

Report No.: XEWM2309000462RG06

Rev.: 01

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TEST REPORT

Application No.: XEWM2309000462RG
Applicant: JL MARINE SYSTEMS, INC.
Address of Applicant: 9010 Palm River Road, Tampa, FL 33619, USA
Manufacturer: JL MARINE SYSTEMS, INC.
Address of Manufacturer: 9010 Palm River Road, Tampa, FL 33619, USA
EUT Description: Marine Tablet
Model No.: Vision 7
Trade Mark: Power-Pole
FCC ID: A7FVISION7
Standards: 47 CFR Part 2.1091
FCC KDB 447498 D01 v06
Date of Receipt: 2023/09/14
Date of Issue: 2024/06/12

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

Authorized Signature:



Linus Chen

Wireless Laboratory Manager



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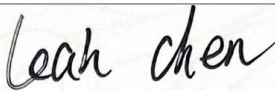

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1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2024/06/12		Original

Prepared By	 (Leah Chen) / Test Engineer
Checked By	 (Andy Yao) /Reviewer

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2 General Information

2.1 Client Information

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Manufacturer:	JL MARINE SYSTEMS, INC.
Address of Manufacturer:	9010 Palm River Road, Tampa, FL 33619, USA

2.2 Test Facility

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

• **A2LA (Certificate No. 4854.01)**

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

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

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0095.

IC#: 25613.

• **FCC –Designation Number: CN1337**

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN1337.

Test Firm Registration Number: 917410



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2.3 General Description of EUT

EUT Description:	Marine Tablet	
Model No.:	Vision 7	
Trade Mark:	Power-Pole	
Hardware Version:	V3.0	
Software Version:	Vision7_20240522	
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated	
Antenna Gain:	WCDMA Band II:	1.96dBi
	WCDMA Band IV:	2.34dBi
	WCDMA Band V:	1.11dBi
	LTE Band 2:	1.96dBi
	LTE Band 4:	2.34dBi
	LTE Band 5:	1.11dBi
	LTE Band 7:	2.24dBi
	LTE Band 12:	0.15dBi
	LTE Band 13:	0.16dBi
	LTE Band 14:	-0.24dBi
	LTE Band 17:	0.15dBi
	LTE Band 18:	1.11dBi
	LTE Band 19:	0.9dBi
	LTE Band 25:	1.96dBi
	LTE Band 26:	1.11dBi
	LTE Band 30:	2.31dBi
	LTE Band 38:	2.14dBi
	LTE Band 41:	2.44dBi
	LTE Band 66:	2.47dBi
	LTE Band 71:	-0.1dBi
	Bluetooth:	2.97dBi(Ant1)
	WIFI 2.4G:	2.97dBi(Ant1)
	5G WIFI(U-NII-1):	2.7dBi(Ant1)
	5G WIFI(U-NII-2A):	2.54dBi(Ant1);
	5G WIFI(U-NII-2C):	2.89dBi(Ant1)
	5G WIFI(U-NII-3):	2.41dBi(Ant1);
	Sprint1	0.8dBi(Ant1);
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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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

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

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 Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	conclusion
WCDMA Band II	1852.4	1.96	25.00	26.96	33.00	0.0988	1.0000	Pass
WCDMA Band IV	1712.4	2.34	25.00	27.34	33.00	0.1078	1.0000	Pass
WCDMA Band V	826.4	1.11	25.00	23.96	38.45	0.0812	0.5509	Pass
LTE Band 2	1850.7	1.96	25.00	26.96	33.00	0.0988	1.0000	Pass
LTE Band 4	1710.7	2.34	25.00	27.34	30.00	0.1078	1.0000	Pass
LTE Band 5	824.7	1.11	25.00	23.96	38.45	0.0812	0.5498	Pass
LTE Band 7	2502.5	2.24	25.00	27.24	33.00	0.1054	1.0000	Pass
LTE Band 12	699.7	0.15	25.00	23.00	34.77	0.0651	0.4665	Pass
LTE Band 13	779.5	0.16	25.00	23.01	34.77	0.0653	0.5197	Pass
LTE Band 14	790.5	-0.24	25.00	22.61	34.77	0.0595	0.5270	Pass
LTE Band 17	706.5	0.15	25.00	23.00	34.77	0.0651	0.4710	Pass
LTE Band 18 (815-824)	817.5	1.11	25.00	23.96	NA	0.0812	0.5450	Pass
LTE Band 18 (824-830)	826.5	1.11	25.00	23.96	38.45	0.0812	0.5510	Pass
LTE Band 19	832.5	0.90	25.00	23.75	38.45	0.0774	0.5550	Pass
LTE Band 25	1852.5	1.96	25.00	26.96	33.00	0.0988	1.0000	Pass
LTE Band 26 (814-824)	814.7	1.11	25.00	23.96	NA	0.0812	0.5431	Pass
LTE Band 26 (824-849)	824.7	1.11	25.00	23.96	38.45	0.0812	0.5498	Pass
LTE Band 30	2307.5	2.31	21.50	23.81	23.98	0.0478	1.0000	Pass
LTE Band 38	2572.5	2.14	25.00	27.14	33.00	0.1030	1.0000	Pass
LTE Band 41	2557.5	2.44	25.00	27.44	33.00	0.1103	1.0000	Pass
LTE Band 66	1710.7	2.47	25.00	27.47	30.00	0.1111	1.0000	Pass
LTE Band 71	665.5	-0.10	25.00	22.75	34.77	0.0615	0.4437	Pass
Bluetooth	2402.0	2.97	10.00	12.97	30.00	0.0039	1.0000	Pass
2.4GWIFI	2412.0	2.97	18.00	20.97	30.00	0.0249	1.0000	Pass
5GWIFI	5180.0	2.89	15.00	17.89	30.00	0.0122	1.0000	Pass
Sprit1	921.25	0.80	11.00	9.65	30.00	0.0030	0.6142	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 + Bluetooth
2	WWAN + WiFi 2.4G
3	WWAN + WiFi 5G
4	WWAN+Sprint1

No.	Mode	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 26 (814-824)	0.0812	0.5431	0.1495	0.1534	1.0000	Pass
	Bluetooth	0.0039	1	0.0039			
2	LTE Band 26 (814-824)	0.0812	0.5431	0.1495	0.1744	1.0000	Pass
	WiFi 2.4G	0.0249	1	0.0249			
3	LTE Band 26 (814-824)	0.0812	0.5431	0.1495	0.1617	1.0000	Pass
	WiFi 5G	0.0122	1	0.0122			
4	LTE Band 26 (814-824)	0.0812	0.5431	0.1495	0.1544	1.0000	Pass
	Sprint1	0.0030	0.6142	0.0049			

Remark: This WWAN Band was recalculated on worst Band.

---End of Report---



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