



Radio Frequency Exposure Evaluation Report

For:
Telular Corporation

Model Name:
SHB6500

Product Description:
Wireless Telematics Hub LTE-M/5G Tether

FCC ID: MTFSHB6500
ISED: 2175D-SHB6500

Applied Rules and Standards:
CFR Part1 (1.1307 & 1.1310), Part 2 (2.1091),
FCC KDB 447498 D01 General RF Exposure Guidance v06
ISED RSS-102 Issue 6

Report number: EMC_TELUL_234_25001_RF_Exposure_Rev1

DATE: 2025-10-21



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1 Assessment

This RF Exposure evaluation report provides evidence for compliance of the below identified device with the RF Exposure limits for mobile devices as defined in FCC CFR Part 1 (1.1307 &1.1310), Part 2 (2.1091) and ISED standard RSS-102 issue 6 under worst case conditions (measured or rated RF output power, antenna gain, distance towards human body, multiple transmitter information as presented by the applicant).
In addition, maximum antenna gain or minimum distance towards the human body is calculated respectively, where relevant.

The device meets the limits as stipulated by the above given FCC and ISED rule parts based on available specifications for worst-case conditions at 20 cm distance to the body.

Company Name	Product Description	Model No.
Telular Corporation	Wireless Telematics Hub LTE-M/5G Tether	SHB6500

Report Authorized by:

Responsible for testing Laboratory:

2025-10-21	Compliance	Alvin, Ilarina (Director of EMC Services)	Alvin ILARINA Digitally signed by Alvin ILARINA Date: 2025.10.21 17:07:29 -07'00'
Date	Section	Name	Signature

Responsible for the Report:

2025-10-21	Compliance	Art Thammanavarat (Lead Engineer)	Art Thammanavarat Digitally signed by: Art Thammanavarat DN: CN = Art Thammanavarat email = art.thammanavarat@cetecom.com C = AD Date: 2025.10.21 13:31:34 -07'00'
Date	Section	Name	Signature

The test results of this test report relate exclusively to the test item specified in Section3.
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2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
EMC Lab Manager:	Alvin, Ilarina
Responsible Project Leader:	Ruby, Hall

2.2 Identification of the Client

Applicant's Name:	Telular Corporation
Street Address:	3225 Cumberland Blvd., Suite 300
City/Zip Code	Atlanta, GA 30339
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	Same as Client
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment under Assessment

3.1 EUT Specifications

Product Description:	Wireless Telematics Hub LTE-M/5G Tether
Marketing Name:	Kinnect-M Tethered
Model Name:	SHB6500
HW Version:	B
SW Version:	EM.00.03.1034,BM.00.01.0140
FCC-ID:	MTFSHB6500
ISED:	2175D-SHB6500
HVIN	SHB6500
PMN	Kinnect-M Tethered
FVIN	SHB6500.2.
Bands/Modes Supported	<u>Cellular Modules</u> Company Name: Telit Model Number : ME910G1-W1 FCC: RI7ME910G1W1 ISED: 5131A-ME910G1W1 <u>Wireless Technologies</u> LTE FDD CAT-M1: 2,4,12
	<u>Bluetooth Modules</u> Model Name : Laird Model Number : BL654 FCC: SQGBL654 ISED : 5131A-ME910G1W1 <u>Wireless Technologies</u> Bluetooth LE
Power Supply/ Rated Operating Voltage Range	11VDC/12VDC/30VDC
Operating Temperature Range	Low : 40 °C - High 70 °C
Sample Revision	☒ Production ☐ Pre-Production
EUT Dimensions	953mm x 476.3mm x 38.1mm
EUT Diameter	☒ < 60 cm ☐ Other _____
Note: The information of the EUT specifications in the table above is provided by the client.	

4 RF Exposure Limits and FCC and ISED Basic Rules

FCC

4.1.1 § 2.1093(c)(1)

Evaluation of compliance with the exposure limits in § 1.1310 of this chapter, and preparation of an EA if the limits are exceeded, is necessary for mobile devices with single RF sources having either more than an available maximum time-averaged power of 1 mW or more than the ERP listed in Table 1 to § 1.1307(b)(3)(i)(C), whichever is greater. For mobile devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 of this chapter is necessary if the ERP of the device is greater than ERP_{20cm} in the formula below. If the ERP of a single RF source at distances from 20 centimeters to 40 centimeters and frequencies from 0.3 GHz to 6 GHz is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP) in comparison with the following formula only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

$$P_{th}(\text{mW}) = ERP_{20\text{ cm}}(\text{mW}) = \begin{cases} 2040f & 0.3\text{ GHz} \leq f < 1.5\text{ GHz} \\ 3060 & 1.5\text{ GHz} \leq f \leq 6\text{ GHz} \end{cases}$$

4.1.2 § 2.1093(c)(2)

For multiple mobile or portable RF sources within a device operating in the same time averaging period, routine environmental evaluation is required if the formula in § 1.1307(b)(3)(ii)(B) of this chapter is applied to determine the exemption ratio and the result is greater than 1.

4.1.3 § 1.1307(b)(3)(ii)(B)

in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

ISED RSS 102

4.1.4 Clause 6.6 Field reference level exposure exemption limits– RF Exposure Evaluation

Field reference level (FRL) RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived

5 Evaluations

5.1 FCC RF Exposure (Standalone)

Radio	Tech-Band	Freq-Low _[GHz]	Pwr _[dBm]	Power _[W]	Ant-G _[dBi]	EIRP _[W]	ERP _[W]	FCC 2.1093(c)(1) P _{th[mW]} = ERP _{20cm}	P/P _{th} ratio
Cellular	LTE 2	1.8550	22.00	0.158	3.80	0.380	0.232	3060.00	0.076
	LTE 4	1.7150	22.00	0.158	3.90	0.389	0.237	3060.00	0.077
	LTE 12	0.7040	22.00	0.158	1.10	0.204	0.124	1436.16	0.110
Radio	Tech-Band	Freq-Low _[GHz]	Pwr _[dBm]	Power _[W]	AG _[dBi]	EIRP _[W]	ERP _[W]	FCC 2.1093(c)(1) P _{th[mW]} = ERP _{20cm}	P/P _{th} ratio
BT	LE	2.4020	7.55	0.0057	0.00	0.006	0.003	3060.00	0.002

Conclusion:

- The maximum RF emissions from this equipment fulfills the RF exclusion threshold limits for separation distance between the antenna and the human body greater than 20 cm. No RF Exposure evaluation is required.

5.2 ISED RF Exposure (Standalone)

							RF Exposure	
							RSS-102 6.6 D>20 cm (300 ≤ Freq < 6000 MHz)	
Radio	Tech-Band	Freq-Low [MHz]	Pwr _[dBm]	Power _[W]	Ant-G [dBi]	EIRP _[W]	Exemption limit for Routine Evaluation	Exemption (Y/N)
Cellular	LTE 2	1855.00	22.00	0.16	3.80	0.38	2.24	Yes
	LTE 4	1715.00	22.00	0.16	3.90	0.39	2.13	Yes
	LTE 12	704.00	22.00	0.16	1.10	0.20	1.16	Yes
Radio	Tech-Band	Freq-Low [MHz]	Pwr _[dBm]	Power _[W]	Ant-G [dBi]	EIRP _[W]	Exemption limit for Routine Evaluation	Exemption (Y/N)
BT	LE	2402.00	7.55	0.0057	0.00	0.01	2.68	Yes

Conclusion:

- The maximum RF emissions from this equipment fulfills the RF exclusion threshold limits for separation distance between the antenna and the human body greater than 20 cm. No RF Exposure evaluation is required.

5.3 RF Exposure Test Exemptions for Simultaneous Transmission Sources

- Theoretically, the worst case of simultaneous transmission operating at the highest output power mode, within the nearest frequency bands.
- The worst case of simultaneous transmission calculation:
 LTE Band 12 + Bluetooth LE:
 $(158.0/1436.16) + (5.7/3060) = 0.112$

Applicable Simultaneous Transmission Sources	Sum of the ratios of the applicable terms	Limit	RF Exclusion No evaluation required
LTE Band 12 + Bluetooth LE:	$0.110 + 0.002 = 0.112$	≤ 1	Yes

Conclusion:

- The sum of the fractional contributions to the applicable thresholds is less than or equal to 1, hence the multiple RF sources are exempt

6 Revision History

Date	Report Name	Changes to report	Report prepared by
2025-10-03	EMC_TELUL_234_25001_RF_Exposure	Initial Version	Art Thammanavarat
2025-10-21	EMC_TELUL_234_25001_RF_Exposure_Rev1	Section 3.1: Updated Table.	Art Thammanavarat

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