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MPE TEST REPORT

FCC Per 47 CFR 2.1091(b)

Report Reference No.....: CTL1607182706-WM

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Date of issue.....: Sept. 05, 2016

Test Firm.....: Shenzhen CTL Testing Technology Co., Ltd.

Address.....: Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

Applicant's name.....: Hunan GM Innovation Technology Co., Ltd

Address.....: No. 46, Jiefang East Road, Furong District, Changsha City, Hunan Province, China

Test specification:

Standard: FCC Per 47 CFR 2.1091(b)

TRF Originator.....: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF.....: Dated 2011-01

Shenzhen CTL Testing Technology Co., Ltd.

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Test item description: Digital Transmission System

FCC ID.....: 2AJOF-SL-1620

Trade Mark: VAXIS

Model/Type reference.....: SL-1620, SM-1610, SP-1618, SJ-1621, SD-1622, SE-1630, SX-1640

Modulation: OFDM 16QAM

Work Frequency Range.....: 5745MHz~5825MHz

Antenna Type: External

Antenna Gain.....: 2.5dBi

Result.....: Pass

Test Report

Test Report No. : CTL1607182706-WM	Sept. 05, 2016 Date of issue
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Equipment under Test : Digital Transmission System

Type / Model(s) : SL-1620, SM-1610, SP-1618, SJ-1621, SD-1622, SE-1630, SX-1640

Applicant : **Hunan GM Innovation Technology Co., Ltd**

Address : No. 46, Jiefang East Road, Furong District, Changsha City, Hunan Province, China

Manufacturer : **Hunan GM Innovation Technology Co., Ltd**

Address : No. 46, Jiefang East Road, Furong District, Changsha City, Hunan Province, China

Test Result according to the standards on page 4:

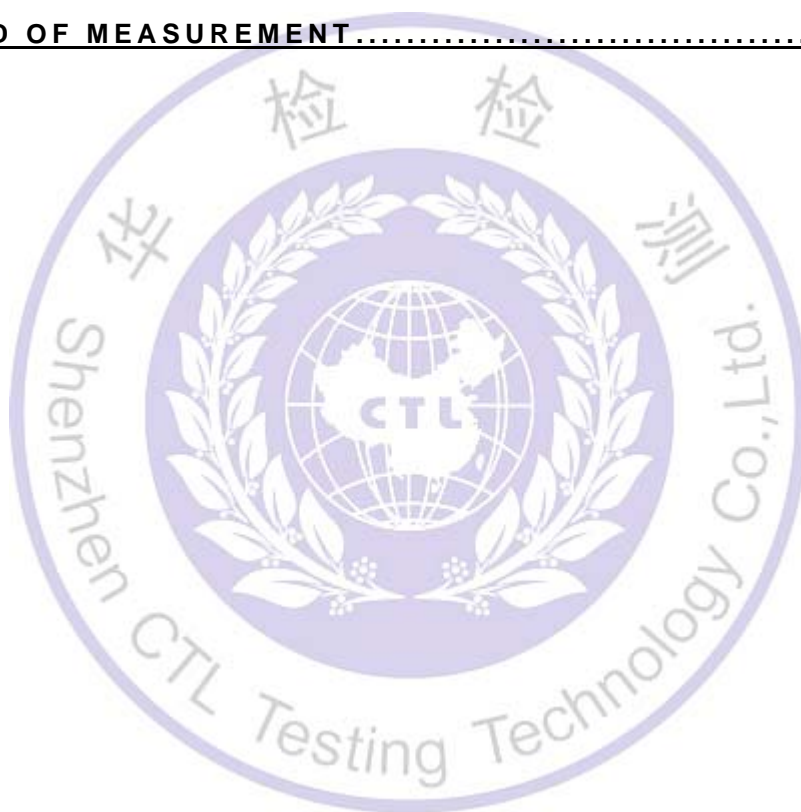
Pass

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

Battery	Manufacturer:	RUIBO
	Model:	NP- F960/F970
AC adapter	Manufacturer:	DVE
	Model:	DSA-0151A-12S

1.2. Equipment Under Test

Power supply system utilised

Power supply voltage : ☒ 120V / 60 Hz ☐ 115V / 60Hz
 ☐ 12 V DC ☐ 24 V DC
 ☒ Other (specified in blank below)
 DC 7.4V from battery

1.3. Description of the test mode

Test Mode:

Test program used to control the EUT for staying in continuous transmitting mode is programmed.
 Below Channels with highest data rate are chosen for full testing.

Test Mode(TM)	Description	Remark
1	Transmitting	5745 MHz
2	Transmitting	5785 MHz
3	Transmitting	5825 MHz

1.4. NOTE

The EUT is a Wireless Transmission System, The functions of the EUT listed as below:

	Test Standards	Reference Report
Wireless Transmission System	FCC Part 15 Subpart C (Section15.407)	CTL1607182706-WF
	FCC Per 47 CFR 2.1091(b)	CTL1607182706-WM

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

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

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 (2013) and CISPR Publication 22.

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 Testing 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:

Test	Range	Measurement Uncertainty	Notes
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 ²)	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 ²)	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=0.2m, as well as the gain of the used antenna is 2.5 dBi, the RF power density can be obtained.

TEST RESULTS

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Nemeric)	Power Density Limit (mW/cm2)	Power Density At 20 cm (mW/cm2)	Test Results
5745	20.00	26.76	474.24	1.7783	1.000	0.1678	Pass
5785	20.00	26.83	481.95	1.7783	1.000	0.1705	Pass
5825	20.00	26.44	440.55	1.7783	1.000	0.1559	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**.....

