

TEST REPORT

Report Number: R16090550-E1

Applicant : Wasion Americas Inc
2880 Slater Rd Ste 20
Morrisville, NC 27560, US

Model : WAIAVM

FCC ID : 2BUVT-WAIAVM

IC : 35232-WAIAVM

EUT Description : BLE Electric Meter

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C
ISED RSS-247 ISSUE 4
ISED RSS-GEN ISSUE 5 + A1 + A2

Date Of Issue:
2026-08-19

Prepared by:
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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2026-05-15	Initial Issue	Lindsay Ryan
V2	2026-06-10	Updated equipment list in Section 7.	Lindsay Ryan
V3	2026-08-19	Updated Antenna Gains	Manish Baral

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Wasion Americas Inc
2880 Slater Rd Ste 20
Morrisville, NC 27560, US

EUT DESCRIPTION: BLE Electric Meter

MODEL: WAIAVM

SERIAL NUMBER: LT26011026, LT26011028

SAMPLE RECEIPT DATE: 2026-03-02

DATE TESTED: 2026-03-26 to 2026-04-10

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	
ISED RSS-247 Issue 4	Refer to Section 2
ISED RSS-GEN Issue 5 + A1 + A2	

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.

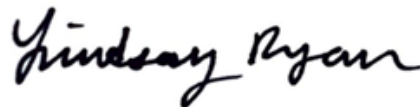
This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

Approved & Released
For UL LLC By:

Prepared By:



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Sr. Staff Engineer
Consumer, Medical and IT Segment
UL LLC



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Project Engineer
Consumer, Medical and IT Segment
UL LLC

2. TEST RESULTS SUMMARY

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

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

- 1)Antenna gain and type (see section 6.3)
- 2)Worst-case data rates (see section 6.5)

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	ANSI C63.10 Section 11.6.
-	RSS-GEN 6.7	99% OBW	Reporting purposes only	ANSI C63.10 Section 6.9.3.
15.247 (a) (2)	RSS-247 6.3.1 (a)	6dB BW	Compliant	None
15.247 (b) (3)	RSS-247 6.3.2	Output Power		
See Comment		Average power	Reporting purposes only	Per ANSI C63.10, Section 11.9.2.3.2.
15.247 (e)	RSS-247 6.3.1 (b)	PSD	Compliant	None
15.247 (d)	RSS-247 6.6	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		

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2, FCC 47 CFR Part 15, FCC: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024, ISED: ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-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 4.

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%
RF output power, conducted	1.3 dB (PK) 0.45 dB (AV)
Power Spectral Density, conducted	2.47 dB
Unwanted Emissions, conducted	1.94 dB
All emissions, radiated	6.01 dB
Conducted Emissions (0.150-30MHz) - LISN	3.40 dB
Temperature	0.57°C
Humidity	3.39%
DC Supply voltages	1.70%
Time	3.39%

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

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN
Insertion Loss.
 $36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is a Wasion Americas Aventa™ Electric Meter that transmits BLE. This report covers testing on BLE radio.

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	BLE 1Mbps	-1.01	0.79
2402 - 2480	BLE 2Mbps	-0.93	0.81

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency Range (MHz)	Maximum 3D Gain (dBi)	Type
0	2402-2480 MHz	1.68	Internal PCB Antenna

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 1.0

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 1GHz, above 18GHz, and power line conducted emissions were performed with the EUT set to transmit at the mode and channel with highest output power 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, middle (radiated emissions only) and high channels. Radiated emissions performed on the modes with the highest power and PSD per modulation type.

The EUT is intended to operate in one orientation. Therefore, all testing was performed with the EUT in this intended orientation of operation.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Power Supply	N/A	TDA-40-15	N/A	N/A
Laptop	Lenovo	ThinkPad L14 Gen 1	PF31H1AS	N/A
Power Transformer Converter 110V-220V	Shunhong Electric Co., Ltd	200VA power transformer	N/A	N/A
Power Supply	Changsha Jinlong Electronics Co., Ltd	TDA-40-15	N/A	N/A
Laptop Charger	Lenovo	ADLX45YLC3D	SA10R16913	N/A

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB-A	1	USB-A	Non-shielded	3<	Debug Cable
2	4mm banana plug	2	Banana	Non-shielded	3<	Test cable

TEST SETUP

The EUT is connected to a test laptop during the tests.

SETUP DIAGRAMS

Please refer to R16090550-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 - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Conducted Room 1				
90416	Spectrum Analyzer MY54490254	Keysight Technologies	N9030A	2025-07-31	2026-07-31
179892	Environmental Meter 161024885	Fisher Scientific	15-077-963	2025-08-05	2026-08-05
-	DC Power Supply MY62176088	Keysight Technologies	E3633A	-	-
SOFTEMI	Antenna Port Software	UL	Version 2024.2.23	-	-
Power Software	Boonton Power Analyzer	Boonton	Version 3.0.13.0	-	-
CBL093	Micro-Coax UTIFLEX Cable Assembly, Low Loss,40Ghz	Carlisle Interconnect Technologies	UFA147A-2-0360-200200	2025-09-05	2026-09-05

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

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	1-18 GHz				
88761	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2025-11-19	2027-11-19
	18-40 GHz				
91186	Horn Antenna, 18-26.5GHz	ARA	MWH-1826/B	2024-05-16	2026-05-16
	Gain-Loss Chains				
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				
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2025-07-29	2026-07-29
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
241205	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2027-08-05

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2025-04-17	2026-04-17
179892	Environmental Meter	Fisher Scientific	15-077-963	2025-08-05	2026-08-06
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2025-09-29	2026-09-29
70374	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2025-07-30	2026-07-30
52859	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2025-07-30	2026-07-30
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		

8. MEASUREMENT METHOD

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

6 dB BW: ANSI C63.10-2020 Subclause -11.8.1

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

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

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

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

Radiated emissions restricted frequency bands: ANSI C63.10-2020 Subclause -11.12.1 and 6.10.5, 6.3 to 6.6.

AC Power-line conducted emissions: ANSI C63.10-2020, Section 6.2.

9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

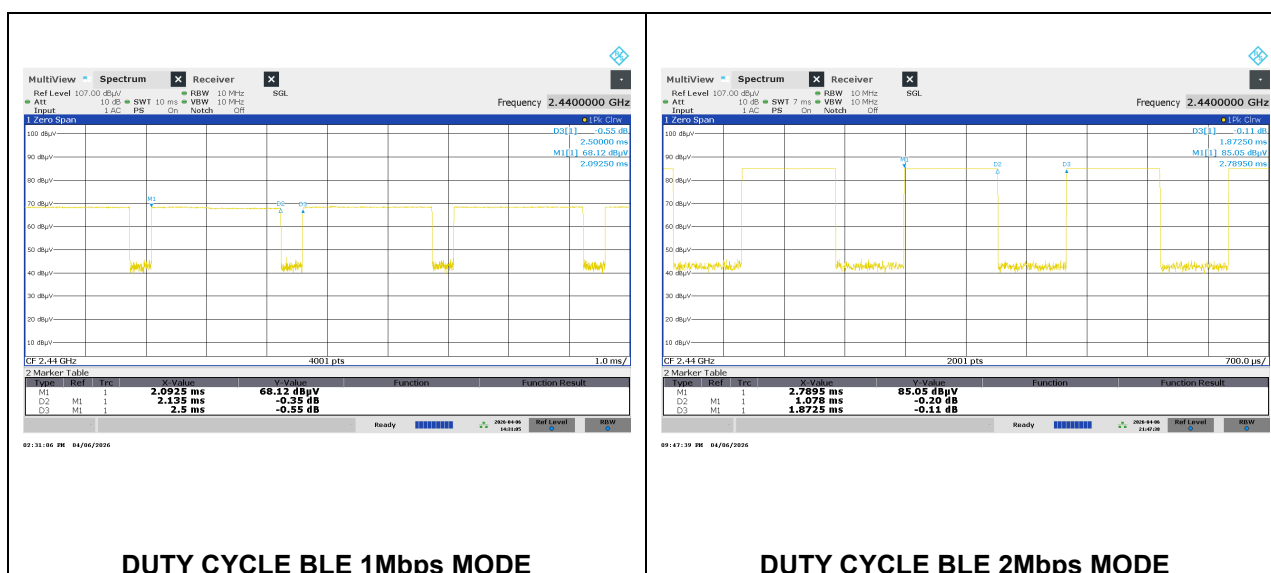
LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

Mode	ON Time B (ms)	Period (ms)	Duty Cycle x (linear)	Duty Cycle (%)	Voltage Duty Cycle Correction Factor (dB)	RMS Duty Cycle Correction Factor (dB)
BLE 1Mbps	2.135	2.500	0.854	85.40	1.37	0.69
BLE 2Mbps	1.078	1.8725	0.5757	57.57	4.80	2.40



9.2. 6dB/99% BANDWIDTH

LIMITS

6dB BW:

FCC §15.247 (a) (2)
RSS-247 5.2 (a)

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

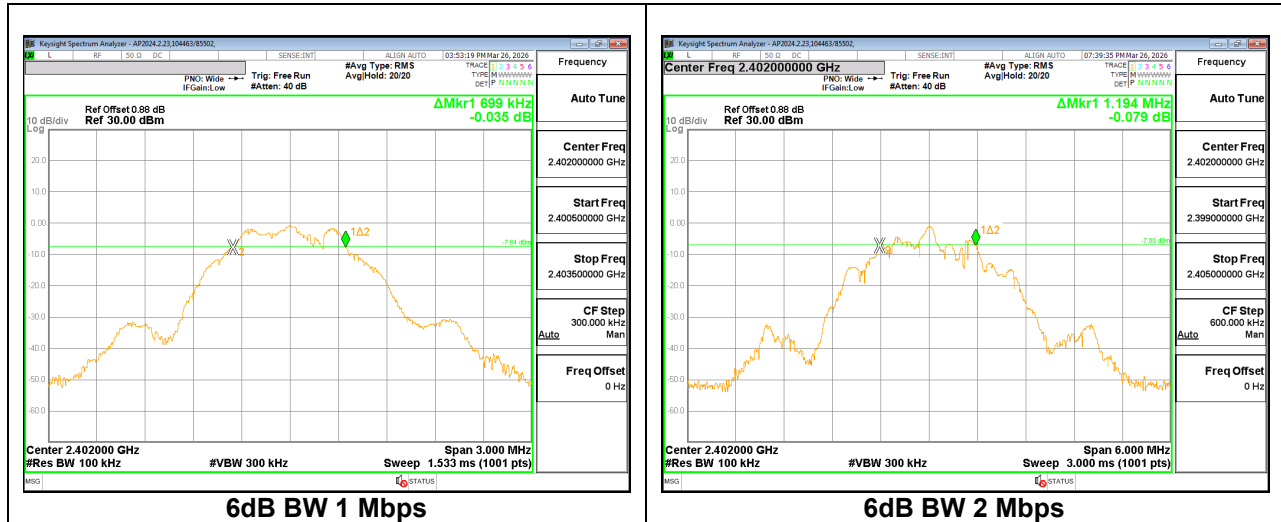
99% BW:

None; for reporting purposes only.

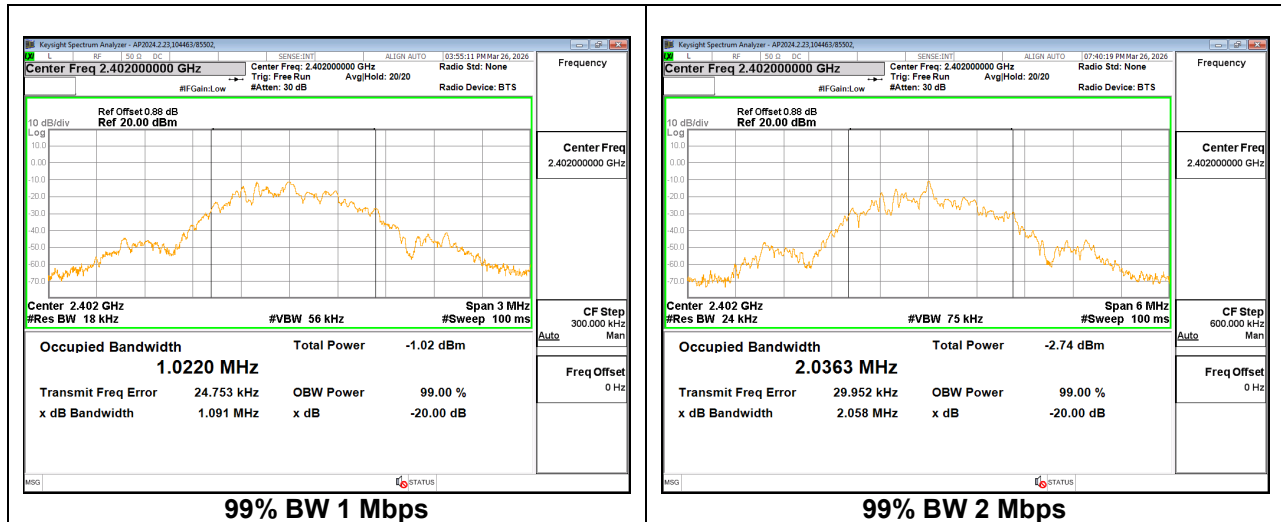
1TX MODE

Band	Center Frequency [MHz]	6dB BW [MHz]	Minimum 6dB BW [MHz]	99% BW [MHz]	Minimum 99% BW [MHz]
BLE 1Mbps	2402	0.699	0.699	1.022	1.022
	2440	0.672		1.024	
	2480	0.693		1.027	
BLE 2Mbps	2404	1.194	1.170	2.036	2.034
	2440	1.212		2.034	
	2478	1.170		2.040	

6 dB BW Example Plot, BLE 1Tx, 2402 MHz:



99% BW Example Plot, BLE 1Tx, 2402 MHz:



9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)
RSS-247 6.3.2

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 0.88 dB (including 0.88 dB cable) was entered as an offset in the power meter.

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

Test Engineer:	104463/85502
Test Date:	2026-03-26

1TX MODE

Mode	Freq. [MHz]	Output Power [dBm]	Maximum Power Limit [dBm]	Margin [dBm]	EIRP Limit [dBm]	Margin [dBm]
BLE 1Mbps	2402	-1.28	30.00	-31.28	36.00	-45.01
	2440	-0.82	30.00	-30.82	36.00	-44.55
	2480	-1.62	30.00	-31.62	36.00	-45.35
BLE 2Mbps	2404	-1.29	30.00	-31.29	36.00	-45.02
	2440	-0.73	30.00	-30.73	36.00	-44.46
	2478	-1.58	30.00	-31.58	36.00	-45.31

9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The cable assembly insertion loss of 0.88 dB (including 0.88 dB cable) was entered as an offset in the power meter.

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

Test Engineer:	104463/85502
Test Date:	2026-03-26

1TX MODE

Mode	Freq. [MHz]	Average Power [dBm]
BLE 1Mbps	2402	-1.46
	2440	-1.01
	2480	-1.79
BLE 2Mbps	2404	-1.46
	2440	-0.93
	2478	-1.79

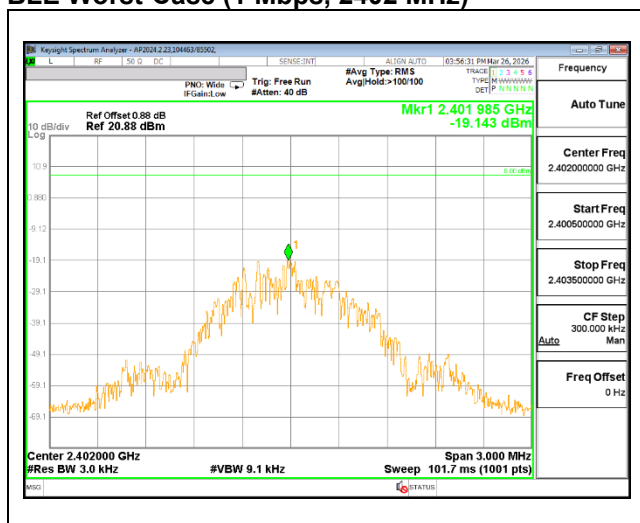
9.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)
RSS-247 6.3.1 (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.

BLE Worst-Case (1 Mbps, 2402 MHz)



1TX MODE

Mode	Freq. [MHz]	PSD [dBm]	PSD Limit [dBm]	Margin [dBm]
BLE 1Mbps	2402	-19.14	8.00	-27.14
	2440	-19.15	8.00	-27.15
	2480	-19.33	8.00	-27.33
BLE 2Mbps	2404	-20.48	8.00	-28.48
	2440	-20.51	8.00	-28.51
	2478	-20.85	8.00	-28.85

9.6. CONDUCTED SPURIOUS EMISSIONS

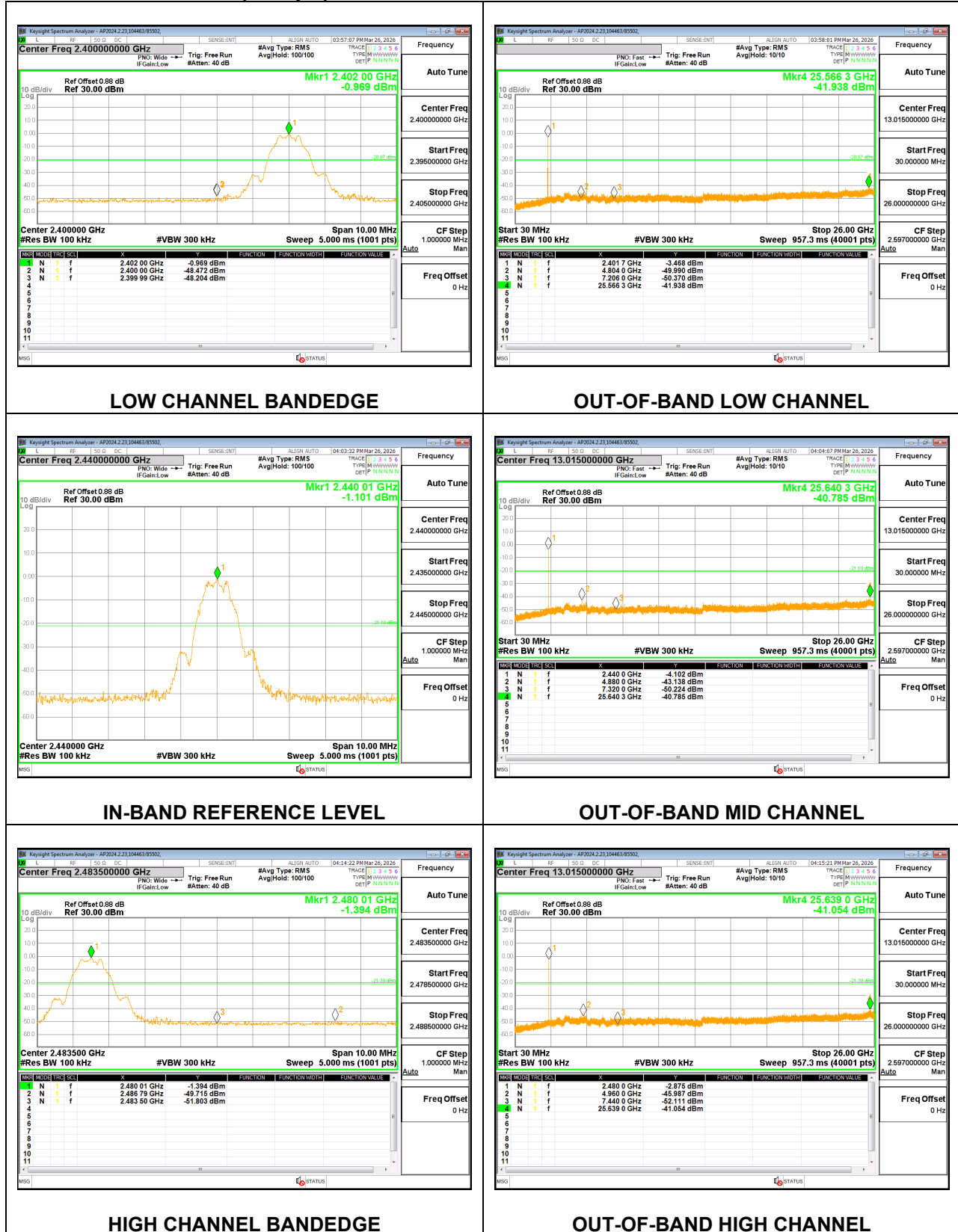
LIMITS

FCC §15.247 (d)
RSS-247 6.6

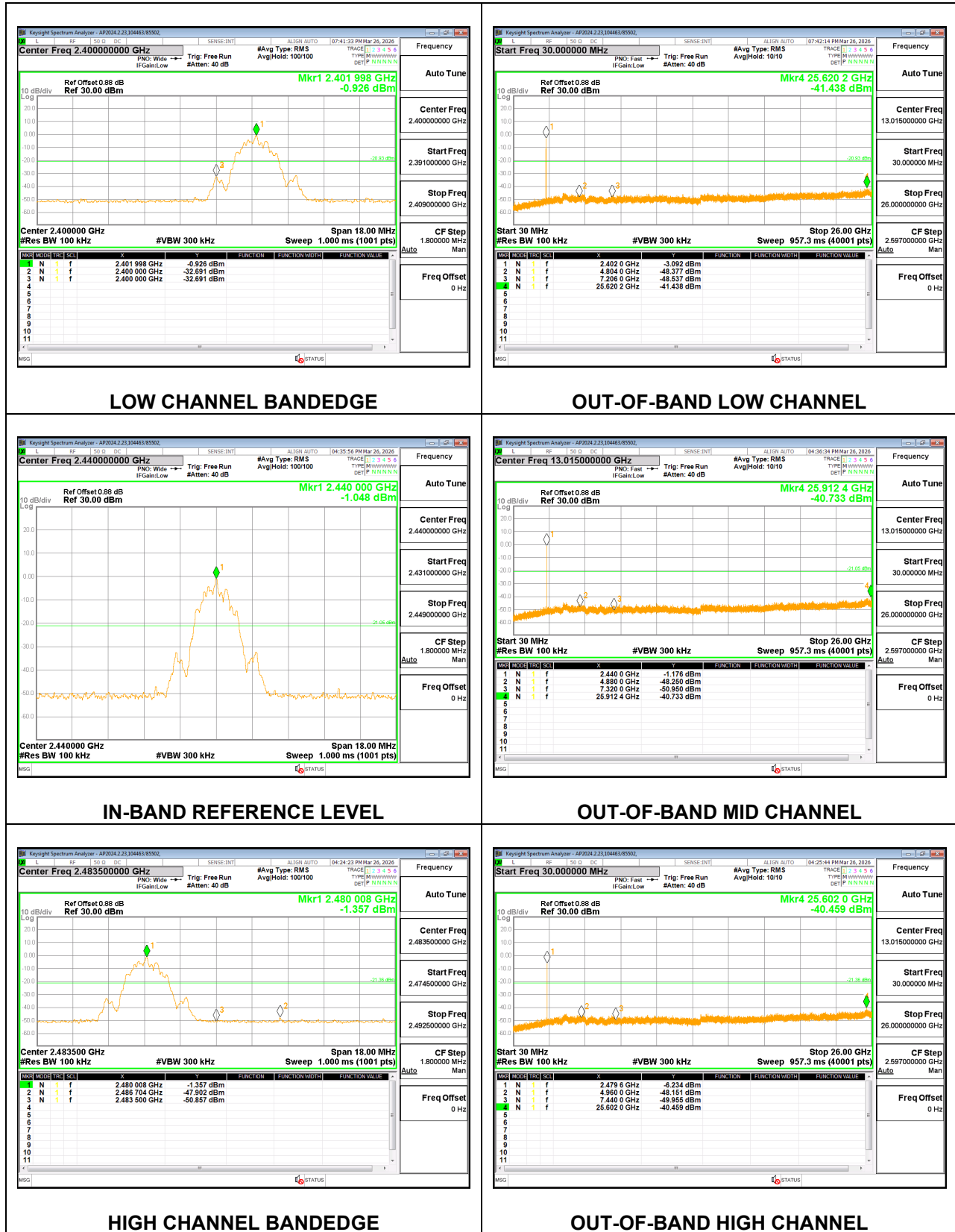
Output power was measured based on the use of a peak measurement; therefore, the required attenuation is -20 dBc.

RESULTS

9.6.1. BLE (1Mbps)



9.6.2. BLE (2Mbps)



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

IC RSS-GEN Clause 8.9 and 8.10

Frequency Range (kHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
0.009-0.490	6.37/F(kHz) @ 300 m	-
0.490-1.705	63.7/F(kHz) @ 30 m	-
1.705 - 30	0.08 @ 30m	-
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements in the 30-1000MHz range, 9kHz for peak and/or quasi-peak detection measurements in the 0.15-30MHz range and 200Hz for peak and/or quasi-peak detection measurements in the 9 to 150kHz range. Peak detection is used unless otherwise noted as quasi-peak or average (9-90kHz and 110-490kHz).

For pre-scans above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3MHz 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 voltage average measurements.

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

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

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

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

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

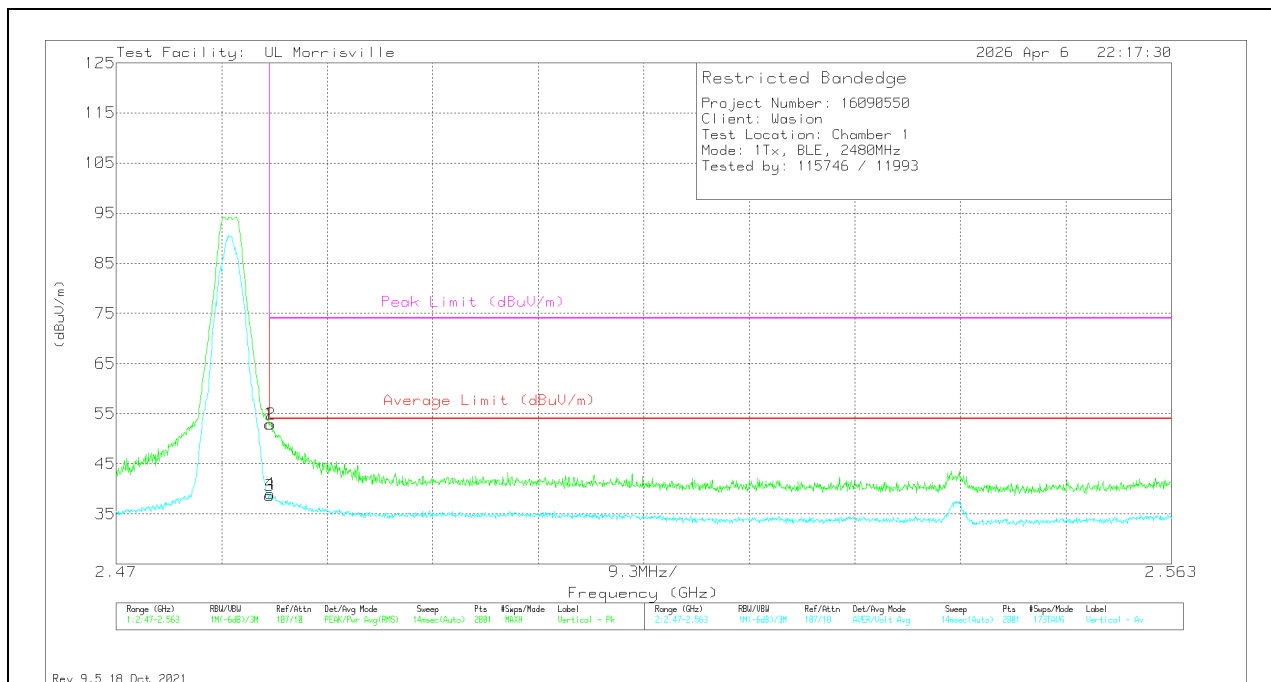
OFS and chamber correlation testing had been performed and chamber measured test result is the worst-case test result.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. BLE

BANDEDGE (WORST-CASE: 2Mbps)

VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*** 2.48353	45.03	Pk	32.3	-24.4	0	52.93	-	-	74	-21.07	90	164	V
2	*** 2.48362	45.05	Pk	32.3	-24.4	0	52.95	-	-	74	-21.05	90	164	V
3	*** 2.48353	25.94	ADV	32.3	-24.4	4.8	38.64	54	-15.36	-	-	90	164	V
4	*** 2.48358	26.31	ADV	32.3	-24.4	4.8	39.01	54	-14.99	-	-	90	164	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

BANEDGE TEST DATA

Mode	Frequency (MHz)	Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	88761 ACF (dB/m)	Gain/Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1Mbps	2402	1	*** 2.39	33.4	Pk	32.1	-25.1	0	40.4	-	-	74	-33.6	83	193	H
		2	*** 2.3375	35.97	Pk	31.9	-24.9	0	42.97	-	-	74	-31.03	83	193	H
		3	*** 2.39	22.12	ADV	32.1	-25.1	1.37	30.49	54	-23.51	-	-	83	193	H
		4	*** 2.33795	26.11	ADV	31.9	-24.9	1.37	34.48	54	-19.52	-	-	83	193	H
		1	*** 2.39	32.94	Pk	32.1	-25.1	0	39.94	-	-	74	-34.06	89	170	V
		2	*** 2.33755	36.79	Pk	31.9	-24.9	0	43.79	-	-	74	-30.21	89	170	V
		3	*** 2.39	22.7	ADV	32.1	-25.1	1.37	31.07	54	-22.93	-	-	89	170	V
		4	*** 2.338	27.12	ADV	31.9	-24.9	1.37	35.49	54	-18.51	-	-	89	170	V
	2480	1	*** 2.48353	42.5	Pk	32.3	-24.4	0	50.4	-	-	74	-23.6	80	202	H
		2	*** 2.48358	42.78	Pk	32.3	-24.4	0	50.68	-	-	74	-23.32	80	202	H
		3	*** 2.48353	22.39	ADV	32.3	-24.4	1.37	31.66	54	-22.34	-	-	80	202	H
		4	** 2.54407	25.8	ADV	32.3	-25.2	1.37	34.27	54	-19.73	-	-	80	202	H
		1	*** 2.48354	45.06	Pk	32.3	-24.4	0	52.96	-	-	74	-21.04	89	161	V
		2	*** 2.48359	45.15	Pk	32.3	-24.4	0	53.05	-	-	74	-20.95	89	161	V
		3	*** 2.48354	23.41	ADV	32.3	-24.4	1.37	32.68	54	-21.32	-	-	89	161	V
		4	** 2.54405	27.58	ADV	32.3	-25.2	1.37	36.05	54	-17.95	-	-	89	161	V
2Mbps	2404	1	*** 2.39	34.12	Pk	32.1	-25.1	0	41.12	-	-	74	-32.88	86	236	H
		2	*** 2.33845	36.43	Pk	31.9	-24.9	0	43.43	-	-	74	-30.57	86	236	H
		3	*** 2.39	22.43	ADV	32.1	-25.1	4.8	34.23	54	-19.77	-	-	86	236	H
		4	*** 2.338	25.16	ADV	31.9	-24.9	4.8	36.96	54	-17.04	-	-	86	236	H
		1	*** 2.39	33.69	Pk	32.1	-25.1	0	40.69	-	-	74	-33.31	87	191	V
		2	*** 2.3897	36.94	Pk	32.1	-25.1	0	43.94	-	-	74	-30.06	87	191	V
		3	*** 2.39	22.38	ADV	32.1	-25.1	4.8	34.18	54	-19.82	-	-	87	191	V
		4	*** 2.33815	24.9	ADV	31.9	-24.9	4.8	36.7	54	-17.3	-	-	87	191	V
	2478	1	*** 2.48353	42.73	Pk	32.3	-24.4	0	50.63	-	-	74	-23.37	80	205	H
		2	*** 2.48367	42.02	Pk	32.3	-24.4	0	49.92	-	-	74	-24.08	80	205	H
		3	*** 2.48353	24.99	ADV	32.3	-24.4	4.8	37.69	54	-16.31	-	-	80	205	H
		4	*** 2.48362	25.18	ADV	32.3	-24.4	4.8	37.88	54	-16.12	-	-	80	205	H
		1	*** 2.48353	45.03	Pk	32.3	-24.4	0	52.93	-	-	74	-21.07	90	164	V
		2	*** 2.48362	45.05	Pk	32.3	-24.4	0	52.95	-	-	74	-21.05	90	164	V
		3	*** 2.48353	25.94	ADV	32.3	-24.4	4.8	38.64	54	-15.36	-	-	90	164	V
		4	*** 2.48358	26.31	ADV	32.3	-24.4	4.8	39.01	54	-14.99	-	-	90	164	V

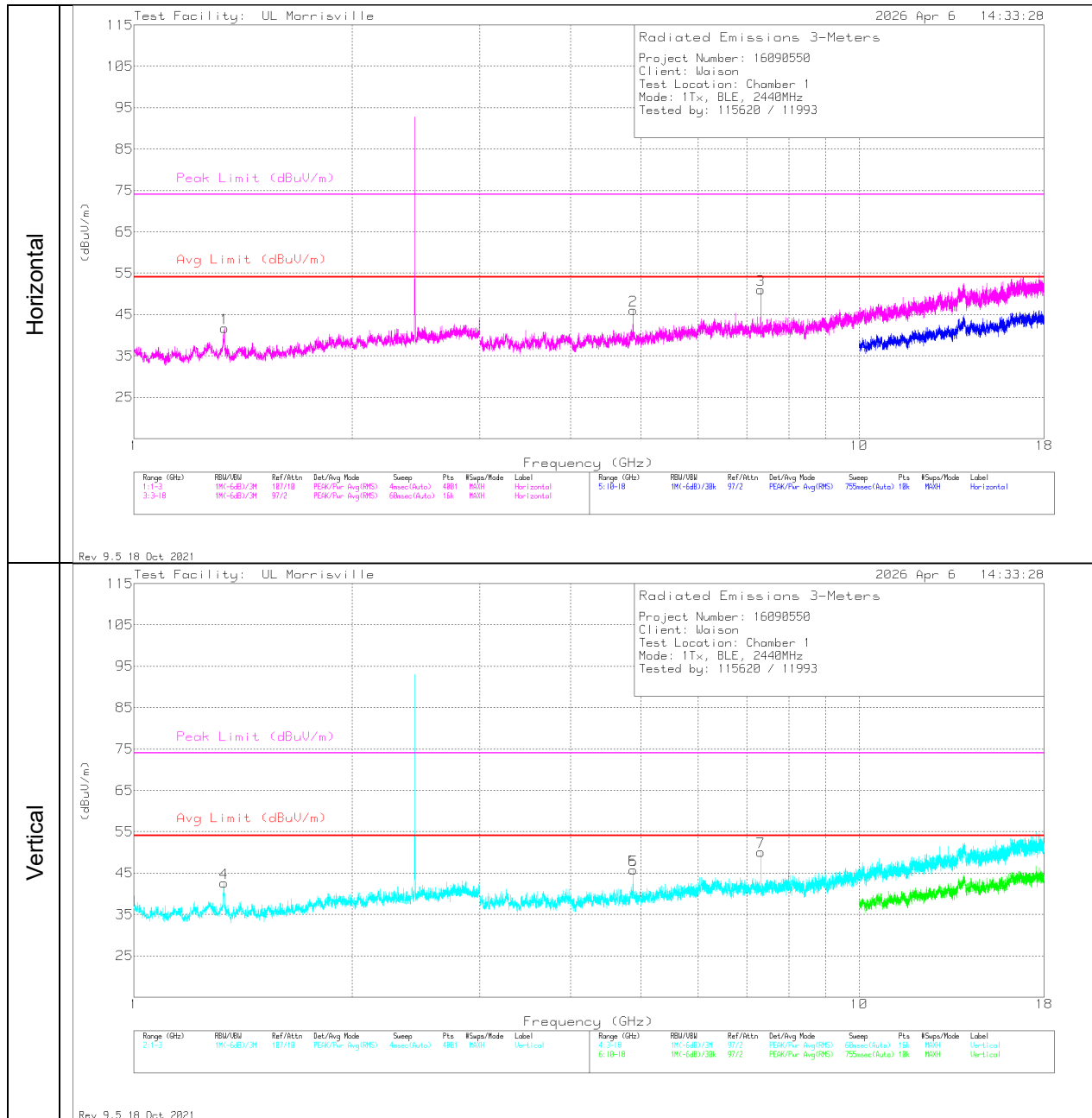
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

ADV - Linear Voltage Average

HARMONICS AND SPURIOUS (WORST-CASE: 1Mbps)



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	88761 (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	*** 1.333	38.05	Pk	28.8	-25.1	0	41.75	54	-12.25	74	-32.25	0-360	101	H
2	*** 4.88063	57.3	Pk	34.1	-45.4	0	46	-	-	74	-28	0-360	200	H
	*** 7.32066	54.12	ADV	35.5	-43.3	1.37	47.69	54	-6.31	-	-	176	107	H
3	*** 7.32086	62.06	PK2	35.5	-43.3	0	54.26	-	-	74	-19.74	176	107	H
4	*** 1.3315	38.87	Pk	28.8	-25	0	42.67	54	-11.33	74	-31.33	0-360	101	V
5	*** 4.87875	56.92	Pk	34.1	-45.3	0	45.72	54	-8.28	74	-28.28	0-360	101	V
6	*** 4.87875	56.92	Pk	34.1	-45.3	0	45.72	54	-8.28	74	-28.28	0-360	101	V
7	*** 7.31939	59.29	PK2	35.5	-43.2	0	51.59	-	-	74	-22.41	205	197	V
	*** 7.32061	50.47	ADV	35.5	-43.3	1.37	44.04	54	-9.96	-	-	205	197	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

HARMONICS AND SPURIOUS TEST DATA

Mode	Frequency (MHz)	Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	88761 (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
1Mbps	2402	1	*** 1.3325	40.58	Pk	28.8	-25.1	0	44.28	54	-9.72	74	-29.72	0-360	200	H
		2	** 1.887	40.63	Pk	31	-24.3	0	47.33	54	-6.67	74	-26.67	0-360	101	H
		5	*** 1.33	43.65	Pk	28.8	-24.9	0	47.55	54	-6.45	74	-26.45	0-360	101	V
		3	*** 4.80415	64.75	PK2	33.9	-47	0	51.65	-	-	74	-22.35	65	168	H
			*** 4.80395	57.99	ADV	33.9	-47	1.37	46.26	54	-7.74	-	-	65	168	H
		6	*** 4.80375	60.47	Pk	33.9	-47	0	47.37	54	-6.63	74	-26.63	0-360	101	V
		8	*** 8.10469	50.96	Pk	35.7	-41.3	0	45.36	54	-8.64	74	-28.64	0-360	101	V
		7	7.20469	58.08	Pk	35.6	-42.4	0	51.28	-	-	-	-	0-360	101	V
	2440	4	7.20656	59.13	Pk	35.6	-42.4	0	52.33	-	-	-	-	0-360	200	H
		1	*** 1.333	38.05	Pk	28.8	-25.1	0	41.75	54	-12.25	74	-32.25	0-360	101	H
		4	*** 1.3315	38.87	Pk	28.8	-25	0	42.67	54	-11.33	74	-31.33	0-360	101	V
		2	*** 4.88063	57.3	Pk	34.1	-45.4	0	46	54	-8	74	-28	0-360	200	H
		3	*** 7.32086	62.06	PK2	35.5	-43.3	0	54.26	-	-	74	-19.74	176	107	H
			*** 7.32066	54.12	ADV	35.5	-43.3	1.37	47.69	54	-6.31	-	-	176	107	H
		5	*** 4.87875	56.92	Pk	34.1	-45.3	0	45.72	54	-8.28	74	-28.28	0-360	101	V
		6	*** 4.87875	56.92	Pk	34.1	-45.3	0	45.72	54	-8.28	74	-28.28	0-360	101	V
		7	*** 7.31939	59.29	PK2	35.5	-43.2	0	51.59	-	-	74	-22.41	205	197	V
			*** 7.32061	50.47	ADV	35.5	-43.3	1.37	44.04	54	-9.96	-	-	205	197	V
	2480	1	*** 1.331	42.6	Pk	28.8	-25	0	46.4	54	-7.6	74	-27.6	0-360	200	H
		4	*** 1.329	39.37	Pk	28.8	-24.9	0	43.27	54	-10.73	74	-30.73	0-360	200	V
		2	*** 7.44084	60.68	PK2	35.6	-42.6	0	53.68	-	-	74	-20.32	154	115	H
			*** 7.43937	52.74	ADV	35.6	-42.6	1.37	47.11	54	-6.89	-	-	154	115	H
		3	*** 9.30938	50.2	Pk	36.3	-40.1	0	46.4	54	-7.6	74	-27.6	0-360	101	H
		5	*** 7.43933	58.94	PK2	35.6	-42.6	0	51.94	-	-	74	-22.06	188	239	V
			*** 7.44062	50.1	ADV	35.6	-42.6	1.37	44.47	54	-9.53	-	-	188	239	V
		6	*** 7.64906	51.29	Pk	35.8	-41.9	0	45.19	54	-8.81	74	-28.81	0-360	200	V
2Mbps	2404	1	*** 1.3315	38.09	Pk	28.8	-25	0	41.89	54	-12.11	74	-32.11	0-360	101	H
		5	*** 1.328	40.85	Pk	28.8	-24.8	0	44.85	54	-9.15	74	-29.15	0-360	101	V
		2	*** 4.80428	64.83	PK2	33.9	-47	0	51.73	-	-	74	-22.27	103	103	H
			*** 4.805	53.4	ADV	33.9	-47	4.8	45.1	54	-8.9	-	-	103	103	H
		4	*** 9.39563	51.02	Pk	36.5	-40.8	0	46.72	54	-7.28	74	-27.28	0-360	101	H
		6	*** 3.99094	59.11	Pk	33.2	-45.1	0	47.21	54	-6.79	74	-26.79	0-360	101	V
		7	*** 4.80469	58.84	Pk	33.9	-47	0	45.74	54	-8.26	74	-28.26	0-360	200	V
		8	7.20375	56.89	Pk	35.6	-42.3	0	50.19	-	-	-	-	0-360	200	V
	2440	3	7.20469	60	Pk	35.6	-42.4	0	53.2	-	-	-	-	0-360	101	H
		1	*** 1.332	36.31	Pk	28.8	-25	0	40.11	54	-13.89	74	-33.89	0-360	200	H
		4	*** 1.3285	40.95	Pk	28.8	-24.8	0	44.95	54	-9.05	74	-29.05	0-360	200	V
		2	*** 4.87969	56.95	Pk	34.1	-45.4	0	45.65	54	-8.35	74	-28.35	0-360	101	H
		3	*** 7.32167	60.38	PK2	35.5	-43.3	0	52.58	-	-	74	-21.42	175	106	H
			*** 7.32126	48.68	ADV	35.5	-43.3	4.8	45.68	54	-8.32	-	-	175	106	H
		5	*** 3.99	56.62	Pk	33.2	-45	0	44.82	54	-9.18	74	-29.18	0-360	101	V
		6	*** 4.88063	56.38	Pk	34.1	-45.4	0	45.08	54	-8.92	74	-28.92	0-360	101	V
	2478	7	*** 7.31856	60.45	PK2	35.5	-43.1	0	52.85	-	-	74	-21.15	153	104	V
			*** 7.31873	49.01	ADV	35.5	-43.1	4.8	46.21	54	-7.79	-	-	153	104	V
		1	*** 1.3285	36.77	Pk	28.8	-24.8	0	40.77	54	-13.23	74	-33.23	0-360	101	H
		4	*** 1.3315	42.23	Pk	28.8	-25	0	46.03	54	-7.97	74	-27.97	0-360	200	V
		2	*** 7.44148	60.12	PK2	35.6	-42.6	0	53.12	-	-	74	-20.88	152	106	H
			*** 7.43903	48.31	ADV	35.6	-42.6	4.8	46.11	54	-7.89	-	-	152	106	H
		3	*** 8.32688	49.61	Pk	35.8	-41.5	0	43.91	54	-10.09	74	-30.09	0-360	200	H
		5	*** 3.99281	55.02	Pk	33.2	-45.1	0	43.12	54	-10.88	74	-30.88	0-360	200	V
		6	*** 7.44171	58.61	PK2	35.6	-42.5	0	51.71	-	-	74	-22.29	113	120	V
			*** 7.44134	46.76	ADV	35.6	-42.6	4.8	44.56	54	-9.44	-	-	113	120	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

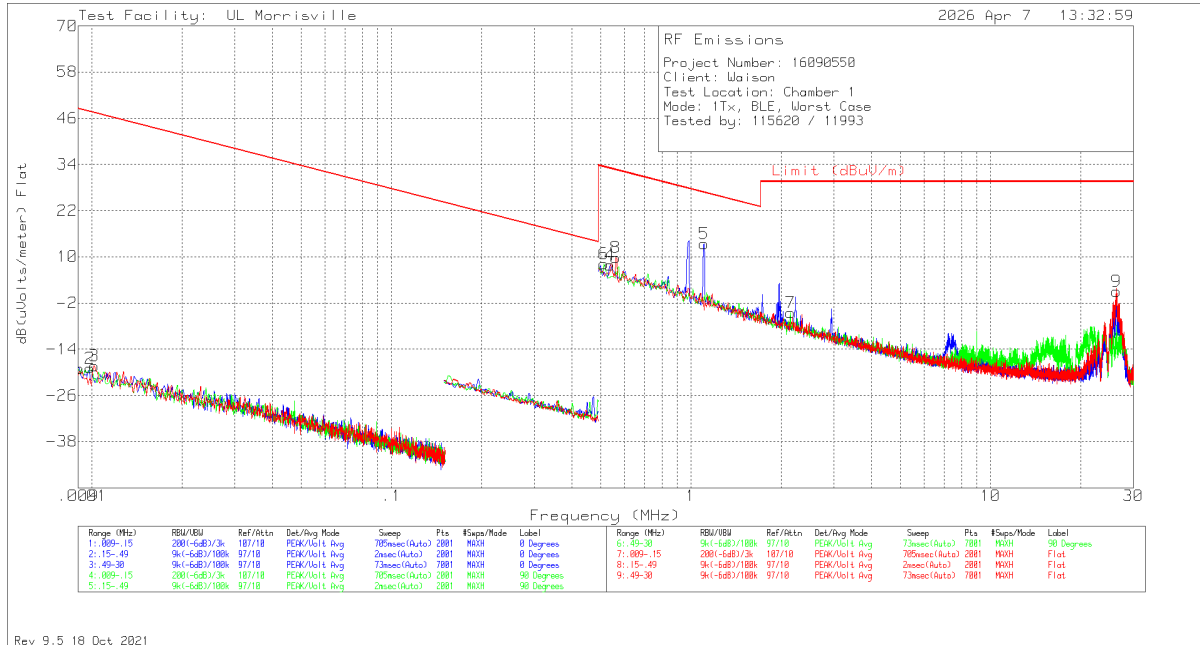
Pk - Peak detector

PK2 - Maximum Peak detector

ADV - Linear Voltage Average

10.1. WORST CASE SPURIOUS 9kHz-30MHz

10.1.1. BLE

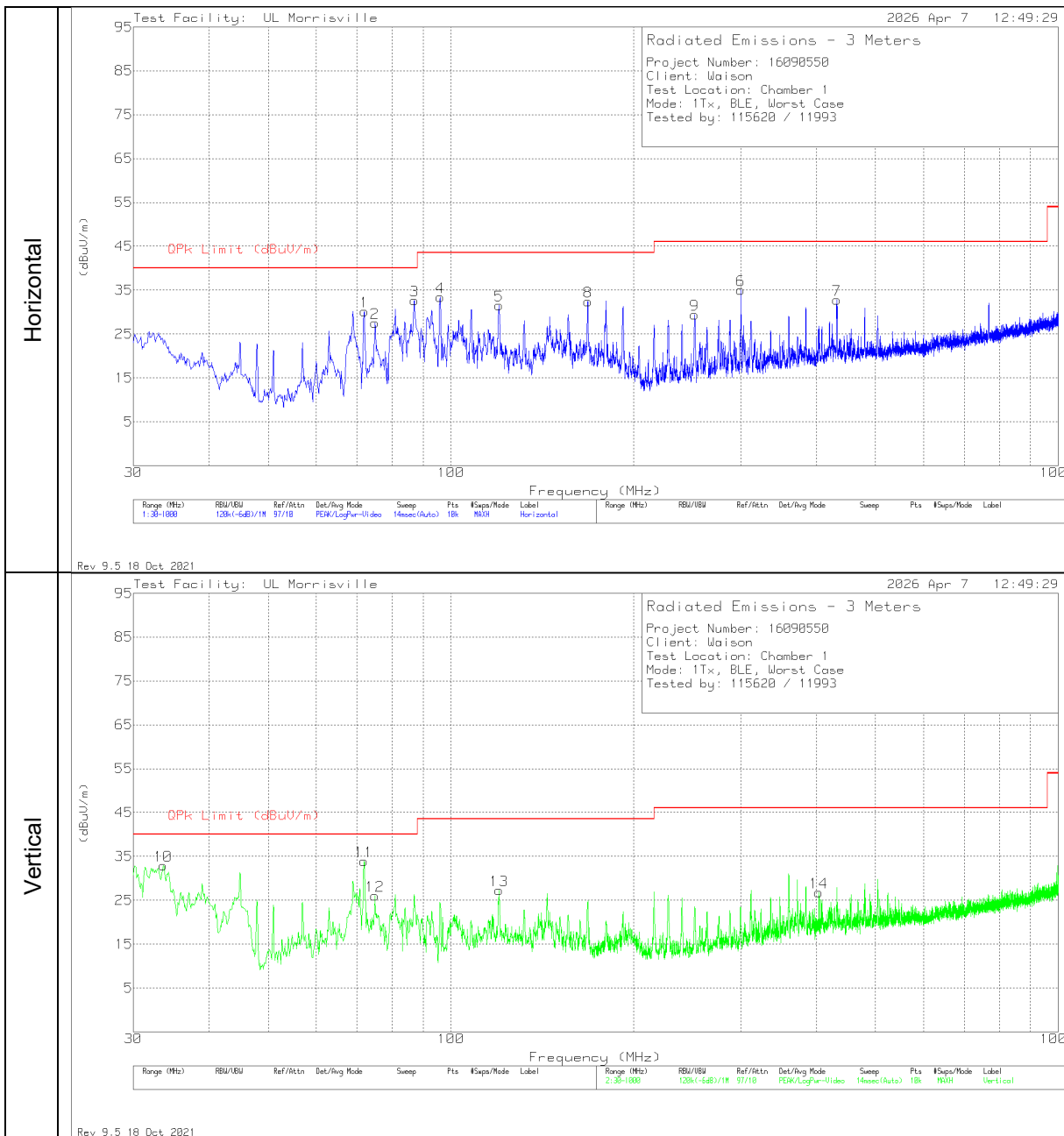


Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	ANT (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
1	.00907	41.28	Pk	19.6	.1	-19.02	48.45	-67.47	0-360	404	0 degs
2	.00985	41.9	Pk	19.1	.1	-18.9	47.73	-66.63	0-360	404	90 degs
3	.01021	42.81	Pk	18.8	.1	-18.29	47.43	-65.72	0-360	404	Flat
6	.51108	37.13	Pk	11	.1	8.23	33.43	-25.2	0-360	404	90 degs
4	.53638	36.75	Pk	11	.1	7.85	33.01	-25.16	0-360	404	0 degs
8	.56167	38.75	Pk	11	.1	9.85	32.61	-22.76	0-360	404	Flat
5	1.10554	42.24	Pk	11	.2	13.44	26.73	-13.29	0-360	404	0 degs
7	2.14689	24.23	Pk	11.1	.2	-4.47	29.54	-34.01	0-360	404	90 degs
9	26.27927	31.39	Pk	8.9	.8	1.09	29.54	-28.45	0-360	404	Flat

Pk - Peak detector

10.2. WORST CASE SPURIOUS 30-1000MHZ

10.2.1. BLE



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	90629 ACF (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* ** 75.008	44.38	Pk	14.4	-31.2	27.58	40	-12.42	0-360	199	H
5	* ** 120.016	42.26	Pk	20.1	-30.8	31.56	43.52	-11.96	0-360	199	H
8	* ** 168.031	44.72	Pk	18.2	-30.5	32.42	43.52	-11.1	0-360	199	H
9	* ** 252.033	41.63	Pk	17.6	-29.8	29.43	46.02	-16.59	0-360	99	H
12	* ** 74.911	42.81	Pk	14.4	-31.2	26.01	40	-13.99	0-360	100	V
13	* ** 120.016	37.97	Pk	20.1	-30.8	27.27	43.52	-16.25	0-360	100	V
14	* ** 403.353	34.21	Pk	21.9	-29.3	26.81	46.02	-19.21	0-360	100	V
10	33.589	39.92	Pk	24.5	-31.5	32.92	-	-	0-360	100	V
11	71.904	50.37	Pk	14.5	-30.9	33.97	-	-	0-360	100	V
1	72.001	46.42	Pk	14.5	-30.8	30.12	-	-	0-360	199	H
3	87.036	49.34	Pk	13.8	-30.5	32.64	-	-	0-360	299	H
4	95.96	49.04	Pk	15.4	-31	33.44	-	-	0-360	299	H
6	300.242	45.13	Pk	19.5	-29.6	35.03	-	-	0-360	99	H
7	431.968	39.43	Pk	22.6	-29.2	32.83	-	-	0-360	99	H

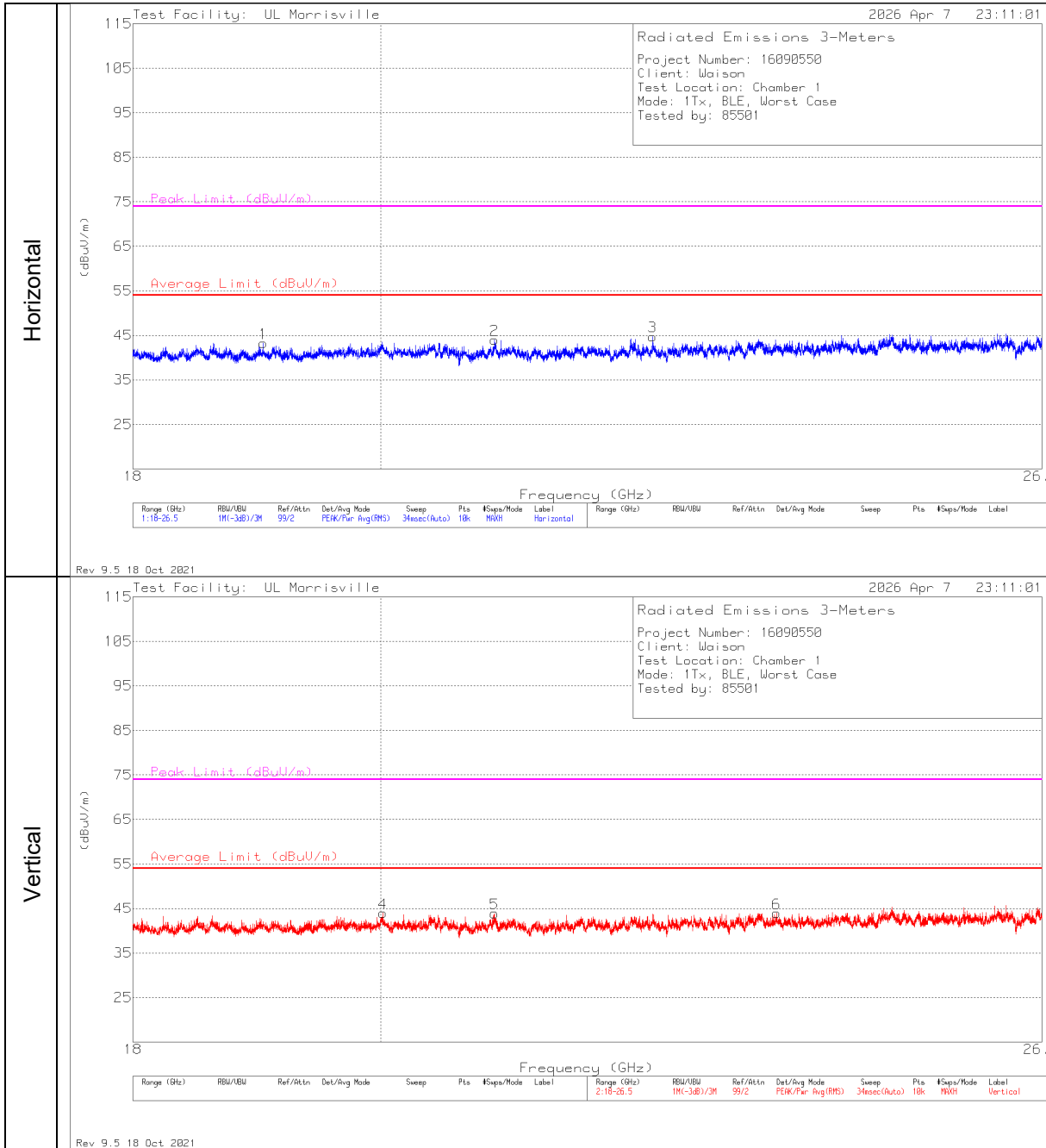
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

10.3. WORST CASE SPURIOUS 18-26GHz

10.3.1. BLE



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	85717 (dB/m)	Gain/Loss (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* ** 19.02605	49.99	Pk	32.5	-39.2	43.29	74	-30.71	0-360	150	H
2	* ** 20.99315	50.51	Pk	32.9	-39.4	44.01	74	-29.99	0-360	249	H
3	* ** 22.4536	50.56	Pk	33.3	-39.1	44.76	74	-29.24	0-360	249	H
4	* ** 20.0215	50.15	Pk	32.6	-38.8	43.95	74	-30.05	0-360	101	V
5	* ** 20.994	50.42	Pk	32.9	-39.4	43.92	74	-30.08	0-360	101	V
6	* ** 23.67177	49.27	Pk	33.8	-39.1	43.97	74	-30.03	0-360	150	V

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

** - indicates frequency in Taiwan NCC LP0002 Restricted Band

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
RSS-Gen 8.8

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

* Decreases with the logarithm of the frequency.

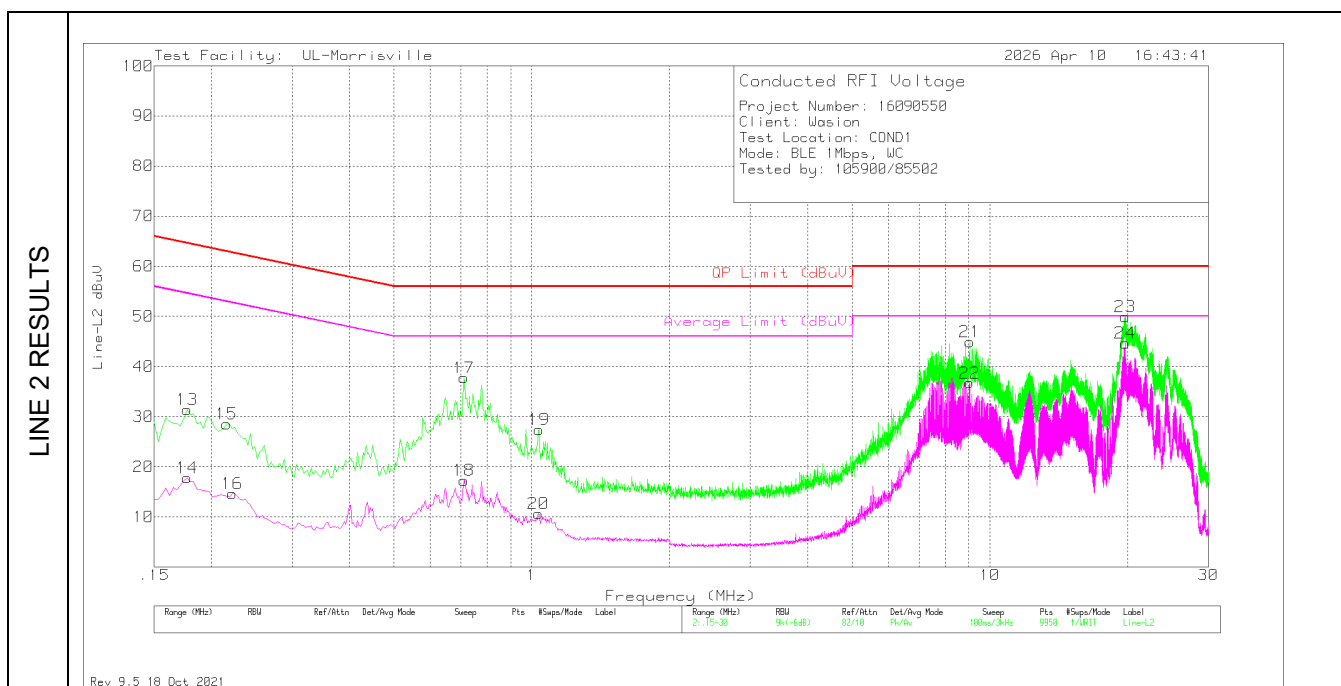
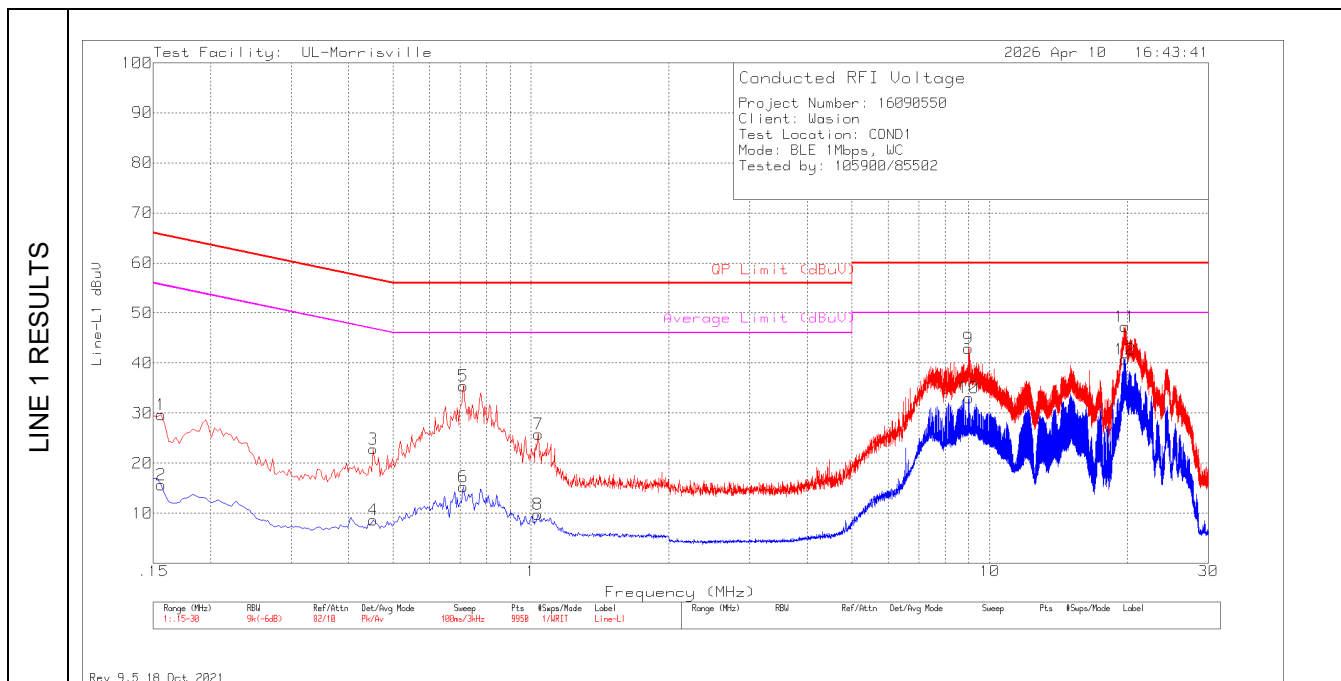
TEST PROCEDURE

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

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

Line conducted data is recorded for both lines.

11.1. BLE



Line	Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	1	.156	19.79	Pk	.2	9.7	29.69	65.67	-35.98	-	-
	2	.156	5.72	Av	.2	9.7	15.62	-	-	55.67	-40.05
	3	.453	13.13	Pk	0	9.7	22.83	56.82	-33.99	-	-
	4	.453	-1.04	Av	0	9.7	8.66	-	-	46.82	-38.16
	5	.711	25.7	Pk	0	9.7	35.4	56	-20.6	-	-
	6	.711	5.57	Av	0	9.7	15.27	-	-	46	-30.73
	7	1.038	16.04	Pk	0	9.7	25.74	56	-30.26	-	-
	8	1.035	.07	Av	0	9.7	9.77	-	-	46	-36.23
	9	.9	33.15	Pk	.1	9.7	42.95	60	-17.05	-	-
	10	9.003	23.25	Av	.1	9.7	33.05	-	-	50	-16.95
	11	19.722	37.25	Pk	.2	9.8	47.25	60	-12.75	-	-
	12	19.722	30.74	Av	.2	9.8	40.74	-	-	50	-9.26
2	13	.177	21.48	Pk	.2	9.7	31.38	64.63	-33.25	-	-
	14	.177	7.92	Av	.2	9.7	17.82	-	-	54.63	-36.81
	15	.216	18.76	Pk	.1	9.7	28.56	62.97	-34.41	-	-
	16	.222	4.83	Av	.1	9.7	14.63	-	-	52.74	-38.11
	17	.711	28.04	Pk	0	9.7	37.74	56	-18.26	-	-
	18	.711	7.59	Av	0	9.7	17.29	-	-	46	-28.71
	19	1.038	17.73	Pk	0	9.7	27.43	56	-28.57	-	-
	20	1.035	.9	Av	0	9.7	10.6	-	-	46	-35.4
	21	9.036	35.17	Pk	.1	9.7	44.97	60	-15.03	-	-
	22	9.03	26.93	Av	.1	9.7	36.73	-	-	50	-13.27
	23	19.722	39.94	Pk	.2	9.8	49.94	60	-10.06	-	-
	24	19.72135	35.4	Ca	.2	9.8	45.4	-	-	50	-4.6

Pk – Peak Detector
Av – Average Detector

12. SETUP PHOTOS

Please refer to R16090550-EP1 for setup photos

END OF TEST REPORT