

TEST REPORT

Report Number: R15927071-E1

Applicant : Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

Model : A04946, B04946, C04946

FCC ID : IPH-04946

IC : 1792A-04946

EUT Description : Digital Transceiver

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C: 2025
ISED RSS-210 ISSUE 11: 2024
ISED RSS-GEN ISSUE 5 + A1 + A2: 2021

Date Of Issue:
2025-10-22

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
v1	2025-10-22	Initial Issue	Manish Baral

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Garmin International Inc.
1200 East 151st Street
Olathe, KS 66062-3426, USA

EUT DESCRIPTION: Digital Transceiver

MODEL: A04946, B04946, C04946

SERIAL NUMBER: 3516172328, 3516172342, 3521365413, 3521365231,
3521365017, 3516172677, 3516168706, 3516172522

SAMPLE RECEIPT DATE: 2025-07-23

DATE TESTED: 2025-07-29 TO 2025-09-02

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C: 2025	Complies
ISED RSS-210 Issue 11: 2024	Complies
ISED RSS-GEN Issue 5 + A1 + A2: 2021	Complies

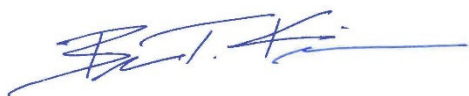
UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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

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

Approved & Released
For UL LLC By:

Prepared By:



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



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Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
15.215 (c)	-	20dB	Complies	None
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.249 (a)	RSS-210-B.10(a)	Fundamental Field Strength	Complies	None
15.205, 15.209, 15.249(a)	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None.
15.207	RSS-GEN 8.8	AC Mains Conducted Emissions	See Comment	EUT Installed in a vehicle.

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.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15: 2024, ANSI C63.10-2020 + Cor.1-2023 + C63.10a-2024, KDB 414788 D01 Radiated Test Site v01r01, ISED RSS-GEN Issue 5 + A1 + A2: 2021, and RSS-210 Issue 11: 2024.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by A2LA, certification # 0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building: 12 Laboratory Dr Durham, NC 27713, U.S.A	US0067	2180C	825374
☒	Building: 2800 Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radio Frequency (Spectrum Analyzer)	141.2 Hz
Occupied Channel Bandwidth	1.22%
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	0.57%
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

The EUT is a Digital Transceiver that utilizes BLE, BT Classic, ANT, 2.4 WLAN, and 5 WLAN radios as well as a GNSS receiver. This report covers testing on ANT. The EUT has three different models, the 10 inch model, 13 inch model, and 17 inch model. The radio is the same across the three models.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2402 - 2480	ANT	3.99	1.0592537252

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)
Dipole	2402-2480	5.4

6.4. SOFTWARE AND FIRMWARE

Software Version: 41.52

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.

The fundamental of the EUT was investigated in three orthogonal axes, X, Y, and Z For each model (10 inch, 13 inch, and 17 inch). After orientations were investigated a 1-18 GHz spurious scan was ran on each model with its worst case orientation.

For ANT the worst-case orientation was determined to be the X orientation, and the worst-case model was determined to be the 13-inch model. Therefore, all testing for ANT was performed with the EUT in the X orientation on the 13-inch model.

Radiated emissions and Equivalent Radiated Power below and above 1GHz were performed with the EUT set to transmit at 2402MHz, 2440MHz, and 2480MHz.

This device has three models, the 10 inch, 13 inch and the 17 inch model. The only difference between these models are the enclosure/screen sizes. The radio is the same amongst these models.

The client has declared an operational duty cycle of 13% resulting in a DCCF of -17.7211. This correction factor is applied to peak measurements when the margin is within 6dB to use as AV calculation.

$$\text{DCCF} = 20\log(0.13) = -17.7211$$
$$\text{AV} = \text{PK} + \text{DCCF}$$

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Sonar	Garmin	010-13073-00	NA	NA
HDMI Termination	NA	NA	NA	NA
USB Card Reader	Garmin	010-02251-10	NA	NA
Switch	Garmin	BlueNet 20 Switch	86P004096	NA
Marine Transducer	Garmin	GT17M 20 Deg	8E9000041	NA
Temp Sensor	Garmin	GTEMP10-TH	4QM001566	NA

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	9-Pin Network	2	9-Pin	Shielded	<3m	NA
2	HDMI	2	HDMI	Shielded	<3m	Used an HDMI terminator
3	CVBS	1	Video	Shielded	<3m	Terminated
4	Audio	1	9-Pin	Shielded	<3m	Terminated
5	Power	1	DC	NA	<3m	NA
6	USB DRD	1	USB-C	Shielded	<3m	Goes to USB Card Reader
7	12-Pin XDCR	1	12-Pin	Shielded	>3m	Sonar
8	NMEA 200 and J1939 5-Pin	2	5-Pin	Shielded	>3m	Temp Sensor
9	8-Pin XDCR	1	8-Pin	Shielded	>3m	Goes to Marine Transducer

TEST SETUP

EUT was configured using its own built-in push buttons prior to testing. For final emissions testing, the EUT was connected to DC power.

SETUP DIAGRAMS

Please refer to R15927071-EP1 for setup diagrams

7. TEST AND MEASUREMENT EQUIPMENT

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

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

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	0.009-30MHz				
135144	Active Loop Antenna	ETS-Lindgren	6502	2024-10-02	2025-10-02
	30-1000 MHz				
90628	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-02	2026-01-02
	1-18 GHz				
206211	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-04-09	2026-04-09
	18-40 GHz				
91186	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2024-05-16	2026-05-16
	Gain-Loss Chains				
207638	Gain-loss string: 0.009-30MHz	Various	Various	2025-06-13	2026-06-13
207639	Gain-loss string: 25-1000MHz	Various	Various	2025-06-13	2026-06-13
207640	Gain-loss string: 1-18GHz	Various	Various	2025-06-13	2026-06-13
225795	Gain-loss string: 18-40GHz	Various	Various	2025-06-13	2026-06-13
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-04-21	2026-04-21
90411	Spectrum Analyzer	Keysight	N9030A	2025-07-30	2026-07-30
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241204	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05
220155	DC Power Supply	Circuit Specialists	CSI3003X5	NA	NA

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	30-1000 MHz				
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-30	2026-01-30
	1-18 GHz				
135143	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2024-02-07	2026-02-07
	18-40 GHz				
91186	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2024-05-16	2026-05-16
	Gain-Loss Chains				
91976	Gain-loss string: 25-1000MHz	Various	Various	2025-05-31	2026-05-31
91979	Gain-loss string: 1-18GHz	Various	Various	2025-05-31	2026-05-31
135999	Gain-loss string: 18-40GHz	Various	Various	2025-05-31	2026-05-31
	Receiver & Software				
197955	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-05-12	2026-05-12
90410	Spectrum Analyzer	Keysight Technologies	N9030A	2025-07-30	2026-07-30
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2023-09-05	2025-09-05

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Conducted Room 2					
90410	Spectrum Analyzer	Keysight Technologies	N9030A	2025-07-10	2026-07-10
248881	Environmental Meter	Control Company	06-662-4	2024-04-10	2026-04-10
76021	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	NA	NA
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	NA	NA
Additional Equipment used					
259603	Conducted Switch Box	UL	CSB	2025-03-12	2026-03-12
91212	True RMS Multimeter	Agilent	U1232A	2025-07-30	2026-07-30
211055	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2025-07-30	2026-07-30

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
Attenuators					
246811	SMA Coaxial 10dB SMA Attenuator	CentricRF	-	2025-03-19	2026-03-19

8. MEASUREMENT METHOD

Duty Cycle: ANSI C63.10-2020, Section 11.6

20dB Bandwidth: ANSI C63.10-2020, Section 6.9.2

Occupied Bandwidth: ANSI C63.10-2020, Subclause 6.9.3

Emissions non-restricted frequency bands: ANSI C63.10-2020, Subclause -11.11

General Radiated Spurious Emissions: ANSI C63.10-2020, Section 6.3, 6.5, 6.6

AC Power Line Conducted Emissions: ANSI C63.10-2020, Section 6.2.

Fundamental emission output power: ANSI C63.10-2020, Section 11.9

9. ANTENNA PORT TEST RESULTS

Note: To reduce file size of report, only representative plots are included for some conducted test data in section 9.

9.1. ON TIME AND DUTY CYCLE

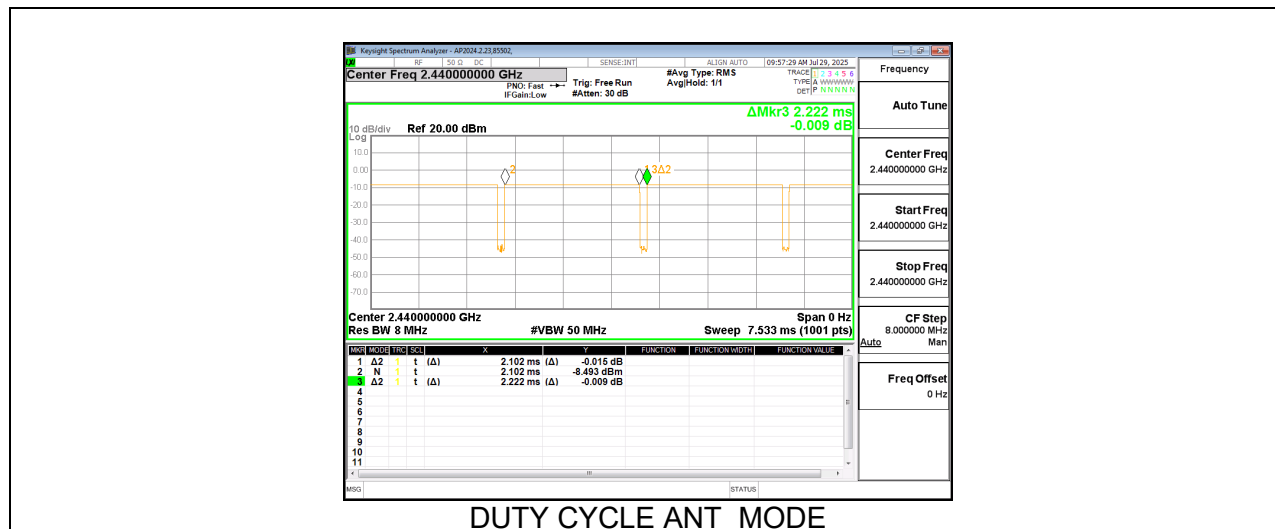
LIMITS

None; for reporting purposes only.

PROCEDURE

ANSI C63.10 Section 11.6
KDB 558074 Zero-Span Spectrum Analyzer Method.

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
ANT	2.102	2.222	0.946	94.60	0.48	0.476



Note – Manufacturer has declared an operational DC of 13%, resulting in a DCCF of -17.72 dBm

$$20\log(.13) = -17.72 \text{ dBm}$$

9.2. 99% and 20 dB BANDWIDTH

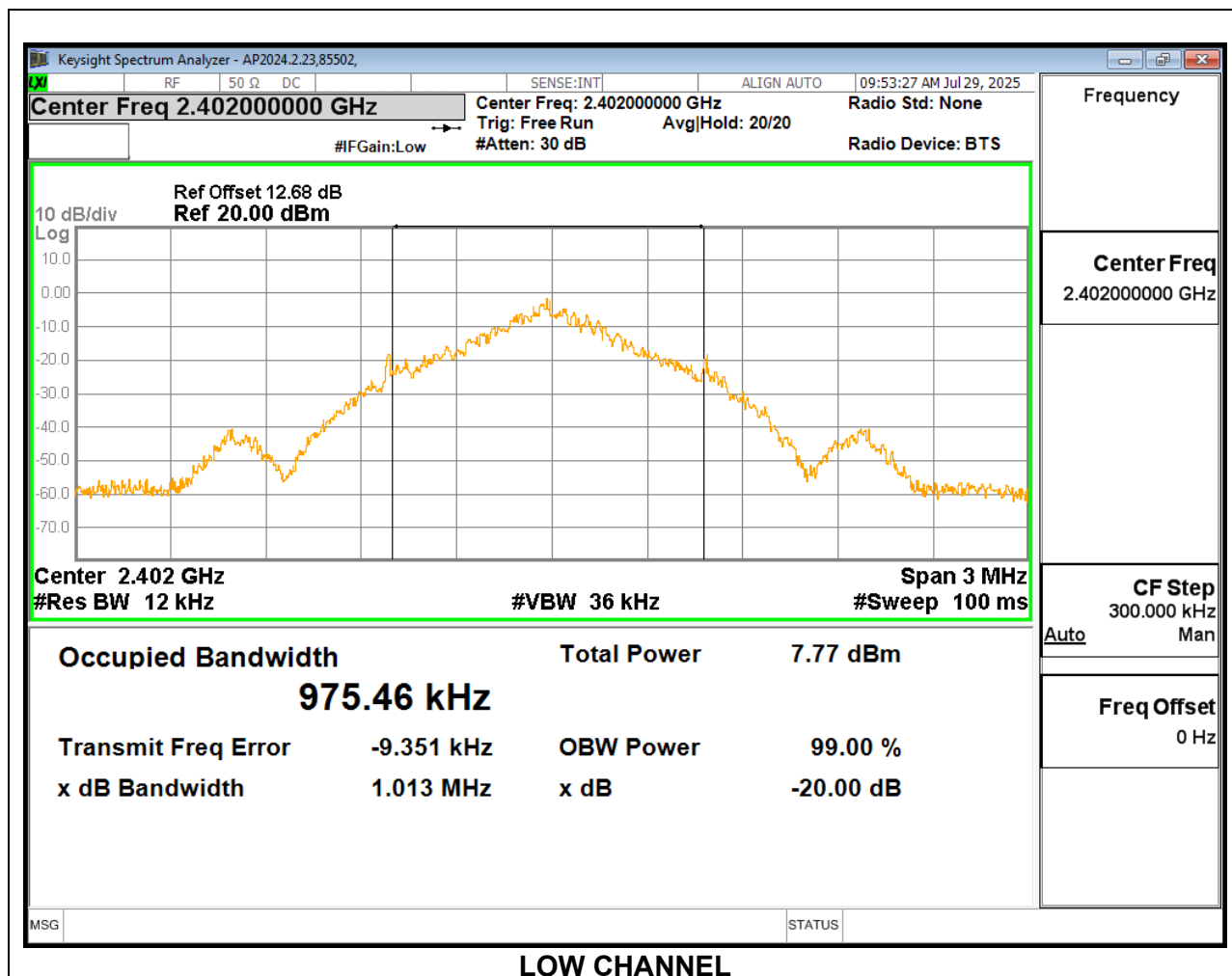
LIMITS

None; for reporting purposes only.

§15.215 (c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

9.2.1. ANT MODE

Frequency (MHz)	99% Bandwidth Chain 0 (MHz)	20 dB Bandwidth Chain 0 (MHz)
2402	0.97546	1.013
2440	0.95209	1.005
2480	0.96739	1.015



10. RADIATED TEST RESULTS

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

FCC 15.249(a), RSS-210 B.10(a)

Frequency Range (MHz)	Field Strength Limit of Fundamental (mV/m) at 3 m	Field Strength Limit of Harmonics (mV/m) at 3 m
2402-2480	50	.5

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(e) As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

RSS-GEN, Section 8.9 and 8.10

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT

distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

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. AV is determined by a calculation: $AV = PK + DCCF$.

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.

10.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (LOW CHANNEL)

10.1.1. FUNDAMENTAL (2402 MHz)

Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2402													
2.40182	87.99	Pk	32	-25.2	0	94.79	-	-	114	-19.21	104	264	H
2.40182	87.99	Pk	32	-25.2	-17.72	77.07	94	-16.93	-	-	104	264	H
2.40184	97.79	Pk	32	-25.2	0	104.59	-	-	114	-9.41	30	125	V
2.40184	97.79	Pk	32	-25.2	-17.72	86.87	94	-7.13	-	-	30	125	V

Tested by: 11993

Test Date: 2025-09-02

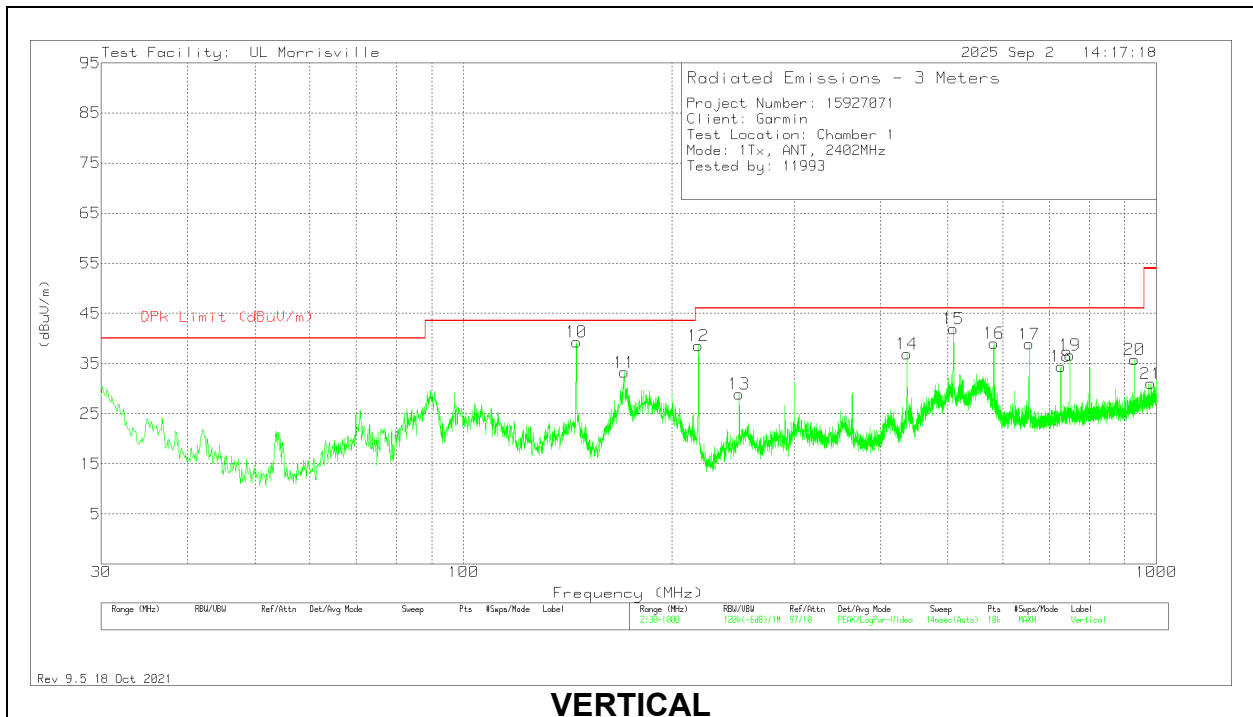
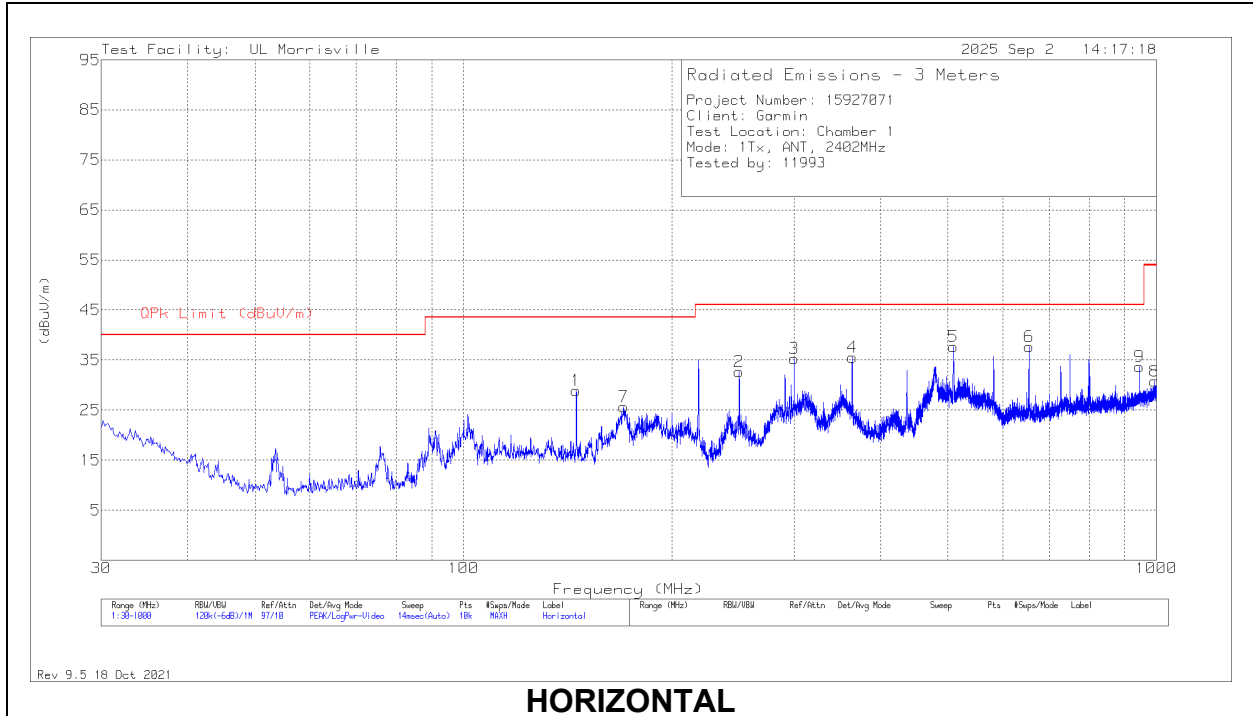
Pk - Peak detector

Note – Manufacturer has declared an operational DC of 13%, resulting in a DCCF of -17.72 dBm

$20\log(.13) = -17.72 \text{ dBm}$

10.1.2. HARMONICS AND SPURIOUS EMISSIONS BELOW 1 GHz

LOW CHANNEL, 2402 MHz RESULTS



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
2	* ** 249.996	44.54	Pk	17.7	-29.6	32.64	46.02	-13.38	0-360	99	H
5	** 509.277	42.83	Pk	23.9	-29.1	37.63	46.02	-8.39	0-360	99	H
7	* ** 170.165	37.59	Pk	18.1	-30	25.69	43.52	-17.83	0-360	99	H
8	* ** 993.792	26.24	Pk	29.6	-25.1	30.74	53.97	-23.23	0-360	200	H
9	** 945.971	30.88	Pk	28.9	-26.1	33.68	46.02	-12.34	0-360	99	H
11	* ** 170.553	45.43	Pk	18	-30.2	33.23	43.52	-10.29	0-360	100	V
13	* ** 249.996	40.8	Pk	17.7	-29.6	28.9	46.02	-17.12	0-360	100	V
15	** 509.4289	41.6	Qp	23.9	-29.4	36.1	46.02	-9.92	114	119	V
18	** 728.012	35.95	Pk	26.8	-28.3	34.45	46.02	-11.57	0-360	100	V
21	* ** 981.376	27.39	Pk	29.2	-25.6	30.99	53.97	-22.98	0-360	100	V
1	145.43	40.41	Pk	19	-30.5	28.91	-	-	0-360	200	H
10	145.527	50.68	Pk	19	-30.4	39.28	-	-	0-360	100	V
12	218.374	51.45	Pk	16.8	-29.7	38.55	-	-	0-360	100	V
3	299.951	45.21	Pk	19.6	-29.5	35.31	-	-	0-360	99	H
4	363.874	44	Pk	21.1	-29.5	35.6	-	-	0-360	99	H
14	436.333	43.19	Pk	22.7	-29	36.89	-	-	0-360	100	V
16	582.512	43.7	Pk	24.6	-29.2	39.1	-	-	0-360	100	V
6	654.68	40.22	Pk	25.9	-28.4	37.72	-	-	0-360	99	H
17	655.068	41.27	Pk	25.9	-28.3	38.87	-	-	0-360	100	V
19	750.031	37.53	Pk	27.1	-28	36.63	-	-	0-360	100	V
20	929.6265	33.56	Pk	28.8	-26.6	35.76	-	-	0-360	100	V

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

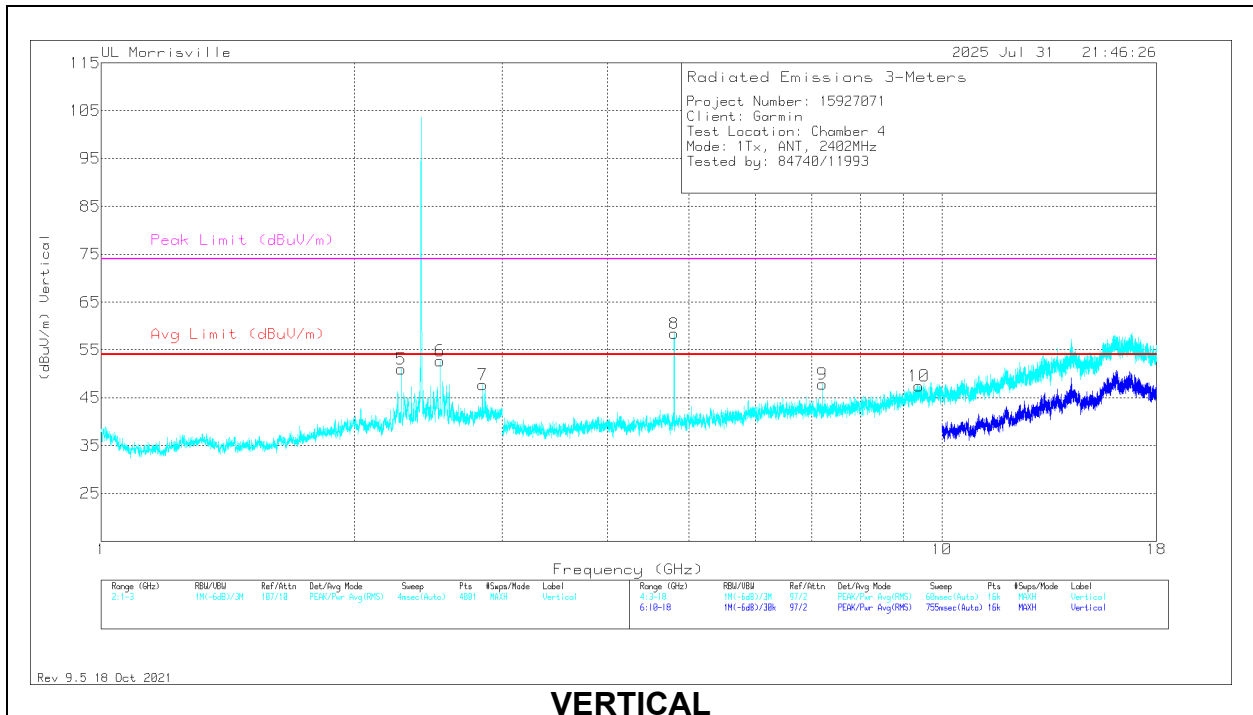
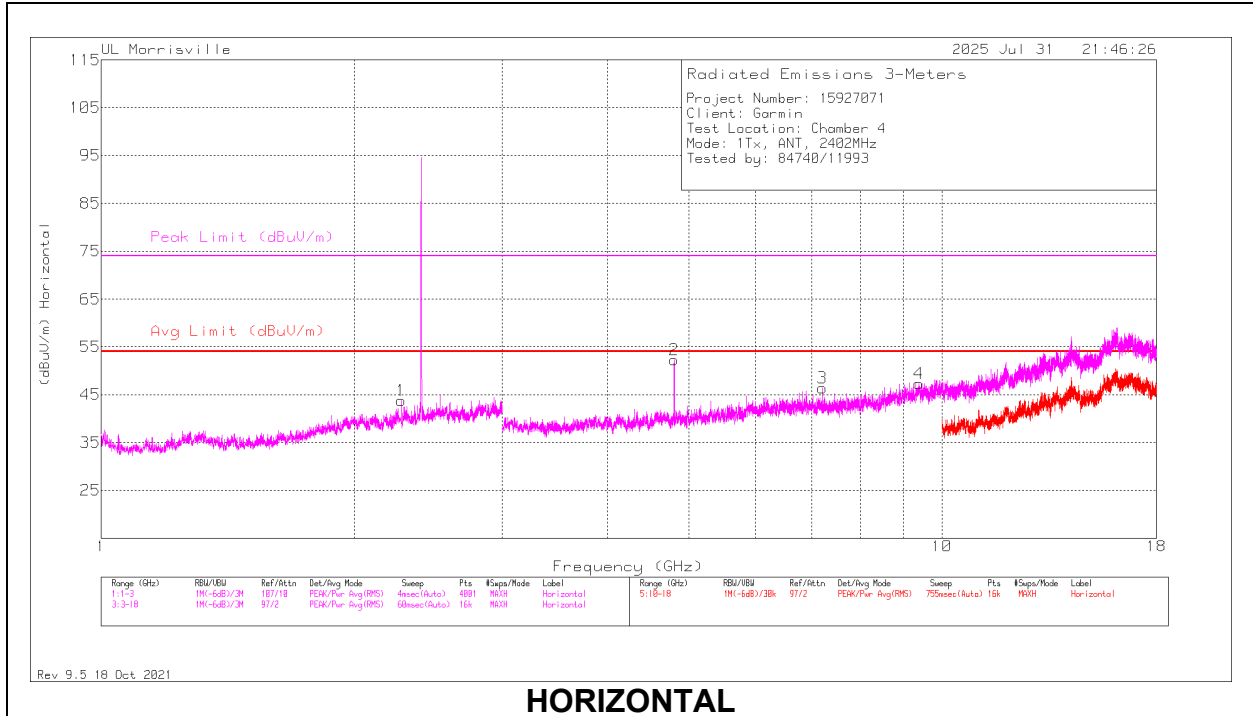
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

10.1.3. HARMONICS AND SPURIOUS EMISSIONS ABOVE 1 GHz

LOW CHANNEL, 2402 MHz RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.274	35.39	Pk	31.8	-23.4	0	43.79	54	-10.21	74	-30.21	0-360	100	H
5	*** 2.27402	43.68	PK2	31.8	-23.4	0	52.08	-	-	74	-21.92	68	172	V
	*** 2.27402	43.68	PK2	31.8	-23.4	-17.72	34.36	54	-19.64	-	-	68	172	V
6	** 2.52984	45.42	PK2	32.4	-23.1	0	54.72	-	-	74	-19.28	83	124	V
	** 2.52984	45.42	PK2	32.4	-23.1	-17.72	37	54	-17	-	-	83	124	V
7	*** 2.843	37.76	Pk	32.3	-22.3	0	47.76	54	-6.24	74	-26.24	0-360	200	V
2	*** 4.80435	52.01	PK2	33.9	-32.5	0	53.41	-	-	74	-20.59	100	108	H
	*** 4.80435	52.01	PK2	33.9	-32.5	-17.72	35.69	54	-18.31	-	-	100	108	H
4	*** 9.39188	35.39	Pk	36.5	-24.6	0	47.29	54	-6.71	74	-26.71	0-360	100	H
8	*** 4.8043	56.33	PK2	33.9	-32.5	0	57.73	-	-	74	-16.27	342	123	V
	*** 4.8043	56.33	PK2	33.9	-32.5	-17.72	40.01	54	-13.99	-	-	342	123	V
10	*** 9.38813	35.99	Pk	36.5	-25	0	47.49	54	-6.51	74	-26.51	0-360	200	V
3	7.20656	39.34	Pk	35.5	-28.4	0	46.44	-	-	-	-	0-360	100	H
9	7.20656	40.72	Pk	35.5	-28.4	0	47.82	-	-	-	-	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

10.2. FUNDAMENTAL AND SPURIOUS EMISSIONS (MID CHANNEL)

10.2.1. FUNDAMENTAL (2440 MHz)

Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2440													
2.4398	88.16	Pk	32.1	-25.3	0	94.96	-	-	114	-19.04	53	361	H
2.4398	88.16	Pk	32.1	-25.3	-17.72	77.24	94	-16.76	-	-	53	361	H
2.43982	96.7	Pk	32.1	-25.3	0	103.5	-	-	114	-10.5	45	100	V
2.43982	96.7	Pk	32.1	-25.3	-17.72	85.78	94	-8.22	-	-	45	100	V

Tested by: 11993

Test Date: 2025-09-02

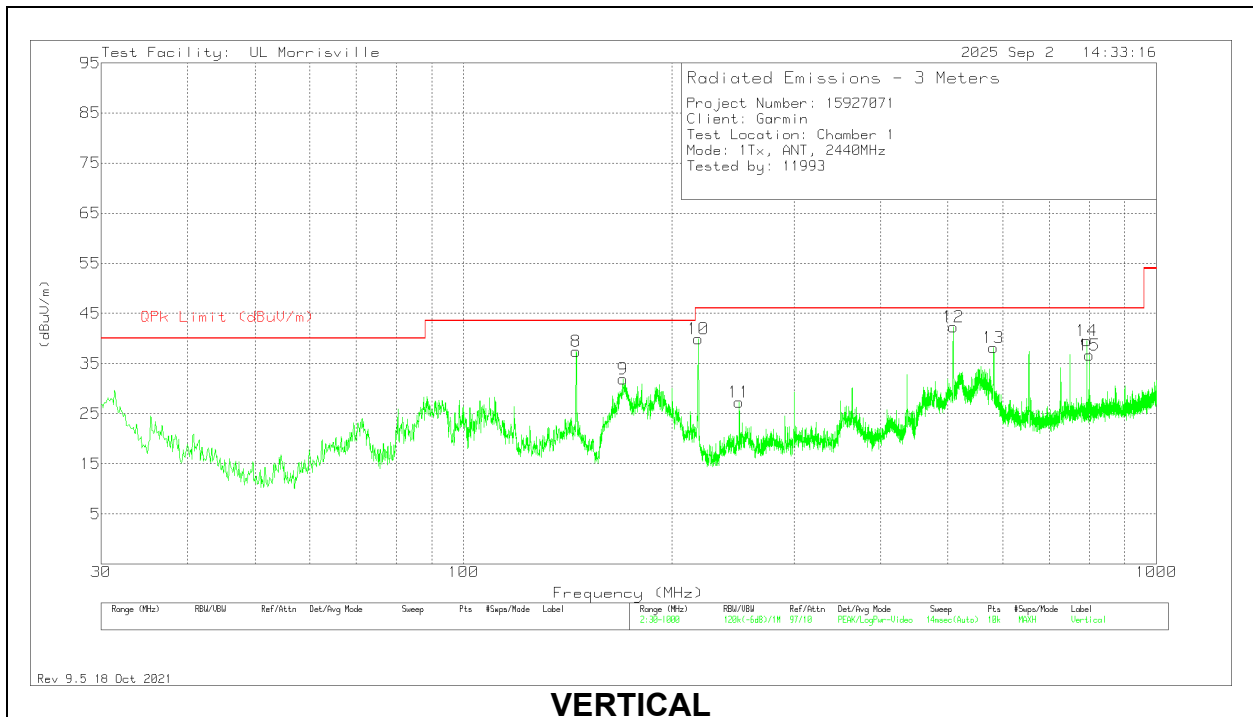
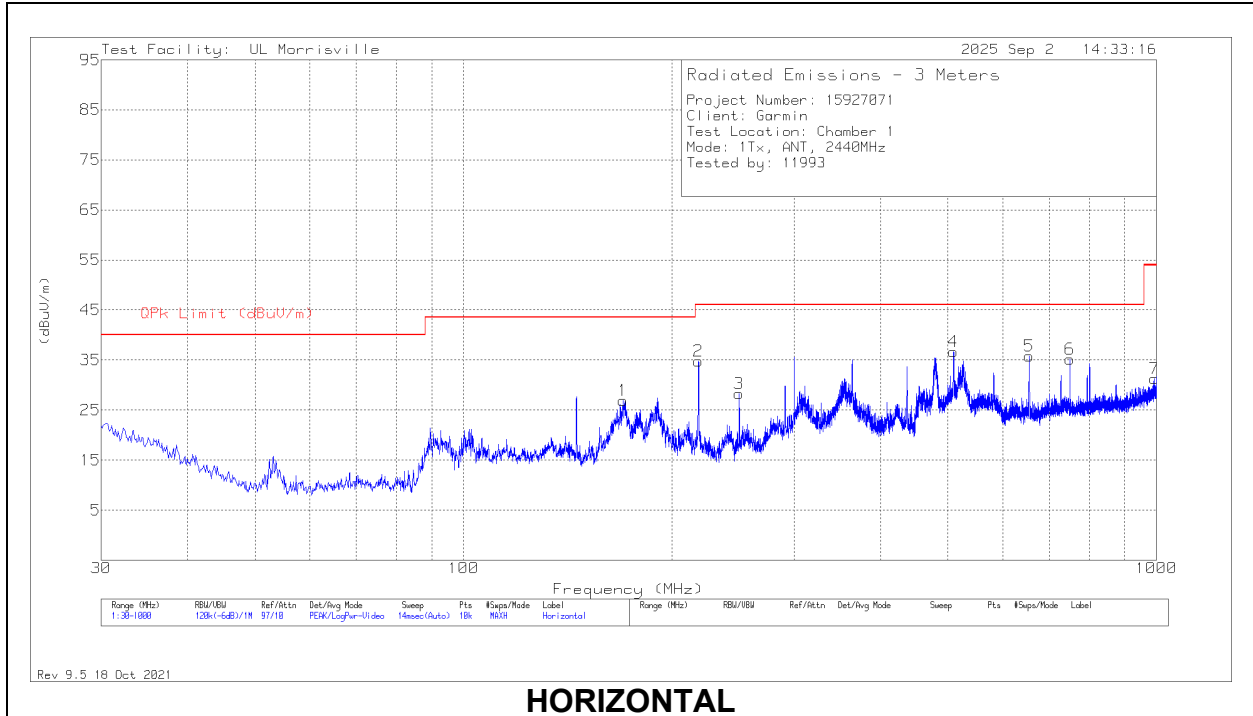
Pk - Peak detector

Note – Manufacturer has declared an operational DC of 13%, resulting in a DCCF of -17.72 dBm

$20\log(.13) = -17.72 \text{ dBm}$

10.2.2. HARMONICS AND SPURIOUS EMISSIONS BELOW 1 GHz

MID CHANNEL, 2440 MHz RESULTS



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
1	* ** 169.777	39.03	Pk	18.1	-30.2	26.93	43.52	-16.59	0-360	200	H
3	* ** 249.996	40.17	Pk	17.7	-29.6	28.27	46.02	-17.75	0-360	99	H
4	** 509.665	42	Pk	23.9	-29.2	36.7	46.02	-9.32	0-360	99	H
7	* ** 993.889	26.74	Pk	29.6	-25	31.34	53.97	-22.63	0-360	299	H
9	* ** 169.777	44.03	Pk	18.1	-30.2	31.93	43.52	-11.59	0-360	100	V
11	* ** 249.996	39.17	Pk	17.7	-29.6	27.27	46.02	-18.75	0-360	100	V
12	** 509.0835	45.8	Qp	23.9	-28.8	40.9	46.02	-5.12	339	111	V
14	** 793.778	39.56	Pk	27.5	-27.5	39.56	46.02	-6.46	0-360	100	V
15	** 800.083	36.51	Pk	27.6	-27.4	36.71	46.02	-9.31	0-360	100	V
8	145.43	48.88	Pk	19	-30.5	37.38	-	-	0-360	100	V
10	218.083	52.88	Pk	16.8	-29.7	39.98	-	-	0-360	100	V
2	218.374	47.67	Pk	16.8	-29.7	34.77	-	-	0-360	99	H
13	581.639	41.83	Pk	24.6	-28.2	38.23	-	-	0-360	100	V
5	655.747	38.18	Pk	25.9	-28.3	35.78	-	-	0-360	99	H
6	750.031	36.09	Pk	27.1	-28	35.19	-	-	0-360	99	H

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

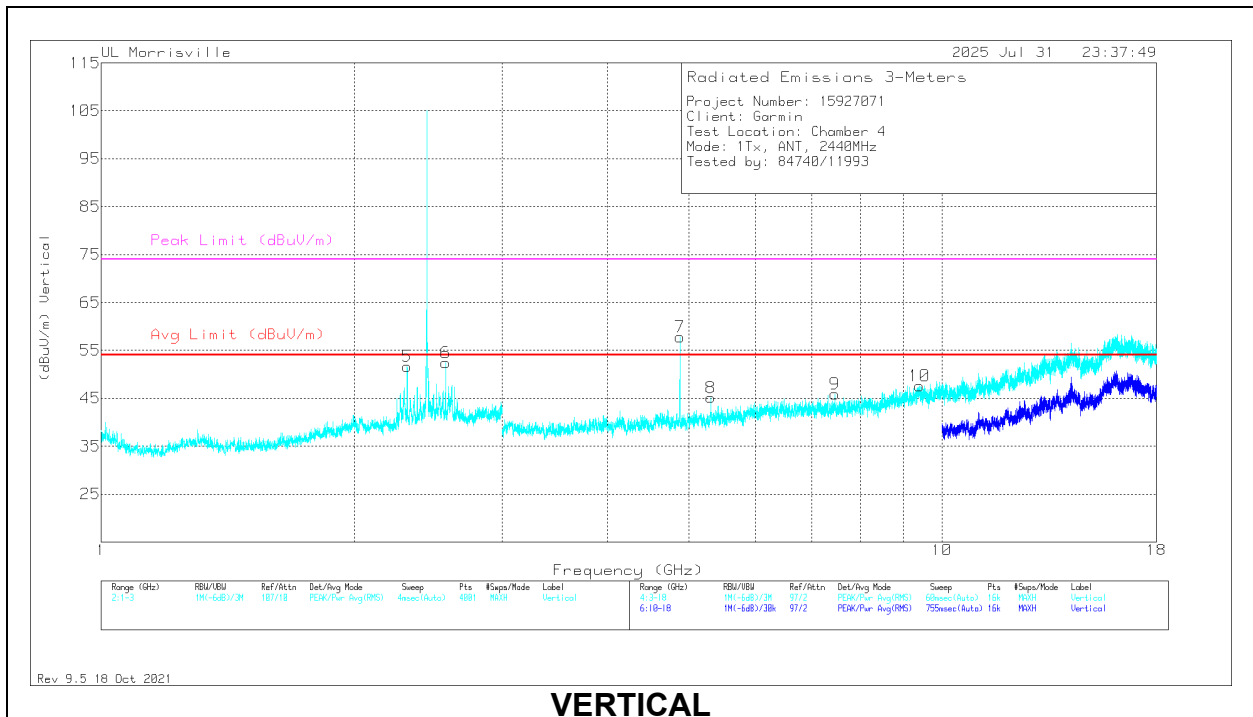
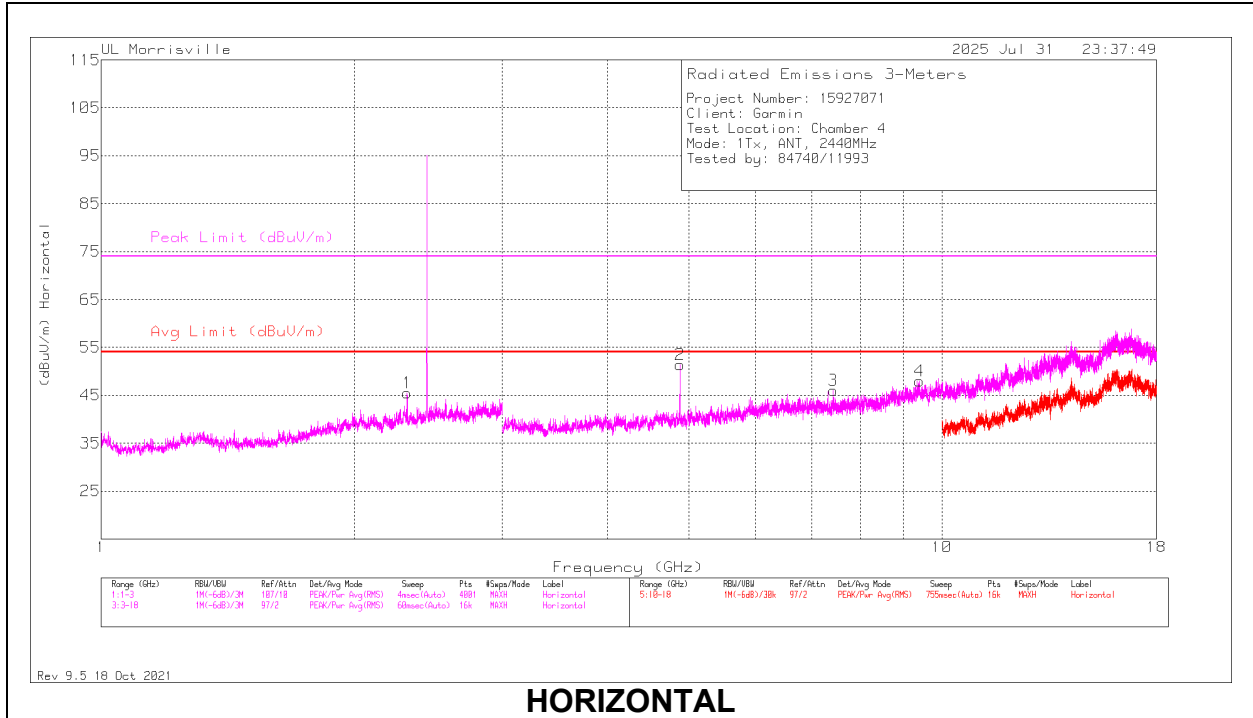
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

10.2.3. HARMONICS AND SPURIOUS EMISSIONS ABOVE 1 GHz

MID CHANNEL, 2440 MHz RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.312	36.63	Pk	31.9	-23	0	45.53	54	-8.47	74	-28.47	0-360	100	H
5	* ** 2.31208	44.36	PK2	31.9	-23	0	53.26	-	-	74	-20.74	68	163	V
	* ** 2.31208	44.36	PK2	31.9	-23	-17.72	35.54	54	-18.46	-	-	68	163	V
6	** 2.5681	43.52	PK2	32.4	-22.7	0	53.22	-	-	74	-20.78	94	155	V
	** 2.5681	43.52	PK2	32.4	-22.7	-17.72	35.5	54	-18.5	-	-	94	155	V
2	* ** 4.87959	51.83	PK2	33.9	-31.4	0	54.33	-	-	74	-19.67	104	224	H
	* ** 4.87959	51.83	PK2	33.9	-31.4	-17.72	36.61	54	-17.39	-	-	104	224	H
3	* ** 7.42875	38.02	Pk	35.6	-27.6	0	46.02	54	-7.98	74	-27.98	0-360	100	H
4	* ** 9.39938	35.44	Pk	36.5	-24	0	47.94	54	-6.06	74	-26.06	0-360	100	H
7	* ** 4.88025	55.39	PK2	33.9	-31.5	0	57.79	-	-	74	-16.21	349	211	V
	* ** 4.88025	55.39	PK2	33.9	-31.5	-17.72	40.07	54	-13.93	-	-	349	211	V
9	* ** 7.46344	38.05	Pk	35.6	-27.8	0	45.85	54	-8.15	74	-28.15	0-360	200	V
10	* ** 9.40031	35.16	Pk	36.5	-24.1	0	47.56	54	-6.44	74	-26.44	0-360	200	V
8	5.31094	42.06	Pk	34.4	-31.3	0	45.16	54	-8.84	74	-28.84	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

10.3. FUNDAMENTAL AND SPURIOUS EMISSIONS (HIGH CHANNEL)

10.3.1. FUNDAMENTAL (2480 MHz)

Frequency (GHz)	Meter Reading (dBuV)	Det	88761 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.480													
2.47982	88.84	Pk	32.2	-24.4	0	96.64	-	-	114	-17.36	45	264	H
2.47982	88.84	Pk	32.2	-24.4	-17.72	78.92	94	-15.08	-	-	45	264	H
2.47997	96.59	Pk	32.2	-24.4	0	104.39	-	-	114	-9.61	358	119	V
2.47997	96.59	Pk	32.2	-24.4	-17.72	86.67	94	-7.33	-	-	358	119	V

Tested by: 11993

Test Date: 2025-09-02

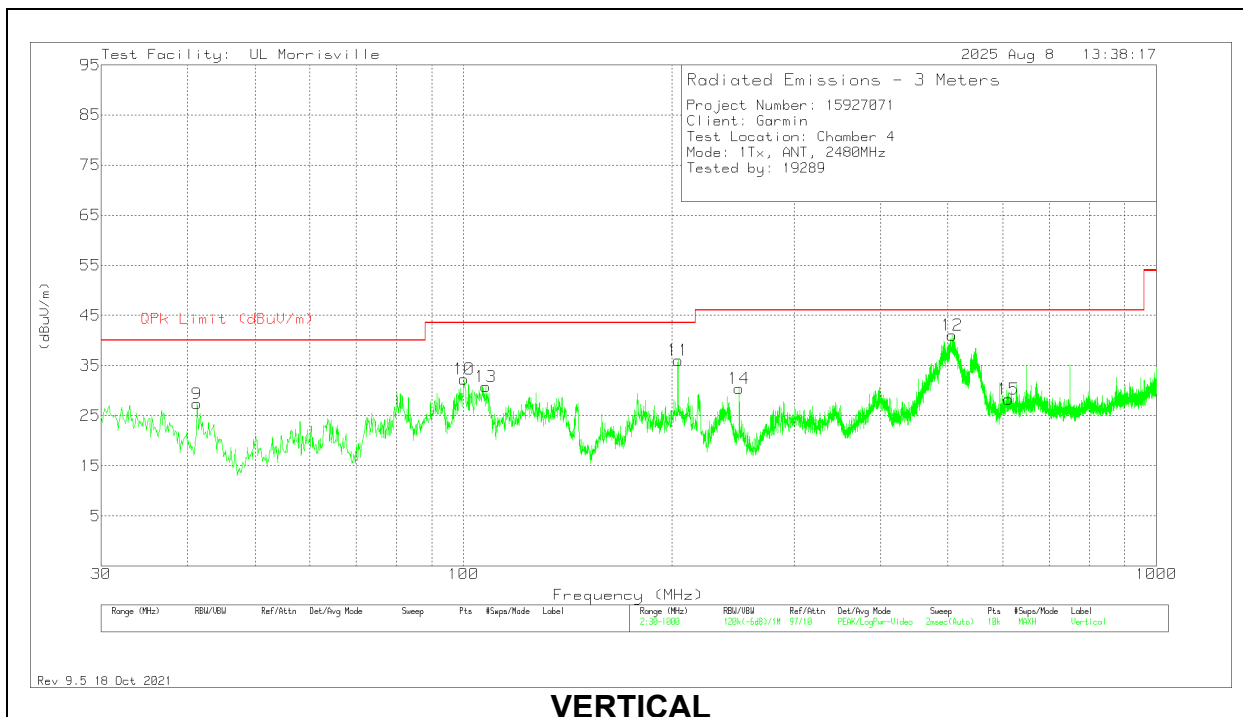
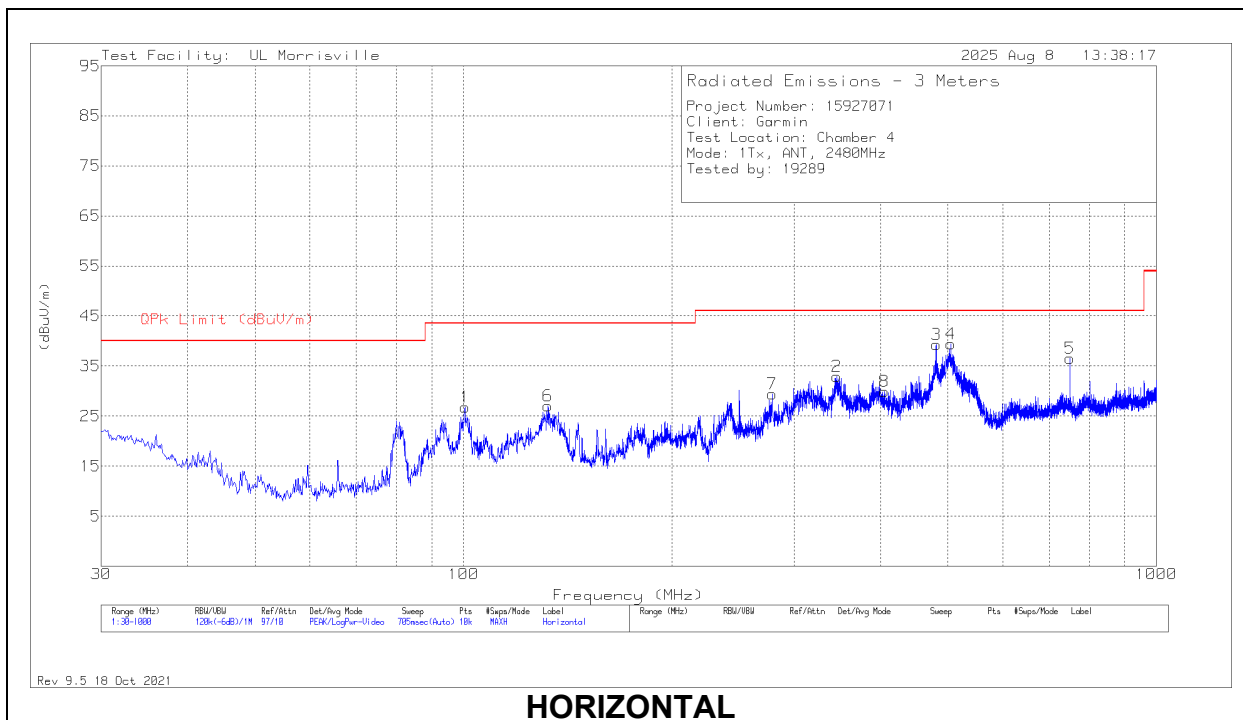
Pk - Peak detector

Note – Manufacturer has declared an operational DC of 13%, resulting in a DCCF of -17.72 dBm

$20\log(.13) = -17.72 \text{ dBm}$

10.3.2. HARMONICS AND SPURIOUS EMISSIONS BELOW 1 GHz

HIGH CHANNEL, 2480 MHz RESULTS



RADIATED EMISSIONS

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
4	** 505.203	43.58	Pk	23.8	-28	39.38	46.02	-6.64	0-360	100	H
6	* ** 132.432	37.87	Pk	19.8	-30.6	27.07	43.52	-16.45	0-360	100	H
7	* ** 278.902	39.74	Pk	19.5	-29.8	29.44	46.02	-16.58	0-360	100	H
8	* ** 405.196	37.13	Pk	21.8	-29	29.93	46.02	-16.09	0-360	100	H
12	** 507.5338	41.53	Qp	23.8	-28.4	36.93	46.02	-9.09	75	102	V
14	* ** 249.996	42.38	Pk	17.5	-29.5	30.38	46.02	-15.64	0-360	100	V
15	* ** 611.321	30.87	Pk	25.1	-27.7	28.27	46.02	-17.75	0-360	100	V
9	41.252	39.76	Pk	19.1	-31.5	27.36	-	-	0-360	100	V
10	100.228	46.68	Pk	16.5	-30.9	32.28	-	-	0-360	100	V
1	100.519	40.99	Pk	16.6	-30.8	26.79	-	-	0-360	200	H
13	107.697	43.73	Pk	18.4	-31.3	30.83	-	-	0-360	100	V
11	204.018	48.99	Pk	17.3	-30.2	36.09	-	-	0-360	100	V
2	345.541	41.33	Pk	20.3	-28.7	32.93	-	-	0-360	100	H
3	480.953	43.89	Pk	23.8	-28.4	39.29	-	-	0-360	100	H
5	750.031	37.47	Pk	26.6	-27.5	36.57	-	-	0-360	100	H

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

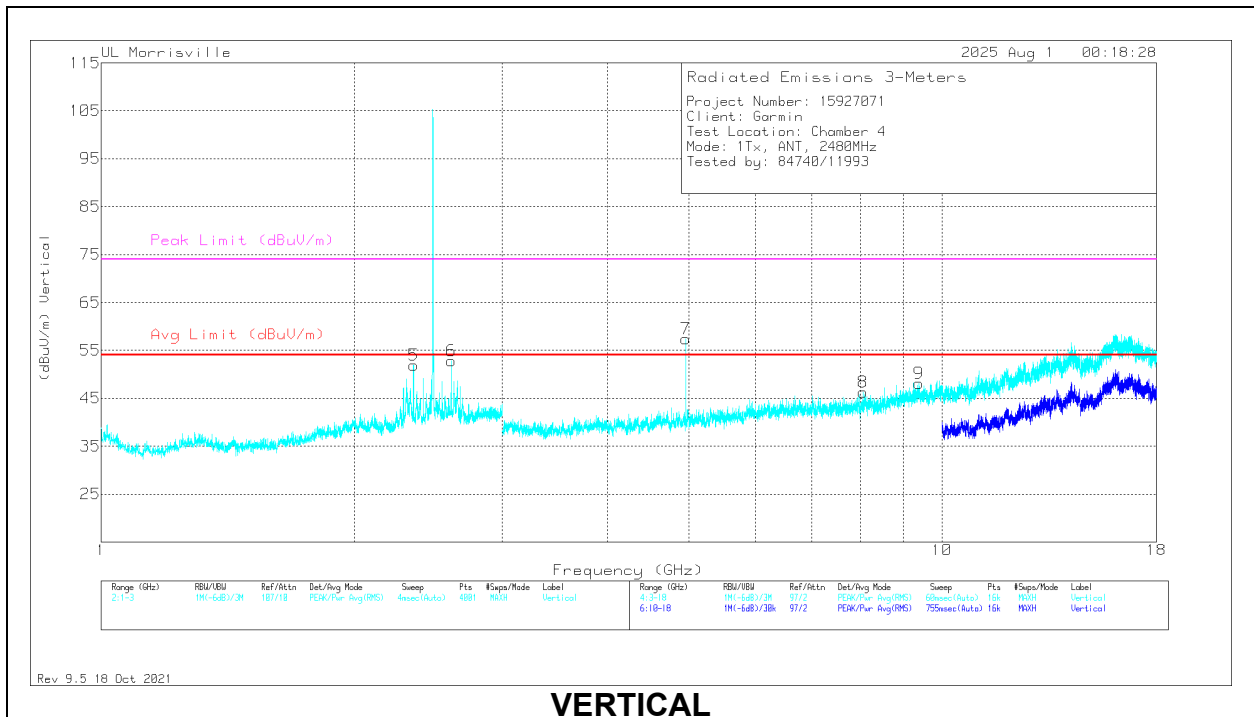
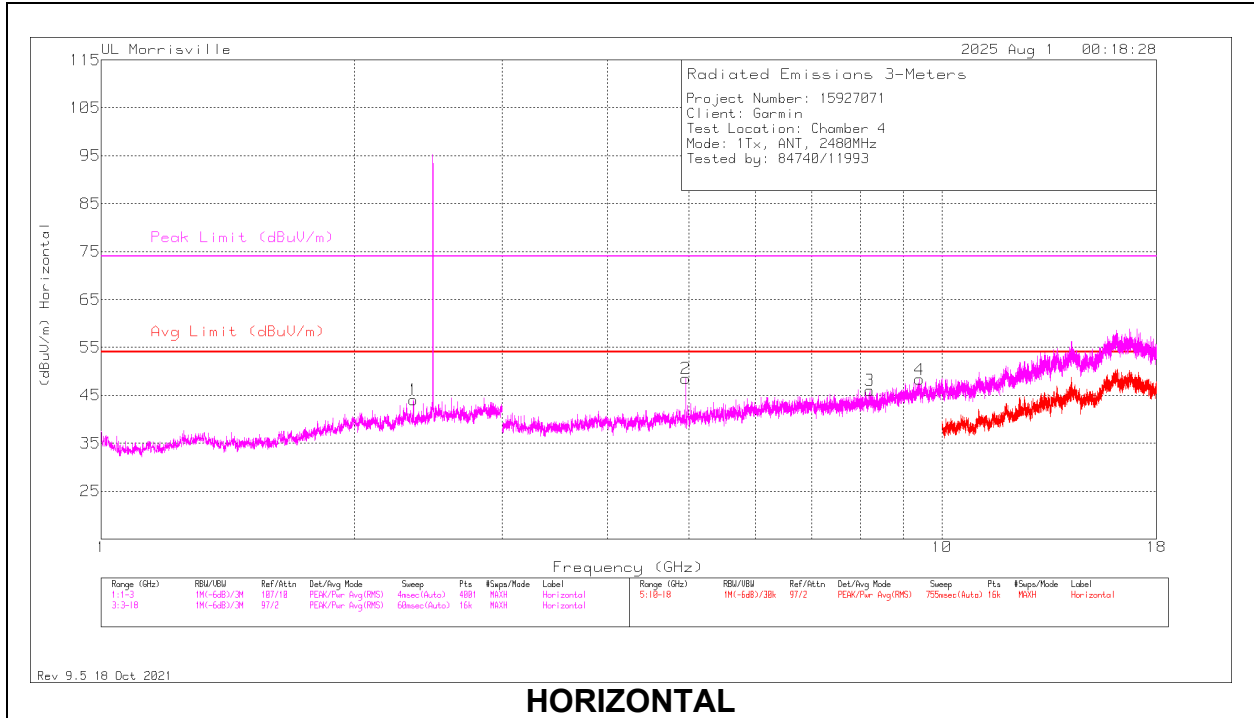
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

10.3.3. HARMONICS AND SPURIOUS EMISSIONS ABOVE 1 GHz

HIGH CHANNEL, 2480 MHz RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	206211 (dB/m)	Gain/Loss (dB)	DCCF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.352	35.65	Pk	31.8	-23.4	0	44.05	54	-9.95	74	-29.95	0-360	100	H
5	* ** 2.35231	43.81	PK2	31.8	-23.4	0	52.21	-	-	74	-21.79	87	205	V
	* ** 2.35231	43.81	PK2	31.8	-23.4	-17.72	34.49	54	-19.51	-	-	87	205	V
6	** 2.60803	44.9	PK2	32.2	-22.8	0	54.3	-	-	74	-19.7	98	142	V
	** 2.60803	44.9	PK2	32.2	-22.8	-17.72	36.58	54	-17.41	-	-	98	142	V
2	* ** 4.95998	49.72	PK2	33.8	-31.8	0	51.72	-	-	74	-22.28	50	103	H
	* ** 4.95998	49.72	PK2	33.8	-31.8	-17.72	34	54	-20	-	-	50	103	H
3	* ** 8.20688	37.09	Pk	35.7	-26.8	0	45.99	54	-8.01	74	-28.01	0-360	100	H
4	* ** 9.40499	36.68	PK2	36.5	-24.1	0	49.08	-	-	74	-24.92	110	181	H
	* ** 9.40499	36.68	PK2	36.5	-24.1	-17.72	31.36	54	-22.64	-	-	110	181	H
7	* ** 4.95968	53.87	PK2	33.8	-31.8	0	55.87	-	-	74	-18.13	340	215	V
	* ** 4.95968	53.87	PK2	33.8	-31.8	-17.72	38.15	54	-15.85	-	-	340	215	V
8	* ** 8.055	37.76	Pk	35.6	-27.1	0	46.26	54	-7.74	74	-27.74	0-360	200	V
9	* ** 9.39687	36.97	PK2	36.5	-24	0	49.47	-	-	74	-24.53	187	272	V
	* ** 9.39687	36.97	PK2	36.5	-24	-17.72	31.75	54	-22.25	-	-	187	272	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

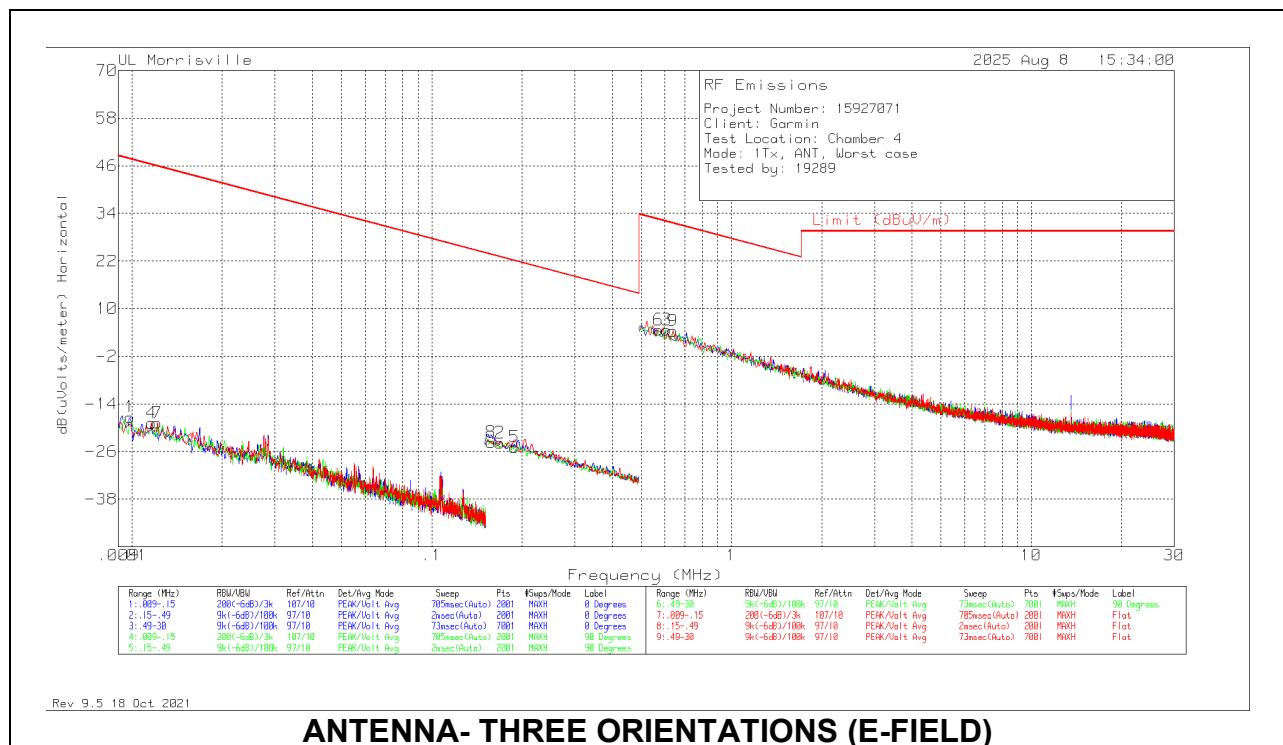
Pk - Peak detector

PK2 - Maximum Peak

10.4. WORST CASE SPURIOUS BELOW 30MHZ

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

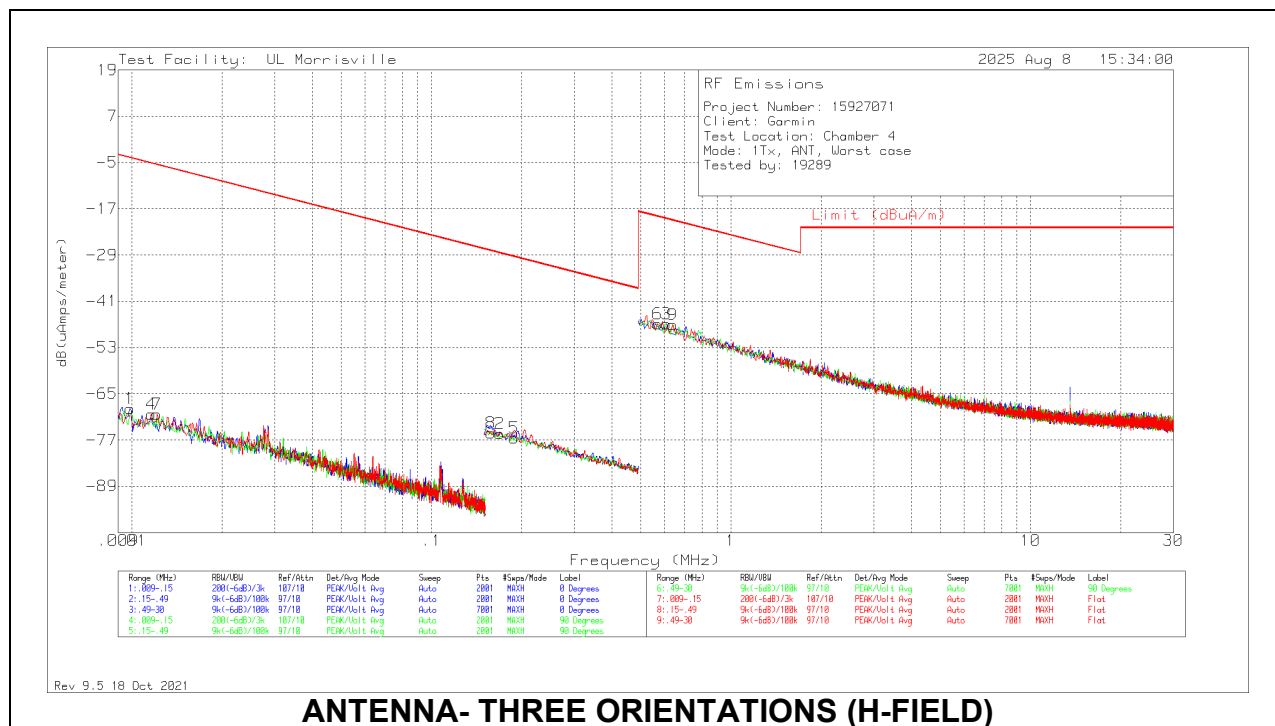
10.4.1. ANT



ANTENNA- THREE ORIENTATIONS (E-FIELD)

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ANT (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	.00985	43.59	Pk	19.1	0	-80	-17.31	47.73	67.73	-65.04	0-360	0 degs
4	.01163	43.04	Pk	18.1	0	-80	-18.86	46.3	66.3	-65.16	0-360	90 degs
7	.01212	43.27	Pk	17.9	0	-80	-18.83	45.93	65.93	-64.76	0-360	Flat
8	.15765	45.31	Pk	11	0	-80	-23.69	23.65	43.65	-47.34	0-360	Flat
2	.16887	45.15	Pk	11	0	-80	-23.85	23.05	43.05	-46.9	0-360	0 degs
5	.18851	44.08	Pk	11	0	-80	-24.92	22.1	42.1	-47.02	0-360	90 degs
6	.5701	33.53	Pk	11	.1	-40	4.63	32.48	-	-27.85	0-360	90 degs
3	.60805	33.55	Pk	11	.1	-40	4.65	31.93	-	-27.28	0-360	0 degs
9	.63756	33.29	Pk	11	.1	-40	4.39	31.51	-	-27.12	0-360	Flat

Pk - Peak detector



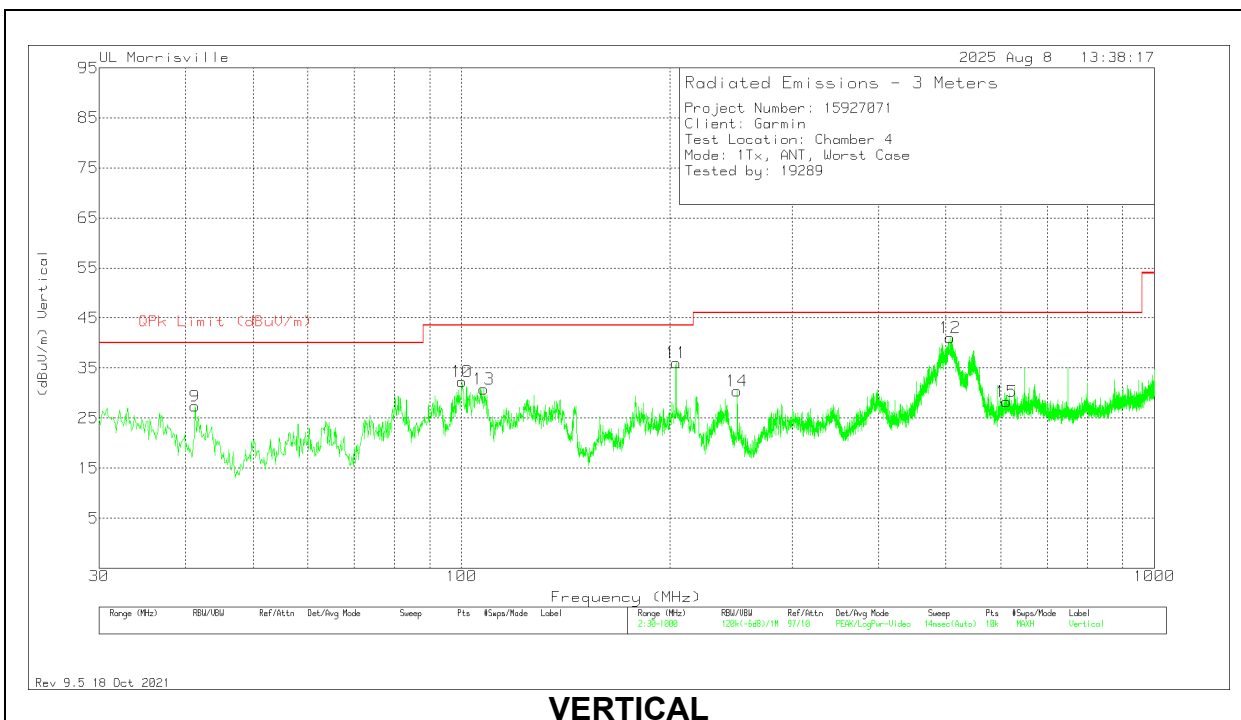
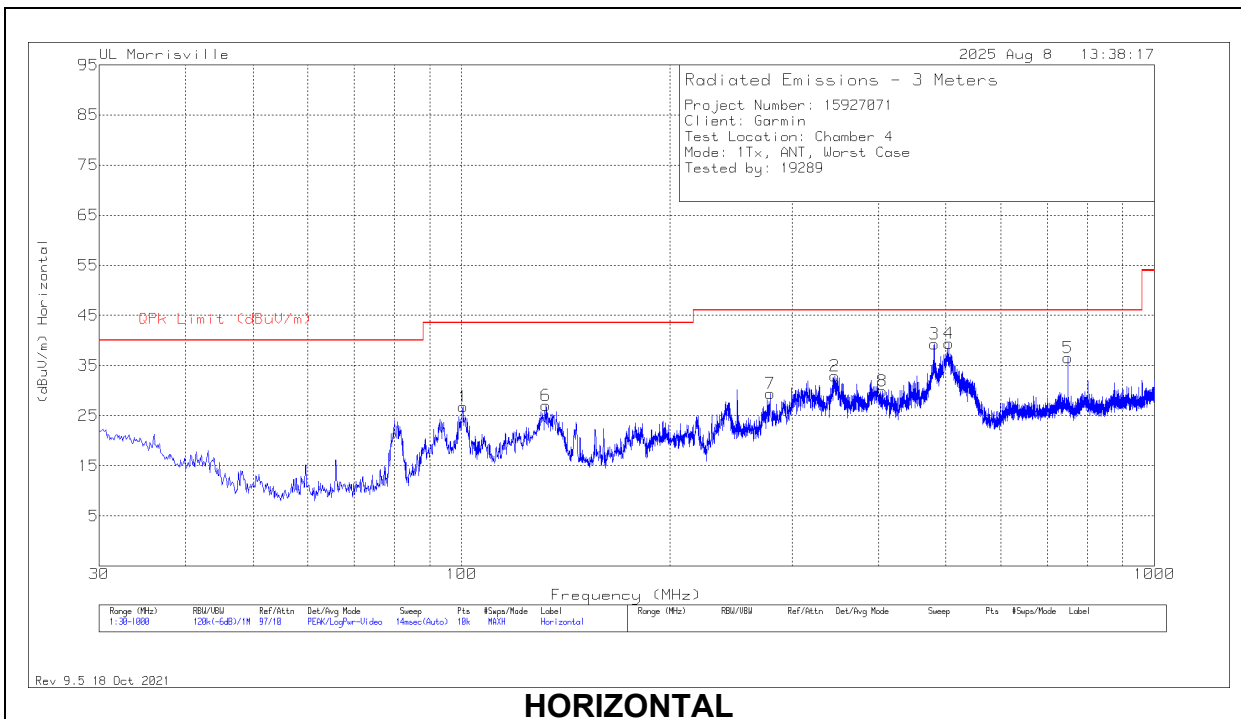
ANTENNA- THREE ORIENTATIONS (H-FIELD)

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ANT (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
1	.00985	43.59	Pk	-32.4	0	-80	-68.81	-3.77	16.23	-65.04	0-360	0 degs
4	.01163	43.04	Pk	-33.4	0	-80	-70.36	-5.2	14.8	-65.16	0-360	90 degs
7	.01212	43.27	Pk	-33.6	0	-80	-70.33	-5.57	14.43	-64.76	0-360	Flat
8	.15765	45.31	Pk	-40.5	0	-80	-75.19	-27.85	-7.85	-47.34	0-360	Flat
2	.16887	45.15	Pk	-40.5	0	-80	-75.35	-28.45	-8.45	-46.9	0-360	0 degs
5	.18851	44.08	Pk	-40.5	0	-80	-76.42	-29.4	-9.4	-47.02	0-360	90 degs
6	.5701	33.53	Pk	-40.5	.1	-40	-46.87	-19.02	-	-27.85	0-360	90 degs
3	.60805	33.55	Pk	-40.5	.1	-40	-46.85	-19.57	-	-27.28	0-360	0 degs
9	.63756	33.29	Pk	-40.5	.1	-40	-47.11	-19.99	-	-27.12	0-360	Flat

Pk - Peak detector

10.5. WORST CASE SPURIOUS BELOW 1 GHZ

10.5.1. ANT



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
4	** 505.203	43.58	Pk	23.8	-28	39.38	46.02	-6.64	0-360	100	H
6	* ** 132.432	37.87	Pk	19.8	-30.6	27.07	43.52	-16.45	0-360	100	H
7	* ** 278.902	39.74	Pk	19.5	-29.8	29.44	46.02	-16.58	0-360	100	H
8	* ** 405.196	37.13	Pk	21.8	-29	29.93	46.02	-16.09	0-360	100	H
12	** 507.5338	41.53	Qp	23.8	-28.4	36.93	46.02	-9.09	75	102	V
14	* ** 249.996	42.38	Pk	17.5	-29.5	30.38	46.02	-15.64	0-360	100	V
15	* ** 611.321	30.87	Pk	25.1	-27.7	28.27	46.02	-17.75	0-360	100	V
9	41.252	39.76	Pk	19.1	-31.5	27.36	-	-	0-360	100	V
10	100.228	46.68	Pk	16.5	-30.9	32.28	-	-	0-360	100	V
1	100.519	40.99	Pk	16.6	-30.8	26.79	-	-	0-360	200	H
13	107.697	43.73	Pk	18.4	-31.3	30.83	-	-	0-360	100	V
11	204.018	48.99	Pk	17.3	-30.2	36.09	-	-	0-360	100	V
2	345.541	41.33	Pk	20.3	-28.7	32.93	-	-	0-360	100	H
3	480.953	43.89	Pk	23.8	-28.4	39.29	-	-	0-360	100	H
5	750.031	37.47	Pk	26.6	-27.5	36.57	-	-	0-360	100	H

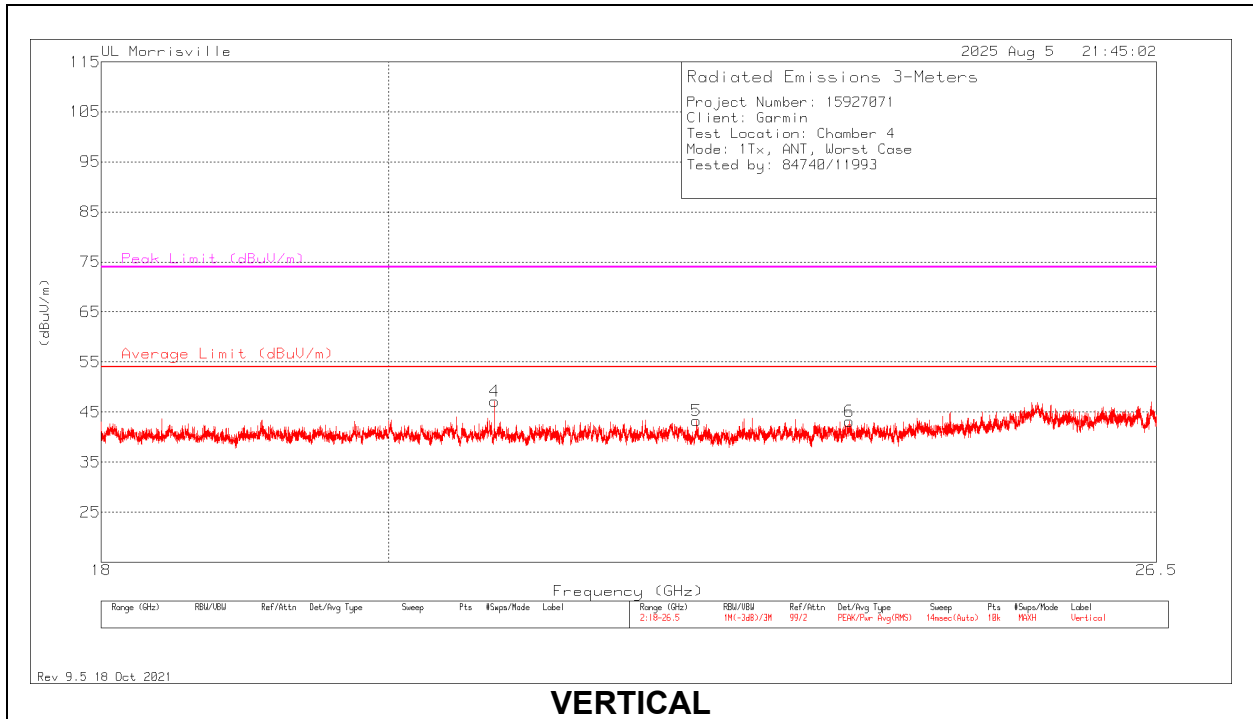
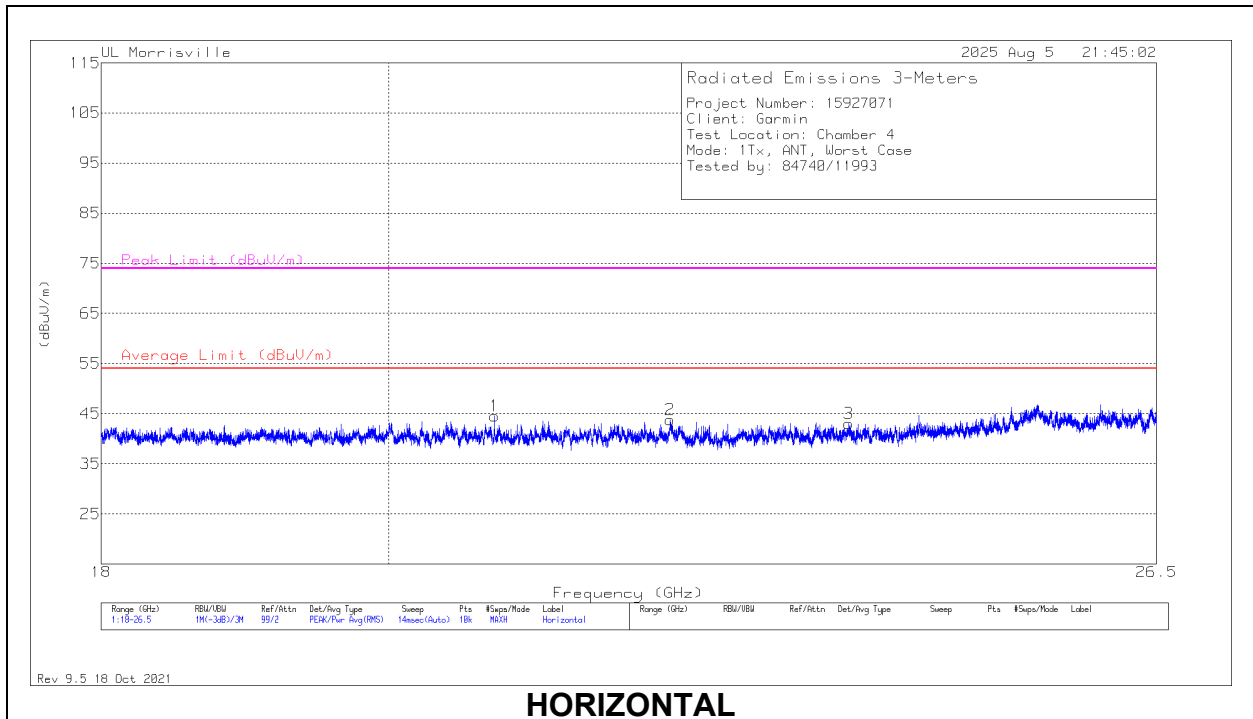
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.6. WORST CASE SPURIOUS 18-26 GHZ

10.6.1. ANT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	91186 (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	* ** 20.79253	51.35	Pk	32.7	-39.5	0	44.55	54	-9.45	74	-29.45	0-360	200	H
2	* ** 22.17392	48.48	Pk	33.4	-38.1	0	43.78	54	-10.22	74	-30.22	0-360	200	H
3	* ** 23.67432	46.86	Pk	33.9	-37.7	0	43.06	54	-10.94	74	-30.94	0-360	100	H
4	* ** 20.79168	53.87	Pk	32.7	-39.4	0	47.17	54	-6.83	74	-26.83	0-360	300	V
5	* ** 22.38729	48.75	Pk	33.3	-38.8	0	43.25	54	-10.75	74	-30.75	0-360	200	V
6	* ** 23.67687	46.83	Pk	33.9	-37.6	0	43.13	54	-10.87	74	-30.87	0-360	300	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

11. SETUP PHOTOS

Please refer to R15927071-EP1 for setup photos

END OF TEST REPORT