

Report No.: SEWM2211000245RG07
 Rev.: 01
 Page: 1 of 8

TEST REPORT

Application No.: SEWM2211000245RG
Applicant: Omnitracs, LLC
Address of Applicant: 9246 Lightwave Ave., Suite 320, San Diego, California, USA 92123
Manufacturer: AsiaTelco Technologies Co.
Address of Manufacturer: No. 68 Huatuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201203, China
EUT Description: Smart Telematics Recorder
Model No.: CV90-JE305
Trade Mark: Solera
FCC ID: 2AE8Z-STR01
Standards: 47 CFR Part 2.1091
 FCC KDB 447498 D01 v06
Date of Receipt: 2022/11/17
Date of Issue: 2022/12/09

Test Result:	PASS*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Panta Sun
 Wireless Laboratory Manager



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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022/12/09		Original

Prepared By		 <hr/> (Nick Hu) / Test Engineer
Checked By		 <hr/> (Well Wei) / Reviewer



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2 General Information

2.1 Client Information

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Manufacturer:	AsiaTelco Technologies Co.
Address of Manufacturer:	No. 68 Huatuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201203, China

2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

• **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



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2.3 General Description of EUT

EUT Description:	Smart Telematics Recorder			
Model No.:	CV90-JE305			
Trade Mark:	Solera			
Hardware Version:	P3			
Software Version:	5.00.00P1			
Antenna Type:	PIFA Antenna			
Antenna Gain:	WCDMA Band II:	3dBi	WCDMA Band IV:	2dBi
	WCDMA Band V:	0.5dBi		
	LTE Band 2:	3dBi	LTE Band 4:	2dBi
	LTE Band 5:	0.5dBi	LTE Band 12:	-2dBi
	LTE Band 13:	-2dBi	LTE Band 14:	-2dBi
	LTE Band 66:	2dBi	LTE Band 71:	-1dBi
	BT/BLE:	3dBi	2.4G WIFI:	3dBi
	5150MHz to 5250MHz:	4dBi	5250MHz to 5350MHz:	4dBi
	5470MHz to 5725MHz:	4dBi	5725MHz to 5850MHz:	4dBi
	Note:	The antenna gain are derived from the gain information report provided by the manufacturer.		
Remark:	As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.			



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3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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				
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
 RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



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3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

3.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Average Output Power (dBm)	Output Power to Antenna (dBm)	EIRP(ERP) Limit (dBm)	Output Power to Antenna (mw)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	conclusion
WCDMA Bnad II	1852.4	3.00	24.00	27.00	33.00	251.1886	0.0997	1.0000	Pass
WCDMA Bnad IV	1712.4	2.00	24.00	26.00	30.00	251.1886	0.0792	1.0000	Pass
WCDMA Bnad V	826.4	0.50	24.00	24.50	38.45	251.1886	0.0561	0.5509	Pass
LTE B2	1850.7	3.00	24.00	27.00	33.00	251.1886	0.0997	1.0000	Pass
LTE B4	1710.7	2.00	24.00	26.00	30.00	251.1886	0.0792	1.0000	Pass
LTE B5	824.7	0.50	24.00	24.50	38.45	251.1886	0.0561	0.5498	Pass
LTE B12	699.7	-2.00	24.00	22.00	34.77	251.1886	0.0315	0.4665	Pass
LTE B13	779.5	-2.00	24.00	22.00	34.77	251.1886	0.0315	0.5197	Pass
LTE B14	790.5	-2.00	24.00	22.00	34.77	251.1886	0.0315	0.5270	Pass
LTE B66	1710.7	2.00	24.00	26.00	30.00	251.1886	0.0792	1.0000	Pass
LTE B71	665.5	-1.00	24.00	23.00	34.77	251.1886	0.0397	0.4437	Pass
BT	2402.0	3.00	8.00	11.00	30.00	6.3096	0.0025	1.0000	Pass
2.4GWIFI	2412.0	3.00	15.00	18.00	30.00	31.6228	0.0126	1.0000	Pass
5GWIFI	5180.0	4.00	14.00	18.00	30.00	25.1189	0.0126	1.0000	Pass



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3.1.4 Exposure calculations for multiple sources

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE in accordance with the provisions of Table(A) and Table(B). To comply with the MPE, the fraction of the MPE in terms of E2, H2 (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity.

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN +2.4G WIFI
2	WWAN +5G WIFI

No.	Mode	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 71	0.0397	0.4437	0.0895	0.1021	1.00	Pass
	2.4G WIFI	0.0126	1.0000	0.0126			
2	LTE Band 71	0.0397	0.4437	0.0895	0.1021	1.00	Pass
	5G WIFI	0.0126	1.0000	0.0126			

Remark: This WWAN Band was recalculated on worst Band.

---End of Report---



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