
MPE REPORT

Report No.: SRTC2020-9004(F)-20050801(I)

Product Name: On-board Terminal (Telematics BOX)

Product Model: SR10006

Applicant: SiRun (Beijing) Technology Co., Ltd.

Manufacturer: SiRun (Beijing) Technology Co., Ltd.

Specification: FCC Part §2.1091, §2.1093, §1.1307(b), §1.1310 (2019)

FCC ID: 2AWCT-SR10006

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District,

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1 GENERAL INFORMATION

1.1 Notes of the test report

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1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
Address:	15th Building, No.30 Shixing Street, Shijingshan District, P.R.China
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Country or Region:	P.R.China
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1.3 Applicant's details

Company:	SiRun (Beijing) Technology Co., Ltd.
Address:	F16, Block A, Building 2, No.2 Auto Museum East Road, Fengtai District, Beijing, China
City:	Beijing
Country or Region:	China
Contacted person:	Lingrong Zhou
Tel:	15010875309
Fax:	---
Email:	lingrong.zhou@sirun.net

1.4 Manufacturer's details

Company:	SiRun (Beijing) Technology Co., Ltd.
Address:	F16, Block A, Building 2, No.2 Auto Museum East Road, Fengtai District, Beijing, China
City:	Beijing
Country or Region:	China
Contacted person:	Lingrong Zhou
Tel:	15010875309
Fax:	---
Email:	lingrong.zhou@sirun.net

1.5 Test Environment

Date of Receipt of test sample at SRTC:	2020-05-08
Testing Start Date:	2020-05-08
Testing End Date:	2020-05-22

Environmental Data:	Temperature (°C)	Humidity (%)
Ambient	25	30
Maximum Extreme	70	---
Minimum Extreme	-30	---

Normal Supply Voltage (V d.c.):	12.0
Maximum Extreme Supply Voltage (V d.c.):	18.0
Minimum Extreme Supply Voltage (V d.c.):	9.0

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

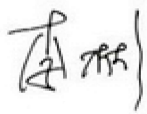
Frequency Range	CDMA BC0 LTE 5/40/41
Modulation Type	CDMA: CDMA2000 1x Advanced CDMA2000 1x EVDO Rel.0/Rev.A LTE:QPSK/16QAM/64QAM
Antenna Type	Fixed external Antenna
Antenna Gain	0dBi
Power Supply	DC Power
Hardware Version	V3.01
Software Version	V3.02
ICCID	898602F2101950003613

3 REFERENCE SPECIFICATION

Specification	Version	Title
2.1091	2019	Radiofrequency radiation exposure evaluation: mobile devices.
2.1093	2019	Radiofrequency radiation exposure evaluation: portable devices.
1.1307(b)	2019	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
1.1310	2019	Radiofrequency radiation exposure limits.
KDB447498	October 23, 2015	RF exposure procedures and equipment authorization policies for mobile and portable devices

4 RESULT SUMMARY

No.	Test case	FCC reference
1	MPE Calculation	FCC Part §2.1091, FCC Part §2.1093, FCC Part §1.1307(b) FCC Part §1.1310 KDB 447498

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Miss Jin Wanqing 	Issued date: 2020/05/25

5 TEST RESULTS

5.1 Average Power Output Test Result

CDMA Output Power

Mode	Radio Configuration (RC)	Service Option (SO)	Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
1xEVDO Rev. A	FETAP:307.2k, QPSK/ ACK	RETAP: 4096	824.70	1013	23.87
			836.52	384	23.88
			848.31	777	23.84

LTE Output Power

Frequency Band	Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
LTE Band 5	829.0	20450	23.30
	836.5	20525	23.62
	844.0	20600	23.56
LTE Band 40	2310.0	38750	22.54
	2355.0	39200	22.89
LTE Band 41	2565	40340	22.55
	2605	40740	22.61
	2645	41140	22.66

5.2 Calculation result

FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

(A) Limits for Occupational/Controlled Exposure ☐

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure ☒

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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

Calculation procedure:

According to §2.1091, §2.1093, §1.1307(b) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm²

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode/Band	Freq (MHz)	Power		Antenna Gain		R (cm)	S (mW/cm ²)	Limits (mW/cm ²)
		(dBm)	(mW)	(dBi)	(Numeric)			
CDMA	836.52	23.88	244.34	0	1	20	0.049	0.56
LTE FDD 5	836.5	23.62	230.14	0	1	20	0.046	0.56
LTE FDD 40	2355.0	22.89	194.53	0	1	20	0.039	1.00
LTE FDD 41	2645.0	22.66	184.50	0	1	20	0.037	1.00

Note: Simultaneous Transmission Limit=Power Density_1/ limit_1 + Power Density_2/ limit_2+ Power Density_3/ limit_3 <1

---End of Test Report---