December 04, 2022

Trackonomy Systems
Saurabh Sanghai

1828 Bering Drive
San Jose, CA 95112
Dear Mr. Malmivaara,

Enclosed is the RF Wireless test report for compliance testing of the, GBP wireless communication device 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, January 2013
RSS-133 Issue 6 January 2018
RSS-139 Issue 3 July 2015
RSS-199 Issue 3 December 2016

Thank you for using the services of Eurofins Electrical and Electronic Testing NA, Inc. Please contact me if you have any questions regarding these results or if Eurofins E&E can be of further service to you.

Sincerely yours,

Gary Chou

Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

ACCREDITED
TESTINGCERT #0591.02

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

FCC/ ISED Test Report

Applicant name: Trackonomy Systems

Manufacturer name: Trackonomy Systems

Product: GBP wireless communication device

Report: WIR113706-FCC _ISED_ TRK _LTE_WCDMA_GSM

Applicant Address:

1828 Bering Drive
San Jose, CA 95112

Manufacturer Address:

1828 Bering Drive
San Jose, CA 95112

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

Applicant name: Trackonomy Systems

Product: GBP wireless communication device

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, January 2013
RSS-133 Issue 6, January 2018
RSS-139 Issue 3 July 2015
RSS-199 Issue 3 December 2016

Christopher Martin
Christopher Martin
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
∅	December 29, 2022	Initial Issue.

Table of Contents

I. Executive Summary

A. Purpose of Test

An WIRELESS evaluation was performed to determine compliance of the GBP wireless communication device, 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 3, January 2013, RSS-133 Issue 6 January 2018, RSS-139 Issue 6 July 2015. 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 3, January 2013, RSS-133 Issue 6 January 2018, RSS-139 Issue 6 July 2015, RSS-199 Issue 3 December 2016. 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 RSS-199§4.5	Radiated Spurious Emissions	Compliant

Note: For other test items please refer to
FCC ID report: XMR201903EG25G
ISED ID Report: 10224A-201903EG25G

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. Overview

Eurofins Electrical and Electronic Testing NA, Inc. was contracted by Geotab, Inc to perform testing on the Trackonomy Systems, Inc, GBP wireless communication device.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of Trackonomy Systems, Inc, GBP wireless communication device.
The results obtained relate only to the item(s) tested.
EUT Summary Table

Model(s) Tested:	GBP-2002	
EUT Specifications:	Input Power: Voltage: 120 Vac/ 60mHz	
	Type of Modulations:	QPSK, 16QAM, 8PSK, GMSK
	Technology:	GSM/ WCDMA/ LTE
	Operating Frequency :	GSM Band 850: 824.2 MHz ~ 824.8 MHz GSM Band 1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band 2: 1850 MHz ~ 1910 MHz WCDMA Band 4: 1710 MHz ~ 1755 MHz WCDMA Band 5: 824 MHz ~ 849 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26 : 814 MHz ~ 849 MHz LTE Band 41: 2426 MHz ~ 2690 MHz
	Product:	GBP wireless communication device
	Brand:	Trackonomy Systems
	Hardware Version	GBP-2002
	Software Version	Functional Firmware v2
	Antenna Type:	Dipole Antenna
	Antenna Manufacturer/ Model	N/A
	Antenna Gain:	Cell low band: 2.7 dBi (peak) Cell high band: 2.8 dBi (peak) ISM: 2.7 dBi (peak) BLE: 1.5 dBi (peak)
	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%
	Barometric Pressure: 860-1060 mbar
Evaluated by:	Christopher Martin
Date(s):	November 04, 2022

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 3, January 2013**
- **RSS-133 Issue 6, January 2018**
- **RSS-139 Issue 3 July 2015**
- **RSS-199 Issue 3 December 2016**
- **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.

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 Trackonomy Systems 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 log10(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.

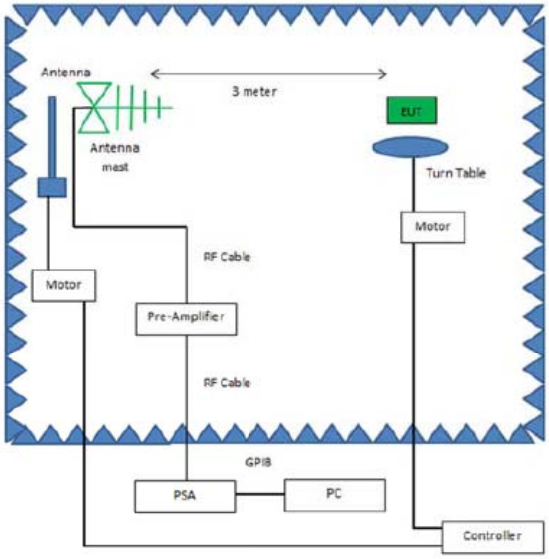
b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

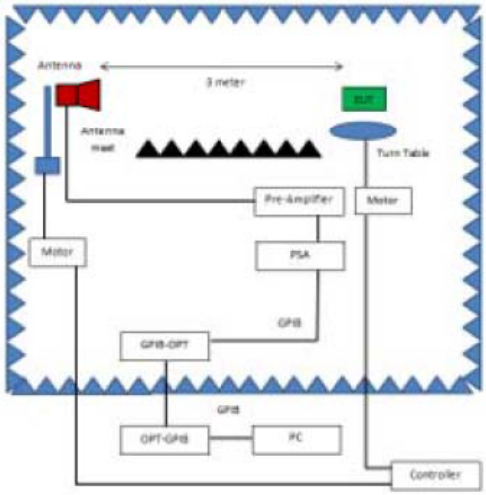
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

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: Christopher Martin

Test Date(s): December 04, 2022
Note: The test data only shows worst cast result

Test Result:

LTE Band 2 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.620315	V	-52.68	-13	-39.68
6817.482603	V	-51.95	-13	-38.95
9258.210231	V	-44.15	-13	-31.15
1209.62	H	-53.52	-13	-40.52
6817.483	H	-51.69	-13	-38.69
9258.21	H	-49.22	-13	-36.22

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Middle Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
7517.8	V	-42.81	-13	-29.81
9401.4	V	-44.86	-13	-31.86
7507.6	H	-44.01	-13	-31.01
9386.1	H	-46.67	-13	-33.67

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3795.629	V	-52.70	-13	-39.7
7599.927	V	-51.59	-13	-38.59
13479.67	V	-49.61	-13	-36.61
3795.629	H	-51.67	-13	-38.67
7743.133	H	-52.05	-13	-39.05
16632.28	H	-48.71	-13	-35.71

LTE Band 4 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3422.049	V	-49.35	-13	-36.35
8560.859	V	-50.66	-13	-37.66
13402.88	V	-49.65	-13	-36.65
3422.049	H	-48.79	-13	-35.79
8554.633	H	-49.99	-13	-36.99
13357.22	H	-49.95	-13	-36.95

LTE Band 4 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
5047.7	V	-51.82	-13	-38.82
6917.7	V	-49.00	-13	-36
8646.6	V	-48.92	-13	-35.92
3470.1	H	-52.37	-13	-39.37
6914.3	H	-48.97	-13	-35.97
8646.6	H	-46.71	-13	-33.71

LTE Band 4 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3498.84	V	-50.02	-13	-37.02
9262.361	V	-52.83	-13	-39.83
11759.13	V	-50.85	-13	-37.85
3494.689	H	-50.45	-13	-37.45
9370.284	H	-51.95	-13	-38.95
12740.81	H	-50.75	-13	-37.75

LTE Band 5 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.62	V	-54.93	-13	-41.93
5887.682	V	-51.15	-13	-38.15
12701.38	V	-50.15	-13	-37.15
1209.62	H	-52.14	-13	-39.14
1651.691	H	-53.41	-13	-40.41
12730.44	H	-48.19	-13	-35.19

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3114.8	V	-52.94	-13	-39.94
4835.2	V	-51.14	-13	-38.14
8332.1	V	-50.28	-13	-37.28
1736.1	H	-53.71	-13	-40.71
2509.6	H	-50.22	-13	-37.22
6941.5	H	-49.88	-13	-36.88

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1682.823	V	-54.43	-13	-41.43
4638.262	V	-52.60	-13	-39.6
6836.162	V	-51.51	-13	-38.51
1680.747	H	-52.94	-13	-39.94
6759.37	H	-51.91	-13	-38.91
12720.06	H	-48.69	-13	-35.69

LTE Band 12 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1400.562	V	-30.29	-13	-17.29
1408.863	H	-24.81	-13	-11.81
2099.988	H	-34.83	-13	-21.83
2816.018	H	-45.64	-13	-32.64

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
4906.6	V	-51.59	-13	-38.59
9914.8	V	-47.76	-13	-34.76
16169.1	V	-43.19	-13	-30.19
3738.7	H	-52.49	-13	-39.49
7888.4	H	-49.44	-13	-36.44
10635.6	H	-48.07	-13	-35.07

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1423.392	V	-20.30	-13	-7.3
2135.27	V	-34.58	-13	-21.58
2847.149	V	-47.57	-13	-34.57
1423.392	H	-13.20	-13	-0.2
2135.27	H	-22.67	-13	-9.67
2845.074	H	-38.85	-13	-25.85
3556.953	H	-48.17	-13	-35.17

LTE Band 13 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.62	V	-53.30	-13	-40.3
6819.558	V	-52.19	-13	-39.19
17377.37	V	-48.76	-13	-35.76
1556.22	H	-50.89	-13	-37.89
7687.096	H	-51.58	-13	-38.58
13444.39	H	-49.31	-13	-36.31

LTE Band 13 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
2334.5	V	-64.40	-13	-51.4
6069.4	V	-62.53	-13	-49.53
13336.9	V	-52.43	-13	-39.43
2334.5	H	-57.31	-13	-44.31
5790.6	H	-64.55	-13	-51.55
11410.8	H	-53.47	-13	-40.47

LTE Band 13 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
2558.662	V	-53.16	-13	-40.16
5862.776	V	-51.16	-13	-38.16
6728.238	V	-52.24	-13	-39.24
1568.673	H	-54.44	-13	-41.44
2467.342	H	-52.88	-13	-39.88
4152.607	H	-52.99	-13	-39.99

LTE Band 25 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3714.687	V	-52.54	-13	-39.54
5570.138	V	-46.31	-13	-33.31
9281.04	V	-47.89	-13	-34.89
3712.611	H	-52.79	-13	-39.79
5570.138	H	-51.23	-13	-38.23
9227.079	H	-51.62	-13	-38.62

LTE Band 25 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
2484.1	V	-35.92	-13	-22.92
5729.4	V	-49.10	-13	-36.1
11796.7	V	-46.94	-13	-33.94
2484.1	H	-38.73	-13	-25.73
10771.6	H	-47.47	-13	-34.47
15851.2	H	-43.33	-13	-30.33

LTE Band 25 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3812.233	V	-51.74	-13	-38.74
7626.908	V	-50.20	-13	-37.2
9532.169	V	-51.38	-13	-38.38
3812.233	H	-51.65	-13	-38.65
7624.832	H	-50.39	-13	-37.39
12593.46	H	-49.03	-13	-36.03

LTE Band 26 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.62	V	-54.87	-13	-41.87
1639.238	V	-56.82	-13	-43.82
5624.1	V	-53.59	-13	-40.59
1209.62	H	-53.48	-13	-40.48
1633.012	H	-55.10	-13	-42.1
3096.203	H	-53.85	-13	-40.85

LTE Band 26 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
2484.1	V	-35.92	-13	-22.92
5729.4	V	-49.10	-13	-36.1
11796.7	V	-46.94	-13	-33.94
2484.1	H	-38.73	-13	-25.73
10771.6	H	-47.47	-13	-34.47
15851.2	H	-43.33	-13	-30.33

LTE Band 26 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1437.92	V	-55.77	-13	-42.77
3191.674	V	-53.53	-13	-40.53
8388.597	V	-52.02	-13	-39.02
1674.521	H	-55.12	-13	-42.12
6049.567	H	-52.47	-13	-39.47
9353.681	H	-51.90	-13	-38.9

LTE Band 41 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
6819.558	V	-52.42	-13	-39.42
10026.13	V	-48.68	-13	-35.68
13500.43	V	-50.81	-13	-37.81
6971.066	H	-52.95	-13	-39.95
9193.871	H	-52.64	-13	-39.64
12744.96	H	-51.34	-13	-38.34

LTE Band 41 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
5178.6	V	-63.38	-13	-50.38
7614.7	V	-61.80	-13	-48.8
10358.5	V	-49.05	-13	-36.05
5178.6	H	-62.58	-13	-49.58
7675.9	H	-61.73	-13	-48.73
10358.5	H	-43.96	-13	-30.96

LTE Band 41 Bandwidth 10 MHz

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
5352.216	V	-47.67	-13	-34.67
8666.707	V	-52.42	-13	-39.42
12572.7	V	-51.58	-13	-38.58
8662.556	H	-52.13	-13	-39.13
12724.21	H	-51.28	-13	-38.28
16034.55	H	-49.43	-13	-36.43

GSM 850

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.37	V	-54.33	-13	-41.33
5887.342	V	-51.45	-13	-38.45
12701.25	V	-50.27	-13	-37.27
1209.367	H	-52.38	-13	-39.38
1651.169	H	-53.47	-13	-40.47
12730.254	H	-48.39	-13	-35.39

GSM 850

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3114.53	V	-52.39	-13	-39.39
4835.26	V	-51.26	-13	-38.26
8332.176	V	-50.52	-13	-37.52
1736.37	H	-53.44	-13	-40.44
2509.73	H	-50.37	-13	-37.37
6941.472	H	-49.82	-13	-36.82

GSM 850

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1682.183	V	-54.18	-13	-41.18
4638.426	V	-52.46	-13	-39.46
6836.649	V	-51.19	-13	-38.19
1680.37	H	-52.34	-13	-39.34
6759.253	H	-51.25	-13	-38.25
12720.44	H	-48.18	-13	-35.18

GSM 1900

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.431	V	-52.53	-13	-39.53
6817.265	V	-51.27	-13	-38.27
9258.372	V	-44.18	-13	-31.18
1209.418	H	-53.48	-13	-40.48
6817.254	H	-51.27	-13	-38.27
9258.361	H	-49.36	-13	-36.36

GSM 1900

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
7517.418	V	-42.52	-13	-29.52
9401.254	V	-44.46	-13	-31.46
7507.361	H	-44.37	-13	-31.37
9386.152	H	-46.28	-13	-33.28

GSM 1900

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3795.187	V	-52.19	-13	-39.19
7599.362	V	-51.34	-13	-38.34
13479.245	V	-49.48	-13	-36.48
3795.417	H	-51.53	-13	-38.53
7743.362	H	-52.25	-13	-39.25
16632.561	H	-48.27	-13	-35.27

WCDMA Band 2

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.413	V	-52.42	-13	-39.42
6817.257	V	-51.57	-13	-38.57
9258.541	V	-44.29	-13	-31.29
1209.272	H	-53.33	-13	-40.33
6817.731	H	-51.61	-13	-38.61
9258.174	H	-49.18	-13	-36.18

WCDMA Band 2

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
7517.391	V	-42.35	-13	-29.35
9401.433	V	-44.41	-13	-31.41
7507.257	H	-44.53	-13	-31.53
9386.341	H	-46.28	-13	-33.28

WCDMA Band 2

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3795.763	V	-52.37	-13	-39.37
7599.372	V	-51.19	-13	-38.19
13479.165	V	-49.43	-13	-36.43
3795.243	H	-51.81	-13	-38.81
7743.179	H	-52.29	-13	-39.29
16632.514	H	-48.42	-13	-35.42

WCDMA Band 4

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3422.156	V	-49.19	-13	-36.19
8560.241	V	-50.25	-13	-37.25
13402.372	V	-49.43	-13	-36.43
3422.198	H	-48.29	-13	-35.29
8554.277	H	-49.18	-13	-36.18
13357.342	H	-49.42	-13	-36.42

WCDMA Band 4

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
5047.278	V	-51.18	-13	-38.18
6917.532	V	-49.54	-13	-36.54
8646.273	V	-48.19	-13	-35.19
3470.231	H	-52.24	-13	-39.24
6914.766	H	-48.25	-13	-35.25
8646.19	H	-46.36	-13	-33.36

WCDMA Band 4

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3498.176	V	-50.43	-13	-37.43
9262.187	V	-52.27	-13	-39.27
11759.251	V	-50.18	-13	-37.18
3494.173	H	-50.39	-13	-37.39
9370.175	H	-51.42	-13	-38.42
12740.377	H	-50.18	-13	-37.18

WCDMA Band 5

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Low Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1209.34	V	-54.43	-13	-41.43
5887.432	V	-51.27	-13	-38.27
12701.264	V	-50.42	-13	-37.42
1209.399	H	-52.56	-13	-39.56
1651.168	H	-53.38	-13	-40.38
12730.25	H	-48.43	-13	-35.43

WCDMA Band 5

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	Mid Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
3114.632	V	-52.53	-13	-39.53
4835.24	V	-51.18	-13	-38.18
8332.372	V	-50.42	-13	-37.42
1736.233	H	-53.25	-13	-40.25
2509.23	H	-50.43	-13	-37.43
6941.63	H	-49.41	-13	-36.41

WCDMA Band 5

Frequency Range	1GHz ~ 26.5GHz	Operating Channel	High Channel

SPURIOUS EMISSION LEVEL				
Frequency (MHz)	Antenna Polarization	Level (dBm)	Limit (dBm)	Margin (dB)
1682.187	V	-54.36	-13	-41.36
4638.245	V	-52.27	-13	-39.27
6836.264	V	-51.37	-13	-38.37
1680.385	H	-52.42	-13	-39.42
6759.243	H	-51.19	-13	-38.19
12720.267	H	-48.25	-13	-35.25

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	November 01, 2022	November 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	March 09, 2021	March 09, 2023
1S3826	Horn Antenna	ETS-LINDGREN	3117	March 09, 2021	March 09, 2023
N/A	Preamplifier	EMC Instrument	EMC118A45SE	Note 1	Note 1
1S2668	Preamplifier	Sonoma Instrument	310N	Note 1	Note 1
N/A	EXG Vector Signal Generator	Keysight	N5172B	August 22, 2022	August 22, 2024
1S2600	Antenna	TESEQ GmbH	D-12623	May 11, 2021	May 11, 2023
Note 1: Verified by calibrated instrumentation at the time of testing					

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

END OF REPORT

