

TEST REPORT

Report Number: R15607285-E3

Applicant : RF IDEAS
425 N. Martingale Road
Suite 1680
Schaumburg, IL 60173, USA

Model : SP30L00

FCC ID : M9MSP30L00

IC : 6571A-SP30L00

EUT Description : WAVE ID Mobile SP LEGIC USB Black Reader

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

Date Of Issue:

2025-03-25

Prepared by:

UL LLC

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-02-10	Initial Issue	Manish Baral
V2	2025-03-25	Revised Technical Notes, Maximum Field Strength, and Revised AC Mains Remeasurement	Charles Moody

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: RF IDEAS
425 N. Martingale Road, Suite 1680
Schaumburg, IL 60173, USA

EUT DESCRIPTION: WAVE ID Mobile SP LEGIC USB Black Reader

MODEL: SP30L00

SERIAL NUMBER: WLHA000127, WLHA000115, WLHA000139, WLHA000134

SAMPLE RECEIPT DATE: 2024-12-13

DATE TESTED: 2025-01-13 to 2025-01-16

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 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 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:

Prepared By:



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

Manish Baral
Engineer
Consumer, Medical and IT Segment.
UL LLC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:

- ANSI C63.10-2020
- FCC 47 CFR Part 2
- FCC 47 CFR Part 15C
- RSS-GEN Issue 5 + A1 + A2: 2021
- RSS-210 Issue 11: 2024

3. SUMMARY OF TEST RESULTS

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:

Requirement Description	Requirement Clause Number	Result	Remarks
Occupied Bandwidth	For Reporting Purposes Only	Passed	None.
Fundamental Measurements.	FCC §15.225 (a-d) FCC §15.209 (d)		
Tx Spurious Emissions	IC RSS-210, Annex B.6 IC RSS-GEN, Section 8.9 (Transmitter)		
Frequency Stability	FCC FCC §15.225 (e) RSS-210, Annex B.6		
AC Mains Line Conducted Emissions	FCC §15.207 IC RSS-GEN, Section 8.8		

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 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)	141.16 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:

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

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 dBuV + 0 dB + 10.1 dB + 0 dB = 46.6 dBuV

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a dual band RFID card reader capable of reading both 125 kHz and 13.56 MHz credentials and Legic Secure Segment credentials via Bluetooth communication. This report covers the full emissions testing of the 125kHz RFID radio.

6.2. MAXIMUM ELECTRIC FIELD STRENGTH

The transmitter has a maximum peak radiated electric field strength as follows:

Fundamental Frequency (kHz)	E-Field at 300-Meters (dBuV/m)
125 kHz	-7.32

6.3. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was:

EUT Firmware: WN5020600UPX7L0

6.4. WORST-CASE CONFIGURATION AND MODE

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

In addition, Type A and B with and without a tag were investigated to determine the worst case based on the highest power and spurious emissions. Type A without a tag was determined to be the worst case and therefore selected for all final tests.

6.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Lenovo	T14	0623PF4FKVWW	N/A
Laptop Charger	Lenovo	ADLX65YDC2D	8SSA10R16970D1SG	N/A
Laptop	HP	HP EliteBook Resolve 810 G2	8CG4340RMV	N/A
13.56MHz Tag	RF Ideas	N/A	996302030	N/A
125kHz Tag	RF Ideas	N/A	23993	N/A

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Power	1	N/A	USB	<3m	N/A
2	Power	1	N/A	USB and RS232	<3m	Power to USB and RS232. RS232 to USB adapter For Rx Only

SETUP DIAGRAM

Please refer to R15607285-EP2 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 1)

Equip. ID	Description	Manufacturer	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					
90629	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2024-01-30	2026-01-30
Gain-Loss Chains					
91974	Gain-loss string: 0.009-30MHz	Various	Various	2024-05-08	2025-05-08
91976	Gain-loss string: 25-1000MHz	Various	Various	2024-05-08	2025-05-08
Receiver & Software					
206496	Spectrum Analyzer	Rohde & Schwarz	ESW44	2024-08-29	2025-08-29
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.
Common Equipment					
Conducted Room 2					
90416	Spectrum Analyzer	Keysight Technologies	N9030A	2024-09-23	2025-09-23
76023	Temp/Humid Chamber	Cincinnati Sub-Zero	ZPH-8-3.5-SCT/AC	2024-01-12	2025-01-12
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
Additional Equipment used					
91212	True RMS Multimeter	Agilent	U1232A	2024-08-01	2025-08-01

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

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
70374	EMI Test Receiver	ROHDE & SCHWARZ	ESCI7	2024-07-30	2025-07-30
CBL087	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3W06143-240	2024-04-04	2025-04-04
179892	Environmental Meter	Fisher Scientific	15-077-963	2024-08-12	2025-08-12
80391	LISN, 50-ohm/50-uH, 250uH 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50/250-25-2-01	2024-08-01	2025-08-01
PS216	AC Power Source	Elgar	CW2501M	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		

8. OCCUPIED BANDWIDTH

LIMITS

Reporting Purposes Only

TEST PROCEDURE

C63.10 6.9.2 and 6.9.3

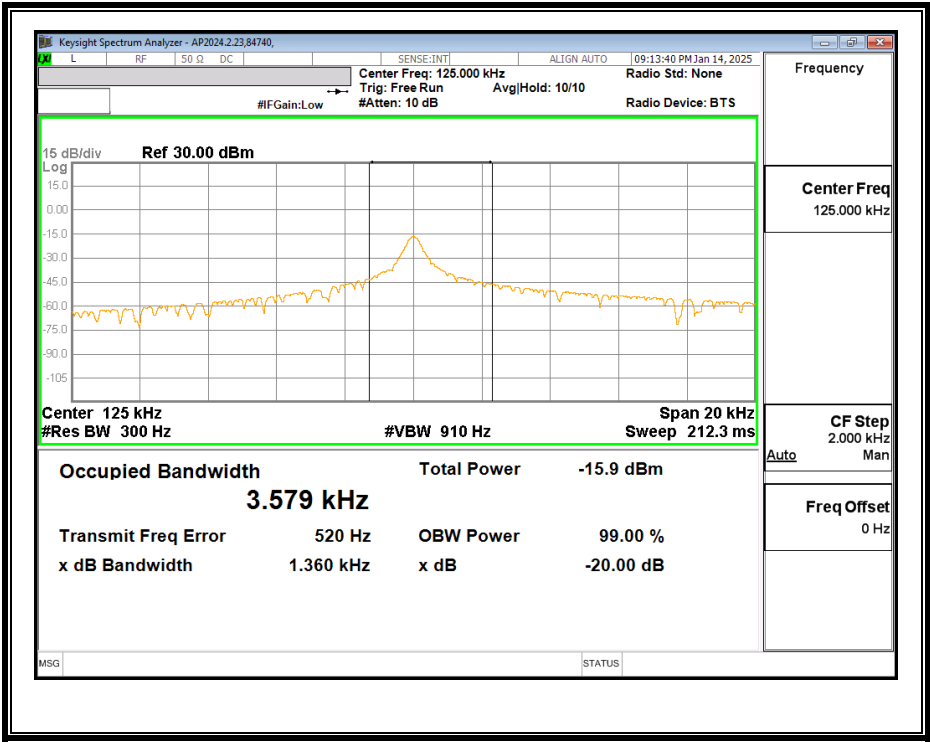
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1-5% of the 20dB bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

8.1. TAG OFF

RESULTS

Frequency (MHz)	20dB Bandwidth (kHz)	99% Bandwidth (kHz)
0.125	1.360	3.579



Note: Because the measured signal is CW or CW-like, adjusting the RBW per C63.10 would not be practical since the measured bandwidth will always follow the RBW.

Test Information
Date: 2025-01-14
Project: 15607285
Tested By: 84740

9. RADIATED EMISSION TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMIT

FCC §15.209 (a)

IC RSS-GEN, Section 8.9 (Transmitter)

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

FCC §15.205 and §15.209
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

RSS-GEN, Section 8.9 and 8.10.

Frequency Range (MHz)	Field Strength Limit (uA/m) at 3 m	Field Strength Limit (dBuA/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 below 1GHz measurements. The antenna to EUT distance is 3 meters.

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

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.

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

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.

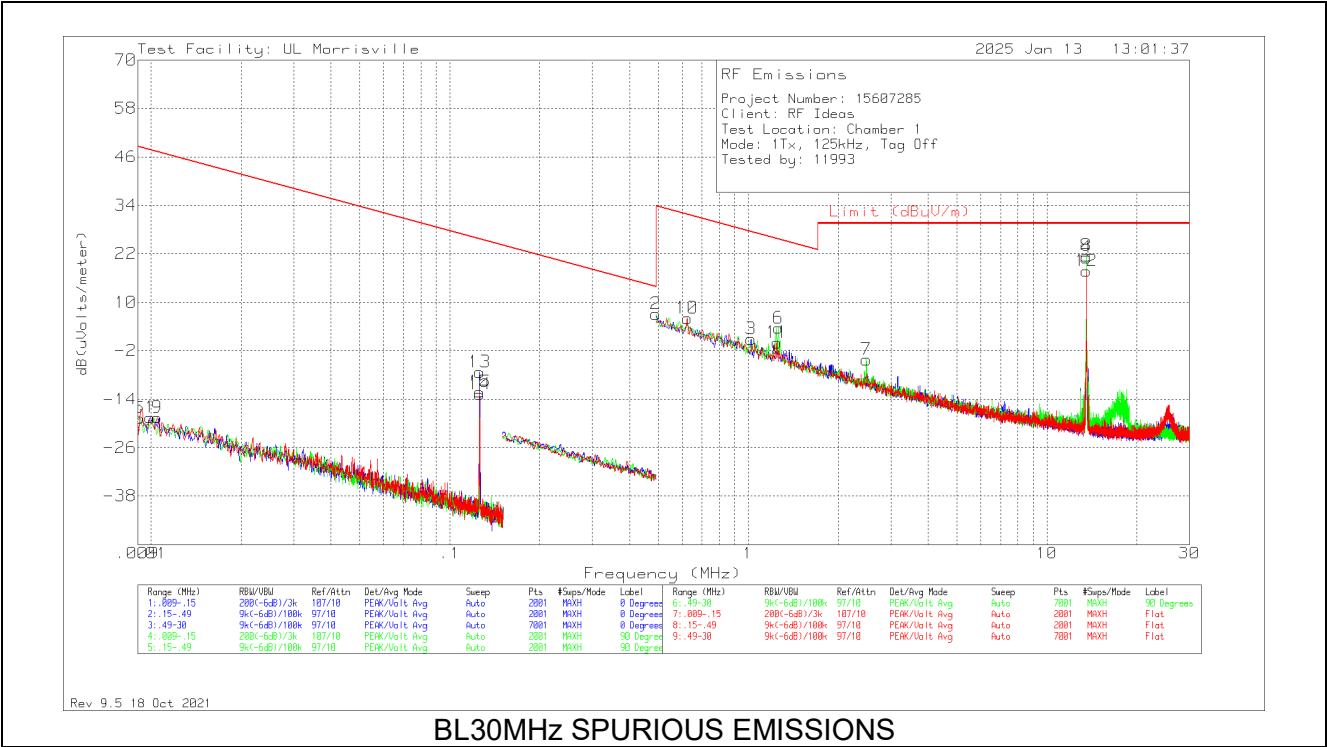
OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

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

9.2.1. TAG OFF

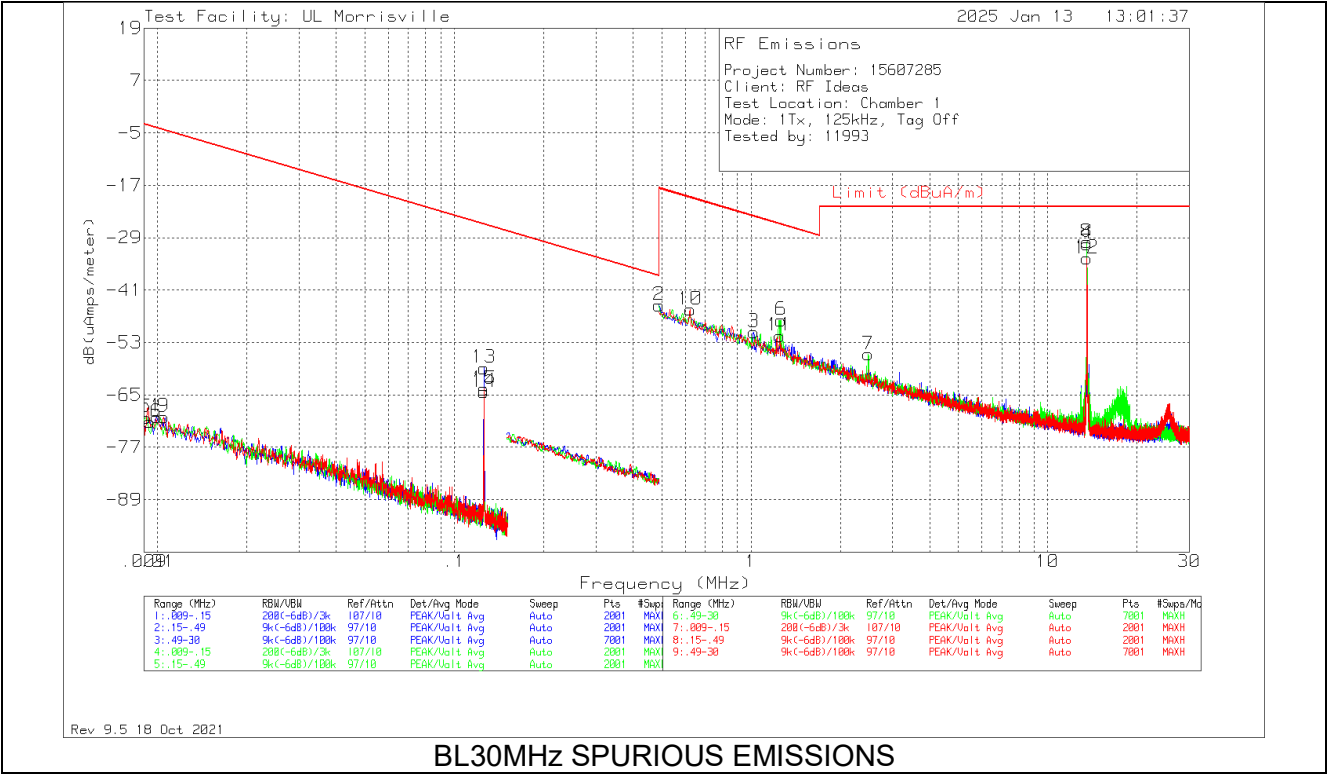
SPURIOUS EMISSION – E FIELD



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	QP/AV Limit (dBuV/m)	PK Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
5	.00914	42.22	Pk	19	.1	-80	-18.68	48.38	68.38	-67.06	0-360	404	90 degs
1	.00992	43.07	Pk	18.3	.1	-80	-18.53	47.67	67.67	-66.2	0-360	404	0 degs
9	.01049	43.35	Pk	18	.1	-80	-18.55	47.19	67.19	-65.74	0-360	404	Flat
13	.12587	61.58	Pk	11	.1	-80	-7.32	25.61	45.61	-32.93	0-360	404	0 degs
14	.12587	56.12	Pk	11	.1	-80	-12.78	25.61	45.61	-38.39	0-360	404	90 degs
15	.12587	56.74	Pk	11	.1	-80	-12.16	25.61	45.61	-37.77	0-360	404	Flat
2	.49	35.98	Pk	11	.1	-40	7.08	13.8	33.8	-6.72	0-360	404	0 degs
10	.62491	34.93	Pk	11	.1	-40	6.03	31.69	-	-25.66	0-360	404	Flat
3	1.02122	29.78	Pk	11	.1	-40	.88	27.42	-	-26.54	0-360	404	0 degs
11	1.24888	28.8	Pk	11	.2	-40	0	25.67	-	-25.67	0-360	404	Flat
6	1.26153	32.41	Pk	11	.2	-40	3.61	25.59	-	-21.98	0-360	404	90 degs
7	2.48417	24.5	Pk	11.1	.2	-40	-4.2	29.54	-	-33.74	0-360	404	90 degs
4	13.5596	50.66	Pk	9.8	.6	-40	21.06	29.54	-	-8.48	0-360	404	0 degs
8	13.5596	51.12	Pk	9.8	.6	-40	21.52	29.54	-	-8.02	0-360	404	90 degs
12	13.5596	47.35	Pk	9.8	.6	-40	17.75	29.54	-	-11.79	0-360	404	Flat

Pk - Peak detector

SPURIOUS EMISSION – H FIELD



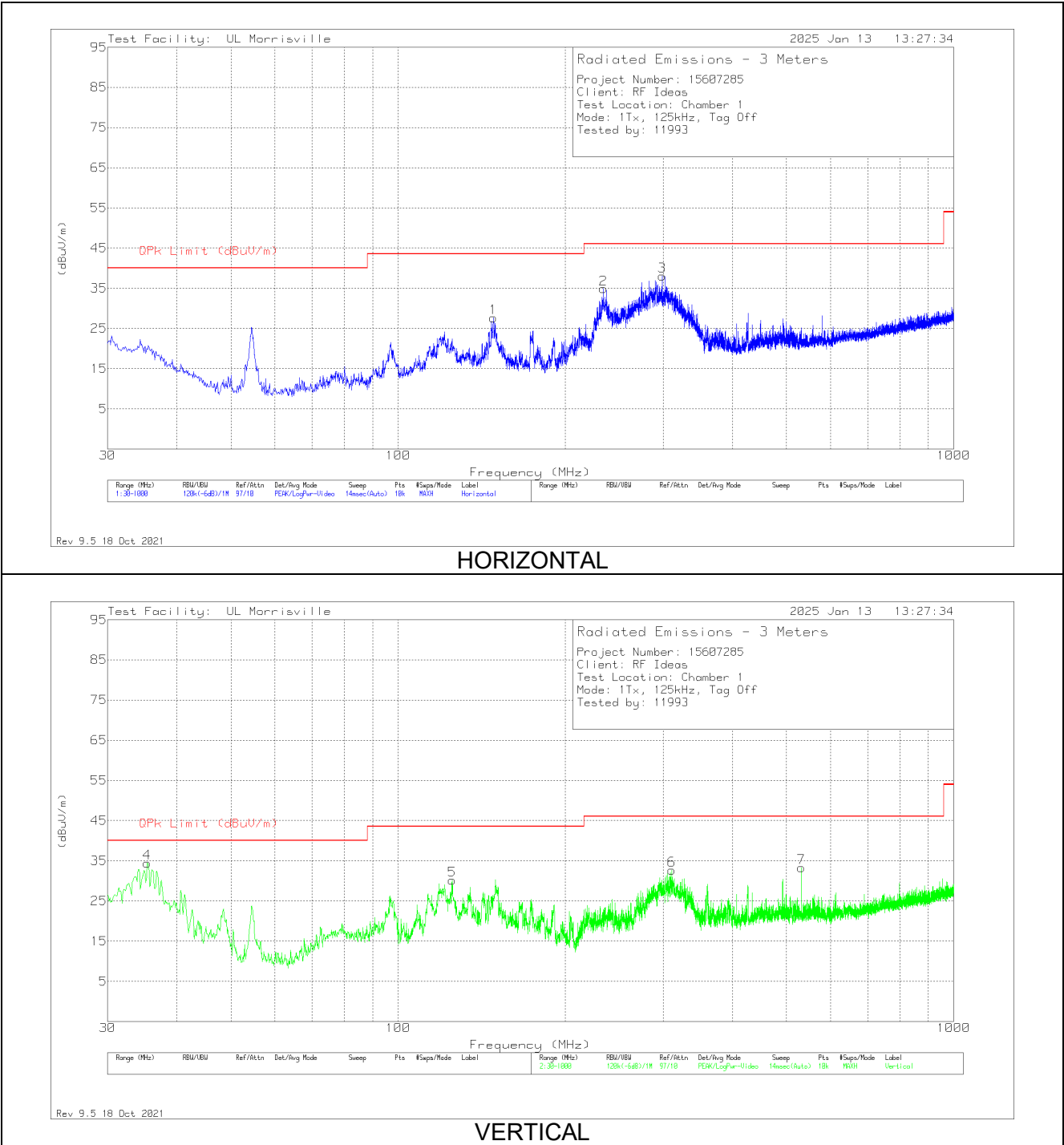
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	135144 (dB/m)	Gain/Loss (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	QP/AV Limit (dBuA/m)	PK Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
5	.00914	42.22	Pk	-32.5	.1	-80	-70.18	-3.12	16.88	-67.06	0-360	404	90 degs
16	.00943	41.5	Pk	-32.8	.1	-80	-71.2	-3.38	16.62	-67.82	0-360	404	0 degs
1	.00992	43.07	Pk	-33.2	.1	-80	-70.03	-3.83	16.62	-66.2	0-360	404	0 degs
9	.01049	43.35	Pk	-33.5	.1	-80	-70.05	-4.31	15.69	-65.74	0-360	404	Flat
13	.12587	61.58	Pk	-40.5	.1	-80	-58.82	-25.89	5.89	-32.93	0-360	404	0 degs
14	.12587	56.12	Pk	-40.5	.1	-80	-64.28	-25.89	5.89	-38.39	0-360	404	90 degs
15	.12587	56.74	Pk	-40.5	.1	-80	-63.66	-25.89	5.89	-37.77	0-360	404	Flat
2	.49	35.98	Pk	-40.5	.1	-40	-44.42	-37.7	-17.7	-6.72	0-360	404	0 degs
10	.62491	34.93	Pk	-40.5	.1	-40	-45.47	-19.81	-	-25.66	0-360	404	Flat
3	1.02122	29.78	Pk	-40.5	.1	-40	-50.62	-24.08	-	-26.54	0-360	404	0 degs
11	1.24888	28.8	Pk	-40.5	.2	-40	-51.5	-25.83	-	-25.67	0-360	404	Flat
6	1.26153	32.41	Pk	-40.5	.2	-40	-47.89	-25.91	-	-21.98	0-360	404	90 degs
7	2.48417	24.5	Pk	-40.4	.2	-40	-55.7	-21.96	-	-33.74	0-360	404	90 degs
4	13.5596	50.66	Pk	-41.7	.6	-40	-30.44	-21.96	-	-8.48	0-360	404	0 degs
8	13.5596	51.12	Pk	-41.7	.6	-40	-29.98	-21.96	-	-8.02	0-360	404	90 degs
12	13.5596	47.35	Pk	-41.7	.6	-40	-33.75	-21.96	-	-11.79	0-360	404	Flat

Pk - Peak detector

9.3. TX SPURIOUS EMISSION 30 TO 1000 MHz

9.3.1. TAG OFF

SPURIOUS EMISSION



DATA

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
4	35.2578	39.34	Qp	23.2	-31.6	30.94	40	-9.06	8	103	V
5	125.06	40.92	Pk	20.1	-30.9	30.12	43.52	-13.4	0-360	101	V
1	148.437	39.03	Pk	18.8	-30.2	27.63	43.52	-15.89	0-360	199	H
2	234.185	47.36	Pk	17.4	-29.9	34.86	46.02	-11.16	0-360	98	H
3	298.69	48.29	Pk	19.6	-29.8	38.09	46.02	-7.93	0-360	98	H
6	310.718	42.12	Pk	19.8	-29.2	32.72	46.02	-13.3	0-360	101	V
7	532.266	38.33	Pk	24.2	-29.2	33.33	46.02	-12.69	0-360	101	V

Pk - Peak detector

10. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207

IC RSS-GEN, Section 8.8

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Notes:
1. The lower limit shall apply at the transition frequencies
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

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.

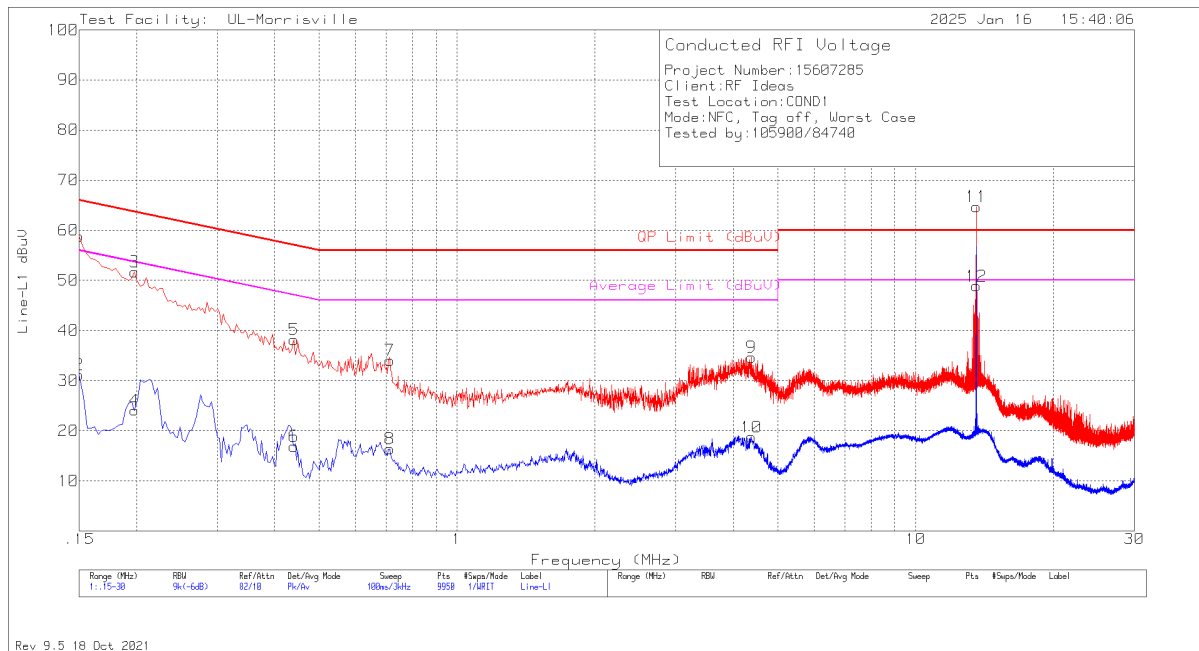
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

10.1.1. TAG OFF

LINE 1 RESULTS



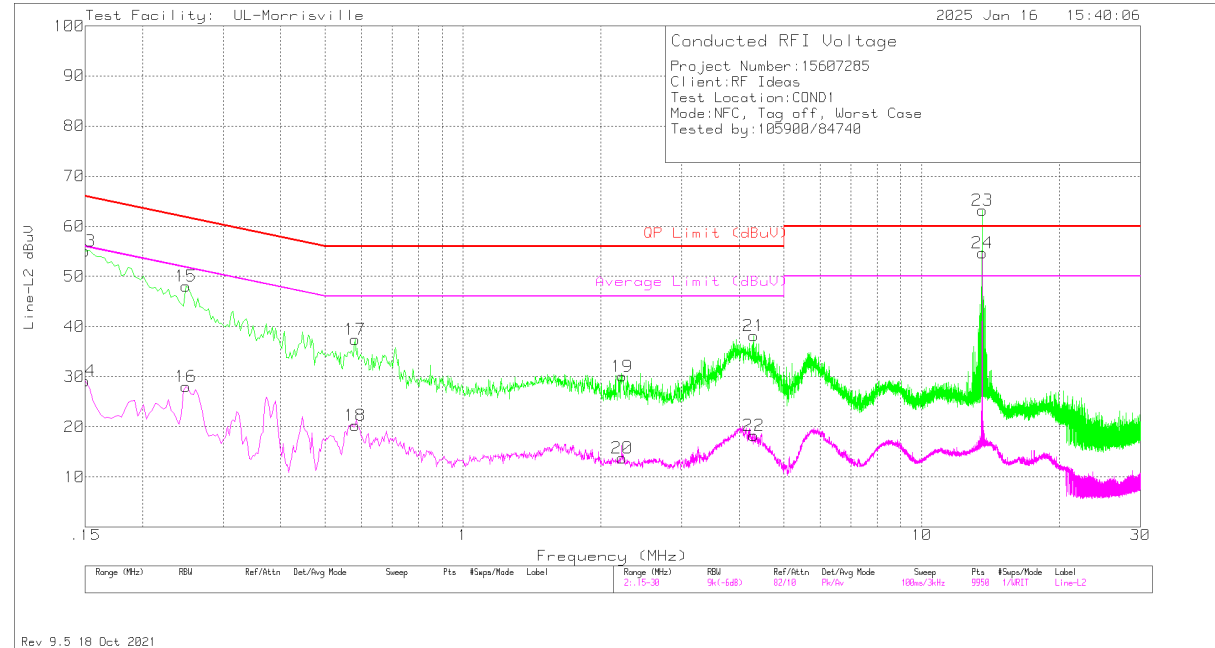
Emissions

Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.15	48.76	Pk	.3	9.8	58.86	66	-7.14	-	-
2	.15	21.08	Av	.3	9.8	31.18	-	-	56	-24.82
3	.198	41.69	Pk	.2	9.8	51.69	63.69	-12	-	-
4	.198	14.08	Av	.2	9.8	24.08	-	-	53.69	-29.61
5	.441	28.27	Pk	.1	9.8	38.17	57.04	-18.87	-	-
6	.441	7.03	Av	.1	9.8	16.93	-	-	47.04	-30.11
7	.714	24.2	Pk	0	9.8	34	56	-22	-	-
8	.714	6.57	Av	0	9.8	16.37	-	-	46	-29.63
9	4.383	24.62	Pk	.1	9.9	34.62	56	-21.38	-	-
10	4.383	8.71	Av	.1	9.9	18.71	-	-	46	-27.29
11	13.56048	53.39	Qp	.1	10	63.49	60	3.49	-	-
12	13.5604	49.28	Ca	.1	10	59.38	-	-	50	9.38

Pk - Peak detector
Av - Average detection
Qp - Quasi-Peak detector
Ca - CISPR average detection

NOTE* - Since the fundamental is over the limit, a terminated sample will be used to show compliance. Refer to section 9.1.2.

LINE 2 RESULTS



Emissions

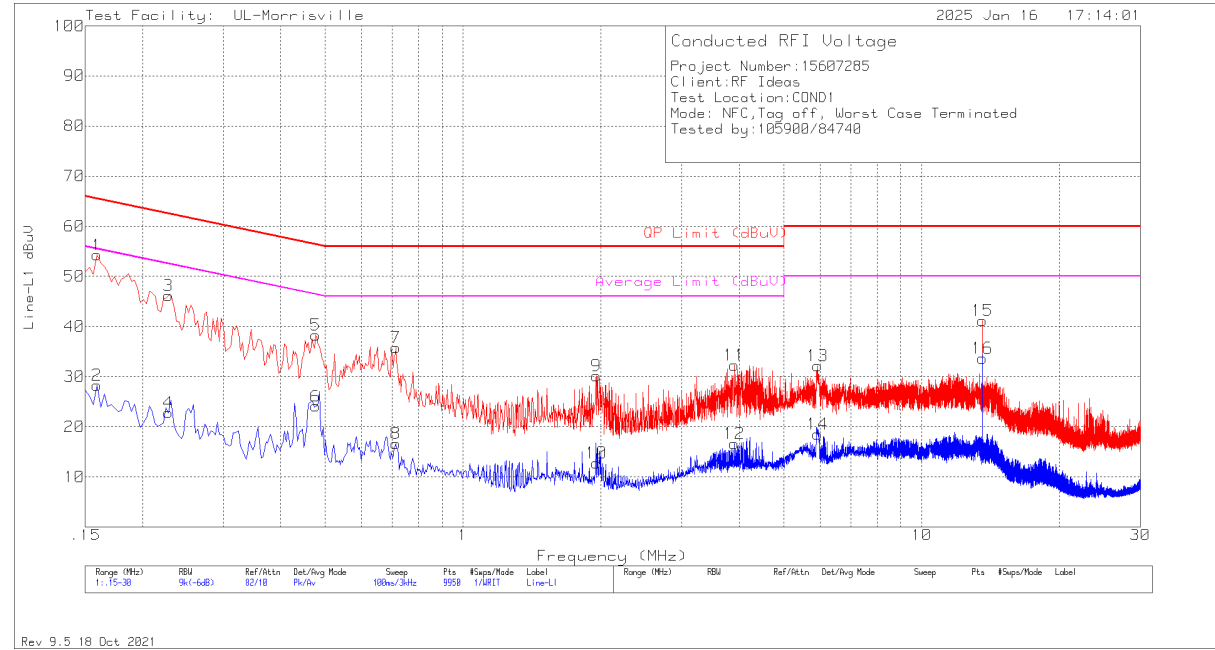
Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
13	.15	44.96	Pk	.3	9.8	55.06	66	-10.94	-	-
14	.15	19.02	Av	.3	9.8	29.12	-	-	56	-26.88
15	.249	38.12	Pk	.1	9.8	48.02	61.79	-13.77	-	-
16	.249	18.09	Av	.1	9.8	27.99	-	-	51.79	-23.8
17	.582	27.6	Pk	0	9.8	37.4	56	-18.6	-	-
18	.582	10.51	Av	0	9.8	20.31	-	-	46	-25.69
19	2.223	20.29	Pk	0	9.8	30.09	56	-25.91	-	-
20	2.223	3.97	Av	0	9.8	13.77	-	-	46	-32.23
21	4.299	28.19	Pk	.1	9.9	38.19	56	-17.81	-	-
22	4.299	8.28	Av	.1	9.9	18.28	-	-	46	-27.72
23	13.5605	53.62	Qp	.1	10	63.72	60	3.72	-	-
24	13.5605	55.07	Ca	.1	10	65.17	-	-	50	15.17

Pk - Peak detector
Av - Average detection
Qp - Quasi-Peak detector
Ca - CISPR average detection

NOTE* - Since the fundamental is over the limit, a terminated sample will be used to show compliance. Refer to section 9.1.2.

10.1.2. **TERMINATED SAMPLE**

LINE 1 RESULTS

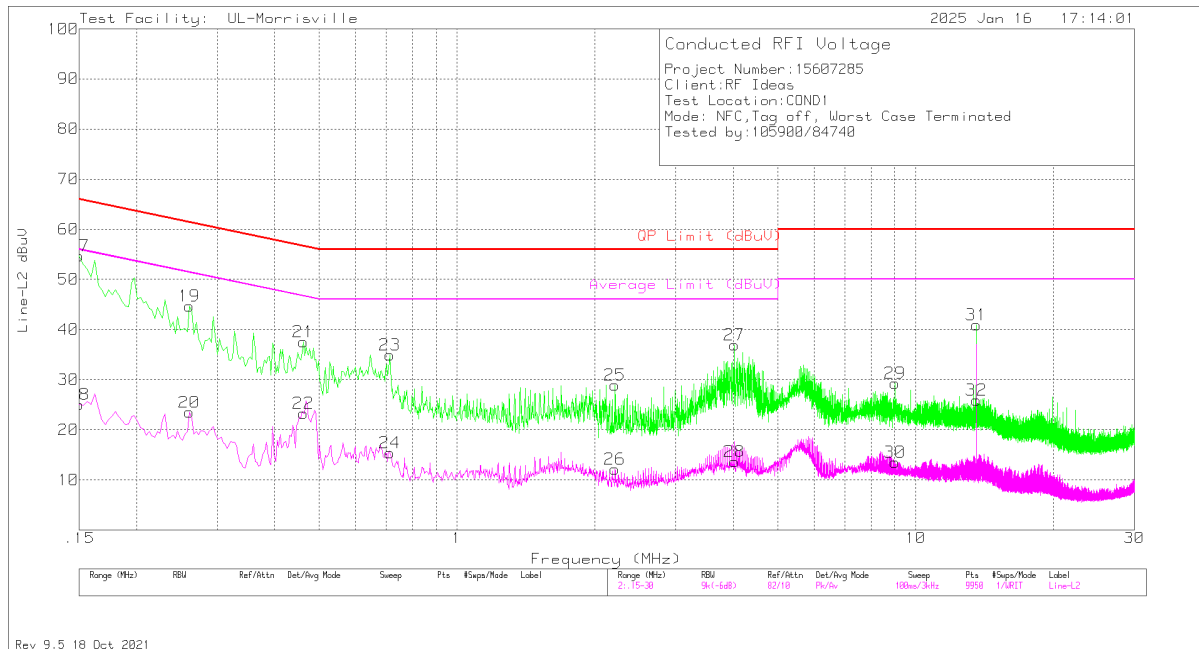


Emissions

Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.159	44.26	Pk	.2	9.8	54.26	65.52	-11.26	-	-
2	.159	18.24	Av	.2	9.8	28.24	-	-	55.52	-27.28
3	.228	36.26	Pk	.1	9.8	46.16	62.52	-16.36	-	-
4	.228	12.93	Av	.1	9.8	22.83	-	-	52.52	-29.69
5	.477	28.54	Pk	0	9.8	38.34	56.39	-18.05	-	-
6	.477	14.29	Av	0	9.8	24.09	-	-	46.39	-22.3
7	.714	26.01	Pk	0	9.8	35.81	56	-20.19	-	-
8	.714	6.81	Av	0	9.8	16.61	-	-	46	-29.39
9	1.953	20.41	Pk	0	9.8	30.21	56	-25.79	-	-
10	1.953	2.95	Av	0	9.8	12.75	-	-	46	-33.25
11	3.906	22.41	Pk	0	9.9	32.31	56	-23.69	-	-
12	3.906	6.75	Av	0	9.9	16.65	-	-	46	-29.35
13	5.928	22.2	Pk	.1	9.9	32.2	60	-27.8	-	-
14	5.928	8.56	Av	.1	9.9	18.56	-	-	50	-31.44
15	13.56	31.12	Pk	.1	10	41.22	60	-18.78	-	-
16	13.56	23.52	Av	.1	10	33.62	-	-	50	-16.38

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS



Emissions

Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VDF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
17	.15	44.6	Pk	.3	9.8	54.7	66	-11.3	-	-
18	.15	14.89	Av	.3	9.8	24.99	-	-	56	-31.01
19	.261	34.78	Pk	.1	9.8	44.68	61.4	-16.72	-	-
20	.261	13.57	Av	.1	9.8	23.47	-	-	51.4	-27.93
21	.462	27.76	Pk	0	9.8	37.56	56.66	-19.1	-	-
22	.462	13.5	Av	0	9.8	23.3	-	-	46.66	-23.36
23	.714	25.14	Pk	0	9.8	34.94	56	-21.06	-	-
24	.714	5.57	Av	0	9.8	15.37	-	-	46	-30.63
25	2.211	19.08	Pk	0	9.8	28.88	56	-27.12	-	-
26	2.211	2.32	Av	0	9.8	12.12	-	-	46	-33.88
27	4.023	26.97	Pk	0	9.9	36.87	56	-19.13	-	-
28	4.023	3.76	Av	0	9.9	13.66	-	-	46	-32.34
29	9.021	19.22	Pk	.1	10	29.32	60	-30.68	-	-
30	9.021	3.46	Av	.1	10	13.56	-	-	50	-36.44
31	13.56	30.87	Pk	.1	10	40.97	60	-19.03	-	-
32	13.56	15.83	Av	.1	10	25.93	-	-	50	-24.07

Pk - Peak detector
Av - Average detection

11. SETUP PHOTOS

Please refer to R15607285-EP2 for setup photos.

END OF TEST REPORT