



FCC PART 22H, PART 24E

TEST REPORT

For

LiveFree Emergency Response, Inc.

3780 Woodhaven Lane, Idaho Falls, Idaho United States

FCC ID: XTX-EZV

Report Type: Original Report	Product Type: EZC
Test Engineer: <u>Mike Hu</u> 	
Report Number: <u>RSZ151014002-00B</u>	
Report Date: <u>2015-10-21</u>	
Reviewed By: <u>Jimmy Xiao</u> 	Prepared By: Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
BLOCK DIAGRAM OF TEST SETUP	5
SUMMARY OF TEST RESULTS	6
FCC §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE).....	7
APPLICABLE STANDARD	7
TEST DATA	7
FCC §2.1047 - MODULATION CHARACTERISTIC	8
FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS.....	9
APPLICABLE STANDARD	9
TEST PROCEDURE	9
TEST EQUIPMENT LIST AND DETAILS.....	9
TEST DATA	10

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *LiveFree Emergency Response, Inc.*'s product, model number: *EZcare Plus (FCC ID: XTX-EZV)* or the "EUT" in this report was a *EZC*, which was measured approximately: 21.0 cm (L) x 14.0 cm (W) x 3.6 cm (H), rated with input voltage: DC 3.7 V rechargeable Li-ion battery or DC 5.0 V from adapter.

Adapter Information:

Model: JF012WR-0500200UV

Input: AC 100-240V, 50/60Hz, 0.35A

Output: DC 5.0V, 2A

**All measurement and test data in this report was gathered from production sample serial number: 1506802 (Assigned by Shenzhen BACL). The EUT supplied by the applicant was received on 2015-10-14.*

Objective

This test report is prepared on behalf of *LiveFree Emergency Response, Inc.* in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E of the Federal Communication Commissions rules.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

Related Submittal(s)/Grant(s)

FCC Part 15B CYY submissions with FCC ID: XTX-EZV

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-D, ANSI C63.4-2014.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement uncertainty with radiated emission is 5.91 dB for 30MHz-1GHz and 4.92 dB for above 1GHz, 1.95dB for conducted measurement.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on October 31, 2013. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing according to TIA/EIA-603-D.

The final qualification test was performed with the EUT operating at normal mode.

Equipment Modifications

No modification was made to the EUT.

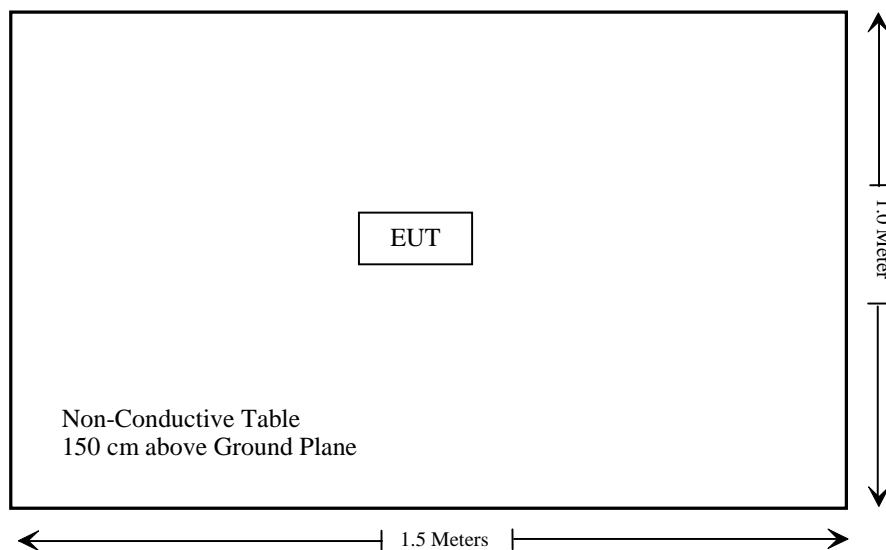
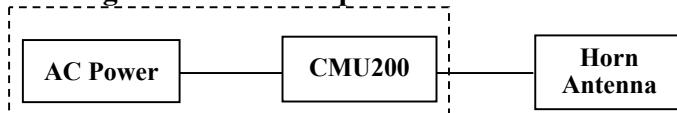
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891

External I/O Cable

Cable Description	Length (m)	From/Port	To
/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307, §2.1091	Maximum Permissible Exposure (MPE)	Compliance
§2.1046; § 22.913 (a); § 24.232 (c)	RF Output Power	Compliance*
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238	Bandwidth	Compliance*
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance*
§ 2.1053 § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance*
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance*

Compliance*: the EUT (Model: *EZcare Plus*, FCC ID: *XTX-EZV*) has used a certified module with model MC323 (ID: QISMC323), the difference test data between them is “Spurious Radiated Emission, so all the other test data are referred to reports SYBHZ(R)E038102010EB-2 and SYBHZ(R)E038102010EB-3, (with model number: MC323, FCC ID: QISMC323), issued on 2010-11-10 by Reliability Laboratory of Huawei Technologies Co., Ltd.

FCC §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mw/cm ²)	Averaging Time (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

Test Data

Predication of MPE limit at a given distance

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally **numeric** gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Mode	Frequency Band	Antenna Gain		Conducted Target Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
CDMA	800	0.02	1.00	26	398.1	20	0.079	0.5655
	1900	1.02	1.26	26	398.1	20	0.100	1.0

Note: The evaluation distance from human body to antenna is 20 cm.

Result: The device meet FCC MPE limits at 20 cm distance.

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917 and § 24.238.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ – the absolute level

Spurious attenuation limit in dB = $43 + 10 \log_{10} (\text{power out in Watts})$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2014-11-01	2015-11-30
Sunol Sciences	Broadband Antenna	JB3	A111513	2014-06-18	2017-06-17
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2014-12-11	2015-12-11
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2014-11-03	2015-11-03
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2015-04-23	2016-04-23
HP	Amplifier	8447E	1937A01046	2015-05-06	2016-05-06
HP	Signal Generator	8341B	2624A00116	2015-06-03	2016-06-03
COM POWER	Dipole Antenna	AD-100	041000	2015-08-18	2016-08-18
A.H. System	Horn Antenna	SAS-200/571	135	2013-02-11	2016-02-10
Electro-Mechanics	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	20 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Mike Hu on 2015-10-20.

EUT operation mode: Transmitting (worst case)

CDMA Mode

Frequency (MHz)	Receiver Reading (dB μ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
CDMA 800										
254.35	27.35	65	2.4	H	-69.6	0.32	0	-69.92	-13	56.92
254.35	27.68	128	1.7	V	-69.3	0.32	0	-69.62	-13	56.62
1673.04	73.76	52	1.3	H	-21.9	1.60	6.90	-16.60	-13	3.60
1673.04	66.60	340	2.3	V	-29.5	1.60	6.90	-24.20	-13	11.20
2509.56	60.99	84	1.2	H	-32.6	1.70	8.60	-25.70	-13	12.70
2509.56	55.84	42	1.4	V	-38.0	1.70	8.60	-31.10	-13	18.10
3346.08	46.26	57	2.0	H	-44.1	1.90	9.80	-36.20	-13	23.20
3346.08	42.54	319	1.4	V	-48.5	1.90	9.80	-40.60	-13	27.60
CDMA 1900										
254.35	27.82	254	1.4	H	-69.2	0.32	0	-69.52	-13	56.52
254.35	28.20	326	2.1	V	-68.8	0.32	0	-69.12	-13	56.12
3760.00	63.53	91	1.1	H	-23.5	1.90	9.90	-15.50	-13	2.50
3760.00	61.55	42	2.0	V	-25.1	1.90	9.90	-17.10	-13	4.10

Note:

- 1) Absolute Level = SG Level - Cable loss + Antenna Gain
- 2) Margin = Limit- Absolute Level

******* END OF REPORT *******