TCT 通测检测 TESTING CENTRE TECHNOLOGY

RF exposure evaluation

FCC ID: 2AGBDHERO-ME31-08

Product: Mobile Digital Video Recorder

Model No.: Hero-ME31-08

Additional Model No.: Please refer to page 4

Trade Mark: Howen

Report No.: TCT190716E032

Issued Date: Aug. 15, 2019

Issued for:

Howen Technologies Co., Ltd.
No.201, 2/F, B Zone, Hivac Building, Langshan 2nd Rd, North Zone of Technology Park, Nanshan, Shenzhen, China

Issued By:

Shenzhen Tongce Testing Lab.
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1. Test Certification

Product:	Mobile Digital Video Recorder
Model No.:	Hero-ME31-08
Additional Model No.:	Please refer to page 4
Trade Mark:	Howen
Applicant:	Howen Technologies Co., Ltd.
Address:	No.201, 2/F, B Zone, Hivac Building, Langshan 2nd Rd, North Zone of Technology Park, Nanshan, Shenzhen, China
Manufacturer:	Howen Technologies Co., Ltd.
Address:	No.201, 2/F, B Zone, Hivac Building, Langshan 2nd Rd, North Zone of Technology Park, Nanshan, Shenzhen, China
Date of Test:	Jul. 17, 2019 – Aug. 14, 2019

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:	***Rleo***	***Date:***	***Aug. 14, 2019***
Reviewed By:	***Beryl Zhao***	***Date:***	***Aug. 15, 2019***
Approved By:	***Tomsin***	***Date:***	***Aug. 15, 2019***

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2. EUT Description

Product:	Mobile Digital Video Recorder
Model No.:	Hero-ME31-08
Additional Model No.:	Hero-ME40-02, Hero-ME40-04, Hero-ME40-08, Hero-ME40-16, Hero-ME41-02, Hero-ME41-04, Hero-ME41-08, Hero-ME41-16, Hero-ME32-02, Hero-ME32-04, Hero-ME32-08, Hero-ME32-16, Hero-ME31-02, Hero-ME31-04, Hero-ME31-16, Hero-ME34-02, Hero-ME34-04, Hero-ME34-08, Hero-ME34-16, Hero-ME35-02, Hero-ME35-04, Hero-ME35-08, Hero-ME35-16, Hero-ME36-02, Hero-ME36-04, Hero-ME36-08, Hero-ME36-16, Hero-ME37-02, Hero-ME37-04, Hero-ME37-08, Hero-ME37-16, Hero-ME38-02, Hero-ME38-04, Hero-ME38-08, Hero-ME38-16, Hero-MA80-02, Hero-MA80-04, Hero-MA80-08, Hero-MA80-16, Hero-MA81-02, Hero-MA81-04, Hero-MA81-08, Hero-MA81-16, Hero-MA82-02, Hero-MA82-04, Hero-MA82-08, Hero-MA82-16, Hero-MA83-02, Hero-MA83-04, Hero-MA83-08, Hero-MA83-16, Hero-MA84-02, Hero-MA84-04, Hero-MA84-08, Hero-MA84-16, Hero-MDT-AT5, Hero-MDT-AT8
Trade Mark:	Howen
Product:	Mobile Digital Video Recorder
Model No.:	Hero-ME31-08
Operation Frequency:	For WIFI: 2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20)) 2422MHz~2452MHz (802.11n(HT40)) For WCDMA: WCDMA Band V: TX: 826.4MHz ~ 846.6MHz, RX: 871.4MHz ~ 891.6MHz WCDMA Band IV: TX: 1712.4MHz ~ 1752.6MHz, RX: 2112.4MHz ~ 2152.6MHz WCDMA Band II: TX: 1852.4MHz ~ 1907.6MHz, RX: 1932.4MHz ~ 1987.6MHz
Modulation Technology:	For WIFI: DSSS(802.11b) OFDM (802.11g/802.11n) For WCDMA: QPSK for HSDPA and HSUPA
Antenna Type:	Integral Antenna

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Antenna Gain:	For WIFI: 3dBi WCDMA Band V: 5dBi WCDMA Band IV: 5dBi WCDMA Band II: 5dBi
Power Supply:	DC 8V-36V
Remark:	All models above are identical in interior structure, electrical circuits and components, and just model names are different for the marketing requirement.

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3. General Information

3.1. Test environment and mode

Item	Normal condition
Temperature	+25ºC
Voltage	DC 8V-36V
Humidity	55%
Atmospheric Pressure:	1010 mbar
Test Mode:	
WIFI Mode:	**Keep the EUT in continuous transmitting by select channel and modulations**
WCDMA Mode:	**Keep the EUT in communication with CMU200 and select channel with modulation**

3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

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4. Facilities and Accreditations

4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

  Shenzhen Tongce Testing Lab

  The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

4.2. Location

Shenzhen Tongce Testing Lab

Address: 1B/F., Building 1, Yibaolai Industrial Park, Qiaotou, Fuyong, Baoan District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

5. Test Results and Measurement Data

Applicable Standard
According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1) **For WIFI:** The tune up maximum output power for antenna is 18.00dBm (63.10mW) at 2412MHz, 3dBi antenna gain(with 2.00 numeric antenna gain.)
For WCDMA Band V: The tune up maximum output power for antenna is 25.00dBm (316.23mW) at 846.6MHz, 5dBi antenna gain(with 3.16 numeric antenna gain.)
For WCDMA Band IV: The tune up maximum output power for antenna is 24.00dBm (251.19mW) at 1752.6MHz, 5dBi antenna gain(with 3.16 numeric antenna gain.)
For WCDMA Band II: The tune up maximum output power for antenna is 24.00dBm (251.19mW) at 1907.6MHz, 5dBi antenna gain(with 3.16 numeric antenna gain.)
2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where E = *Field Strength in Volts / meter*
P = *Power in Watts*
G=*Numeric antenna gain*
d=*Distance in meters*
S=*Power Density in milliwatts / square centimeter*

Substituting the MPE safe distance using d=20cm into above equation.
Yields: *S=0.000199*P*G*

Maximum Emissions Level					
Mode	**Power(*m*W)**	**Numeric antenna gain**	**Power density *(mW/cm²)***	**Limit *(mW/cm²)***	**Result**
WIFI	63.10	2.00	0.025114	1.0	Pass
WCDMA Band V	316.23	3.16	0.198858	0.5644	
WCDMA Band IV	251.19	3.16	0.157958	1.0	
WCDMA Band II	251.19	3.16	0.157958	1.0	

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The device contain transmitters (WCDMA & WIFI) can transmit multiple transmission modes at the same time.

Maximum Emissions Level			
Mode	**Power density (mW/cm^2)**	**Limit (mW/cm^2)**	**Result**
WCDMA & WIFI	0.377449	1	Pass

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