

TEST REPORT

Report Number: R15603217-E1

Applicant : Abbott Diabetes Care Inc.
1360 South Loop Rd
Alameda, CA 94502, United States

Model : FreeStyle Libre 2 Sensor / FreeStyle Libre 2 Plus Sensor

FCC ID : QXS-LIB02S2

IC : 12106A-LIB02S2

EUT Description : FreeStyle Libre 2 (Plus) Sensor

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C: 2025
ISED RSS-247 ISSUE 3: 2023
ISED RSS-GEN ISSUE 5 + A1 + A2: 2021

Date Of Issue:
2026-02-18

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2025-05-20	Initial Issue	Charles Moody
V2	2025-06-10	Misc. editorial updates	Mike Antola
V3	2025-06-13	Added antenna port conducted data	Mike Antola
V4	2026-02-18	Updated Output Power and C63.10 References	Charles Moody

TABLE OF CONTENTS

REPORT REVISION HISTORY	2
TABLE OF CONTENTS	3
1. ATTESTATION OF TEST RESULTS	5
2. TEST RESULTS SUMMARY	6
3. TEST METHODOLOGY	6
4. FACILITIES AND ACCREDITATION	6
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	7
5.1. METROLOGICAL TRACEABILITY	7
5.2. DECISION RULES	7
5.3. MEASUREMENT UNCERTAINTY	7
5.4. SAMPLE CALCULATION	7
6. EQUIPMENT UNDER TEST	8
6.1. EUT DESCRIPTION	8
6.2. MAXIMUM OUTPUT POWER	8
6.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
6.4. SOFTWARE AND FIRMWARE	8
6.5. WORST-CASE CONFIGURATION AND MODE	8
6.6. DESCRIPTION OF TEST SETUP	9
7. MEASUREMENT METHOD	10
8. TEST AND MEASUREMENT EQUIPMENT	11
9. ANTENNA PORT TEST RESULTS	13
9.1. ON TIME AND DUTY CYCLE	13
9.2. 99% BANDWIDTH	14
9.2.1. BLE (1Mbps)	14
9.3. 6 dB BANDWIDTH	15
9.3.1. BLE (1Mbps)	15
9.4. PEAK & AVERAGE POWER	16
9.4.1. BLE (1Mbps)	17
9.4.2. BLE (1Mbps)	17
9.5. POWER SPECTRAL DENSITY	18
9.5.1. BLE (1Mbps)	18
9.6. CONDUCTED SPURIOUS EMISSIONS	19

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

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Abbott Diabetes Care Inc.
1360 South Loop Rd
Alameda, CA 94502, United States

EUT DESCRIPTION: FreeStyle Libre 2 (Plus) Sensor

MODEL: FreeStyle Libre 2 Sensor / FreeStyle Libre 2 Plus Sensor

SERIAL NUMBER: E07A007988D32484 (Conducted)
E07A007509CA5D3B (Radiated)

SAMPLE RECEIPT DATE: 2025-04-07, 2025-04-29, 2025-05-02

DATE TESTED: 2025-04-29 TO 2025-05-06, 2025-08-07

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C: 2025	Refer to Section 2
ISED RSS-247 Issue 3: 2023	Refer to Section 2
ISED RSS-GEN Issue 5 + A1 + A2: 2021	Refer to Section 2

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

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

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

Approved & Released For
UL LLC By:



Michael Antola
Senior Staff Engineer
Consumer, Medical and IT Segment
UL LLC

Prepared By:



Charles Moody
Operations Leader
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data provided by the customer:

- 1.) Antenna gain and type (see section 6.3)
- 2.) Supported data rates (see section 6.5)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3
15.247 (a) (2)	RSS-247 5.2 (a)	6dB BW	Compliant	None
15.247 (b) (3)	RSS-247 5.4 (d)	Output Power		
See Comment		Average power	Reporting purposes only	ANSI C63.10, Section 11.9.2.3.2
15.247 (e)	RSS-247 5.2 (b)	PSD	Compliant	None
15.247 (d)	RSS-247 5.5	Conducted Spurious Emissions		
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions		
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Not Performed	EUT is battery powered

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+A1:2023+Corr:2024, 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, Certificate Number #0751.06, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 12 Laboratory Dr RTP, NC 27709, U.S.A.	US0067	2180C	825374
☒	Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, U.S.A		27265	

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

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

5.2. DECISION RULES

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

5.3. MEASUREMENT UNCERTAINTY

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

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

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable} \\ &\text{Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT the FreeStyle Libre 2 (Plus) Sensor which makes automatic glucose readings every minute. The EUT contains a BLE radio. This report covers the full emissions testing of the BLE radio. Both models are electrically identical. The FreeStyle Libre 2 Sensor was used for testing, as this was declared by the client to be worst case.

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	0.91	1.23

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

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

The radio utilizes an PIFA antenna, with a maximum gain of -1.59 dBi.

6.4. SOFTWARE AND FIRMWARE

The testing software used for testing was PTUGen4 Version 1.2.3.0 – x86, Security Library Version 1.0.2.6

Embedded software version of the radiated and conducted samples is 3.7.11.0.

6.5. WORST-CASE CONFIGURATION AND MODE

The BLE radio only supports 1Mbps. Therefore, all testing was performed at this data rate only.

Radiated emissions below 1GHz and above 18GHz, were performed with the EUT set to transmit at the channel with highest power spectral density as worst-case scenario.

Band edge and radiated emissions between 1GHz and 18GHz were performed with the EUT set to transmit at the highest power on low and high channels as well as mid channel for radiated spurious emissions.

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

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	HP	14-dq1039wm	5CD941FN5J	-
EVM Board	Texas Instruments	TRF7960	-	-

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB A Extension Cord	Shielded	< 1m	Used from Laptop to EVM board.

TEST SETUP

The EUT is placed on the EVM board in order to configure the radio prior to testing. For radiated testing, the EUT is removed from the board and tested without the use of any additional support equipment.

SETUP DIAGRAMS

Please refer to R15603217-EP1 for setup diagrams

7. MEASUREMENT METHOD

6 dB BW: ANSI C63.10 Subclause -11.8.1

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

Output Power: ANSI C63.10 Subclause -11.9.1.3 Method PKPM1 Peak-reading power meter

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

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

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

Radiated emissions restricted & unrestricted frequency bands: ANSI C63.10 Subclause -11.12.1 and 6.10.5, 6.3 to 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.
	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				
**89509	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2023-05-23	2025-05-23
	Gain-Loss Chains				
**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
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-04-21	2026-04-21
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

****NOTE:** At the time of testing, all equipment was in calibration.

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	18-40 GHz				
**204704	Horn Antenna, 18-26.5GHz	Com-Power	AH-826	2023-07-20	2025-07-20
	Gain-Loss Chains				
**135999	Gain-loss string: 18-40GHz	Various	Various	2024-05-08	2025-05-08
	Receiver & Software				
**81018	Spectrum Analyzer	Agilent	E4446A	2024-07-31	2025-07-31
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 1				
**90411	Spectrum Analyzer	Keysight Technologies	N9030A	2024-08-01	2025-08-01
211055	Real-Time Peak Power Sensor 50MHz to 8GHz	Boonton	RTP5000	2025-07-30	2026-07-30
259679	SMA Coaxial 10dB Attenuator 25MHz-18GHz	CentricRF	C27S-10	2024-08-16	2025-08-16
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	NA	NA

****NOTE:** At the time of testing, all equipment was in calibration.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

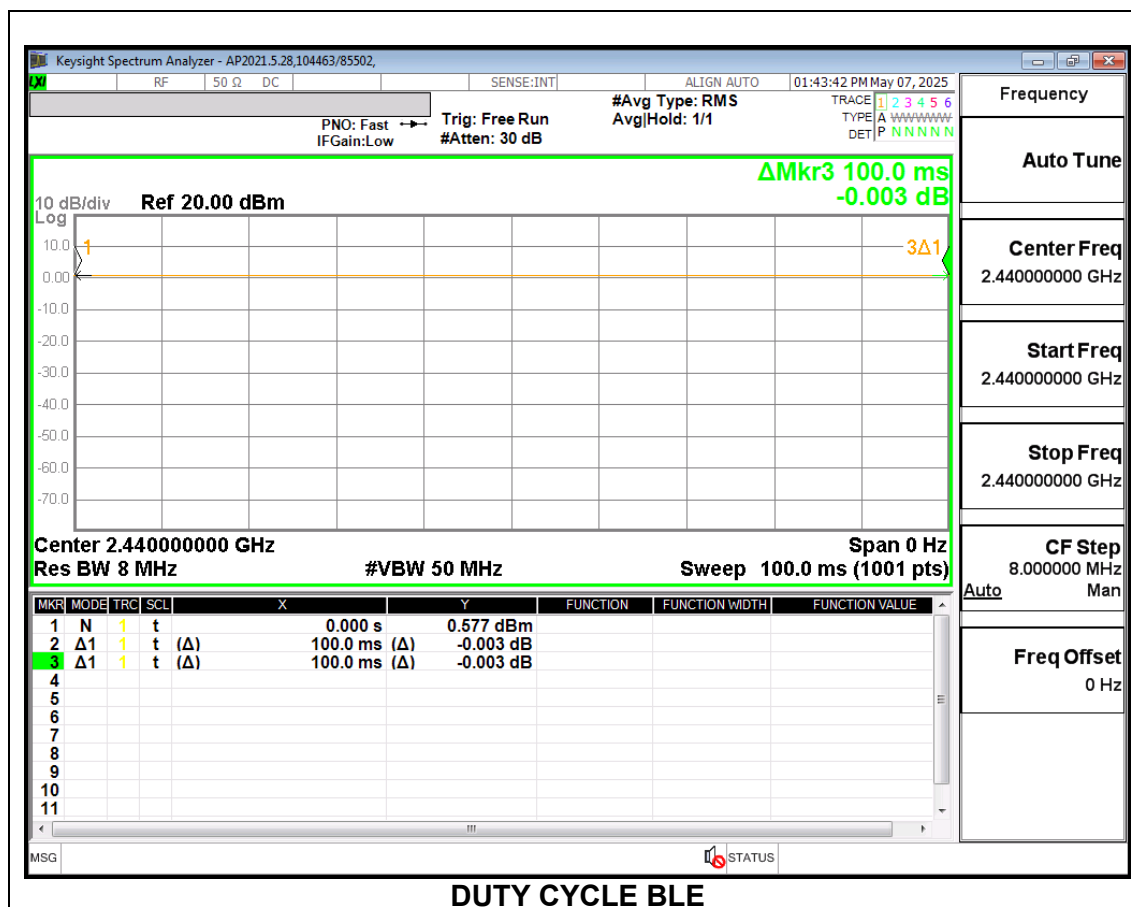
PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
2.4GHz Band						
BLE	100.000	100.000	1.000	100.00	0.00	0.010

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	1.0299
Middle	2440	1.0130
High	2480	1.0153



9.3. 6 dB BANDWIDTH

LIMITS

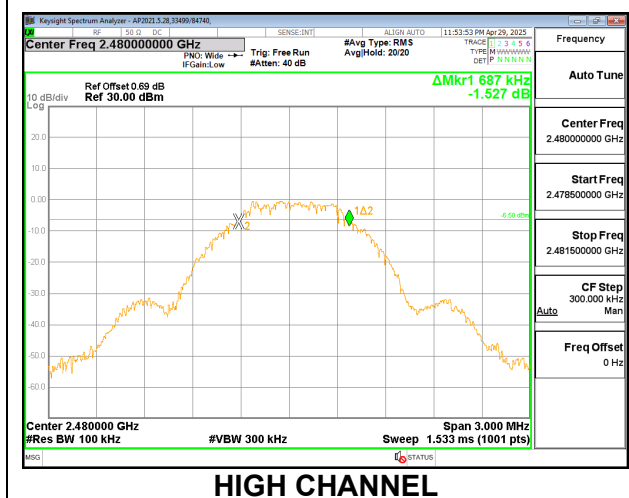
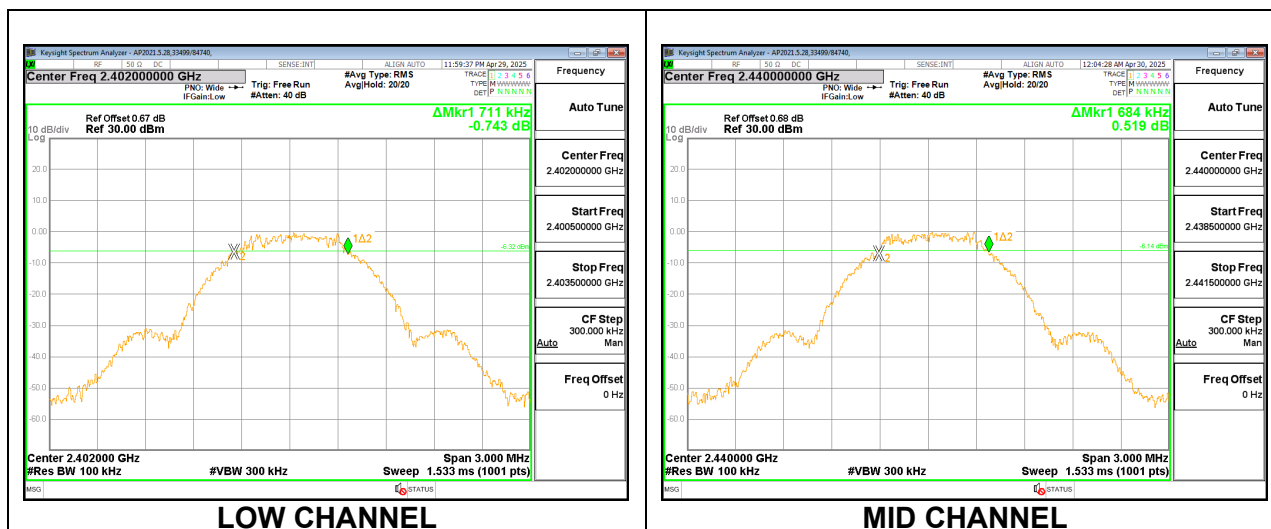
FCC §15.247 (a) (2)
RSS-247 5.2 (a)

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	0.7110	0.5
Middle	2440	0.6840	0.5
High	2480	0.6870	0.5



9.4. PEAK & AVERAGE POWER

LIMITS

Peak Power:
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.

Avg Power is for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter for Peak and Gated Average power measurements.

The EUT cable assembly insertion loss of 1 dB 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. Output power was read directly from power meter. Average power is gated.

POWER RESULTS

Tested By:	85502
Date:	2025-08-07

9.4.1. BLE (1Mbps)

Channel	Frequency (MHz)	Peak Power Reading (dBm)	Limit (dBm)	Margin (dB)
Low	2402	0.78	30	-29.22
Middle	2440	0.82	30	-29.18
High	2480	0.91	30	-29.09

9.4.2. BLE (1Mbps)

Channel	Frequency (MHz)	AV power (dBm)
Low	2402	0.57
Middle	2440	0.61
High	2480	0.69

9.5. POWER SPECTRAL DENSITY

LIMITS

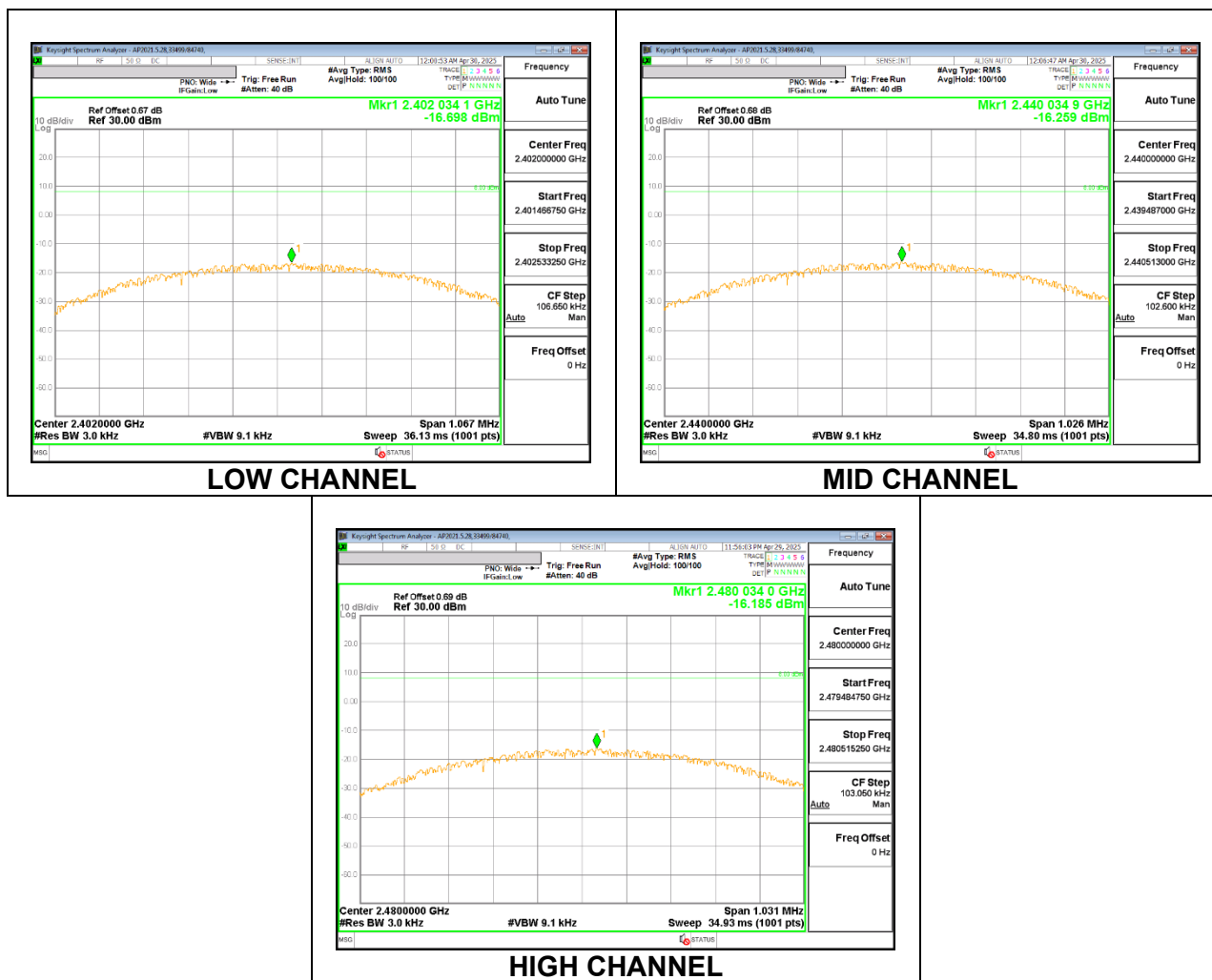
FCC §15.247 (e)
RSS-247 (5.2) (b)

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

9.5.1. BLE (1Mbps)

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Margin (dB)
Low	2402	-16.698	8	-24.70
Middle	2440	-16.259	8	-24.26
High	2480	-16.185	8	-24.19



9.6. CONDUCTED SPURIOUS EMISSIONS

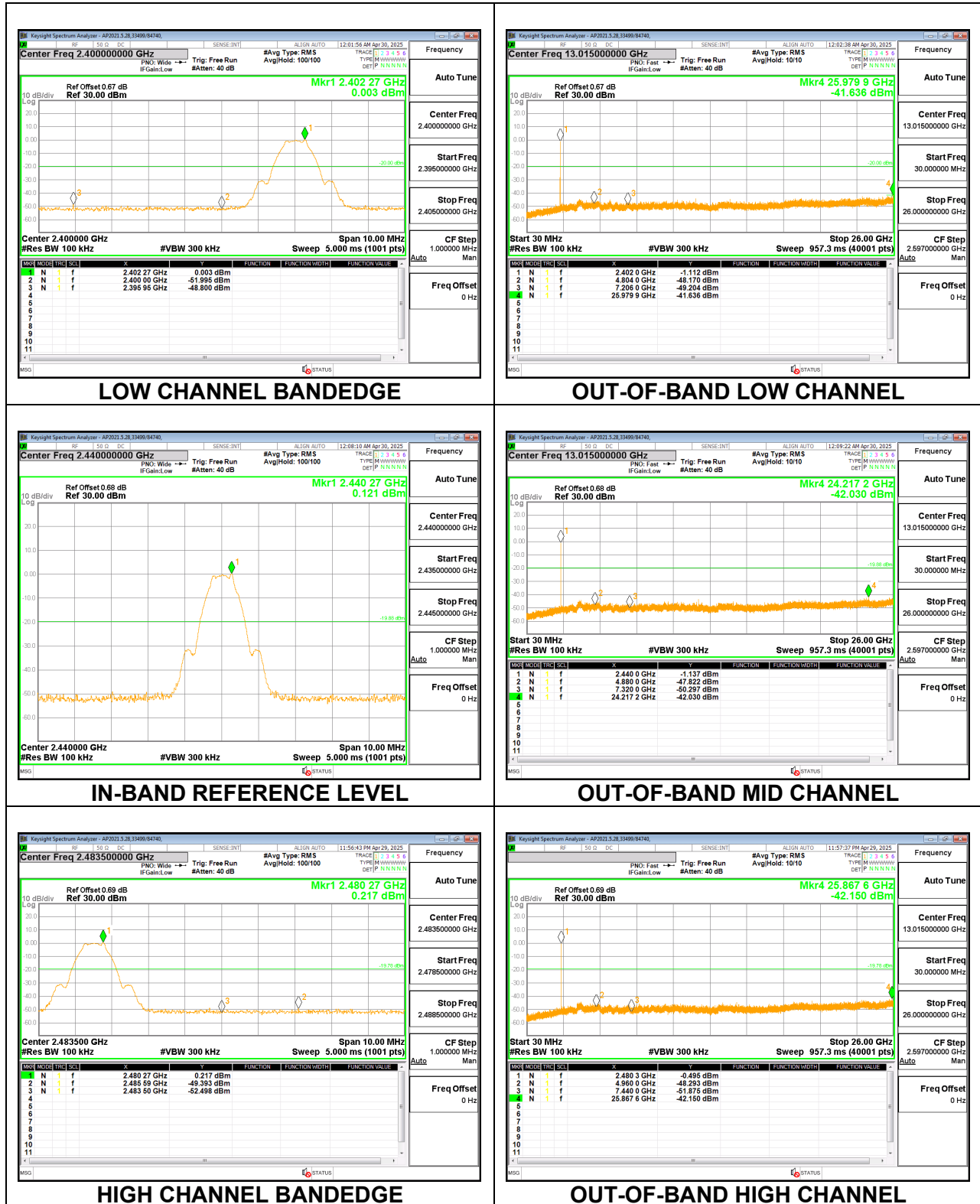
LIMITS

FCC §15.247 (d)
RSS-247 5.5

Output power was measured based on the use of peak measurements, so the required attenuation is -20 dBc.

RESULTS

9.6.1. BLE (1Mbps)



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

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

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (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 power spectral density was tested.

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

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

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

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

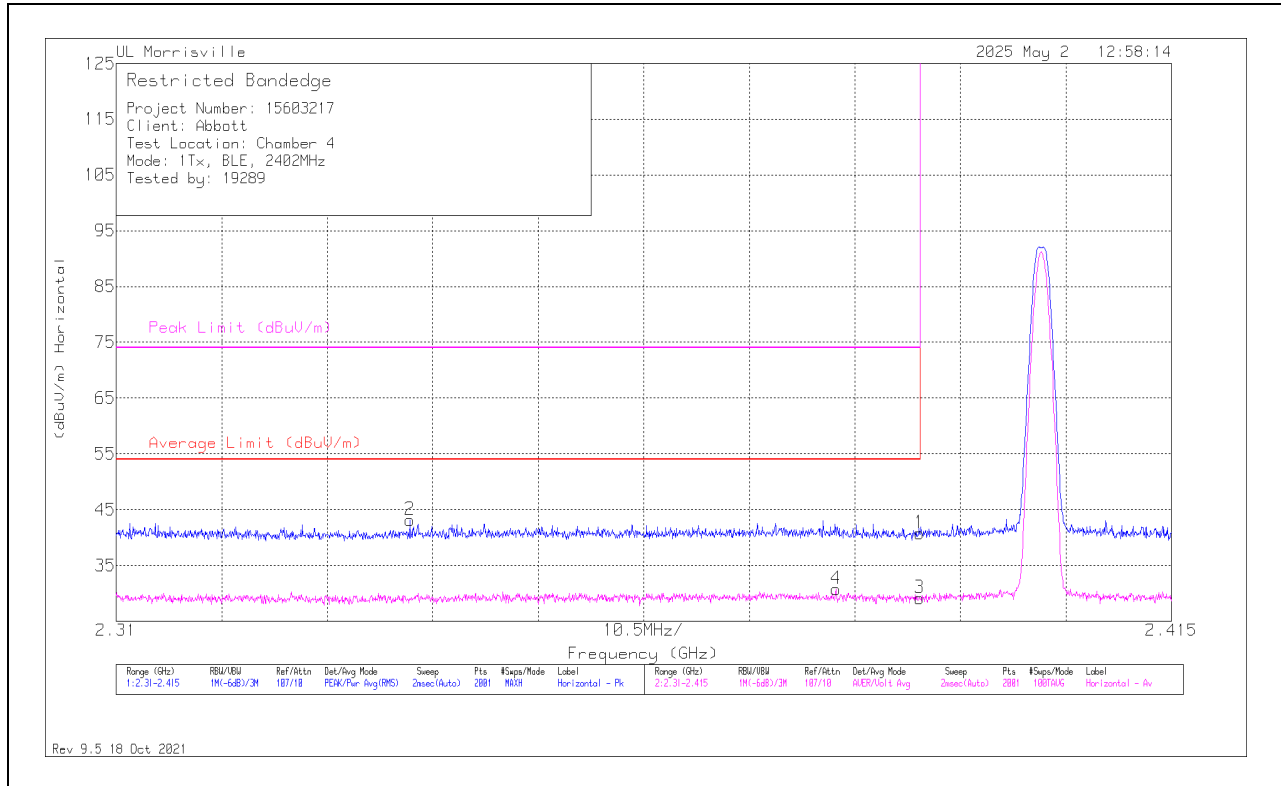
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. BLE (1Mbps)

BANDEDGE (LOW CHANNEL)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	89509 ACF (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	* ** 2.38996	31.99	Pk	32	-23.2	40.79	-	-	74	-33.21	310	128	H
2	* ** 2.33924	34.39	Pk	31.9	-23.1	43.19	-	-	74	-30.81	310	128	H
3	* ** 2.38996	20.37	ADV	32	-23.2	29.17	54	-24.83	-	-	310	128	H
4	* ** 2.38161	21.89	ADV	32	-23.1	30.79	54	-23.21	-	-	310	128	H

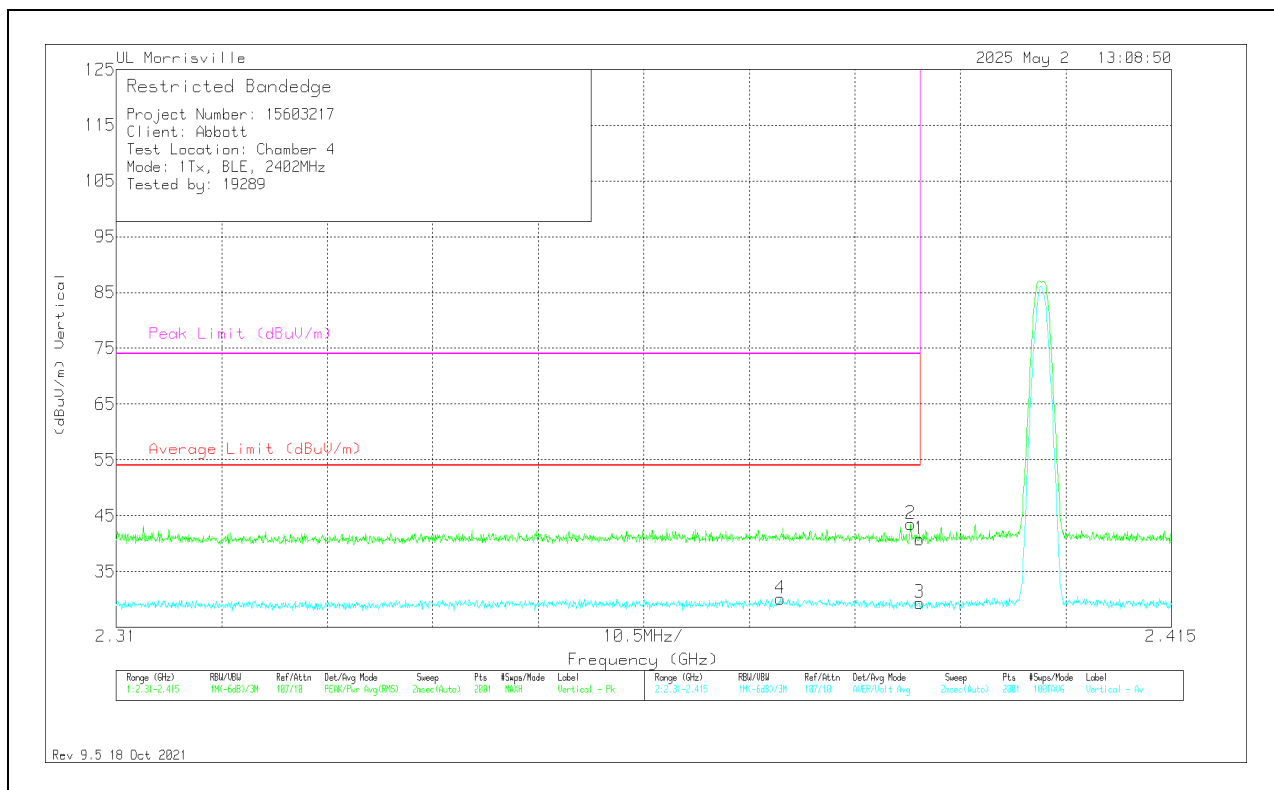
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - 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)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 2.38996	31.97	Pk	32	-23.2	40.77	-	-	74	-33.23	217	351	V
2	* ** 2.38907	34.68	Pk	32	-23.2	43.48	-	-	74	-30.52	217	351	V
3	* ** 2.38996	20.62	ADV	32	-23.2	29.42	54	-24.58	-	-	217	351	V
4	* ** 2.3761	21	ADV	32	-22.9	30.1	54	-23.9	-	-	217	351	V

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

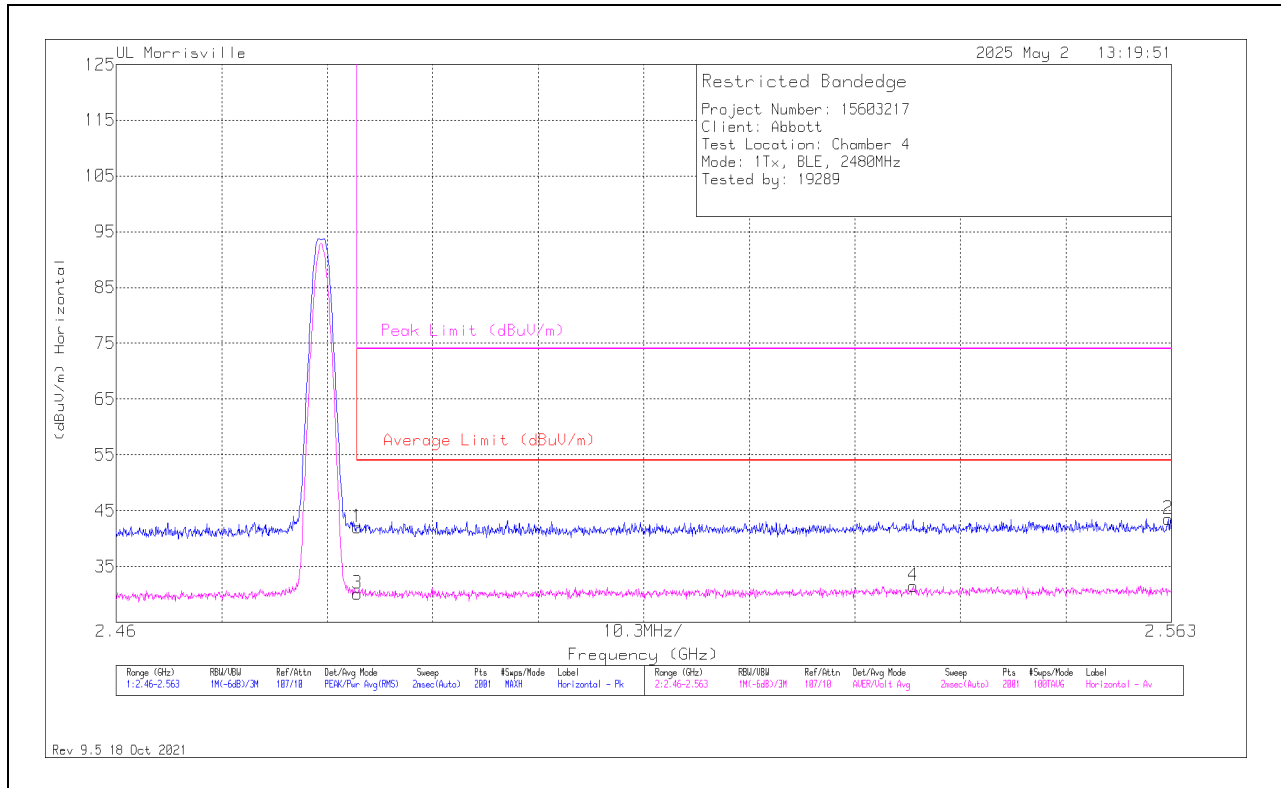
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

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)	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	32.48	Pk	32.3	-22.8	41.98	-	-	74	-32.02	137	118	H
2	** 2.56269	33.62	Pk	32.5	-22.6	43.52	-	-	74	-30.48	137	118	H
3	* ** 2.48354	20.62	ADV	32.3	-22.8	30.12	54	-23.88	-	-	137	118	H
4	** 2.53777	21.84	ADV	32.5	-22.8	31.54	54	-22.46	-	-	137	118	H

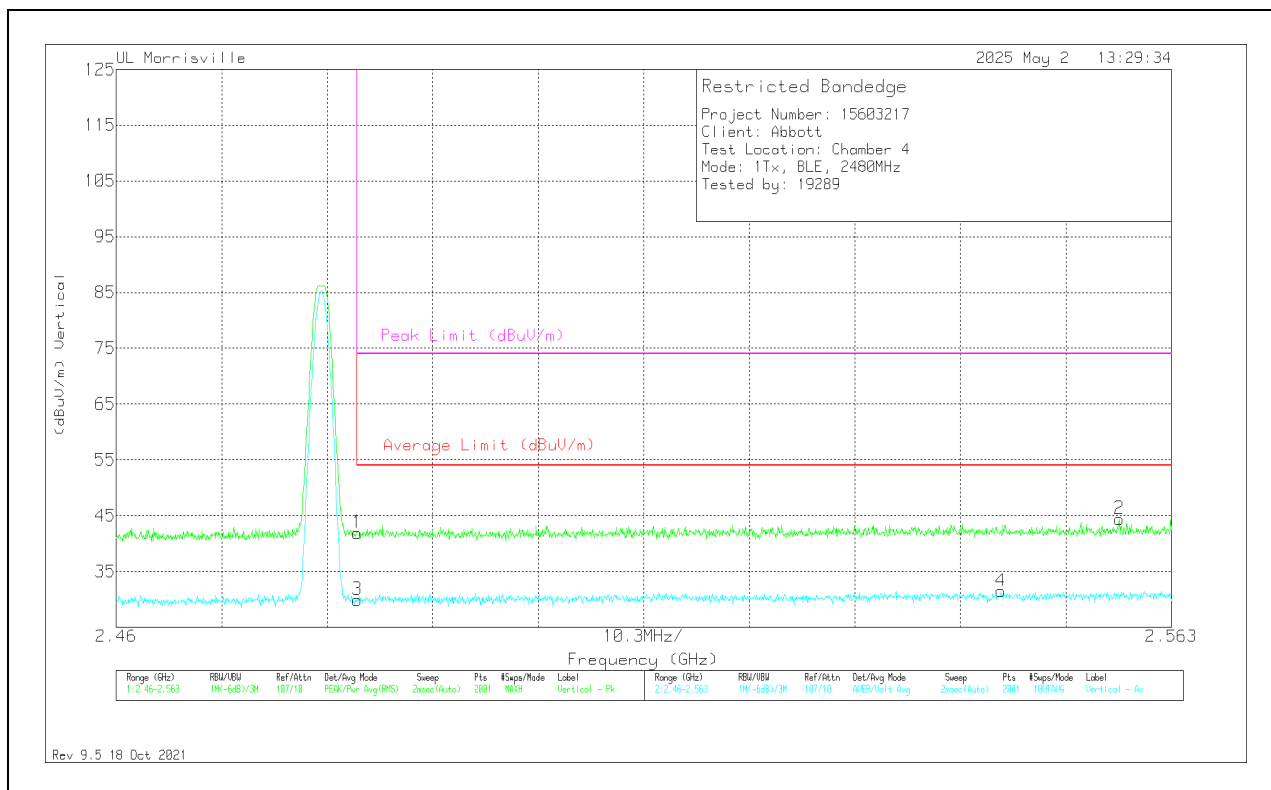
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - 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)	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	32.43	Pk	32.3	-22.8	41.93	-	-	74	-32.07	62	373	V
2	** 2.5579	34.38	Pk	32.5	-22.5	44.38	-	-	74	-29.62	62	373	V
3	* ** 2.48354	20.35	ADV	32.3	-22.8	29.85	54	-24.15	-	-	62	373	V
4	** 2.54637	21.74	ADV	32.4	-22.7	31.44	54	-22.56	-	-	62	373	V

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

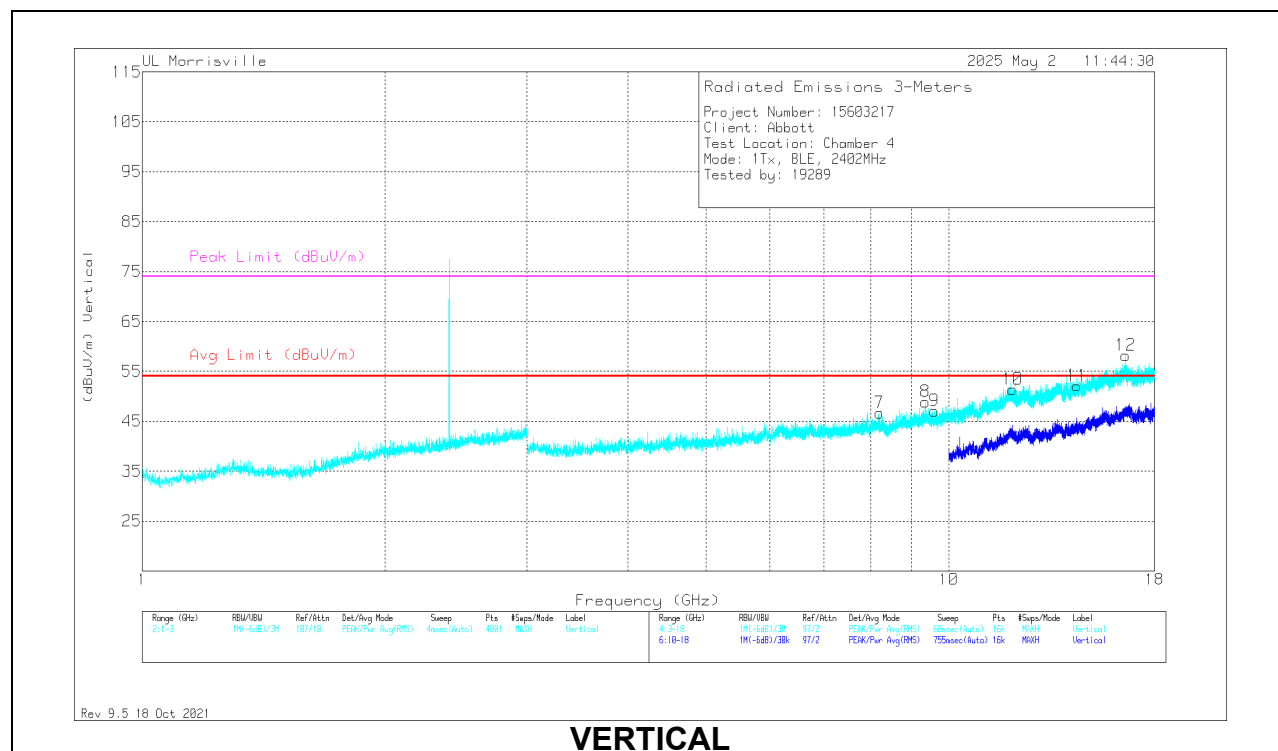
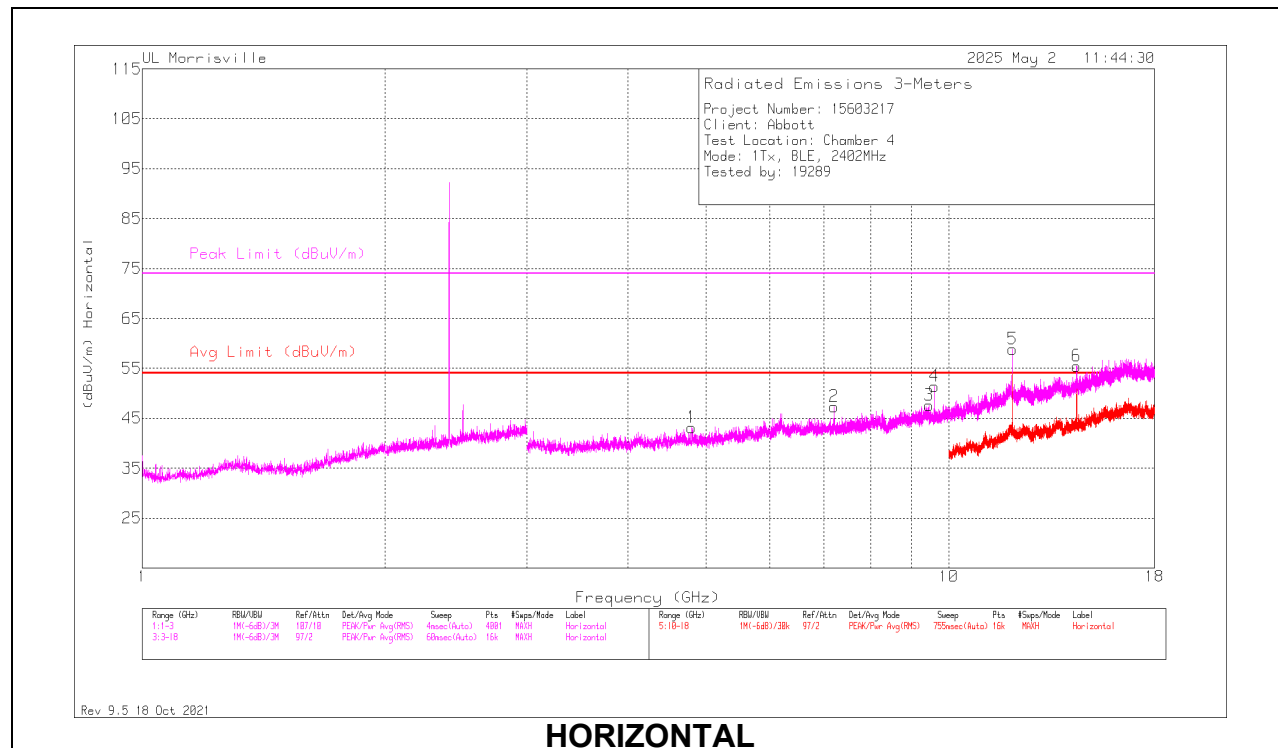
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

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)	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	40.46	Pk	34.1	-31.4	43.16	54	-10.84	74	-30.84	0-360	100	H
3	*** 9.44813	35.86	Pk	36.7	-25	47.56	54	-6.44	74	-26.44	0-360	100	H
5	*** 12.01136	43.29	PK2	38.7	-21.3	60.69	-	-	74	-13.31	64	116	H
	*** 12.00897	35.57	ADV	38.7	-21.2	53.07	54	-.93	-	-	64	116	H
7	*** 8.20688	37.29	Pk	35.8	-26.4	46.69	54	-7.31	74	-27.31	0-360	200	V
8	*** 9.35547	36.28	PK2	36.5	-24.4	48.38	-	-	74	-25.62	83	255	V
	*** 9.35397	24.27	ADV	36.5	-24.4	36.37	54	-17.63	-	-	83	255	V
10	*** 12.01148	36.74	PK2	38.7	-21.3	54.14	-	-	74	-19.86	83	353	V
	*** 12.00917	25.9	ADV	38.7	-21.3	43.3	54	-10.7	-	-	83	353	V
2	7.20563	39.43	Pk	35.6	-27.7	47.33	-	-	-	-	0-360	100	H
9	9.6075	35.27	Pk	36.8	-25	47.07	-	-	-	-	0-360	200	V
4	9.60938	39.64	Pk	36.8	-25	51.44	-	-	-	-	0-360	100	H
6	14.41031	35.85	Pk	39.3	-19.7	55.45	-	-	-	-	0-360	100	H
11	14.41313	32.5	Pk	39.3	-19.7	52.1	-	-	-	-	0-360	200	V
12	16.57594	34.54	Pk	41.6	-17.9	58.24	-	-	-	-	0-360	200	V

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

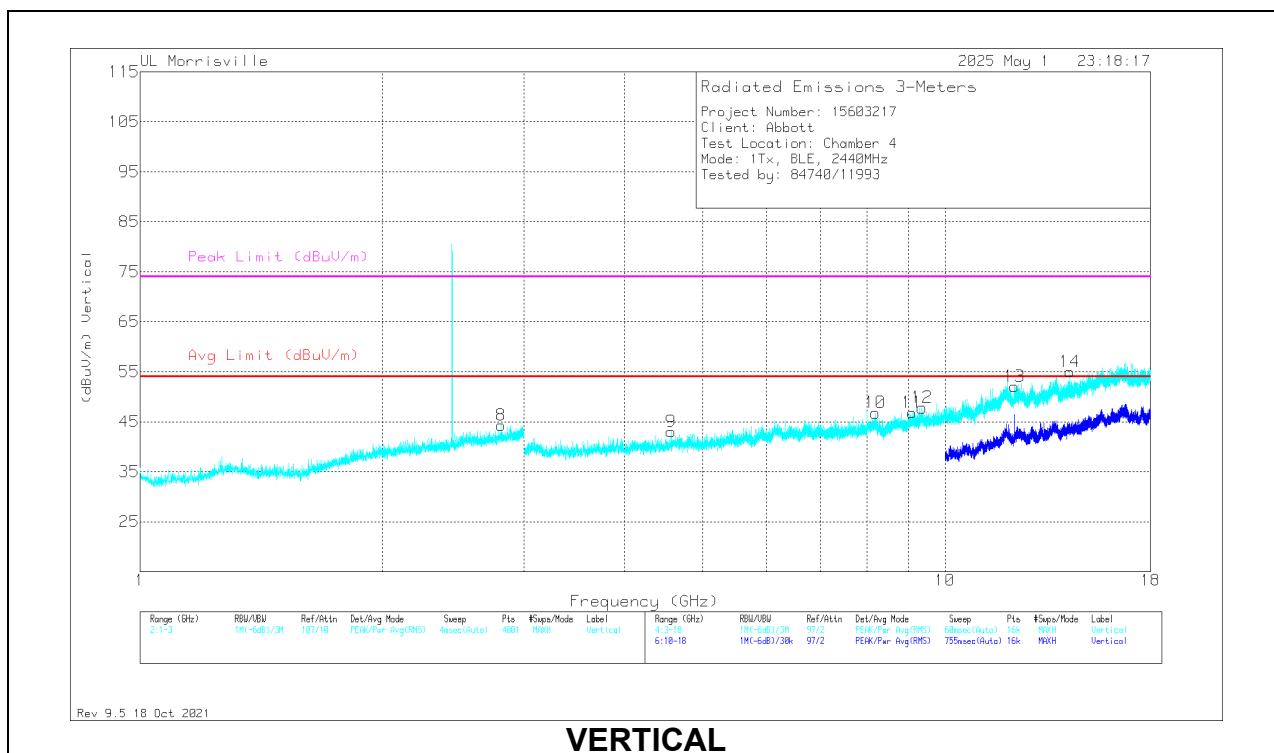
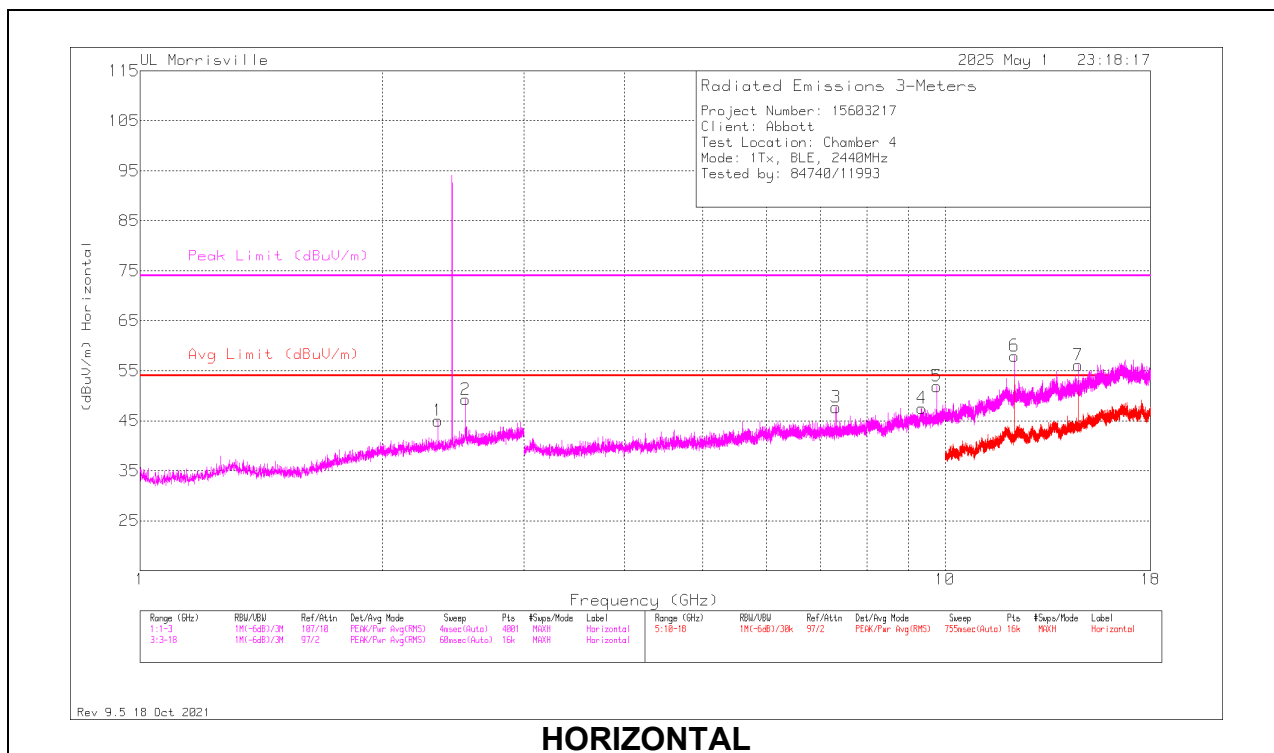
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

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)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degr)	Height (cm)	Polarity
1	*** 2.3445	36.01	Pk	31.9	-22.9	45.01	54	-8.99	74	-28.99	0-360	100	H
2	** 2.53636	43.93	PK2	32.5	-22.8	53.63	-	-	74	-20.37	265	131	H
	** 2.5358	22.33	ADV	32.5	-22.8	32.03	54	-21.97	-	-	265	131	H
8	*** 2.8095	33.89	Pk	32.5	-22.1	44.29	54	-9.71	74	-29.71	0-360	200	V
3	*** 7.32094	39.78	Pk	35.6	-27.7	47.68	54	-6.32	74	-26.32	0-360	100	H
4	*** 9.35531	35.39	Pk	36.5	-24.4	47.49	54	-6.51	74	-26.51	0-360	100	H
6	*** 12.20124	41.53	PK2	38.9	-21.2	59.23	-	-	74	-14.77	119	106	H
	*** 12.20115	33.53	ADV	38.9	-21.2	51.23	54	-2.77	-	-	119	106	H
9	*** 4.56844	40.1	Pk	34	-31.1	43	54	-11	74	-31	0-360	200	V
10	*** 8.19094	37.18	Pk	35.8	-26.2	46.78	54	-7.22	74	-27.22	0-360	200	V
11	*** 9.105	35.02	Pk	36.3	-24.5	46.82	54	-7.18	74	-27.18	0-360	200	V
12	*** 9.36281	35.8	Pk	36.5	-24.5	47.8	54	-6.2	74	-26.2	0-360	200	V
13	*** 12.19897	37.16	PK2	38.9	-21.1	54.96	-	-	74	-19.04	182	394	V
	*** 12.19902	26.76	ADV	38.9	-21.1	44.56	54	-9.44	-	-	182	394	V
5	9.76125	40.18	Pk	36.9	-25.2	51.88	-	-	-	-	0-360	100	H
14	14.28656	35.09	Pk	39.1	-19.2	54.99	-	-	-	-	0-360	200	V
7	14.63906	35.69	Pk	39.6	-19.2	56.09	-	-	-	-	0-360	100	H

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

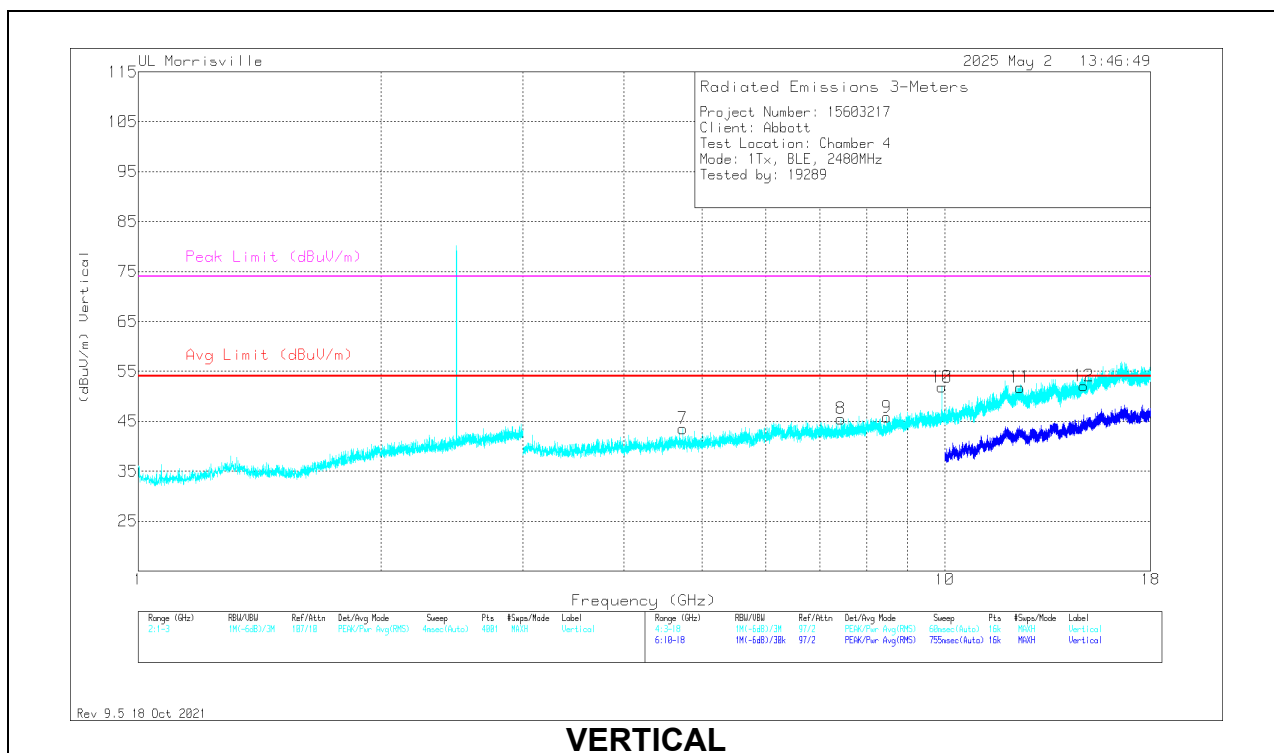
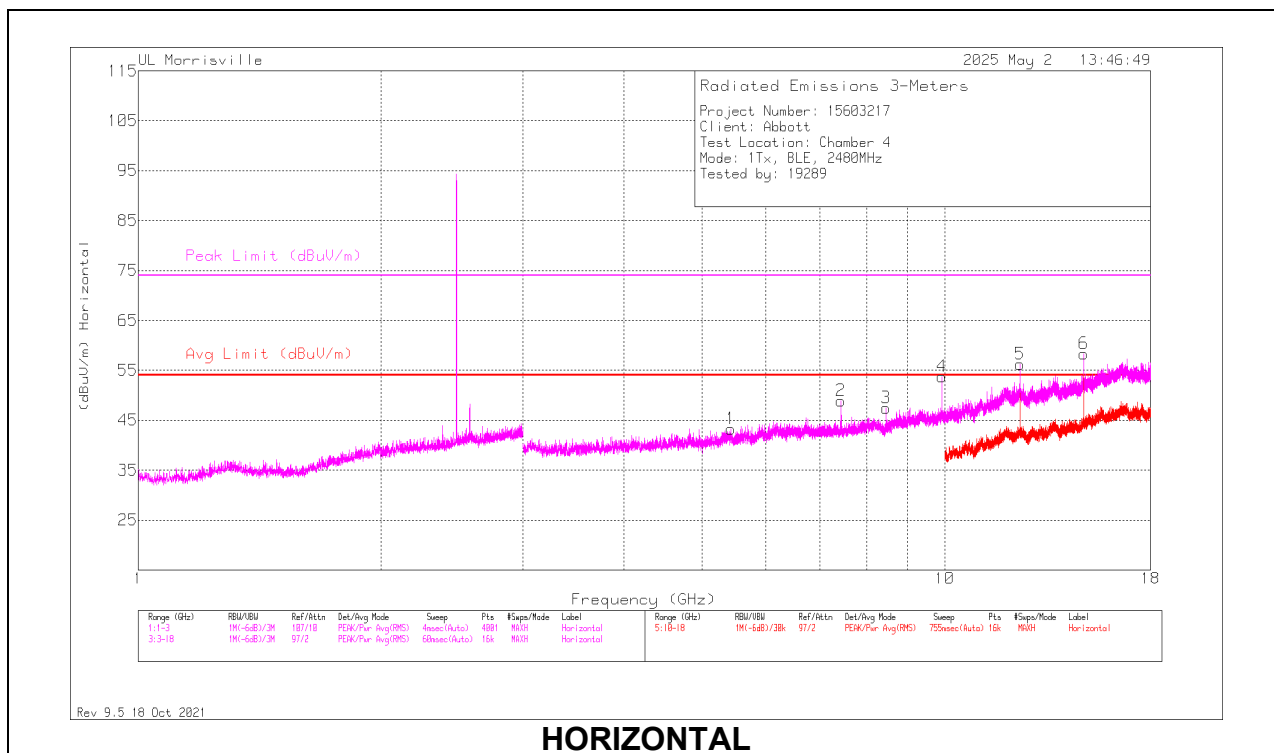
** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

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)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 5.43188	38.08	Pk	34.6	-29.4	43.28	54	-10.72	74	-30.72	0-360	100	H
2	* ** 7.44533	38.02	PK2	35.7	-27.8	45.92	-	-	74	-28.08	158	345	H
	* ** 7.4348	25.58	ADV	35.7	-27.9	33.38	54	-20.62	-	-	158	345	H
3	* ** 8.46375	37.43	Pk	35.8	-25.8	47.43	54	-6.57	74	-26.57	0-360	100	H
5	* ** 12.40139	44.44	PK2	38.9	-21.6	61.74	-	-	74	-12.26	29	101	H
	* ** 12.39892	36.54	ADV	38.9	-21.8	53.64	54	-.36	-	-	29	101	H
7	* ** 4.73438	40.57	Pk	34	-31	43.57	54	-10.43	74	-30.43	0-360	200	V
8	* ** 7.43906	37.74	Pk	35.7	-27.9	45.54	54	-8.46	74	-28.46	0-360	200	V
9	* ** 8.47875	36.22	Pk	35.8	-26.2	45.82	54	-8.18	74	-28.18	0-360	200	V
11	* ** 12.40125	36.89	PK2	38.9	-21.6	54.19	-	-	74	-19.81	335	181	V
	* ** 12.40109	26.77	ADV	38.9	-21.6	44.07	54	-9.93	-	-	335	181	V
10	9.91875	40.24	Pk	37	-25.4	51.84	-	-	-	-	0-360	200	V
4	9.92063	42.06	Pk	37	-25.3	53.76	-	-	-	-	0-360	100	H
12	14.88094	31.6	Pk	39.6	-19.1	52.1	-	-	-	-	0-360	200	V
6	14.88188	37.83	Pk	39.6	-19.1	58.33	-	-	-	-	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

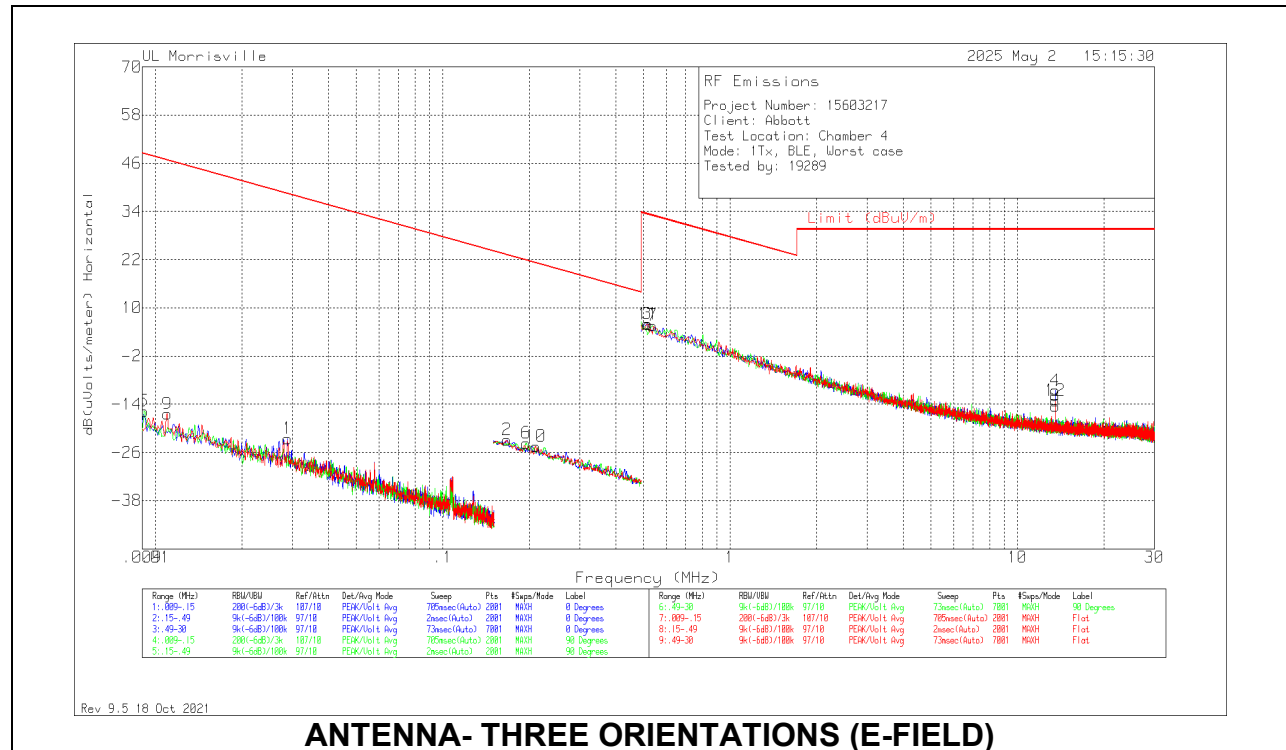
PK2 - Maximum Peak

ADV - Linear Voltage Average

10.3. WORST CASE BELOW 30MHZ

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

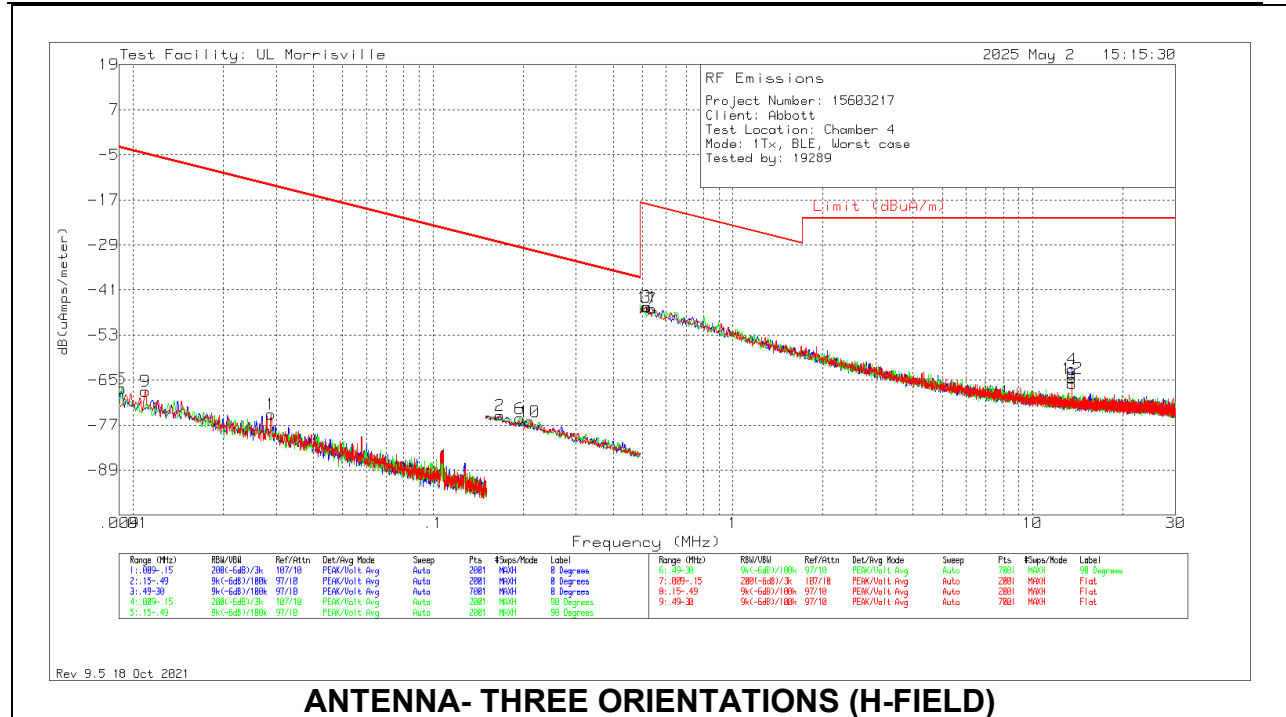
SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION)



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
5	.00914	44.52	Pk	19.6	.1	-80	-15.78	48.38	68.38	-64.16	0-360	90 degs
9	.01099	44.95	Pk	18.5	.1	-80	-16.45	46.79	66.79	-63.24	0-360	Flat
1	.02881	44.09	Pk	13.2	.1	-80	-22.61	38.41	58.41	-61.02	0-360	0 degs
2	.16734	45.98	Pk	11	.1	-80	-22.92	23.13	43.13	-46.05	0-360	0 degs
6	.19514	45.18	Pk	11	.1	-80	-23.72	21.8	41.8	-45.52	0-360	90 degs
10	.21052	44.45	Pk	10.9	.1	-80	-24.55	21.14	41.14	-45.69	0-360	Flat
3	.5153	34.91	Pk	11	.1	-40	6.01	33.36	-	-27.35	0-360	0 degs
11	.51951	34.87	Pk	11	.1	-40	5.97	33.29	-	-27.32	0-360	Flat
7	.53638	34.44	Pk	11	.1	-40	5.54	33.01	-	-27.47	0-360	90 degs
4	13.5596	18.3	Pk	10.6	.5	-40	-10.6	29.54	-	-40.14	0-360	0 degs
8	13.5596	14.42	Pk	10.6	.5	-40	-14.48	29.54	-	-44.02	0-360	90 degs
12	13.5596	15.83	Pk	10.6	.5	-40	-13.07	29.54	-	-42.61	0-360	Flat

Pk - Peak detector



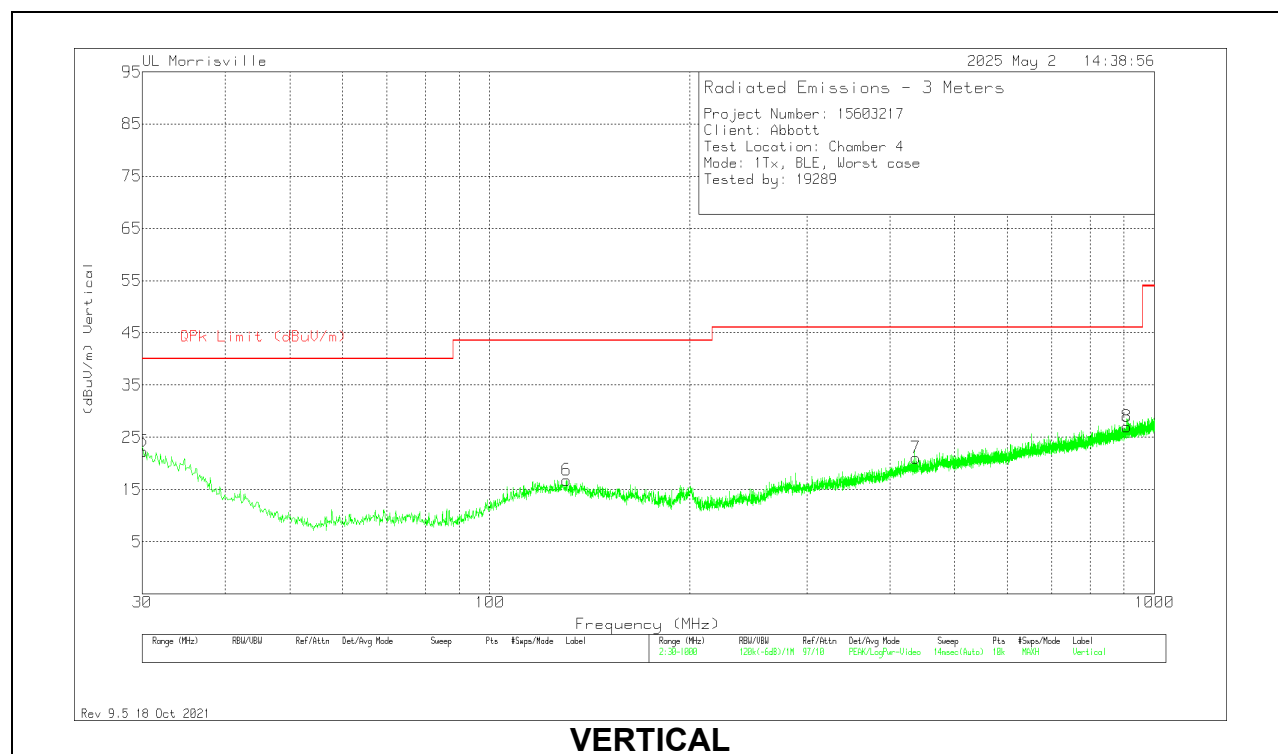
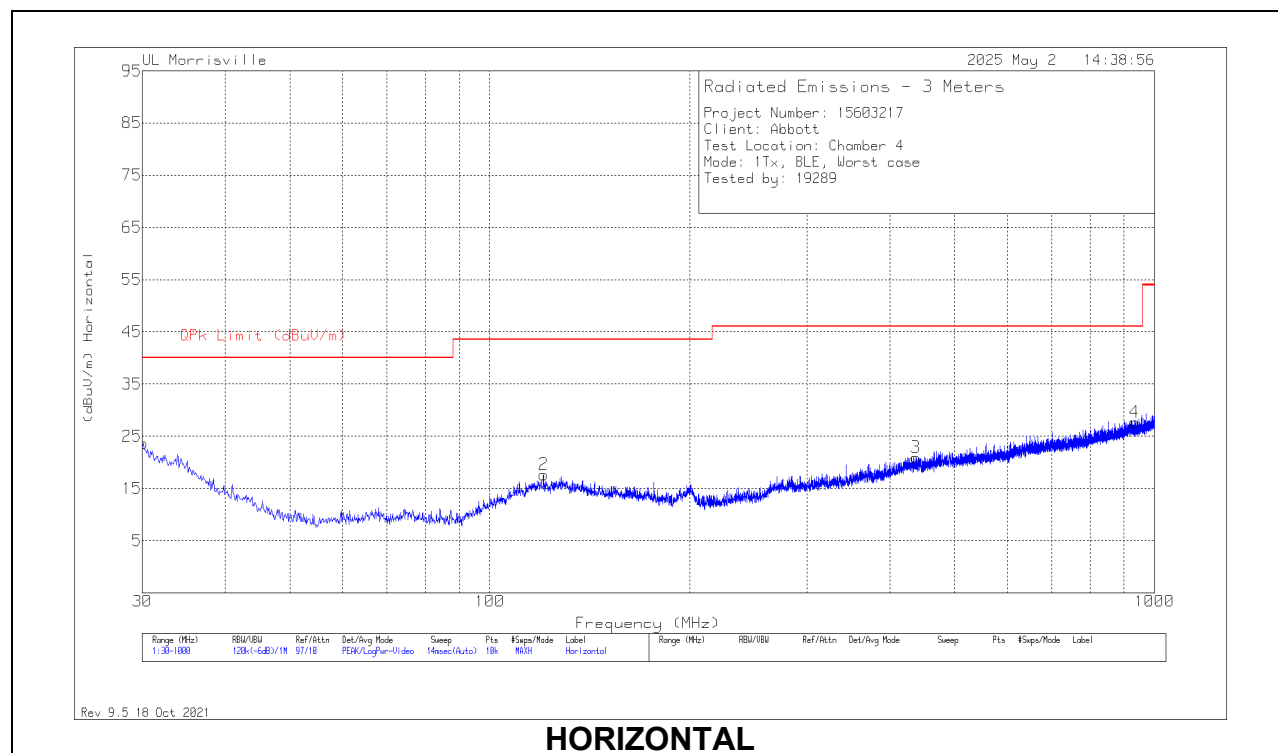
ANTENNA- THREE ORIENTATIONS (H-FIELD)

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ANT (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AVLimit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Loop Angle
5	.00914	44.52	Pk	-31.9	.1	-80	-67.28	-3.12	16.88	-64.16	0-360	90 degs
9	.01099	44.95	Pk	-33	.1	-80	-67.95	-4.71	15.29	-63.24	0-360	Flat
1	.02881	44.09	Pk	-38.3	.1	-80	-74.11	-13.09	6.91	-61.02	0-360	0 degs
2	.16734	45.98	Pk	-40.5	.1	-80	-74.42	-28.37	-8.37	-46.05	0-360	0 degs
6	.19514	45.18	Pk	-40.5	.1	-80	-75.22	-29.7	-9.7	-45.52	0-360	90 degs
10	.21052	44.45	Pk	-40.6	.1	-80	-76.05	-30.36	-10.36	-45.69	0-360	Flat
3	.5153	34.91	Pk	-40.5	.1	-40	-45.49	-18.14	-	-27.35	0-360	0 degs
11	.51951	34.87	Pk	-40.5	.1	-40	-45.53	-18.21	-	-27.32	0-360	Flat
7	.53638	34.44	Pk	-40.5	.1	-40	-45.96	-18.49	-	-27.47	0-360	90 degs
4	13.5596	18.3	Pk	-40.9	.5	-40	-62.1	-21.96	-	-40.14	0-360	0 degs
8	13.5596	14.42	Pk	-40.9	.5	-40	-65.98	-21.96	-	-44.02	0-360	90 degs
12	13.5596	15.83	Pk	-40.9	.5	-40	-64.57	-21.96	-	-42.61	0-360	Flat

Pk - Peak detector

10.4. WORST CASE BELOW 1 GHZ

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

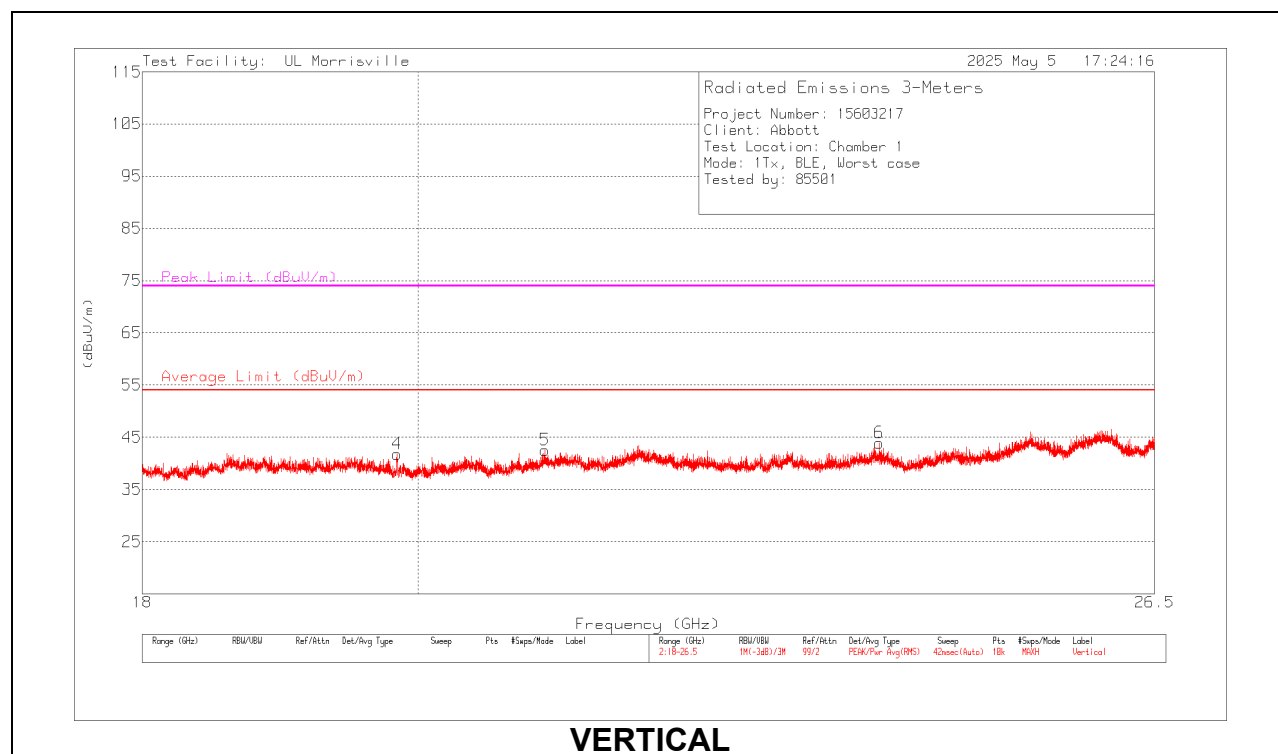
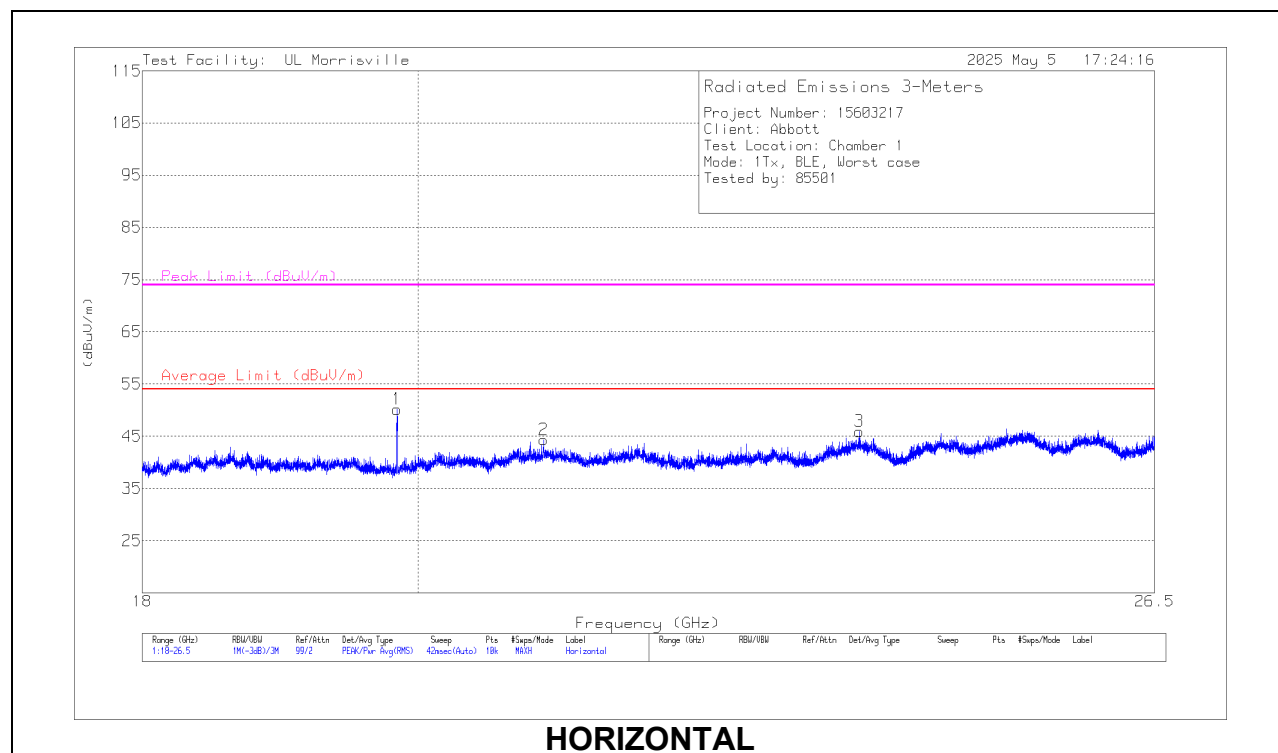


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90628 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	30.097	28.98	Pk	26.8	-32.1	23.68	40	-16.32	0-360	100	H
5	30.097	27.62	Pk	26.8	-32.1	22.32	40	-17.68	0-360	100	V
2	120.404	28.84	Pk	20	-31.2	17.64	43.52	-25.88	0-360	100	H
6	130.395	28.1	Pk	19.9	-31.2	16.8	43.52	-26.72	0-360	200	V
7	437.012	28.13	Pk	22.6	-29.7	21.03	46.02	-24.99	0-360	100	V
3	437.594	28.06	Pk	22.6	-29.7	20.96	46.02	-25.06	0-360	300	H
8	907.656	25.94	Pk	28.3	-27.2	27.04	46.02	-18.98	0-360	100	V
4	933.167	26.02	Pk	28.5	-26.9	27.62	46.02	-18.4	0-360	100	H

Pk - Peak detector

10.5. WORST CASE 18-26 GHZ

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



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Horn (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 19.84204	59.26	PK2	32.6	-40.2	51.66	-	-	74	-22.34	319	106	H
	*** 19.84187	50.28	ADV	32.6	-40.2	42.68	54	-11.32	-	-	319	106	H
2	*** 20.98235	51.54	Pk	32.8	-40	44.34	54	-9.66	74	-29.66	0-360	200	H
3	*** 23.67403	51.96	Pk	33.9	-39.9	45.96	54	-8.04	74	-28.04	0-360	101	H
4	*** 19.83837	49.52	Pk	32.5	-40.2	41.82	54	-12.18	74	-32.18	0-360	299	V
5	*** 20.99255	49.62	Pk	32.9	-40	42.52	54	-11.48	74	-31.48	0-360	299	V
6	*** 23.85591	49.98	Pk	33.8	-39.9	43.88	54	-10.12	74	-30.12	0-360	299	V

Pk - Peak detector

PK2 - Maximum Peak

ADV - Linear Voltage Average

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

11. SETUP PHOTOS

Please refer to R15603217-EP1 for setup photos

END OF TEST REPORT