



Radio Frequency Exposure Evaluation Report

For: Telular Corporation

Brand: Telular

Marketing Name: SkyTank

Model Name: ST100

Product Description: Telematic Gateway for Communicating Measurement Data

FCC ID: MFTST1002

ISED: 2175D-ST1001

Applied Rules and Standards:

CFR Part 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_232_25001_RF_Exposure

DATE: 2025-10-30



IC recognized #
3462B

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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 (2.1093) 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.

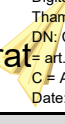
Company Name	Product Description	Model No.
Telular Corporation	Telematic Gateway for Communicating Measurement Data	ST100

Report Authorized by:

Responsible for testing Laboratory:

2025-10-30	Compliance	Alvin, Ilarina (Director of EMC Services)	Alvin ILARINA 	Digitally signed by Alvin ILARINA Date: 2025.11.04 14:09:01 -08'00'
Date	Section	Name	Signature	

Responsible for the Report:

2025-10-30	Compliance	Art Thammanavarat (Lead Engineer)	Art Thammanavarat 	Digitally signed by: Art Thammanavarat DN: CN = Art Thammanavarat email = art.thammanavarat@cetecom.com C = AD Date: 2025.10.30 16:56:59 -07'00'
Date	Section	Name	Signature	

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

CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

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:	Jayalakshmi, Sekar

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

Model No	ST100
HW Version	B
SW Version	v2.60
FCC-ID	MFTST1002
ISED:	2175D-ST1001
HVIN:	ST1002
PMN:	SkyTank
Product Description	Telematic Gateway for Communicating Measurement Data
Bands/Modes Supported	Cellular Modules Model Name : Telit Model Number : ME910G1-W1 FCC: RI7ME910G1W1 ISED: 5131A-ME910G1W1 Wireless Technologies LTE FDD Band CAT-M: 2, 4, 12, 13, 66
	Bluetooth Modules Model Name: SmartBond TINYTM Module Model Number : DA14531MOD FCC: Y82-DA14531MOD ISED : 9576A-DA14531MOD Wireless Technologies BLE
	ISM900 Chipset Model Name : Tellular Corporation Model Number : CC1200
Power Supply/ Rated Operating Voltage Range	4VDC to 7.4VDC (internal battery; 4 Energizer L91 cell is 4S1P configuration)
Operating Temperature Range	Low: -20 °C - High +70 °C
Sample Revision	☐ Production ☒ Pre-Production
EUT Dimensions	190mm x 130mm x 45mm
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 portable devices having single RF sources with more than an available maximum time-averaged power of 1 mW, more than the ERP listed in Table 1 to § 1.1307(b)(3)(i)(C), or more than the Pth in the following formula, whichever is greater. The following formula shall only be used in conjunction with portable devices not exempt by § 1.1307(b)(3)(i)(C) at distances from 0.5 centimeters to 20 centimeters and frequencies from 0.3 GHz to 6 GHz.

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

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 6.3 SAR exemption limits

Devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 11, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

The exemption limits in table 11 are based on measurements and simulations of half-wave dipole antennas at separation distances of 5 mm to 50 mm from a flat phantom, which provides a SAR value of approximately 0.4 W/kg for 1 g of tissue.

For limb-worn devices where the 10 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 2.5.

For controlled-use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 5.

When the operating frequency of the device is between two frequencies located in table 11, linear interpolation shall be applied for the applicable separation distance. If the separation distance of the device is between two distances located in table 11, linear interpolation may be applied for the applicable frequency. Alternatively, the limit corresponding to the smaller distance may be employed. For example, in case of a 7 mm separation distance, either use the exception value for a 5 mm separation distance or interpolate between the limits corresponding to 5 mm and 10 mm separation distances.

For implanted medical devices, the exemption limit for routine SAR evaluation is set at an output power of 1 mW, regardless of frequency.

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]	ERP _[mW]	Threshold ERP _[W]	ERP < Threshold ERP _[W]	FCC 2.1093(c)(1) Pth _[mW] = ERP _{20cm}
Cellular	LTE 4	1.7150	21.16	0.131	3.90	0.321	0.195	195.43	0.77	Yes	3060.00
	LTE 12	0.7040	21.60	0.145	1.10	0.186	0.114	113.50	0.36	Yes	1436.16
	LTE 13	0.7820	21.39	0.138	1.70	0.204	0.124	124.17	0.40	Yes	1595.28
	LTE 66	1.7150	21.91	0.155	3.90	0.381	0.232	232.27	0.77	Yes	3060.00
Radio	Tech-Band	Freq-Low _[GHz]	Pwr _[dBm]	Power _[W]	Ant-G _[dBi]	EIRP _[W]	ERP _[W]	ERP _[mW]	Threshold ERP _[W]	ERP < Threshold ERP _[W]	FCC 2.1093(c)(1) Pth _[mW] = ERP _{20cm}
BT	LE	2.4020	2.20	0.0017	0.00	0.002	0.001	1.01	0.77	Yes	3060.00
ISM 900	N/A	0.9050	11.30	0.0135	1.00	0.017	0.010	10.35	0.46	Yes	1846.20

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]	EIRP _[mW]	Exemption limit for Routine Evaluation	Exemption (Y/N)
Cellular	LTE 4	1715.00	21.16	0.13	3.90	0.32	320.63	2.13	Yes
	LTE 12	704.00	21.60	0.14	1.10	0.19	186.21	1.16	Yes
	LTE 13	782.00	21.39	0.14	1.70	0.20	203.70	1.24	Yes
	LTE 66	1715.00	21.91	0.16	3.90	0.38	381.07	2.13	Yes
Radio	Tech-Band	Freq-Low [MHz]	Pwr _[dBm]	Power _[W]	Ant-G [dBi]	EIRP _[W]	EIRP _[mW]	Exemption limit for Routine Evaluation	Exemption (Y/N)
BT	LE	2402.00	2.20	0.0017	0.00	0.00	1.66	2.68	Yes
ISM900	N/A	905.00	11.30	0.01	1.00	0.02	16.98	1.37	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

Conclusion:

- The radio complies with routine environmental evaluation requirements for RF exposure. Simultaneous transmission with other radios is not support.

6 Revision History

Date	Report Name	Changes to report	Report prepared by
2025-10-30	EMC_TELUL_232_25001_RF_Exposure	Initial Version	Art Thammanavarat

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