FCC PART 90

TEST REPORT

For

ZTE TRUNKING TECHNOLOGY CORPORATION

4/F, R&D Building 1, ZTE Industrial Park, LiuXian Rd., Xili, Nanshan District, Shenzhen, China

FCC ID: 2AEKCPH7X0LU1

Report Type:	**Product Type:**
Original Report	DIGITAL PORTABLE RADIO

Report Number:	RSZ170901005-00A
Report Date:	2017-09-14
Reviewed By:	Rocky Kang RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third 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

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *ZTE TRUNKING TECHNOLOGY CORPORATION's* product, model number: *PH790L U(1) (FCC ID: 2AEKCPH7X0LU1) in* this report is a *DIGITAL PORTABLE RADIO*, which was measured approximately: 150 mm (L) x 60 mm (W) x 38 mm (H), rated with input voltage: DC 7.4 V rechargeable battery.

Notes: This series products model: PH700L U(1) and PH790L U(1) are identical; they have the same or similar appearance, structure, PCB, material and function to the testing products. PH790L U(1) was selected for fully testing, the detailed information can be referred to the attached declaration which was stated and guaranteed by the applicant.

** All measurement and test data in this report was gathered from production sample serial number: 1702014 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2017-09-01.*

Objective

This test report is prepared on behalf of *ZTE TRUNKING TECHNOLOGY CORPORATION* in accordance with Part 2, and Part 90 of the Federal Communication Commissions rules.

Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s).

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA 603-D and ANSI C63.4-2014.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter	uncertainty
Occupied Channel Bandwidth	±5%
RF output power, conducted	±1.5dB
Unwanted Emission, conducted	±1.5dB
All emissions, radiated	±4.88dB
Temperature	±1℃
Supply voltages	±0.4%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

Bay Area Compliance Laboratories Corp. (Shenzhen) has been accredited to ISO/IEC 17025 by CNAS(Lab code: L2408). And accredited to ISO/IEC 17025 by NVLAP(Lab code: 200707-0), the FCC Designation No. CN5001 under the KDB 974614 D01.

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.

Bay Area Compliance Laboratories Corp. (Shenzhen) was registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a test mode which has been done in the factory.

EUT Exercise Software

No exercise software was used.

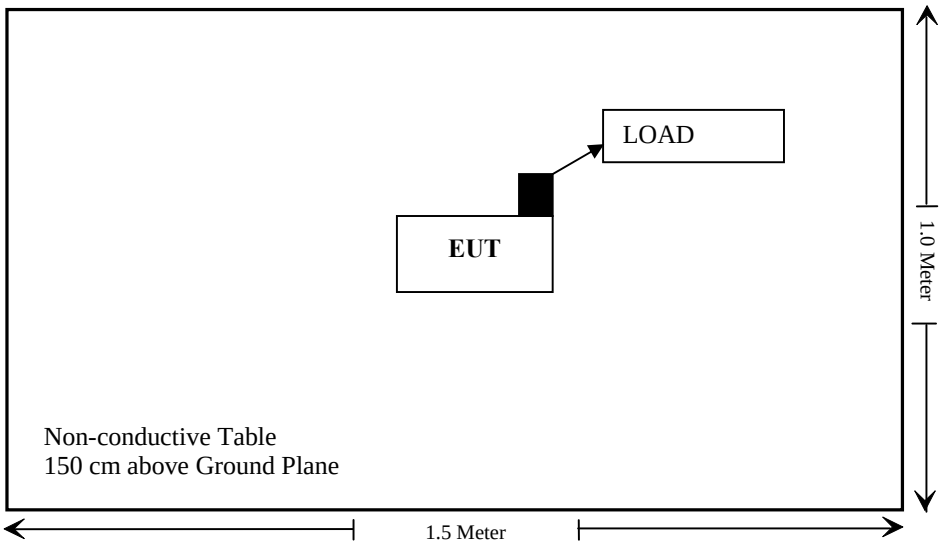
Special Accessories

No special accessory was used.

Equipment Modifications

No modification was made to the EUT tested.

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§1.1307 & §2.1093	RF Exposure	Compliance
§2.1046; §90.205	RF Output Power	Compliance*
§2.1047; §90.207	Modulation Characteristic	Compliance*
§2.1049; §90.210	Occupied Bandwidth & Emission Mask	Compliance*
§2.1051;§90.210	Spurious Emission at Antenna Terminal	Compliance*
§2.1053;§90.210	Spurious Radiated Emissions	Compliance
§2.1055;§90.213	Frequency Stability	Compliance*
§90.214	Transient Frequency Behavior	Compliance*

Note: Compliance*: The EUT is identical with the product which the Model named PH790 U(1) and FCC ID is 2AEKCPH7X0U1, the difference is the GPS,BT function was removed, but it doesn't effect the MainBoard's circuit, So these items please referred to FCC ID: 2AEKCPH7X0U1 that has been certified on 2016-09-19, report No.: RSZ160711004-00C, which was tested by Bay Area Compliance Laboratories Corp.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2016-12-07	2017-12-07
HP	Amplifier	HP8447E	1937A01046	2017-05-21	2017-11-19
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2014-12-17	2017-12-16
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2017-04-24	2018-04-24
Sunol Sciences	Horn Antenna	DRH-118	A052604	2014-12-29	2017-12-28
HP	Synthesized Sweeper	HP 8341B	2624A00116	2017-07-02	2018-07-01
Mini	Amplifier	ZVA-183-S+	5969001149	2017-02-14	2018-02-14
A.H. System	Horn Antenna	SAS-200/571	135	2015-08-18	2018-08-17
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	104PEA	218124002	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	RG-214	1	2017-05-21	2017-11-19
Ducommun technologies	RF Cable	RG-214	2	2017-05-22	2017-11-22
COM POWER	Dipole Antenna	AD-100	041000	2016-08-18	2017-08-18

*** 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).

FCC §1.1307 & §2.1093 - RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RSZ170901005-20.

FCC §2.1053 & §90.210 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

FCC §2.1053 and §90.210

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 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 teeth 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 1g (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB =50+10 Log_{10} (power out in Watts) for EUT with a 12.5 kHz channel bandwidth.

Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Layne Li on 2017-09-12.

Test Mode: Transmitting(High power level)

For Model PH700L U(1):

30MHz - 5GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
Analog Modulation 435.0125MHz										
870.03	41.47	344	2.5	H	-53.5	0.7	0.0	-54.2	-20	34.2
870.03	40.59	75	1.9	V	-54.4	0.7	0.0	-55.1	-20	35.1
1305.04	49.77	1	2.1	H	-58.4	1.60	7.60	-52.40	-20	32.40
1305.04	52.06	209	1.4	V	-56.0	1.60	7.60	-50.00	-20	30.00
1740.05	47.12	118	2.1	H	-60.4	1.30	9.10	-52.60	-20	32.60
1740.05	49.36	280	1.7	V	-57.5	1.30	9.10	-49.70	-20	29.70
Digital Modulation 435.0125MHz										
870.03	40.25	332	1.1	H	-54.8	0.7	0.0	-55.7	-20	35.7
870.03	39.85	289	1.3	V	-55.2	0.7	0.0	-55.9	-20	35.9
1305.04	49.87	213	2.4	H	-58.3	1.60	7.60	-52.30	-20	32.30
1305.04	51.42	216	1.1	V	-56.7	1.60	7.60	-50.70	-20	30.70
1740.05	46.25	122	1.8	H	-61.2	1.30	9.10	-53.40	-20	33.40
1740.05	48.51	277	1.3	V	-58.4	1.30	9.10	-50.60	-20	30.60

For Model: PH790L U(1)

30MHz - 5GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
Analog Modulation 435.0125MHz										
870.03	41.21	336	1.8	H	-53.8	0.7	0.0	-54.5	-20	34.5
870.03	39.43	138	1.2	V	-55.6	0.7	0.0	-56.3	-20	36.3
1305.04	45.64	130	1.2	H	-62.2	1.60	7.60	-56.20	-20	36.20
1305.04	46.37	339	1.8	V	-61.4	1.60	7.60	-55.40	-20	35.40
1740.05	43.82	336	1.5	H	-63.3	1.30	9.10	-55.50	-20	35.50
1740.05	42.69	1	2.4	V	-63.8	1.30	9.10	-56.00	-20	36.00
Digital Modulation 435.0125MHz										
870.03	39.51	195	2.3	H	-55.5	0.7	0.0	-56.2	-20	36.2
870.03	38.49	231	1.6	V	-56.5	0.7	0.0	-57.2	-20	37.2
1305.04	49.64	67	1.4	H	-58.6	1.60	7.60	-52.60	-20	32.60
1305.04	51.34	198	1.3	V	-56.8	1.60	7.60	-50.80	-20	30.80
1740.05	45.37	232	1.0	H	-62.1	1.30	9.10	-54.30	-20	34.30
1740.05	46.61	229	1.6	V	-60.3	1.30	9.10	-52.50	-20	32.50

Note:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

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