

July 20, 2023

Actineon, Inc.
2530 Zanker Road
San Jose, California 95131

Dear Michael Kelsey,

Enclosed is the RF Wireless test report for compliance testing of the Actineon, Inc., IOT EDGE HUB / Splunk SPLKEH201GL as tested to the requirements of the

FCC Part §2.1053, §22.917(a), §24.238(a), §27.53(a)(4), §27.53(c)(2), §27.53(f), §27.53(g), § 90.691
RSS-GEN Issue 5, April 2018 + Amendment 1 (March 2019) + Amendment 2 (February 2021)
RSS-130 Issue 2 February 2019
RSS-132 Issue 4, January 2023
RSS-133 Issue 6 January 2018
RSS-139 Issue 4 September 2022

Sincerely yours,



Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.



FCC Test Site(s) Reg #: US1123
IC Test Site(s) Reg. #: 2043C

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FCC/ ISED Test Report

Applicant name: Actineon, Inc.

Manufacturer name: Actineon, Inc.

Product: IOT EDGE HUB

Report: WIR125986-ACT_FCC_ISED_LTE CAT-M_Rev 1.0

Applicant Address:

**2530 Zanker Road
San Jose, California 95131**

Manufacturer Address:

**2530 Zanker Road
San Jose, California 95131**

Prepared By:
Eurofins Electrical and Electronic Testing NA, Inc.
3162 Belick St.
Santa Clara CA, 95054

FCC/ ISED Test Report

Applicant name: Actineon, Inc.

Product: IOT EDGE HUB

Standard

47 CFR Part 2, 22, 24, 27, 90

RSS-GEN Issue 5, April 2018 + Amendment 1 (March 2019) + Amendment 2 (February 2021)

RSS-130 Issue 2 February 2019

RSS-132 Issue 4, January 2023

RSS-133 Issue 6, January 2018

RSS-139 Issue 4 September 2022

Richard Dollente

Richard Dollente

Test Engineer, Wireless Laboratory

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of FCC and ISED Rules under normal use and maintenance.

Gary Chou

Gary Chou

Wireless Engineering Manager, Wireless Laboratory

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	July 15, 2023	Initial Issue.
1	August 15, 2023	Update EUT/ Test software information

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I. Executive Summary

A. Purpose of Test

An WIRELESS evaluation was performed to determine compliance of the Actineon, Inc., IOT EDGE HUB / Splunk SPLKEH201GL, with the requirements of 47 CFR FCC CFR Part 2, 22, 24, 27, 90 RSS-GEN Issue 5 April 2018 + Amendment 1 (March 2019) + Amendment 2 (February 2021), RSS-130 Issue 2 February 2019, RSS-132 Issue 4 January 31, 2023, RSS-133 Issue 6 January 2018, RSS-139 Issue 4 September 2022. All references are to the most current version of Title 47 of the Code of Federal Regulations in effect. In accordance with PVG-04 technical requirements.

B. Executive Summary

The following tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with 47 CFR FCC CFR Part 2, 22, 24, 27, RSS-Gen Issue 5 2018, RSS-130 Issue 2 February 2019, RSS-132 Issue 4 January 31 2023, RSS-133 Issue 6 January 2018, RSS-139 Issue 4 September 2022. All tests were conducted using measurement procedure.

FCC ISED Clause	Description	Compliance
§2.1053 §22.917(a) §24.238 §27.53(l)(4)(6) § 90.691	Radiated Spurious Emissions	Compliant
RSS-132§5.5 RSS-133§6.5 RSS-130§4.6 RSS-139§6.6	Radiated Spurious Emissions	Compliant

Note: For other test items please refer to

FCC ID report: 202007BG95M6

ISED ID Report: 10224A-2020BG95M6

Rationale:

Per KDB 996369 D04 “Modular Transmitter Integration Guide – Guidance for Host Product Manufacturers” only spot checks are reported in this filing.

Per ANSI C63.26: 2015 section 5.1.2.2, the results include worst case modulation only.

II. Equipment Information

A. Equipment Overview and Test Configuration

Model(s) Tested:	Splunk SPLKEH201GL			
Series Number:	ACT-076-4422-0135			
EUT Specifications:	Input Power: POE 48 Vdc/ 0.625A, Power adaptor: 15Vdc/ 2A			
	Type of Modulations:	QPSK, 16QAM, 8PSK, GMSK		
	Technology:	LTE CAT-M		
	Operating Frequency :	LTE CAT-M Band 2:	1850 MHz ~ 1910 MHz	
		LTE CAT-M Band 4:	1710 MHz ~ 1755 MHz	
		LTE CAT-M Band 5:	824 MHz ~ 849 MHz	
		LTE CAT-M Band 12:	699 MHz ~ 716 MHz	
		LTE CAT-M Band 13:	777 MHz ~ 787 MHz	
		LTE CAT-M Band 25:	1850 MHz ~ 1915 MHz	
		LTE CAT-M Band 26 :	814 MHz ~ 849 MHz	
		LTE CAT-M Band 66:	1710 MHz ~ 1780 MHz	
LTE CAT-M Band 85:	698 MHz ~ 716 MHz			
Product:	IOT EDGE HUB			
FCC ID:	2BBHWSPLKEH201GL			
ISED ID:	30709SPLKEH201GL			
Brand:	Actineon			
	Antenna Type:	Quectel/ YE0007AA		
	Antenna Manufacturer/ Model	Dipole Antenna		
	Antenna Gain:	680 MHz -960 MHz : 3.0 dBi 1710 MHz - 2170 MHz : 4.1 dBi 2170 MHz - 2690 MHz : 3.2 dBi 3300 MHz – 4000 MHz : 3.9 dBi		
	Antenna Port:	SMA		
Analysis:	The results obtained relate only to the item(s) tested.			
Environmental Test Conditions:	Temperature: 15-35° C			
	Relative Humidity: 30-60%			
	Richard Dollente			
Evaluated by:	April 20, 2023			
Issue Date(s):	August 15, 2023			

B. General Description of Applied Standards

References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

- FCC 47 CFR Part 2
- FCC 47 CFR Part 22(H)
- FCC 47 CFR Part 24(E)
- FCC 47 CFR Part 27
- FCC 47 CFR Part 90
- RSS-GEN Issue 5, April 2018 + Amendment 1 (March 2019) + Amendment 2 (February 2021)
- RSS-130 Issue 2, February 2019
- RSS-132 Issue 4, January 31, 2023
- RSS-133 Issue 6, January 2018
- ANSI/TIA/EIA-603-E 2016
- ANSI 63.26 2015

C. Test Site

All testing was performed at Eurofins Electrical and Electronic Testing NA, Inc., 3162 Belick St. Santa Clara, CA 95054. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Eurofins Electrical and Electronic Testing NA, Inc. has been accredited by the American Association for Laboratory Accreditation (A2LA) (Certificate #: 0591.02) in accordance with ISO/IEC 17025:2017.

Eurofins Electrical and Electronic Testing NA, Inc. is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

FCC Test Site(s) Reg #:US1123

IC Test Site(s) Reg. #: 2043C

D. Measurement Uncertainty

Test Method	Typical Expanded Uncertainty	K	Confidence Level
RF Frequencies	±4.52 Hz	2	95%
RF Power Conducted Emissions	±2.32 dB	2	95%
RF Power Conducted Spurious Emissions	±2.25 dB	2	95%
RF Power Radiated Emissions	±3.01 dB	2	95%

Uncertainty Calculations Summary

E. Modifications**a) Modifications to EUT**

No modifications were made to the EUT.

b) Modifications to Test Standard

No modifications were made to the test standard.

F. Disposition of EUT

The test sample including all support equipment (if any), submitted to the Electromagnetic Compatibility Lab for testing was returned to Actineon, Inc. upon completion of testing.

III. Electromagnetic Compatibility Criteria for Intentional Radiators

Radiated Emission Measurement

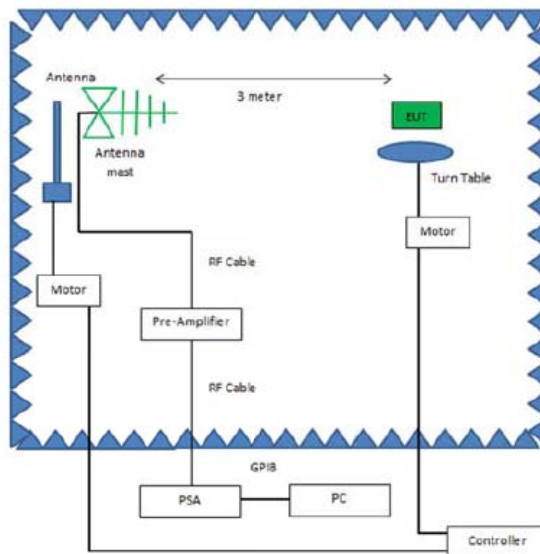
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

Test Procedures:

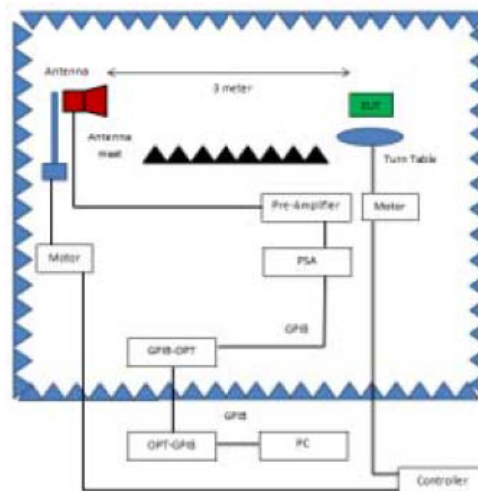
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}.$

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

Deviation from Test Standard
No deviation.



Radiated Emissions, Below 1GHz, Test Setup



Radiated Emissions, Above 1GHz, Test Setup

Test Engineer: Richard Dollente

Test Date(s): July 15, 2023

Note: The test data only shows worst cast result

Test Result:

LTE CAT-M Band 2 Bandwidth 10 MHz

Frequency Range	30 MHz ~ 1GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
41.45	V	-72.01	-13	-59.01
105.73	V	-55.71	-13	-42.71
201	V	-61.51	-13	-48.51
105.72	H	-64.75	-13	-51.75
201.02	H	-71.27	-13	-58.27
900.03	H	-67.45	-13	-54.45

LTE CAT-M Band 2 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3760	V	-58.40	-13	-45.4
5640	V	-55.96	-13	-42.96
3760	H	-58.72	-13	-45.72
5640	H	-55.99	-13	-42.99

LTE CAT-M Band 2 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3760.375	V	-58.05	-13	-45.05
5641	V	-56.00	-13	-43
3760.375	H	-56.64	-13	-43.64
5638.875	H	-56.47	-13	-43.47

LTE CAT-M Band 2 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3762.5	V	-46.98	-13	-33.98
5638.875	V	-55.69	-13	-42.69
3762.5	H	-46.96	-13	-33.96
5641	H	-55.99	-13	-42.99

LTE CAT-M Band 2 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3760.375	V	-56.17	-13	-43.17
5641	V	-56.66	-13	-43.66
3758.25	H	-57.51	-13	-44.51
5638.875	H	-56.26	-13	-43.26

LTE CAT-M Band 2 Bandwidth 15 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3762.5	V	-56.20	-13	-43.2
5634.625	V	-53.70	-13	-40.7
3764.625	H	-57.46	-13	-44.46
5636.75	H	-55.21	-13	-42.21

LTE CAT-M Band 2 Bandwidth 20 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3756.125	V	-56.56	-13	-43.56
5630.375	V	-54.26	-13	-41.26
3760.375	H	-57.36	-13	-44.36
5641	H	-56.91	-13	-43.91

LTE CAT-M Band 4 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3465	V	-56.50	-13	-43.5
5196.875	V	-57.37	-13	-44.37
3465	H	-51.17	-13	-38.17
5196.875	H	-58.59	-13	-45.59

LTE CAT-M Band 4 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3465	V	-47.52	-13	-34.52
5199	V	-57.49	-13	-44.49
3465	H	-56.09	-13	-43.09
5199	H	-57.73	-13	-44.73

LTE CAT-M Band 4 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3467.125	V	-52.72	-13	-39.72
5194.75	V	-57.49	-13	-44.49
3467.125	H	-49.41	-13	-36.41
5196.875	H	-58.24	-13	-45.24

LTE CAT-M Band 4 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3462.875	V	-56.54	-13	-43.54
5194.75	V	-56.62	-13	-43.62
3467.125	H	-58.69	-13	-45.69
5194.75	H	-55.09	-13	-42.09

LTE CAT-M Band 4 Bandwidth 15 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3458.625	V	-58.20	-13	-45.2
5192.625	V	-55.86	-13	-42.86
3460.75	H	-57.00	-13	-44
5192.625	H	-55.87	-13	-42.87

LTE CAT-M Band 4 Bandwidth 20 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3465	V	-57.10	-13	-44.1
5190.5	V	-55.19	-13	-42.19
3456.5	H	-56.78	-13	-43.78
5196.875	H	-55.64	-13	-42.64

LTE CAT-M Band 5 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1673.625	V	-52.37	-13	-39.37
2508.75	V	-52.06	-13	-39.06
1673.625	H	-59.47	-13	-46.47
2508.75	H	-57.04	-13	-44.04

LTE CAT-M Band 5 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1671.5	V	-59.79	-13	-46.79
2508.75	V	-58.02	-13	-45.02
1671.5	H	-60.00	-13	-47
2510.875	H	-58.37	-13	-45.37

LTE CAT-M Band 5 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1673.625	V	-60.76	-13	-47.76
2510.875	V	-58.70	-13	-45.7
1671.5	H	-60.73	-13	-47.73
2510.875	H	-56.72	-13	-43.72

LTE CAT-M Band 5 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1677.875	V	-60.58	-13	-47.58
2513	V	-56.22	-13	-43.22
1677.875	H	-58.90	-13	-45.9
2508.75	H	-56.05	-13	-43.05

LTE CAT-M Band 12 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1414.375	V	-59.34	-13	-46.34
2122	V	-59.45	-13	-46.45
1414.375	H	-61.16	-13	-48.16
2122	H	-59.48	-13	-46.48

LTE CAT-M Band 12 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1414.375	V	-61.47	-13	-48.47
2122	V	-60.01	-13	-47.01
1416.5	H	-60.24	-13	-47.24
2122	H	-59.36	-13	-46.36

LTE CAT-M Band 12 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1414.375	V	-61.19	-13	-48.19
2124.125	V	-58.72	-13	-45.72
1414.375	H	-59.56	-13	-46.56
2124.125	H	-58.55	-13	-45.55

LTE CAT-M Band 12 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1418.625	V	-59.32	-13	-46.32
2122	V	-58.40	-13	-45.4
1412.25	H	-59.76	-13	-46.76
2119.875	H	-56.64	-13	-43.64

LTE CAT-M Band 13 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1563.125	V	-62.04	-13	-49.04
2345.125	V	-58.35	-13	-45.35
1563.125	H	-59.94	-13	-46.94
2347.25	H	-58.60	-13	-45.6

LTE CAT-M Band 13 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1567.375	V	-61.32	-13	-48.32
2347.25	V	-59.10	-13	-46.1
1567.375	H	-61.17	-13	-48.17
2349.375	H	-57.44	-13	-44.44

LTE CAT-M Band 25 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3764.625	V	-51.95	-13	-38.95
5647.375	V	-56.94	-13	-43.94
3764.625	H	-59.57	-13	-46.57
5647.375	H	-57.70	-13	-44.7

LTE CAT-M Band 25 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3764.625	V	-58.07	-13	-45.07
5647.375	V	-56.90	-13	-43.9
3764.625	H	-56.12	-13	-43.12
5647.375	H	-56.07	-13	-43.07

LTE CAT-M Band 25 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3762.5	V	-57.19	-13	-44.19
5649.5	V	-56.34	-13	-43.34
3764.625	H	-57.53	-13	-44.53
5647.375	H	-56.28	-13	-43.28

LTE CAT-M Band 25 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3768.875	V	-56.58	-13	-43.58
5647.375	V	-55.64	-13	-42.64
3768.875	H	-56.56	-13	-43.56
5636.75	H	-54.80	-13	-41.8

LTE CAT-M Band 25 Bandwidth 15 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3771	V	-58.01	-13	-45.01
5651.625	V	-55.66	-13	-42.66
3762.5	H	-56.73	-13	-43.73
5649.5	H	-54.68	-13	-41.68

LTE CAT-M Band 25 Bandwidth 20 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3762.5	V	-57.12	-13	-44.12
5645.25	V	-54.44	-13	-41.44
3760.375	H	-54.25	-13	-41.25
5645.25	H	-54.42	-13	-41.42

LTE CAT-M Band 26 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1663	V	-60.23	-13	-47.23
2493.875	V	-60.00	-13	-47
1663	H	-60.72	-13	-47.72
2496	H	-58.99	-13	-45.99

LTE CAT-M Band 26 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1663	V	-59.42	-13	-46.42
2496	V	-57.77	-13	-44.77
1663	H	-60.88	-13	-47.88
2496	H	-57.99	-13	-44.99

LTE CAT-M Band 26 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1660.875	V	-60.43	-13	-47.43
2496	V	-57.88	-13	-44.88
1660.875	H	-60.44	-13	-47.44
2496	H	-57.06	-13	-44.06

LTE CAT-M Band 26 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1665.125	V	-60.08	-13	-47.08
2493.875	V	-57.17	-13	-44.17
1660.875	H	-59.66	-13	-46.66
2493.875	H	-57.28	-13	-44.28

LTE CAT-M Band 26 Bandwidth 15 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1667.25	V	-60.73	-13	-47.73
2487.5	V	-55.51	-13	-42.51
1667.25	H	-59.57	-13	-46.57
2487.5	H	-55.50	-13	-42.5

LTE CAT-M Band 66 Bandwidth 1.4 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3490.5	V	-59.71	-13	-46.71
5235.125	V	-59.39	-13	-46.39
3490.5	H	-57.49	-13	-44.49
5235.125	H	-59.45	-13	-46.45

LTE CAT-M Band 66 Bandwidth 3 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3490.5	V	-58.33	-13	-45.33
5235.125	V	-55.31	-13	-42.31
3490.5	H	-57.89	-13	-44.89
5235.125	H	-55.27	-13	-42.27

LTE CAT-M Band 66 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3488.375	V	-56.60	-13	-43.6
5237.25	V	-54.73	-13	-41.73
3488.375	H	-56.55	-13	-43.55
5237.25	H	-54.72	-13	-41.72

LTE CAT-M Band 66 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3490.5	V	-56.96	-13	-43.96
5230.875	V	-55.35	-13	-42.35
3490.5	H	-55.63	-13	-42.63
5233	H	-54.64	-13	-41.64

LTE CAT-M Band 66 Bandwidth 15 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3496.875	V	-54.95	-13	-41.95
5241.5	V	-54.71	-13	-41.71
3484.125	H	-55.01	-13	-42.01
5233	H	-53.75	-13	-40.75

LTE CAT-M Band 66 Bandwidth 20 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3492.625	V	-56.04	-13	-43.04
5233	V	-53.87	-13	-40.87
3496.875	H	-55.05	-13	-42.05
5239.375	H	-54.50	-13	-41.5

LTE CAT-M Band 85 Bandwidth 5 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1416.5	V	-61.49	-13	-47.43
2119.875	V	-59.67	-13	-44.88
1416.5	H	-59.58	-13	-47.44
2119.875	H	-59.70	-13	-44.06

LTE CAT-M Band 85 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel
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SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1410.125	V	-60.36	-13	-47.08
2126.25	V	-58.52	-13	-44.17
1416.5	H	-59.43	-13	-46.66
2124.125	H	-58.69	-13	-44.28

Test Setup Photo

(Please refer to the attached file (Test Setup Photo))

IV. Test Equipment List

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2017.

Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1S2003	EMI Test Receiver	Keysight	N9030B	11/01/2022	11/01/2023
1S2399	Turntable Controller	SUNOL SCIENCE	SC99V	Not Required	Not Required
1S2486	5 Meter Chamber Control Room	Panashield	5 Meter Control Room	Not Required	Not Required
1S2435	Horn Antenna	ETS-LINDGREN	3117	04/06/2023	04/06/2025
1S3826	Horn Antenna	ETS-LINDGREN	3117	04/06/2023	04/06/2025
1S4802	Preamplifier	EMC Instrument	EMC118A45SE	Note 1	Note 1
1S2668	Preamplifier	Sonoma Instrument	310N	Note 1	Note 1
1S2756	EXG Vector Signal Generator	Keysight	N5172B	August 27, 2022	August 27, 2024
1S2600	Antenna	TESEQ GmbH	D-12623	April 19, 2023	April 19, 2025
Note 1: Verified by calibrated instrumentation at the time of testing					

Table 1. Radiated Emission and Bandage Measurement, Test Equipment List

END OF REPORT