



**Shenzhen Huatongwei International Inspection Co., Ltd.**

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中国认可  
国际互认  
检测  
TESTING  
CNAS L1225

## TEST REPORT

IEC/EN 60601-1-2

### Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic disturbances - Requirements and tests

Report Reference No. .... : TRE13070081 R/C: 13334

Compiled by

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Date of issue .....: Aug. 20, 2013

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

Address .....: Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, Guangdong, China

Testing location/ procedure .....: Full application of Harmonised standards ☒  
Partial application of Harmonised standards ☐  
Other standard testing methods ☐

Applicant's name .....: Shenzhen Sonka Medical Technology CO., Limited

Address .....: Floor 6, Block 8, Zhongyuntai Technology Industrial Park, Songbai Road, Shiyan Street, Baoan District, Shenzhen, Guangdong, China

#### Test specification:

Standard .....: IEC 60601-1-2: 2014  
EN 60601-1-2: 2015

Non-standard test method .....: /

Test Report Form No. ....: HTWEMCCE\_1B

TRF Originator .....: Shenzhen Huatongwei International Inspection Co., Ltd.

Master TRF .....: Dated 2014-06

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Test item description .....: Body composition analyzer scale

Trade Mark .....: N/A

Manufacturer .....: Shenzhen Sonka Medical Technology CO., Limited

Model/Type reference .....: SK-X80T-MD01

Listed Model .....: SK-X60, SK-X60HD, SK-X9L

Ratings .....: 100-240Va.c., 50/60Hz

Result .....: Positive

#### Report version information:

Revised date: 2017-11-09 Clause 2, 3, 4.1, 4.2, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11.

**EMC -- TEST REPORT**

|                                             |               |
|---------------------------------------------|---------------|
| <b>Test Report No. :</b> <b>TRE13070081</b> | Aug.20, 2013  |
|                                             | Date of issue |

Equipment under Test        :        Body composition analyzer scale

Model /Type                    :        SK-X80T-MD01

Listed Model                   :        SK-X60, SK-X60HD, SK-X9L

**Applicant**                     :        Shenzhen Sonka Medical Technology CO., Limited

Address                         :        Floor 6, Block 8, Zhongyuntai Technology Industrial Park,  
Songbai Road, Shiyan Street, Baoan District, Shenzhen,  
Guangdong, China

**Manufacturer**                :        Shenzhen Sonka Medical Technology CO., Limited

Address                         :        Floor 6, Block 8, Zhongyuntai Technology Industrial Park,  
Songbai Road, Shiyan Street, Baoan District, Shenzhen,  
Guangdong, China

|                                                          |                 |
|----------------------------------------------------------|-----------------|
| <b>Test Result</b> according to the standards on page 4: | <b>Positive</b> |
|----------------------------------------------------------|-----------------|

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. TEST STANDARDS

The tests were performed according to following standards:

[IEC 60601-1-2: 2014](#) Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic disturbances - Requirements and tests

[EN 60601-1-2: 2015](#) Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic disturbances - Requirements and tests

Remark: This EUT is ranged to the Group 1 Class B apparatus according to the standard of CISPR 11: 2015 + A1: 2016 clause 5.2.

## 2. SUMMARY

### 2.1. General Remarks:

Date of receipt of test sample : Jul.17, 2013

Testing commenced on : Jul.17, 2013

Testing concluded on : Nov. 09, 2017

### 2.2. Equipment Under Test

#### Power supply system utilised

Power supply voltage :   ■ 230V / 50 Hz                           ■ 120V / 60Hz  
                                  o 12 V DC                                   o 24 V DC  
                                  o Other (specified in blank below)

\_\_\_\_\_ / \_\_\_\_\_

### 2.3. Short description of the Equipment under Test (EUT)

The report is on the basis of the original report, Update test standards: IEC60601-1-2: 2014 and EN 60601-1-2: 2015, Update company name, Model name and increase Listed Model. Change the ratings.

The EUT is a Body composition analyzer scale. SK-X80T-MD01 is a equipment which specially in the body weight, body fat, body temperature testing for mass centralism physical examination in the healthcare department, using with non-contact ultrasonic wave to measure height; High quality balanced beam weighing sensor. Has: Three operating mode: The pressed key, the remote control, the automatic to choose ,fast accurate measurement result , built-in ten inch high clear advertisement screen and so on. It is applicable for use in home healthcare environment and professional healthcare facility environment. All models are same except for appearance

Serial number: SK-X801706029.

### 2.4. EUT operation mode:

The equipment under test was operated and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes during the measurement under the following conditions. The height measurement range is from 60cm to 215 cm and the weight measurement range is from 5.0kg to 250 kg. The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm.

Test program (customer specific)

|                          |                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------|
| Emissions tests.....     | : According to IEC 60601-1-2, EN 60601-1-2 searching for the highest disturbance.    |
| Immunity tests .....     | : According to IEC 60601-1-2, EN 60601-1-2 searching for the highest susceptibility. |
| Harmonic current.....    | : According to IEC 61000-3-2, searching for the highest disturbance.                 |
| Voltage fluctuation..... | : According to IEC 61000-3-3, searching for the highest disturbance.                 |

## 2.5. EUT configuration:

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

■ - supplied by the manufacturer

o - supplied by the lab

- |                              |                                                                   |
|------------------------------|-------------------------------------------------------------------|
| ■ AC Probe line              | Length(m) : 1.8<br>Shield : UnShielded<br>Detachable : Detachable |
| o Portable thermostatic bath | Manufacturer : JUYI<br>M/N : PR600                                |
| ■ SD-Card                    | Manufacturer : Kingston<br>M/N : 31311-001A00LF                   |

## 2.6. IMMUNITY pass/fail criteria:

Examples of test failures:

- malfunction;
- non-operation when operation is required;
- unwanted operation when no operation is required;
- deviation from normal operation that poses an unacceptable RISK to the PATIENT or OPERATOR;
- component failures;
- change in programmable parameters;
- reset to factory defaults (MANUFACTURER's presets);
- change of operating mode;
- a FALSE POSITIVE ALARM CONDITION;
- a FALSE NEGATIVE ALARM CONDITION (failure to alarm);
- cessation or interruption of any intended operation, even if accompanied by an ALARM SIGNAL;
- initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an ALARM SIGNAL;
- error of a displayed numerical value sufficiently large to affect diagnosis or treatment;
- noise on a waveform in which the noise would interfere with diagnosis, treatment or monitoring;
- artefact or distortion in an image in which the artefact would interfere with diagnosis, treatment or monitoring;
- failure of automatic diagnosis or treatment ME EQUIPMENT or ME SYSTEM to diagnose or treat, even if accompanied by an ALARM SIGNAL.

Example of performance during and after the applied testing stimulus required to pass the test:

- for a mammography system, the compression full release and associated command remains fully operational;
- for ULTRASOUND DIAGNOSTIC EQUIPMENT, the probe heating, dissipative power and temperature shall remain within specifications;
- safety-related functions perform as intended;
- false operation of alarms, “fail safe” modes and similar functions do not occur.

NOTE This might require performing the test twice – once to ensure the functions occur as expected and again to ensure they do not occur falsely.

Examples of acceptable degradation:

- an imaging system displays an image that could be altered, but in a way that would not affect the diagnosis or treatment;
- a heart rate monitor displays a heart rate that could be in error, but by an amount that is not clinically significant;
- a PATIENT monitor exhibits a small amount of noise or a transient on a waveform and the noise or transient would not affect diagnosis, treatment or monitoring.

Examples of ME EQUIPMENT and ME SYSTEMS with multiple functions:

- multi-parameter monitors;
- anaesthesia system with monitors;
- ventilators with monitors;
- multiple instances of the same function (e.g. multiple invasive blood pressure sensors).

measuring range: stature/height 60—215cm allowance error  $\leq 0.5\text{cm}$

weight 5.0—250kg allowance error  $\leq \pm 0.5\text{ kg}$

rating power :  $\leq 40\text{VA}$

work environment: temperature : 10。C—40。C dampness 20%—85%PH

storage environment: temperature: -20。C—55。C dampness 10%—90%PH

### **3. TEST ENVIRONMENT**

#### **3.1. Address of the test laboratory**

Shenzhen Huatongwei International Inspection Co., Ltd.  
Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, Guangdong, China  
Tel: 86-755-26748019 Fax: 86-755-26748089

#### **3.2. Test Facility**

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

##### **CNAS-Lab Code: L1225**

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

##### **A2LA-Lab Cert. No. 3902.01**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

##### **FCC-Registration No.: 762235**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No: 762235.

##### **IC-Registration No.: 5377B-1, 5377B-2**

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B.

##### **ACA**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

##### **VCCI**

Radiated disturbance above 1GHz measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20007.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. Has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-20001.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-20001.

The 3m Semi-anechoic chamber (9.1m×6.4m×6.0m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.:R-4398.



### 3.3. Environmental conditions

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

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

**3.4. Test Description**

|                                                       |                                                                                    |      |
|-------------------------------------------------------|------------------------------------------------------------------------------------|------|
| Emission Measurement                                  |                                                                                    |      |
| Radiated Emission                                     | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>CISPR 11: 2015 + A1: 2016             | PASS |
| Conducted Disturbance                                 | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>CISPR 11: 2015 + A1: 2016             | PASS |
| Harmonic Current                                      | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-3-2: 2014                   | PASS |
| Voltage Fluctuation and Flicker                       | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-3-3: 2013                   | PASS |
| Immunity Measurement                                  |                                                                                    |      |
| Electrostatic Discharge                               | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-2: 2008                   | PASS |
| RF Field Strength Susceptibility<br>(80~2500MHz)      | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-3: 2006+A1: 2007+A2: 2010 | PASS |
| Electrical Fast Transient/Burst Test                  | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-4: 2012                   | PASS |
| Surge Test                                            | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-5: 2014                   | PASS |
| Conducted Susceptibility Test                         | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-6: 2013                   | PASS |
| Power Frequency Magnetic Field<br>Susceptibility Test | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-8: 2009                   | PASS |
| Voltage Dips and Interruptions Test                   | IEC 60601-1-2: 2014<br>EN 60601-1-2: 2015<br>IEC 61000-4-11: 2004                  | PASS |

Note: "N/A" means "not applicable".

The measurement uncertainty is not included in the test result.

| IEC 60601-1-2: 2014 / EN 60601-1-2: 2015 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |         |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------|
| Clause                                   | Requirement + Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Result - Remark             | Verdict |
| 5                                        | ME EQUIPMENT and ME SYSTEMS identification, marking and documents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                             | PASS    |
| 5.1                                      | Additional requirements for marking on the outside of ME EQUIPMENT and ME SYSTEMS that are specified for use only in a shielded location SPECIAL ENVIRONMENT                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | N/A     |
|                                          | In addition to the requirements of 7.2 of the general standard, ME EQUIPMENT and ME SYSTEMS specified for use only in a shielded location SPECIAL ENVIRONMENT shall be labelled with a CLEARLY LEGIBLE warning that they should be used only in the specified type of shielded location.                                                                                                                                                                                                                                                                                                   |                             | N/A     |
| 5.2                                      | ACCOMPANYING DOCUMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | PASS    |
| 5.2.1                                    | Instructions for use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                             | PASS    |
| 5.2.1.1                                  | General                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                             | PASS    |
| a)                                       | a statement of the environments for which the ME EQUIPMENT or ME SYSTEM is suitable. Relevant exclusions, as determined by RISK ANALYSIS, shall also be listed, e.g. hospitals except for near active HF SURGICAL EQUIPMENT and the RF shielded room of an ME SYSTEM for magnetic resonance imaging, where the intensity of EM DISTURBANCES is high.                                                                                                                                                                                                                                       | Please refer to User manual | PASS    |
| b)                                       | the performance of the ME EQUIPMENT or ME SYSTEM that was determined to be ESSENTIAL PERFORMANCE and a description of what the OPERATOR can expect if the ESSENTIAL PERFORMANCE is lost or degraded due to EM DISTURBANCES (the defined term "ESSENTIAL PERFORMANCE" need not be used).                                                                                                                                                                                                                                                                                                    | Please refer to User manual | PASS    |
| c)                                       | a warning statement to the effect that "WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally." The MANUFACTURER of the ME EQUIPMENT or ME SYSTEM may provide a description or list of equipment with which the ME EQUIPMENT or ME SYSTEM has been tested in a stacked or adjacent configuration and with which stacked or adjacent use resulted in normal operation. | Please refer to User manual | PASS    |

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             |      |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|
| d)      | a list of all cables and maximum lengths of cables (if applicable), transducers and other ACCESSORIES that are replaceable by the RESPONSIBLE ORGANIZATION and that are likely to affect compliance of the ME EQUIPMENT or ME SYSTEM with the requirements of Clause 7 (EMISSIONS) and Clause 8 (IMMUNITY). ACCESSORIES may be specified either generically (e.g. shielded cable, load impedance) or specifically (e.g. by MANUFACTURER and MODEL OR TYPE REFERENCE). Transducers and cables specified by the MANUFACTURER of the ME EQUIPMENT or ME SYSTEM as replacement parts for internal components need not be listed.                        | Please refer to User manual | PASS |
| e)      | a warning statement to the effect that "WARNING: Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation."                                                                                                                                                                                                                                                                                                                             | Please refer to User manual | PASS |
| f)      | a warning statement to the effect that: "WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the [ME EQUIPMENT or ME SYSTEM], including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result." In the above warning, "[ME EQUIPMENT or ME SYSTEM]" shall be replaced with the MODEL OR TYPE REFERENCE of the ME EQUIPMENT or ME SYSTEM.                                                                                                                     | Please refer to User manual | PASS |
|         | If higher IMMUNITY TEST LEVELS than those specified in Table 9 are used, the minimum separation distance may be lowered. Lower minimum separation distances shall be calculated using the equation specified in 8.10.                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | N/A  |
| 5.2.1.2 | Requirements applicable to ME EQUIPMENT and ME SYSTEMS classified class A according to CISPR 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             | N/A  |
|         | In addition to the requirements of 7.9.2 of the general standard, for ME EQUIPMENT and ME SYSTEMS that are classified class A according to CISPR 11, the instructions for use shall include the following note:<br><br>The EMISSIONS characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment. |                             | N/A  |
| 5.2.2   | Technical description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                             | PASS |
| 5.2.2.1 | Requirements applicable to all ME EQUIPMENT and ME SYSTEMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                             | PASS |

|         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |      |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|
|         | <p>In addition to the requirements of 7.9.3 of the general standard, the technical description shall describe precautions to be taken to prevent adverse events to the PATIENT and OPERATOR due to ELECTROMAGNETIC DISTURBANCES.</p> <p>For all ME EQUIPMENT and ME SYSTEMS, the technical description shall include the following information:</p>                                                                                                             |                             |      |
| a)      | the compliance for each EMISSIONS and IMMUNITY standard or test specified by this collateral standard, e.g. EMISSIONS class and group and IMMUNITY TEST LEVEL.                                                                                                                                                                                                                                                                                                  | Please refer to User manual | PASS |
| b)      | any deviations from this collateral standard and allowances used.                                                                                                                                                                                                                                                                                                                                                                                               |                             | N/A  |
| c)      | all necessary instructions for maintaining BASIC SAFETY and ESSENTIAL PERFORMANCE with regard to ELECTROMAGNETIC DISTURBANCES for the EXPECTED SERVICE LIFE.                                                                                                                                                                                                                                                                                                    | Please refer to User manual | PASS |
| 5.2.2.2 | Requirements applicable to ME EQUIPMENT and ME SYSTEMS specified for use only in a shielded location SPECIAL ENVIRONMENT                                                                                                                                                                                                                                                                                                                                        |                             | N/A  |
|         | In addition to the requirements of 7.9.3 of the general standard, for ME EQUIPMENT and ME SYSTEMS specified for use only in a shielded location (see 7.1.5), the technical description shall include the following information:                                                                                                                                                                                                                                 |                             | N/A  |
| a)      | a warning to the effect that: "WARNING: Failure to use this equipment in the specified type of shielded location could result in degradation of the performance of this equipment, interference with other equipment or interference with radio services";                                                                                                                                                                                                      |                             | N/A  |
| b)      | specifications for the shielded location, including: – minimum RF shielding effectiveness; – for each cable that enters or exits the shielded location, the minimum RF filter attenuation; and – the frequency range(s) over which the specifications apply;                                                                                                                                                                                                    |                             | N/A  |
| c)      | recommended test methods for measurement of RF shielding effectiveness and RF filter attenuation;                                                                                                                                                                                                                                                                                                                                                               |                             | N/A  |
| d)      | <p>one or more of the following and a recommendation that a notice containing this information be posted at the entrance(s) to the shielded location:</p> <ul style="list-style-type: none"> <li>– a specification of the EMISSIONS characteristics of other equipment allowed inside the shielded location with the ME EQUIPMENT or ME SYSTEM;</li> <li>– a list of specific equipment allowed;</li> <li>– a list of types of equipment prohibited.</li> </ul> |                             | N/A  |
| 5.2.2.3 | Requirements applicable to ME EQUIPMENT that intentionally receives RF electromagnetic energy for the purpose of its operation                                                                                                                                                                                                                                                                                                                                  |                             | PASS |
|         | In addition to the requirements of 7.9.3 of the general standard, for ME EQUIPMENT that intentionally receives RF electromagnetic energy for the purpose of its operation (RF receivers), the technical description shall include the following information:                                                                                                                                                                                                    |                             | PASS |

|         |                                                                                                                                                                                                                                                                                                         |  |      |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------|
|         | <ul style="list-style-type: none"> <li>– each frequency or frequency band of reception;</li> <li>– the preferred frequency or frequency band, if applicable;</li> <li>– the bandwidth of the receiving section of the ME EQUIPMENT in those bands.</li> </ul>                                           |  |      |
| 5.2.2.4 | Requirements applicable to ME EQUIPMENT that includes RF transmitters                                                                                                                                                                                                                                   |  | PASS |
|         | In addition to the requirements of 7.9.3 of the general standard, for ME EQUIPMENT that includes RF transmitters, the technical description shall include each frequency or frequency band of transmission, the type and frequency characteristics of the modulation and the EFFECTIVE RADIATED POWER   |  | PASS |
| 5.2.2.5 | Requirements applicable to PERMANENTLY INSTALLED LARGE ME EQUIPMENT and LARGE ME SYSTEMS                                                                                                                                                                                                                |  | N/A  |
|         | In addition to the requirements of 7.9.3 of the general standard, for PERMANENTLY INSTALLED LARGE ME EQUIPMENT and LARGE ME SYSTEMS for which the exemption specified in 8.6 from the testing requirements of IEC 61000-4-3 is used, the technical description shall include the following information: |  | N/A  |
| a)      | a statement that an exemption has been used and that the equipment has not been tested for radiated RF IMMUNITY over the entire frequency range 80 MHz to 6 000 MHz;                                                                                                                                    |  | N/A  |
| b)      | a warning to the effect that “WARNING: This equipment has been tested for radiated RF immunity only at selected frequencies, and use nearby of emitters at other frequencies could result in improper operation”;                                                                                       |  | N/A  |
| c)      | a list of the frequencies and modulations used to test the IMMUNITY of the ME EQUIPMENT or ME SYSTEM.                                                                                                                                                                                                   |  | N/A  |
| 5.2.2.6 | Requirements applicable to ME EQUIPMENT and ME SYSTEMS that claim compatibility with HF SURGICAL EQUIPMENT                                                                                                                                                                                              |  | N/A  |
|         | In addition to the requirements of 7.9.3 of the general standard, for ME EQUIPMENT and ME SYSTEMS that claim compatibility with HF SURGICAL EQUIPMENT, the technical description shall include a statement of HF SURGICAL EQUIPMENT compatibility and the conditions of INTENDED USE during HF surgery. |  | N/A  |

### 3.5. 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 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                  | Range      | Measurement Uncertainty | Notes |
|-----------------------|------------|-------------------------|-------|
| Radiated Emission     | 30~1000MHz | 4.24dB                  | (1)   |
| Conducted Disturbance | 0.15~30MHz | 3.35dB                  | (1)   |

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 3.6. Equipments Used during the Test

| Radiated Emission |                         |                |              |            |            |            |
|-------------------|-------------------------|----------------|--------------|------------|------------|------------|
| Item              | Test Equipment          | Manufacturer   | Model No.    | Serial No. | Last Cal.  | Next Cal.  |
| 1                 | Ultra-Broadband Antenna | SCHWARZB ECK   | VULB9163     | 538        | 11/8/2014  | 11/7/2017  |
| 2                 | Emi Test Receiver       | R&S            | ESCI         | 101247     | 11/13/2016 | 11/12/2017 |
| 3                 | Pre-amplifier           | SCHWARZB ECK   | BBV 9743     | 9743-0022  | 11/13/2016 | 11/12/2017 |
| 4                 | Turntable               | Maturo Germany | TT2.0-1T     | /          | N/A        | N/A        |
| 5                 | Antenna Mast            | Maturo Germany | CAM-4.0-P-12 | /          | N/A        | N/A        |
| 6                 | Test Software           | R&S            | ES-K1        | /          | N/A        | N/A        |

| Conducted Disturbance |                   |              |           |            |            |            |
|-----------------------|-------------------|--------------|-----------|------------|------------|------------|
| Item                  | Test Equipment    | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
| 1                     | EMI Test Receiver | R&S          | ESCI      | 100900     | 11/13/2016 | 11/12/2017 |
| 2                     | Artificial Mains  | SCHWARZB ECK | NNLK 8121 | 573        | 11/13/2016 | 11/12/2017 |
| 3                     | Pulse Limiter     | R&S          | ESH3-Z2   | 101488     | 11/13/2016 | 11/12/2017 |
| 4                     | Test Software     | R&S          | ES-K1     | /          | N/A        | N/A        |

| Harmonic Current |                               |                        |           |            |            |            |
|------------------|-------------------------------|------------------------|-----------|------------|------------|------------|
| Item             | Test Equipment                | Manufacturer           | Model No. | Serial No. | Last Cal.  | Next Cal.  |
| 1                | Purified Power Source         | CALIFORNIA INSTRUMENTS | HFS500    | 54513      | 11/13/2016 | 11/12/2017 |
| 2                | Harmonic And Flicker Analyzer | EM TEST                | DPA503S1  | 0500-10    | 11/13/2016 | 11/12/2017 |
| 3                | Test Software                 | EM TEST                | DPA       | /          | N/A        | N/A        |

| Voltage Fluctuation and Flicker |                               |                        |           |            |            |            |
|---------------------------------|-------------------------------|------------------------|-----------|------------|------------|------------|
| Item                            | Test Equipment                | Manufacturer           | Model No. | Serial No. | Last Cal.  | Next Cal.  |
| 1                               | Purified Power Source         | CALIFORNIA INSTRUMENTS | HFS500    | 54513      | 11/13/2016 | 11/12/2017 |
| 2                               | Harmonic And Flicker Analyzer | EM TEST                | DPA503S1  | 0500-10    | 11/13/2016 | 11/12/2017 |
| 3                               | Test Software                 | EM TEST                | DPA       | /          | N/A        | N/A        |

| Electrostatic Discharge |                |              |           |            |            |            |
|-------------------------|----------------|--------------|-----------|------------|------------|------------|
| Item                    | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
| 1                       | ESD Simulator  | EM TEST      | DITO      | 0301-04    | 11/13/2016 | 11/12/2017 |

| RF Field Strength Susceptibility |                  |              |              |            |           |           |
|----------------------------------|------------------|--------------|--------------|------------|-----------|-----------|
| Item                             | Test Equipment   | Manufacturer | Model No.    | Serial No. | Last Cal. | Next Cal. |
| 1                                | Signal Generator | R&S          | SMB100A      | 114360     | 2017/6/13 | 2018/6/12 |
| 2                                | Amplifier        | R&S          | BBA150-BC500 | 102664     | 2017/6/30 | 2018/6/29 |
| 3                                | Amplifier        | R&S          | BBA150       | 101681     | 2017/2/9  | 2018/2/8  |
| 4                                | Power Head       | R&S          | NRP18A       | 101010     | 2017/6/12 | 2018/6/11 |
| 5                                | Power Head       | R&S          | NRP18A       | 101011     | 2017/6/12 | 2018/6/11 |
| 6                                | Transmit Antenna | Schwarzbeck  | STLP9129     | 00044      | 2017/7/12 | 2018/7/11 |
| 7                                | Field Probe      | AR           | FL7006/KIT   | 0348555    | 2017/6/23 | 2018/6/22 |
| 8                                | RF switch        | R&S          | OSP120       | 101859     | 2017/6/14 | 2018/6/13 |
| 9                                | Test Software    | R&S          | EMC32        | 100916     | NA        | NA        |



## Electrical Fast Transient/Burst

| Item | Test Equipment           | Manufacturer | Model No.     | Serial No. | Last Cal.  | Next Cal.  |
|------|--------------------------|--------------|---------------|------------|------------|------------|
| 1    | Ultra Compact Simulator  | EM TEST      | UCS500M6      | 0500-19    | 11/13/2016 | 11/12/2017 |
| 2    | 3-Phase Coupling Network | EM TEST      | CNI503 S5/16A | 0606-01    | 11/13/2016 | 11/12/2017 |
| 3    | Test Software            | EM TEST      | ISM IEC       | /          | N/A        | N/A        |

## Surge

| Item | Test Equipment           | Manufacturer | Model No.     | Serial No. | Last Cal.  | Next Cal.  |
|------|--------------------------|--------------|---------------|------------|------------|------------|
| 1    | Ultra Compact Simulator  | EM TEST      | UCS500M6      | 0500-19    | 11/13/2016 | 11/12/2017 |
| 2    | 3-Phase Coupling Network | EM TEST      | CNI503 S5/16A | 0606-01    | 11/13/2016 | 11/12/2017 |
| 3    | Test Software            | EM TEST      | ISM IEC       | /          | N/A        | N/A        |

## Conducted Susceptibility

| Item | Test Equipment   | Manufacturer | Model No.  | Serial No. | Last Cal.  | Next Cal.  |
|------|------------------|--------------|------------|------------|------------|------------|
| 1    | Signal Generator | IFR          | 2023A      | 202304/060 | 11/13/2016 | 11/12/2017 |
| 2    | Amplifier        | AR           | 75A250     | 302205     | 11/13/2016 | 11/12/2017 |
| 3    | 6db Attenuator   | EMTEST       | ATT6/75    | 0010230A   | 11/13/2016 | 11/12/2017 |
| 4    | CDN              | EMTEST       | CDN M3/16A | 0802-03    | 11/13/2016 | 11/12/2017 |
| 5    | Test Software    | AR           | SW1004     | /          | N/A        | N/A        |

## Power Frequency Magnetic Field Susceptibility

| Item | Test Equipment                   | Manufacturer | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|----------------------------------|--------------|-----------|------------|------------|------------|
| 1    | Ultra Compact Simulator          | EM TEST      | UCS500M6  | 202304/060 | 11/13/2016 | 11/12/2017 |
| 2    | Motor Driven Voltage Transformer | EM TEST      | MV2616    | 302205     | 11/13/2016 | 11/12/2017 |
| 3    | Current Transformer              | EM TEST      | MC2630    | 302389     | 11/13/2016 | 11/12/2017 |
| 4    | Magnetic Coil                    | EM TEST      | MS100     | 0010230A   | 11/13/2016 | 11/12/2017 |
| 5    | Test Software                    | EM TEST      | ISM IEC   | /          | N/A        | N/A        |

## Voltage Dips and Interruptions

| Item | Test Equipment        | Manufacturer           | Model No. | Serial No. | Last Cal.  | Next Cal.  |
|------|-----------------------|------------------------|-----------|------------|------------|------------|
| 1    | Purified Power Source | CALIFORNIA INSTRUMENTS | HFS500    | 54513      | 11/13/2016 | 11/12/2017 |
| 2    | Test Software         | EM TEST                | DPA       | /          | N/A        | N/A        |

## **4. TEST CONDITIONS AND RESULTS**

### **4.1. Radiated Emission**

For test instruments and accessories used see section 3.6.

#### **4.1.1. Description of the test location**

Test location: Shielded room No. 6

#### **4.1.2. Limits of disturbance (Class B)**

| Frequency (MHz) | Distance (Meters) | Field Strengths Limits (dB $\mu$ V/m) |
|-----------------|-------------------|---------------------------------------|
| 30 ~ 230        | 3                 | 40                                    |
| 230 ~ 1000      | 3                 | 47                                    |

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

#### **4.1.3. Description of the test set-up**

##### **4.1.3.1. Operating Condition**

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes during the test, and the results of the maximum emanation are recorded.

##### **4.1.3.2. Test Configuration and Procedure**

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna. The antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

## 4.1.3.3. Photos of the test set-up



## 4.1.4. Test result

The requirements are **Fulfilled**

Band Width: 120kHz

Frequency Range: 30MHz to 1000MHz

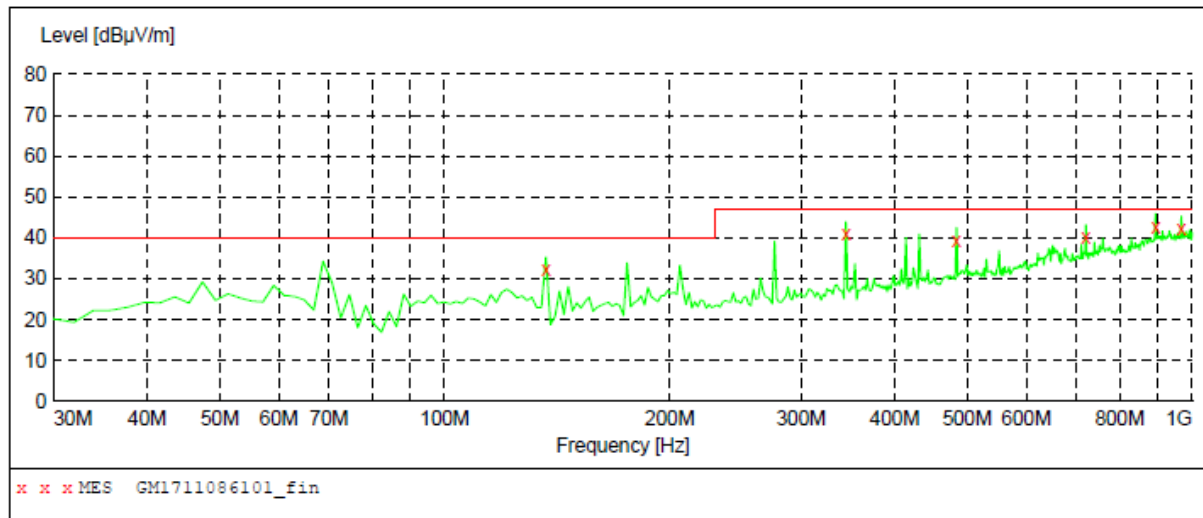
**Remarks:** The limits are kept. For detailed results, please see the following page(s).

Margin=limit-level

Level=read value+transducer

Transducer=antenna factor+pre-amplifier factor+cable loss

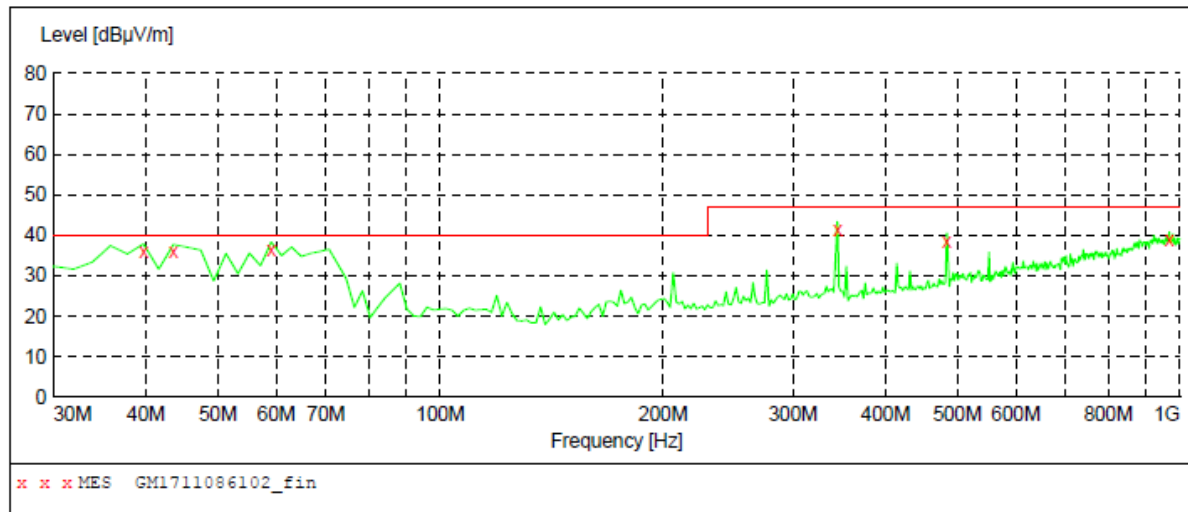
Test mode: Turned on  
Test voltage: AC 230V/50Hz



### MEASUREMENT RESULT: "GM1711086101\_fin"

11/8/2017 6:21PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 136.700000       | 32.20           | -13.7        | 40.0            | 7.8          | QP   | 100.0        | 225.00         | HORIZONTAL   |
| 344.280000       | 40.80           | -5.5         | 47.0            | 6.2          | QP   | 300.0        | 327.00         | HORIZONTAL   |
| 483.960000       | 39.40           | -2.4         | 47.0            | 7.6          | QP   | 100.0        | 328.00         | HORIZONTAL   |
| 720.640000       | 40.10           | 2.9          | 47.0            | 6.9          | QP   | 100.0        | 23.00          | HORIZONTAL   |
| 893.300000       | 42.80           | 6.6          | 47.0            | 4.2          | QP   | 100.0        | 74.00          | HORIZONTAL   |
| 967.020000       | 42.20           | 7.4          | 47.0            | 4.8          | QP   | 300.0        | 153.00         | HORIZONTAL   |

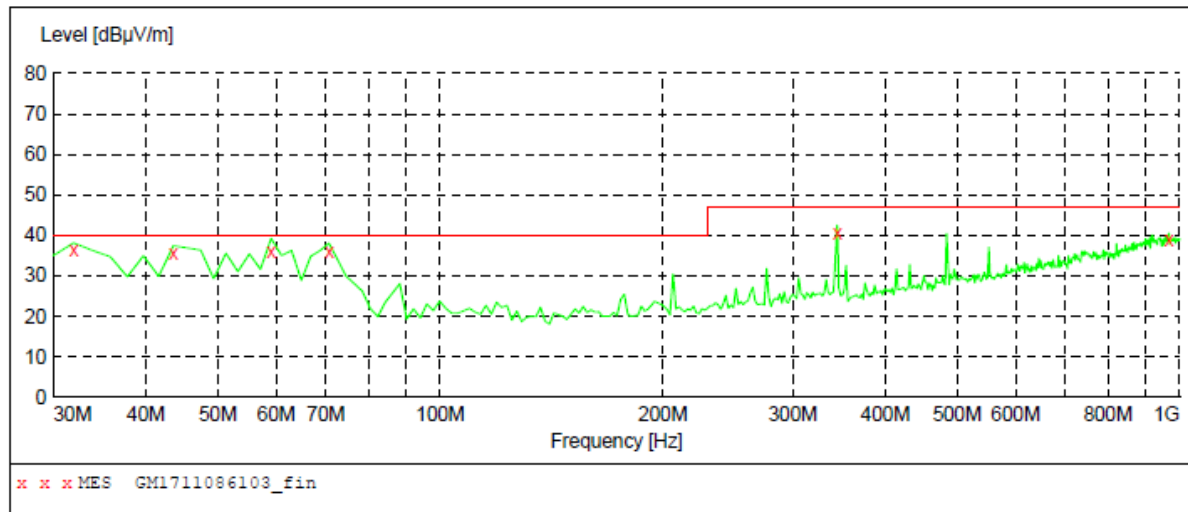
**MEASUREMENT RESULT: "GM1711086102\_fin"**

11/8/2017 6:35PM

| Frequency<br>MHz | Level<br>dBμV/m | Transd<br>dB | Limit<br>dBμV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 39.700000        | 36.00           | -10.1        | 40.0            | 4.0          | QP   | 100.0        | 206.00         | VERTICAL     |
| 43.580000        | 35.90           | -9.1         | 40.0            | 4.1          | QP   | 100.0        | 262.00         | VERTICAL     |
| 59.100000        | 36.50           | -9.8         | 40.0            | 3.5          | QP   | 100.0        | 222.00         | VERTICAL     |
| 344.280000       | 41.50           | -5.5         | 47.0            | 5.5          | QP   | 100.0        | 0.00           | VERTICAL     |
| 483.960000       | 38.70           | -2.4         | 47.0            | 8.3          | QP   | 100.0        | 86.00          | VERTICAL     |
| 967.020000       | 39.00           | 7.4          | 47.0            | 8.0          | QP   | 100.0        | 86.00          | VERTICAL     |

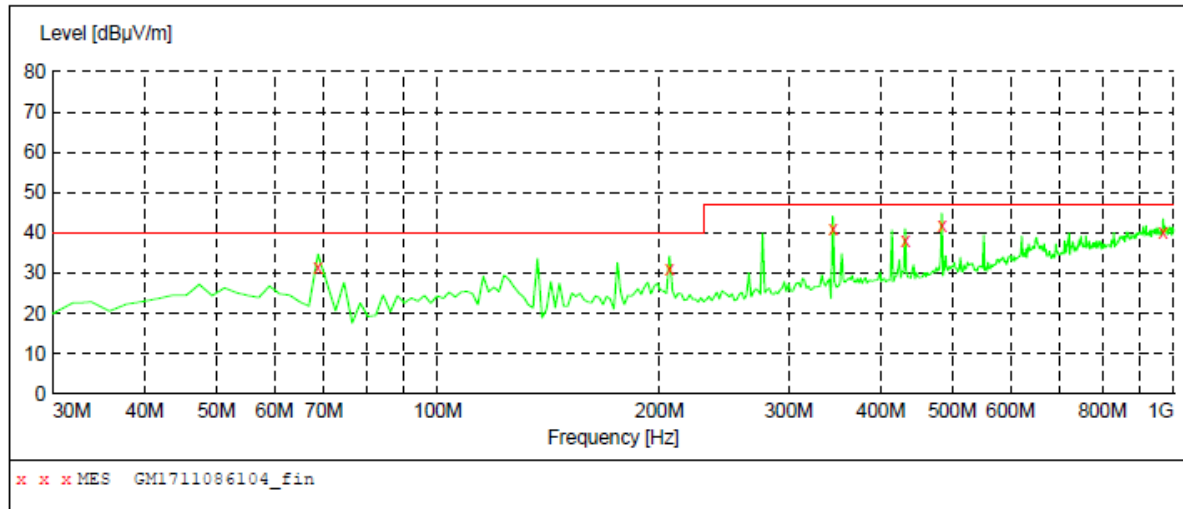
Test mode: Turned on

Test voltage: AC 120V/60Hz

**MEASUREMENT RESULT: "GM1711086103\_fin"**

11/8/2017 6:49PM

| Frequency<br>MHz | Level<br>dBμV/m | Transd<br>dB | Limit<br>dBμV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 31.940000        | 36.30           | -13.2        | 40.0            | 3.7          | QP   | 100.0        | 157.00         | VERTICAL     |
| 43.580000        | 35.60           | -9.1         | 40.0            | 4.4          | QP   | 100.0        | 63.00          | VERTICAL     |
| 59.100000        | 36.40           | -9.8         | 40.0            | 3.6          | QP   | 100.0        | 186.00         | VERTICAL     |
| 70.740000        | 36.20           | -13.3        | 40.0            | 3.8          | QP   | 100.0        | 210.00         | VERTICAL     |
| 344.280000       | 40.60           | -5.5         | 47.0            | 6.4          | QP   | 100.0        | 332.00         | VERTICAL     |
| 967.020000       | 38.70           | 7.4          | 47.0            | 8.3          | QP   | 100.0        | 169.00         | VERTICAL     |

**MEASUREMENT RESULT: "GM1711086104\_fin"**

11/8/2017 7:12PM

| Frequency<br>MHz | Level<br>dBμV/m | Transd<br>dB | Limit<br>dBμV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 68.800000        | 31.60           | -12.6        | 40.0            | 8.4          | QP   | 300.0        | 245.00         | HORIZONTAL   |
| 206.540000       | 31.10           | -10.5        | 40.0            | 8.9          | QP   | 300.0        | 111.00         | HORIZONTAL   |
| 344.280000       | 41.00           | -5.5         | 47.0            | 6.0          | QP   | 100.0        | 193.00         | HORIZONTAL   |
| 431.580000       | 37.90           | -3.5         | 47.0            | 9.1          | QP   | 300.0        | 191.00         | HORIZONTAL   |
| 483.960000       | 41.70           | -2.4         | 47.0            | 5.3          | QP   | 100.0        | 343.00         | HORIZONTAL   |
| 967.020000       | 40.30           | 7.4          | 47.0            | 6.7          | QP   | 300.0        | 163.00         | HORIZONTAL   |

## 4.2. Conducted disturbance

For test instruments and accessories used see section 3.6.

### 4.2.1. Description of the test location

Test location: Shielded room No. 5

### 4.2.2. Limits of disturbance

Limit of conducted disturbance at the mains ports(Class B)

| Frequency Range (MHz) | Limits (dBuV) |         |
|-----------------------|---------------|---------|
|                       | Quasi-Peak    | Average |
| 0.150~0.500           | 66~56         | 56~46   |
| 0.5000~5.000          | 56            | 46      |
| 5.000~30.000          | 60            | 50      |

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

### 4.2.3. Description of the test set-up

#### 4.2.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes during the test during the test, and the maximum emanating results are recorded.

#### 4.2.3.2. Test Configuration and Procedure

EUT is placed on the grounded reference plane. Connect the power line of the EUT to the LISN which is connected to receiver by coaxial line, then disturbance of the neutral line and live line can be detected by the receiver.



## 4.2.3.3. Photo of the test set-up



## 4.2.4. Test result

The requirements are **Fulfilled**

Band Width: 9kHz

Frequency Range: 150kHz to 30MHz

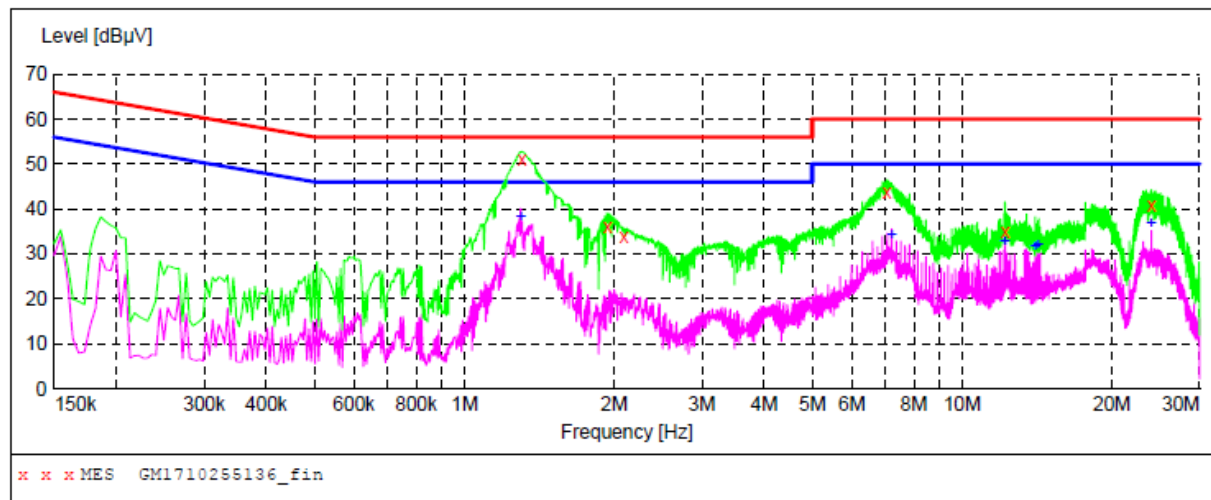
**Remarks:** The limits are kept. For detailed results, please see the following page(s).

Margin=limit-level

Level=read value+transducer

Transducer=insertion loss of LISN+cable loss+insertion loss of pulse limiter

Test mode: Turned on  
Test voltage: AC 230V/50Hz

**MEASUREMENT RESULT: "GM1710255136\_fin"**

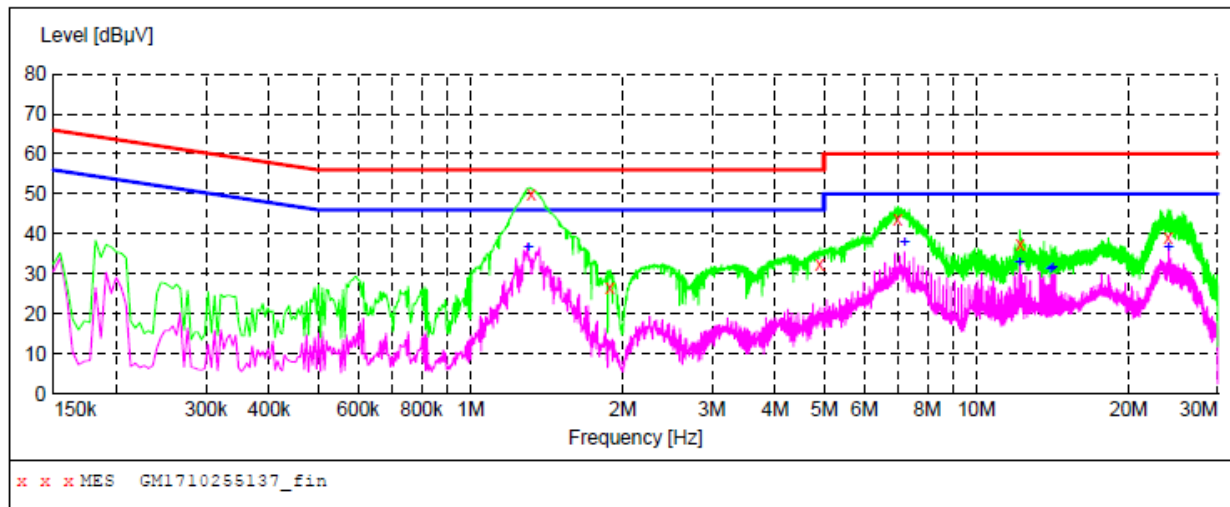
10/25/2017 4:20PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 1.306500         | 51.10         | 10.2         | 56            | 4.9          | QP       | N    | GND |
| 1.941000         | 35.90         | 10.2         | 56            | 20.1         | QP       | N    | GND |
| 2.094000         | 33.80         | 10.2         | 56            | 22.2         | QP       | N    | GND |
| 7.062000         | 43.60         | 10.3         | 60            | 16.4         | QP       | N    | GND |
| 12.192000        | 35.10         | 10.5         | 60            | 24.9         | QP       | N    | GND |
| 24.000000        | 40.80         | 10.7         | 60            | 19.2         | QP       | N    | GND |

**MEASUREMENT RESULT: "GM1710255136\_fin2"**

10/25/2017 4:20PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 1.297500         | 38.10         | 10.2         | 46            | 7.9          | AV       | N    | GND |
| 7.219500         | 34.20         | 10.3         | 50            | 15.8         | AV       | N    | GND |
| 12.196500        | 32.90         | 10.5         | 50            | 17.1         | AV       | N    | GND |
| 14.028000        | 31.50         | 10.5         | 50            | 18.5         | AV       | N    | GND |
| 14.212500        | 31.90         | 10.5         | 50            | 18.1         | AV       | N    | GND |
| 24.000000        | 36.70         | 10.7         | 50            | 13.3         | AV       | N    | GND |

**MEASUREMENT RESULT: "GM1710255137\_fin"**

10/25/2017 4:23PM

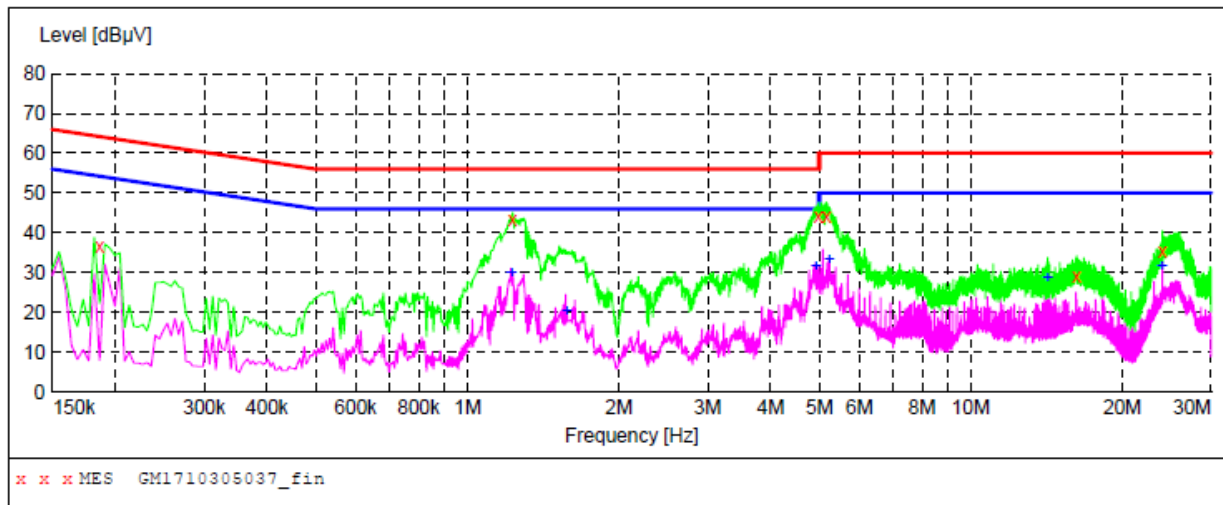
| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 1.320000         | 50.00         | 10.2         | 56            | 6.0          | QP       | L1   | GND |
| 1.887000         | 26.40         | 10.2         | 56            | 29.6         | QP       | L1   | GND |
| 4.906500         | 32.30         | 10.3         | 56            | 23.7         | QP       | L1   | GND |
| 6.999000         | 43.60         | 10.3         | 60            | 16.4         | QP       | L1   | GND |
| 12.196500        | 37.40         | 10.5         | 60            | 22.6         | QP       | L1   | GND |
| 23.932500        | 39.10         | 10.7         | 60            | 20.9         | QP       | L1   | GND |

**MEASUREMENT RESULT: "GM1710255137\_fin2"**

10/25/2017 4:23PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 1.302000         | 36.80         | 10.2         | 46            | 9.2          | AV       | L1   | GND |
| 7.210500         | 38.00         | 10.3         | 50            | 12.0         | AV       | L1   | GND |
| 12.196500        | 32.90         | 10.5         | 50            | 17.1         | AV       | L1   | GND |
| 14.028000        | 31.20         | 10.5         | 50            | 18.8         | AV       | L1   | GND |
| 14.149500        | 31.70         | 10.5         | 50            | 18.3         | AV       | L1   | GND |
| 24.000000        | 36.80         | 10.7         | 50            | 13.2         | AV       | L1   | GND |

Test mode: Turned on  
Test voltage: AC 120V/60Hz



#### MEASUREMENT RESULT: "GM1710305037\_fin"

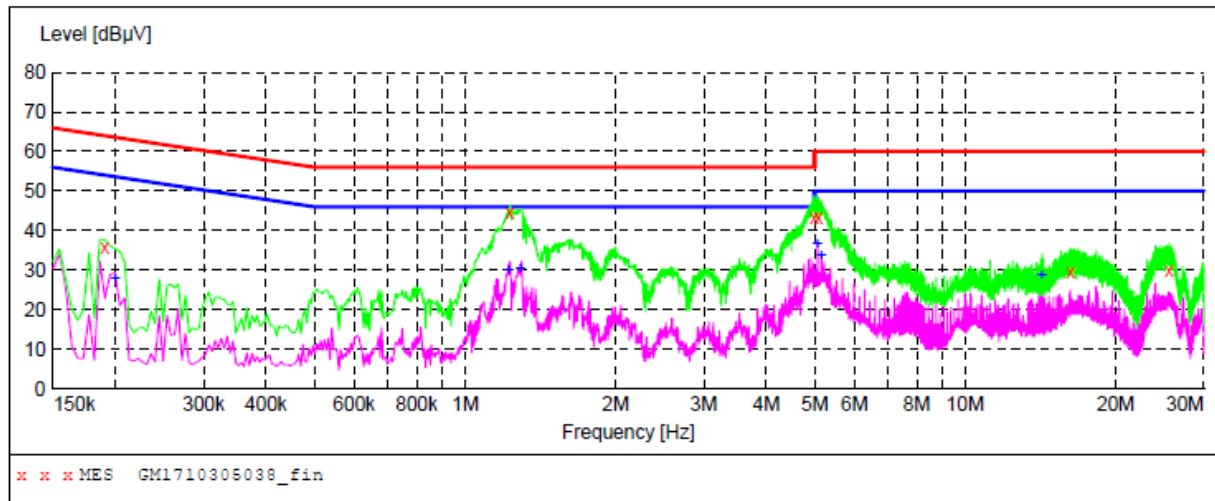
10/30/2017 5:23PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.186000         | 36.70         | 10.3         | 64            | 27.5         | QP       | L1   | GND |
| 1.230000         | 43.10         | 10.2         | 56            | 12.9         | QP       | L1   | GND |
| 4.983000         | 44.20         | 10.3         | 56            | 11.8         | QP       | L1   | GND |
| 5.167500         | 44.20         | 10.3         | 60            | 15.8         | QP       | L1   | GND |
| 16.224000        | 29.10         | 10.5         | 60            | 30.9         | QP       | L1   | GND |
| 24.000000        | 35.40         | 10.7         | 60            | 24.6         | QP       | L1   | GND |

#### MEASUREMENT RESULT: "GM1710305037\_fin2"

10/30/2017 5:23PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 1.225500         | 30.00         | 10.2         | 46            | 16.0         | AV       | L1   | GND |
| 1.572000         | 20.40         | 10.2         | 46            | 25.6         | AV       | L1   | GND |
| 4.920000         | 31.70         | 10.3         | 46            | 14.3         | AV       | L1   | GND |
| 5.226000         | 33.40         | 10.3         | 50            | 16.6         | AV       | L1   | GND |
| 14.212500        | 28.70         | 10.5         | 50            | 21.3         | AV       | L1   | GND |
| 24.000000        | 31.40         | 10.7         | 50            | 18.6         | AV       | L1   | GND |

**MEASUREMENT RESULT: "GM1710305038\_fin"**

10/30/2017 5:26PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.190500         | 35.80         | 10.3         | 64            | 28.2         | QP       | N    | GND |
| 1.230000         | 44.40         | 10.2         | 56            | 11.6         | QP       | N    | GND |
| 4.996500         | 43.20         | 10.3         | 56            | 12.8         | QP       | N    | GND |
| 5.100000         | 43.10         | 10.3         | 60            | 16.9         | QP       | N    | GND |
| 16.251000        | 29.40         | 10.5         | 60            | 30.6         | QP       | N    | GND |
| 25.597500        | 29.90         | 10.7         | 60            | 30.1         | QP       | N    | GND |

**MEASUREMENT RESULT: "GM1710305038\_fin2"**

10/30/2017 5:26PM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Detector | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|----------|------|-----|
| 0.199500         | 27.90         | 10.3         | 54            | 25.7         | AV       | N    | GND |
| 1.221000         | 29.90         | 10.2         | 46            | 16.1         | AV       | N    | GND |
| 1.288500         | 30.20         | 10.2         | 46            | 15.8         | AV       | N    | GND |
| 5.064000         | 36.60         | 10.3         | 50            | 13.4         | AV       | N    | GND |
| 5.154000         | 33.60         | 10.3         | 50            | 16.4         | AV       | N    | GND |
| 14.212500        | 28.60         | 10.5         | 50            | 21.4         | AV       | N    | GND |

### 4.3. Harmonic current

For test instruments and accessories used see section 3.6.

#### 4.3.1. Description of the test location

Test location: Shielded room No. 5

#### 4.3.2. Limits of harmonic current

Test configuration and procedure see clause 7.1 of standard IEC 61000-3-2: 2014.

#### 4.3.3. Description of the test set-up

##### 4.3.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes during the test, and the results of the maximum emanation are recorded.

##### 4.3.3.2. Photo of the test set-up



#### 4.3.4. Test result

The requirements are **Fulfilled**

**Remarks:** The limits are kept. For detailed results, please see the following page(s).

**Test Report of HTW**

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Standard used:        | IEC 61000-3-2<br>Equipment class A <= 150% of the limit |
| Observation time:     | 150s                                                    |
| Windows width:        | 10 periods - (IEC 61000-4-7 Edition 2002 + A1:2008)     |
| Customer:             | Shenzhen Sonka Medical Technology CO., Limited          |
| Mains supply voltage: | AC 230V/50Hz                                            |
| E. U. T.:             | Body composition analyzer scale<br>M/N: SK-X80T-MD01    |
| Date of test:         | 10:29 14.Aug 2013                                       |
| Tester:               | LuoRin                                                  |

**Test Result**

|               |      |
|---------------|------|
| E. U. T.:     | PASS |
| Power Source: | PASS |

**E. U. T. Result*****Check harmonics 2..40 [exception odd 21..39]:***

|                                            |      |
|--------------------------------------------|------|
| <b>Harmonic(s) &gt; 150%:</b>              |      |
| Order (n):                                 | None |
| <b>Harmonic(s) with average &gt; 100%:</b> |      |
| Order (n):                                 | None |

***Check odd harmonics 21..39:***

|                                                        |      |
|--------------------------------------------------------|------|
| <b>All Partial Odd Harmonics below partial limits.</b> |      |
| <b>Harmonic(s) &gt; 150%:</b>                          |      |
| Order (n):                                             | None |
| <b>Harmonic(s) with average &gt; 150%:</b>             |      |
| Order (n):                                             | None |

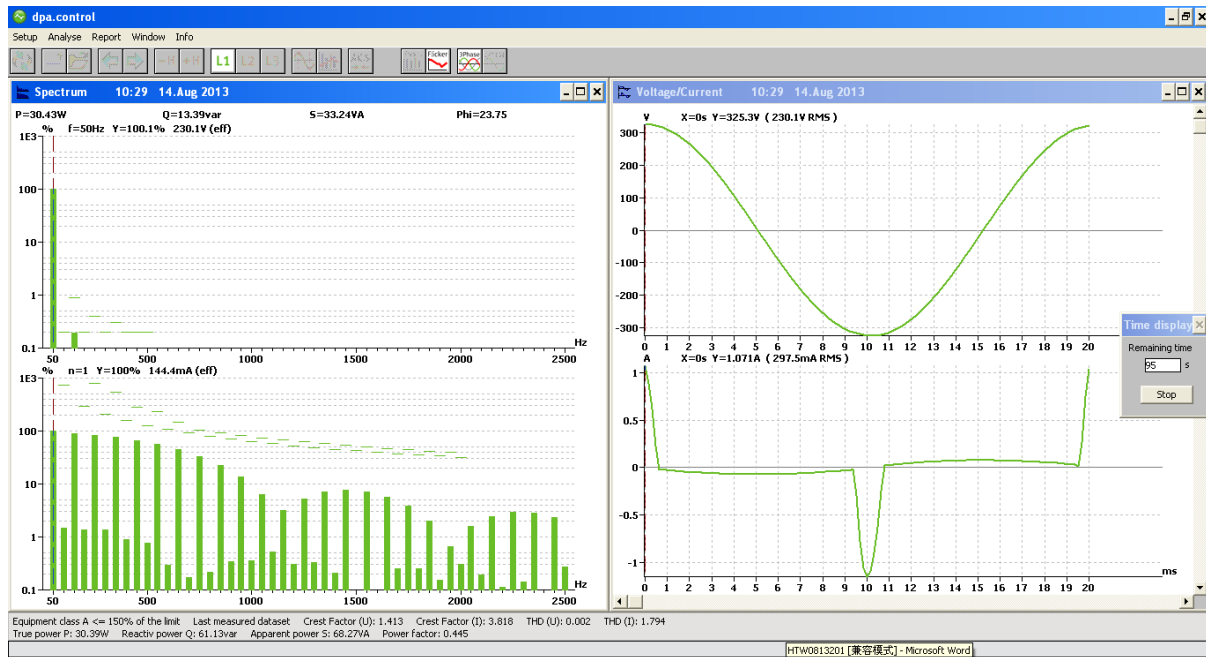
## Power Source Result

First dataset out of limit:

DS (time): None

Harmonic(s) out of limit:

Order (n): None





**Average harmonic current results**

| Hn | I <sub>eff</sub> [A] | % of Limit | Limit [A] | Result |
|----|----------------------|------------|-----------|--------|
| 1  | 22.409E-3            |            |           |        |
| 2  | 231.858E-6           | 0.021      | 1.08      | PASS   |
| 3  | 21.605E-3            | 0.939      | 2.30      | PASS   |
| 4  | 287.297E-6           | 0.067      | 430.00E-3 | PASS   |
| 5  | 20.343E-3            | 1.784      | 1.14      | PASS   |
| 6  | 284.109E-6           | 0.095      | 300.00E-3 | PASS   |
| 7  | 18.636E-3            | 2.420      | 770.00E-3 | PASS   |
| 8  | 273.079E-6           | 0.119      | 230.00E-3 | PASS   |
| 9  | 16.558E-3            | 4.139      | 400.00E-3 | PASS   |
| 10 | 264.363E-6           | 0.144      | 184.00E-3 | PASS   |
| 11 | 14.243E-3            | 4.316      | 330.00E-3 | PASS   |
| 12 | 262.658E-6           | 0.171      | 153.33E-3 | PASS   |
| 13 | 11.830E-3            | 5.634      | 210.00E-3 | PASS   |
| 14 | 262.850E-6           | 0.200      | 131.43E-3 | PASS   |
| 15 | 9.451E-3             | 6.301      | 150.00E-3 | PASS   |
| 16 | 242.091E-6           | 0.211      | 115.00E-3 | PASS   |
| 17 | 7.225E-3             | 5.459      | 132.35E-3 | PASS   |
| 18 | 213.269E-6           | 0.209      | 102.22E-3 | PASS   |
| 19 | 5.267E-3             | 4.447      | 118.42E-3 | PASS   |
| 20 | 189.378E-6           | 0.206      | 92.00E-3  | PASS   |
| 21 | 3.691E-3             | 2.297      | 160.71E-3 | PASS   |
| 22 | 166.932E-6           | 0.200      | 83.64E-3  | PASS   |
| 23 | 2.631E-3             | 1.793      | 146.74E-3 | PASS   |
| 24 | 150.598E-6           | 0.196      | 76.66E-3  | PASS   |
| 25 | 2.174E-3             | 1.610      | 135.00E-3 | PASS   |
| 26 | 148.841E-6           | 0.210      | 70.77E-3  | PASS   |
| 27 | 2.148E-3             | 1.719      | 124.99E-3 | PASS   |
| 28 | 148.643E-6           | 0.226      | 65.71E-3  | PASS   |
| 29 | 2.217E-3             | 1.905      | 116.39E-3 | PASS   |
| 30 | 145.219E-6           | 0.237      | 61.33E-3  | PASS   |
| 31 | 2.179E-3             | 2.001      | 108.87E-3 | PASS   |
| 32 | 138.500E-6           | 0.241      | 57.50E-3  | PASS   |
| 33 | 1.983E-3             | 1.939      | 102.27E-3 | PASS   |
| 34 | 129.357E-6           | 0.239      | 54.12E-3  | PASS   |
| 35 | 1.647E-3             | 1.708      | 96.44E-3  | PASS   |
| 36 | 116.253E-6           | 0.227      | 51.11E-3  | PASS   |
| 37 | 1.230E-3             | 1.349      | 91.21E-3  | PASS   |
| 38 | 107.850E-6           | 0.223      | 48.42E-3  | PASS   |
| 39 | 819.796E-6           | 0.947      | 86.53E-3  | PASS   |
| 40 | 103.994E-6           | 0.226      | 46.00E-3  | PASS   |

**Maximum harmonic current results**

| Hn | I <sub>eff</sub> [A] | % of Limit | Limit [A] | Result |
|----|----------------------|------------|-----------|--------|
| 1  | 22.469E-3            |            |           |        |
| 2  | 376.844E-6           | 0.023      | 1.62      | PASS   |
| 3  | 21.646E-3            | 0.627      | 3.45      | PASS   |
| 4  | 463.727E-6           | 0.072      | 645.00E-3 | PASS   |
| 5  | 20.374E-3            | 1.191      | 1.71      | PASS   |
| 6  | 450.376E-6           | 0.100      | 450.00E-3 | PASS   |
| 7  | 18.674E-3            | 1.617      | 1.15      | PASS   |
| 8  | 439.854E-6           | 0.127      | 345.00E-3 | PASS   |
| 9  | 16.601E-3            | 2.767      | 600.00E-3 | PASS   |
| 10 | 419.795E-6           | 0.152      | 276.00E-3 | PASS   |
| 11 | 14.290E-3            | 2.887      | 495.00E-3 | PASS   |
| 12 | 414.760E-6           | 0.180      | 229.99E-3 | PASS   |
| 13 | 11.881E-3            | 3.772      | 315.00E-3 | PASS   |
| 14 | 399.470E-6           | 0.203      | 197.15E-3 | PASS   |
| 15 | 9.503E-3             | 4.223      | 225.00E-3 | PASS   |
| 16 | 357.672E-6           | 0.207      | 172.50E-3 | PASS   |
| 17 | 7.274E-3             | 3.664      | 198.52E-3 | PASS   |
| 18 | 313.671E-6           | 0.205      | 153.33E-3 | PASS   |
| 19 | 5.314E-3             | 2.992      | 177.63E-3 | PASS   |
| 20 | 290.581E-6           | 0.211      | 138.00E-3 | PASS   |
| 21 | 3.737E-3             | 2.325      | 160.71E-3 | PASS   |
| 22 | 275.370E-6           | 0.219      | 125.46E-3 | PASS   |
| 23 | 2.671E-3             | 1.820      | 146.74E-3 | PASS   |
| 24 | 253.728E-6           | 0.221      | 114.99E-3 | PASS   |
| 25 | 2.206E-3             | 1.634      | 135.00E-3 | PASS   |
| 26 | 235.275E-6           | 0.222      | 106.16E-3 | PASS   |
| 27 | 2.175E-3             | 1.740      | 124.99E-3 | PASS   |
| 28 | 229.527E-6           | 0.233      | 98.57E-3  | PASS   |
| 29 | 2.240E-3             | 1.924      | 116.39E-3 | PASS   |
| 30 | 227.235E-6           | 0.247      | 92.00E-3  | PASS   |
| 31 | 2.208E-3             | 2.028      | 108.87E-3 | PASS   |
| 32 | 214.689E-6           | 0.249      | 86.25E-3  | PASS   |
| 33 | 2.024E-3             | 1.979      | 102.27E-3 | PASS   |
| 34 | 200.016E-6           | 0.246      | 81.18E-3  | PASS   |
| 35 | 1.688E-3             | 1.750      | 96.44E-3  | PASS   |
| 36 | 178.954E-6           | 0.233      | 76.66E-3  | PASS   |
| 37 | 1.267E-3             | 1.389      | 91.21E-3  | PASS   |
| 38 | 168.801E-6           | 0.232      | 72.63E-3  | PASS   |
| 39 | 848.135E-6           | 0.980      | 86.53E-3  | PASS   |
| 40 | 165.439E-6           | 0.240      | 69.00E-3  | PASS   |

**Maximum harmonic voltage results**

| Hn | Ueff [V]  | Ueff [%] | Limit [%] | Result |
|----|-----------|----------|-----------|--------|
| 1  | 230.17    | 100.073  |           |        |
| 2  | 129.47E-3 | 0.056    | 0.2       | PASS   |
| 3  | 424.74E-3 | 0.185    | 0.9       | PASS   |
| 4  | 49.65E-3  | 0.022    | 0.2       | PASS   |
| 5  | 26.18E-3  | 0.011    | 0.4       | PASS   |
| 6  | 40.04E-3  | 0.017    | 0.2       | PASS   |
| 7  | 27.11E-3  | 0.012    | 0.3       | PASS   |
| 8  | 24.30E-3  | 0.011    | 0.2       | PASS   |
| 9  | 9.91E-3   | 0.004    | 0.2       | PASS   |
| 10 | 23.97E-3  | 0.010    | 0.2       | PASS   |
| 11 | 23.63E-3  | 0.010    | 0.1       | PASS   |
| 12 | 14.48E-3  | 0.006    | 0.1       | PASS   |
| 13 | 11.51E-3  | 0.005    | 0.1       | PASS   |
| 14 | 13.80E-3  | 0.006    | 0.1       | PASS   |
| 15 | 18.05E-3  | 0.008    | 0.1       | PASS   |
| 16 | 17.24E-3  | 0.007    | 0.1       | PASS   |
| 17 | 12.39E-3  | 0.005    | 0.1       | PASS   |
| 18 | 15.15E-3  | 0.007    | 0.1       | PASS   |
| 19 | 16.09E-3  | 0.007    | 0.1       | PASS   |
| 20 | 14.53E-3  | 0.006    | 0.1       | PASS   |
| 21 | 11.94E-3  | 0.005    | 0.1       | PASS   |
| 22 | 13.82E-3  | 0.006    | 0.1       | PASS   |
| 23 | 11.08E-3  | 0.005    | 0.1       | PASS   |
| 24 | 9.48E-3   | 0.004    | 0.1       | PASS   |
| 25 | 13.38E-3  | 0.006    | 0.1       | PASS   |
| 26 | 14.10E-3  | 0.006    | 0.1       | PASS   |
| 27 | 7.39E-3   | 0.003    | 0.1       | PASS   |
| 28 | 10.52E-3  | 0.005    | 0.1       | PASS   |
| 29 | 11.94E-3  | 0.005    | 0.1       | PASS   |
| 30 | 10.56E-3  | 0.005    | 0.1       | PASS   |
| 31 | 7.40E-3   | 0.003    | 0.1       | PASS   |
| 32 | 11.45E-3  | 0.005    | 0.1       | PASS   |
| 33 | 10.30E-3  | 0.004    | 0.1       | PASS   |
| 34 | 7.92E-3   | 0.003    | 0.1       | PASS   |
| 35 | 11.01E-3  | 0.005    | 0.1       | PASS   |
| 36 | 9.56E-3   | 0.004    | 0.1       | PASS   |
| 37 | 12.98E-3  | 0.006    | 0.1       | PASS   |
| 38 | 7.73E-3   | 0.003    | 0.1       | PASS   |
| 39 | 12.71E-3  | 0.006    | 0.1       | PASS   |
| 40 | 12.49E-3  | 0.005    | 0.1       | PASS   |

#### 4.4. Voltage Fluctuation and Flicker

For test instruments and accessories used see section 3.6.

##### 4.4.1. Description of the test location

Test location: Shielded room No. 5

##### 4.4.2. Limits of voltage fluctuation and flicker

Test configuration and procedure see clause 5 of standard IEC 61000-3-3: 2013.

##### 4.4.3. Description of the test set-up

###### 4.4.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes during the test, and the results of the maximum emanation are recorded.

###### 4.4.3.2. Photo of the test set-up



##### 4.4.4. Test result

The requirements are **Fulfilled**

**Remarks:** The limits are kept. For detailed results, please see the following page(s).

## Test Report of HTW

|                      |                                                      |
|----------------------|------------------------------------------------------|
| Standard used:       | IEC 61000-3-3 Flicker                                |
| Short time (Pst):    | 10 min                                               |
| Observation time:    | 10 min (1 Flicker measurement)                       |
| Customer:            | Shenzhen Sonka Medical Technology CO., Limited       |
| Flickermeter:        | AC 230V/50Hz                                         |
| Ambient Temperature: | 23°C                                                 |
| Humidity:            | 51%                                                  |
| Barometric Pressure: | 1017mbar                                             |
| E. U. T.:            | Body composition analyzer scale<br>M/N: SK-X80T-MD01 |
| Date of test:        | 13:32 9.Aug 2013                                     |
| Tester:              | LuoRin                                               |

|             |      |
|-------------|------|
| Test Result | PASS |
|-------------|------|

## Maximum Flicker results

|          | EUT values | Limit | Result |
|----------|------------|-------|--------|
| Pst      | 0.028      | 1.00  | PASS   |
| dc [%]   | 0.000      | 3.30  | PASS   |
| dmax [%] | 0.105      | 4.00  | PASS   |
| dt [s]   | 0.000      | 0.50  | PASS   |

## 4.5. Electrostatic discharge

For test instruments and accessories used see section 3.6.

### 4.5.1. Description of the test location and date

Test location: Shielded room No. 4

Date of test: Oct. 26, 2017

Operator: LuoRin

### 4.5.2. Severity levels of electrostatic discharge

| Level | Test Voltage<br>Contact Discharge (KV) | Test Voltage<br>Air Discharge (KV) |
|-------|----------------------------------------|------------------------------------|
| 1     | 2                                      | 2                                  |
| 2     | 4                                      | 4                                  |
| 3     | 6                                      | 8                                  |
| 4     | 8                                      | 15                                 |
| X     | Special                                | Special                            |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels of  $\pm 2\text{KV}$ ,  $\pm 4\text{KV}$ ,  $\pm 8\text{KV}$  and  $\pm 15\text{KV}$  for air discharge and  $\pm 8\text{KV}$  for contact discharge.

### 4.5.3. Description of the test set-up

#### 4.5.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height , temperature , body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm. The results are allowed in the measurement error.

#### 4.5.3.2. Test Configuration and Procedure:

Air Discharge:

- This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

Contact Discharge:

- All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

Indirect Discharge:

- The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 10 times discharge.
- The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 10 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

## 4.5.3.3. Photo of the test set-up



## 4.5.4. Test specification:

|                                   |                                                                                                                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Test voltage:</u>              | ■ AC 120V & AC 230V                                                                                                                                                                        |
| <u>Contact discharge voltage:</u> | ■ 8 kV                                                                                                                                                                                     |
| <u>Number of discharges:</u>      | ■ 10 <input type="checkbox"/> 25                                                                                                                                                           |
| <u>Air discharge voltage:</u>     | ■ 2 kV      ■ 4 kV      ■ 8 kV      ■ 15 kV                                                                                                                                                |
| <u>Number of discharges:</u>      | ■ 10 <input type="checkbox"/> 25                                                                                                                                                           |
| <u>Type of discharge:</u>         | Direct discharge      ■ Air discharge<br>Indirect discharge      ■ Contact discharge                                                                                                       |
| <u>Polarity:</u>                  | ■ Positive      ■ Negative                                                                                                                                                                 |
| <u>Discharge location:</u>        | ■ see photo documentation of the test set-up<br>■ all external locations accessible by hand<br><input type="checkbox"/> horizontal coupling plane (HCP)<br>■ vertical coupling plane (VCP) |

## 4.5.5. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

#### 4.6. Radiated, radio-frequency, electromagnetic field

For test instruments and accessories used see section 3.6.

##### 4.6.1. Description of the test location and date

Test location: Shielded room No. 7

Date of test: Oct. 25, 2017

Operator: LuoRin

##### 4.6.2. Severity levels of radiated, radio-frequency, electromagnetic field

| Level | Field Strength (V/m) |
|-------|----------------------|
| 1.    | 1                    |
| 2.    | 3                    |
| 3.    | 10                   |
| X     | Special              |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels.

##### 4.6.3. Description of the test set-up

###### 4.6.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm. The results are allowed in the measurement error.

###### 4.6.3.2. Test Procedure

EUT and its auxiliary instrument are placed on a turntable which is 0.8 meter above ground. Transmitting antenna mounted on an antenna mast is set 3 meter away from the EUT. During the test, each of the four sides of EUT will face the transmitting antenna with the turntable cycled. Both horizontal and vertical polarization of the antenna are set on test and measured individually.

In order to judge the performance of the EUT, a set of monitor system is used.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.



#### 4.6.3.3. Photo of the test set-up



#### 4.6.4. Test specification:

Test voltage:

- AC 120V & AC 230V

Frequency range:

- 80 MHz to 2700 MHz

Field strength:

■ 10 V/m

EUT - antenna separation:

■ 3 m

Modulation:

- AM: 80 %
- sinusoidal 1KHz.

Frequency step:

- 1 % with 1 s dwell time

Antenna polarisation:

■ horizontal      ■ vertical

Communications Equipment Frequency:

### ■ Tabulated Results for Proximity Fields From RF Wireless Communications Equipment

[illegible]

|      |                  |                                                                                |                               |     |     |    |
|------|------------------|--------------------------------------------------------------------------------|-------------------------------|-----|-----|----|
| 930  |                  | TETRA 800,<br>iDEN 820,<br>CDMA 850,<br>LTE Band 5                             | 18 Hz                         |     |     |    |
| 1720 | 1 700 –<br>1 990 | GSM 1800;<br>CDMA 1900;<br>GSM 1900;<br>DECT; LTE<br>Band 1, 3, 4,<br>25; UMTS | Pulse<br>modulation<br>217 Hz | 2   | 0.3 | 28 |
| 1845 |                  |                                                                                |                               |     |     |    |
| 1970 |                  |                                                                                |                               |     |     |    |
| 2450 | 2 400 –<br>2 570 | Bluetooth,<br>WLAN,<br>802.11 b/g/n,<br>RFID 2450,<br>LTE Band 7               | Pulse<br>modulation<br>217 Hz | 2   | 0.3 | 28 |
| 5240 | 5 100 –<br>5 800 | WLAN<br>802.11 a/n                                                             | Pulse<br>modulation<br>217 Hz | 0.2 | 0.3 | 9  |
| 5500 |                  |                                                                                |                               |     |     |    |
| 5785 |                  |                                                                                |                               |     |     |    |

#### 4.6.5. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

#### 4.7. Electrical fast transients / Burst

For test instruments and accessories used see section 3.6.

##### 4.7.1. Description of the test location and date

Test location: Shielded room No. 8

Date of test: Oct. 26, 2017

Operator: LuoRin

##### 4.7.2. Severity levels of electrical fast transients / Burst

| Open circuit output test voltage and repetition rate of the impulses |                   |                            |
|----------------------------------------------------------------------|-------------------|----------------------------|
| Level                                                                | On power port, PE |                            |
|                                                                      | V peak(KV)        | Repetition Frequency (KHz) |
| 1.                                                                   | 0.5               | 100                        |
| 2.                                                                   | 1                 | 100                        |
| 3.                                                                   | 2                 | 100                        |
| 4.                                                                   | 4                 | 100                        |
| X                                                                    | Special           | Special                    |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels of  $\pm 2$ KV for a.c. power lines.

##### 4.7.3. Description of the test set-up

###### 4.7.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height , temperature, body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm.The results are allowed in the measurement error.

###### 4.7.3.2. Test Requirements

EUT and its simulators shall be placed above the ground reference plane which is a minimum 1m\*1m with minimum 0.65mm thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

###### 4.7.3.3. Test Configuration and Procedure

For AC power input ports:

EUT is connected to coupling/decoupling network which couples the EFT signal to power input lines. During the test, both positive and negative polarities of the test voltage should be applied and the duration of the test can't be less than 1mins.

The EUT is unnecessary to test on these signal / control lines.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.7.3.4. Photo of the test set-up



4.7.4. Test specification:

- Test voltage: ☒ AC 120V & AC 230V
- Coupling network: ☒ 0.5 kV ☒ 1 kV ☒ 2 kV
- Coupling clamp: ☐ 0.5 kV ☐ 1 kV
- Burst frequency: ☒ 100 kHz
- Coupling duration: ☒ 60 s
- Polarity: ☒ positive ☒ negative

4.7.5. Coupling points

- Cable description: AC power line : L, N, PE,L-N,L-PE,N-PE,L-N-PE
- Screening: ☐ screened ☒ unscreened
- Status: ☒ detachable ☐ undetachable
- Signal transmission: ☒ analogue ☐ digital
- Length: ☐ 1.6 m

4.7.6. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

## 4.8. Surge

For test instruments and accessories used see section 3.6.

### 4.8.1. Description of the test location and date

Test location: Shielded room No. 8

Date of test: Oct. 26, 2017

Operator: LuoRin

### 4.8.2. Severity levels of surge

| Level | Test Voltage (KV) |
|-------|-------------------|
| 1     | 0.5               |
| 2     | 1.0               |
| 3     | 2.0               |
| 4     | 4.0               |
| *     | Special           |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels of  $\pm 0.5\text{KV}$ ,  $\pm 1\text{KV}$  and  $\pm 2\text{KV}$  for a.c. power line(s) to earth and  $\pm 0.5\text{KV}$  and  $\pm 1\text{KV}$  for a.c. power line(s) to line(s)

### 4.8.3. Description of the test set-up

#### 4.8.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height , temperature, body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm. The results are allowed in the measurement error.

#### 4.8.3.2. Test Configuration and Procedure

In this test, the 1.2/50us& 8/20us surge generator must be used for AC power ports. The voltage for line to earth coupling mode is twice of that for line to line. At least 5 positive and 5 negative (polarity) surge signal with a maximum 1/min repetition rate are injected to AC power lines from 4 different phase angles ( $0^\circ$ ,  $90^\circ$ ,  $180^\circ$ ,  $270^\circ$ ) during the test.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

## 4.8.3.3. Photo of the test set-up



## 4.8.4. Test specification:

Test voltage:☒ AC 120V & AC 230VPulse amplitude-Power line sym.:☒ 0.5 kV    ☒ 1 kV    ☐ 2 kV    ☐ 4 kVSource impedance:  $2\ \Omega + 18\mu\text{F}$ Pulse amplitude-Power line unsym.:☒ 0.5 kV    ☒ 1 kV    ☒ 2 kV    ☐ 4 kVSource impedance:  $12\ \Omega + 9\mu\text{F}$ Number of surges:☒ 5 Surges/Phase anglePhase angle:☒ 0 °    ☒ 90 °    ☒ 180 °    ☒ 270 °Repetition rate:☒ 60 sPolarity:☒ positive    ☒ negative

**4.8.5. Coupling points**

Cable description: AC power line: L-N, L-PE, N-PE

Screening: ☐ screened ☒ unscreened  
 Status: ☒ detachable ☐ undetachable  
 Signal transmission: ☒ analogue ☐ digital  
 Length: ☐ 1.6 m

**4.8.6. Test result**

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

**4.9. Conducted disturbances induced by radio-frequency fields**

For test instruments and accessories used see section 3.6.

**4.9.1. Description of the test location and date**

Test location: Shielded room No. 8

Date of test: Oct. 25, 2017

Operator: LuoRin

**4.9.2. Severity levels of conducted disturbances induced by radio-frequency fields discharge**

| Level | Field Strength (V) |
|-------|--------------------|
| 1.    | 1                  |
| 2.    | 3                  |
| 3.    | 10                 |
| X     | Special            |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels of 3Vrms and 6Vrms over the frequency range beginning at the start frequency and extending to 80 MHz.

**4.9.3. Description of the test set-up****4.9.3.1. Operating Condition**

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm. The results are allowed in the measurement error.

**4.9.3.2. Test Configuration and Procedure**

For AC power input lines:

—EUT is placed on an insulating support above a ground reference plane. It must be 0.3m away the CDN (coupling and decoupling network) of which the bottom is made of metallic material and placed directly on the ground plane. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). The disturbance signal amplified by amplifier is injected to EUT through CDN.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

## 4.9.3.3. Photo of the test set-up



## 4.9.4. Test specification:

Test voltage:

- AC 120V & AC 230V

Frequency range:

- 0.15 MHz to 80 MHz

Test voltage :

- 3 V

Frequency range:

- |                            |                           |
|----------------------------|---------------------------|
| ■ 6.765 MHz to 6.795 MHz   | ■ 13.553MHz to 13.567 MHz |
| ■ 26.957 MHz to 27.283 MHz | ■ 40.66 MHz to 40.70 MHz  |
| ■ 1.8 MHz to 2.0 MHz       | ■ 3.5 MHz to 4.0 MHz      |
| ■ 5.3 MHz to 5.4 MHz       | ■ 7 MHz to 7.3 MHz        |
| ■ 10.1 MHz to 10.15 MHz    | ■ 14 MHz to 14.2 MHz      |
| ■ 18.07 MHz to 18.17 MHz   | ■ 21 MHz to 21.4 MHz      |
| ■ 24.89 MHz to 24.99 MHz   | ■ 28 MHz to 29.7 MHz      |
| ■ 50 MHz to 54 MHz         |                           |

Test strength :

- 6 V

Modulation:

- AM: 80 %
- sinusoidal 1KHz

Frequency step:

- 1 % with 1 s dwell time

## 4.9.5. Coupling points

Cable description :

AC power line,

Screening:

- |              |                |
|--------------|----------------|
| o screened   | ■ unscreened   |
| ■ detachable | o undetachable |
| ■ analogue   | o digital      |
| o 1.6 m      |                |

Status:

Signal transmission:

Length:

## 4.9.6. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.



#### 4.10. Magnetic Field Immunity

For test instruments and accessories used see section 3.6.

##### 4.10.1. Description of the test location and date

Test location: Shielded room No. 8

Date of test: Oct. 25, 2017

Operator: LuoRin

##### 4.10.2. Severity levels of magnetic field immunity

| Level | Magnetic Field Strength (A/m) |
|-------|-------------------------------|
| 1     | 1                             |
| 2     | 3                             |
| 3     | 10                            |
| 4     | 30                            |
| 5     | 100                           |
| X.    | Special                       |

Note: equipment and systems shall comply with the requirements of clause 8.9 of IEC 60601-1-2: 2014, EN 60601-1-2: 2015 at immunity test levels of 30 A /m.

##### 4.10.3. Description of the test set-up

###### 4.10.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height , temperature , body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm.The results are allowed in the measurement error.

###### 4.10.3.2. Test Configuration and Procedure:

EUT is placed on an insulating support of 0.1m high above a table of 0.8m high. There is a minimum 1m\*1m ground metallic plane put on this table. EUT is put in the center of the magnetic coil then three orientations of the magnetic coil, X, Y and Z, shall be rotated in order to expose the EUT to the difference polarization magnetic field.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

## 4.10.3.3. Photo of the test set-up



## 4.10.4. Test specification:

|                   |                                      |
|-------------------|--------------------------------------|
| Test voltage:     | ■ AC 120V & AC 230V                  |
| Test frequency:   | ■ 50 Hz      ■ 60 Hz                 |
| Continuous field: | ■ 30 A/m                             |
| Test duration:    | ■ 5 mins                             |
| Antenna factor:   | 0.917 A/m                            |
| <u>Axis:</u>      | ■ x-axis      ■ y-axis      ■ z-axis |

## 4.10.5. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

#### 4.11. Voltage Dips and Interruptions

For test instruments and accessories used see section 3.6.

##### 4.11.1. Description of the test location and date

Test location: Shielded room No. 5

Date of test: Oct. 24, 2017

Operator: LuoRin

##### 4.11.2. Severity levels of voltage dips and interruptions

| Test Level for Voltage Dips |                                           |                      |
|-----------------------------|-------------------------------------------|----------------------|
| Test Level (%Ut)            | Voltage Dip And Short Interruptions (%Ut) | Duration (In Period) |
| 0                           | 100                                       | 0.5                  |
| 0                           | 100                                       | 1                    |
| 70                          | 30                                        | 25                   |

| Test Level for Voltage Interruption |                                           |                      |
|-------------------------------------|-------------------------------------------|----------------------|
| Test Level (%Ut)                    | Voltage Dip And Short Interruptions (%Ut) | Duration (In Period) |
| 0                                   | 100                                       | 250                  |

##### 4.11.3. Description of the test set-up

###### 4.11.3.1. Operating Condition

The EUT is turned on and the EUT in the measurement of height, temperature, body adiposity index and SD card playing modes models during the test, and the results of the The weight measurement error is allowed not more than 0.5kg and the height measurement error is allowed not more than 0.5cm. The results are allowed in the measurement error.

###### 4.11.3.2. Test Configuration and Procedure

EUT is connected to the simulator according to the test photo. When conducting this test, the power supply shall be set at the minimum and maximum rated input voltages and test voltage changes shall be step changes and start at the phase angle of 0° and 180°.

## 4.11.3.3. Photo of the test set-up



## 4.11.4. Test specification:

Nominal Mains Voltage ( $V_N$ ):

■ AC 100V &amp; AC 240V

Number of voltage fluctuations:

■ 3

Level of reduction(dip) / duration:

■ 100 % / 10ms,20ms

■ 30 % / 500ms

Nominal Mains Voltage ( $V_N$ ):

■ AC 100V &amp; AC 240V

Number of Interruptions:

■ 3

Duration of the Interruption:

■ 5000 ms

## 4.11.5. Test result

Device worked normally after power on and remained functionally stable during Immunity testing, The image is clear, normal, no obvious change. Comply with IEC 60601-1-2: 2014, EN 60601-1-2: 2015.

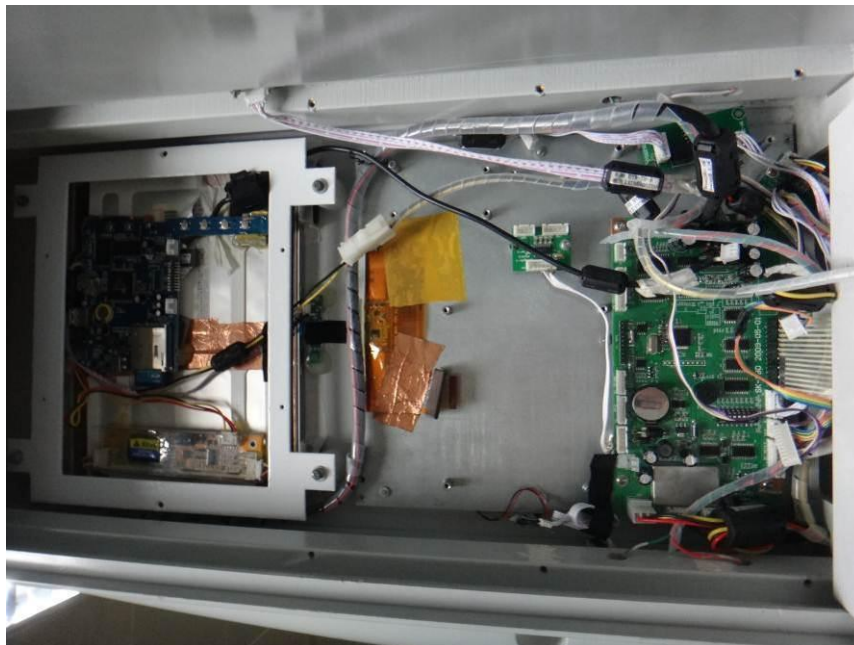
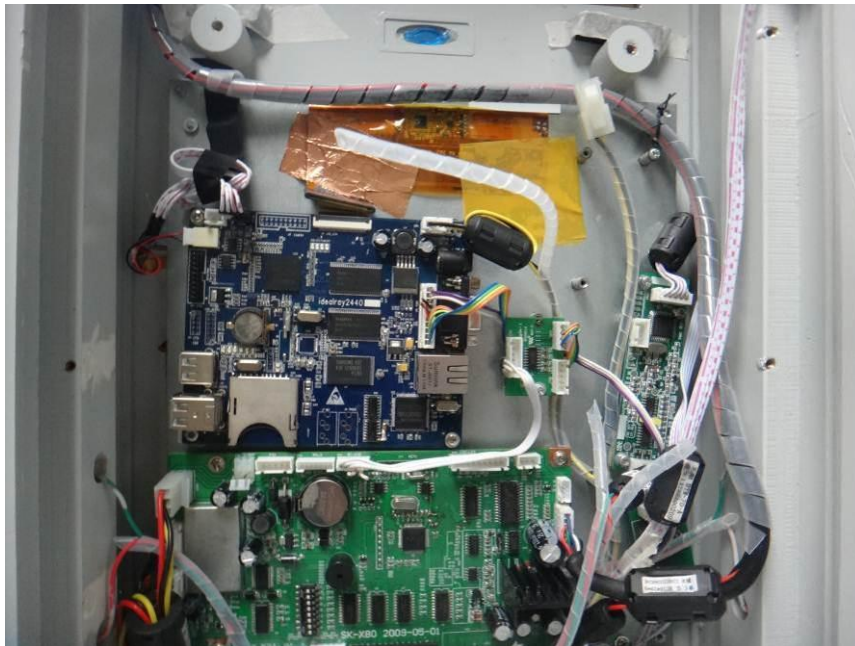
## **5. External and Internal Photos of the EUT**

### **5.1. External photos of the EUT**

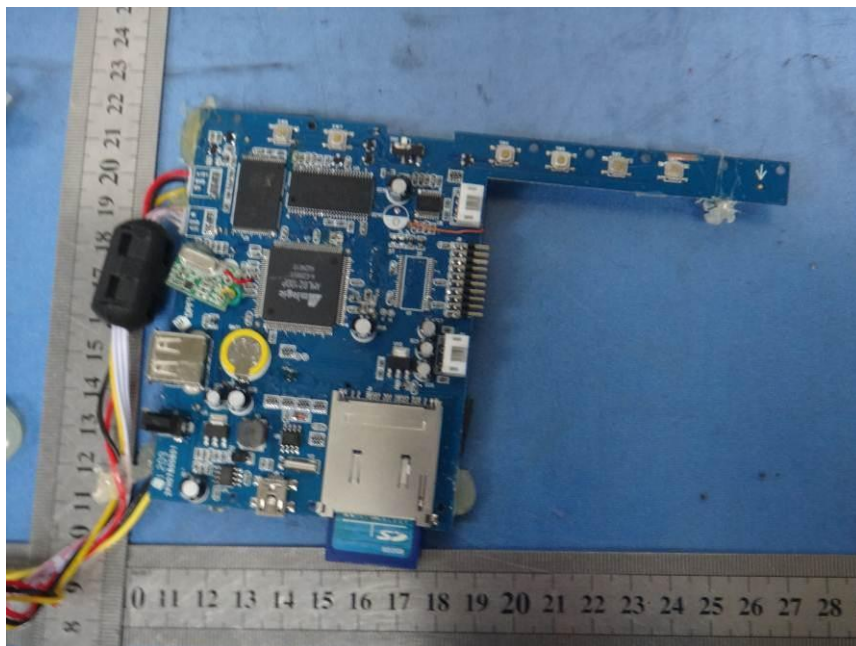
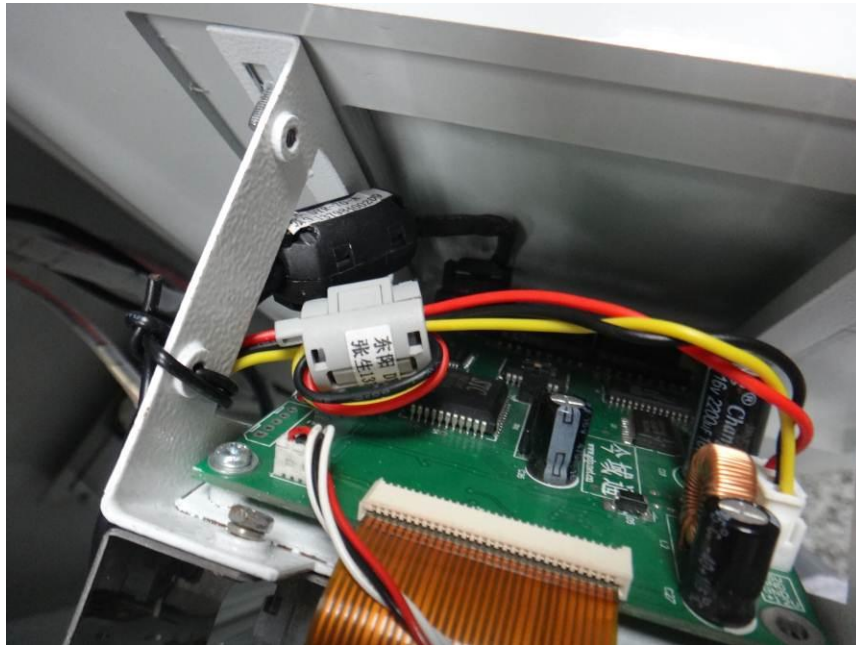




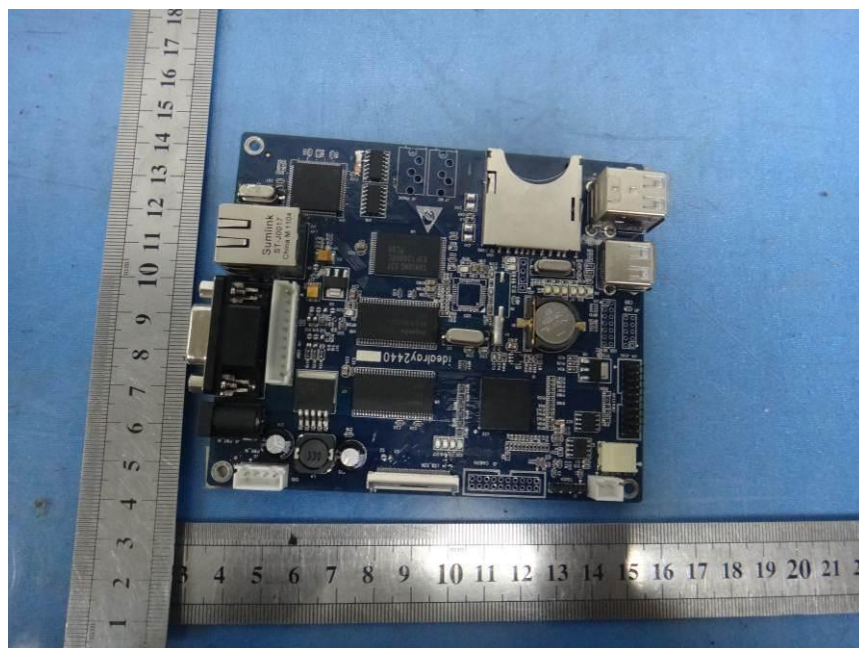
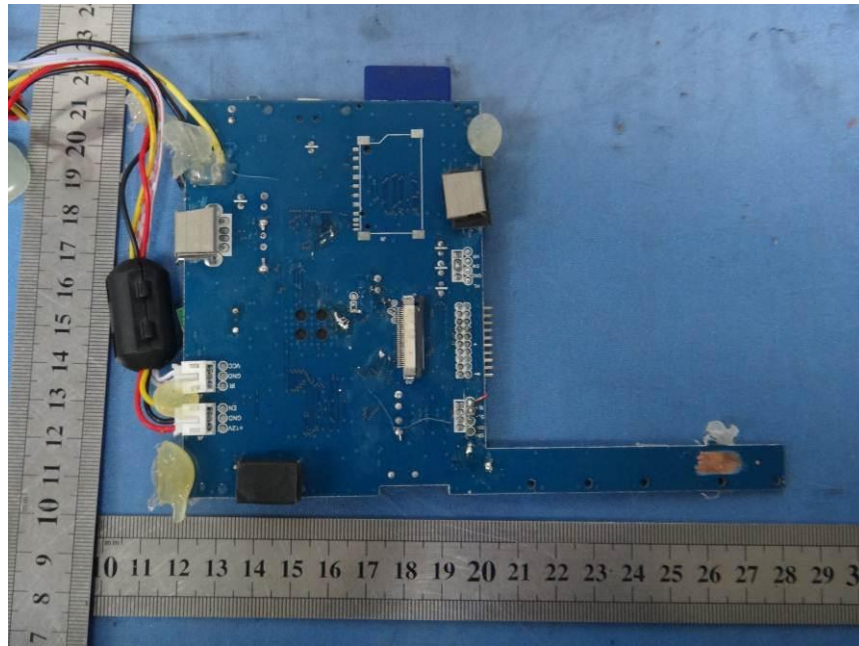
## 5.2. Internal photos of the EUT

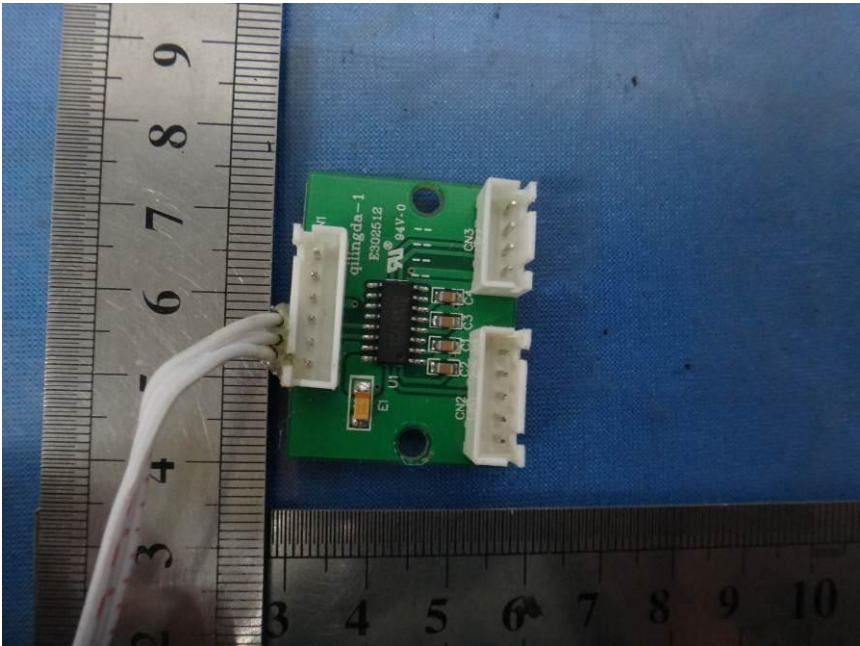


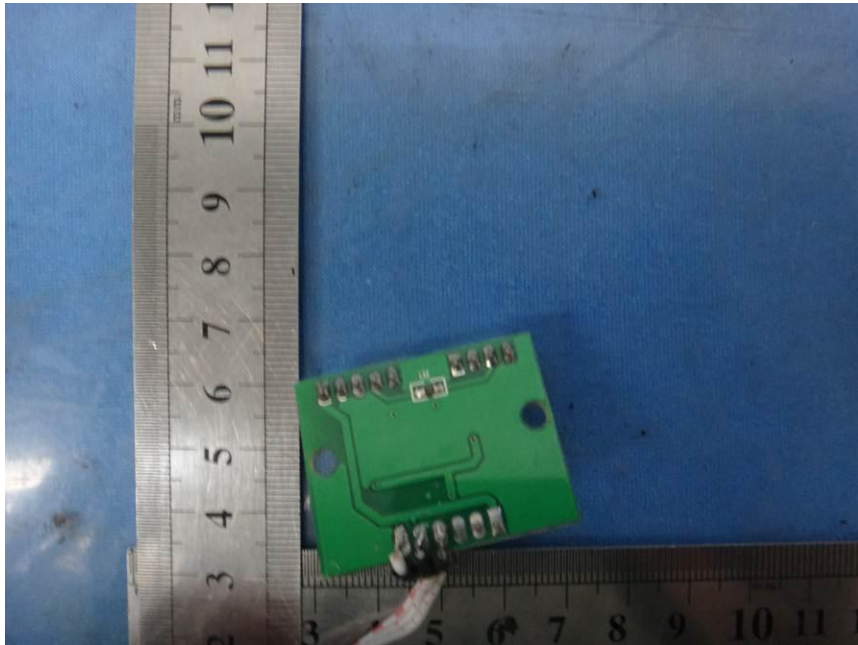




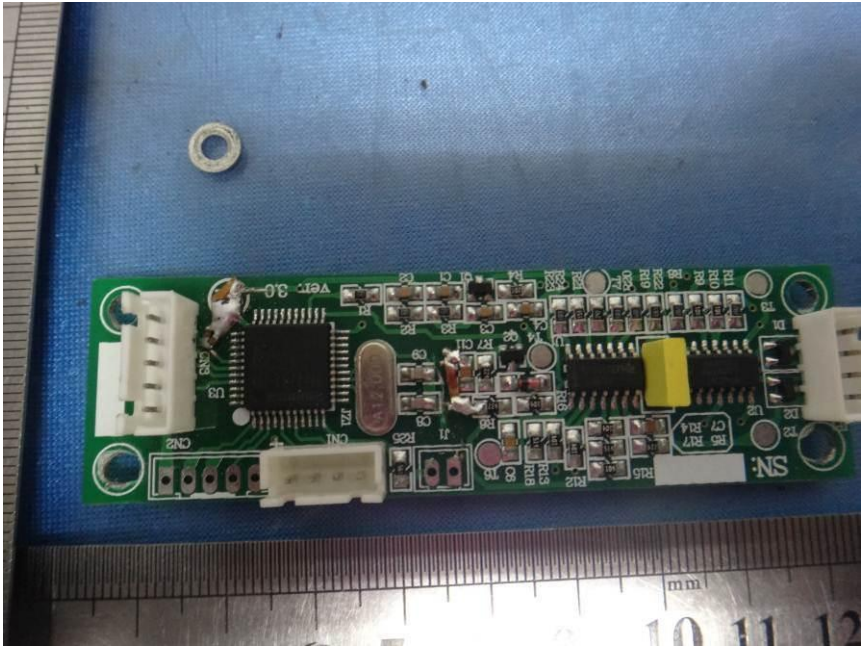
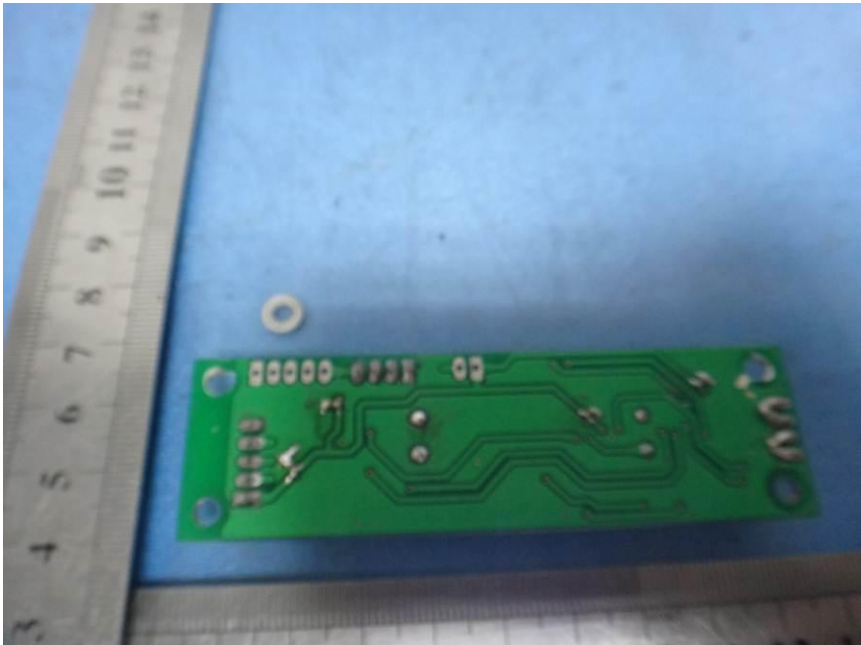


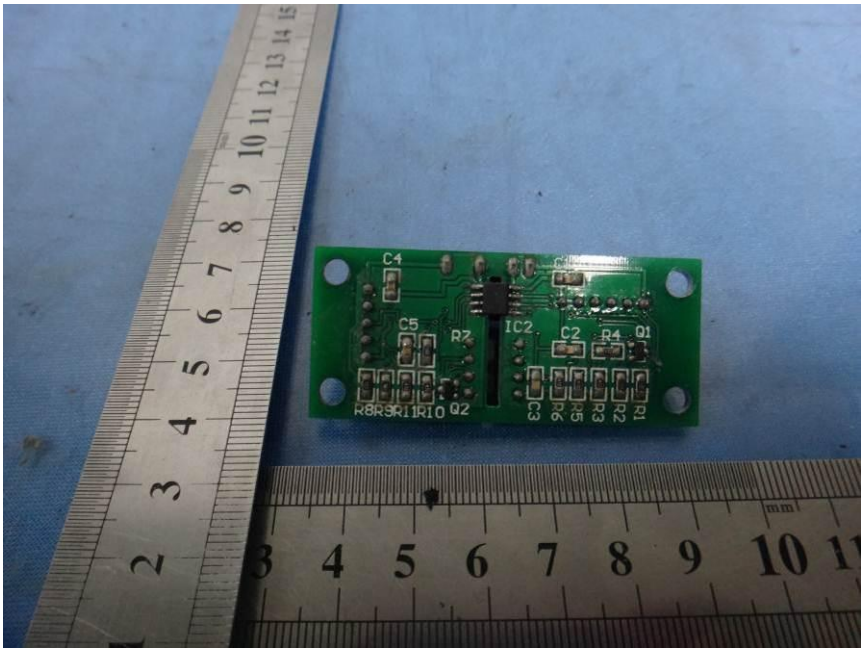
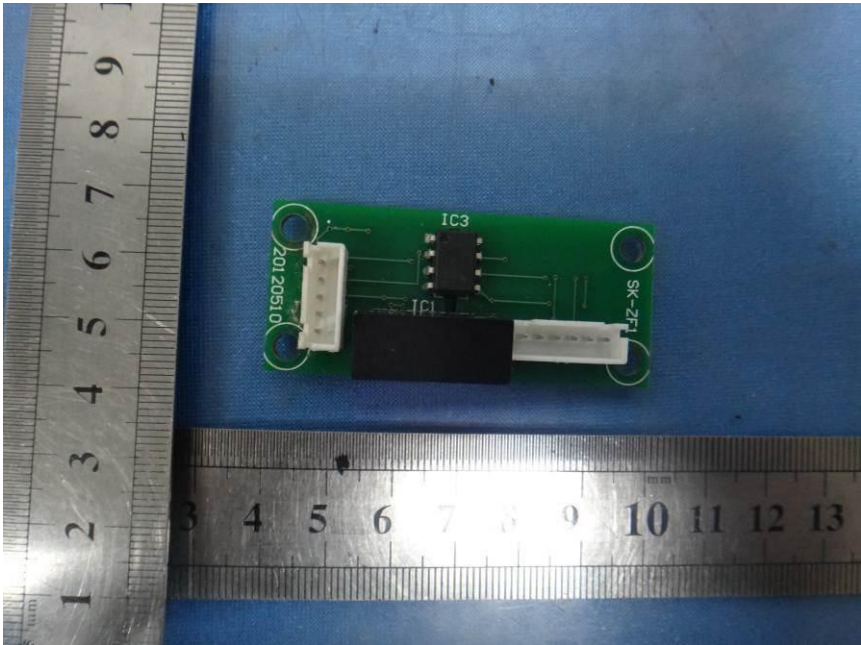


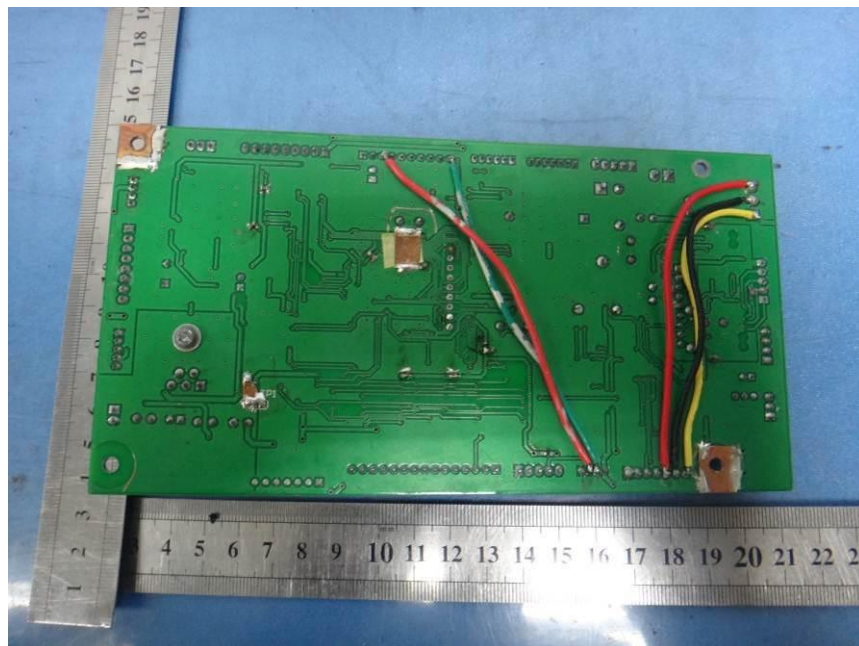
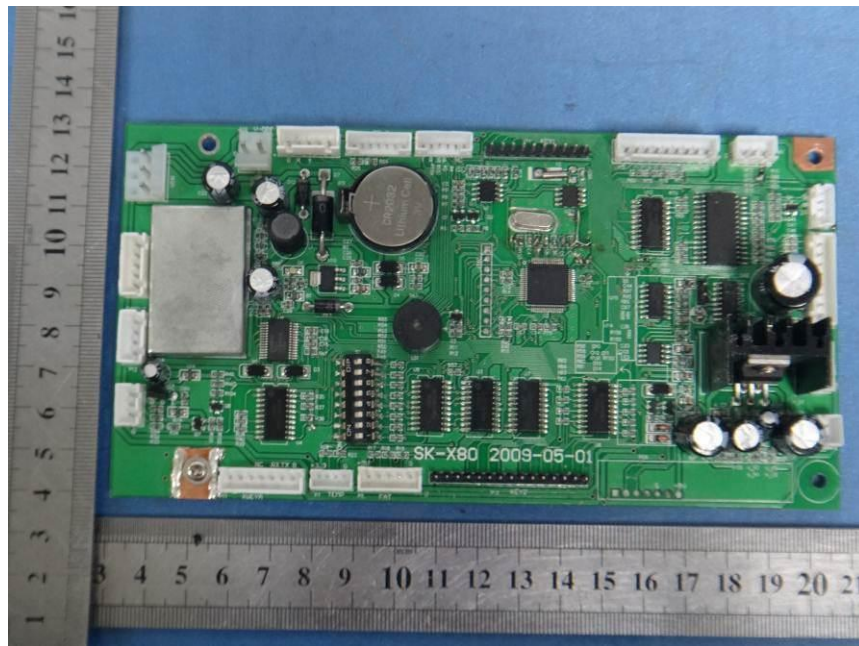




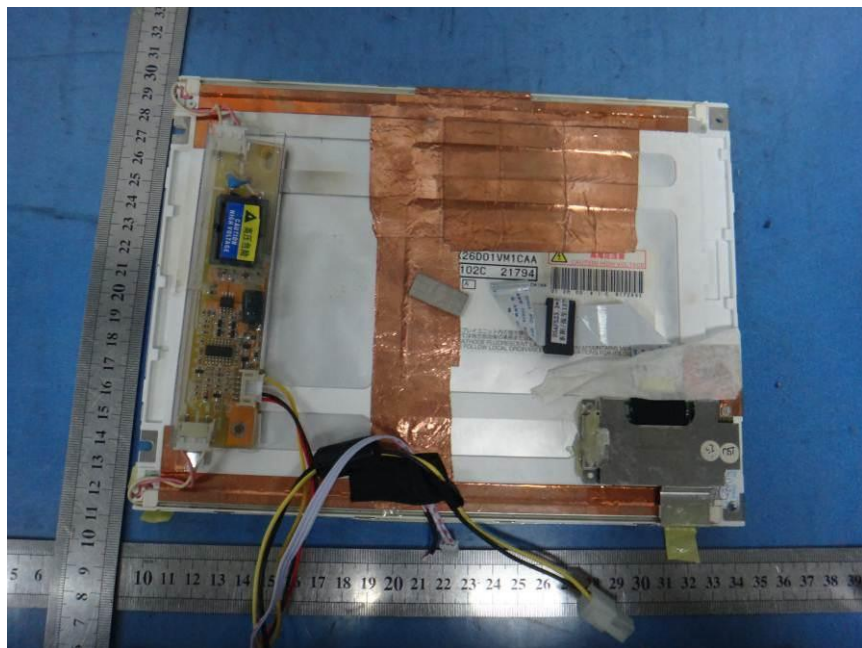
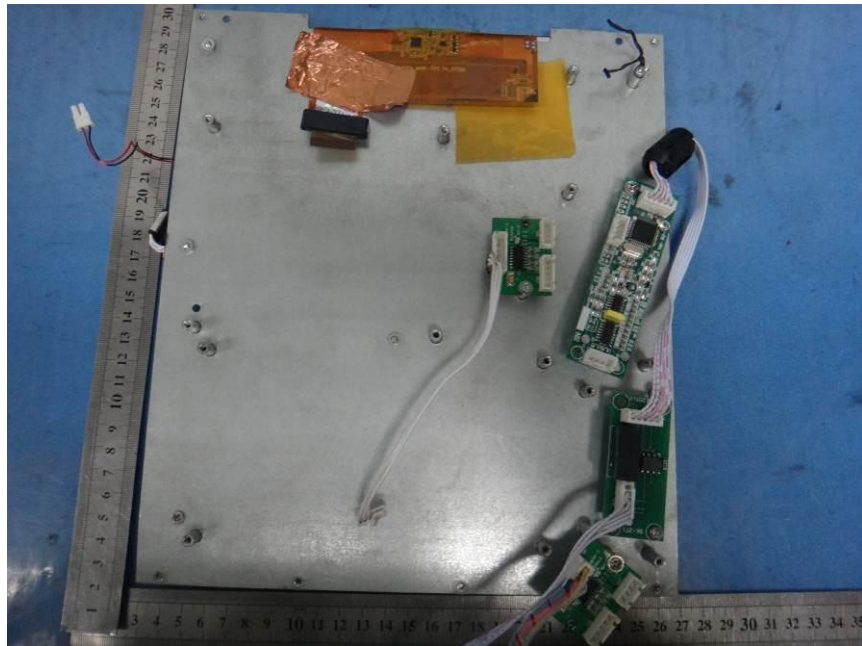














..... End of Report.....