RF Exposure Report (FCC)

Report No.:	WIR121141-FCC-Xirgo-RF Exposure
Test Model:	XT4392
Received Date:	September 10, 2022
Test Date:	September 15, 2022 – October 07, 2022
Issued Date:	November 04, 2022
Applicant:	Xirgo Technologies, LLC
Address:	188 Camino Ruiz. Camarillo, CA
Issued By:	Eurofins Electrical and Electronic Testing NA, Inc.
Lab Address:	3162 Belick St. Santa Clara CA, 95054

A2LA ACCREDITED
TESTING CERT #0591.02

1. Certificate of Conformity

Product:	Asset Tracking/ FLEET TPMS
Brand:	Xirgo
Test Model:	XT4392
FCC ID:	GKM-XT4392
Series Model:	N/A
Sample Status:	Engineering Sample
Applicant:	Xirgo Technologies, LLC
Test Date:	September 15, 2022 – October 07, 2022
Standard:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

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.

Gary Chou

Gary Chou
Wireless Engineering Manager, Wireless Laboratory

Revision	Report Date	Reason for Revision
∅	November 07, 2022	Initial Issue.

2. RF Exposure

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

f = Frequency in MHz; *Plane-wave equivalent power density

2.1 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.2 Antenna Gain

Cellular:
Antenna Manufacturer/ Model:
ANTENNA COMPANY/ AC31202-01 175-00032 0.01 22Cellular:
Antenna Type: Flex Antenna
Antenna Gain:
699 MHz -716 MHz : 0.75 dBi
703 MHz -748 MHz : 1.16 dBi
777 MHz -787 MHz : 1.7 dBi
832 MHz -862 MHz : 1.4 dBi
1710 MHz - 1755 MHz : 4.7 dBi
1850 MHz - 1910 MHz : 4.5 dBi

Bluetooth:
Antenna Type: PCB Antenna
Antenna Gain: 2.6 dBi

2.3 Calculation Result worst case of Maximum Conducted Power

Type/ Band	Frequency Band (MHz)	Max Power (tune up) (dBm)	Max Power (tune up) (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
GSM850	848.8	25.97	395.366	1.4	20	0.108630	0.5658
Bluetooth LE	2480	15.2	33.113	2.6	20	0.011994	1

The maximum calculations of above situations are less than the limit.
The SAR evaluation is not required.

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

3. This device contains

TYPE	Model No.	FCC ID	Note
Cellular	BG95M3	XMR201910BG95M3	-

4. Conclusion

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Worse case

Total MPE Percentage for

GSM 850+ BT LE = 0.203987637< 1

Therefore, the maximum calculations of above situations are less than the "1" limit.
The SAR evaluation is not required.