



### MPE TEST REPORT

### FCC Per 47 CFR 2.1091(b)

<b>Report Reference No</b> .....	<b>CTL1407301819-WM</b>	
<b>FCC ID</b> .....	<b>2AC2Z-898UV</b>	
Compiled by ( position+printed name+signature)...	File administrators Jennifer NI	<i>Jennifer NI</i>
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Date of issue .....	Aug. 24, 2014	
<b>Test Firm</b> .....	<b>Shenzhen CTL Testing Technology Co., Ltd.</b>	
Address .....	Floor 1-A, Baisha Technology Park, No.3011, Shahehexi Road, Nanshan District, Shenzhen, China 518055	
<b>Applicant's name</b> .....	<b>Quanzhou Leixen Electronics Co., Ltd</b>	
Address .....	No.48, Jinqiao Road, Changtai Street, Quanzhou City, Fujian Province, China	
<b>Test specification</b> .....		
Standard .....	<b>FCC Per 47 CFR 2.1091(b)</b>	
TRF Originator .....	Shenzhen CTL Testing Technology Co., Ltd.	
Master TRF .....	Dated 2011-01	
<b>Shenzhen CTL Testing Technology Co., Ltd.</b>		
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<b>Test item description</b> .....	<b>Mobile Transceiver</b>	
Trade Mark .....	LEIXEN	
Model/Type reference .....	VV-898	
Listed Models .....	UV-898, UV-898S, UV-998, UV-998S, JT270M, LX-809	
Power Supply .....	DC 13.8V from battery	
Modulation .....	FM	
Channel Separation .....	12.5KHz	
Rated Power .....	10W	
Operating Frequency Range .....	136-174MHz, 400-470MHz	
Result .....	<b>Positive</b>	

# Test Report

<b>Test Report No. :</b> CTL1407301819-WM	Aug. 24, 2014
	Date of issue

Equipment under Test : Mobile Transceiver

Model /Type : VV-898

Listed Models : UV-898, UV-898S, UV-998, UV-998S, JT270M, LX-809

Difference Description : Only the color and model's name is different.

**Applicant** : **Quanzhou Leixen Electronics Co., Ltd**

Address : No.48, Jinqiao Road, Changtai Street, Quanzhou City, Fujian Province, China

**Manufacturer** : **Quanzhou Leixen Electronics Co., Ltd**

Address : No.48, Jinqiao Road, Changtai Street, Quanzhou City, Fujian Province, China

<b>Test Result</b> according to the standards on page 4:	<b>Positive</b>
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The test report merely corresponds to the test sample.  
 It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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# 1. SUMMARY

## 1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- o - supplied by the lab

## 1.2. Equipment Under Test

### Power supply system utilised

Power supply voltage : o 120V / 60 Hz o 115V / 60Hz  
 o 12 V DC o 24 V DC  
 ■ Other (specified in blank below)

DC 13.80V

## 1.3. Description of the test mode

The Mobile Transceiver, Model: VV-898 or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

Name of EUT	Mobile Transceiver	
Model Number	VV-898	
FCC ID	2AC2Z-898UV	
Rated Output Power	10 Watts(40.00dBm)	
Modulation Type	FM for Analog Voice	
	Analog	F3E for 12.5KHz Channel Separation
Channel Separation	Analog Voice	12.5KHz
Antenna Type	External	
Frequency Range	136-174MHz, 400-470MHz	
Maximum Output Power	Analog	10.47W for 12.5 KHz Channel Separation

### Test frequency list

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Test Frequency (MHz)
				TX
	Analog/FM	12.5	A001	136.5000
			A002	146.0000
			A003	155.5000
			A004	164.0000
			A005	173.5000

Frequency Range (MHz)	Modulation Type	Channel Separation (KHz)	Test Channel	Test Frequency (MHz)
				TX
	Analog/FM	12.5	A006	406.5000
			A007	418.0000
			A008	435.5000
			A009	453.0000
			A010	469.5000

## **2. TEST ENVIRONMENT**

### **2.1. Address of the test laboratory**

**Shenzhen CTL Testing Technology Co., Ltd.**

Floor 1-A, Baisha Technology Park, No. 3011, Shaheji Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

### **2.2. Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

Temperature:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

### **2.3. Statement of the measurement uncertainty**

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen CTL Electromagnetic Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

<b>Test</b>	<b>Range</b>	<b>Measurement Uncertainty</b>	<b>Notes</b>
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~12.75GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.22dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



### 3. Method of measurement

#### 3.1. Applicable Standard

According to §1.1307(b)(1), 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.

According to §1.1310 and §2.1091 RF exposure is calculated.

#### 3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f)*	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

#### 3.3. MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

From the peak EUT RF output power, the minimum mobile separation distance, d=1.0m, as well as the gain of the used antenna is 4.1 dBi, the RF power density can be obtained.

**TEST RESULTS****V Frequency Band**

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm <sup>2</sup> )	Power Density At 100 cm (mW/cm <sup>2</sup> )	Test Results
136.5000	100.00	39.59	9099.1327	2.5704	1.000	0.1861	Pass
146.0000	100.00	39.75	9440.6088	2.5704	1.000	0.1931	Pass
155.5000	100.00	39.64	9204.4957	2.5704	1.000	0.1883	Pass
164.0000	100.00	39.52	8953.6476	2.5704	1.000	0.1831	Pass
173.5000	100.00	39.10	8128.3051	2.5704	1.000	0.1663	Pass

**U Frequency Band**

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm <sup>2</sup> )	Power Density At 100 cm (mW/cm <sup>2</sup> )	Test Results
406.5000	100.00	39.65	9225.7143	2.5704	1.355	0.1887	Pass
418.0000	100.00	39.55	9015.7114	2.5704	1.393	0.1844	Pass
435.5000	100.00	39.98	9954.0542	2.5704	1.452	0.2036	Pass
453.0000	100.00	40.20	10471.2854	2.5704	1.510	0.2142	Pass
469.5000	100.00	39.40	8709.6359	2.5704	1.565	0.1782	Pass

**4. Conclusion**

The measurement results comply with the FCC Limit per 47 CFR 2.1091 (b) for the controlled RF Exposure.

.....**End of Report**.....

