

4/28/2026

Nexxiot Inc
6175 Main St, Ste 250
Frisco, TX 75034

Dear Kenneth Mannka,

Enclosed is the EMC test report for testing of the Nexxiot Inc, GHTLV tested to the requirements of FCC Part 2.1091 and RSS-102 Issue 6

Thank you for using the services of Eurofins E&E North America. If you have any questions regarding these results or if MET can be of further service to you, please do feel free to contact me.

Sincerely,



Nancy LaBrecque
Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: WIRA138975-FCC-IC-MPE-R2



Certificates and reports shall not be reproduced except in full, without the written permission of Eurofins E&E North America. While use of the A2LA logo in this report reflects MET accreditation under these programs, the report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the Federal Government. This letter of transmittal is not a part of the attached report.

Eurofins MET Laboratories Inc. (Eurofins E&E North America) is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

**RF Exposure Criteria
Test Report
Using Maximum Permissible Exposure (MPE) Calculations**

for the

Nexxiot Inc
GHTLV

Tested under

FCC Part 2.1091 and RSS-102 Issue 6

Report: WIRA138975-FCC-IC-MPE-R2

4/28/2026



Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab



Nancy LaBrecque
Documentation Department

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 the FCC Rules Part 15.247 under normal use and maintenance.



Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
0	1/16/2026	Initial Issue.
1	2/12/2026	TCB Reviewer Comments
2	4/28/2026	TCB Reviewer Comments

List of Terms and Abbreviations

AC	Alternating Current
ACF	Antenna Correction Factor
Cal	Calibration
<i>d</i>	Measurement Distance
dB	Decibels
dBμA	Decibels above one microamp
dBμV	Decibels above one microvolt
dBμA/m	Decibels above one microamp per meter
dBμV/m	Decibels above one microvolt per meter
DC	Direct Current
E	Electric Field
DSL	Digital Subscriber Line
ESD	Electrostatic Discharge
EUT	Equipment Under Test
<i>f</i>	Frequency
CISPR	Comite International Special des Perturbations Radioelectriques (International Special Committee on Radio Interference)
GRP	Ground Reference Plane
H	Magnetic Field
HCP	Horizontal Coupling Plane
Hz	Hertz
IEC	International Electrotechnical Commission
kHz	kiloHertz
kPa	kiloPascal
kV	kilovolt
LISN	Line Impedance Stabilization Network
MHz	MegaHertz
μH	microHenry
μF	microFarad
μs	microseconds
PRF	Pulse Repetition Frequency
RF	Radio Frequency
RMS	Root-Mean-Square
V/m	Volts per meter
VCP	Vertical Coupling Plane

1.0 Requirements Summary

Page Number	Test Name	Result
9	IEC62311: 2019 MPE Limits (For General Public Exposure)	Compliant
9	RSS-102 Issue 6 MPE Limits (For General Public Exposure)	Compliant

Table 1. Summary of Test Results

2.0 Equipment Configuration

2.1 Overview

Eurofins MET Labs was contracted by Nexxiot Inc to perform testing on the GHTLV, under Nexxiot Inc's purchase order number CPO001598.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the Nexxiot Inc GHTLV.

The results obtained relate only to the item(s) tested.

Product Name	Globehopper TLV		
Model(s) Covered:	GHTLV		
FCCID:	2AXRX-GHTLV		
ICID:	26682-GHTLV		
EUT Specifications:	Primary Power: 3.6V Battery		
	EUT Frequency Ranges:	BLE:	2402 – 2480MHz
		802.15.4:	2405 – 2480MHz
		Cellular:	
		GSM850:	824 – 849MHz
		GSM1900:	1850 – 1910MHz
		LTE Band 2:	1850 – 1910MHz
		LTE Band 4:	1710 – 1755MHz
	Maximum Conducted Output Power:	LTE Band 5:	824 – 849MHz
		LTE Band 12:	699 – 716MHz
		LTE Band 13:	777 – 787MHz
		BLE:	19.5dBm
		802.15.4:	19.5dBm
		Cellular:	
		GSM850:	33.5dBm
		GSM1900:	30.5dBm
	Antenna Gain ¹ :	LTE Band 2:	24.5dBm
		LTE Band 4:	24.5dBm
		LTE Band 5:	24.5dBm
		LTE Band 12:	24.5dBm
		LTE Band 13:	24.5dBm
		BLE:	3.2dBi
		802.15.4:	3.2dBi
		Cellular:	
		GSM850:	1.1dBi
		GSM1900:	2.4dBi
		LTE Band 2:	2.4dBi
		LTE Band 4:	2.4dBi
		LTE Band 5:	1.1dBi
		LTE Band 12:	1.1dBi
		LTE Band 13:	1.1dBi
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		
Type of Filing:	Original		
Evaluated by:	Bryan Taylor		

Table 2. EUT Summary Table
¹ The antenna gain information was provided by Nexxiot Inc at the time of testing.

2.2 Test Site

All testing was performed at Eurofins E&E North America, Austin, TX. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

2.3 References

IEC62311 Edition 2.0 (2019-04)	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)
RSS-102: Issue 6	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

Table 3. References

2.4 Description of Test Sample

The Globehopper TLV is a Solar/Battery Powered Gateway intended for tracking railroad assets.

2.5 Modifications

2.5.1 Modifications to EUT

No modifications were made to the EUT.

2.5.2 Modifications to Test Standard

No modifications were made to the test standard.

3.0 Maximum Permissible Exposure Results

3.1 RSS-102 RF Exposure Limits

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10 ²¹	83	90	-	Instantaneous*
0.1-10	-	0.73/ f	-	6**
1.1-10	87/ f ^{0.5}	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ f ^{0.25}	0.1540/ f ^{0.25}	8.944/ f ^{0.5}	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f ^{0.3417}	0.008335 f ^{0.3417}	0.02619 f ^{0.6834}	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ f ^{1.2}
150000-300000	0.158 f ^{0.5}	4.21 x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616000/f ^{1.2}
Note: f is frequency in MHz. * Based on nerve stimulation (NS). ** Based on specific absorption rate (SAR).				

3.2 FCC Exposure Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

Test Procedure:

An MPE evaluation for was performed in order to show that the device was compliant with the general population exposure limits. The maximum power density was calculated for each transmitter band at a separation distance of 20cm using the maximum declared output power including tune up tolerance.

For each transmitter the maximum RF exposure at a 20 cm distance using the formula:

$$ConductedPower_{mW} = 10^{ConductedPower(dBm)/10}$$

$$PowerDensity = \frac{ConductedPower_{mW} \times Ant.Gain}{4\pi \times (20_{cm})^2}$$

For transmitters that could operate simultaneously, the MPE to limit ratio for each was calculated and then summed. If the sum of the MPE to limit ratios was less than 1, that specific combination of transmitters was deemed to comply.

Test Results:

The GLOBEHOPPER TLV was **compliant** with FCC Part 2.1091 and RSS-102 Issue 6. The calculated maximum power density at 20cm distance was equal to or less than the required limits for general population exposure for FCC Part 2.1091 and RSS-102 Issue 6.

Additionally, the sum of the worst case for each MPE to Limit ratio is less than 1 indicating that the BLE, 802.15.4, and cellular radios may transmit simultaneously.

Test Data:

Duty Cycle	100 (%), (25% for GPRS)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (mW/cm ²)	MPE Limit (mW/cm ²)	Margin to Limit (mW/cm ²)	MPE / Limit Ratio (for Co-Location)
BLE	2402	19.5	19.50	3.2	0.0370	1.0000	0.9630	0.0370
802.15.4	2405	19.5	19.50	3.2	0.0370	1.0000	0.9630	0.0370
LTE Band 2	1850	24.5	24.50	2.4	0.0974	1.0000	0.9026	0.0974
LTE Band 4	1710	24.5	24.50	2.4	0.0974	1.0000	0.9026	0.0974
LTE Band 5	824	24.5	24.50	1.1	0.0722	0.5493	0.4771	0.1315
LTE Band 12	699	24.5	24.50	1.1	0.0722	0.4660	0.3938	0.1550
LTE Band 13	777	24.5	24.50	1.1	0.0722	0.5180	0.4458	0.1394
GPRS850	824	33.5	27.48	1.1	0.1434	0.5493	0.4059	0.2611
GPRS1900	1850	30.5	24.48	2.4	0.0970	1.0000	0.9030	0.0970

Note: a 25% duty cycle was used for the GPRS modes which comes from a maximum of 2 transmit slots used out of a possible 8.

Worst-case MPE / Limit calculation for simultaneous transmission:

BLE + 802.15.4 + GPRS850

$0.037 + 0.037 + 0.2611 = 0.3351$

Test Engineer(s): Bryan Taylor

Test Date(s): 11/7/2025 - 11/12/2025

FCC MPE Data

Duty Cycle	100 (%), (25% for GPRS)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (W/m ²)	MPE Limit (W/m ²)	Margin to Limit (W/m ²)	MPE / Limit Ratio (for Co-Location)
BLE	2402	19.5	19.50	3.2	0.3705	5.3508	4.9804	0.0692
802.15.4	2405	19.5	19.50	3.2	0.3705	5.3554	4.9849	0.0692
LTE Band 2	1850	24.5	24.50	2.4	0.9744	4.4763	3.5019	0.2177
LTE Band 4	1710	24.5	24.50	2.4	0.9744	4.2419	3.2676	0.2297
LTE Band 5	824	24.5	24.50	1.1	0.7223	2.5756	1.8533	0.2804
LTE Band 12	699	24.5	24.50	1.1	0.7223	2.3017	1.5794	0.3138
LTE Band 13	777	24.5	24.50	1.1	0.7223	2.4743	1.7520	0.2919
GPRS850	824	33.5	27.48	1.1	1.4344	2.5756	1.1412	0.5569
GPRS1900	1850	30.5	24.48	2.4	0.9698	4.4763	3.5065	0.2166

Note: a 25% duty cycle was used for the GPRS modes which comes from a maximum of 2 transmit slots used out of a possible 8.

Worst-case MPE / Limit calculation for simultaneous transmission:

BLE + 802.15.4 + GPRS850

0.0692 + 0.0692 + 0.5569 = 0.6953

Test Engineer(s): Bryan Taylor

Test Date(s): 11/7/2025 - 11/12/2025

ISED MPE Data