	-	-	70	109	V
4	* ** 2.48359	22.62	ADV	32.5	-24.3	4.83	35.65	54	-18.35	-	-	70	109	V
6	** 2.56053	21.18	ADV	32.6	-24.8	4.83	33.81	54	-20.19	-	-	70	109	V

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

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

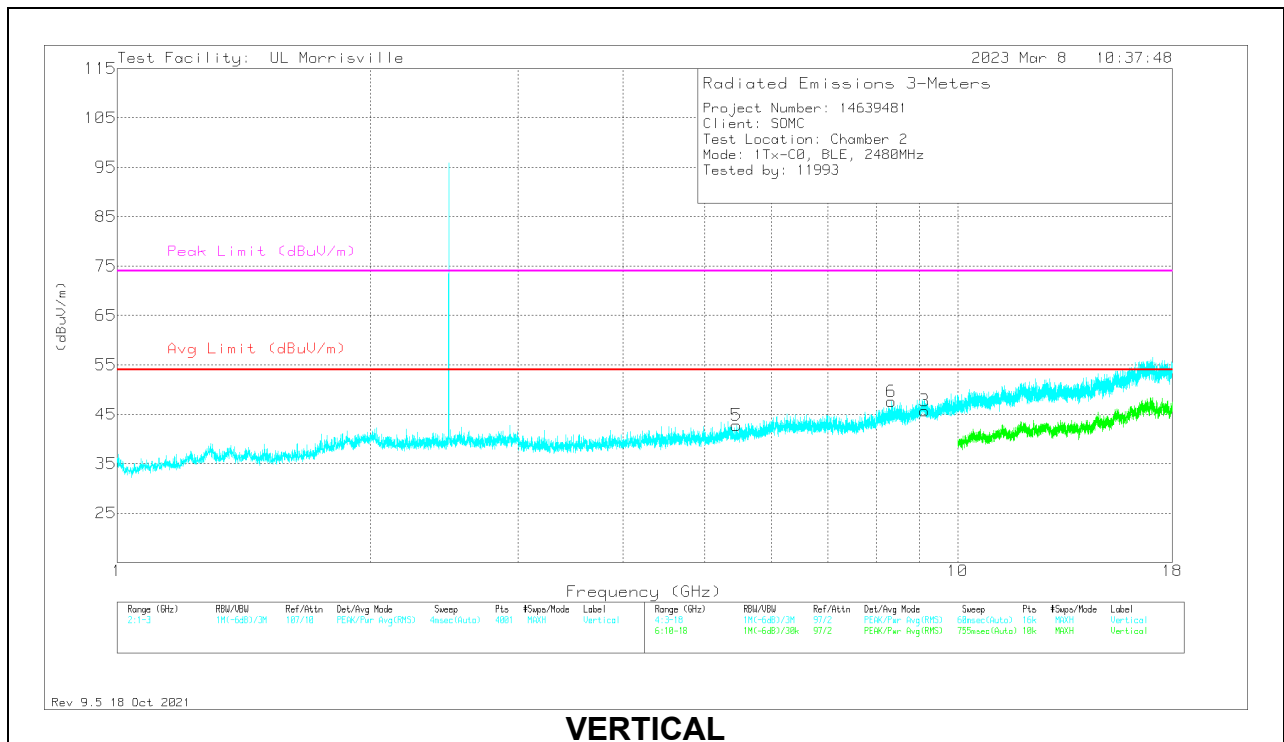
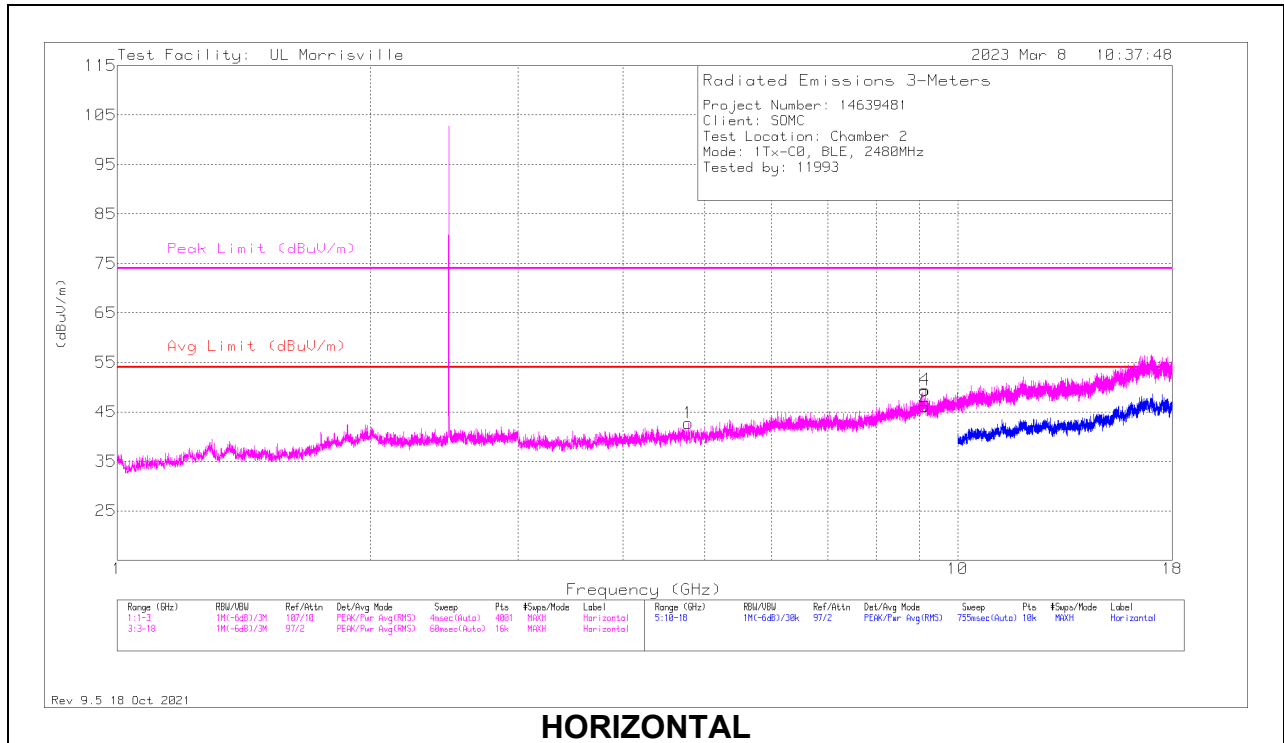
Pk - Peak detector

ADV - Linear Voltage Average



# HARMONICS AND SPURIOUS EMISSIONS

## HIGH CHANNEL – CHAIN 0, 500Kbps



**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	* ** 4.78219	39.51	Pk	34.1	-30.9	0	42.71	54	-11.29	74	-31.29	0-360	200	H
2	* ** 9.14242	38.33	PK2	36.3	-25.2	0	49.43	-	-	74	-24.57	338	244	H
	* ** 9.14361	25.91	ADV	36.3	-25.2	.82	37.83	54	-16.17	-	-	338	244	H
4	* ** 9.12882	38.83	PK2	36.3	-25.1	0	50.03	-	-	74	-23.97	187	265	H
	* ** 9.12764	26.07	ADV	36.3	-25.1	.82	38.09	54	-15.91	-	-	187	265	H
3	* ** 9.12915	38.23	PK2	36.3	-25.1	0	49.43	-	-	74	-24.57	254	328	V
	* ** 9.12708	26.1	ADV	36.3	-25.2	.82	38.02	54	-15.98	-	-	254	328	V
5	* ** 5.45344	38.67	Pk	34.4	-30.3	0	42.77	54	-11.23	74	-31.23	0-360	200	V
6	* ** 8.33906	38.29	Pk	35.8	-26.5	0	47.59	54	-6.41	74	-26.41	0-360	101	V

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

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

Pk - Peak detector

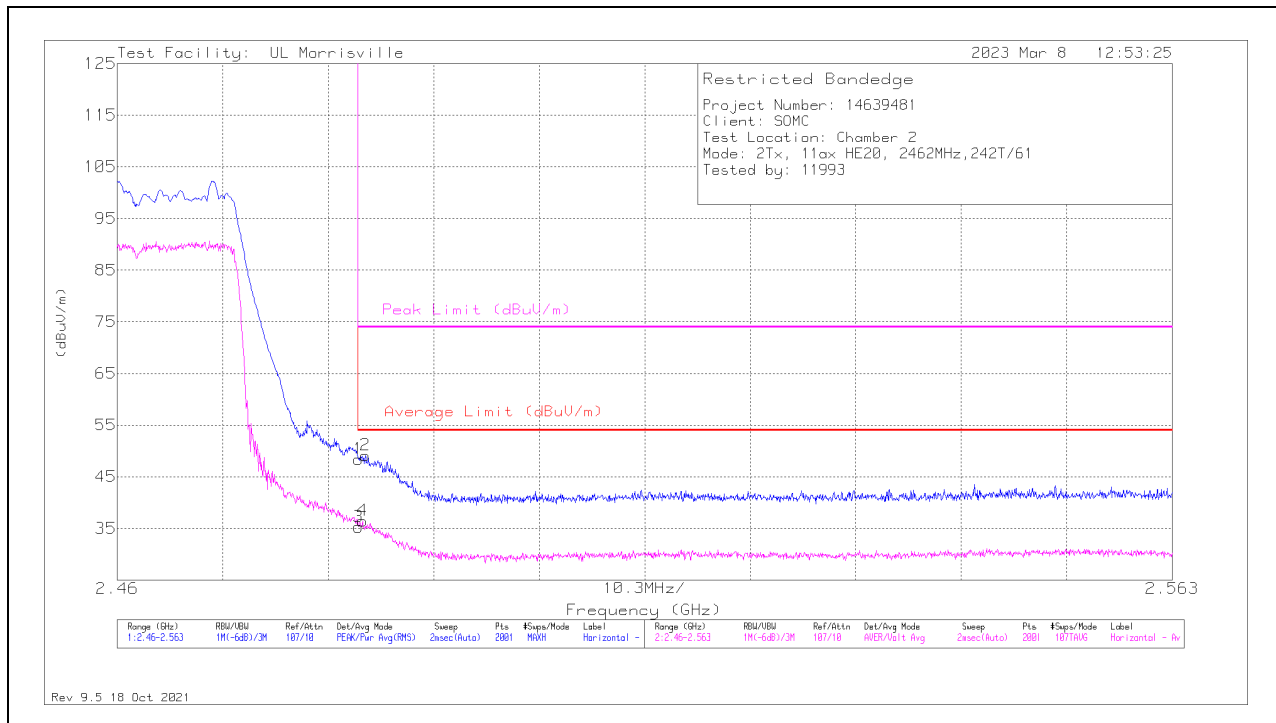
PK2 - Maximum Peak

ADV - Linear Voltage Average

### 10.3. 2.4GHz WLAN

#### BANDEDGE (HIGH CHANNEL – 2TX, 802.11ax HE20 242T/RU61)

#### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	40.22	Pk	32.5	-24.3	0	48.42	-	-	74	-25.58	170	120	H
2	*** 2.48421	41.06	Pk	32.5	-24.4	0	49.16	-	-	74	-24.84	170	120	H
3	*** 2.48354	26.46	ADV	32.5	-24.3	.64	35.3	54	-18.7	-	-	170	119	H
4	*** 2.48395	27.75	ADV	32.5	-24.4	.64	36.49	54	-17.51	-	-	170	119	H

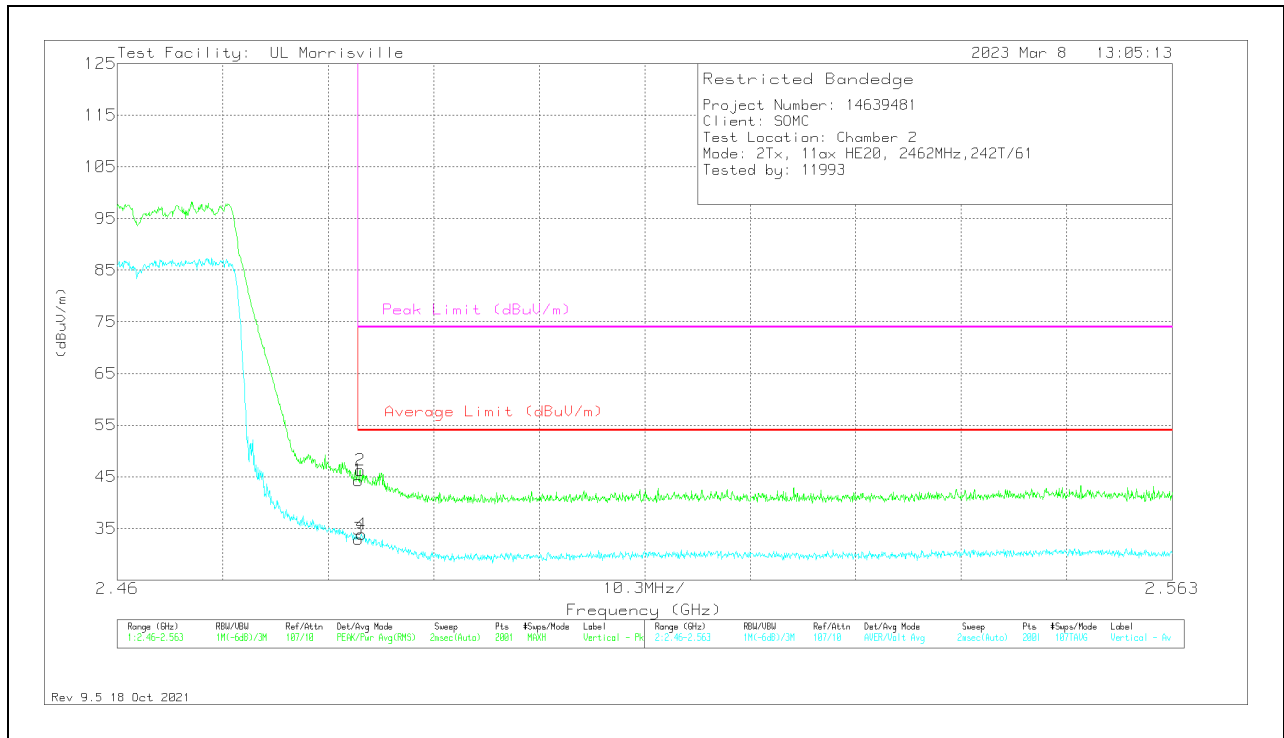
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

ADV - Linear Voltage Average

### VERTICAL RESULT

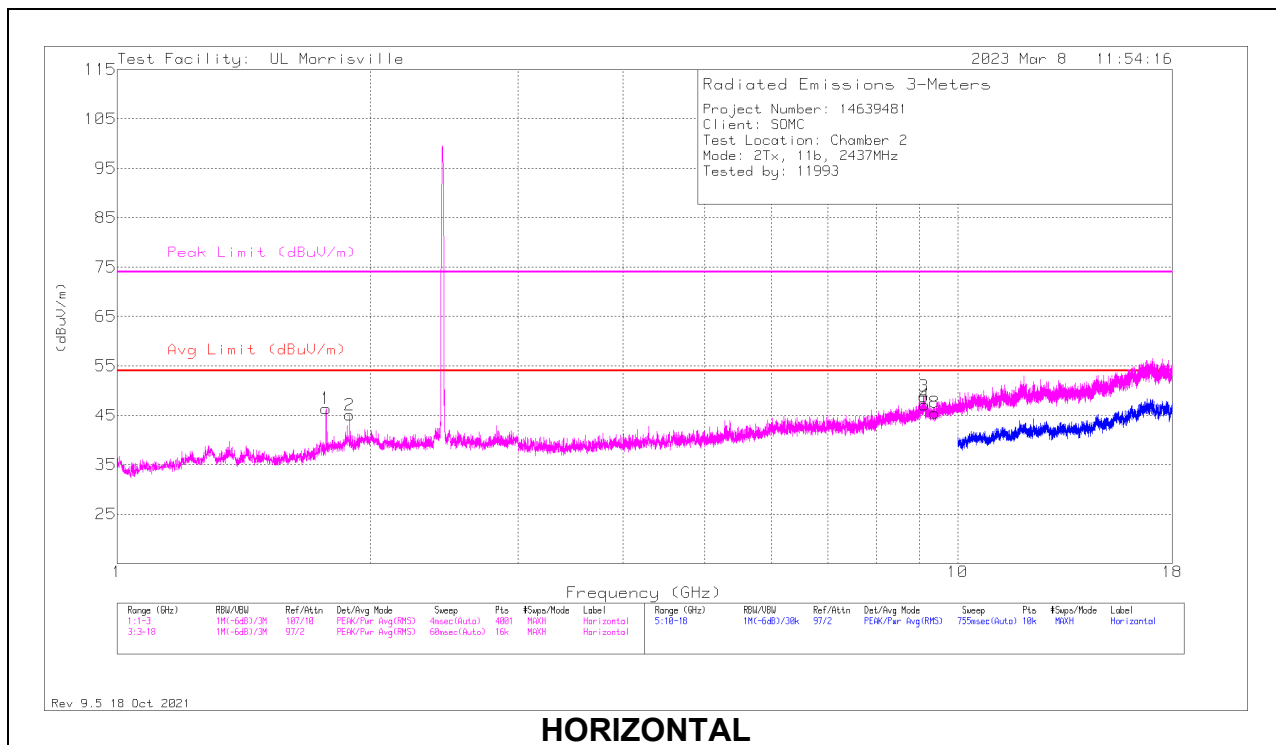


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48354	36.05	Pk	32.5	-24.3	0	44.25	-	-	74	-29.75	10	106	V
2	*** 2.48374	38.05	Pk	32.5	-24.3	0	46.25	-	-	74	-27.75	10	106	V
3	*** 2.48354	24.08	ADV	32.5	-24.3	.64	32.92	54	-21.08	-	-	10	105	V
4	*** 2.48384	25.11	ADV	32.5	-24.4	.64	33.85	54	-20.15	-	-	10	105	V

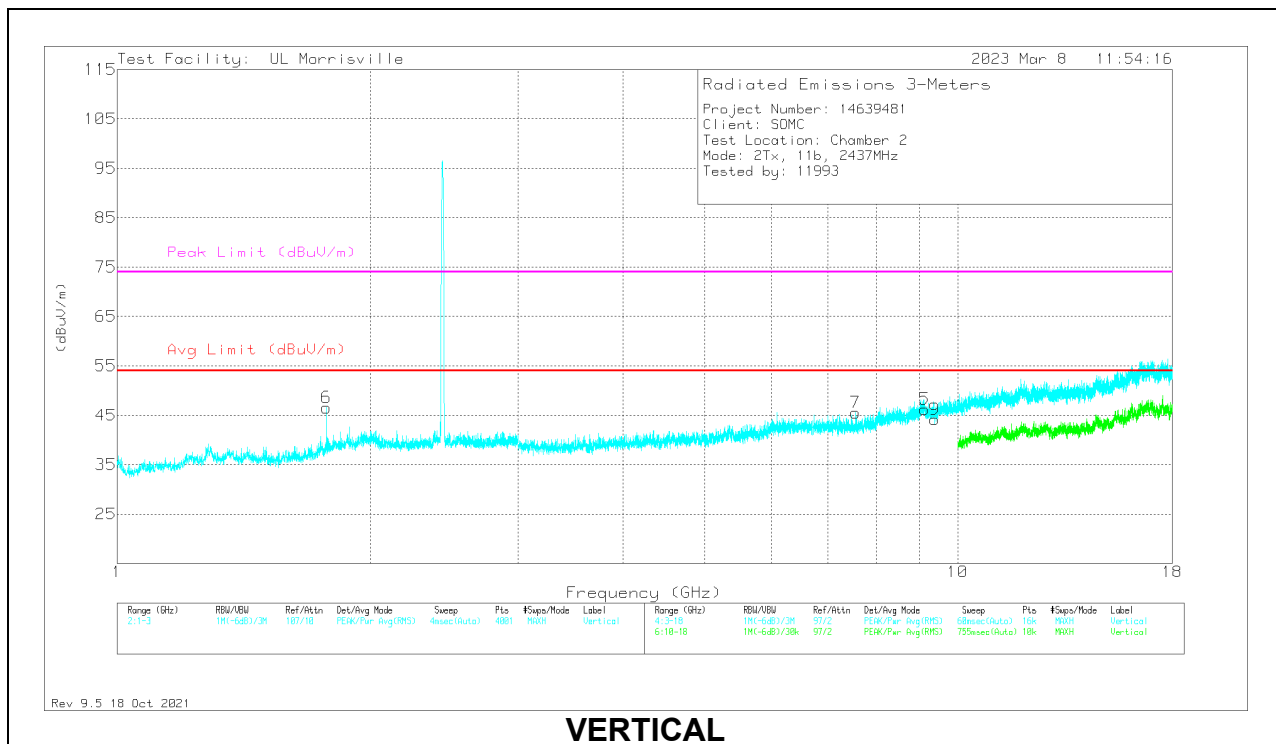
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band  
 \*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band  
 Pk - Peak detector  
 ADV - Linear Voltage Average

# HARMONICS AND SPURIOUS EMISSIONS

## MID CHANNEL 2TX, 802.11b, 1Mbps



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	** 1.772	38.44	Pk	30	-22.1	46.34	54	-7.66	74	-27.66	0-360	200	H
2	** 1.8895	36.23	Pk	31.4	-22.6	45.03	54	-8.97	74	-28.97	0-360	101	H
6	** 1.77275	38.55	Pk	30.1	-22.1	46.55	54	-7.45	74	-27.45	0-360	200	V
3	*** 9.11707	38.17	PK2	36.3	-25.4	49.07	-	-	74	-24.93	235	138	H
	*** 9.11725	26.02	ADV	36.3	-25.4	36.92	54	-17.08	-	-	235	138	H
4	*** 9.13688	35.79	Pk	36.3	-25	47.09	54	-6.91	74	-26.91	0-360	101	H
8	*** 9.3864	37.14	PK2	36.6	-26.2	47.54	-	-	74	-26.46	155	311	H
	*** 9.38809	25.2	ADV	36.6	-26.1	35.7	54	-18.3	-	-	155	311	H
5	*** 9.13688	34.95	Pk	36.3	-25	46.25	54	-7.75	74	-27.75	0-360	101	V
7	*** 7.55625	37.03	Pk	35.7	-27.2	45.53	54	-8.47	74	-28.47	0-360	101	V
9	*** 9.38894	36.79	PK2	36.6	-26	47.39	-	-	74	-26.61	171	168	V
	*** 9.3889	24.79	ADV	36.6	-26	35.39	54	-18.61	-	-	171	168	V

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

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

Pk - Peak detector

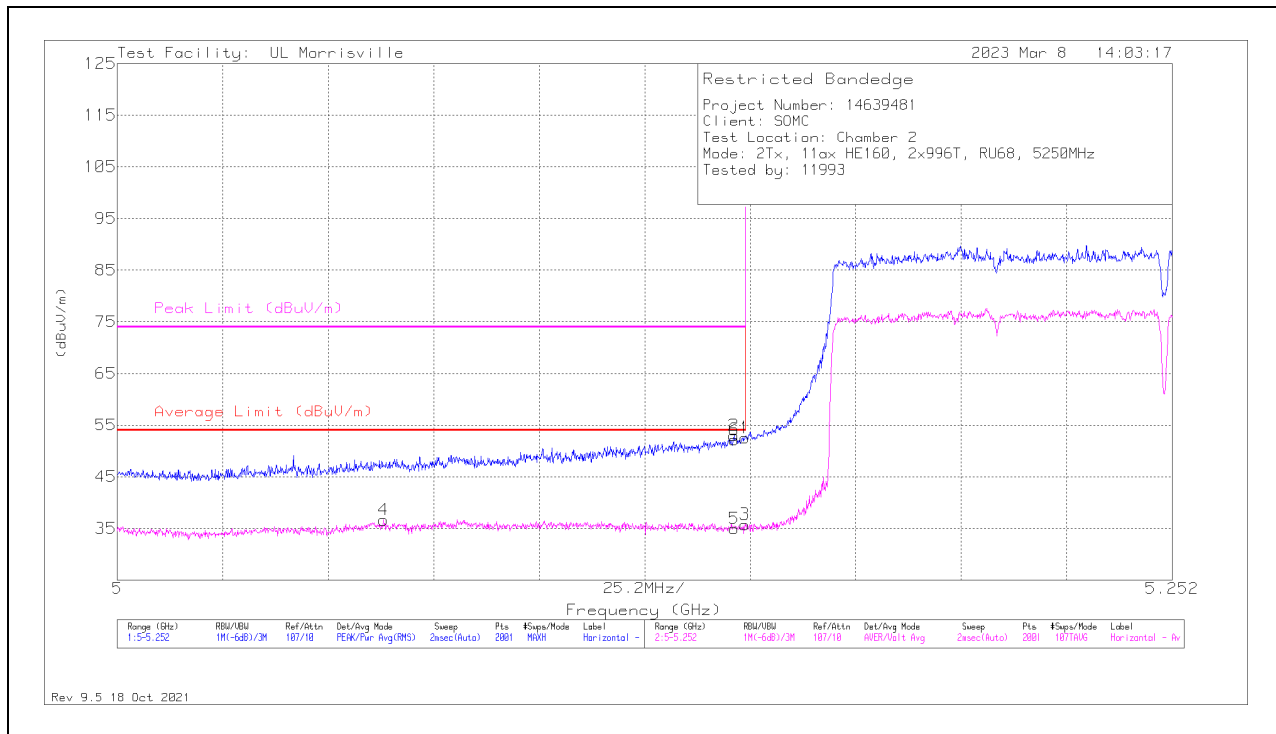
PK2 - Maximum Peak

ADV - Linear Voltage Average

### 10.4. 5GHz WLAN

#### BANDEDGE (5.2 BAND LOW CHANNEL – 2TX, 802.11ax HE160, 2x996T/RU68)

#### HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	*** 5.14994	40.82	Pk	34.3	-22.6	0	52.52	-	-	74	-21.48	334	193	H
2	*** 5.14729	41.28	Pk	34.3	-22.6	0	52.98	-	-	74	-21.02	334	193	H
6	*** 5.14742	40.49	Pk	34.3	-22.6	0	52.19	-	-	74	-21.81	334	193	H
3	*** 5.14994	23.44	ADV	34.3	-22.6	.61	35.75	54	-18.25	-	-	334	193	H
4	*** 5.06363	24.23	ADV	34.1	-22.3	.61	36.64	54	-17.36	-	-	334	193	H
5	*** 5.14742	22.66	ADV	34.3	-22.6	.61	34.97	54	-19.03	-	-	334	193	H

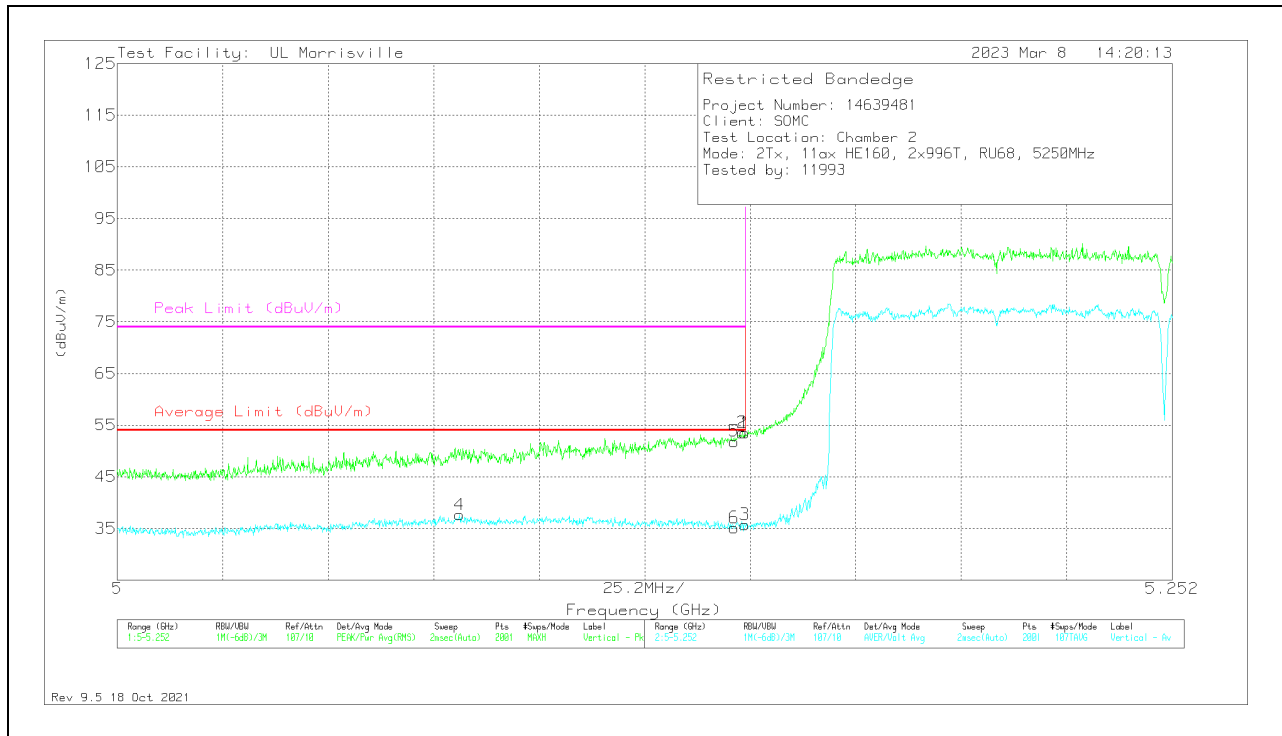
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

ADV - Linear Voltage Average

### VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	*** 5.14994	41.76	Pk	34.3	-22.6	0	53.46	-	-	74	-20.54	32	127	V
2	*** 5.14931	41.86	Pk	34.3	-22.6	0	53.56	-	-	74	-20.44	32	127	V
5	*** 5.14742	40.13	Pk	34.3	-22.6	0	51.83	-	-	74	-22.17	32	127	V
3	*** 5.14994	23.43	ADV	34.3	-22.6	.61	35.74	54	-18.26	-	-	32	127	V
4	*** 5.08177	25.03	ADV	34.2	-22.2	.61	37.64	54	-16.36	-	-	32	127	V
6	*** 5.14742	22.8	ADV	34.3	-22.6	.61	35.11	54	-18.89	-	-	32	127	V

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

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

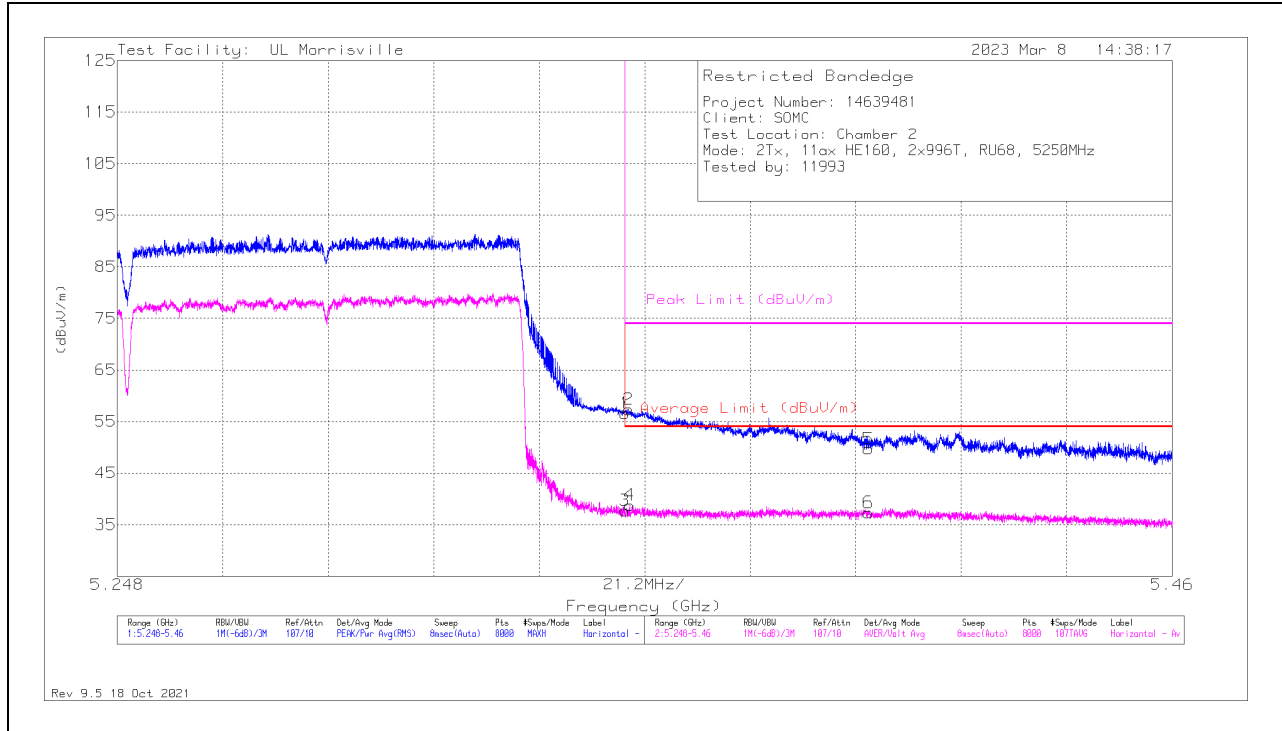
Pk - Peak detector

ADV - Linear Voltage Average



**BANDEDGE (5.3 BAND HIGH CHANNEL – 2TX, 802.11ax HE160, 2x996T/RU68)**

**HORIZONTAL RESULT**



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	*** 5.35001	44.91	Pk	34.4	-22.7	0	56.61	-	-	74	-17.39	334	187	H
2	*** 5.35073	45.64	Pk	34.4	-22.7	0	57.34	-	-	74	-16.66	334	187	H
5	*** 5.39893	38.6	Pk	34.4	-23.3	0	49.7	-	-	74	-24.3	334	187	H
3	*** 5.35001	25.42	ADV	34.4	-22.7	.61	37.73	54	-16.27	-	-	334	187	H
4	*** 5.35096	26.48	ADV	34.4	-22.7	.61	38.79	54	-15.21	-	-	334	187	H
6	*** 5.39893	25.6	ADV	34.4	-23.3	.61	37.31	54	-16.69	-	-	334	187	H

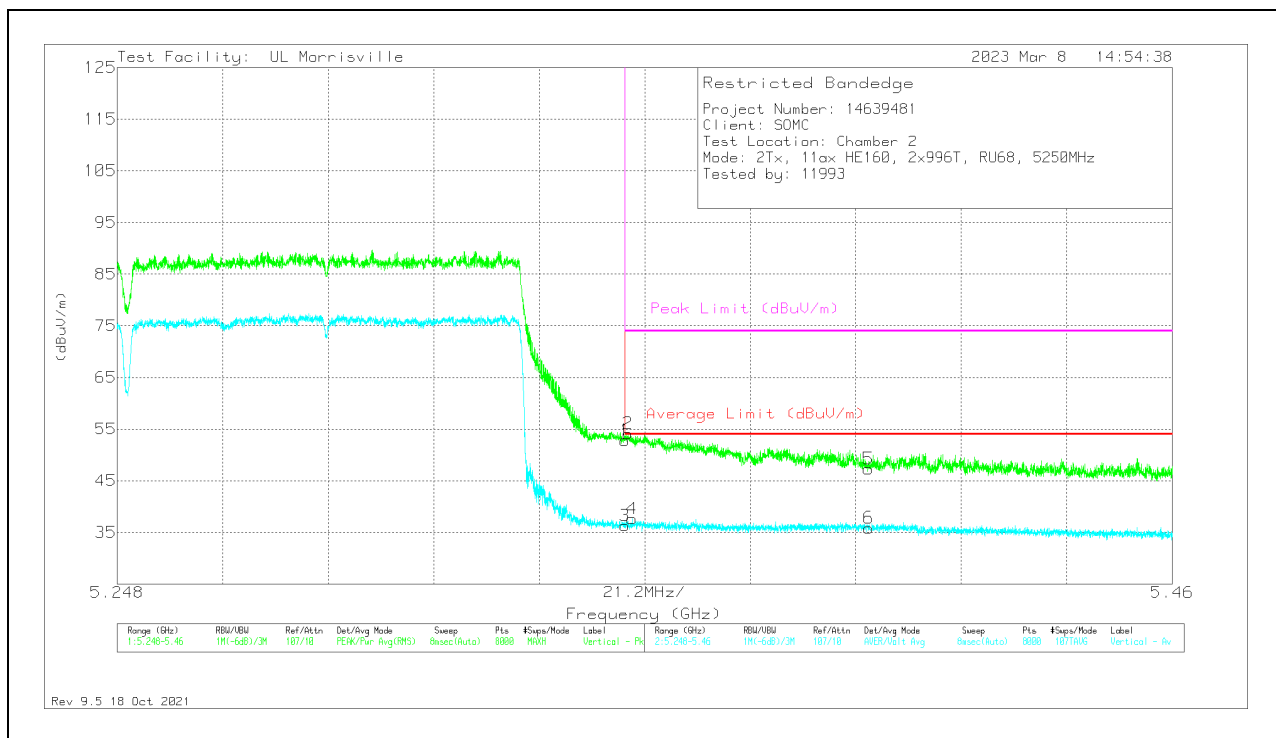
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

ADV - Linear Voltage Average

### VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	*** 5.35001	41.12	Pk	34.4	-22.7	0	52.82	-	-	74	-21.18	110	119	V
2	*** 5.35062	42.44	Pk	34.4	-22.7	0	54.14	-	-	74	-19.86	110	119	V
5	*** 5.39893	36.19	Pk	34.4	-23.3	0	47.29	-	-	74	-26.71	110	119	V
3	*** 5.35001	23.97	ADV	34.4	-22.7	.61	36.28	54	-17.72	-	-	110	119	V
4	*** 5.35147	25.34	ADV	34.4	-22.7	.61	37.65	54	-16.35	-	-	110	119	V
6	*** 5.39896	24.14	ADV	34.4	-23.3	.61	35.85	54	-18.15	-	-	110	119	V

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

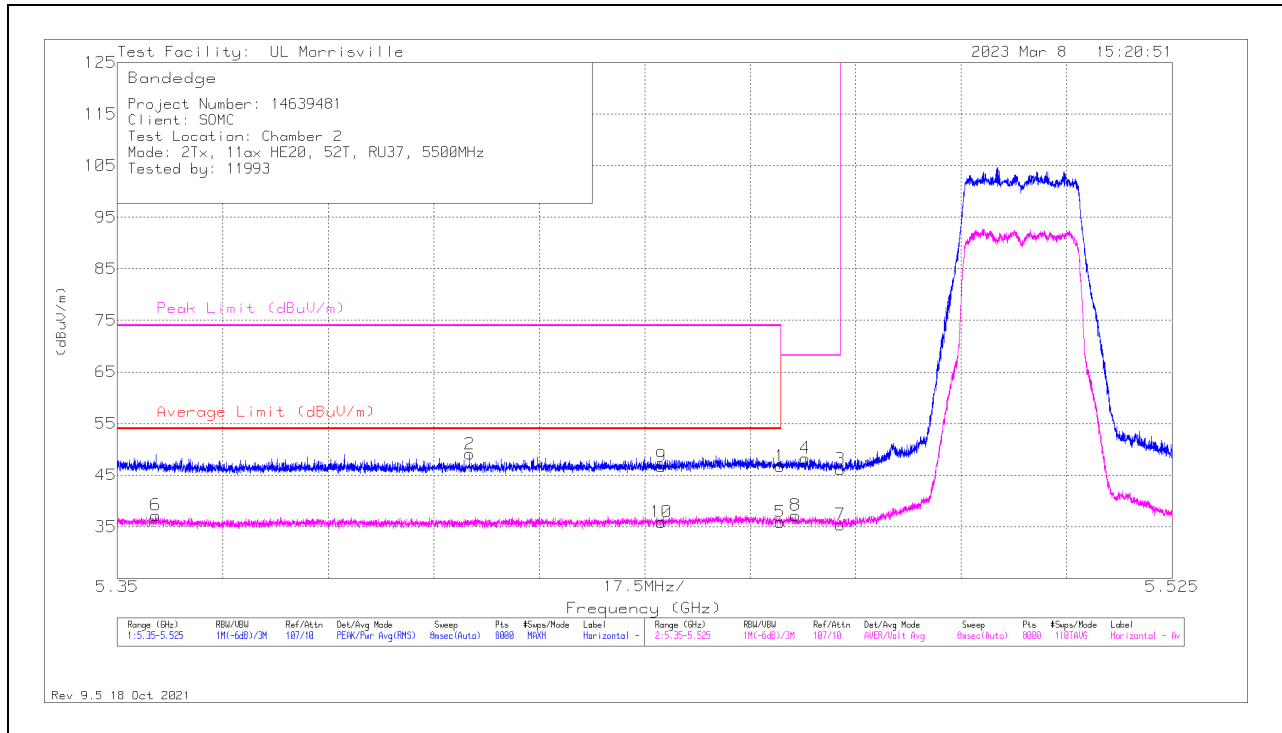
\*\* - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

**BANDEGE (5.6 BAND LOW CHANNEL – 2TX, 802.11ax HE20 52T/RU37)**

**HORIZONTAL RESULT**



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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	*** 5.45998	35.64	Pk	34.4	-23.3	0	46.74	-	-	74	-27.26	325	134	H
2	*** 5.40848	38.2	Pk	34.4	-23.5	0	49.1	-	-	74	-24.9	325	134	H
9	*** 5.44022	35.79	Pk	34.4	-23.5	0	46.69	-	-	74	-27.31	325	134	H
5	*** 5.45998	23.94	ADV	34.4	-23.3	.87	35.91	54	-18.09	-	-	325	134	H
6	*** 5.35639	24.75	ADV	34.4	-22.8	.87	37.22	54	-16.78	-	-	325	134	H
10	*** 5.44025	24.12	ADV	34.4	-23.5	.87	35.89	54	-18.11	-	-	325	134	H
8	5.4625	25.34	ADV	34.4	-23.4	.87	37.21	-	-	-	-	325	134	H
4	5.46414	37.27	Pk	34.4	-23.4	0	48.27	-	-	68.2	-19.93	325	134	H
3	5.46998	35.34	Pk	34.4	-23.6	0	46.14	-	-	68.2	-22.06	325	134	H
7	5.46998	23.69	ADV	34.4	-23.6	.87	35.36	-	-	-	-	325	134	H

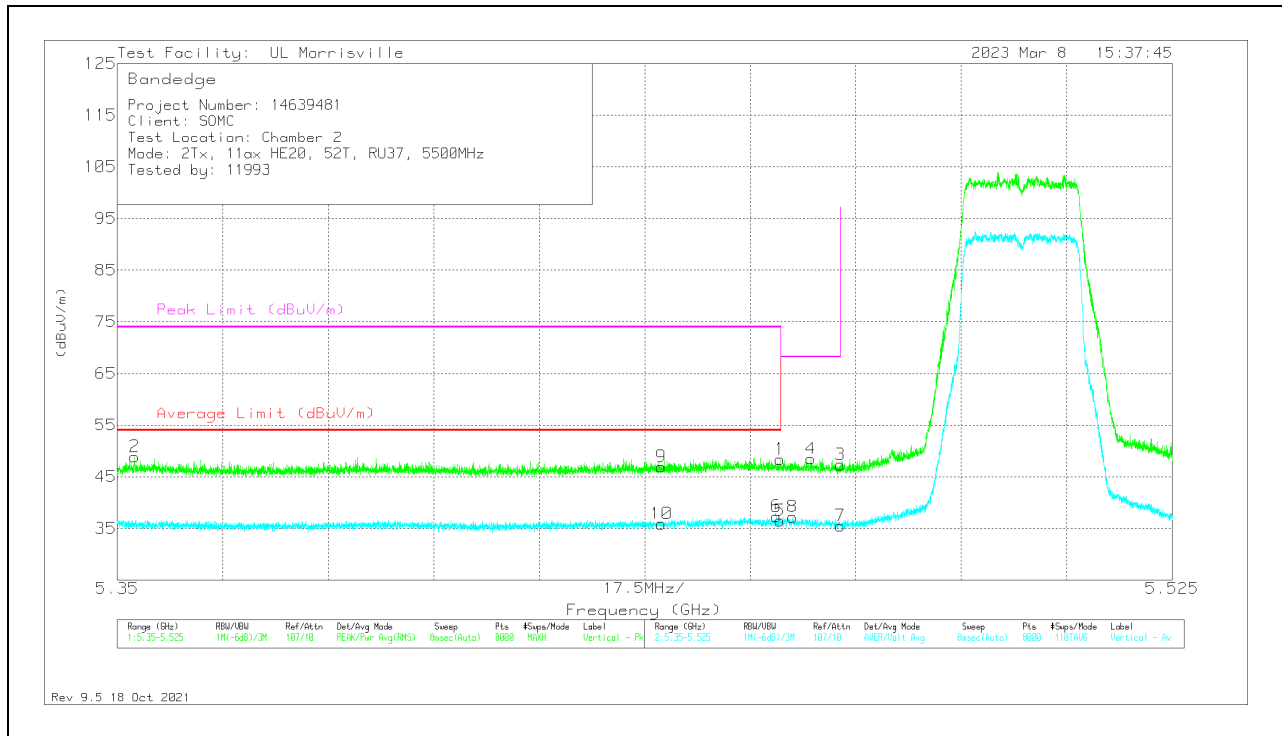
\* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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

Pk - Peak detector

ADV - Linear Voltage Average

### VERTICAL RESULT

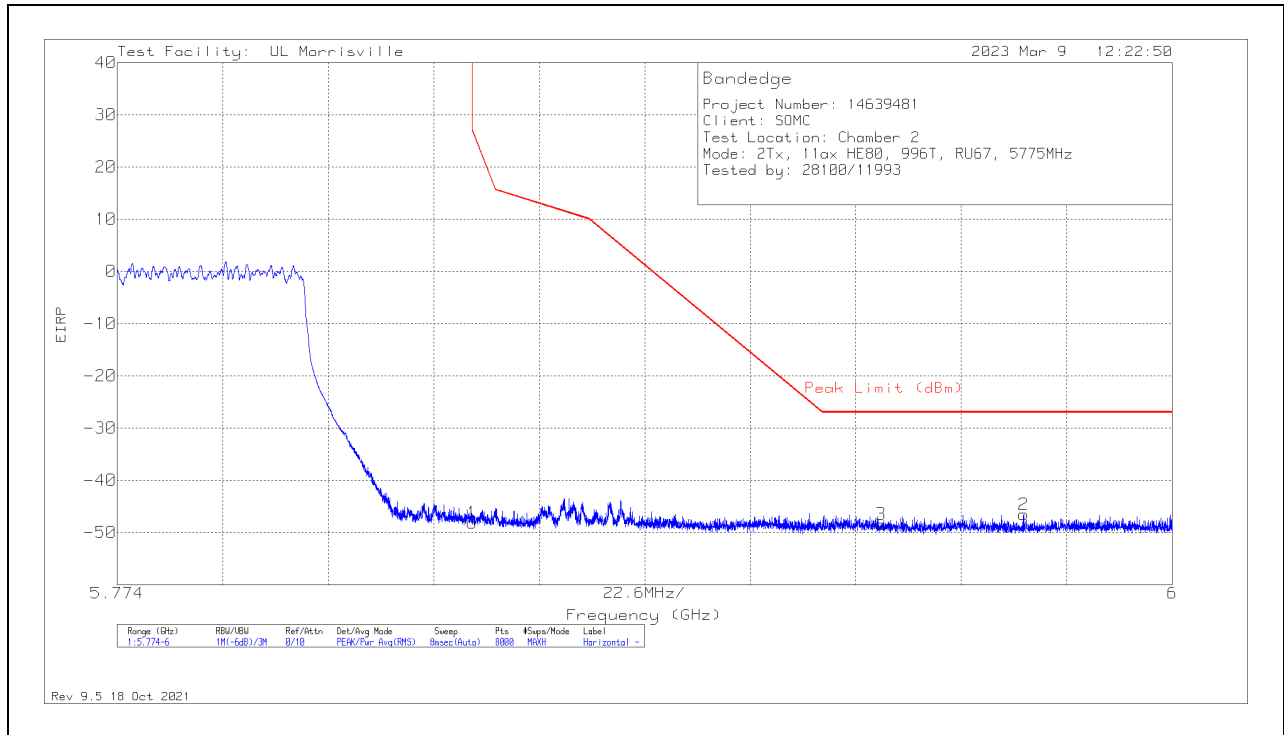


Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 5.45998	37.29	Pk	34.4	-23.3	0	48.39	-	-	74	-25.61	315	105	V
2	*** 5.35287	37.19	Pk	34.4	-22.7	0	48.89	-	-	74	-25.11	315	105	V
9	*** 5.44025	36.03	Pk	34.4	-23.5	0	46.93	-	-	74	-27.07	315	105	V
5	*** 5.45998	24.55	ADV	34.4	-23.3	.87	36.52	54	-17.48	-	-	315	105	V
6	*** 5.45935	25.36	ADV	34.4	-23.3	.87	37.33	54	-16.67	-	-	315	105	V
10	*** 5.44027	24.12	ADV	34.4	-23.5	.87	35.89	54	-18.11	-	-	315	105	V
8	5.46202	25.36	ADV	34.4	-23.4	.87	37.23	-	-	-	-	315	105	V
4	5.46506	37.46	Pk	34.4	-23.4	0	48.46	-	-	68.2	-19.74	315	105	V
3	5.46998	36.54	Pk	34.4	-23.6	0	47.34	-	-	68.2	-20.86	315	105	V
7	5.46998	23.8	ADV	34.4	-23.6	.87	35.47	-	-	-	-	315	105	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 (5.8 BAND HIGH CHANNEL – 2TX, 802.11ax HE80 996T/RU67)**

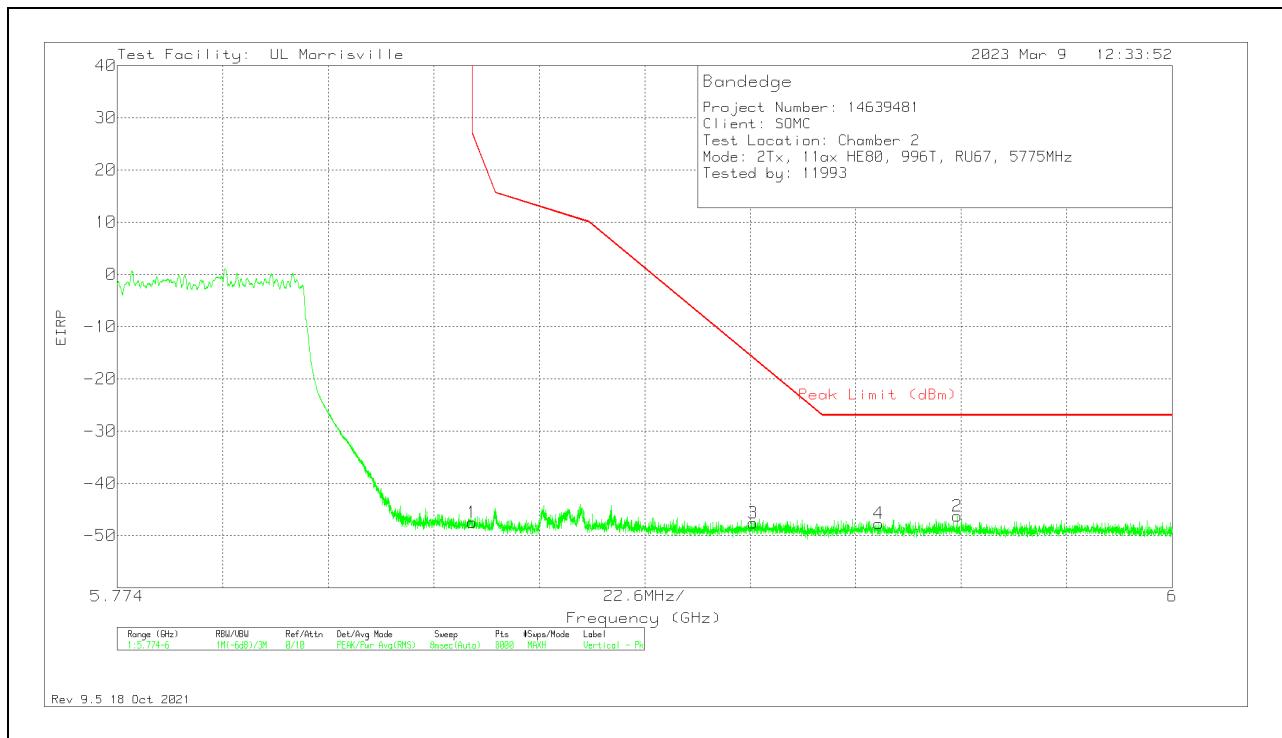
**HORIZONTAL RESULT**



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-71.93	Pk	34.9	-22.9	11.8	-48.13	26.99	-75.12	335	105	H
3	5.93759	-72.43	Pk	35	-22.8	11.8	-48.43	-27	-21.43	335	105	H
2	5.96816	-70.63	Pk	35	-22.7	11.8	-46.53	-27	-19.53	335	105	H

Pk - Peak detector

### VERTICAL RESULT

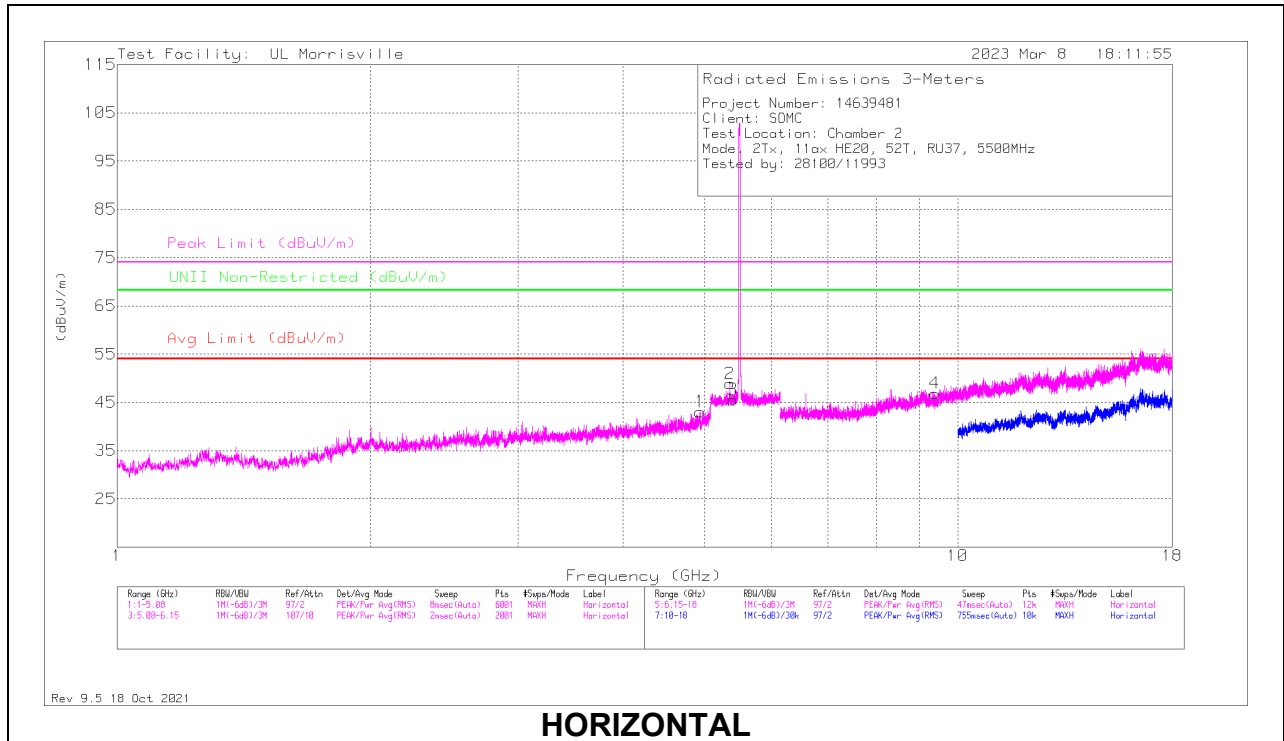


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AT0072 (dB/m)	Gain/Loss (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-71.3	Pk	34.9	-22.9	11.8	-47.5	26.99	-74.49	327	110	V
3	5.91016	-71.51	Pk	35	-22.9	11.8	-47.61	-16.02	-31.59	327	110	V
4	5.93711	-71.71	Pk	35	-22.8	11.8	-47.71	-27	-20.71	327	110	V
2	5.95398	-70.6	Pk	35	-22.5	11.8	-46.3	-27	-19.3	327	110	V

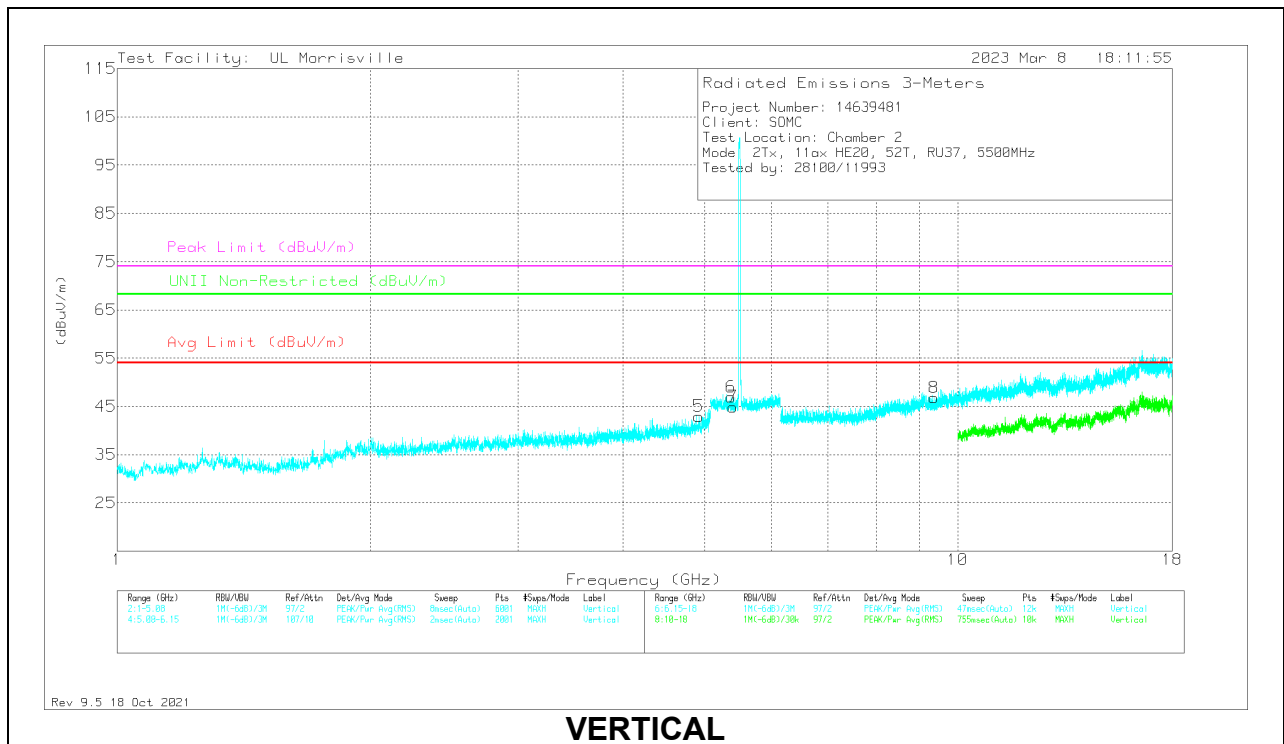
Pk - Peak detector

### HARMONICS AND SPURIOUS EMISSIONS

#### 5.6 BAND LOW CHANNEL 2TX, 802.11ax HE20 52T/RU37



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0072 (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)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 4.93652	38.27	Pk	34	-29.2	0	43.07	54	-10.93	74	-30.93	-	-	0-360	101	H
5	* ** 4.91952	38.42	Pk	34	-29.5	0	42.92	54	-11.08	74	-31.08	-	-	0-360	199	V
2	* ** 5.35751	38.21	PK-U	34.4	-22.8	0	49.81	-	-	74	-24.19	-	-	335	109	H
	* ** 5.35527	25.07	ADV	34.4	-22.8	.87	37.54	54	-16.46	-	-	-	-	335	109	H
3	* ** 5.40594	39.16	PK-U	34.4	-23.5	0	50.06	-	-	74	-23.94	-	-	334	117	H
	* ** 5.40646	25.47	ADV	34.4	-23.5	.87	37.24	54	-16.76	-	-	-	-	334	117	H
6	* ** 5.37158	35.74	Pk	34.4	-23.2	0	46.94	54	-7.06	74	-27.06	-	-	0-360	200	V
7	* ** 5.40341	37.32	PK-U	34.4	-23.4	0	48.32	-	-	74	-25.68	-	-	323	134	V
	* ** 5.40256	24.83	ADV	34.4	-23.3	.87	36.8	54	-17.2	-	-	-	-	323	134	V
4	* ** 9.39493	36.07	Pk	36.6	-25.8	0	46.87	54	-7.13	74	-27.13	-	-	0-360	101	H
8	* ** 9.36629	35.78	Pk	36.6	-25.6	0	46.78	54	-7.22	74	-27.22	-	-	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

PK-U - Maximum Peak

ADV - Linear Voltage Average

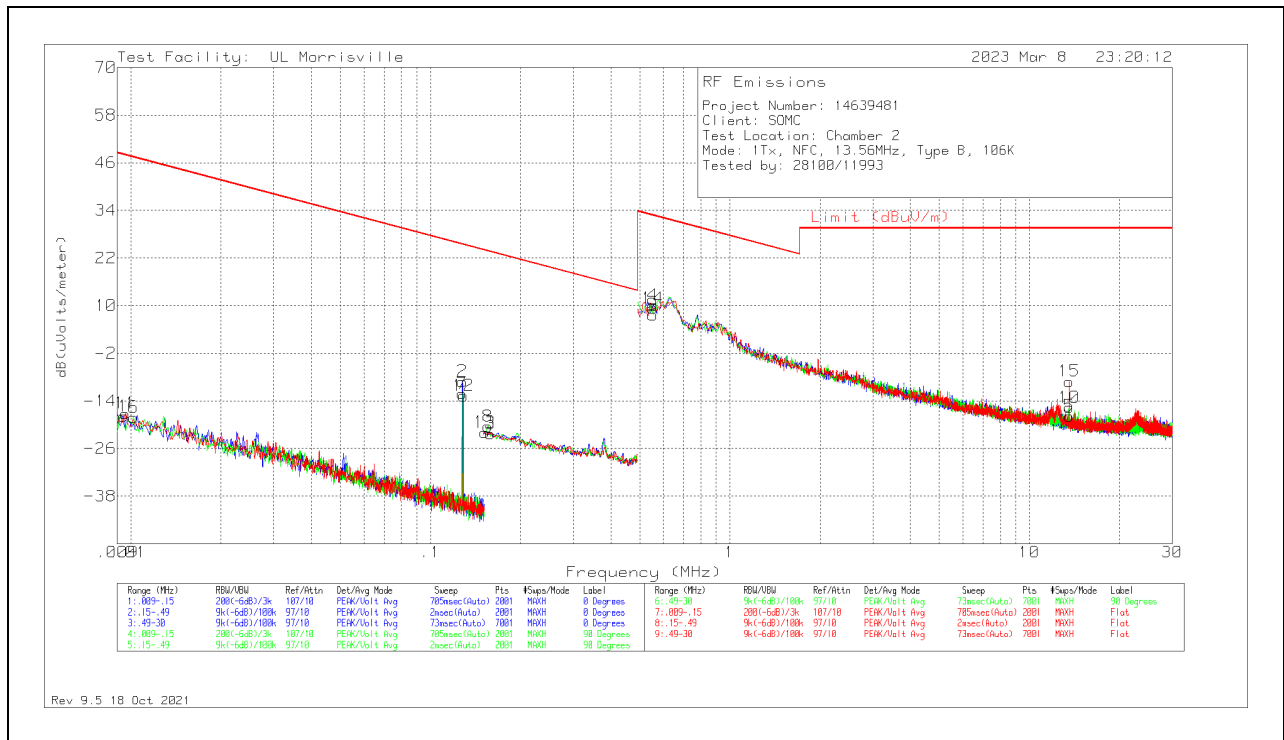


### 10.5. WPT

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  $40 \cdot \log(\text{test distance} / \text{specification distance})$ .

### HARMONICS AND SPURIOUS EMISSIONS – CONFIG 1

#### 0.009 to 30MHz



**RADIATED EMISSIONS**

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
1	.00943	42.3	Pk	19.7	.1	-80	-17.9	48.12	68.12	-66.02	0-360	0 degs
11	.00957	43.14	Pk	19.6	.1	-80	-17.16	47.99	67.99	-65.15	0-360	Flat
6	.01021	42.56	Pk	19.2	.1	-80	-18.14	47.43	67.43	-65.57	0-360	90 degs
7	.1278	23.77	Qp	12.2	.1	-80	-43.93	25.47	45.47	-69.4	239	90 degs
2	.12769	23.7	Qp	12.2	.1	-80	-44	25.48	45.48	-69.48	216	0 degs
12	.12892	23.49	Qp	12.2	.1	-80	-44.21	25.4	45.4	-69.61	203	Flat
13	.1517	45.76	Pk	12.2	.1	-80	-21.94	23.98	43.98	-45.92	0-360	Flat
8	.15578	47.26	Pk	12.2	.1	-80	-20.44	23.75	43.75	-44.19	0-360	90 degs
3	.15833	45.43	Pk	12.2	.1	-80	-22.27	23.61	43.61	-45.88	0-360	0 degs
4	.5545	31.04	Qp	12.2	.1	-40	3.34	32.73	-	-29.39	24	0 degs
9	.56115	30.98	Qp	12.2	.1	-40	3.28	32.62	-	-29.34	356	90 degs
14	.55727	30.94	Qp	12.2	.1	-40	3.24	32.68	-	-29.44	271	Flat
10	13.5596	13.05	Pk	10.6	.7	-40	-15.65	29.54	-	-45.19	0-360	90 degs
15	13.5596	19.61	Pk	10.6	.7	-40	-9.09	29.54	-	-38.63	0-360	Flat
5	13.58911	10.9	Pk	10.6	.7	-40	-17.8	29.54	-	-47.34	0-360	0 degs

Pk - Peak detector

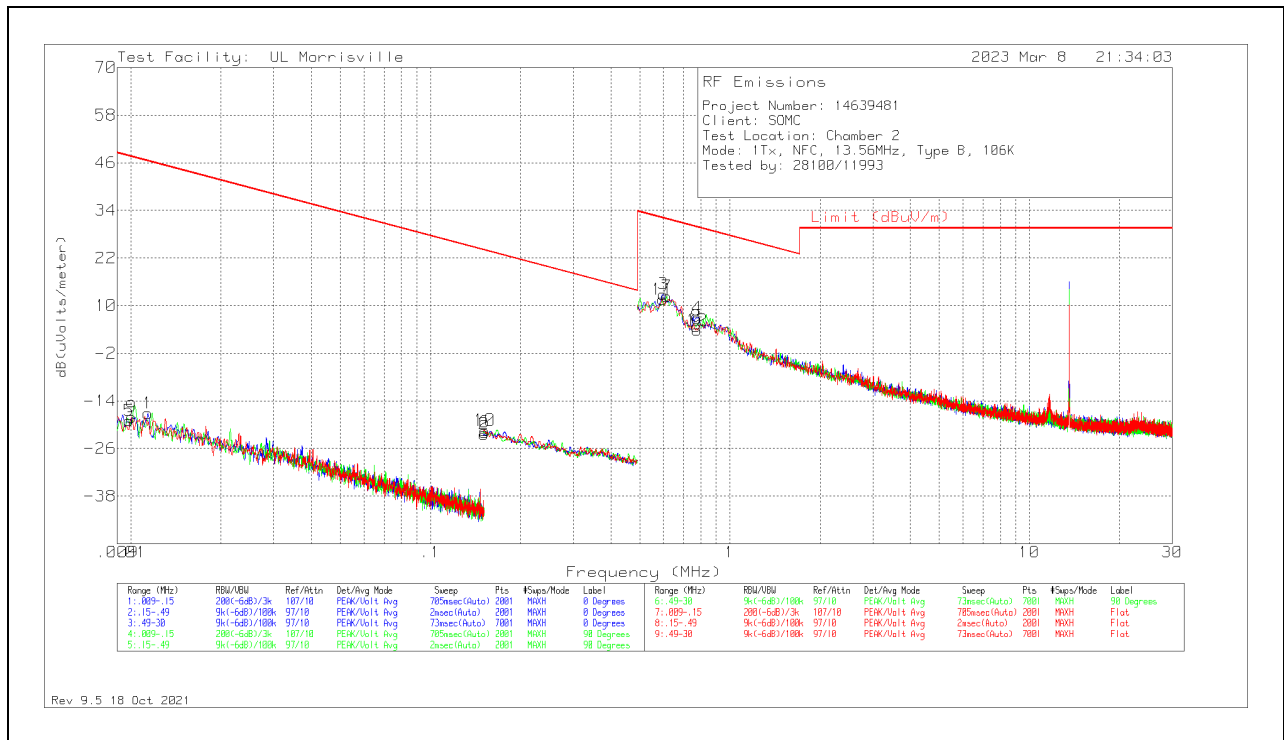
Qp - Quasi-Peak detector

## 10.6. NFC

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  $40 \cdot \log(\text{test distance} / \text{specification distance})$ .

### HARMONICS AND SPURIOUS EMISSIONS – TYPE B, 106Kbps

#### 0.009 to 30MHz

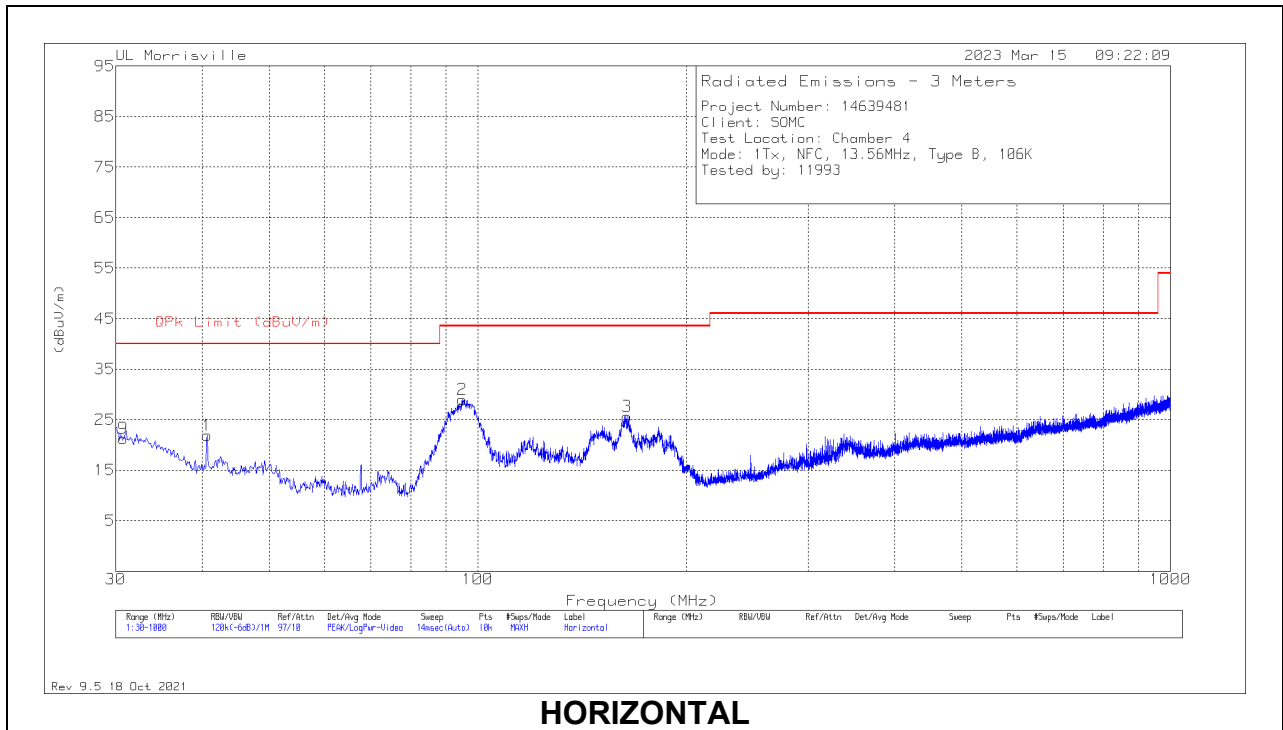


**RADIATED EMISSIONS**

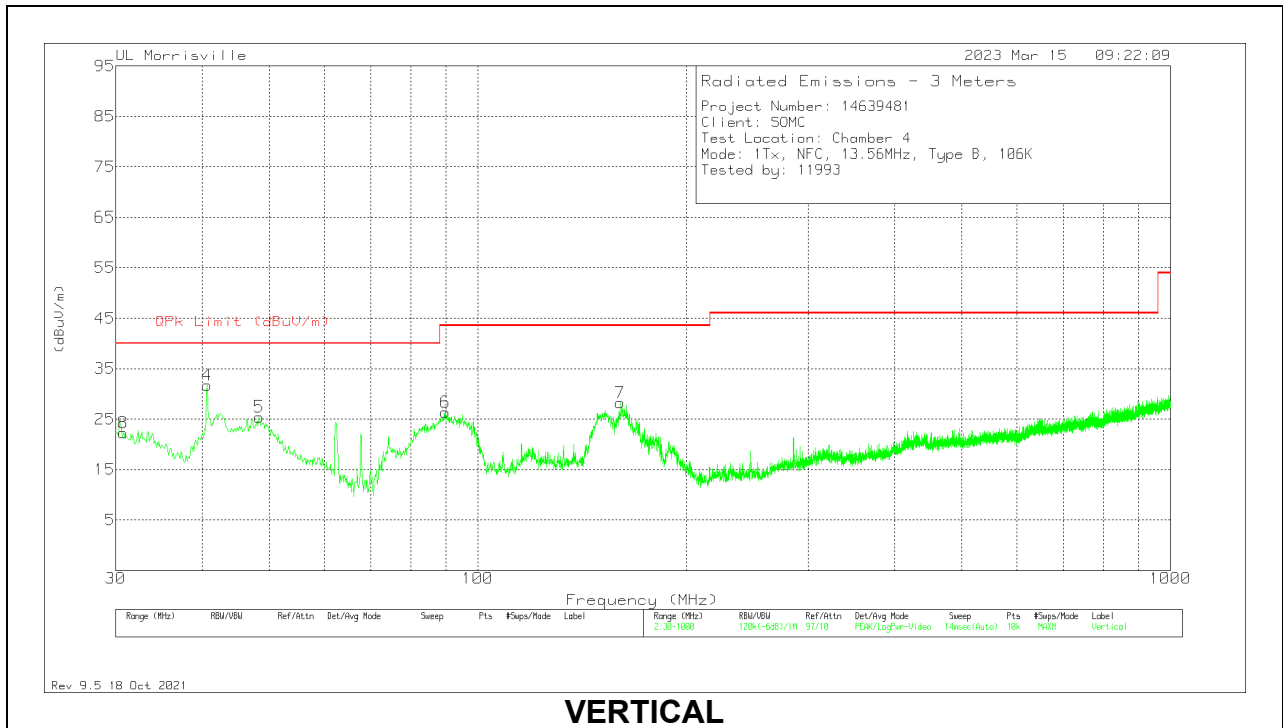
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
5	.00985	41.5	Pk	19.4	.1	-80	-19	47.73	67.73	-66.73	0-360	90 degs
9	.01007	42.51	Pk	19.3	.1	-80	-18.09	47.55	67.55	-65.64	0-360	Flat
1	.01141	44.06	Pk	18.7	.1	-80	-17.14	46.46	66.46	-63.6	0-360	0 degs
2	.15102	45.32	Pk	12.2	.1	-80	-22.38	24.02	44.02	-46.4	0-360	0 degs
10	.1517	46.22	Pk	12.2	.1	-80	-21.48	23.98	43.98	-45.46	0-360	Flat
6	.15187	45.79	Pk	12.2	.1	-80	-21.91	23.97	43.97	-45.88	0-360	90 degs
11	.5954	39.15	Pk	12.2	.2	-40	11.55	32.11	-	-20.56	0-360	Flat
3	.59962	40.51	Pk	12.2	.2	-40	12.91	32.05	-	-19.14	0-360	0 degs
7	.61648	39.93	Pk	12.2	.2	-40	12.33	31.81	-	-19.48	0-360	90 degs
8	.77035	27.16	Qp	12.2	.2	-40	-.44	29.87	-	-30.31	71	90 degs
4	.76831	28.82	Qp	12.2	.2	-40	1.22	29.89	-	-28.67	148	0 degs
12	.7686	28.9	Qp	12.2	.2	-40	1.3	29.89	-	-28.59	222	Flat

Pk - Peak detector  
 Qp - Quasi-Peak detector

### 30 to 1000MHz



**HORIZONTAL**



**VERTICAL**

**RADIATED EMISSIONS**

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
9	30.78	20.93	Qp	26.5	-31.7	15.73	40	-24.27	296	187	H
8	30.78	21.19	Qp	26.5	-31.7	15.99	40	-24.01	250	239	V
1	40.67	34.25	Pk	19.2	-31.6	21.85	40	-18.15	0-360	300	H
4	40.67	44.13	Pk	19.2	-31.6	31.73	40	-8.27	0-360	100	V
5	48.333	42.24	Pk	14.7	-31.5	25.44	40	-14.56	0-360	100	V
6	89.655	43.26	Pk	14	-30.9	26.36	43.52	-17.16	0-360	100	V
2	94.893	44.16	Pk	15.5	-30.7	28.96	43.52	-14.56	0-360	100	H
7	160.465	39.95	Pk	18.5	-30.2	28.25	43.52	-15.27	0-360	100	V
3	164.054	37.37	Pk	18.3	-30	25.67	43.52	-17.85	0-360	100	H

Pk - Peak detector

Qp - Quasi-Peak detector

## 11. SETUP PHOTOS

Refer to R14639481-EP5 for setup photos.

**END OF REPORT**