



TEST REPORT

Report Number. : R13389274-E3

Applicant : Clairvoyant Technology
3622 Lyckan Parkway, Suite 2006
Durham, NC 27707, USA

Model : S1

FCC ID : 2A04T-S1

IC : 23676-S1

EUT Description : RFID Scanner

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C: 2022
ISED RSS-247 ISSUE 2: 2017
ISED RSS-GEN ISSUE 5 + A2: 2021

Date Of Issue:

2022-03-22

Prepared by:

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REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2022-02-11	Initial Issue	Haley Ackun
V2	2022-03-22	Updated Output Power Section and Antenna Info	Haley Ackun

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Clairvoyant Technology LLC
3622 Lyckan Parkway, Suite 2006
Durham, NC 27707, USA

EUT DESCRIPTION: RFID Scanner

MODEL: S1

SERIAL NUMBER: 100055

SAMPLE RECEIPT DATE: 2021-12-14

DATE TESTED: 2022-01-04 to 2022-01-31

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C: 2022	Complies
ISED RSS-247 Issue 2: 2017	Complies
ISED RSS-GEN Issue 5 + 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. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, a2La, NIST, or any agency of the U.S. government.

Approved & Released For
UL LLC. By:



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UL LLC.

2. TEST RESULTS SUMMARY

FCC Clause	ISED Clause	Requirement	Result	Comment
See Comment		Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 11.6.
See Comment	RSS-GEN 6.7	20dB BW/99% OBW	Reporting purposes only	ANSI C63.10 Sections 6.9.2 and 6.9.3
15.247 (a)(1)	RSS-247 (5.1) (b)	Hopping Frequency Separation	Complies	None.
15.247 (a)(1)(i)	RSS-247 (5.1) (c)	Number of Hopping Channels	Complies	None.
15.247 (a)(1)(i)	RSS-247 (5.1) (c)	Average Time of Occupancy	Complies	None.
15.247 (b)(2)	RSS-247 (5.4) (a)	Output Power	Complies	None.
15.247 (d)	RSS-247 (5.5)	Conducted Spurious Emissions	Complies	None.
15.209, 15.205	RSS-GEN 8.9, 8.10	Radiated Emissions	Complies	None.
15.207	RSS-Gen 8.8	AC Mains Conducted Emissions	Complies	None.

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 CFR 47 Part 2, FCC CFR 47 Part 15: 2022, ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r01, KDB 414788 D01 Radiated Test Site v01r01, RSS-GEN Issue 5 + A2: 2021, and RSS-247 Issue 2: 2017.

4. FACILITIES AND ACCREDITATION

UL LLC is accredited by a2La, cert. # 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	US0067	27265	825374

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. 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)
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%.

5.2. 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.

5.3. 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.)

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

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

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:

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

$$36.5 \text{ dBuV} + 0 \text{ dB} + 10.1 \text{ dB} + 0 \text{ dB} = 46.6 \text{ dBuV}$$

6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The EUT is an RFID scanner that supports frequency hopping in the 902-928 MHz range.

The EUT utilizes 2 antennas: a low gain antenna and a high gain antenna.

6.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range (MHz)	Antenna	Output Power (dBm)	Output Power (mW)
902-928	Low Gain	29.63	918.33
902-928	High Gain	26.92	492.04

*Note: Power measurements were taken on all 8 ports of the EUT. Refer to section 10.5 for power measurement results.

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The antenna type and gain, as provided by the manufacturer, are as follows:

The radio utilizes two RHCP Reader antennas, with a maximum gain of 6.15dBi for the low gain antenna and 9 dBi for the high gain antenna.

6.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 0.1.1.27648.

The test utility software used during testing was Java Host GUI.

6.5. WORST-CASE CONFIGURATION AND MODE

Radiated emissions below 30 MHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emissions between 30 MHz and 10GHz were performed with the EUT set to transmit on the worst-case antenna port and at the highest power on low, middle and high channels.

Antenna port 5 was determined to be the worst-case antenna port since the highest output power was measured on this port.

The EUT has one orientation while operating in the field; therefore, all final radiated testing was performed in its intended orientation.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Control Box	-	S1	-	-
Laptop	HP	-	N/A	-
AC Adapter	CUI INC	SD150-12-U	N/A	-
High Gain Antenna	Mci Wireless Edge	MT-262006/TRH/A/K	115952	NA
Low Gain Antenna	Mci Wireless Edge	MT262013/TRH/A/K	106585	NA
POE Supply	Phihong	POE29U-1AT(PL)	-	-

I/O CABLES

I/O Cable List						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	1	1	DC	AC Mains	<3m	Connects to DC or POE supply.
2	2	1	I/O	Non-electrical	>3m	Connection to antenna.
3	3	1	I/O	VGA	<3m	Terminated with resistive load
4	4	1	Telecommunications port	Ethernet	<3m	Connected to laptop.

TEST SETUP

The EUT is connected to a test laptop during the tests. Test software exercised the radio card.

SETUP DIAGRAMS

Please refer to R13389274-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 - North Chamber)

Equip. ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
	30-1000 MHz				
AT0066	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB1	2021-02-19	2022-02-19
	1-18 GHz				
AT0067	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2021-05-13	2022-05-13
	Gain-Loss Chains				
N-SAC03	Gain-loss string: 1-18GHz	Various	Various	2021-07-20	2022-07-20
	Receiver & Software				
197954	Spectrum Analyzer	Rohde & Schwarz	ESW44	2021-03-30	2022-03-30
SOFTEMI	EMI Software	UL	Version 9.5 (18 Oct 2021)		
	Additional Equipment used				
s/n 181474341	Environmental Meter	Fisher Scientific	15-077-963	2021-09-27	2022-09-27
HPF012	1GHz high-pass filter, 2W, $F_{high} = 18\text{GHz}$	Micro-Tronics	HPM18129	2021-02-15	2022-02-15
BRF007	Band reject filter 902-928MHz	Micro-Tronics	BRC17691	2021-07-21	2022-07-21

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer/Brand	Model Number	Last Cal.	Next Cal.
SA0025	Spectrum Analyzer	Keysight Technologies	N9030A	2021-04-01	2022-04-01
PWM002 (PRE0137344)	RF Power Meter	Keysight Technologies	N1911A	2021-06-17	2022-06-17
PWS004 (PRE0126443)	Peak and Avg Power Sensor, 50MHz to 6GHz	Keysight Technologies	E9323A	2021-08-19	2022-08-19
PWS001	Peak and Avg Power Sensor, 50MHz to 6GHz	Keysight Technologies	N1921A	2021-06-25	2022-06-25
HI0090	Environmental Meter	Fisher Scientific	15-077-963	2021-07-12	2022-07-12
SOFTEMI	Antenna Port Software	UL	Version AP2021.11.3	NA	NA

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	2021-04-05	2022-04-05
HI0091	Environmental Meter	Fisher Scientific	15-077-963	2021-07-12	2022-07-12
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2021-08-16	2022-08-16
75141	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2021-08-31	2022-08-31
ATA222	Transient Limiter, 0.009-100MHz	Electro-Metrics	EM-7600	2020-04-05	2022-04-05
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5 (2021-Oct-18)	NA	NA

8. MEASUREMENT METHODS

On Time and Duty Cycle: ANSI C63.10-2013 Section 11.6

Emissions BW (20dB): ANSI C63.10-2013 Section 6.9.2

Occupied BW (99%): ANSI C63.10-2013 Section 6.9.3

Carrier Frequency Separation: ANSI C63.10-2013 Section 7.8.2

Number of Hopping Frequencies: ANSI C63.10-2013 Section 7.8.3

Time of Occupancy (Dwell Time): ANSI C63.10-2013 Section 7.8.4

Peak Output Power: ANSI C63.10-2013 Section 7.8.5

Out-of-Band Emissions in Non-restricted Band : ANSI C63.10-2013 Sections 7.8.6, 7.8.8 and 6.10.4

Out-of-Band Emissions in Restricted Bands: ANSI C63.10-2013 Sections 6.3-6.6 and 6.10.5

AC Power-line conducted emissions: ANSI C63.10-2013, Section 6.2

9. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

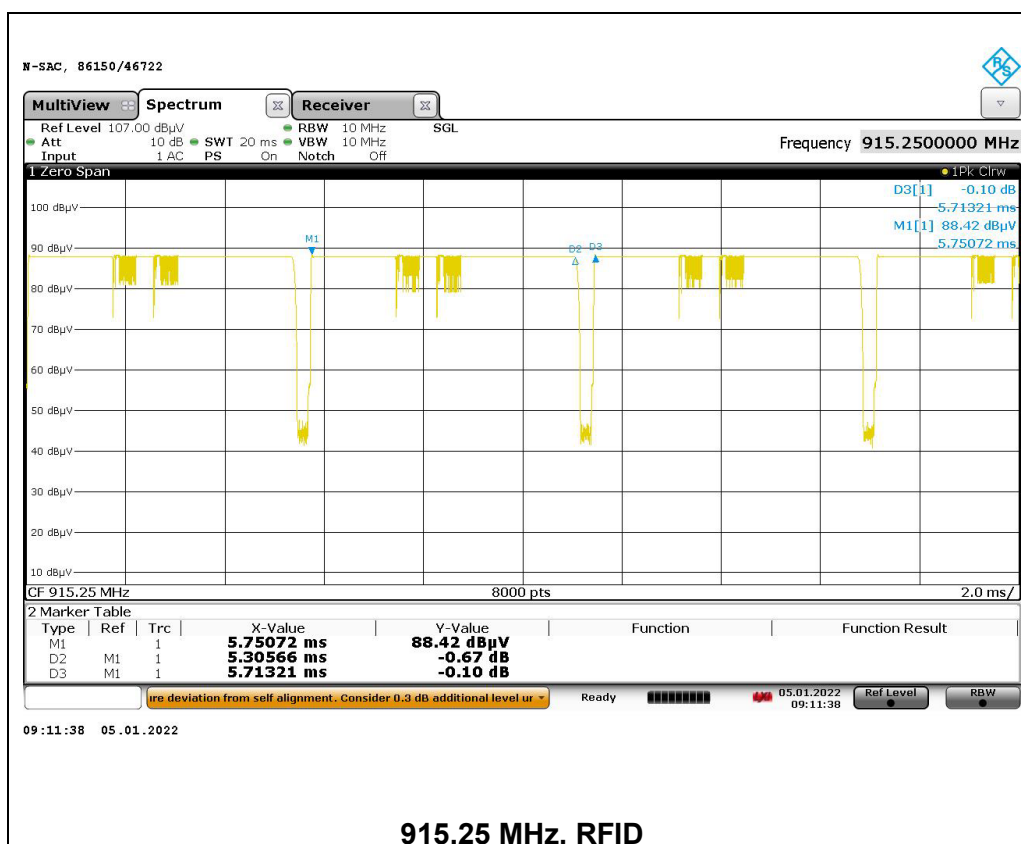
PROCEDURE

ANSI C63.10, Section 11.6: 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/T Minimum VBW (kHz)
915.25 MHz	5.30566	5.71321	0.929	92.9%	0.64	0.188

DUTY CYCLE PLOT



10. ANTENNA-PORT TEST RESULTS

10.1. 20 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 1-5% of the 20 dB bandwidth and Occupied Bandwidth. The VBW is set to $\geq$ RBW. The sweep time is coupled.

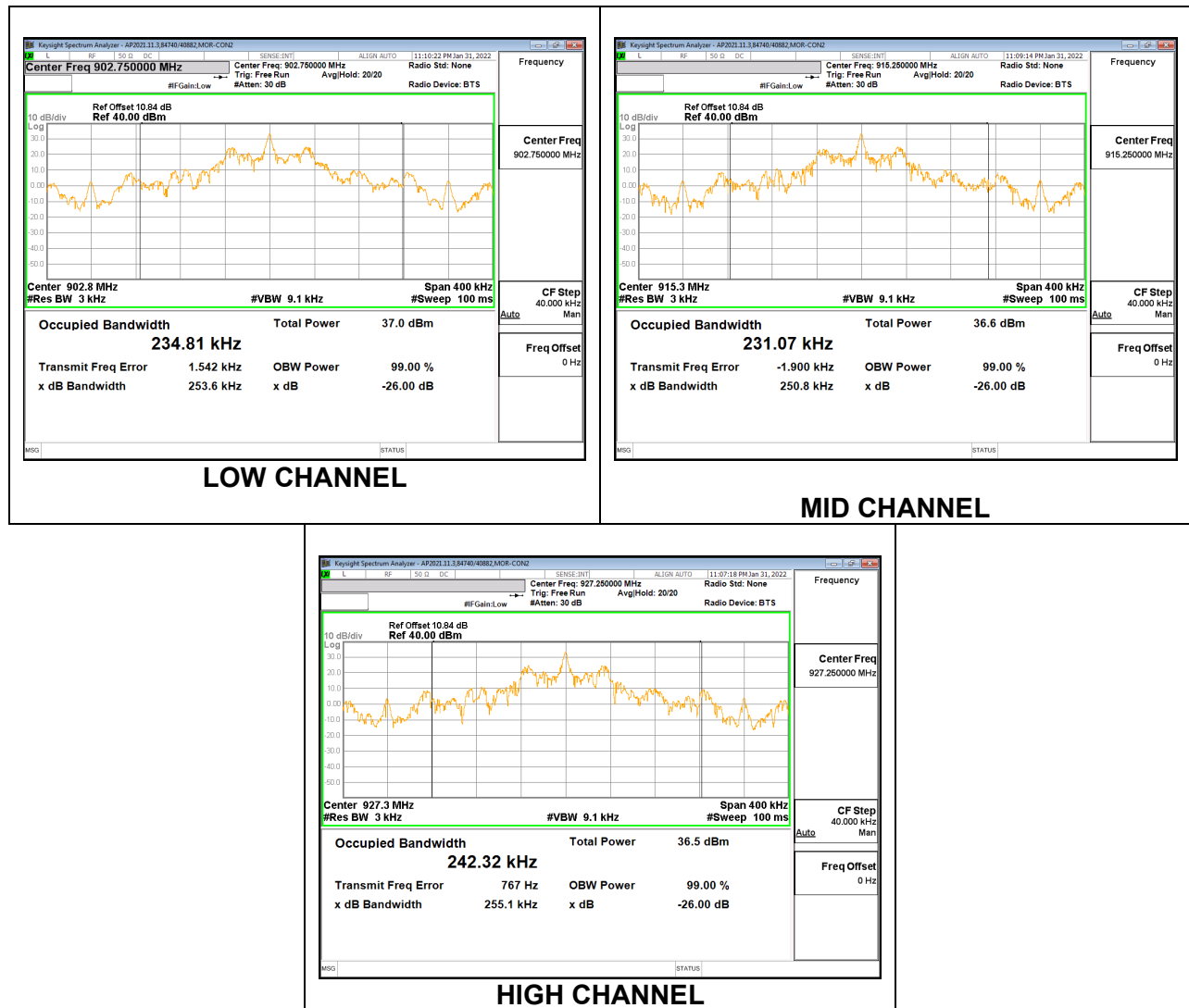
RESULTS

10.1.1. 902-908 MHz

Port 5

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)
Low	902.75	0.1008	0.23481
Mid	915.25	0.1008	0.23107
High	927.25	0.1008	0.24232





10.2. HOPPING FREQUENCY SEPARATION

LIMITS

FCC §15.247 (a) (1)

RSS-247 (5.1) (b)

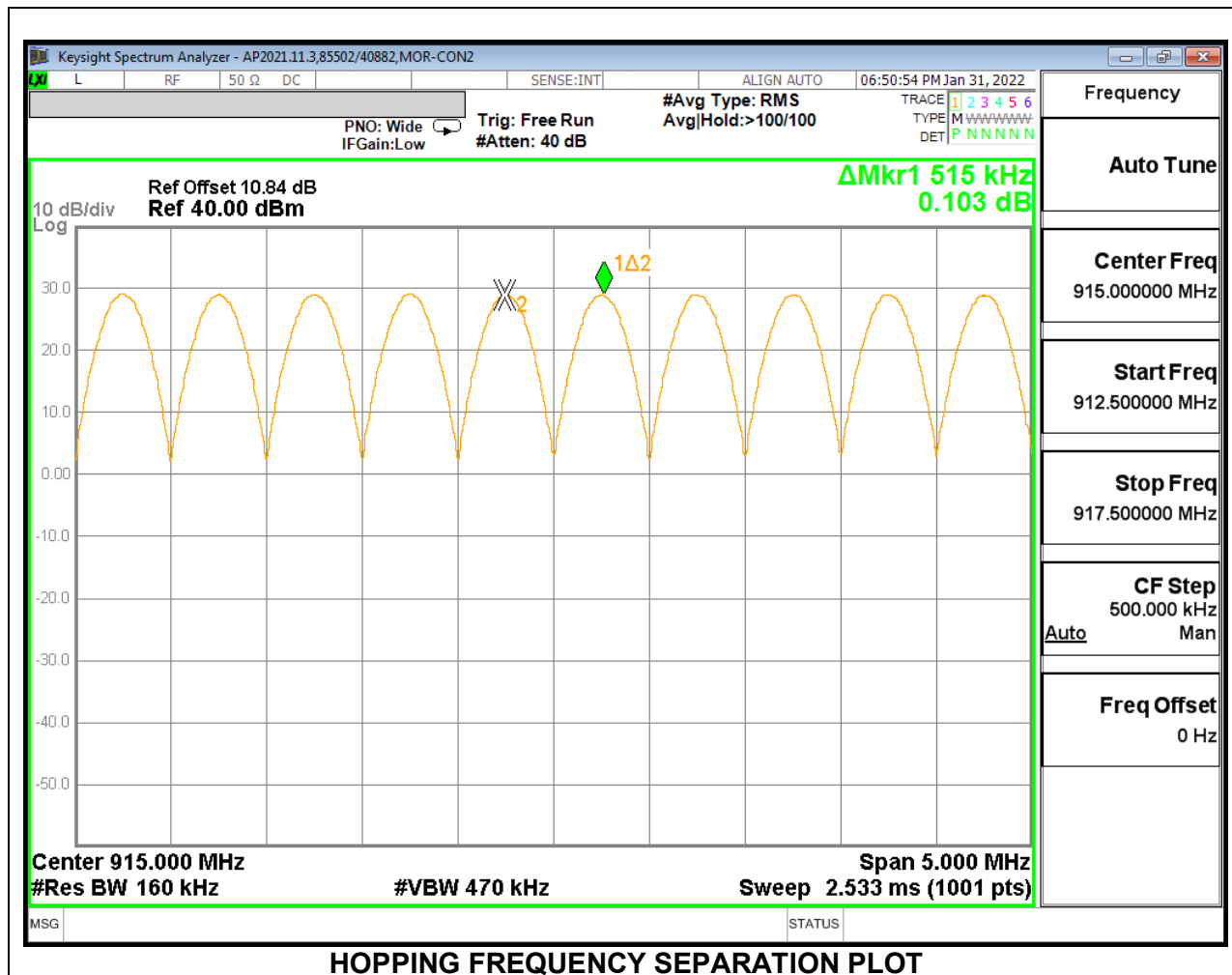
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 30% of the channel spacing (approx. $0.3 \times 515 \text{ kHz} = 150 \text{ kHz}$) and the VBW is set to $\text{VBW} \geq \text{RBW}$. The sweep time is coupled and the detector is peak.

RESULTS

10.2.1. 902-928 MHz



10.3. NUMBER OF HOPPING CHANNELS

LIMITS

FCC §15.247 (a) (1) (i)

RSS-247 (5.1) (c)

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies.

If the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.

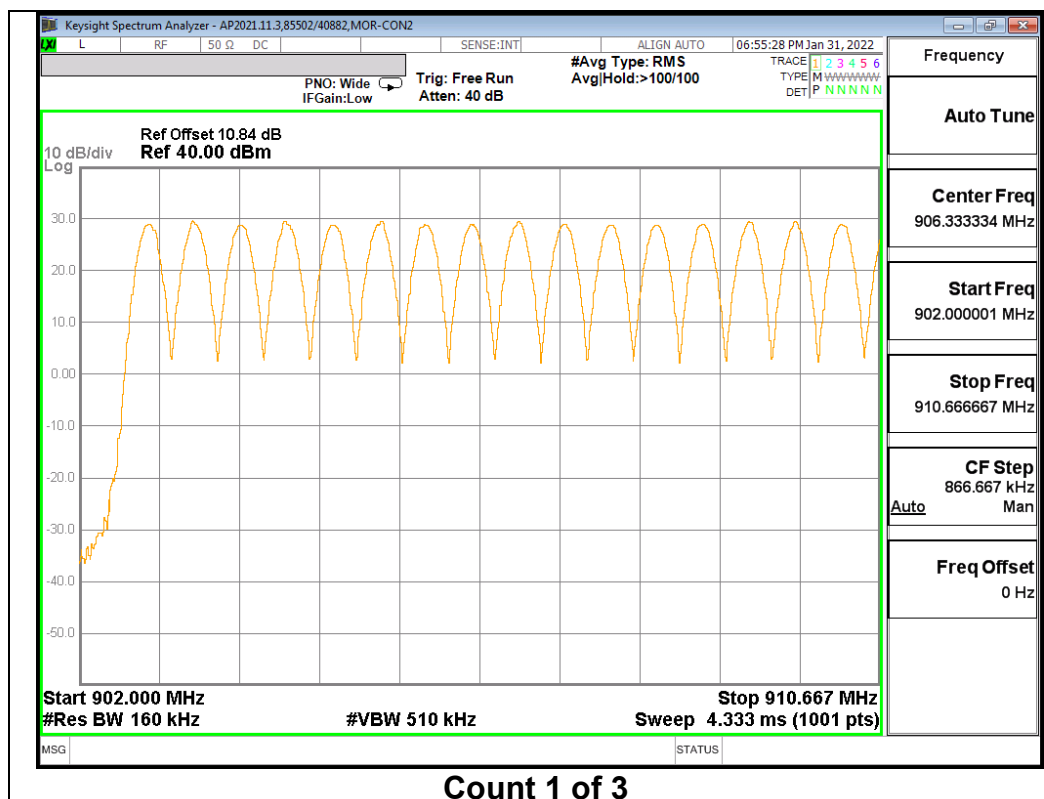
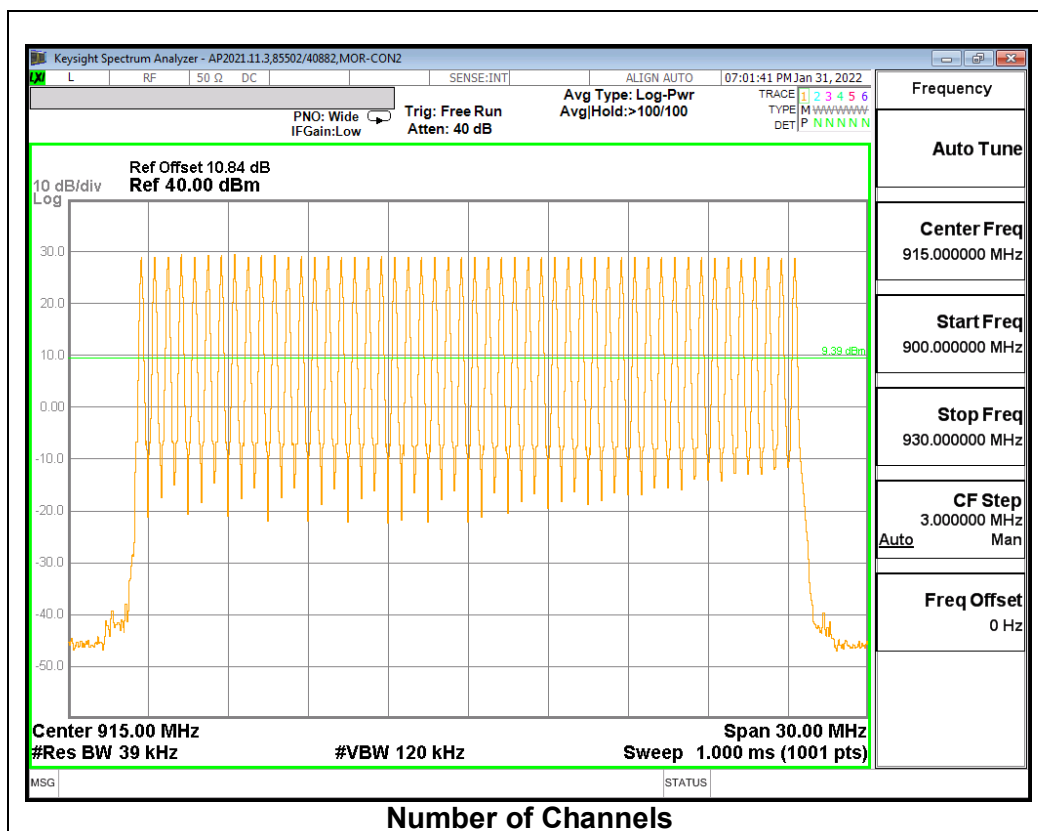
TEST PROCEDURE

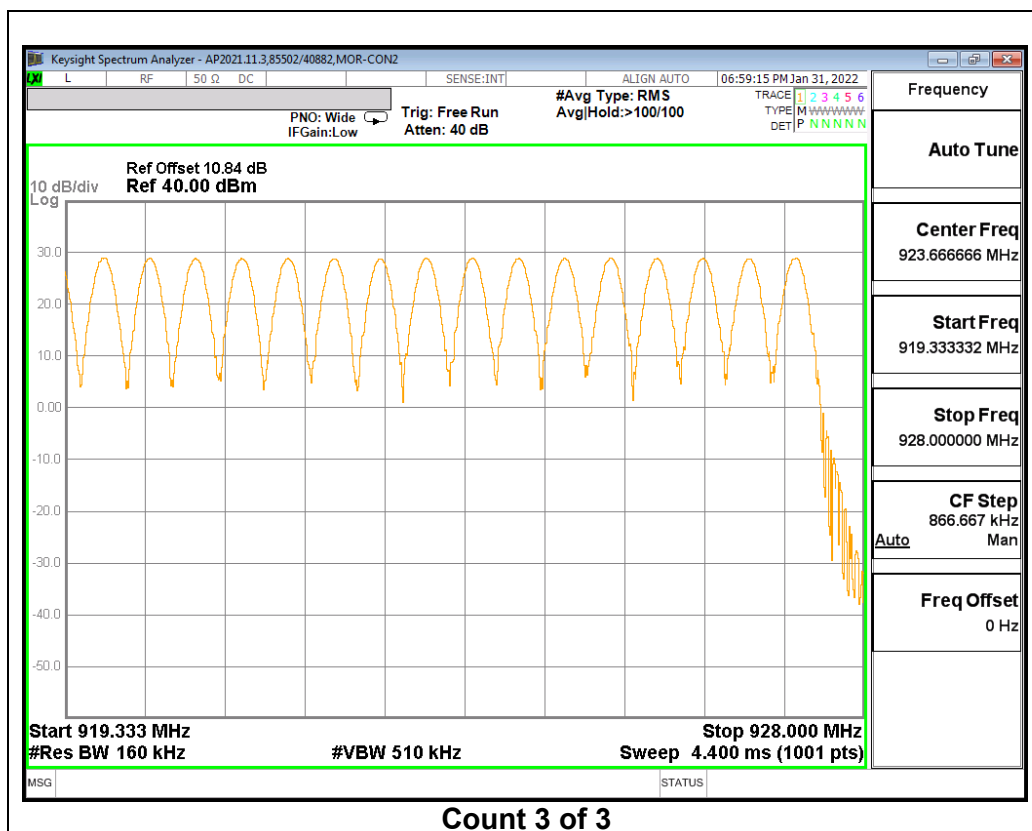
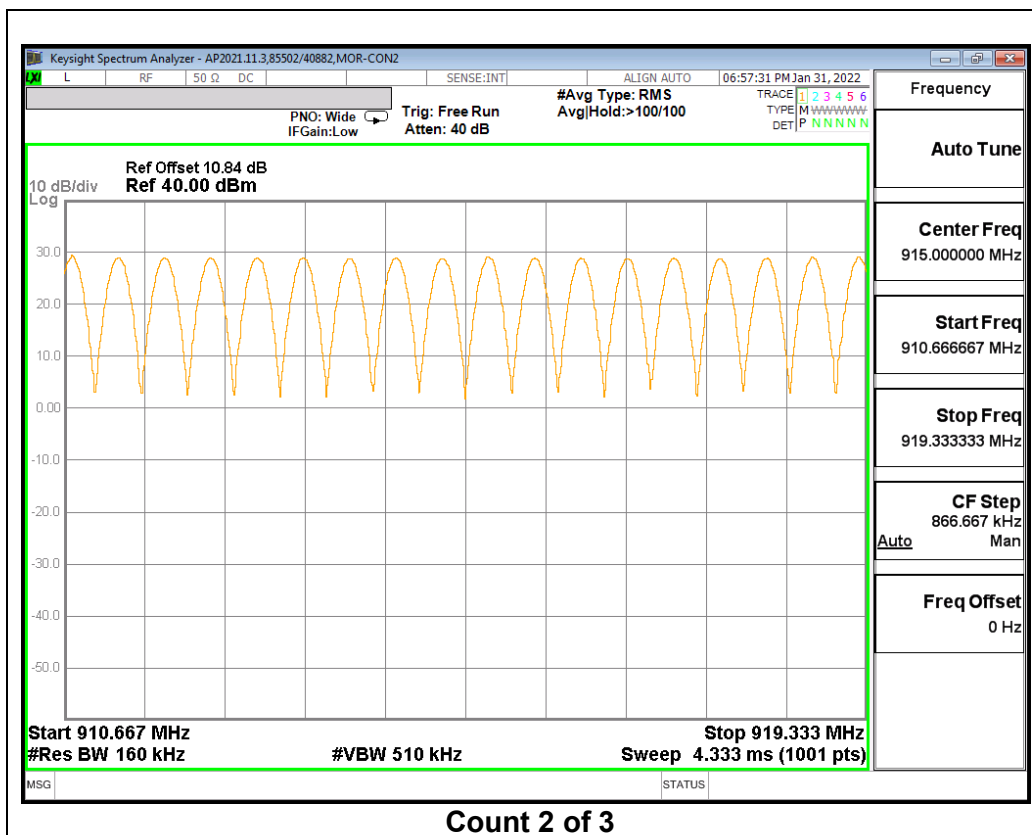
The transmitter output is connected to a spectrum analyzer. The span is set to cover the entire authorized band, in either a single sweep or in multiple contiguous sweeps. The RBW is set to a maximum of 1 % of the span. The analyzer is set to Max Hold.

RESULTS

Normal Mode: 50 Channels Observed

10.3.1. 902-928 MHz





10.4. AVERAGE TIME OF OCCUPANCY

LIMITS

FCC §15.247 (a) (1) (i)

RSS-247 (5.1) (c)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds within a 20 second period.

TEST PROCEDURE

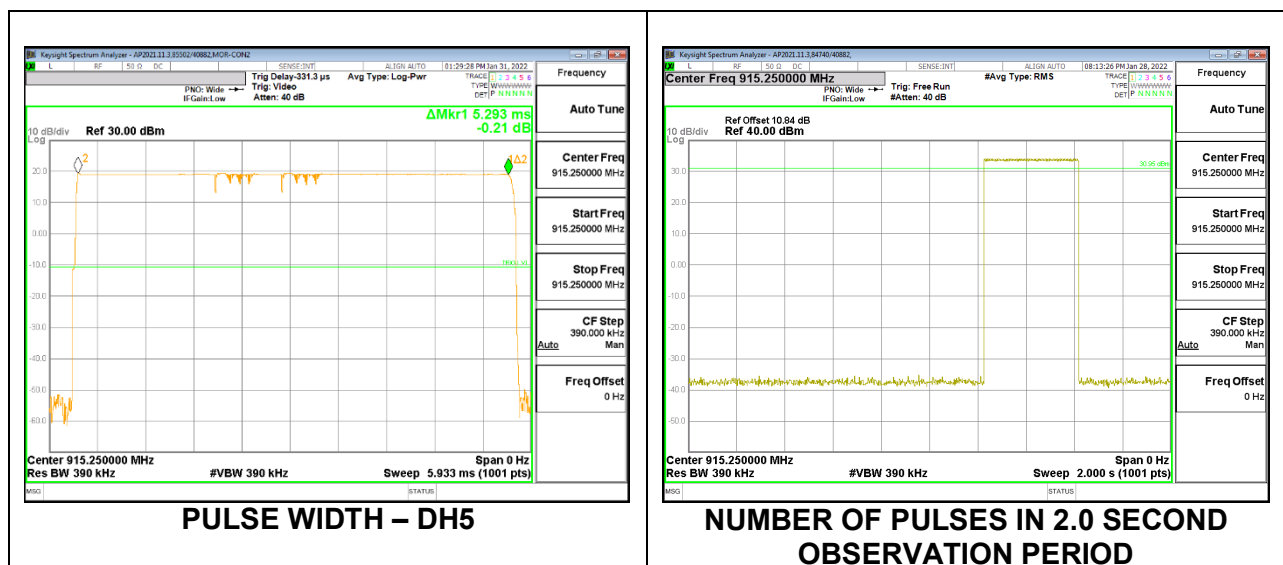
The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in a 2.0 second scan, to enable resolution of each occurrence.

The average time of occupancy in the specified 20 second period is equal to $10 * (\# \text{ of pulses in } 2 \text{ s}) * \text{ pulse width}$.

RESULTS

10.4.1. 902-928 MHz

Channel	Pulse Width (msec)	Number of Pulses in 2.0 seconds	Average Time of Occupancy (sec)	Limit (sec)	Margin (sec)
Normal Mode					
915.25	5.293	1	0.0529	0.4	-0.3471



10.5. OUTPUT POWER

LIMITS

§15.247 (b) (2)

RSS-247 (5.4) (d)

The maximum antenna gain is 6.15dBi for the low gain antenna; therefore the limit is 29.85 dBm. The maximum antenna gain is 9dBi for the high gain antenna; therefore, the limit is 27 dBm.

For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section

TEST PROCEDURE

Measurements perform using a wideband peak RF power meter.

The cable assembly insertion loss of 19.80 dB (9.79 dB pad and 10.01 dB pad) was entered as an offset in the power meter. In addition, the minimum cable loss of the client provided cable is 6dB for the 9dBi gain antenna and 0.15dB for the 6dBi gain antenna. Power measurements were not performed with the client provided cable. So, cable loss was added to calculations after power measurements to obtain the corrected power measurements listed in the tables below.

Preliminary testing showed Port 5 as worst-case. Therefore, only port 5 was included in the following testing results.

RESULTS

10.5.1. RFID

LOW GAIN ANTENNA

Port 5

Tested By:	86150/46722
Date:	2022-01-31

Channel	Frequency (MHz)	Output Power (dBm)	Antenna Cable Loss (dB)	Correct Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	902.75	29.78	0.15	29.63	29.85	-0.22
Middle	915.25	29.36	0.15	29.21	29.85	-0.64
High	927.25	29.33	0.15	29.18	29.85	-0.67

HIGH GAIN ANTENNA

Port 5

Tested By:	86150/46722
Date:	2022-01-31

Channel	Frequency (MHz)	Output Power (dBm)	Antenna Cable Loss (dB)	Correct Output Power (dBm)	Limit (dBm)	Margin (dB)
Low	902.75	32.92	6.0	26.92	27	-0.08
Middle	915.25	32.87	6.0	26.87	27	-0.13
High	927.25	32.85	6.0	26.85	27	-0.15

10.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

Limit = -20 dBc

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

The bandedges at 902 and 928 MHz are investigated with the transmitter set to the normal hopping mode.

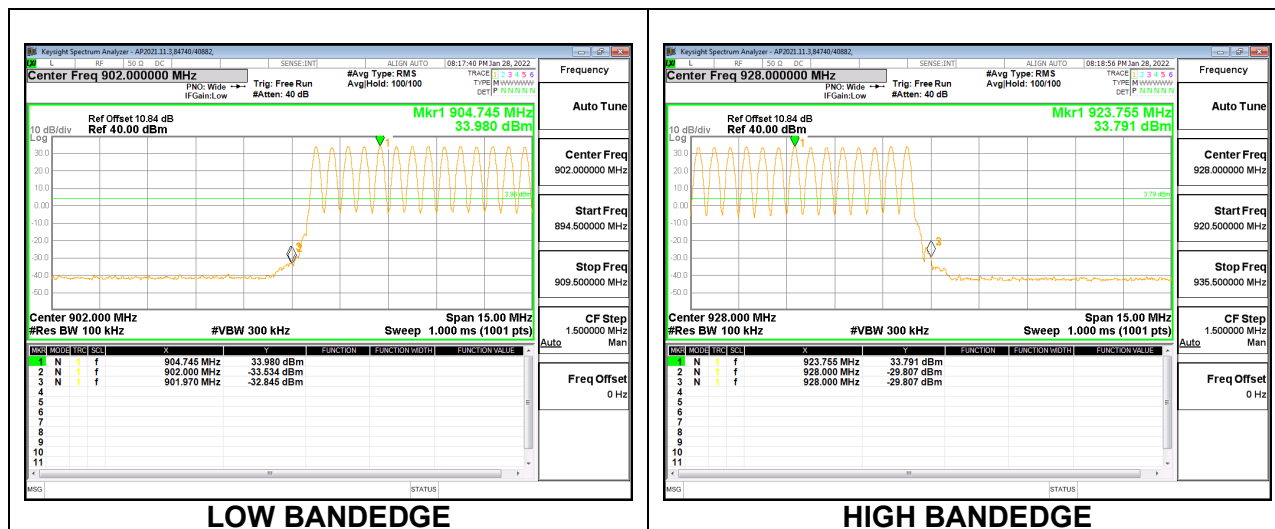
RESULTS

10.6.1. 902-928 MHz



Note – The Average attenuation limit was used for these plots (-30 dBc) as this is worst-case.

SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON



11. 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

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 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 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for reduced VBW averaging measurements.

The spectrum from 30 MHz to 10 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band. Below 1GHz 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).

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.

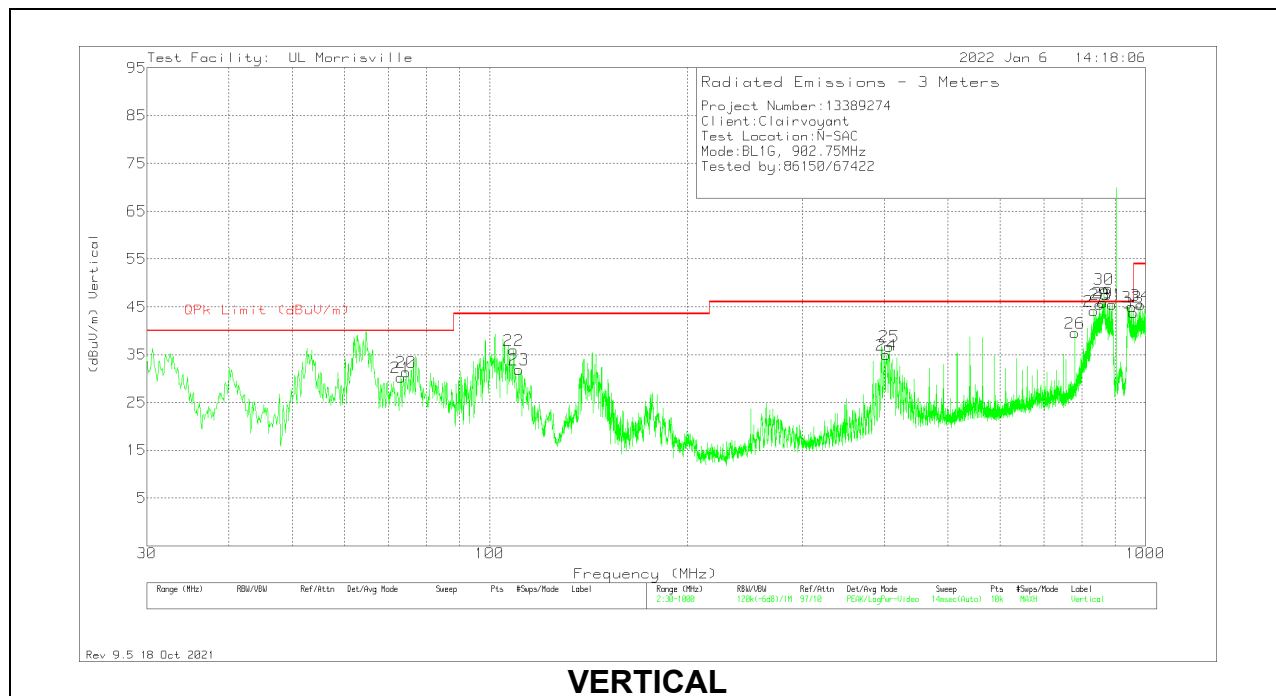
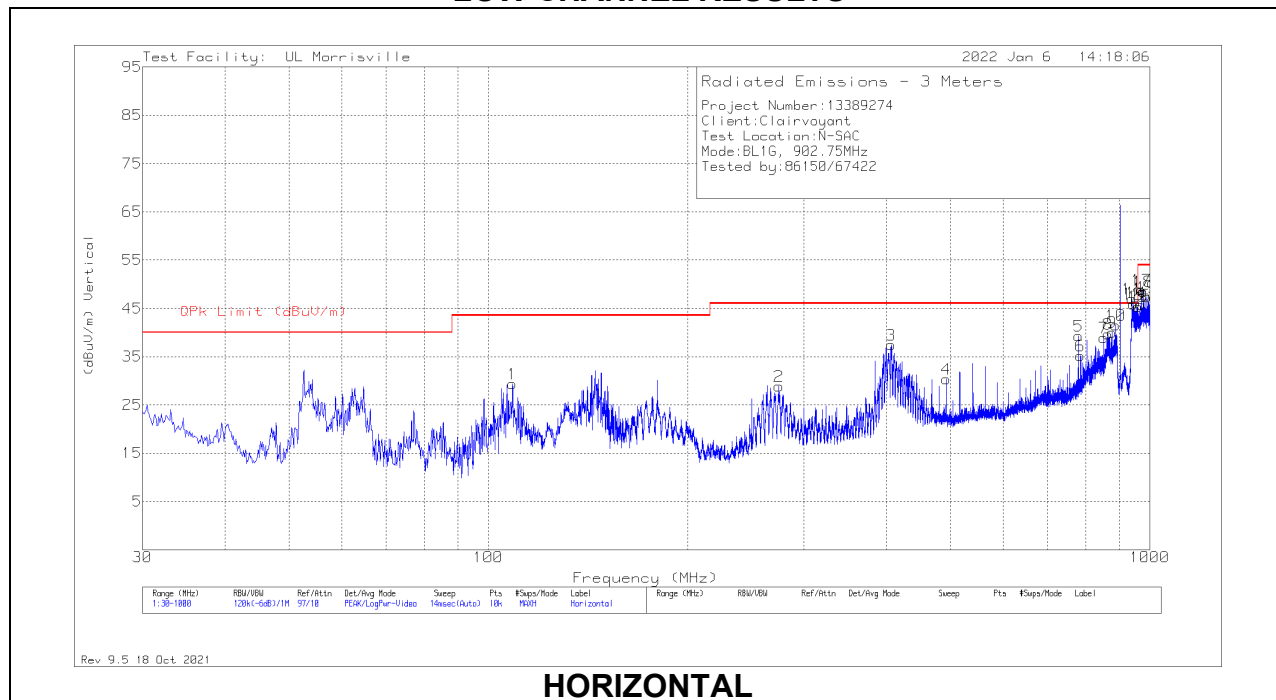
KDB 558074 D01 15.247 Meas Guidance v05r01

Use of a duty cycle correction factor (DCCF) is permitted for calculating average radiated field strength emission levels for an FHSS device in 15.247. This DCCF can be applied when the field strength limit (e.g., within a Government Restricted band) and the conditions specified in Section 15.35(c) can be satisfied. The average radiated field strength is calculated by subtracting the DCCF from the maximum radiated field strength level as determined through measurement. The maximum radiated field strength level represents the worst-case (maximum amplitude) RMS measurement of the emission(s) during continuous transmission (i.e., not including any time intervals during which the transmitter is off or is transmitting at a reduced power level). It is also acceptable to apply the DCCF to a measurement performed with a peak detector instead of the specified RMS power averaging detector. Note that Section 15.35(c) specifies that the DCCF shall represent the worst-case (greatest duty cycle) over any 100 msec transmission period.

11.1. TRANSMITTER BELOW 1 GHz

11.1.1. HARMONICS AND SPURIOUS EMISSIONS- LOW GAIN ANTENNA

LOW CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

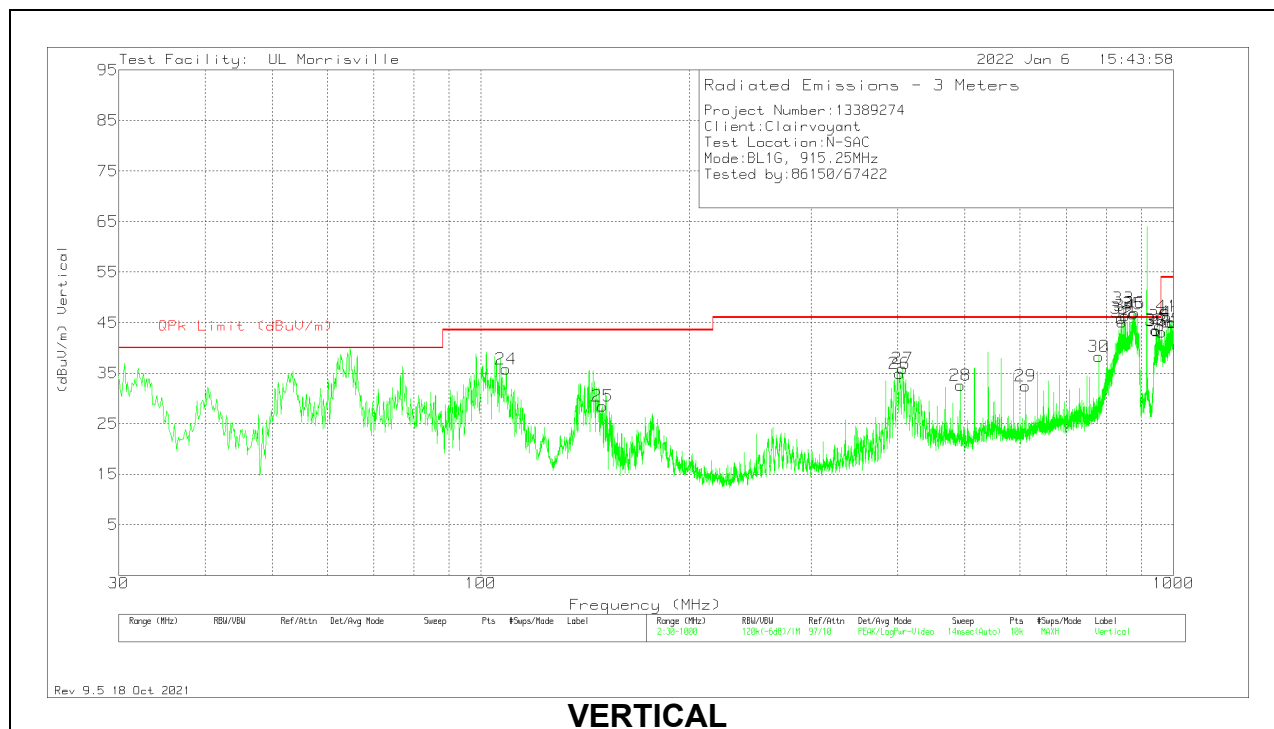
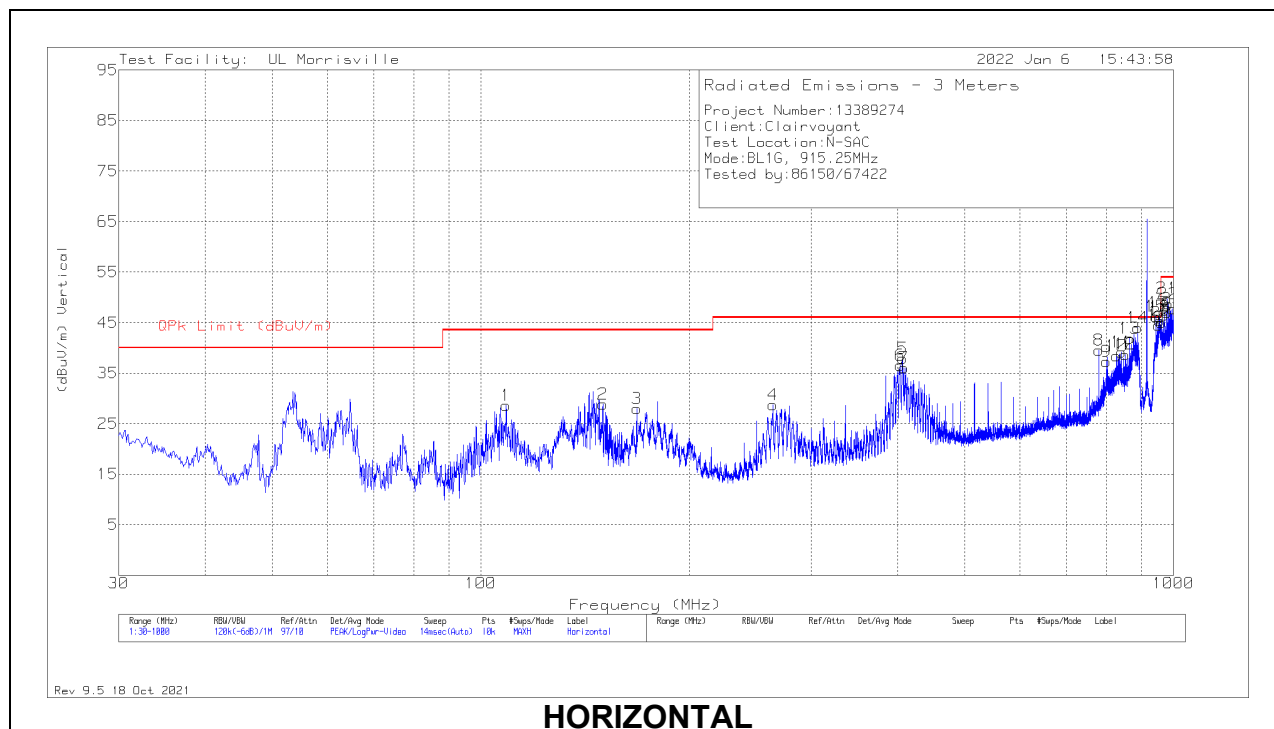
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 108.764	41.37	Pk	18	-30.1	.1	29.37	43.52	-14.15	0-360	300	H
2	* 275.022	37.7	Pk	19.6	-28.7	.3	28.9	46.02	-17.12	0-360	101	H
3	* 406.651	42.48	Pk	22.1	-27.7	.5	37.38	46.02	-8.64	0-360	101	H
16	* 968.475	38.95	Pk	29.5	-23.5	.8	45.75	53.97	-8.22	0-360	200	H
17	* 972.0026	42.38	Qp	29.5	-23.2	.8	49.48	53.97	-4.49	25	133	H
18	* 977.4893	41.89	Qp	29.6	-23.2	.8	49.09	53.97	-4.88	33	137	H
19	* 990.106	39.79	Pk	29.7	-23	.9	47.39	53.97	-6.58	0-360	200	H
20	* 74.523	47.63	Pk	14.2	-30.7	.2	31.33	40	-8.67	0-360	100	V
21	* 73.165	46.4	Pk	14.4	-30.8	.2	30.2	40	-9.8	0-360	100	V
22	* 108.764	47.88	Pk	18	-30.1	.1	35.88	43.52	-7.64	0-360	100	V
23	* 110.7525	43.4	Pk	18.4	-30	.1	31.9	43.52	-11.62	0-360	100	V
24	* 402.674	40.02	Pk	21.9	-27.5	.5	34.92	46.02	-11.1	0-360	100	V
25	* 406.166	41.74	Pk	22	-27.5	.5	36.74	46.02	-9.28	0-360	100	V
34	* 984.092	38.12	Pk	29.5	-23	.8	45.42	53.97	-8.55	0-360	100	V
4	492.011	32.95	Pk	23.9	-27	.5	30.35	-	-	0-360	200	H
5	780.004	36.17	Pk	27.8	-25.5	.8	39.27	-	-	0-360	101	H
26	780.004	36.39	Pk	27.8	-25.5	.8	39.49	-	-	0-360	100	V
6	786.018	31.92	Pk	27.9	-25.4	.8	35.22	-	-	0-360	200	H
27	833.548	40.36	Pk	28.2	-25.1	.7	44.16	-	-	0-360	100	V
7	852.075	34.61	Pk	28.2	-24.7	.8	38.91	-	-	0-360	101	H
28	852.075	41.2	Pk	28.2	-24.7	.8	45.5	-	-	0-360	100	V
29	860.514	41.58	Pk	28.2	-24.8	.9	45.88	-	-	0-360	100	V
30	864.006	44.48	Pk	28.2	-24.8	.9	48.78	-	-	0-360	100	V
8	864.491	35.26	Pk	28.2	-24.7	.9	39.66	-	-	0-360	101	H
9	876.034	35.41	Pk	28.3	-24.7	1	40.01	-	-	0-360	101	H
10	888.062	35.87	Pk	28.4	-24.4	1.7	41.57	-	-	0-360	101	H
31	890.584	38.55	Pk	28.5	-24.3	2.7	45.45	-	-	0-360	100	V
11	939.86	39.87	Pk	29.1	-23.9	1.9	46.97	-	-	0-360	200	H
12	943.643	39.33	Pk	29.1	-23.8	1.3	45.93	-	-	0-360	200	H
13	943.643	39.33	Pk	29.1	-23.8	1.3	45.93	-	-	0-360	200	H
14	953.537	39.69	Pk	29.1	-23.7	1.2	46.29	-	-	0-360	200	H
32	953.537	38.44	Pk	29.1	-23.7	1.2	45.04	-	-	0-360	100	V
15	958.193	38.5	Pk	29.2	-23.4	1.1	45.4	-	-	0-360	200	H
33	958.29	36.82	Pk	29.2	-23.4	1.1	43.72	-	-	0-360	100	V

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

Pk - Peak detector

Qp - Quasi-Peak detector

MID CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

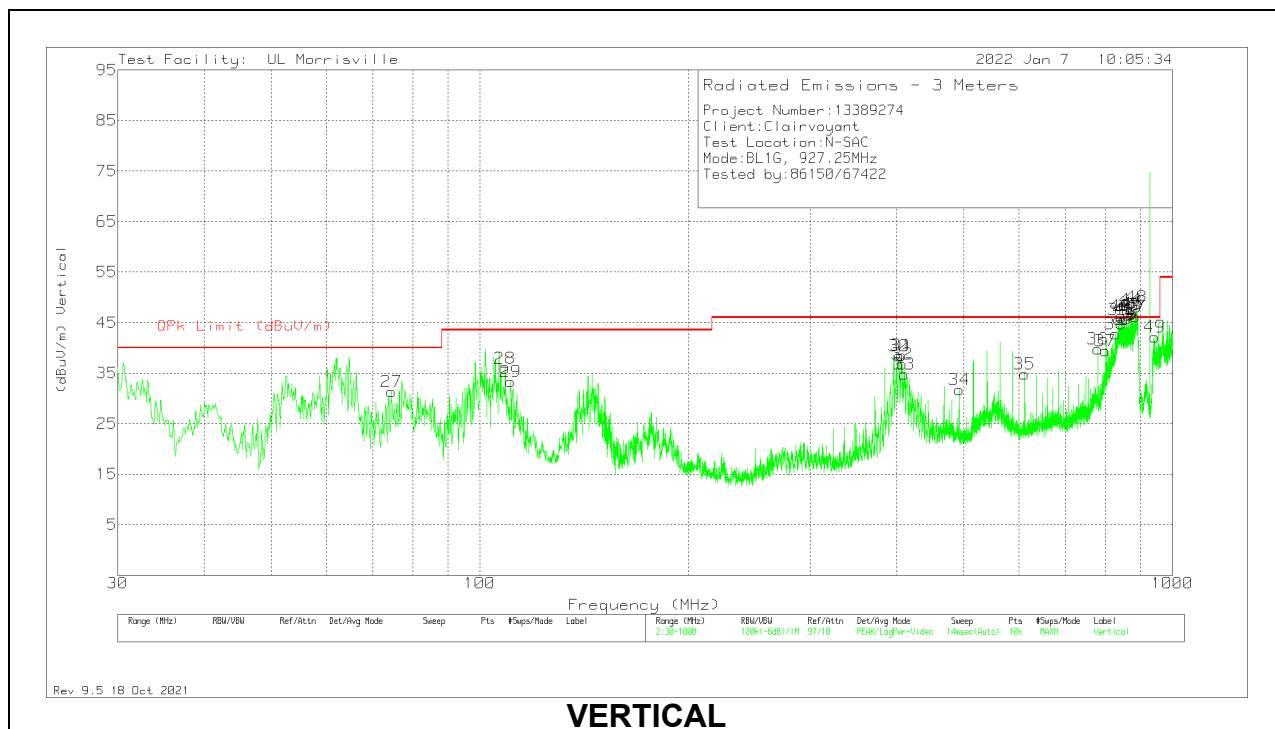
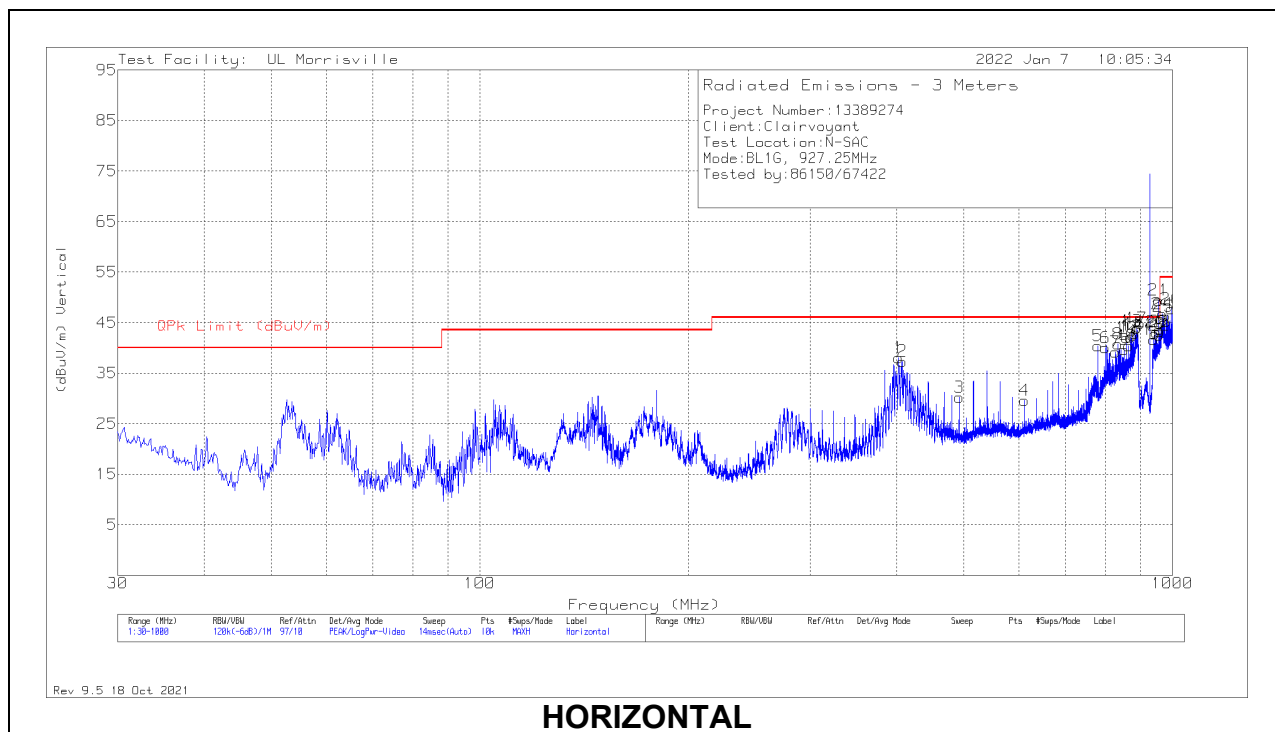
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 108.764	40.56	Pk	18	-30.1	.1	28.56	43.52	-14.96	0-360	300	H
2	* 149.989	40.07	Pk	18.5	-29.9	.2	28.87	43.52	-14.65	0-360	200	H
3	* 168.031	39.55	Pk	17.7	-29.6	.3	27.95	43.52	-15.57	0-360	200	H
4	* 263.964	38.51	Pk	18.8	-28.9	.3	28.71	46.02	-17.31	0-360	98	H
5	* 406.36	43.06	Pk	22	-27.6	.5	37.96	46.02	-8.06	0-360	98	H
6	* 402.868	41.6	Pk	21.9	-27.5	.5	36.5	46.02	-9.52	0-360	98	H
7	* 408.009	41.01	Pk	22.1	-27.6	.5	36.01	46.02	-10.01	0-360	98	H
20	* 960.521	38.05	Pk	29.3	-23.4	1	44.95	53.97	-9.02	0-360	200	H
21	* 978.482	42.11	Qp	29.6	-23.3	.8	49.21	53.97	-4.76	21	127	H
22	* 984.0143	41.33	Qp	29.5	-23	.8	48.63	53.97	-5.34	31	126	H
23	* 996.023	39.94	Pk	29.7	-22.9	1	47.74	53.97	-6.23	0-360	200	H
24	* 108.764	47.81	Pk	18	-30.1	.1	35.81	43.52	-7.71	0-360	100	V
26	* 402.48	40.17	Pk	21.9	-27.6	.5	34.97	46.02	-11.05	0-360	100	V
27	* 406.554	41.03	Pk	22.1	-27.7	.5	35.93	46.02	-10.09	0-360	100	V
29	* 612	33.1	Pk	25.3	-26.5	.6	32.5	46.02	-13.52	0-360	100	V
40	* 960.521	36.18	Pk	29.3	-23.4	1	43.08	53.97	-10.89	0-360	100	V
41	* 978.563	39.08	Pk	29.6	-23.3	.8	46.18	53.97	-7.79	0-360	100	V
42	* 990.591	37.57	Pk	29.6	-23	.9	45.07	53.97	-8.9	0-360	100	V
43	* 995.829	37.16	Pk	29.7	-22.9	1	44.96	53.97	-9.01	0-360	100	V
25	149.892	39.65	Pk	18.5	-29.9	.2	28.45	-	-	0-360	100	V
28	492.011	35.13	Pk	23.9	-27	.5	32.53	-	-	0-360	100	V
8	780.004	36.43	Pk	27.8	-25.5	.8	39.53	-	-	0-360	98	H
30	780.004	35.16	Pk	27.8	-25.5	.8	38.26	-	-	0-360	100	V
9	800.083	33.96	Pk	27.6	-25	.7	37.26	-	-	0-360	98	H
10	828.019	34.42	Pk	28.1	-24.8	.7	38.42	-	-	0-360	98	H
11	840.532	35.17	Pk	28.2	-25	.8	39.17	-	-	0-360	98	H
31	840.532	41.9	Pk	28.2	-25	.8	45.9	-	-	0-360	100	V
32	842.763	40.84	Pk	28.2	-24.7	.8	45.14	-	-	0-360	100	V
33	846.546	43.41	Pk	28.3	-24.7	.8	47.81	-	-	0-360	100	V
12	851.978	34.53	Pk	28.2	-24.8	.8	38.73	-	-	0-360	98	H
34	852.075	42.06	Pk	28.2	-24.7	.8	46.36	-	-	0-360	100	V
13	864.006	37.59	Pk	28.2	-24.8	.9	41.89	-	-	0-360	98	H
35	875.064	42.22	Pk	28.2	-24.6	.9	46.72	-	-	0-360	100	V
36	878.556	42.37	Pk	28.3	-24.7	1	46.97	-	-	0-360	100	V
14	888.062	38.34	Pk	28.4	-24.4	1.7	44.04	-	-	0-360	98	H
15	942.576	39.58	Pk	29.1	-23.8	1.4	46.28	-	-	0-360	200	H
37	942.576	36.76	Pk	29.1	-23.8	1.4	43.46	-	-	0-360	100	V
38	945.777	36.87	Pk	29.1	-23.8	1.2	43.37	-	-	0-360	100	V
16	951.015	37.75	Pk	29.1	-23.5	1.2	44.55	-	-	0-360	200	H
17	953.634	40.4	Pk	29.1	-23.7	1.2	47	-	-	0-360	200	H
39	954.604	37.72	Pk	29.2	-23.7	1.2	44.42	-	-	0-360	100	V
18	954.895	39.56	Pk	29.2	-23.7	1.1	46.16	-	-	0-360	200	H
19	955.962	38.75	Pk	29.2	-23.7	1.1	45.35	-	-	0-360	200	H

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

Pk - Peak detector

Qp - Quasi-Peak detector

HIGH CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 402.286	43.24	Pk	21.9	-27.6	.5	38.04	46.02	-7.98	0-360	100	H
2	* 406.942	42.36	Pk	22.1	-27.6	.5	37.36	46.02	-8.66	0-360	100	H
4	* 612	30.2	Pk	25.3	-26.5	.6	29.6	46.02	-16.42	0-360	200	H
23	* 960.036	36.43	Pk	29.3	-23.5	1	43.23	53.97	-10.74	0-360	200	H
24	* 966.535	39.79	Pk	29.5	-23.4	.8	46.69	53.97	-7.28	0-360	200	H
25	* 972.064	39.19	Pk	29.5	-23.2	.8	46.29	53.97	-7.68	0-360	200	H
26	* 996.023	39.96	Pk	29.7	-22.9	1	47.76	53.97	-6.21	0-360	200	H
27	* 74.523	47.61	Pk	14.2	-30.7	.2	31.31	40	-8.69	0-360	100	V
28	* 108.764	47.96	Pk	18	-30.1	.1	35.96	43.52	-7.56	0-360	100	V
29	* 110.704	44.98	Pk	18.3	-30	.1	33.38	43.52	-10.14	0-360	100	V
30	* 403.159	43.53	Pk	21.9	-27.5	.5	38.43	46.02	-7.59	0-360	100	V
31	* 406.166	43.53	Pk	22	-27.5	.5	38.53	46.02	-7.49	0-360	100	V
32	* 407.33	41.77	Pk	22.1	-27.6	.5	36.77	46.02	-9.25	0-360	100	V
35	* 612	35.38	Pk	25.3	-26.5	.6	34.78	46.02	-11.24	0-360	100	V
33	410.046	39.57	Pk	22.2	-27.4	.5	34.87	-	-	0-360	100	V
3	492.011	32.78	Pk	23.9	-27	.5	30.18	-	-	0-360	200	H
34	492.011	34.28	Pk	23.9	-27	.5	31.68	-	-	0-360	100	V
5	780.004	37.26	Pk	27.8	-25.5	.8	40.36	-	-	0-360	100	H
36	780.004	36.65	Pk	27.8	-25.5	.8	39.75	-	-	0-360	100	V
6	800.083	36.76	Pk	27.6	-25	.7	40.06	-	-	0-360	100	H
37	800.083	36.12	Pk	27.6	-25	.7	39.42	-	-	0-360	100	V
7	828.019	35.13	Pk	28.1	-24.8	.7	39.13	-	-	0-360	100	H
38	828.019	38.82	Pk	28.1	-24.8	.7	42.82	-	-	0-360	100	V
8	834.518	37	Pk	28.1	-25	.7	40.8	-	-	0-360	100	H
39	836.264	41.55	Pk	28.2	-24.8	.7	45.65	-	-	0-360	100	V
40	842.278	42.32	Pk	28.2	-25	.8	46.32	-	-	0-360	100	V
9	851.008	35.47	Pk	28.2	-24.8	.8	39.67	-	-	0-360	100	H
41	852.075	41.35	Pk	28.2	-24.7	.8	45.65	-	-	0-360	100	V
10	858.574	37.67	Pk	28.2	-24.8	.9	41.97	-	-	0-360	100	H
42	858.574	41.42	Pk	28.2	-24.8	.9	45.72	-	-	0-360	100	V
11	864.588	35.86	Pk	28.2	-24.6	.9	40.36	-	-	0-360	100	H
43	864.588	41.95	Pk	28.2	-24.6	.9	46.45	-	-	0-360	100	V
12	870.505	37.8	Pk	28.3	-24.8	.9	42.2	-	-	0-360	100	H
44	870.602	43.19	Pk	28.3	-24.8	.9	47.59	-	-	0-360	100	V
45	872.736	42.11	Pk	28.3	-24.7	.9	46.61	-	-	0-360	100	V
13	872.833	38.9	Pk	28.3	-24.7	.9	43.4	-	-	0-360	100	H
14	876.034	37.94	Pk	28.3	-24.7	1	42.54	-	-	0-360	100	H
46	876.034	42.25	Pk	28.3	-24.7	1	46.85	-	-	0-360	100	V
15	882.533	37.81	Pk	28.4	-24.5	1.2	42.91	-	-	0-360	100	H
16	882.533	37.81	Pk	28.4	-24.5	1.2	42.91	-	-	0-360	100	H
47	884.279	41.09	Pk	28.3	-24.5	1.4	46.29	-	-	0-360	100	V
48	888.062	42.37	Pk	28.4	-24.4	1.7	48.07	-	-	0-360	100	V
17	888.741	37.99	Pk	28.5	-24.4	1.8	43.89	-	-	0-360	100	H
18	939.278	34.19	Pk	29.1	-23.7	2.1	41.69	-	-	0-360	200	H
19	942.576	36.01	Pk	29.1	-23.8	1.4	42.71	-	-	0-360	200	H
49	942.576	35.5	Pk	29.1	-23.8	1.4	42.2	-	-	0-360	100	V
20	948.105	36.41	Pk	29.1	-23.6	1.2	43.11	-	-	0-360	200	H
21	954.604	42.71	Pk	29.2	-23.7	1.2	49.41	-	-	0-360	200	H
22	957.805	35.85	Pk	29.2	-23.6	1.1	42.55	-	-	0-360	200	H

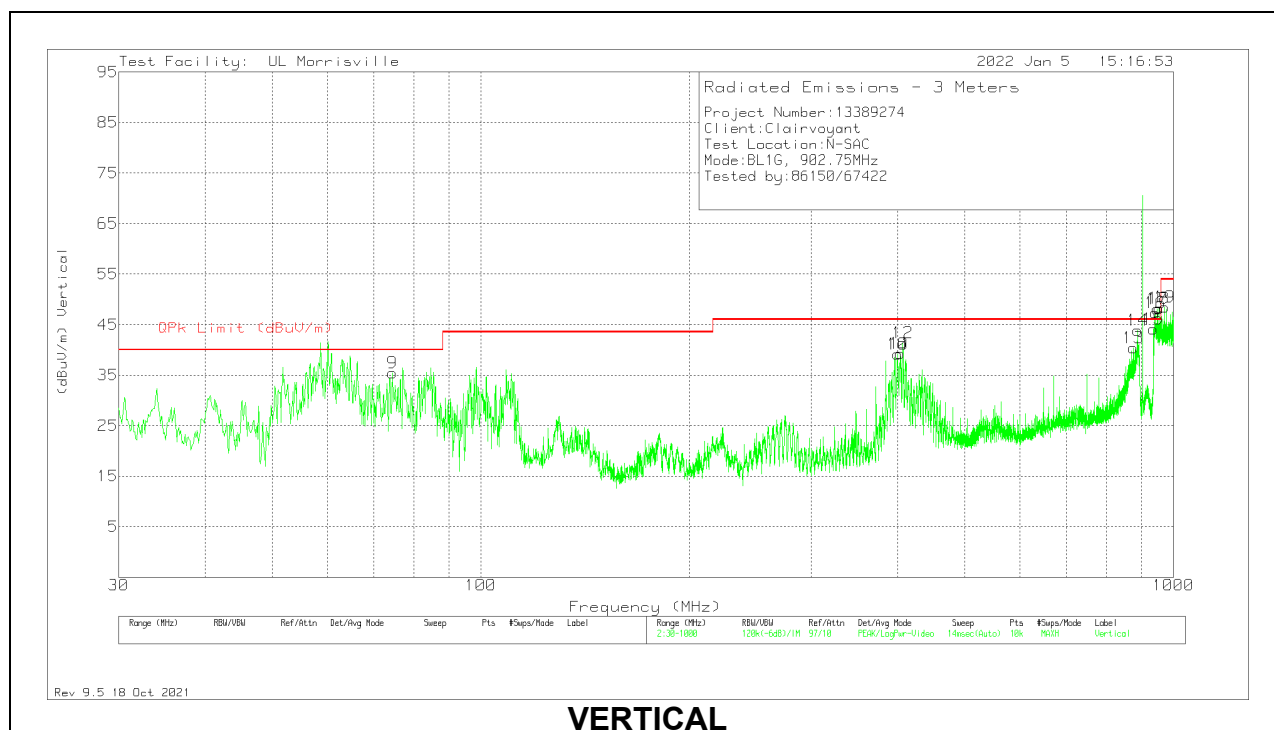
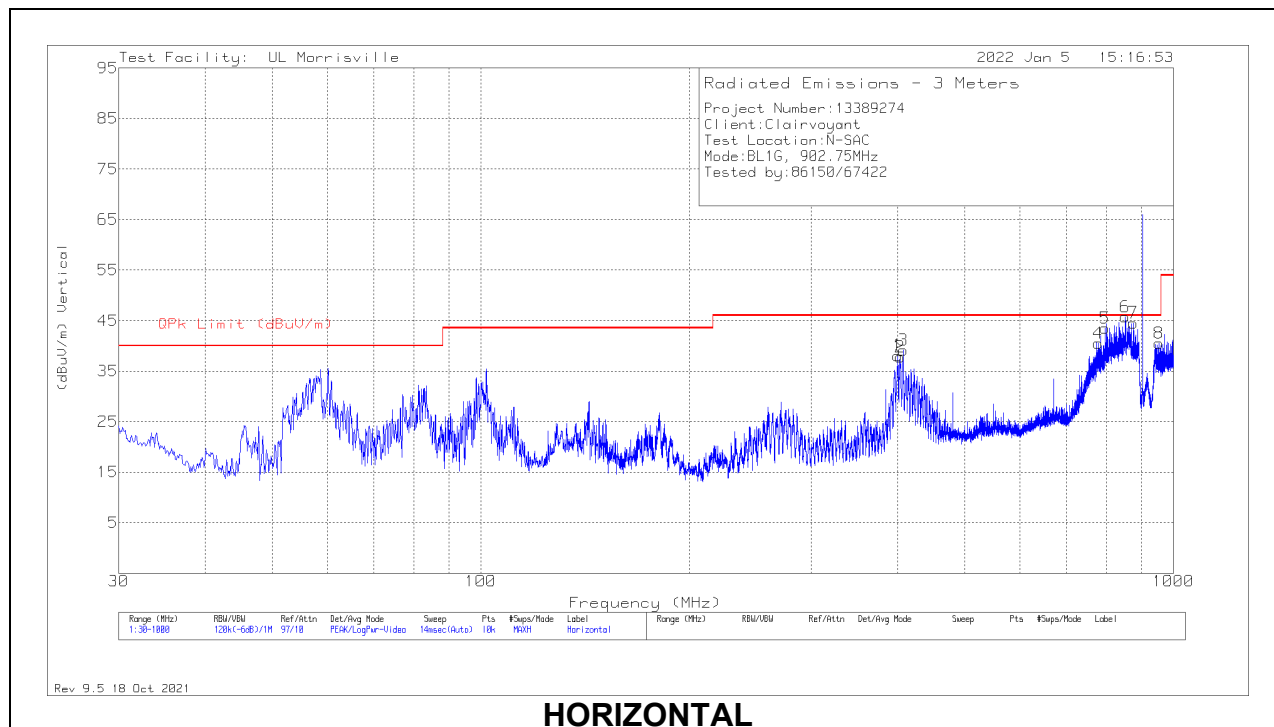
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

Qp - Quasi-Peak detector

11.1.2. HARMONICS AND SPURIOUS EMISSIONS- HIGH GAIN ANTENNA

LOW CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

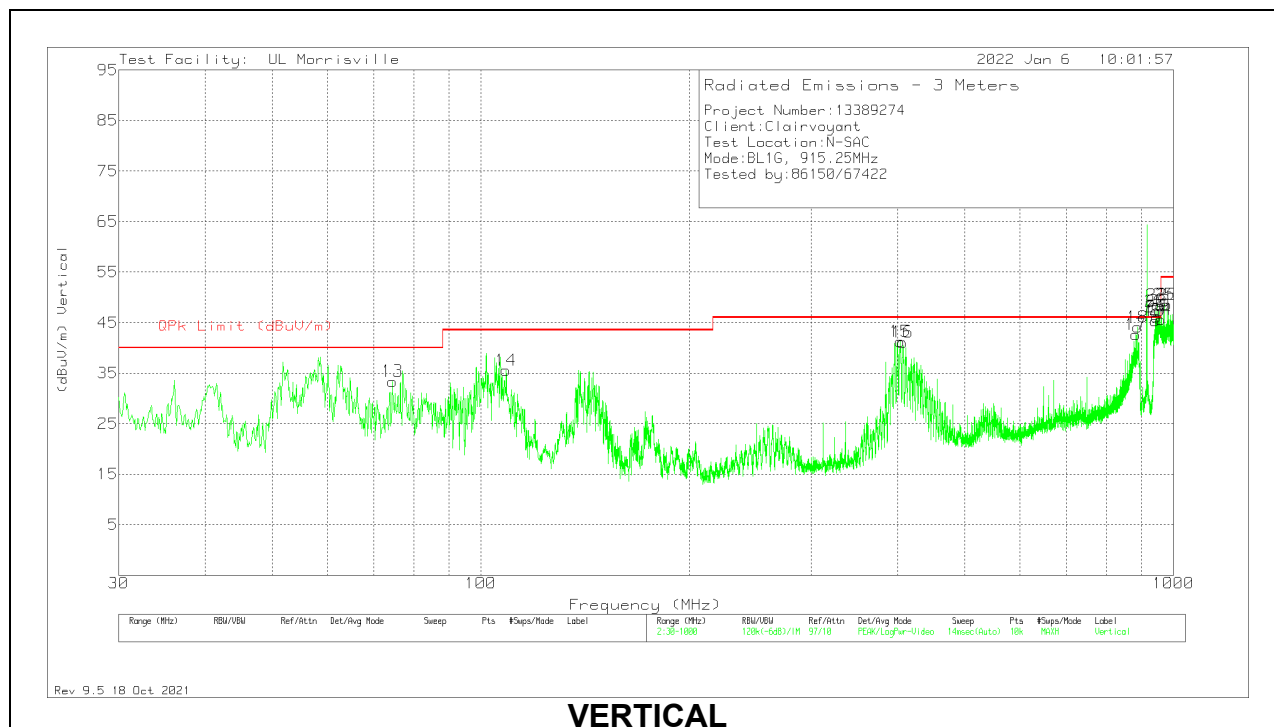
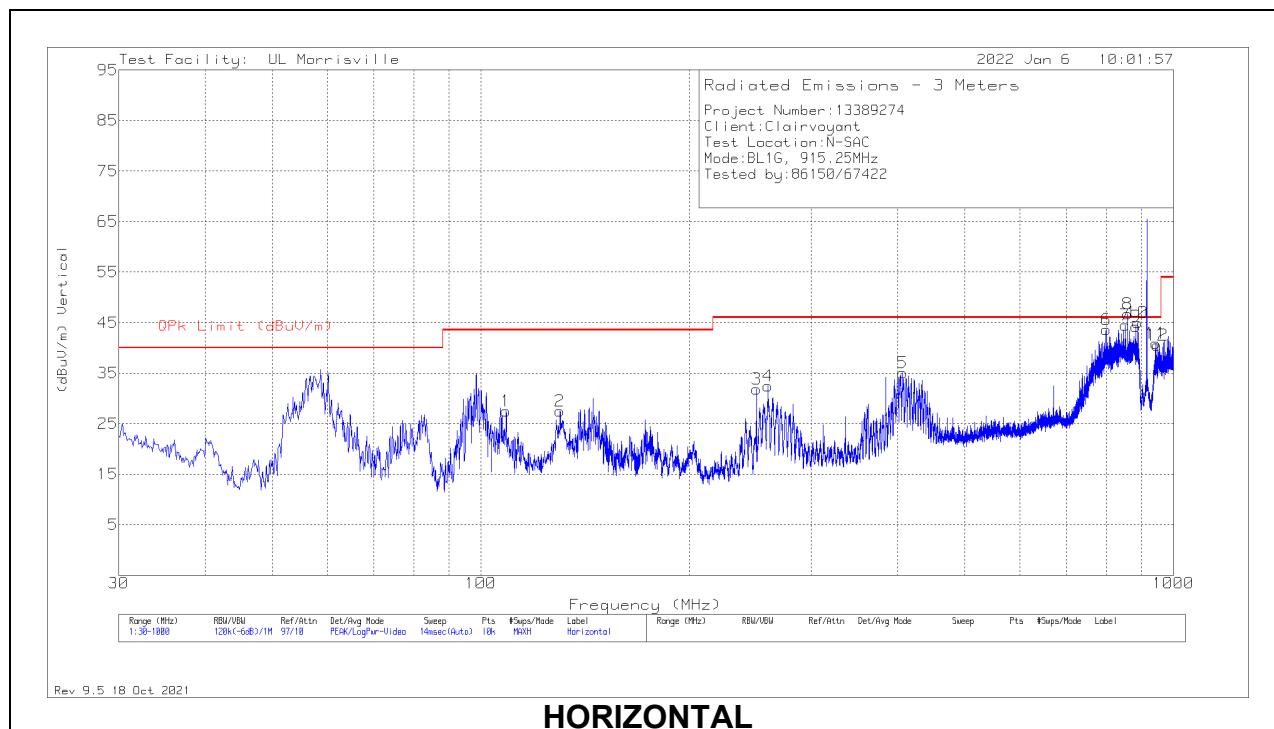
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 400.055	43.31	Pk	21.8	-27.5	.5	38.11	46.02	-7.91	0-360	199	H
2	* 403.256	42.88	Pk	21.9	-27.5	.5	37.78	46.02	-8.24	0-360	199	H
3	* 407.136	44.11	Pk	22.1	-27.6	.5	39.11	46.02	-6.91	0-360	199	H
9	* 74.5686	51.64	Qp	14.2	-30.7	.2	35.34	40	-4.66	242	100	V
11	* 402.868	44.42	Pk	21.9	-27.5	.5	39.32	46.02	-6.7	0-360	100	V
12	* 406.8738	44.05	Qp	22.1	-27.6	.5	39.05	46.02	-6.97	221	129	V
19	* 972.0007	40.14	Qp	29.5	-23.2	.8	47.24	53.97	-6.73	22	101	V
10	399.861	44.47	Pk	21.8	-27.6	.5	39.17	-	-	0-360	100	V
4	778.84	37.55	Pk	27.8	-25.6	.8	40.55	-	-	0-360	399	H
5	797.27	40.31	Pk	27.6	-25.1	.7	43.51	-	-	0-360	99	H
6	852.075	41.4	Pk	28.2	-24.7	.8	45.7	-	-	0-360	99	H
7	875.549	40.16	Pk	28.3	-24.8	.9	44.56	-	-	0-360	99	H
13	875.549	35.96	Pk	28.3	-24.8	.9	40.36	-	-	0-360	100	V
14	888.062	38.19	Pk	28.4	-24.4	1.7	43.89	-	-	0-360	100	V
15	936.077	36.79	Pk	29	-24	2.3	44.09	-	-	0-360	100	V
16	941.994	40.68	Pk	29.1	-23.9	1.5	47.38	-	-	0-360	100	V
17	948.008	41.43	Pk	29.1	-23.6	1.2	48.13	-	-	0-360	100	V
8	953.537	33.9	Pk	29.1	-23.7	1.2	40.5	-	-	0-360	199	H
18	953.537	41.67	Pk	29.1	-23.7	1.2	48.27	-	-	0-360	100	V

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

Pk - Peak detector

Qp - Quasi-Peak detector

MID CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

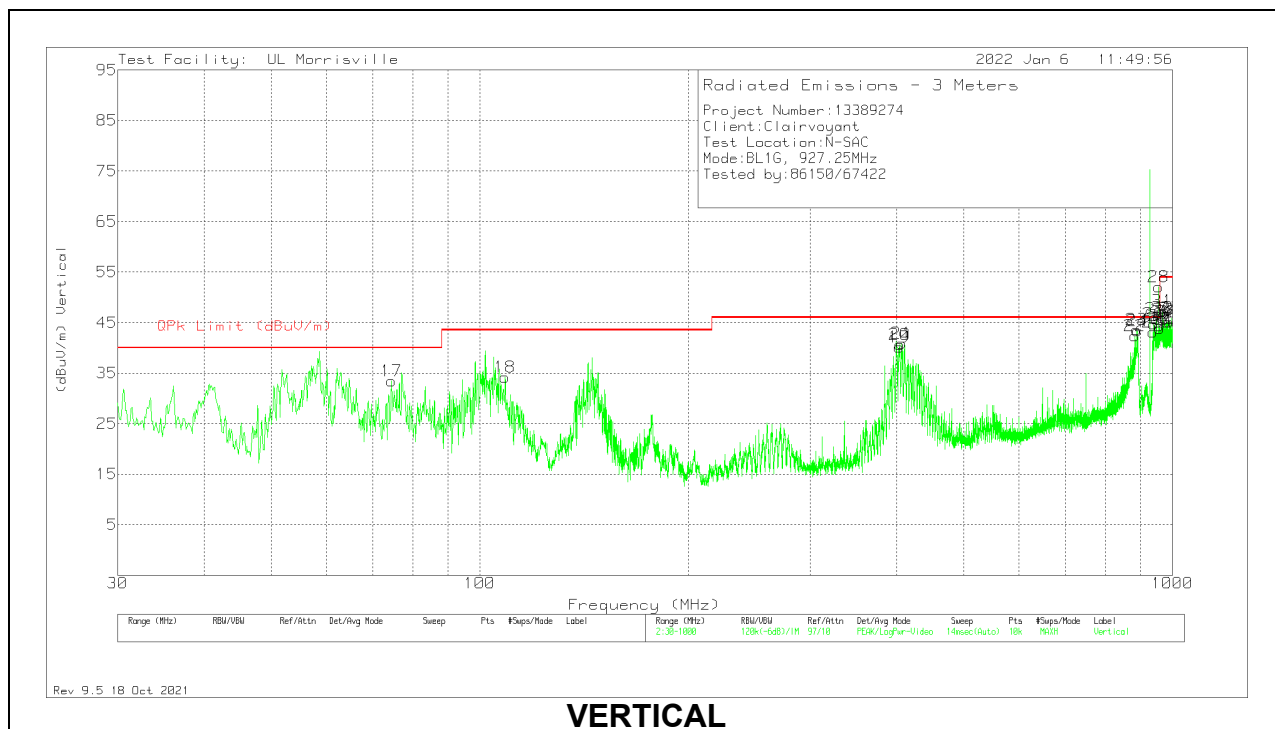
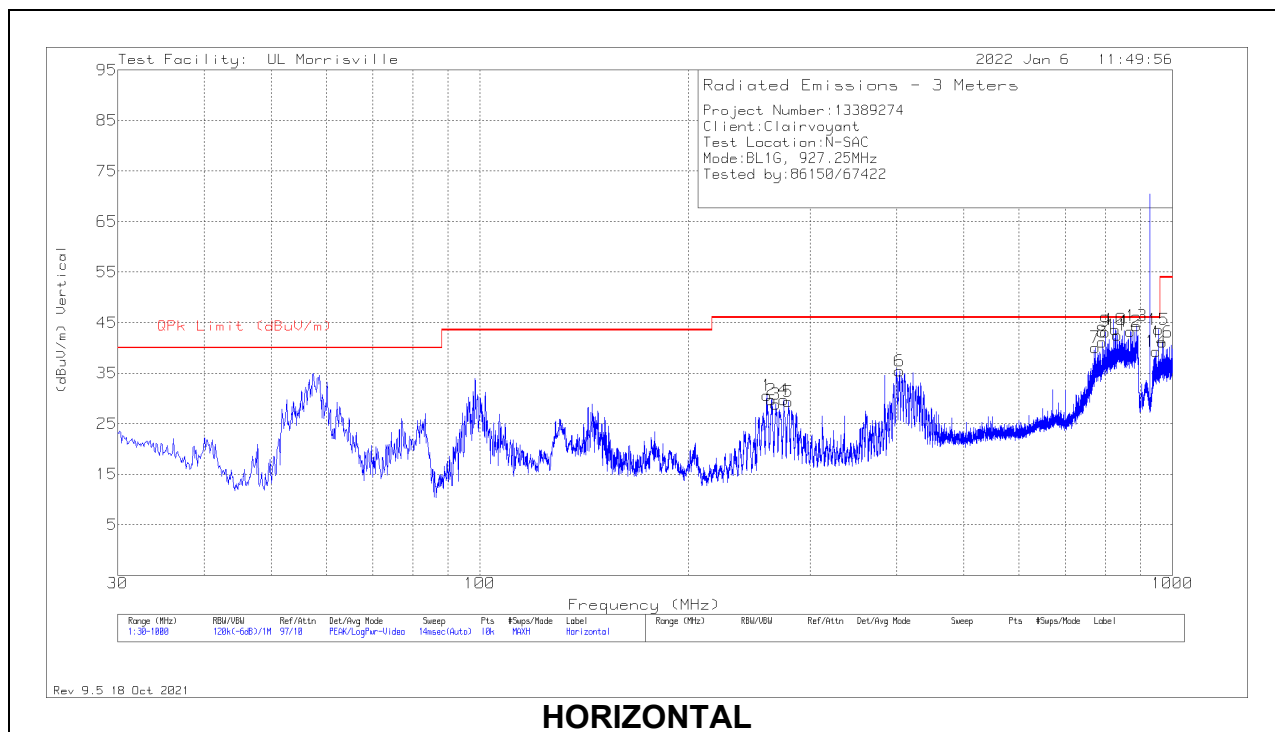
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 108.764	39.53	Pk	18	-30.1	.1	27.53	43.52	-15.99	0-360	300	H
2	* 130.104	37.57	Pk	19.8	-30	.1	27.47	43.52	-16.05	0-360	199	H
3	* 249.996	42.51	Pk	17.7	-28.7	.3	31.81	46.02	-14.21	0-360	101	H
4	* 259.793	42.68	Pk	18.2	-28.7	.3	32.48	46.02	-13.54	0-360	101	H
5	* 406.748	40.01	Pk	22.1	-27.6	.5	35.01	46.02	-11.01	0-360	101	H
13	* 74.523	49.69	Pk	14.2	-30.7	.2	33.39	40	-6.61	0-360	100	V
14	* 108.764	47.58	Pk	18	-30.1	.1	35.58	43.52	-7.94	0-360	100	V
15	* 403.2385	44.68	Qp	21.9	-27.5	.5	39.58	46.02	-6.44	216	142	V
16	* 406.6486	44.86	Qp	22.1	-27.7	.5	39.76	46.02	-6.26	230	124	V
24	* 960.036	38.78	Pk	29.3	-23.5	1	45.58	53.97	-8.39	0-360	100	V
25	* 971.9906	39.11	Qp	29.5	-23.2	.8	46.21	53.97	-7.76	14	102	V
26	* 978.5222	39.88	Qp	29.6	-23.3	.8	46.98	53.97	-6.99	31	100	V
6	800.083	40.35	Pk	27.6	-25	.7	43.65	-	-	0-360	101	H
7	851.978	40.29	Pk	28.2	-24.8	.8	44.49	-	-	0-360	101	H
8	858.574	42.38	Pk	28.2	-24.8	.9	46.68	-	-	0-360	101	H
9	882.533	39.2	Pk	28.4	-24.5	1.2	44.3	-	-	0-360	199	H
17	882.533	37.58	Pk	28.4	-24.5	1.2	42.68	-	-	0-360	100	V
10	888.062	39.29	Pk	28.4	-24.4	1.7	44.99	-	-	0-360	199	H
18	888.062	38.43	Pk	28.4	-24.4	1.7	44.13	-	-	0-360	100	V
19	940.539	38.5	Pk	29	-23.8	1.7	45.4	-	-	0-360	100	V
11	942.576	34.24	Pk	29.1	-23.8	1.4	40.94	-	-	0-360	199	H
20	942.576	40.55	Pk	29.1	-23.8	1.4	47.25	-	-	0-360	100	V
21	946.068	39.67	Pk	29.1	-23.8	1.2	46.17	-	-	0-360	100	V
22	948.008	41.81	Pk	29.1	-23.6	1.2	48.51	-	-	0-360	100	V
12	948.105	33.79	Pk	29.1	-23.6	1.2	40.49	-	-	0-360	199	H
23	954.604	40.62	Pk	29.2	-23.7	1.2	47.32	-	-	0-360	100	V

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

Pk - Peak detector

Qp - Quasi-Peak detector

HIGH CHANNEL RESULTS



Note – Frequencies close to the limit but not in a restricted band (e.g. 50-70 MHz) were not marked.

RADIATED EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0066 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 259.696	40.84	Pk	18.2	-28.7	.3	30.64	46.02	-15.38	0-360	100	H
2	* 263.673	39.35	Pk	18.8	-28.7	.3	29.75	46.02	-16.27	0-360	100	H
3	* 267.359	38.04	Pk	19.2	-28.7	.3	28.84	46.02	-17.18	0-360	100	H
4	* 274.828	38.41	Pk	19.6	-28.6	.3	29.71	46.02	-16.31	0-360	100	H
5	* 278.708	37.87	Pk	19.7	-28.5	.3	29.37	46.02	-16.65	0-360	100	H
6	* 403.547	40.77	Pk	21.9	-27.7	.5	35.47	46.02	-10.55	0-360	100	H
16	* 966.535	34.25	Pk	29.5	-23.4	.8	41.15	53.97	-12.82	0-360	200	H
17	* 74.523	49.77	Pk	14.2	-30.7	.2	33.47	40	-6.53	0-360	100	V
18	* 108.764	46.25	Pk	18	-30.1	.1	34.25	43.52	-9.27	0-360	100	V
19	* 403.0818	44.9	Qp	21.9	-27.5	.5	39.8	46.02	-6.22	239	129	V
20	* 403.9949	44.85	Qp	21.9	-27.6	.5	39.65	46.02	-6.37	228	124	V
21	* 406.5038	45.06	Qp	22.1	-27.7	.5	39.96	46.02	-6.06	226	133	V
30	* 960.036	37.05	Pk	29.3	-23.5	1	43.85	53.97	-10.12	0-360	100	V
31	* 966.535	40.41	Pk	29.5	-23.4	.8	47.31	53.97	-6.66	0-360	100	V
32	* 967.99	39.04	Pk	29.5	-23.3	.8	46.04	53.97	-7.93	0-360	100	V
33	* 972.064	38.53	Pk	29.5	-23.2	.8	45.63	53.97	-8.34	0-360	100	V
34	* 978.563	38.01	Pk	29.6	-23.3	.8	45.11	53.97	-8.86	0-360	100	V
35	* 984.092	37.85	Pk	29.5	-23	.8	45.15	53.97	-8.82	0-360	100	V
36	* 990.009	37.55	Pk	29.7	-23	.9	45.15	53.97	-8.82	0-360	100	V
37	* 996.023	38.12	Pk	29.7	-22.9	1	45.92	53.97	-8.05	0-360	100	V
7	774.572	37.29	Pk	27.6	-25.6	.8	40.09	-	-	0-360	100	H
8	792.032	38.01	Pk	27.7	-25.3	.8	41.21	-	-	0-360	100	H
9	800.083	39.9	Pk	27.6	-25	.7	43.2	-	-	0-360	100	H
10	828.019	39.58	Pk	28.1	-24.8	.7	43.58	-	-	0-360	100	H
11	831.802	38.98	Pk	28.1	-25.3	.7	42.48	-	-	0-360	100	H
12	870.505	38.81	Pk	28.3	-24.8	.9	43.21	-	-	0-360	100	H
22	882.533	37.25	Pk	28.4	-24.5	1.2	42.35	-	-	0-360	100	V
13	888.062	38.66	Pk	28.4	-24.4	1.7	44.36	-	-	0-360	200	H
23	888.062	37.9	Pk	28.4	-24.4	1.7	43.6	-	-	0-360	100	V
24	889.226	37.44	Pk	28.5	-24.4	1.9	43.44	-	-	0-360	100	V
25	938.017	35.66	Pk	29.1	-23.9	2.3	43.16	-	-	0-360	100	V
26	939.569	37.48	Pk	29.1	-23.8	2	44.78	-	-	0-360	100	V
14	948.105	32.54	Pk	29.1	-23.6	1.2	39.24	-	-	0-360	200	H
27	948.105	39.09	Pk	29.1	-23.6	1.2	45.79	-	-	0-360	100	V
15	954.604	36.95	Pk	29.2	-23.7	1.2	43.65	-	-	0-360	200	H
28	954.604	45.32	Pk	29.2	-23.7	1.2	52.02	-	-	0-360	100	V
29	957.805	37.7	Pk	29.2	-23.6	1.1	44.4	-	-	0-360	100	V

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

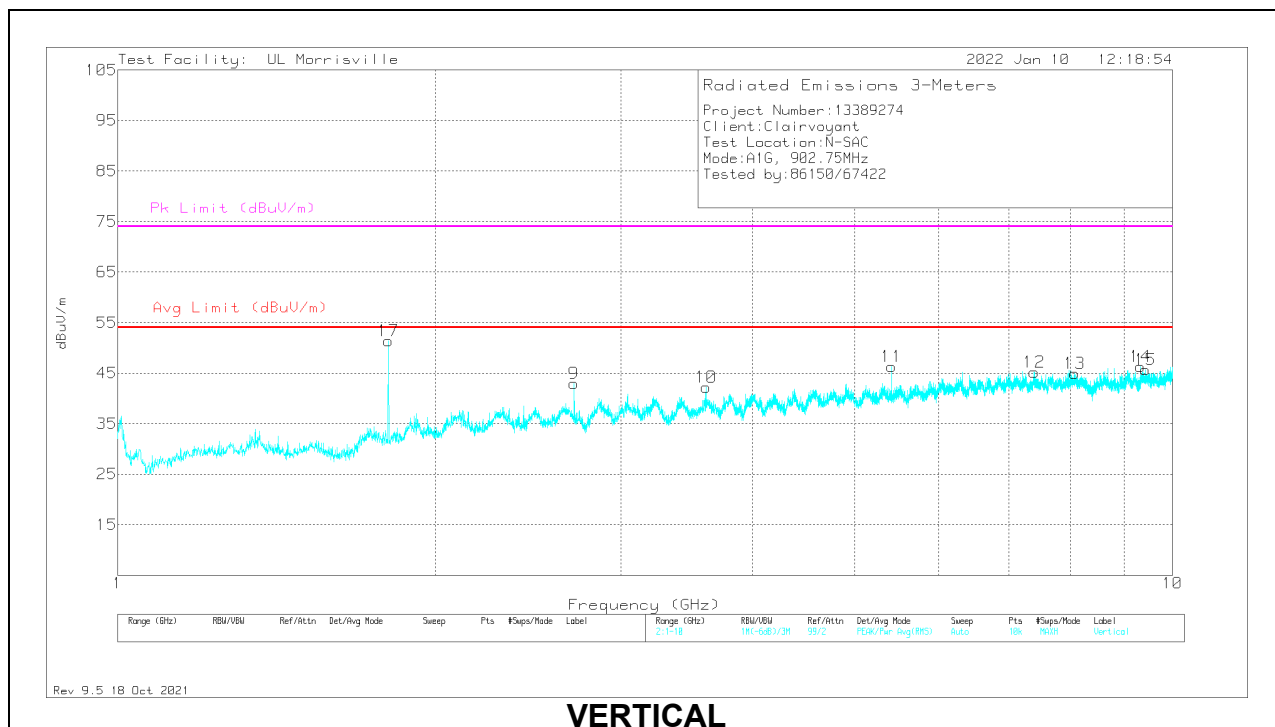
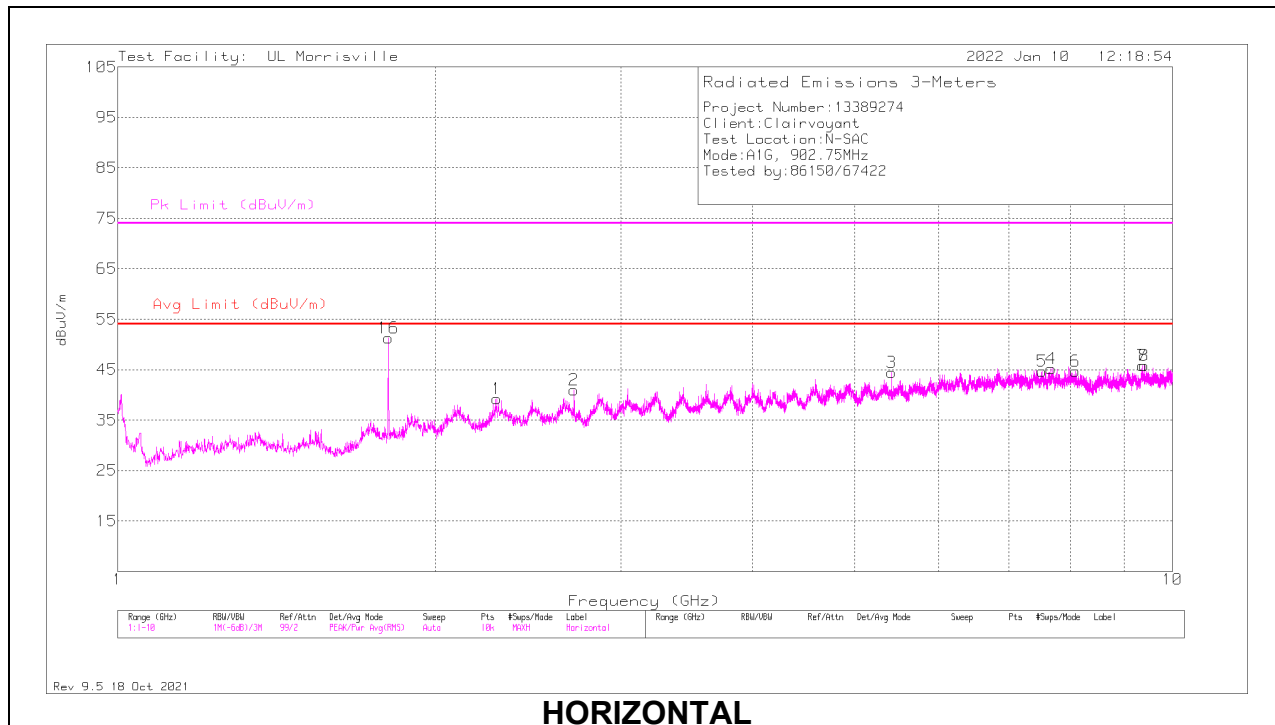
Pk - Peak detector

Qp - Quasi-Peak detector

11.2. TRANSMITTER ABOVE 1 GHz

11.2.1. HARMONICS AND SPURIOUS EMISSIONS- LOW GAIN ANTENNA

LOW CHANNEL RESULTS



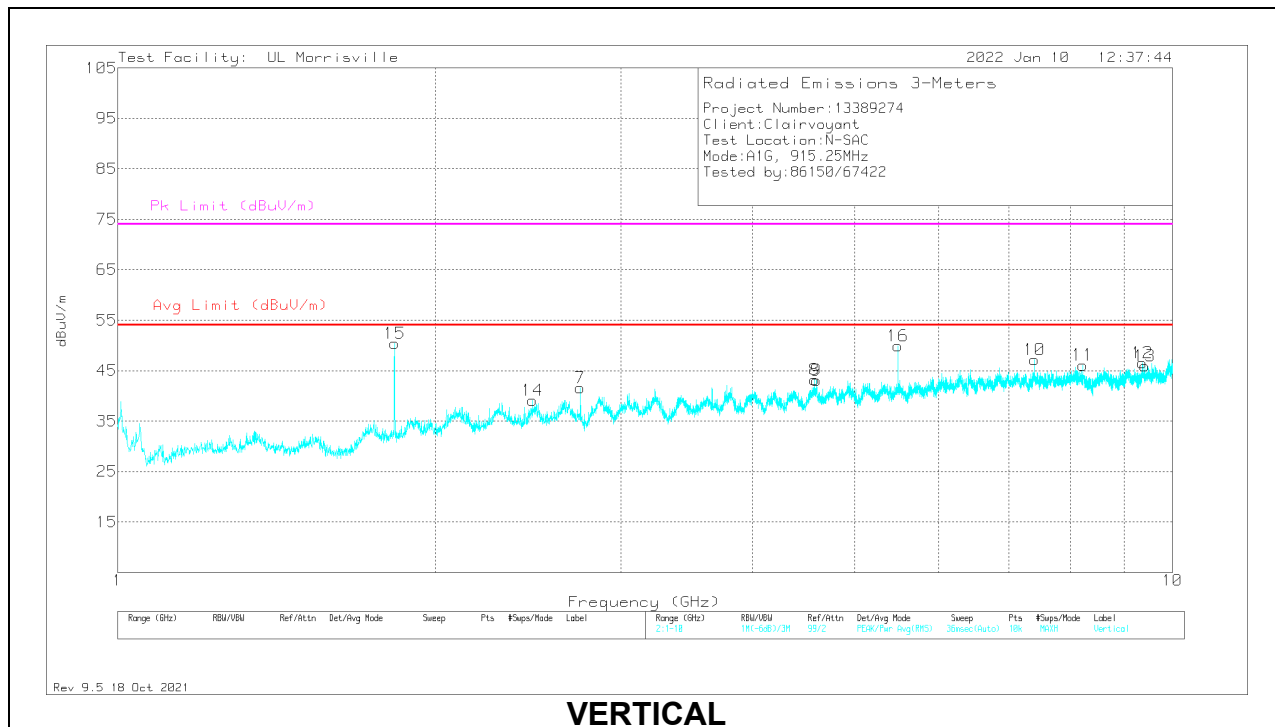
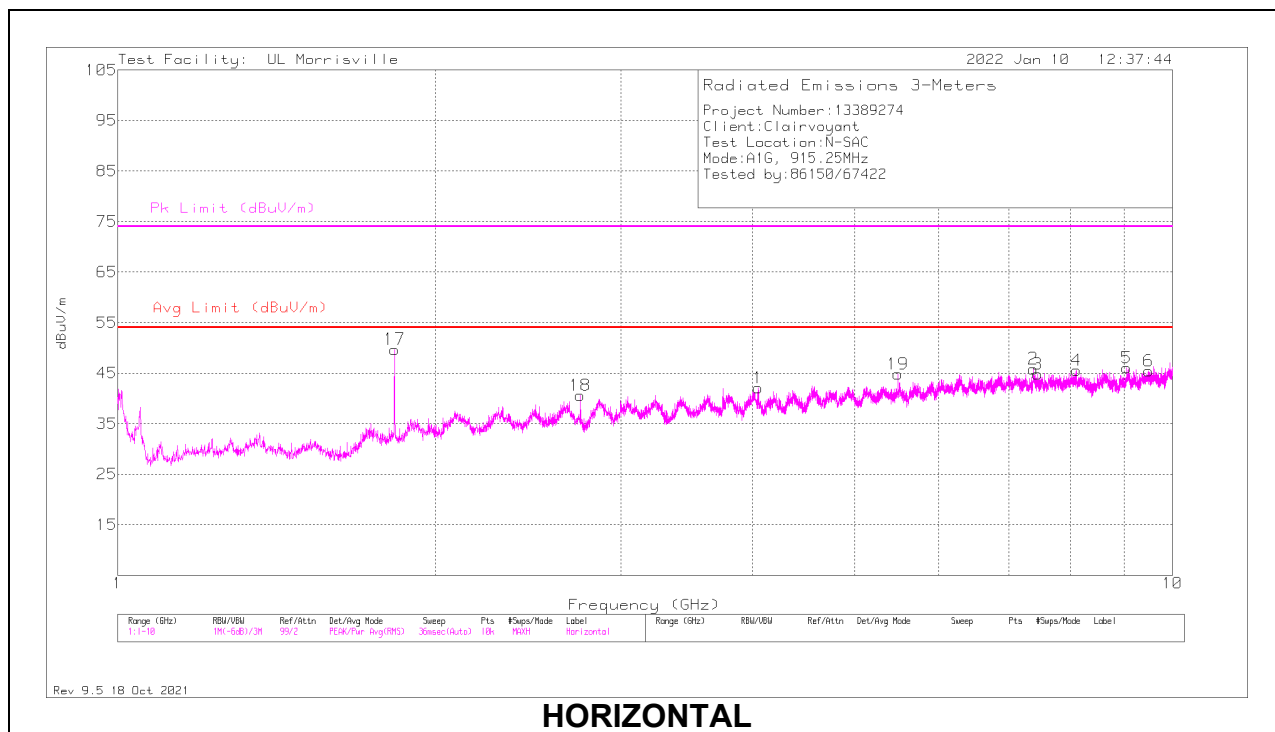
RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.2879	41.58	Pk	31.5	-34.3	.4	39.18	54	-14.82	74	-34.82	0-360	199	H
2	* 2.7082	42.36	Pk	32	-33.8	.4	40.96	54	-13.04	74	-33.04	0-360	300	H
3	* 5.4163	41.4	Pk	34.4	-31.8	.4	44.4	54	-9.6	74	-29.6	0-360	199	H
4	* 7.6735	38.39	Pk	35.7	-29.4	.5	45.19	54	-8.81	74	-28.81	0-360	101	H
5	* 7.5259	37.69	Pk	35.6	-29.2	.6	44.69	54	-9.31	74	-29.31	0-360	101	H
6	* 8.0848	37.58	Pk	35.7	-29	.4	44.68	54	-9.32	74	-29.32	0-360	400	H
7	* 9.3601	36.72	Pk	36.3	-27.8	.6	45.82	54	-8.18	74	-28.18	0-360	400	H
8	* 9.4015	37.22	Pk	36.4	-28.5	.7	45.82	54	-8.18	74	-28.18	0-360	300	H
9	* 2.7082	44.39	Pk	32	-33.8	.4	42.99	54	-11.01	74	-31.01	0-360	201	V
10	* 3.6109	41.87	Pk	33	-33.2	.5	42.17	54	-11.83	74	-31.83	0-360	101	V
11	* 5.4163	43.33	Pk	34.4	-31.8	.4	46.33	54	-7.67	74	-27.67	0-360	101	V
12	* 7.3954	38.43	Pk	35.6	-29.4	.6	45.23	54	-8.77	74	-28.77	0-360	301	V
13	* 8.0749	38.03	Pk	35.7	-29.2	.4	44.93	54	-9.07	74	-29.07	0-360	201	V
14	* 9.3313	38.11	Pk	36.3	-28.7	.6	46.31	54	-7.69	74	-27.69	0-360	101	V
15	* 9.4303	37.44	Pk	36.4	-28.8	.7	45.74	54	-8.26	74	-28.26	0-360	101	V
16	1.8055	55.95	Pk	30.3	-35.4	.4	51.25	-	-	-	-	0-360	101	H
17	1.8055	56.14	Pk	30.3	-35.4	.4	51.44	-	-	-	-	0-360	101	V

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

Pk - Peak detector

MID CHANNEL RESULTS

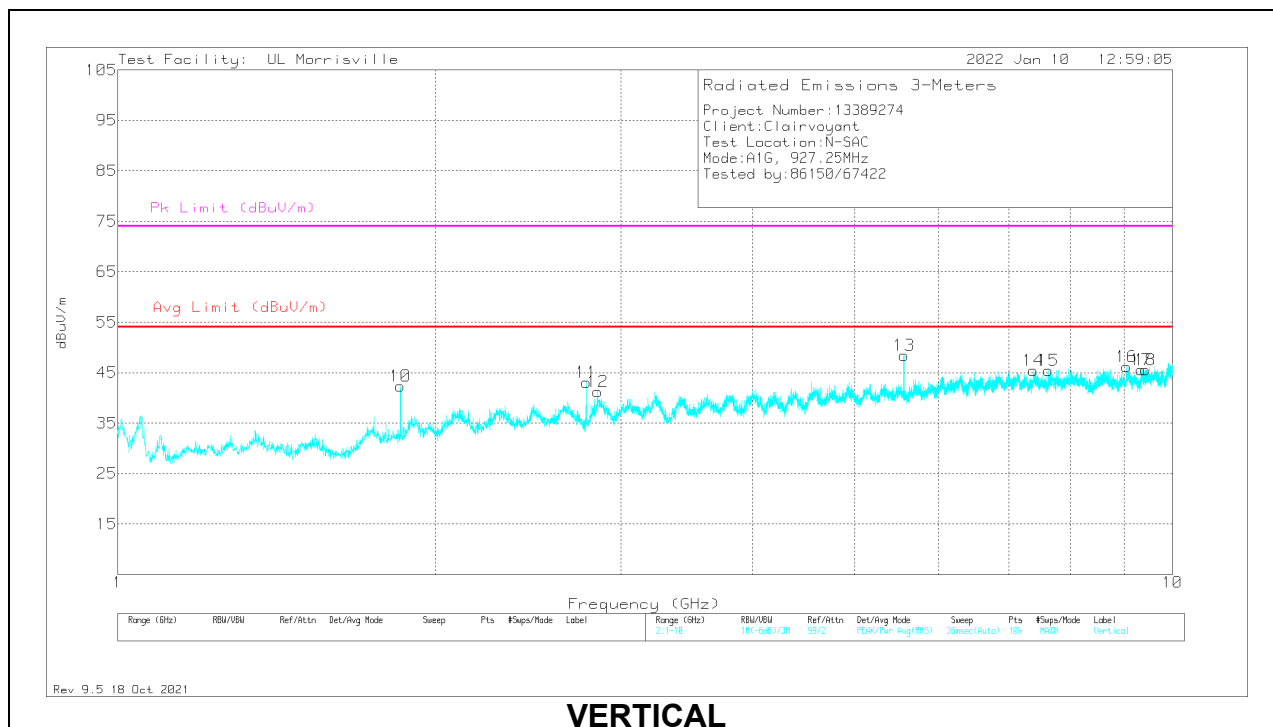
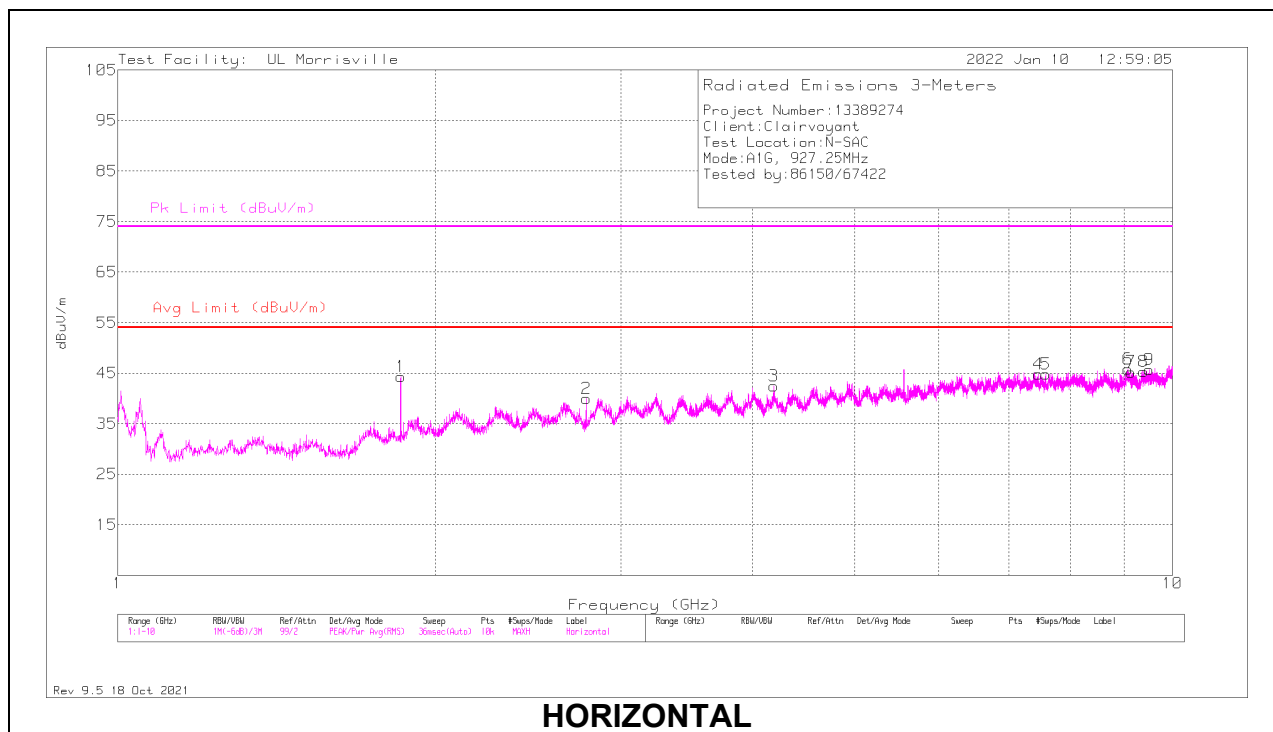


RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.0501	41.56	Pk	33.2	-33.1	.4	42.06	54	-11.94	74	-31.94	0-360	400	H
2	* 7.3828	38.97	Pk	35.6	-29.3	.6	45.87	54	-8.13	74	-28.13	0-360	200	H
3	* 7.4521	38.21	Pk	35.6	-29.6	.6	44.81	54	-9.19	74	-29.19	0-360	101	H
4	* 8.1109	38.58	Pk	35.7	-29.1	.4	45.58	54	-8.42	74	-28.42	0-360	200	H
5	* 9.0541	38.26	Pk	36	-28.8	.6	46.06	54	-7.94	74	-27.94	0-360	200	H
6	* 9.487	36.86	Pk	36.5	-28.6	.7	45.46	54	-8.54	74	-28.54	0-360	400	H
18	* 2.746	41.81	Pk	32.2	-33.9	.5	40.61	54	-13.39	74	-33.39	0-360	400	H
7	* 2.7451	42.75	Pk	32.2	-33.9	.5	41.55	54	-12.45	74	-32.45	0-360	200	V
8	* 4.5766	41.65	Pk	33.9	-32.7	.4	43.25	54	-10.75	74	-30.75	0-360	101	V
9	* 4.5955	40.9	Pk	33.9	-32.1	.4	43.1	54	-10.9	74	-30.9	0-360	400	V
10	* 7.3972	40.52	Pk	35.6	-29.5	.6	47.22	54	-6.78	74	-26.78	0-360	400	V
11	* 8.227	38.72	Pk	35.7	-28.8	.5	46.12	54	-7.88	74	-27.88	0-360	200	V
12	* 9.3601	37.47	Pk	36.3	-27.8	.6	46.57	54	-7.43	74	-27.43	0-360	301	V
13	* 9.4132	37.78	Pk	36.4	-28.9	.7	45.98	54	-8.02	74	-28.02	0-360	301	V
17	1.8298	53.92	Pk	30.6	-35.2	.4	49.72	-	-	-	-	0-360	101	H
15	1.8298	54.66	Pk	30.6	-35.2	.4	50.46	-	-	-	-	0-360	101	V
14	2.4733	40.54	Pk	32.3	-34.1	.4	39.14	-	-	-	-	0-360	301	V
16	5.491	47.36	Pk	34.5	-32.3	.4	49.96	-	-	-	-	0-360	200	V
19	5.4919	42.26	Pk	34.5	-32.3	.4	44.86	-	-	-	-	0-360	200	H

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

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

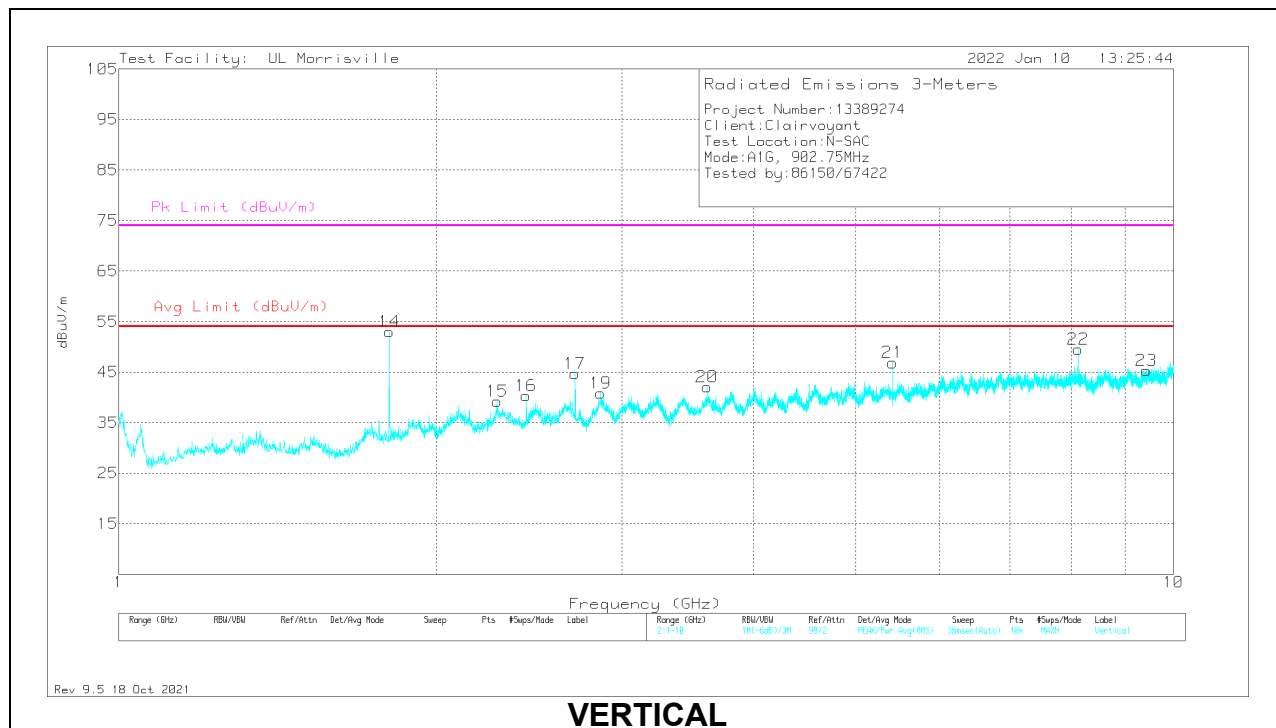
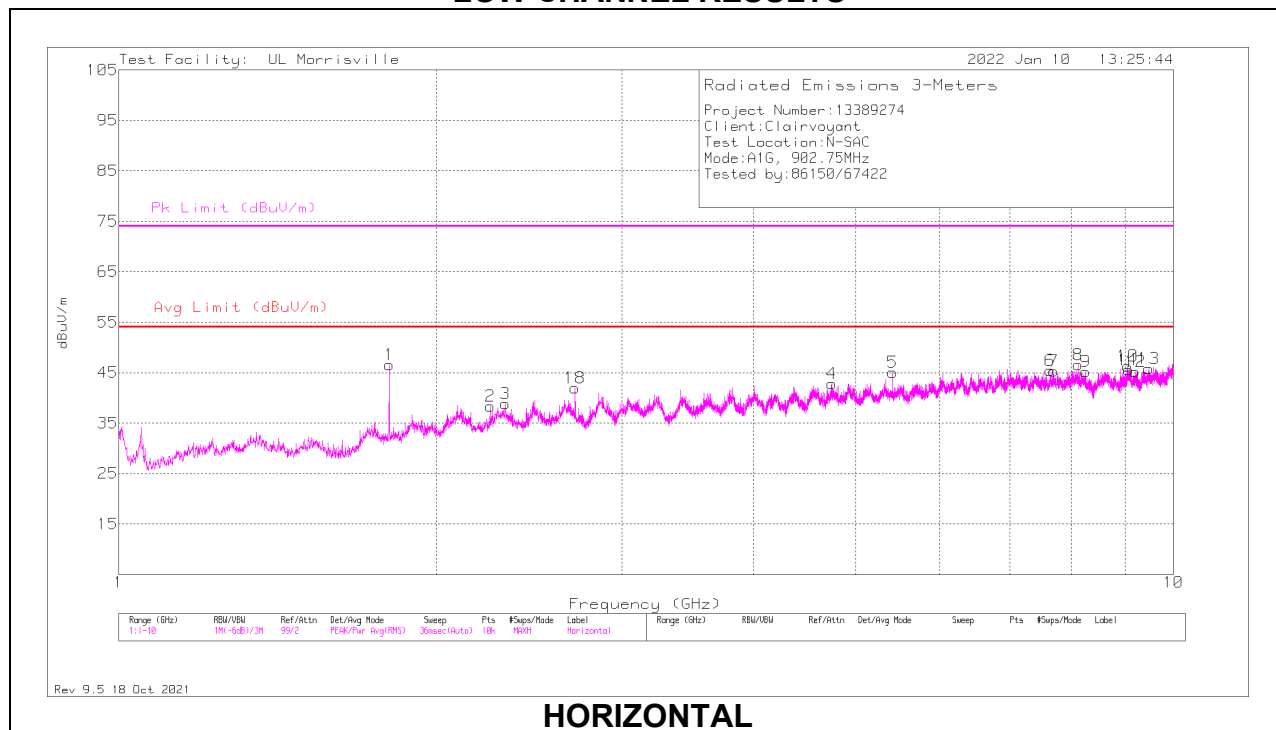
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.7811	41.17	Pk	32.3	-34	.5	39.97	54	-14.03	74	-34.03	0-360	400	H
3	* 4.1887	41.5	Pk	33.3	-32.7	.4	42.5	54	-11.5	74	-31.5	0-360	299	H
4	* 7.4593	37.88	Pk	35.6	-29.3	.6	44.78	54	-9.22	74	-29.22	0-360	299	H
5	* 7.5826	38.06	Pk	35.6	-29.3	.5	44.86	54	-9.14	74	-29.14	0-360	199	H
6	* 9.0694	37.98	Pk	36	-28.8	.6	45.78	54	-8.22	74	-28.22	0-360	199	H
7	* 9.1378	37.45	Pk	36.1	-28.9	.6	45.25	54	-8.75	74	-28.75	0-360	400	H
8	* 9.3952	37.06	Pk	36.4	-28.9	.7	45.26	54	-8.74	74	-28.74	0-360	101	H
11	* 2.782	44.32	Pk	32.3	-34	.5	43.12	54	-10.88	74	-30.88	0-360	101	V
12	* 2.8513	41.85	Pk	32.5	-33.7	.6	41.25	54	-12.75	74	-32.75	0-360	300	V
14	* 7.3792	38.43	Pk	35.6	-29.2	.6	45.43	54	-8.57	74	-28.57	0-360	200	V
15	* 7.6303	38.6	Pk	35.7	-29.4	.5	45.4	54	-8.6	74	-28.6	0-360	101	V
16	* 9.0532	38.33	Pk	36	-28.8	.6	46.13	54	-7.87	74	-27.87	0-360	200	V
17	* 9.3412	37.34	Pk	36.3	-28.7	.6	45.54	54	-8.46	74	-28.46	0-360	300	V
18	* 9.4222	37.52	Pk	36.4	-29.1	.7	45.52	54	-8.48	74	-28.48	0-360	101	V
10	1.8541	46.56	Pk	30.8	-35.4	.4	42.36	-	-	-	-	0-360	400	V
1	1.855	48.4	Pk	30.8	-35.3	.4	44.3	-	-	-	-	0-360	199	H
13	5.5639	46.12	Pk	34.4	-32.5	.4	48.42	-	-	-	-	0-360	101	V
9	9.5032	37.01	Pk	36.5	-28.5	.7	45.71	-	-	-	-	0-360	400	H

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

Pk - Peak detector

11.2.2. HARMONICS AND SPURIOUS EMISSIONS- HIGH GAIN ANTENNA

LOW CHANNEL RESULTS



RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.2501	40.74	Pk	31.5	-34.3	.4	38.34	54	-15.66	74	-35.66	0-360	200	H
3	* 2.3248	41.13	Pk	31.9	-34.6	.4	38.83	54	-15.17	74	-35.17	0-360	399	H
4	* 4.7413	41	Pk	33.9	-32.5	.4	42.8	54	-11.2	74	-31.2	0-360	101	H
5	* 5.4163	42.06	Pk	34.4	-31.8	.4	45.06	54	-8.94	74	-28.94	0-360	200	H
6	* 7.6348	38.46	Pk	35.7	-29.2	.5	45.46	54	-8.54	74	-28.54	0-360	101	H
7	* 7.7005	38.17	Pk	35.7	-29.1	.5	45.27	54	-8.73	74	-28.73	0-360	399	H
8	* 8.1253	40.01	Pk	35.7	-29.5	.4	46.61	54	-7.39	74	-27.39	0-360	101	H
9	* 8.2531	38.32	Pk	35.7	-29.3	.5	45.22	54	-8.78	74	-28.78	0-360	101	H
10	* 9.0532	38.48	Pk	36	-28.8	.6	46.28	54	-7.72	74	-27.72	0-360	200	H
11	* 9.0676	37.81	Pk	36	-28.9	.6	45.51	54	-8.49	74	-28.49	0-360	299	H
12	* 9.1936	37.33	Pk	36.1	-28.8	.6	45.23	54	-8.77	74	-28.77	0-360	200	H
13	* 9.4735	37.76	Pk	36.4	-29.1	.7	45.76	54	-8.24	74	-28.24	0-360	101	H
18	* 2.7082	43.37	Pk	32	-33.8	.4	41.97	54	-12.03	74	-32.03	0-360	299	H
15	* 2.2834	41.52	Pk	31.6	-34.3	.4	39.22	54	-14.78	74	-34.78	0-360	300	V
17	* 2.7082	46.15	Pk	32	-33.8	.4	44.75	54	-9.25	74	-29.25	0-360	200	V
19	* 2.8639	41.09	Pk	32.7	-33.6	.6	40.79	54	-13.21	74	-33.21	0-360	101	V
20	* 3.6109	41.83	Pk	33	-33.2	.5	42.13	54	-11.87	74	-31.87	0-360	101	V
21	* 5.4163	43.87	Pk	34.4	-31.8	.4	46.87	54	-7.13	74	-27.13	0-360	101	V
22	* 8.1248	43.99	PK2	35.7	-29.4	.4	50.69	-	-	74	-23.31	123	124	V
	* 8.12476	38.57	V1TV	35.7	-29.4	.4	45.27	54	-8.73	-	-	123	124	V
23	* 9.4312	37.03	Pk	36.4	-28.8	.7	45.33	54	-8.67	74	-28.67	0-360	101	V
1	1.8055	51.29	Pk	30.3	-35.4	.4	46.59	-	-	-	-	0-360	399	H
14	1.8055	57.68	Pk	30.3	-35.4	.4	52.98	-	-	-	-	0-360	300	V
16	2.4346	41.8	Pk	32.1	-34.1	.5	40.3	-	-	-	-	0-360	300	V

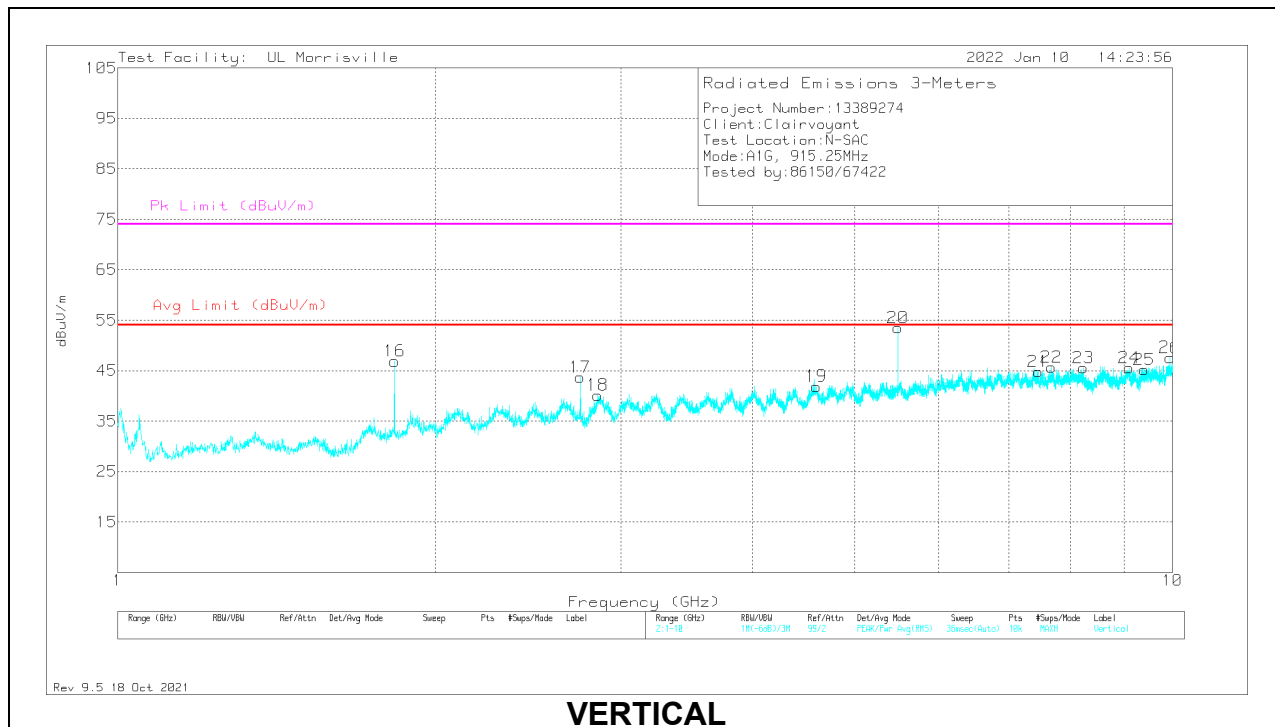
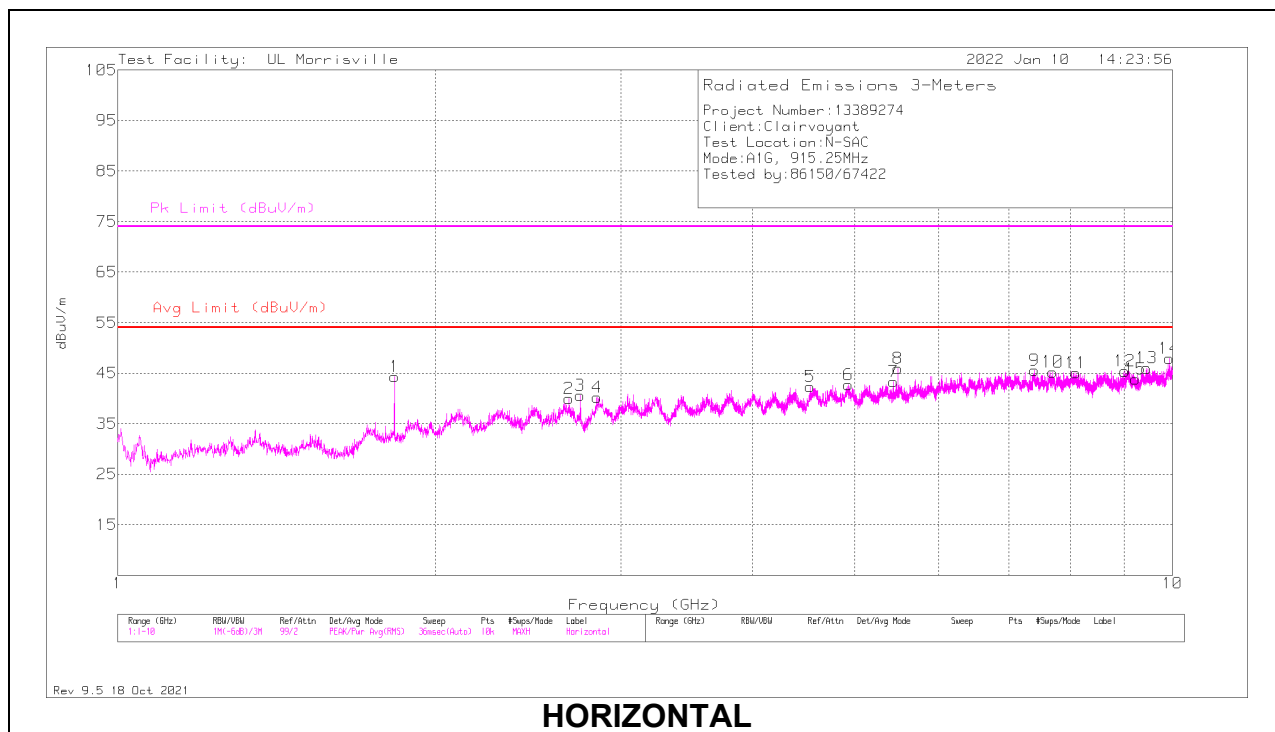
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

PK2 - Maximum Peak

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

MID CHANNEL RESULTS

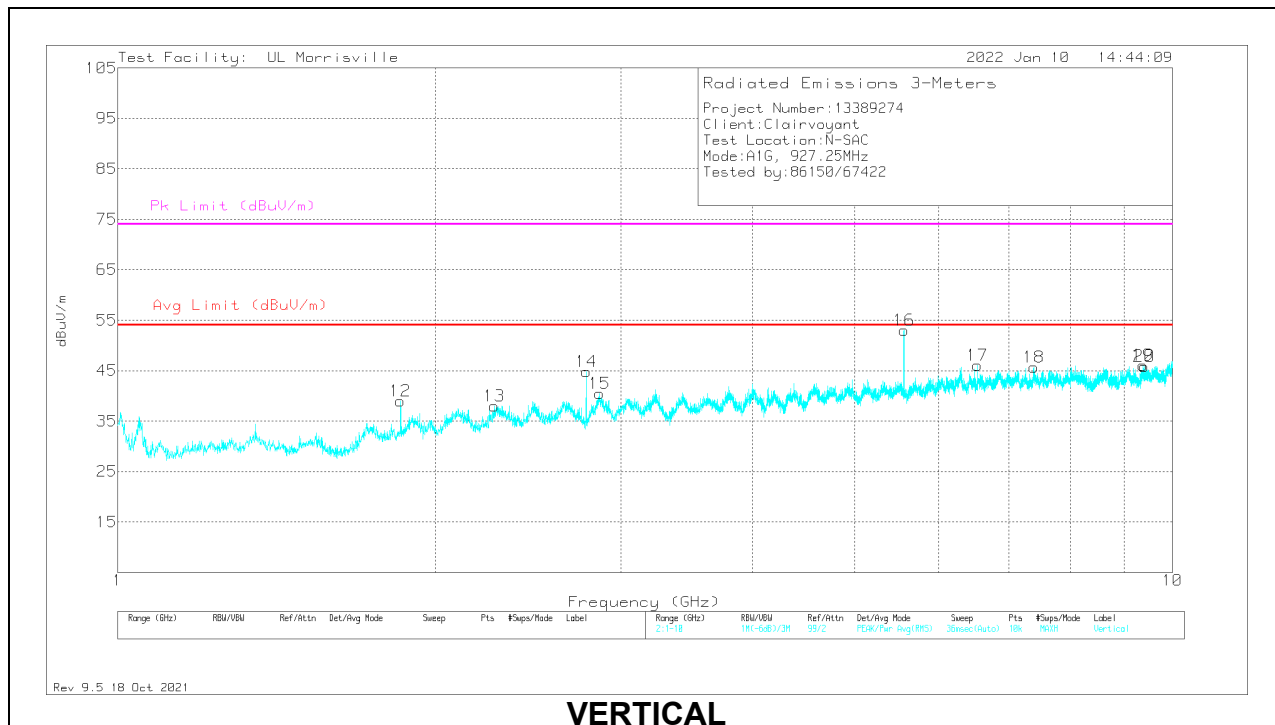
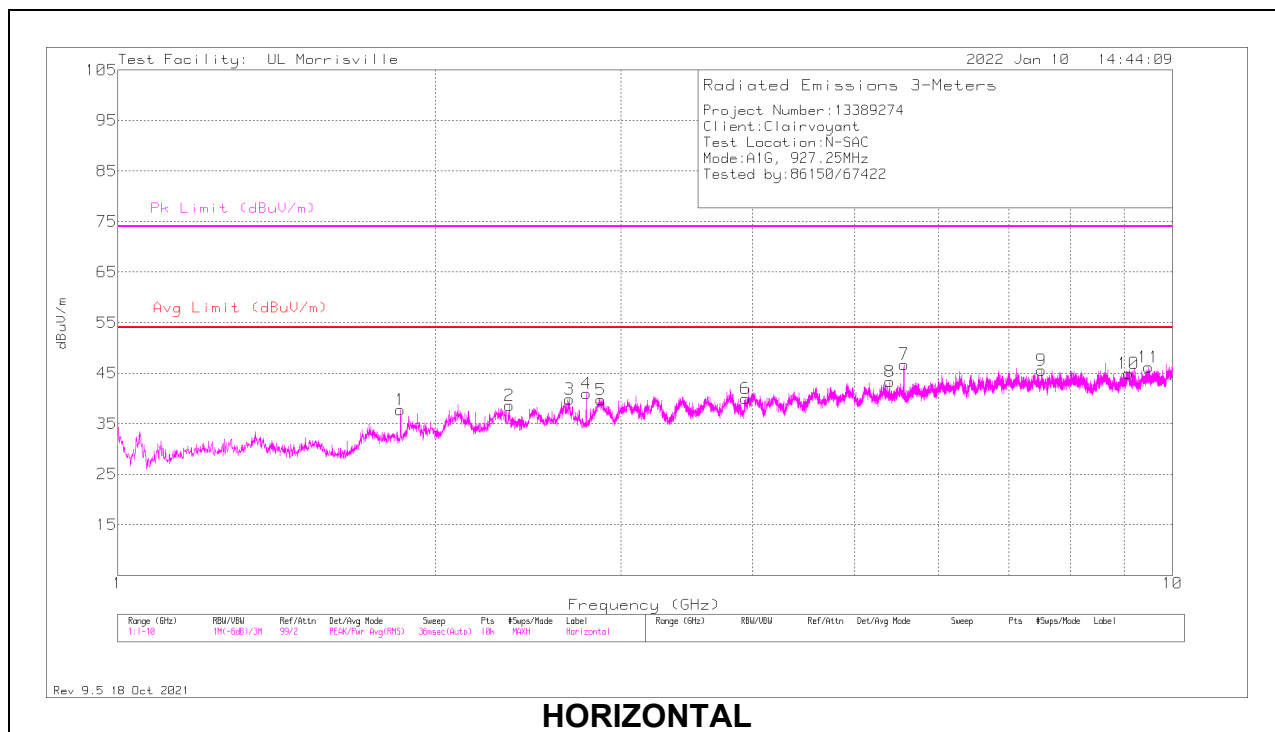


RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.6794	41.33	Pk	32.1	-33.8	.4	40.03	54	-13.97	74	-33.97	0-360	101	H
3	* 2.7451	41.81	Pk	32.2	-33.9	.5	40.61	54	-13.39	74	-33.39	0-360	400	H
4	* 2.8468	40.95	Pk	32.5	-33.8	.6	40.25	54	-13.75	74	-33.75	0-360	200	H
5	* 4.537	41.02	Pk	33.8	-32.9	.4	42.32	54	-11.68	74	-31.68	0-360	101	H
6	* 4.9285	40.46	Pk	33.9	-31.9	.3	42.76	54	-11.24	74	-31.24	0-360	300	H
7	* 5.4361	40.38	Pk	34.4	-31.8	.4	43.38	54	-10.62	74	-30.62	0-360	200	H
9	* 7.3981	38.92	Pk	35.6	-29.6	.6	45.52	54	-8.48	74	-28.48	0-360	101	H
10	* 7.6969	38.15	Pk	35.7	-29.1	.5	45.25	54	-8.75	74	-28.75	0-360	200	H
11	* 8.1046	37.9	Pk	35.7	-28.9	.4	45.1	54	-8.9	74	-28.9	0-360	300	H
12	* 9.0136	38.08	Pk	36	-29.4	.7	45.38	54	-8.62	74	-28.62	0-360	101	H
13	* 9.4573	37.6	Pk	36.4	-28.7	.7	46	54	-8	74	-28	0-360	200	H
17	* 2.7451	44.93	Pk	32.2	-33.9	.5	43.73	54	-10.27	74	-30.27	0-360	200	V
18	* 2.8531	40.46	Pk	32.6	-33.5	.6	40.16	54	-13.84	74	-33.84	0-360	101	V
19	* 4.5991	40.1	Pk	34	-32.6	.4	41.9	54	-12.1	74	-32.1	0-360	200	V
21	* 7.4584	37.88	Pk	35.6	-29.3	.6	44.78	54	-9.22	74	-29.22	0-360	400	V
22	* 7.6816	38.79	Pk	35.7	-29.3	.5	45.69	54	-8.31	74	-28.31	0-360	101	V
23	* 8.2378	38.23	Pk	35.7	-28.9	.5	45.53	54	-8.47	74	-28.47	0-360	101	V
24	* 9.0937	37.58	Pk	36.1	-28.7	.6	45.58	54	-8.42	74	-28.42	0-360	200	V
25	* 9.4051	36.88	Pk	36.4	-28.8	.7	45.18	54	-8.82	74	-28.82	0-360	101	V
1	1.8298	48.5	Pk	30.6	-35.2	.4	44.3	-	-	-	-	0-360	200	H
16	1.8298	51.07	Pk	30.6	-35.2	.4	46.87	-	-	-	-	0-360	300	V
8	5.4919	43.29	Pk	34.5	-32.3	.4	45.89	-	-	-	-	0-360	300	H
20	5.4919	50.96	Pk	34.5	-32.3	.4	53.56	-	-	-	-	0-360	101	V
15	9.2287	36.26	Pk	36.2	-29.2	.6	43.86	-	-	-	-	0-360	400	H
14	9.9262	38.38	Pk	36.9	-27.9	.5	47.88	-	-	-	-	0-360	200	H
26	9.9505	38.31	Pk	37	-28.2	.5	47.61	-	-	-	-	0-360	101	V

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

HIGH CHANNEL RESULTS



RADIATED EMISSIONS

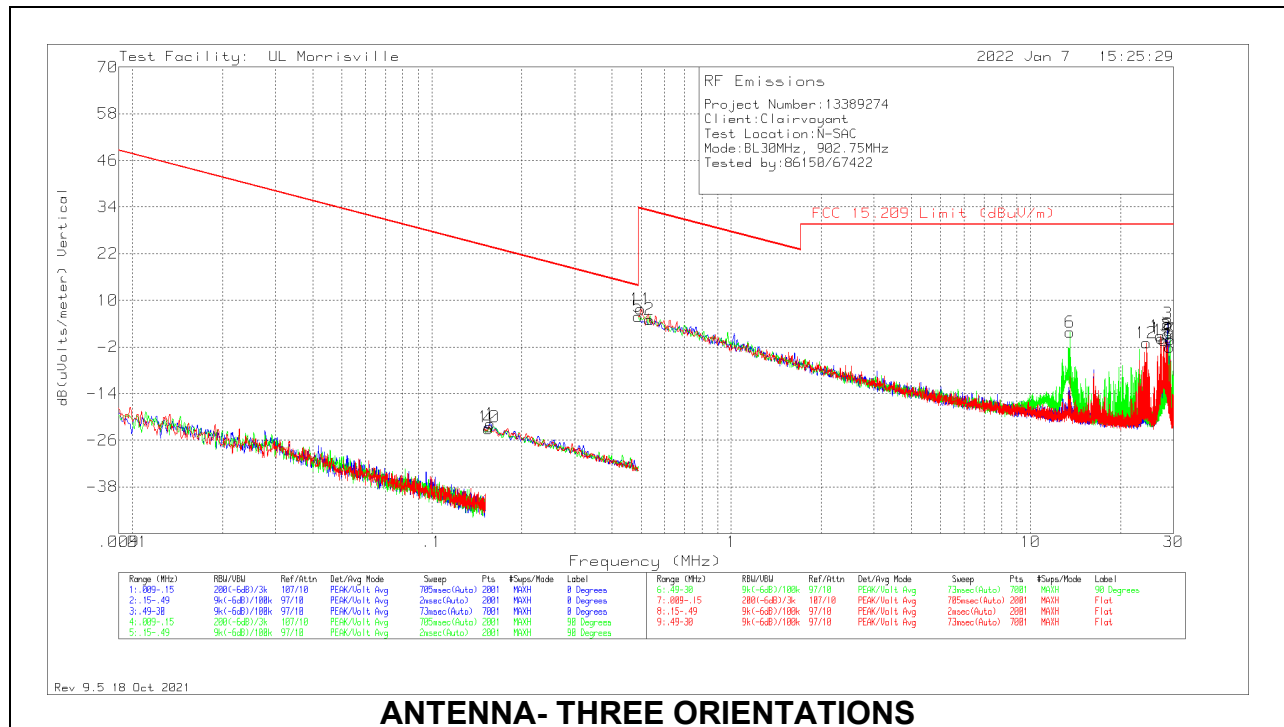
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AT0067 (dB/m)	Amp/Cbl (dB)	Filter (dB)	Corrected Reading dBuV/m	Avg Limit (dBuV/m)	Margin (dB)	Pk Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 2.35	40.31	Pk	32.1	-34.2	.4	38.61	54	-15.39	74	-35.39	0-360	101	H
3	* 2.6803	41.25	Pk	32	-33.8	.4	39.85	54	-14.15	74	-34.15	0-360	299	H
4	* 2.7811	42.16	Pk	32.3	-34	.5	40.96	54	-13.04	74	-33.04	0-360	101	H
5	* 2.8729	40.15	Pk	32.7	-33.7	.6	39.75	54	-14.25	74	-34.25	0-360	299	H
6	* 3.9385	38.75	Pk	33.3	-32.5	.4	39.95	54	-14.05	74	-34.05	0-360	400	H
8	* 5.3947	40.52	Pk	34.4	-32	.4	43.32	54	-10.68	74	-30.68	0-360	101	H
9	* 7.5124	38.44	Pk	35.6	-29.1	.6	45.54	54	-8.46	74	-28.46	0-360	299	H
10	* 9.0811	36.92	Pk	36.1	-28.7	.6	44.92	54	-9.08	74	-29.08	0-360	199	H
11	* 9.4879	37.6	Pk	36.5	-28.6	.7	46.2	54	-7.8	74	-27.8	0-360	299	H
13	* 2.2762	40.57	Pk	31.5	-34.5	.4	37.97	54	-16.03	74	-36.03	0-360	101	V
14	* 2.782	45.99	Pk	32.3	-34	.5	44.79	54	-9.21	74	-29.21	0-360	200	V
15	* 2.8639	40.81	Pk	32.7	-33.6	.6	40.51	54	-13.49	74	-33.49	0-360	101	V
18	* 7.3945	38.87	Pk	35.6	-29.4	.6	45.67	54	-8.33	74	-28.33	0-360	101	V
19	* 9.3736	37.43	Pk	36.3	-28.3	.6	46.03	54	-7.97	74	-27.97	0-360	101	V
20	* 9.3997	37.47	Pk	36.4	-28.7	.7	45.87	54	-8.13	74	-28.13	0-360	300	V
1	1.8541	41.97	Pk	30.8	-35.4	.4	37.77	-	-	-	-	0-360	101	H
12	1.8541	43.21	Pk	30.8	-35.4	.4	39.01	-	-	-	-	0-360	200	V
7	5.5639	44.44	Pk	34.4	-32.5	.4	46.74	-	-	-	-	0-360	400	H
16	5.5639	50.7	Pk	34.4	-32.5	.4	53	-	-	-	-	0-360	101	V
17	6.5359	41.2	Pk	35.5	-31.3	.7	46.1	-	-	-	-	0-360	200	V

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

11.3. WORST CASE BELOW 30MHZ

Note for below 30 MHz scans: 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).

LOW GAIN ANTENNA SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION-E FIELD)

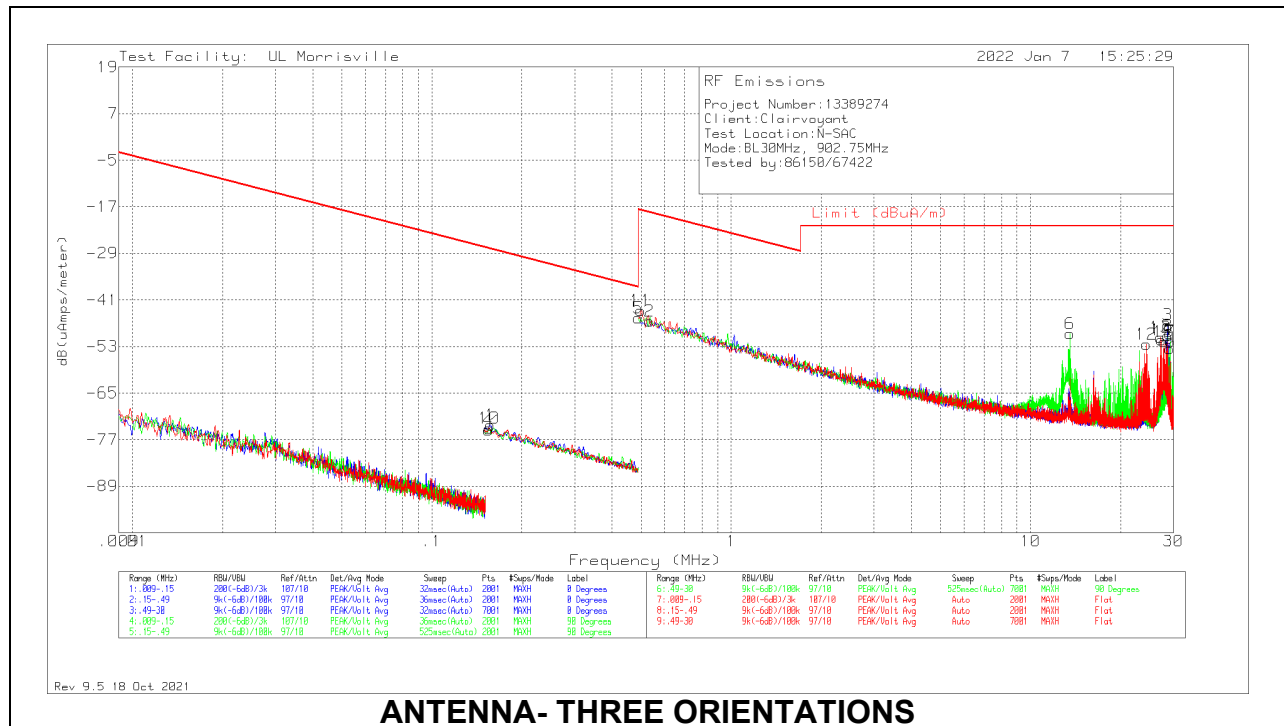


Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 Qp/Av Limit (dBuV/m)	FCC 15.209 Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
4	.15459	45.72	Pk	11.2	.1	-80	-22.98	23.82	43.82	-46.8	0-360	400	90 degs
10	.15527	46.15	Pk	11.2	.1	-80	-22.55	23.78	43.78	-46.33	0-360	400	Flat
1	.1568	46.94	Pk	11.2	.1	-80	-21.76	23.7	43.7	-45.46	0-360	400	0 degs
5	.49	34.42	Pk	11.2	.2	-40	5.82	13.8	33.8	-7.98	0-360	400	90 degs
11	.49843	36.38	Pk	11.2	.2	-40	7.78	33.65	-	-25.87	0-360	400	Flat
2	.53216	33.7	Pk	11.2	.2	-40	5.1	33.08	-	-27.98	0-360	400	0 degs
6	13.5596	30.74	Pk	10.2	.8	-40	1.74	29.54	-	-27.8	0-360	400	90 degs
12	24.35256	29.27	Pk	8.8	1	-40	-.93	29.54	-	-30.47	0-360	400	Flat
13	27.16042	31.44	Pk	8.3	1.1	-40	.84	29.54	-	-28.7	0-360	400	Flat
14	27.34592	30.86	Pk	8.2	1.1	-40	.16	29.54	-	-29.38	0-360	400	Flat
15	27.894	30.52	Pk	8.1	1.1	-40	-.28	29.54	-	-29.82	0-360	400	Flat
3	28.68661	35	Pk	8	1.1	-40	4.1	29.54	-	-25.44	0-360	400	0 degs
8	28.69082	32.2	Pk	8	1.1	-40	1.3	29.54	-	-28.24	0-360	400	90 degs
9	29.11664	28.92	Pk	7.9	1.1	-40	-2.08	29.54	-	-31.62	0-360	400	90 degs
7	29.2389	30.94	Pk	7.9	1.1	-40	-.06	29.54	-	-29.6	0-360	400	90 degs

Pk - Peak detector

LOW GAIN ANTENNA SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION-H FIELD)



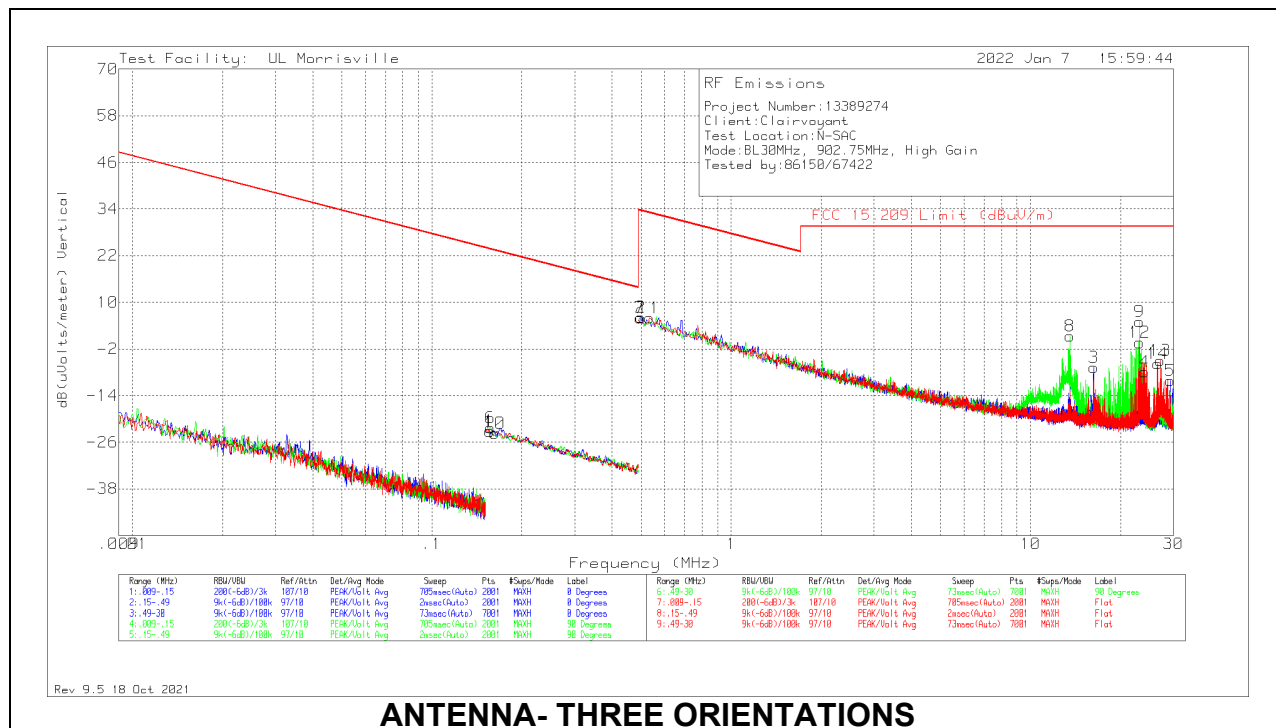
ANTENNA- THREE ORIENTATIONS

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	RSS-GEN Qp/Av Limit (dBuA/m)	RSS-GEN Pk Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
4	.15459	45.72	Pk	-40.3	.1	-80	-74.48	-27.68	-7.68	-46.8	0-360	400	90 degs
10	.15527	46.15	Pk	-40.3	.1	-80	-74.05	-27.72	-7.72	-46.33	0-360	400	Flat
1	.1568	46.94	Pk	-40.3	.1	-80	-73.26	-27.8	-7.80	-45.46	0-360	400	0 degs
5	.49	34.42	Pk	-40.3	.2	-40	-45.68	-37.7	-17.7	-7.98	0-360	400	90 degs
11	.49843	36.38	Pk	-40.3	.2	-40	-43.72	-17.85	-	-25.87	0-360	400	Flat
2	.53216	33.7	Pk	-40.3	.2	-40	-46.4	-18.42	-	-27.98	0-360	400	0 degs
6	13.5596	30.74	Pk	-41.3	.8	-40	-49.76	-21.96	-	-27.8	0-360	400	90 degs
12	24.35256	29.27	Pk	-42.7	1	-40	-52.43	-21.96	-	-30.47	0-360	400	Flat
13	27.16042	31.44	Pk	-43.2	1.1	-40	-50.66	-21.96	-	-28.7	0-360	400	Flat
14	27.34592	30.86	Pk	-43.3	1.1	-40	-51.34	-21.96	-	-29.38	0-360	400	Flat
15	27.894	30.52	Pk	-43.4	1.1	-40	-51.78	-21.96	-	-29.82	0-360	400	Flat
3	28.68661	35	Pk	-43.5	1.1	-40	-47.4	-21.96	-	-25.44	0-360	400	0 degs
8	28.69082	32.2	Pk	-43.5	1.1	-40	-50.2	-21.96	-	-28.24	0-360	400	90 degs
9	29.11664	28.92	Pk	-43.6	1.1	-40	-53.58	-21.96	-	-31.62	0-360	400	90 degs
7	29.2389	30.94	Pk	-43.6	1.1	-40	-51.56	-21.96	-	-29.6	0-360	400	90 degs

Pk - Peak detector

HIGH GAIN ANTENNA SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION-E FIELD)

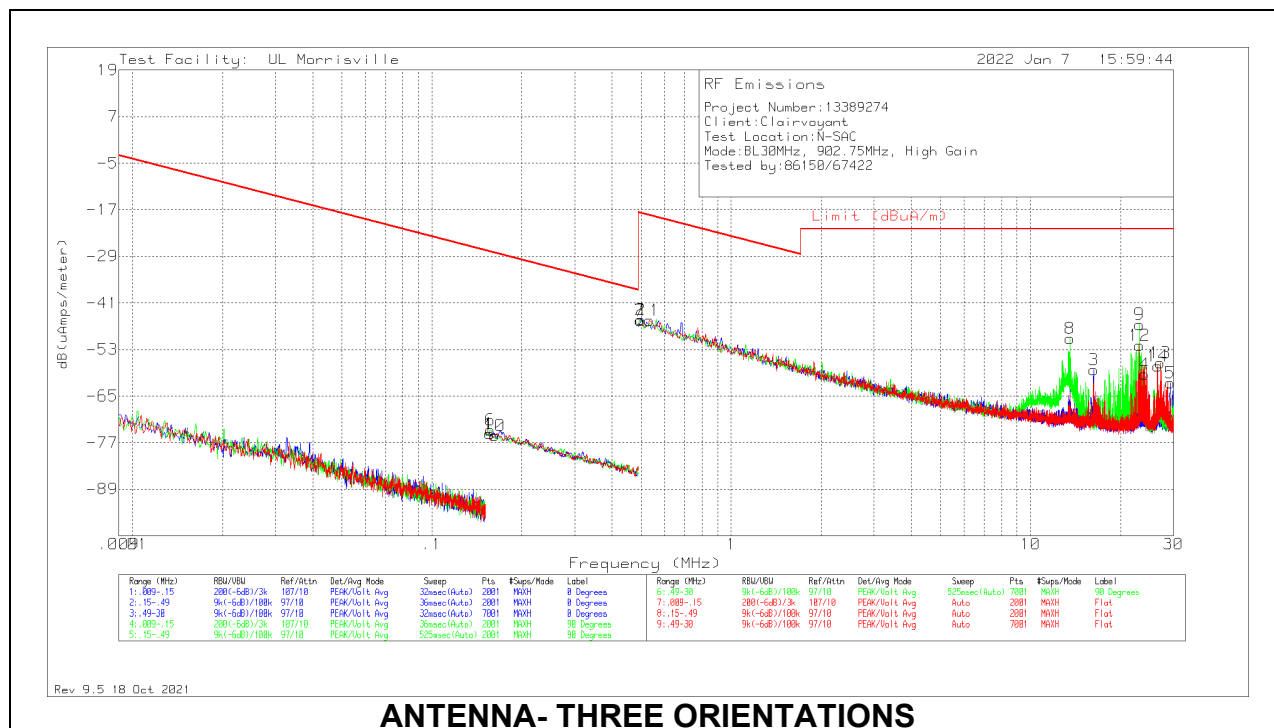


Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 Qp/Av Limit (dBuV/m)	FCC 15.209 Pk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
1	.15595	45.57	Pk	11.2	.1	-80	-23.13	23.74	43.74	-46.87	0-360	400	0 degs
6	.15663	46.48	Pk	11.2	.1	-80	-22.22	23.71	43.71	-45.93	0-360	400	90 degs
10	.16224	45.02	Pk	11.2	.1	-80	-23.68	23.4	43.4	-47.08	0-360	400	Flat
7	.49632	34.64	Pk	11.2	.2	-40	6.04	33.69	-	-27.65	0-360	400	90 degs
2	.49843	34.79	Pk	11.2	.2	-40	6.19	33.65	-	-27.46	0-360	400	0 degs
11	.53216	34.62	Pk	11.2	.2	-40	6.02	33.08	-	-27.06	0-360	400	Flat
8	13.5596	30.35	Pk	10.2	.8	-40	1.35	29.54	-	-28.19	0-360	400	90 degs
3	16.22833	22.52	Pk	9.9	.8	-40	-6.78	29.54	-	-36.32	0-360	400	0 degs
9	23.12992	34.95	Pk	9	1	-40	4.95	29.54	-	-24.59	0-360	400	90 degs
12	23.12992	29.62	Pk	9	1	-40	-.38	29.54	-	-29.92	0-360	400	Flat
4	24.04479	22.26	Pk	8.9	1	-40	-7.84	29.54	-	-37.38	0-360	400	0 degs
14	26.61234	24.75	Pk	8.4	1.1	-40	-5.75	29.54	-	-35.29	0-360	400	Flat
13	27.16042	25.56	Pk	8.3	1.1	-40	-5.04	29.54	-	-34.58	0-360	400	Flat
5	29.2389	20.91	Pk	7.9	1.1	-40	-10.09	29.54	-	-39.63	0-360	400	0 degs

Pk - Peak detector

HIGH GAIN ANTENNA SPURIOUS EMISSIONS BELOW 30 MHz (WORST-CASE CONFIGURATION-H FIELD)



ANTENNA- THREE ORIENTATIONS

Below 30MHz Data

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 (dB/m)	Cbl (dB)	Dist. Corr. Factor (dB)	Corrected Reading dB(uAmps/meter)	RSS-GEN Qp/Av Limit (dBuA/m)	RSS-GEN Pk Limit (dBuA/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Loop Angle
1	.15595	45.57	Pk	-40.3	.1	-80	-74.63	-27.76	-7.76	-46.87	0-360	400	0 degs
6	.15663	46.48	Pk	-40.3	.1	-80	-73.72	-27.79	-7.79	-45.93	0-360	400	90 degs
10	.16224	45.02	Pk	-40.3	.1	-80	-75.18	-28.1	-8.10	-47.08	0-360	400	Flat
7	.49632	34.64	Pk	-40.3	.2	-40	-45.46	-17.81	-	-27.65	0-360	400	90 degs
2	.49843	34.79	Pk	-40.3	.2	-40	-45.31	-17.85	-	-27.46	0-360	400	0 degs
11	.53216	34.62	Pk	-40.3	.2	-40	-45.48	-18.42	-	-27.06	0-360	400	Flat
8	13.5596	30.35	Pk	-41.3	.8	-40	-50.15	-21.96	-	-28.19	0-360	400	90 degs
3	16.22833	22.52	Pk	-41.6	.8	-40	-58.28	-21.96	-	-36.32	0-360	400	0 degs
9	23.12992	34.95	Pk	-42.5	1	-40	-46.55	-21.96	-	-24.59	0-360	400	90 degs
12	23.12992	29.62	Pk	-42.5	1	-40	-51.88	-21.96	-	-29.92	0-360	400	Flat
4	24.04479	22.26	Pk	-42.6	1	-40	-59.34	-21.96	-	-37.38	0-360	400	0 degs
14	26.61234	24.75	Pk	-43.1	1.1	-40	-57.25	-21.96	-	-35.29	0-360	400	Flat
13	27.16042	25.56	Pk	-43.2	1.1	-40	-56.54	-21.96	-	-34.58	0-360	400	Flat
5	29.2389	20.91	Pk	-43.6	1.1	-40	-61.59	-21.96	-	-39.63	0-360	400	0 degs

Pk - Peak detector

12. 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.

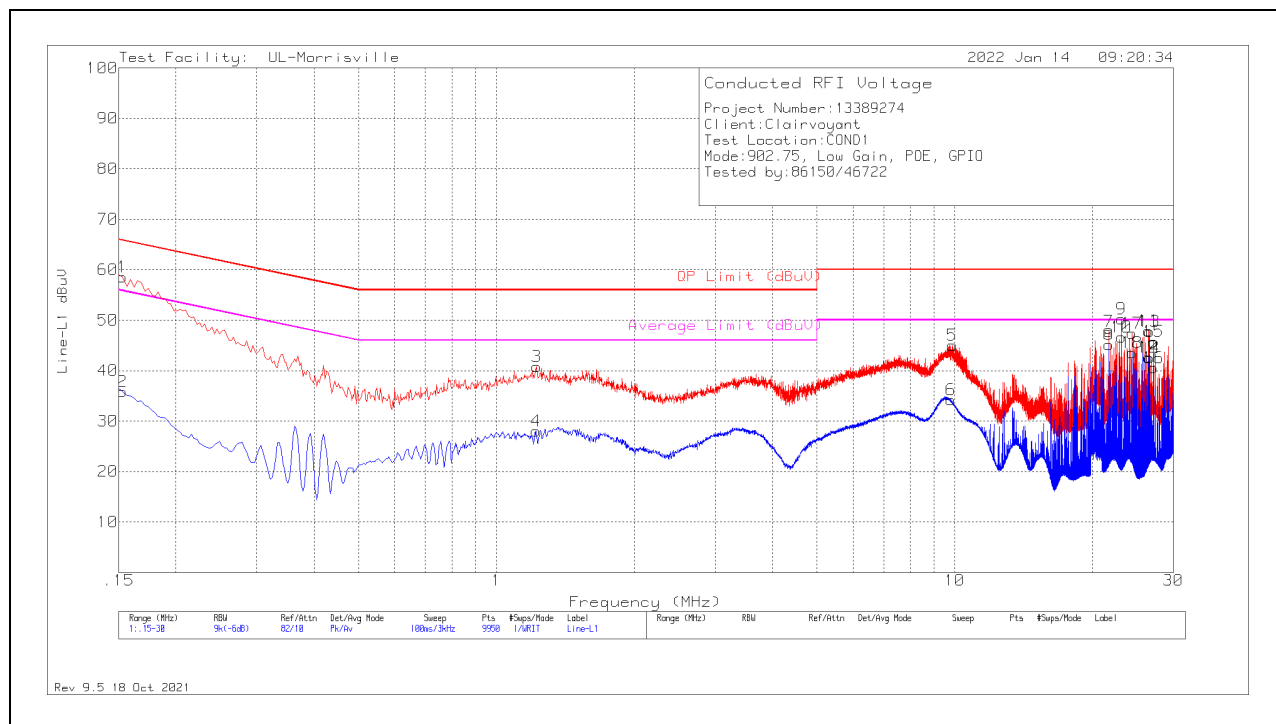
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

12.1.1. AC Power Line Norm- LOW GAIN ANTENNA

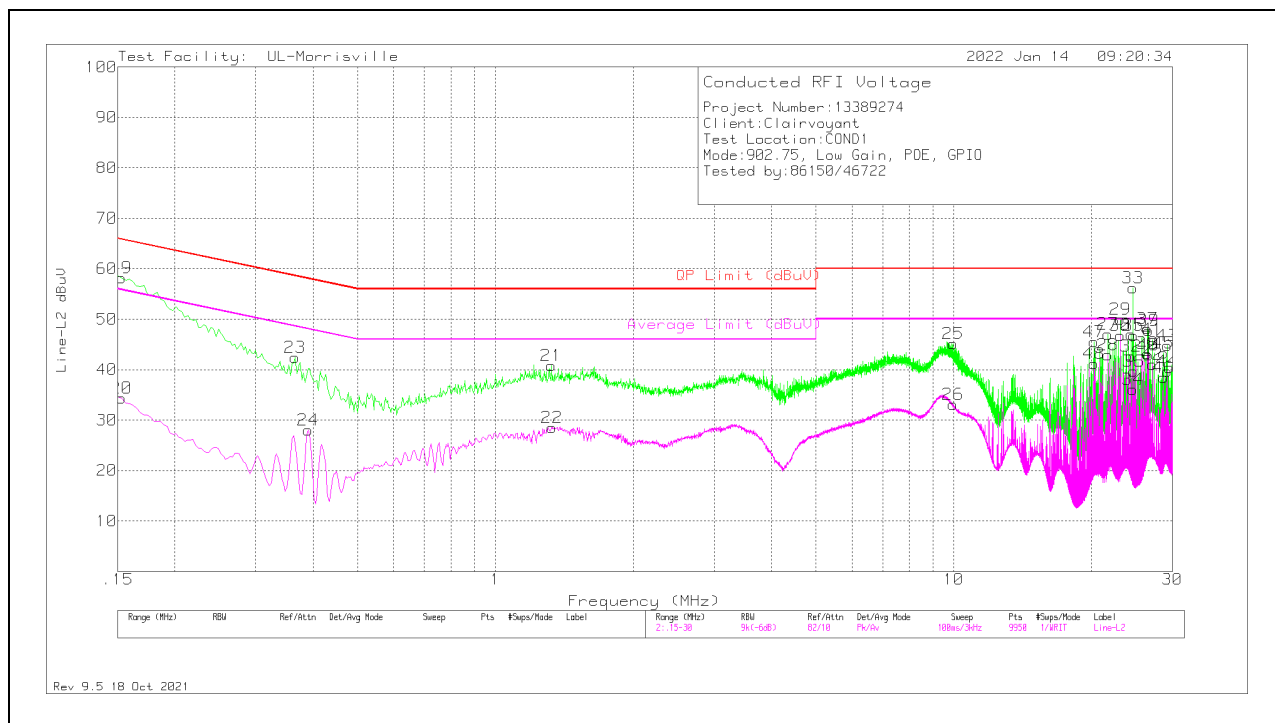
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.156	45.08	Pk	.2	9.8	55.08	79	-23.92	-	-
2	.156	21.96	Av	.2	9.8	31.96	-	-	66	-34.04
4	.402	22.41	Av	.1	9.8	32.31	-	-	66	-33.69
3	.405	30.62	Pk	.1	9.8	40.52	79	-38.48	-	-
5	7.176	27.93	Pk	.1	10	38.03	73	-34.97	-	-
6	7.182	17.32	Av	.1	10	27.42	-	-	60	-32.58
7	20.259	36.27	Pk	.2	10.2	46.67	73	-26.33	-	-
8	20.259	35.03	Av	.2	10.2	45.43	-	-	60	-14.57
10	21.66	34.76	Av	.2	10.2	45.16	-	-	60	-14.84
9	21.663	38.3	Pk	.2	10.2	48.7	73	-24.3	-	-
11	23.127	41.49	Pk	.2	10.2	51.89	73	-21.11	-	-
12	23.127	38.21	Av	.2	10.2	48.61	-	-	60	-11.39
13	26.487	37.61	Pk	.3	10.2	48.11	73	-24.89	-	-
14	26.487	35.81	Av	.3	10.2	46.31	-	-	60	-13.69
15	28.686	38.12	Pk	.3	10.2	48.62	73	-24.38	-	-
16	28.686	35.21	Av	.3	10.2	45.71	-	-	60	-14.29

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS

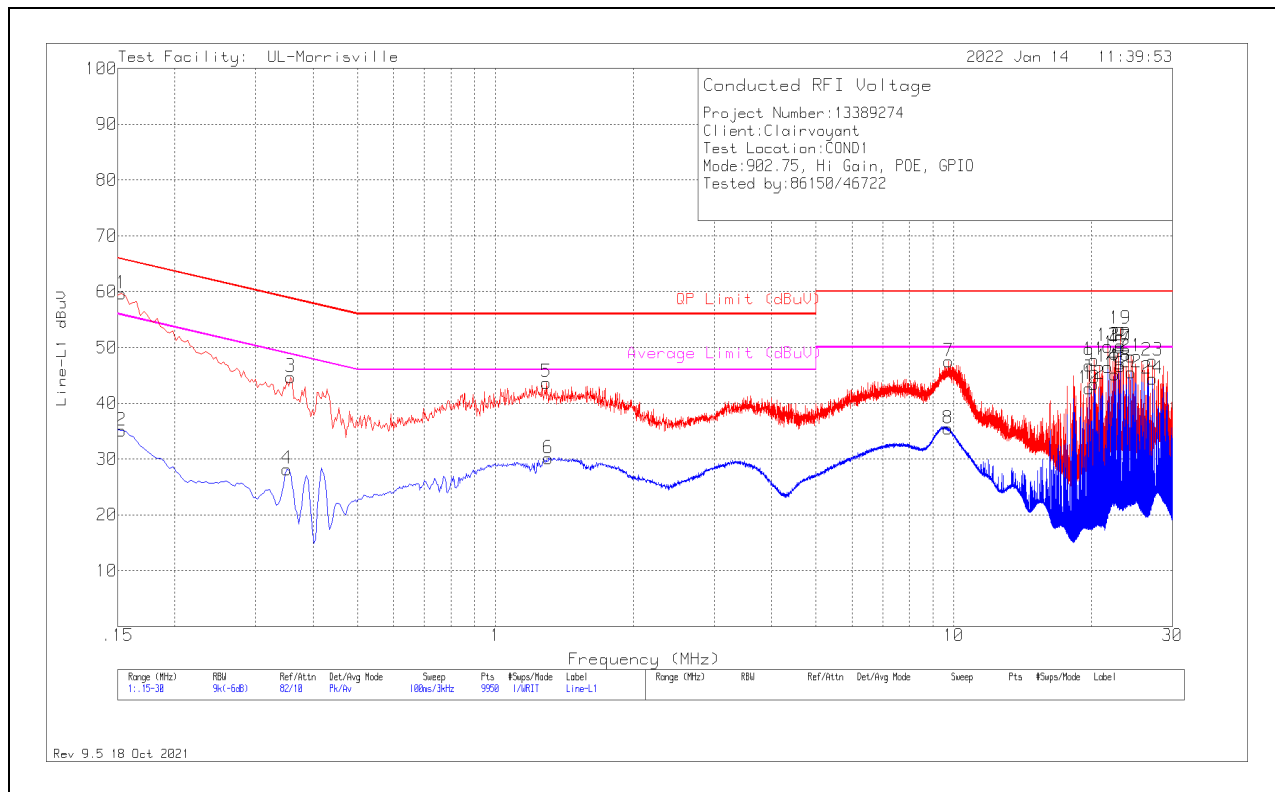


Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
17	.153	43.87	Pk	.2	9.8	53.87	79	-25.13	-	-
18	.159	21.16	Av	.2	9.8	31.16	-	-	66	-34.84
19	.399	28.34	Pk	.1	9.8	38.24	79	-40.76	-	-
20	.402	20.49	Av	.1	9.8	30.39	-	-	66	-35.61
21	7.146	28.12	Pk	.1	10	38.22	73	-34.78	-	-
22	7.155	17.46	Av	.1	10	27.56	-	-	60	-32.44
23	21.663	37.85	Pk	.2	10.2	48.25	73	-24.75	-	-
24	21.663	34.77	Av	.2	10.2	45.17	-	-	60	-14.83
26	22.758	19.58	Av	.2	10.2	29.98	-	-	60	-30.02
25	22.791	40.22	Pk	.2	10.2	50.62	73	-22.38	-	-
27	24.348	37.86	Pk	.2	10.2	48.26	73	-24.74	-	-
28	24.348	36.16	Av	.2	10.2	46.56	-	-	60	-13.44
29	28.686	37.95	Pk	.3	10.2	48.45	73	-24.55	-	-
30	28.686	35.71	Av	.3	10.2	46.21	-	-	60	-13.79
32	29.232	33.65	Av	.3	10.2	44.15	-	-	60	-15.85
31	29.235	36.51	Pk	.3	10.2	47.01	73	-25.99	-	-

Pk - Peak detector
Av - Average detection

12.1.2. AC Power Line Norm- HIGH GAIN ANTENNA

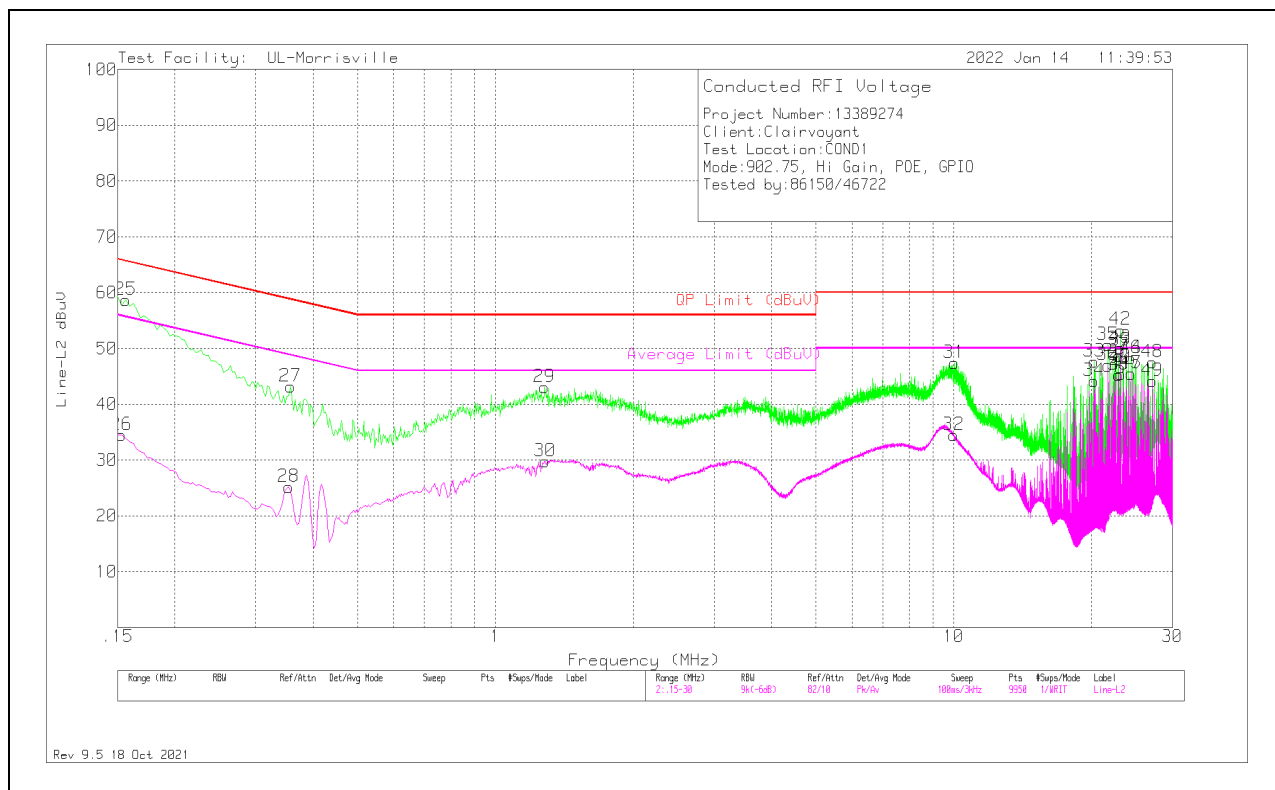
LINE 1 RESULTS



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
1	.156	45.08	Pk	.2	9.8	55.08	79	-23.92	-	-
2	.156	21.96	Av	.2	9.8	31.96	-	-	66	-34.04
4	.402	22.41	Av	.1	9.8	32.31	-	-	66	-33.69
3	.405	30.62	Pk	.1	9.8	40.52	79	-38.48	-	-
5	7.176	27.93	Pk	.1	10	38.03	73	-34.97	-	-
6	7.182	17.32	Av	.1	10	27.42	-	-	60	-32.58
7	20.259	36.27	Pk	.2	10.2	46.67	73	-26.33	-	-
8	20.259	35.03	Av	.2	10.2	45.43	-	-	60	-14.57
10	21.66	34.76	Av	.2	10.2	45.16	-	-	60	-14.84
9	21.663	38.3	Pk	.2	10.2	48.7	73	-24.3	-	-
11	23.127	41.49	Pk	.2	10.2	51.89	73	-21.11	-	-
12	23.127	38.21	Av	.2	10.2	48.61	-	-	60	-11.39
13	26.487	37.61	Pk	.3	10.2	48.11	73	-24.89	-	-
14	26.487	35.81	Av	.3	10.2	46.31	-	-	60	-13.69
15	28.686	38.12	Pk	.3	10.2	48.62	73	-24.38	-	-
16	28.686	35.21	Av	.3	10.2	45.71	-	-	60	-14.29

Pk - Peak detector
Av - Average detection

LINE 2 RESULTS



Range 2: Line-L2 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit (dBuV)	Margin (dB)	Average Limit (dBuV)	Margin (dB)
17	.153	43.87	Pk	.2	9.8	53.87	79	-25.13	-	-
18	.159	21.16	Av	.2	9.8	31.16	-	-	66	-34.84
19	.399	28.34	Pk	.1	9.8	38.24	79	-40.76	-	-
20	.402	20.49	Av	.1	9.8	30.39	-	-	66	-35.61
21	7.146	28.12	Pk	.1	10	38.22	73	-34.78	-	-
22	7.155	17.46	Av	.1	10	27.56	-	-	60	-32.44
23	21.663	37.85	Pk	.2	10.2	48.25	73	-24.75	-	-
24	21.663	34.77	Av	.2	10.2	45.17	-	-	60	-14.83
26	22.758	19.58	Av	.2	10.2	29.98	-	-	60	-30.02
25	22.791	40.22	Pk	.2	10.2	50.62	73	-22.38	-	-
27	24.348	37.86	Pk	.2	10.2	48.26	73	-24.74	-	-
28	24.348	36.16	Av	.2	10.2	46.56	-	-	60	-13.44
29	28.686	37.95	Pk	.3	10.2	48.45	73	-24.55	-	-
30	28.686	35.71	Av	.3	10.2	46.21	-	-	60	-13.79
32	29.232	33.65	Av	.3	10.2	44.15	-	-	60	-15.85
31	29.235	36.51	Pk	.3	10.2	47.01	73	-25.99	-	-

Pk - Peak detector
Av - Average detection

13. SETUP PHOTOS

Please refer to R13389274-EP1 for setup photos

END OF TEST REPORT