




MPE TEST REPORT

Report No. : **CHTEW20040244** Report verification : 

Project No. : **SHT1909028401EW**

FCC ID..... : **2ASNSRT97**

Applicant's name..... : **Shenzhen Retevis Technology Co., Ltd.**

Address..... : Room 700, 7/F, 13-C, Zhonghaixin Science &Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen,China

Manufacturer..... : Shenzhen Retevis Technology Co., Ltd.

Address..... : Room 700, 7/F, 13-C, Zhonghaixin Science &Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen,China

Test item description : **GMRS Repeater**

Trade Mark : RETEVIS

Model/Type reference..... : RT97

Listed Model(s) : RT90, RT92, RT93, RT94, RT95, RT98, RT99, RT9000D, RT9550


Standard : **FCC Per 47 CFR 2.1091(b); KDB447498 v05r02**

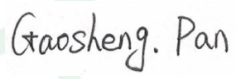
Date of receipt of test sample..... : Oct.08, 2019


Date of testing..... : Oct.08, 2019- Apr.27, 2020

Date of issue..... : Apr.28, 2020

Result..... : **PASS**

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Testing Laboratory Name : **Shenzhen Huatongwei International Inspection Co., Ltd**

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The test report merely correspond to the test sample.

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1. SUMMARY

1.1. Client Information

Applicant:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science &Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen,China
Manufacturer:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science &Technology Park, No.12 Ganli 6th Road,Jihua Street, Longgang District, Shenzhen,China

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2020-04-28	Original

1.3. Product Description

Main unit	
Name of EUT:	GMRS Repeater
Trade mark:	RETEVIS
Model/Type reference:	RT97
Listed model(s):	RT90, RT92, RT93, RT94, RT95, RT98, RT99, RT9000D, RT9550
Power supply:	AC 120V
Hardware version:	V1.01
Software version:	V1.01
Ancillary unit	
Adapter information:	Model: B06120050 Input:100-240Va.c.,50/60Hz 1.6A Output:12Vd.c.,5A
Radio Specification Description	
Operation Frequency Range:	462.5500~ 462.7250MHz
Modulation Type:	FM
Emission Designator:	11K0F3E
Antenna Type:	Detachable
Antenna Gain:	7.2dBi

1.4. Test frequency list

Test Channel	Frequency range	Type	Frequency (MHz)
CH _{M1}	462MHz	Main	462.6500

1.5. EUT operation mode

Test mode	Description
TX-GMRS	Transmitting

√: is operation mode.

1.6. EUT configuration

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

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

○ Power Cable	Length (m) :	/
	Shield :	Unshielded
	Detachable :	Undetachable
○ Multimeter	Manufacturer :	/
	Model No. :	/

1.7. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

2.2. Environmental conditions

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

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

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 TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen Huatongwei International Inspection 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 Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3. Method of measurement

3.1. Applicable Standard

According to FCC Part 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 FCC Part 1.1310 and FCC Part 2.1091 RF exposure is calculated.

IEEE Std C95.1: 2005: "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz".

FCC OET Bulletin 65, Edition 97-01: "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields".

FCC Supplement C to OET Bulletin 65, Edition 01-01: "Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emission".

IEEE Std C95.3: 2002: "IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields with Respect to Human Exposure to Such Fields, 100 kHz – 300 GHz",

3.2. Limit

FCC Part 1.1310(e):

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			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

TX-GMRS						
Test Frequency (MHz)	Max Output Power (dBm)	Max Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (Numeric)	Power Density Limit (mW/cm ²)	Safety Distance(cm)
462.65	36.88	4875.285	7.2	5.25	1.54	36.37

Note:

1) If the antenna gain is 7.2 dBi, The exposure safety distance is at least 36.37 cm.

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 1.1310(e) for general population/ Uncontrolled exposure.

-----End of Report-----