# EMC TEST REPORT

For

Shanghai Panelmate Electronics Co.,Ltd.

Industrial Touch Screen Monitor

Test Model: IDD2627P

Additional Model No.: Please Refer To Page 9

| | | |
|---|---|---|
| Prepared for | : | Shanghai Panelmate Electronics Co.,Ltd. |
| Address | : | Building 18th, No.177 FuLian 2nd Rd, BaoShan District, Shanghai, 201906 |
| Prepared by | : | Shenzhen LCS Compliance Testing Laboratory Ltd. |
| Address | : | Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao’an District, Shenzhen, Guangdong, China |
| Tel | : | (+86)755-82591330 |
| Fax | : | (+86)755-82591332 |
| Web | : | www.LCS-cert.com |
| Mail | : | webmaster@LCS-cert.com |
| Date of receipt of test sample | : | May 28, 2020 |
| Number of tested samples | : | 1 |
| Serial number | : | Prototype |
| Date of Test | : | May 28, 2020 ~ July 25, 2020 |
| Date of Report | : | July 27, 2020 |

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# EMC TEST REPORT

## EN 55032: 2015+A1: 2016

Information technology equipment-Radio disturbance characteristics – Limits of measurement

## EN 55035: 2017

Electromagnetic compatibility of multimedia equipment – Immunity requirements

| | |
|---|---|
| **Report Reference No. .....** | **: LCS200526039AE** |
| Date of Issue..... | : July 27, 2020 |
| **Testing Laboratory Name.....** | **: Shenzhen LCS Compliance Testing Laboratory Ltd.** |
| Address..... | : Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao' an District, Shenzhen, Guangdong, China |
| Testing Location/ Procedure ... | : Full application of Harmonised standards ■<br>Partial application of Harmonised standards □<br>Other standard testing method □ |
| **Applicant's Name.....** | **: Shanghai Panelmate Electronics Co.,Ltd.** |
| Address..... | : Building 18th, No.177 FuLian 2nd Rd, BaoShan District, Shanghai, 201906 |
| **Test Specification** | |
| Standard ..... | : EN 55032: 2015+A1: 2016<br>EN 55035: 2017<br>EN 61000-3-2: 2014<br>EN 61000-3-3: 2013 |
| Test Report Form No. ..... | : LCSEMC-1.0 |
| TRF Originator ..... | : Shenzhen LCS Compliance Testing Laboratory Ltd. |
| Master TRF ..... | : Dated 2011-03 |

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| | |
|---|---|
| **Test Item Description.....** | **: Industrial Touch Screen Monitor** |
| Trade Mark..... | : PANELMATE |
| Test Model ..... | : IDD2627P |
| Ratings..... | : Input: 220-240V~, 50/60Hz, 2A, 48W |
| **Result .....** | **: Positive** |

| Compiled by: | Supervised by: | Approved by: |
|---|---|---|
| Mia Huang | Jason Deng | Gavin Liang |
| Mia Huang/ File administrators | Jason Deng / Technique principal | Gavin Liang/ Manager |

# EMC -- TEST REPORT

| | |
|---|---|
| **Test Report No. : LCS200526039AE** | July 27, 2020<br>Date of issue |

| | |
|---|---|
| **Test Model.....** | **: IDD2627P** |
| EUT..... | : Industrial Touch Screen Monitor |
| **Applicant.....** | **: Shanghai Panelmate Electronics Co.,Ltd.** |
| Address..... | : Building 18th, No.177 FuLian 2nd Rd, BaoShan District, Shanghai, 201906 |
| Telephone..... | : / |
| Fax..... | : / |
| **Manufacturer.....** | **: Shanghai Panelmate Electronics Co.,Ltd.** |
| Address..... | : Building 18th, No.177 FuLian 2nd Rd, BaoShan District, Shanghai, 201906 |
| Telephone..... | : / |
| Fax..... | : / |
| **Factory.....** | **: Shanghai Panelmate Electronics Co.,Ltd.** |
| Address..... | : Building 18th, No.177 FuLian 2nd Rd, BaoShan District, Shanghai, 201906 |
| Telephone..... | : / |
| Fax..... | : / |

| | |
|---|---|
| **Test Result** | **Positive** |

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.

# Revision History

| Revision | Issue Date | Revisions | Revised By |
|---|---|---|---|
| 000 | July 27, 2020 | Initial Issue | Gavin Liang |
| | | | |
| | | | |

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# 1. TEST STANDARDS

**The tests were performed according to following standards:**

EN 55032: 2015+A1: 2016 Electromagnetic compatibility of multimedia equipment - Emission Requirements
EN 55035:2017 Information technology equipment – Immunity characteristics
EN 61000-3-2:2014 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)
EN 61000-3-3:2013 Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

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# 2.SUMMARY OF STANDARDS AND RESULTS

## 2.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| Emission (EN 55032: 2015+A1: 2016) | | | |
|---|---|---|---|
| **Description of Test Item** | **Standard** | **Limits** | **Results** |
| Conducted disturbance at mains terminals | EN 55032: 2015+A1: 2016 | Class A | PASS |
| Conducted disturbance at telecommunication port | EN 55032: 2015+A1: 2016 | Class A | N/A |
| Radiated disturbance | EN 55032: 2015+A1: 2016 | Class A | PASS |
| Harmonic current emissions | EN 61000-3-2: 2014 | Class A | N/A |
| Voltage fluctuations & flicker | EN 61000-3-3: 2013 | --------- | PASS |
| **Immunity (EN 55035: 2017)** | | | |
| **Description of Test Item** | **Basic Standard** | **Performance Criteria** | **Results** |
| Electrostatic discharge (ESD) | EN 61000-4-2: 2009 | B | PASS |
| Radio-frequency, Continuous radiated disturbance | EN 61000-4-3: 2006+A2: 2010 | A | PASS |
| Electrical fast transient (EFT) | EN 61000-4-4: 2012 | B | PASS |
| Surge (Input a.c. power ports) | EN 61000-4-5: 2014+A1: 2017 | B | PASS |
| Surge (Telecommunication ports) | | B | N/A |
| Radio-frequency, Continuous conducted disturbance | EN 61000-4-6: 2014 | A | PASS |
| Power frequency magnetic field | EN 61000-4-8: 2010 | A | PASS |
| Voltage dips, >95% reduction | EN 61000-4-11: 2004+A1: 2017 | B | PASS |
| Voltage dips, 30% reduction | | C | PASS |
| Voltage interruptions | | C | PASS |
| ***Note: N/A is an abbreviation for Not Applicable. | | | |

| **Test mode:** | | |
|---|---|---|
| Mode 1 | DVI mode | Record |
| Mode 2 | USB mode | Pre-scan |
| Mode 3 | VGA mode | Pre-scan |
| ***Note: All test modes were tested, but we only recorded the worst case in this report. | | |

## 2.2. Description of Performance Criteria

General Performance Criteria
Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:
─ essential operational modes and states;

2.2.1. Performance criterion A
The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacture when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.2. Performance criterion B
After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacture, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.3. Performance criterion C
Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacture's instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be loss.

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# 3. GENERAL INFORMATION

## 3.1. Description of Device (EUT)

| | | |
|---|---|---|
| EUT | : | Industrial Touch Screen Monitor |
| Trade Mark | : | PANELMATE |
| Test Model | : | IDD2627P |
| Model Lists | : | IDD2618-XXXX, IDD2618P-XXXX, IDD2619-XXXX, IDD2619P-XXXX, IDD2621-XXXX, IDD2621P-XXXX, IDD2624-XXXX, IDD2624P-XXXX, IDD2627-XXXX, IDD2627P-XXXX, IDD2632-XXXX, IDD2632P-XXXX |
| Model Declaration | : | PCB board, structure and internal of these model(s) are the same, So no additional models were tested |
| Power Supply | : | Input: 220-240V~, 50/60Hz, 2A, 48W |

| Highest internal frequency (Fx) | Highest measured frequency |
|---|---|
| Fx ≤ 108 MHz<br>108 MHz < Fx ≤ 500 MHz<br>500 MHz < Fx ≤ 1 GHz<br>Fx > 1 GHz | 1 GHz<br>2 GHz<br>5 GHz<br>5 × Fx up to a maximum of 6 GHz |
| NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.<br>Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz | |

## 3.2. Description of Support Device

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| PC | dell | Optiplex 380 MT | 2YK643X |

## 3.3. Description of Test Facility

NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.

### 3.4. 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 LCS 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.

### 3.5. Measurement Uncertainty

| Test | Parameters | Expanded uncertainty ($U_{lab}$) | Expanded uncertainty ($U_{cispr}$) |
|---|---|---|---|
| Conducted Emission | Level accuracy<br>(9kHz to 150kHz)<br>(150kHz to 30MHz) | ± 2.63 dB<br>± 2.35 dB | ± 3.8 dB<br>± 3.4 dB |
| Power Disturbance | Level accuracy<br>(30MHz to 300MHz) | ± 2.90dB | ± 4.5 dB |
| Electromagnetic Radiated Emission (3-loop) | Level accuracy<br>(9kHz to 30MHz) | ± 3.60 dB | ± 3.3 dB |
| Radiated Emission | Level accuracy<br>(9kHz to 30MHz) | ± 3.68 dB | N/A |
| Radiated Emission | Level accuracy<br>(30MHz to 1000MHz) | ± 3.48 dB | ± 5.3 dB |
| Radiated Emission | Level accuracy<br>(above 1000MHz) | ± 3.90 dB | ± 5.2 dB |
| Mains Harmonic | Voltage | ± 0.510% | N/A |
| Voltage Fluctuations & Flicker | Voltage | ± 0.510% | N/A |
| EMF | / | ± 21.59% | N/A |

1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.
2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

# 4. MEASURING DEVICES AND TEST EQUIPMENT

## LINE CONDUCTED EMISSION

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | EMI Test Software | AUDIX | E3 | / | N/A | N/A |
| 2 | EMI Test Receiver | R&S | ESPI | 101840 | 2020-06-22 | 2021-06-21 |
| 3 | Artificial Mains | R&S | ENV216 | 101288 | 2020-06-22 | 2021-06-21 |
| 4 | 10dB Attenuator | SCHWARZBECK | MTS-IMP-136 | 261115-001-0032 | 2020-06-22 | 2021-06-21 |
| 5 | WIDEBAND RADIO COMMUNICATION TESTER | R&S | CMW 500 | 103818 | 2019-10-21 | 2020-10-20 |

## RADIATED DISTURBANCE

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | EMI Test Software | AUDIX | E3 | / | N/A | N/A |
| 2 | 3m Semi Anechoic Chamber | SIDT | SAC-3M | 03CH03-HY | 2020-06-22 | 2021-06-21 |
| 3 | Positioning Controller | MF | MF-7082 | / | 2020-06-22 | 2021-06-21 |
| 4 | By-log Antenna | SCHWARZBE | VULB9163 | 9163-470 | 2018-07-26 | 2021-07-25 |
| 5 | Horn Antenna | SCHWARZBE | BBHA 9120D | 9120D-1925 | 2018-07-02 | 2021-07-01 |
| 6 | EMI Test Receiver | R&S | ESR 7 | 101181 | 2020-06-22 | 2021-06-21 |
| 7 | RS SPECTRUM ANALYZER | R&S | FSP40 | 100503 | 2019-11-22 | 2020-11-21 |
| 8 | Broadband Preamplifier | / | BP-01M18G | P150501 | 2020-06-22 | 2021-06-21 |
| 9 | RF Cable-R03m | Jye Bao | RG142 | CB021 | 2020-06-22 | 2021-06-21 |
| 10 | RF Cable-HIGH | SUHNER | SUCOFLEX | 03CH03-HY | 2020-06-22 | 2021-06-21 |

## VOLTAGE FLUCTUATION AND FLICKER/HARMONIC CURRENT EMISSIONS

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Power Analyzer Test System | Voltech | PM6000 | 200006700523 | 2020-06-22 | 2021-06-21 |

## RF ELECTROMAGNETIC FIELD

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | RS Test Software | Tonscend | / | / | N/A | N/A |
| 2 | ESG Vector Signal Generator | Agilent | E4438C | MY4208139 | 2019-11-22 | 2020-11-21 |
| 3 | 3m Semi Anechoic Chamber | SIDT | SAC-3M | 03CH03-HY | 2020-06-22 | 2021-06-21 |
| 4 | RF POWER AMPLIFIER | OPHIR | 5225R | 1052 | NCR | NCR |
| 5 | RF POWER AMPLIFIER | OPHIR | 5273F | 1019 | NCR | NCR |
| 6 | Stacked Broadband Log Periodic | SCHWARZBE | STLP 9128 | 9128ES-145 | NCR | NCR |
| 7 | Stacked Mikrowellen Log.-Per | SCHWARZBE | STLP 9149 | 9149-484 | NCR | NCR |
| 8 | Electric field probe | Narda | EP601 | 611WX8020 | 2020-03-26 | 2021-03-25 |

## ELECTROSTATIC DISCHARGE

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | ESD Simulator | SCHLODER | SESD 230 | 604035 | 2020-06-22 | 2021-06-21 |

## ELECTRICAL FAST TRANSIENT IMMUNITY

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Immunity Simulative Generator | EM TEST | UCS500 M4 | 0101-34 | 2020-06-22 | 2021-06-21 |

## RF COMMON MODE

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Simulator | FRANKONIA | CIT-10/75 | A126A1195 | 2020-06-22 | 2021-06-21 |
| 2 | CDN | FRANKONIA | CDN-M2+M3 | A2210177 | 2020-06-22 | 2021-06-21 |
| 3 | 6dB Attenuator | FRANKONIA | DAM25W | 1172040 | 2020-06-22 | 2021-06-21 |
| 4 | EM-Clamp | ZHINAN | ZN23203 | 14017 | 2020-06-22 | 2021-06-21 |

## SURGES, LINE TO LINE AND LINE TO GROUND

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Immunity Simulative Generator | EM TEST | UCS500 M4 | 0101-34 | 2020-06-22 | 2021-06-21 |

MAGNETIC FIELD SUSCEPTIBILITY TEST

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Power frequency mag-field generator System | EVERFINE | EMS61000-8K | 906003 | 2020-06-22 | 2021-06-21 |

## VOLTAGE DIPS/INTERRUPTIONS IMMUNITY TEST

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|---|---|---|---|---|---|---|
| 1 | Voltage dips and up generator | 3CTEST | VDG-1105G | EC0171014 | 2020-06-22 | 2021-06-21 |

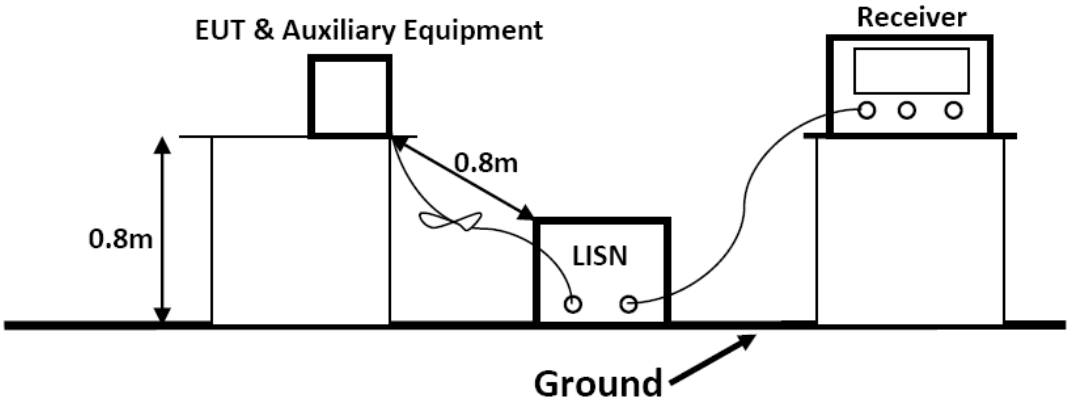
Note: All equipment is calibrated through CHINA CEPREI LABORATORY and GUANGZHOU LISAI CALIBRATION AND TEST CO., LTD.

NCR --- No calibration requirement.

# 5. TEST RESULTS

## 5.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

### 5.1.1. Block Diagram of Test Setup




### 5.1.2. Test Standard

EN 55032: 2015+A1: 2016 Class A

| Power Line Conducted Emission Limits (Class A) | | |
|---|---|---|
| Frequency (MHz) | Limit (dBμV) | |
| | Quasi-peak Level | Average Level |
| 0.15 ~ 0.50 | 66.0 ~ 56.0 * | 56.0 ~ 46.0 * |
| 0.50 ~ 5.00 | 56.0 | 46.0 |
| 5.00 ~ 30.00 | 60.0 | 50.0 |
| NOTE1-The lower limit shall apply at the transition frequencies.<br>NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz. | | |

### 5.1.3. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the EN 55032 requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

### 5.1.4. Operating Condition of EUT

5.1.4.1.Setup the EUT as shown on Section 5.1.1
5.1.4.2.Turn on the power of all equipments.
5.1.4.3.Let the EUT work in measuring mode(1) and measure it.

### 5.1.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55032 regulations during conducted emission measurement.
The bandwidth of the field strength meter is set at 9kHz in 150kHz~30MHz.
The frequency range from 150kHz to 30MHz is investigated.

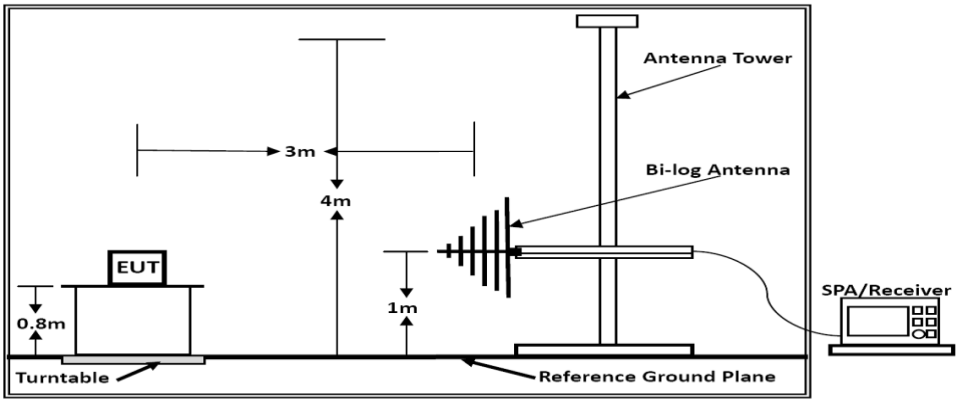
### 5.1.6. Test Results

**PASS.**

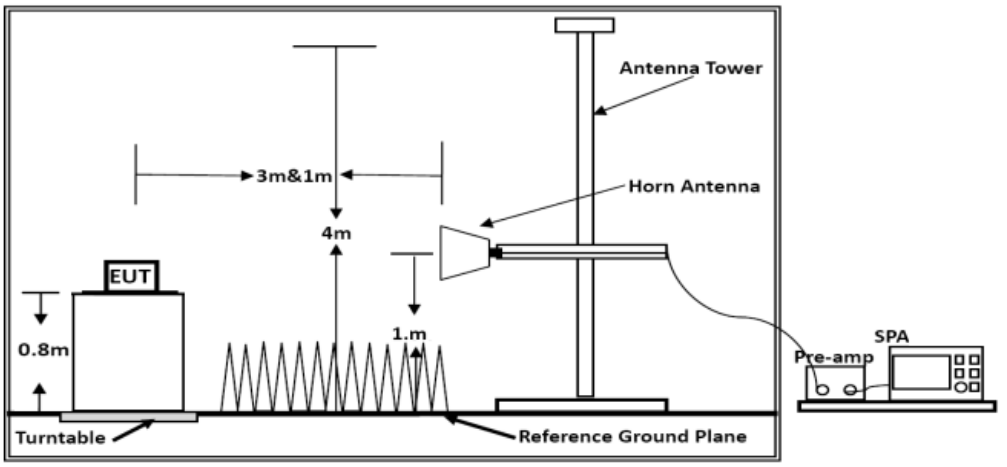
Refer to attached Annexe B.1

## 5.2. RADIATED EMISSION MEASUREMENT

### 5.2.1. Block Diagram of Test Setup




Below 1GHz




Above 1GHz

### 5.2.2. Test Standard

EN 55032: 2015+A1: 2016 Class A
All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

| Limits for Radiated Emission Below 1GHz | | |
|---|---|---|
| Frequency (MHz) | Distance (Meters) | Field Strengths Limit (dBμV/m) |
| 30 ~ 230 | 3 | 50 |
| 230 ~ 1000 | 3 | 57 |
| ***Note:<br>(1) The smaller limit shall apply at the combination point between two frequency bands.<br>(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT. | | |

| Limits for Radiated Emission Above 1GHz | | | |
|---|---|---|---|
| Frequency (MHz) | Distance (Meters) | Peak Limit (dBμV/m) | Average Limit (dBμV/m) |
| 1000 ~ 3000 | 3 | 80 | 60 |
| 3000 ~ 6000 | 3 | 74 | 64 |
| ***Note: The lower limit applies at the transition frequency. | | | |

### 5.2.3. EUT Configuration on Test

The EN 55032 regulations test method must be used to find the maximum emission during radiated emission measurement.

### 5.2.4. Operating Condition of EUT

5.2.4.1.Turn on the power.
5.2.4.2.Let the EUT work in the test mode(1) and measure it.

### 5.2.5. Test Procedure

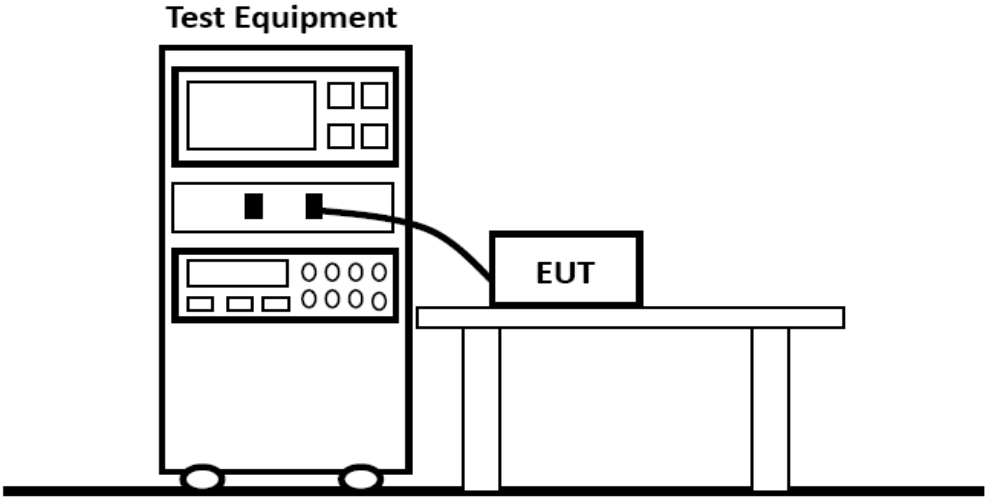
The EUT is placed on a turntable, which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. By-log antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.
The bandwidth of the EMI test receiver is set at RBW/VBW=120kHz/300kHz.
The frequency range from 30MHz to 1000MHz is checked.
The bandwidth of the Spectrum analyzer is set at RBW/VBW=1MHz/3MHz.
The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

### 5.2.6. Test Results

**PASS.**
Refer to attached Annexe B.2

## 5.3. HARMONIC CURRENT EMISSION MEASUREMENT

### 5.3.1. Block Diagram of Test Setup




### 5.3.2. Test Standard

EN 61000-3-2: 2014

### 5.3.3. Operating Condition of EUT

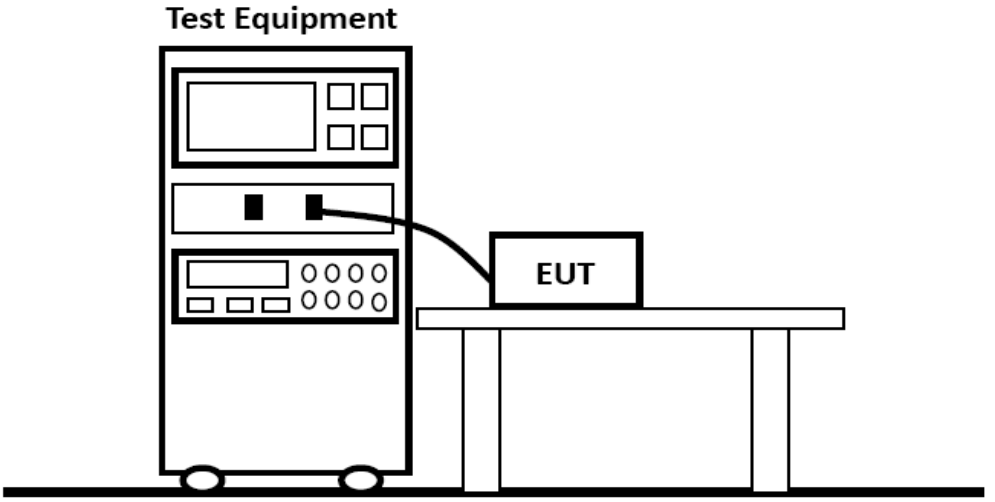
Same as Section 5.2.4, except the test setup replaced as Section 5.3.1.

### 5.3.4. Test Results

Refer to attached Annexe B.3

## 5.4. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

### 5.4.1. Block Diagram of Test Setup




### 5.4.2. Test Standard

EN 61000-3-3: 2013

### 5.4.3. Operating Condition of EUT

Same as Section 5.2.4, except the test setup replaced as Section 5.4.1.

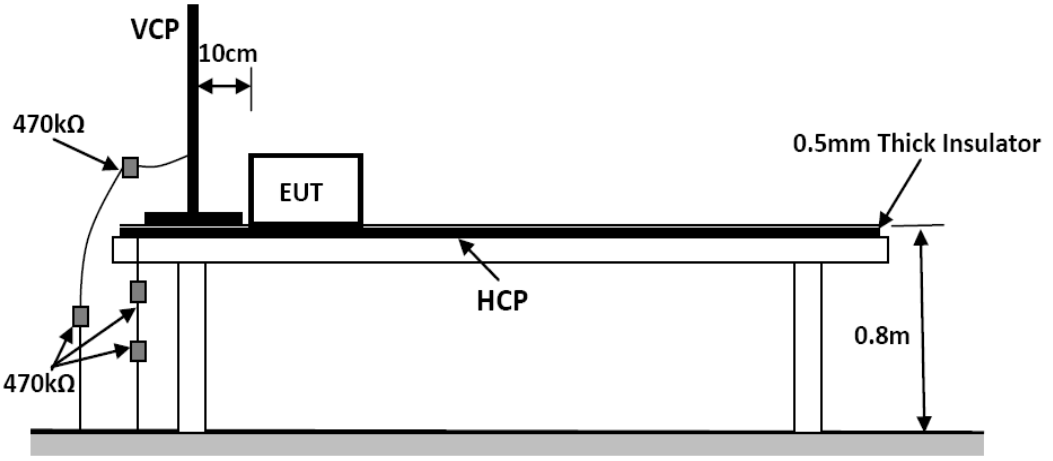
### 5.4.4. Test Results

**PASS.**

Refer to attached Annexe B.4

## 5.5. ELECTROSTATIC DISCHARGE IMMUNITY TEST

### 5.5.1. Block Diagram of Test Setup




### 5.5.2. Test Standard

EN 55035: 2017 (EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: ±8KV, Level: 2 / Contact Discharge: ±4KV)

### 5.5.3. Severity Levels and Performance Criterion

5.5.3.1. Severity level

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

5.5.3.2. Performance Criterion
Performance Criterion: B

### 5.5.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.5.1.

### 5.5.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 5.1.4. Except the test set up replaced by Section 5.5.1.

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### 5.5.6. Test Procedure

5.2.6.1. 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

5.2.6.2. 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.

5.2.6.3. Indirect Discharge For Horizontal Coupling Plane
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 25 times discharge.

5.2.6.4. Indirect Discharge For Vertical Coupling Plane
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 25 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 ce criterion.

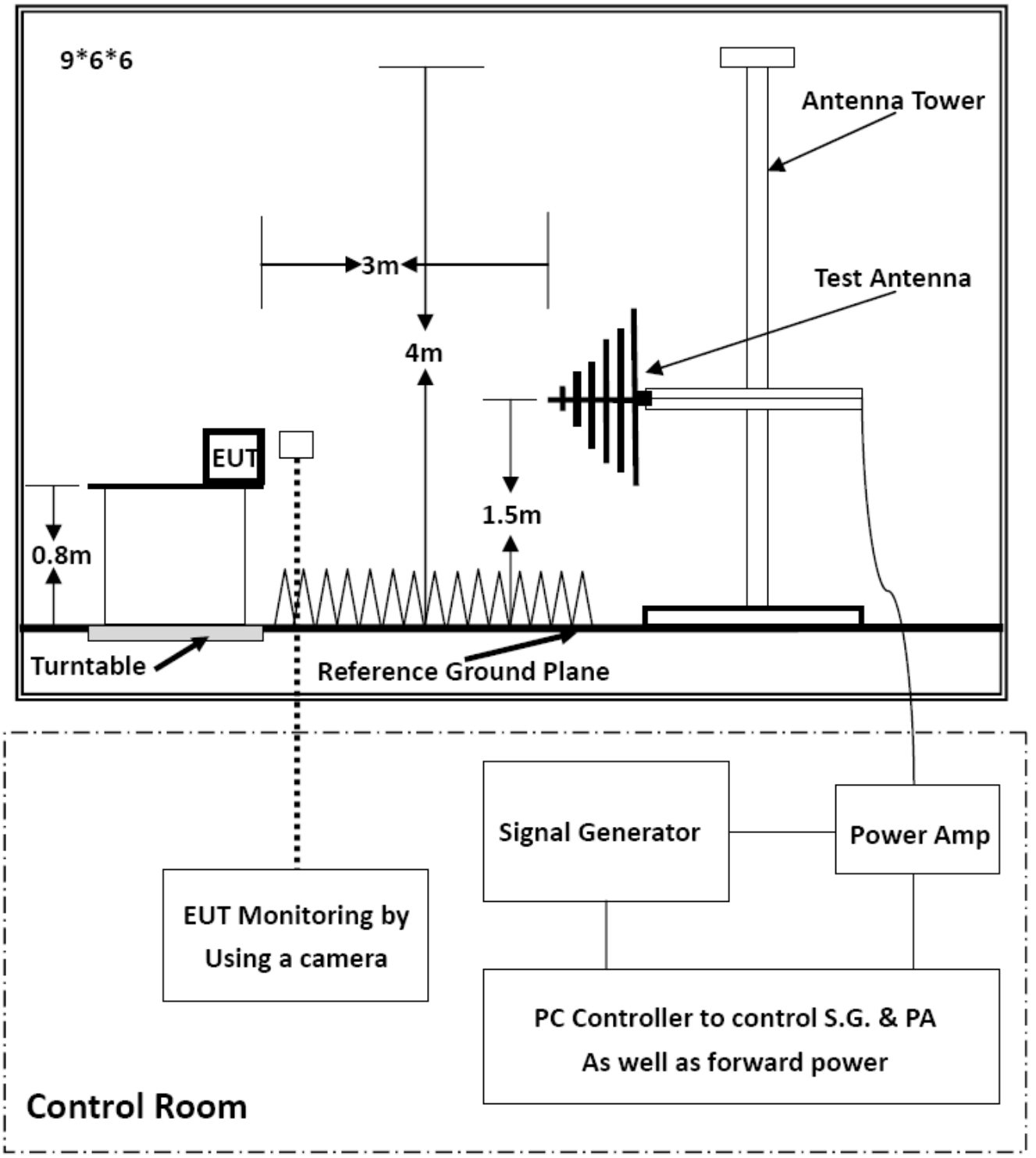
### 5.5.7. Test Results

**PASS.**

Refer to attached Annexe B.5

## 5.6. RF FIELD STRENGTH SUSCEPTIBILITY TEST

### 5.6.1. Block Diagram of Test Setup



### 5.6.2. Test Standard

EN 55035: 2017 (EN 61000-4-3: 2006+A2: 2010 Severity Level: 2, 3V/m)

### 5.6.3. Severity Levels and Performance Criterion

5.6.3.1. Severity level

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

5.6.3.2. Performance Criterion
Performance Criterion: A

### 5.6.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.6.1.

### 5.6.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.2..4, except the test setup replaced as Section 5.6.1.

### 5.6.6. Test Procedure

The EUT are placed on a table, which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna, which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.
In order to judge the EUT performance, a CCD Recording is used to monitor its screen.
All the scanning conditions are as following:

| Condition of Test | Remark |
|---|---|
| Fielded Strength | 3 V/m (Severity Level 2) |
| Radiated Signal | Unmodulated |
| Test Frequency Range (swept test) | 80-1000MHz |
| Test Frequency (spot test) | 1800MHz, 2600MHz, 3500MHz, 5000MHz |
| Dwell time of radiated | 0.0015 decade/s |
| Waiting Time | 3 Sec. |

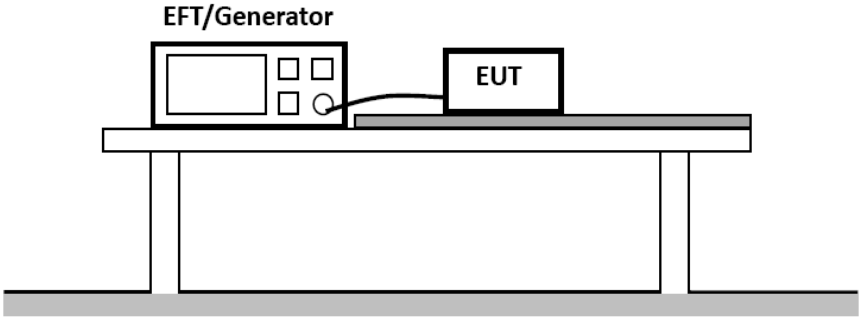
### 5.6.7. Test Results

**PASS.**

Refer to attached Annexe B.6

## 5.7. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

### 5.7.1. Block Diagram of Test Setup




### 5.7.2. Test Standard

EN 55035: 2017 (EN 61000-4-4: 2012, Severity Level, Level 2: 1KV)

### 5.7.3. Severity Levels and Performance Criterion

5.7.3.1. Severity level

| Open Circuit Output Test Voltage ±10% | | |
|---|---|---|
| Level | On Power Supply Lines | On I/O (Input/Output) Signal data and control lines |
| 1 | 0.5 KV | 0.25 KV |
| 2 | 1 KV | 0.5 KV |
| 3 | 2 KV | 1 KV |
| 4 | 4 KV | 2 KV |
| X | Special | Special |

5.7.3.2. Performance Criterion
Performance Criterion: B

### 5.7.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.7.1.

### 5.7.5. Operating Condition of EUT

5.7.5.1. Setup the EUT as shown in Section 5.7.1.
5.7.5.2. Turn on the power of all equipments.
5.7.5.3. Let the EUT work in test mode(1) and measure it.

### 5.7.6. Test Procedure

The EUT is put on the table, which is 0.8 meter high above the ground. 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.

5.7.6.1. For input and output AC power ports:
The EUT is connected to the power mains by using a coupling device, which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 mins.

5.7.6.2. For signal lines and control lines ports:
It’s unnecessary to test.

5.7.6.3. For DC output line ports:
It’s unnecessary to test.

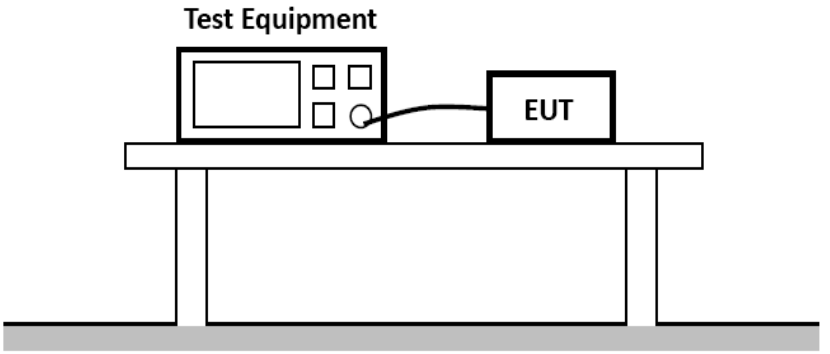
### 5.7.7. Test Results

**PASS.**

Refer to attached Annexe B.7

## 5.8. SURGE IMMUNITY TEST

### 5.8.1. Block Diagram of Test Setup




### 5.8.2. Test Standard

EN 55035: 2017 (EN 61000-4-5: 2014+A1: 2017, Severity Level: Line to Line: Level 2, 1.0KV, Line to Earth: Level 3, 2.0KV)

### 5.8.3. Severity Levels and Performance Criterion

5.8.3.1. Severity level

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

5.8.3.2. Performance Criterion
Performance Criterion: B

### 5.8.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.8.1.

### 5.8.5. Operating Condition of EUT

5.8.5.1.Setup the EUT as shown in Section 5.8.1.
5.8.5.1.Turn on the power of all equipments.
5.8.5.1.Let the EUT work in test mode (1) and measure it.

### 5.8.6. Test Procedure

5.8.6.1. Set up the EUT and test generator as shown on Section 5.8.1.

5.8.6.2. For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

5.8.6.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

5.8.6.4. Different phase angles are done individually.

5.8.6.5. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

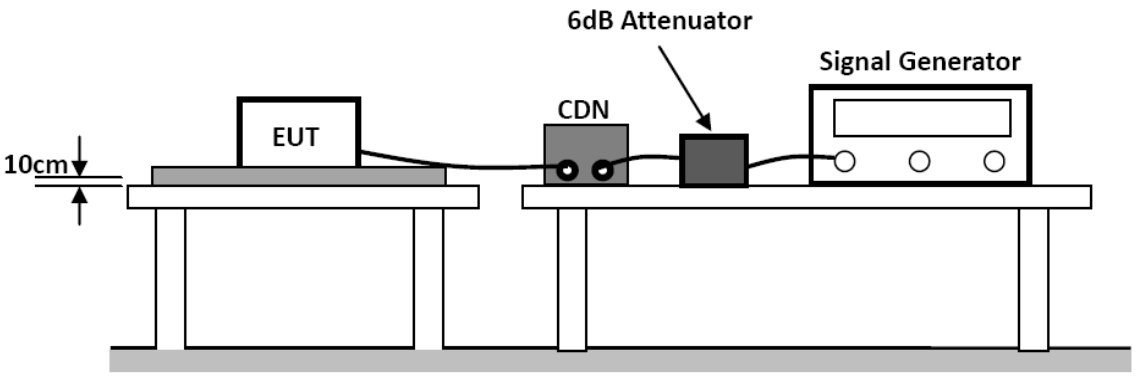
### 5.8.7. Test Results

**PASS.**

Refer to attached Annexe B.8

## 5.9. INJECTED CURRENTS SUSCEPTIBILITY TEST

### 5.9.1. Block Diagram of Test Setup




### 5.9.2. Test Standard

EN 55035: 2017(EN 61000-4-6: 2014, Severity Level: Level 2, (0.15MHz ~ 80MHz))

### 5.9.3. Severity Levels and Performance Criterion

5.9.3.1. Severity level

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

5.9.3.2. Performance Criterion
Performance Criterion: A

### 5.9.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.9.1.

### 5.9.5. Operating Condition of EUT

5.9.5.1.Setup the EUT as shown in Section 5.9.1.
5.9.5.2.Turn on the power of all equipments.
5.9.5.3.Let the EUT work in test mode(1) and measure it.

### 5.9.6. Test Procedure

5.9.6.1. Set up the EUT, CDN and test generators as shown on Section 5.9.1.
5.9.6.2. Let the EUT work in test mode and measure it.
5.9.6.3. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. 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).
5.9.6.4. The disturbance signal described below is injected to EUT through CDN.
5.9.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.
5.9.6.6. The frequency range is swept from 150kHz to 10MHz using 3V signal level,10MHz to 30MHz using 3V to 1V signal level,30MHz to 80MHz using 1V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.
5.9.6.7. The rate of sweep shall not exceed 1.5*10-3decades/s. where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
5.9.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

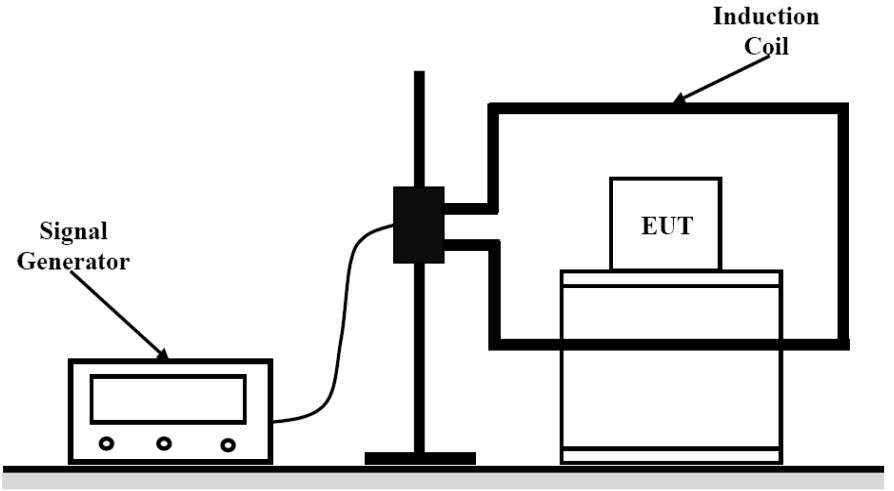
### 5.9.7. Test Results

**PASS.**

Refer to attached Annexe B.9

## 5.10. MAGNETIC FIELD SUSCEPTIBILITY TEST

### 5.10.1. Block Diagram of Test Setup




### 5.10.2. Test Standard

EN 55035: 2017 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A/m)

### 5.10.3. Severity Levels and Performance Criterion

5.10.3.1. Severity level

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

5.10.3.2. Performance Criterion

Performance Criterion: A

### 5.10.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.10.1.

### 5.10.5. Test 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 two orientations of the magnetic coil, horizontal and vertical, 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.

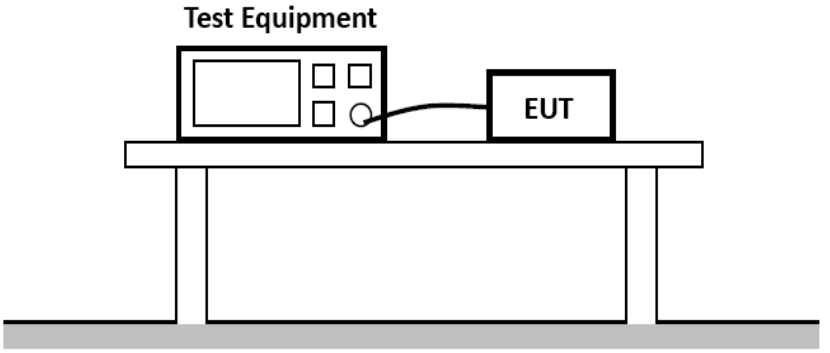
### 5.10.6. Test Results

**PASS.**

Refer to attached Annexe B.10

## 5.11. VOLTAGE DIPS AND INTERRUPTIONS TEST

### 5.11.1. Block Diagram of Test Setup




### 5.11.2. Test Standard

EN 55035: 2017 (EN 61000-4-11: 2004+A1: 2017)

### 5.11.3. Severity Levels and Performance Criterion

5.11.3.1. Severity level

| Test Level | | |
|---|---|---|
| Voltage Reduction $\%U_T$ | Voltage Dips $\%U_T$ | Duration (in Period) |
| 100 | 0 | 0.5 |
| 100 | 0 | 1 |
| 30 | 70 | 5 |
| Voltage Reduction $\%U_T$ | Voltage Dips $\%U_T$ | Duration (in Period) |
| 100 | 0 | 250 |

5.11.3.2. Performance Criterion

Performance Criterion: B&C

### 5.11.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.11.1.

### 5.11.5. Operating Condition of EUT

5.11.5.1. Setup the EUT as shown in Section 5.11.1.
5.11.5.2. Turn on the power of all equipments.
5.11.5.3. Let the EUT work in test mode (1) and measure it.

### 5.11.6. Test Procedure

5.11.6.1. Set up the EUT and test generator as shown on Section 5.11.1.
5.11.6.2. The interruptions are introduced at selected phase angles with specified duration.
5.11.6.3. Record any degradation of performance.

### 5.11.7. Test Results

**PASS.**

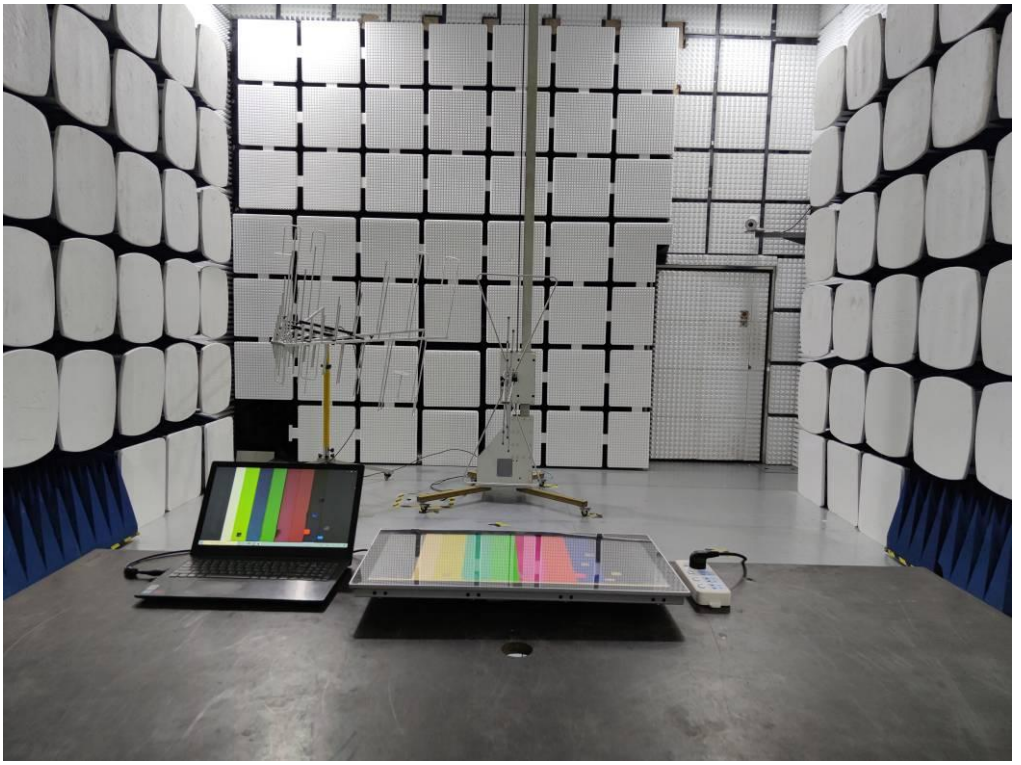
Refer to attached Annexe B.11

# Annexe A

（Test photograph）

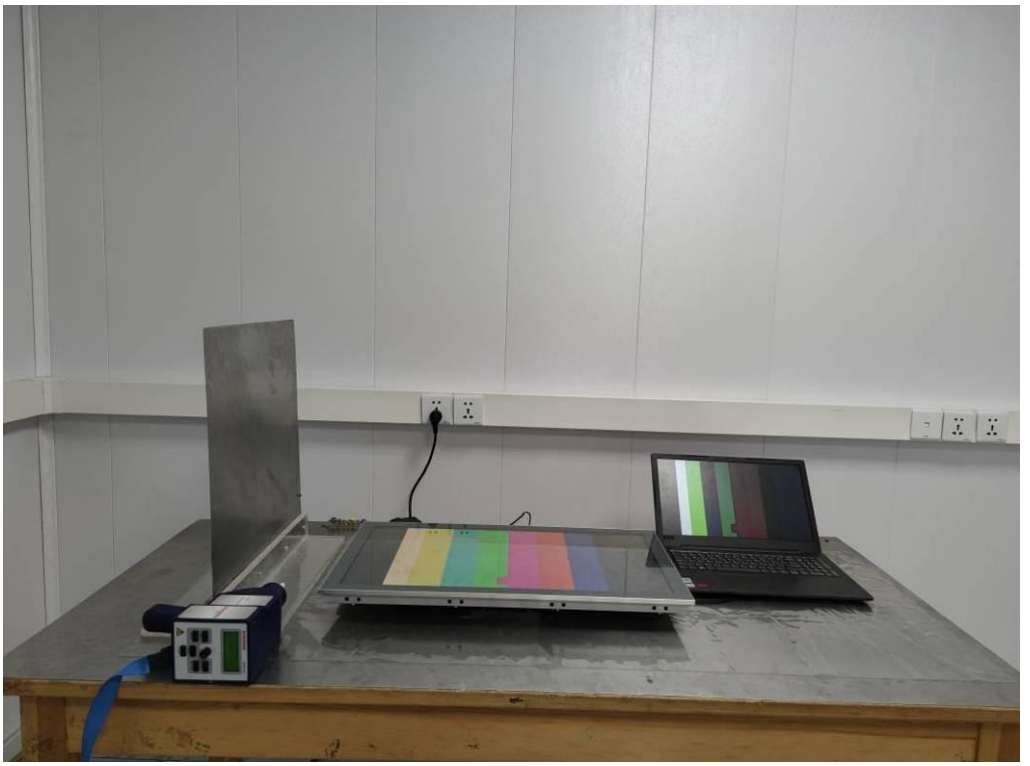
## A.1 Test Setup Photo of Power Line Conducted Measurement

## A.2 Test Setup Photo of Radiated Measurement (Below 1GHz)



## A.3 Test Setup Photo of Harmonic & Flicker Measurement

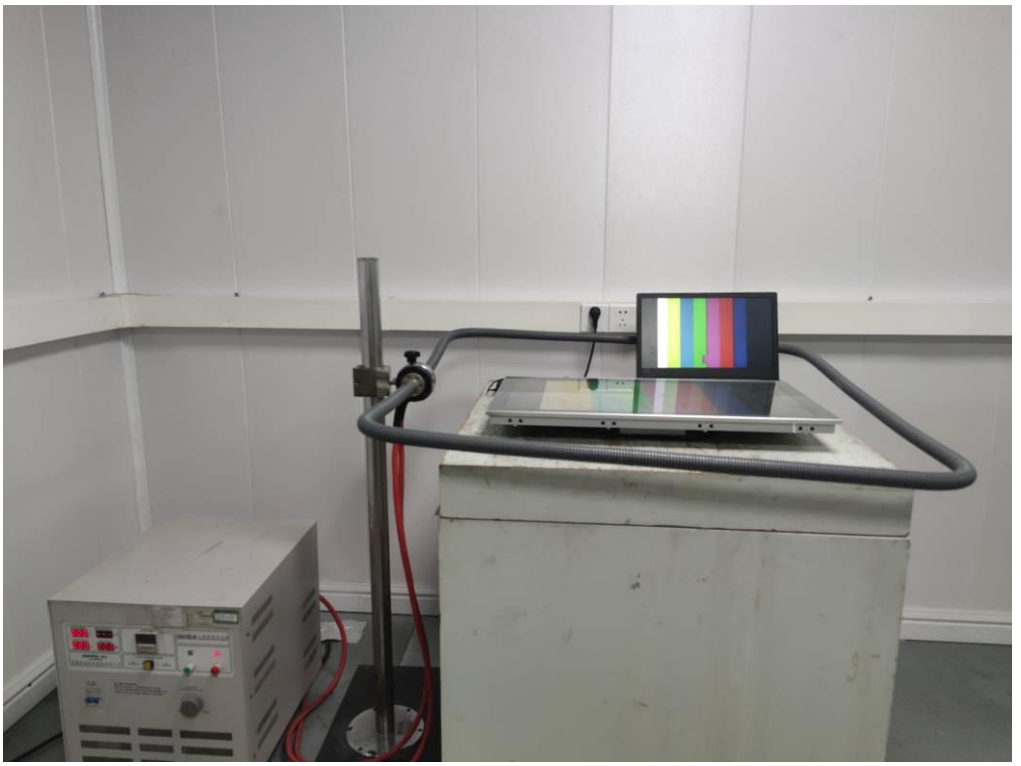
## A.4 Test Setup Photo of Electrostatic Discharge Test



A.5 Photo of Electrical Fast Transient/Burst Test & Surge Immunity Test

A.6 Test Setup Photo of Injected Currents Susceptibility Test

## A.7 Test Setup Photo of Magnetic Field Immunity Test



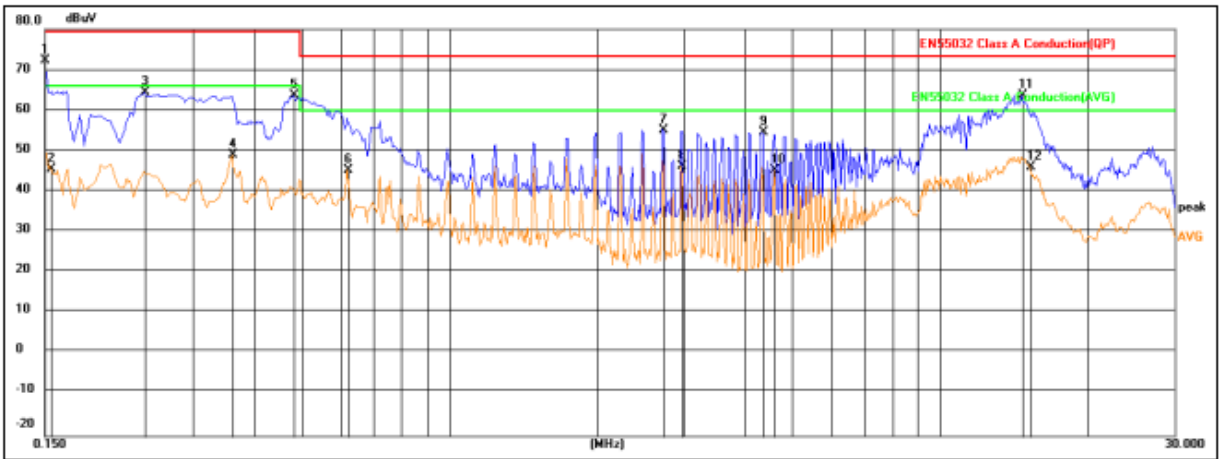
## A.8 Test Setup Photo of Voltage Dips and Interruptions Test

# ANNEXE B

（Emission and Immunity test results）

## B.1 POWER LINE CONDUCTED EMISSION MEASUREMENT

| | |
|---|---|
| Environmental Conditions: | 23.3℃, 53.7% RH |
| Test Voltage: | AC 230V,50Hz |
| Test Model: | IDD2627P |
| Test Mode: | Mode 1 |
| Test Engineer: | Carl Fu |
| Pol: | Line |
| Detailed results are shown below | |




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 57.29 | 15.14 | 72.43 | 79.00 | -6.57 | QP |
| 2 | 0.1544 | 30.60 | 15.14 | 45.74 | 66.00 | -20.26 | AVG |
| 3 | 0.2400 | 49.22 | 15.22 | 64.44 | 79.00 | -14.56 | QP |
| 4 | 0.3615 | 33.84 | 15.31 | 49.15 | 66.00 | -16.85 | AVG |
| 5 | 0.4830 | 48.55 | 15.32 | 63.87 | 79.00 | -15.13 | QP |
| 6 | 0.6224 | 30.24 | 15.25 | 45.49 | 60.00 | -14.51 | AVG |
| 7 | 2.7285 | 39.85 | 15.46 | 55.31 | 73.00 | -17.69 | QP |
| 8 | 2.9760 | 30.96 | 15.47 | 46.43 | 60.00 | -13.57 | AVG |
| 9 | 4.3395 | 39.11 | 15.47 | 54.58 | 73.00 | -18.42 | QP |
| 10 | 4.5870 | 29.75 | 15.49 | 45.24 | 60.00 | -14.76 | AVG |
| 11 | 14.6760 | 47.74 | 16.10 | 63.84 | 73.00 | -9.16 | QP |
| 12 | 15.2655 | 29.95 | 16.17 | 46.12 | 60.00 | -13.88 | AVG |

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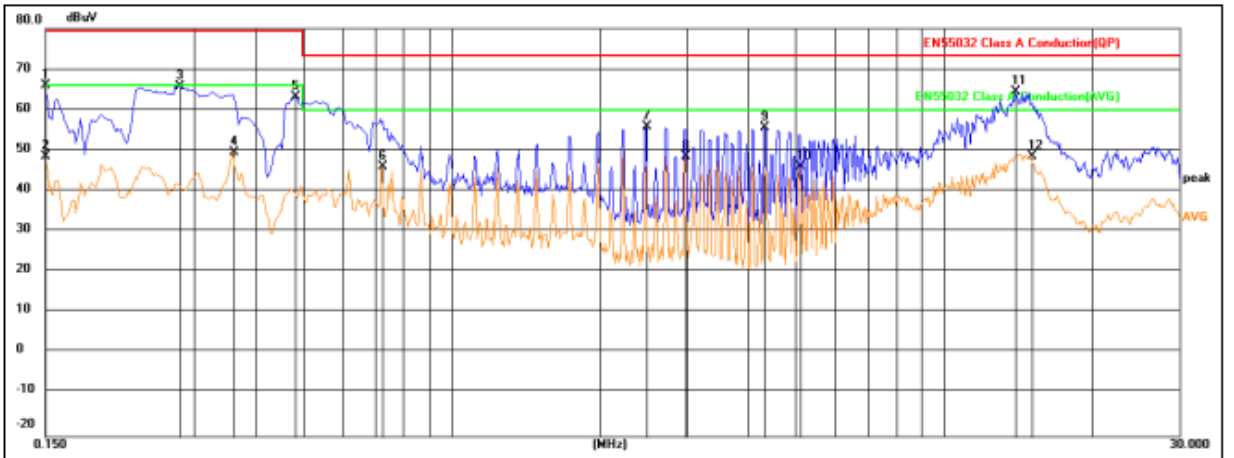
| | |
|---|---|
| Environmental Conditions: | 23.3℃, 53.7% RH |
| Test Voltage: | AC 230V,50Hz |
| Test Model: | IDD2627P |
| Test Mode: | Mode 1 |
| Test Engineer: | Carl Fu |
| Pol: | Neutral |
| Detailed results are shown below | |




| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB) | Result (dBuV) | Limit (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|
| 1 | 0.1500 | 50.88 | 15.14 | 66.02 | 79.00 | -12.98 | QP |
| 2 | 0.1500 | 33.51 | 15.14 | 48.65 | 66.00 | -17.35 | AVG |
| 3 | 0.2805 | 50.47 | 15.25 | 65.72 | 79.00 | -13.28 | QP |
| 4 | 0.3615 | 34.32 | 15.31 | 49.63 | 66.00 | -16.37 | AVG |
| 5 | 0.4830 | 47.93 | 15.32 | 63.25 | 79.00 | -15.75 | QP |
| 6 | 0.7259 | 30.75 | 15.30 | 46.05 | 60.00 | -13.95 | AVG |
| 7 | 2.4900 | 40.46 | 15.45 | 55.91 | 73.00 | -17.09 | QP |
| 8 | 2.9849 | 33.13 | 15.47 | 48.60 | 60.00 | -11.40 | AVG |
| 9 | 4.3305 | 40.12 | 15.47 | 55.59 | 73.00 | -17.41 | QP |
| 10 | 5.0910 | 30.70 | 15.49 | 46.19 | 60.00 | -13.81 | AVG |
| 11 | 13.9515 | 48.54 | 16.01 | 64.55 | 73.00 | -8.45 | QP |
| 12 | 15.0315 | 32.47 | 16.15 | 48.62 | 60.00 | -11.38 | AVG |

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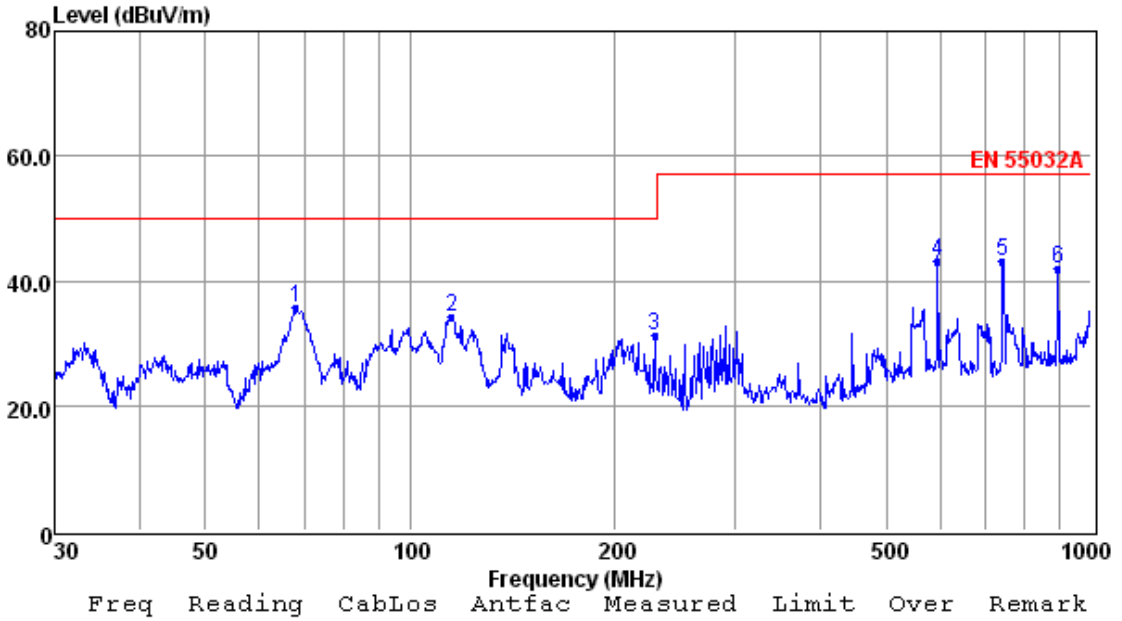
## B.2 Radiated Disturbance Test Results（30MHz to 1000MHz）

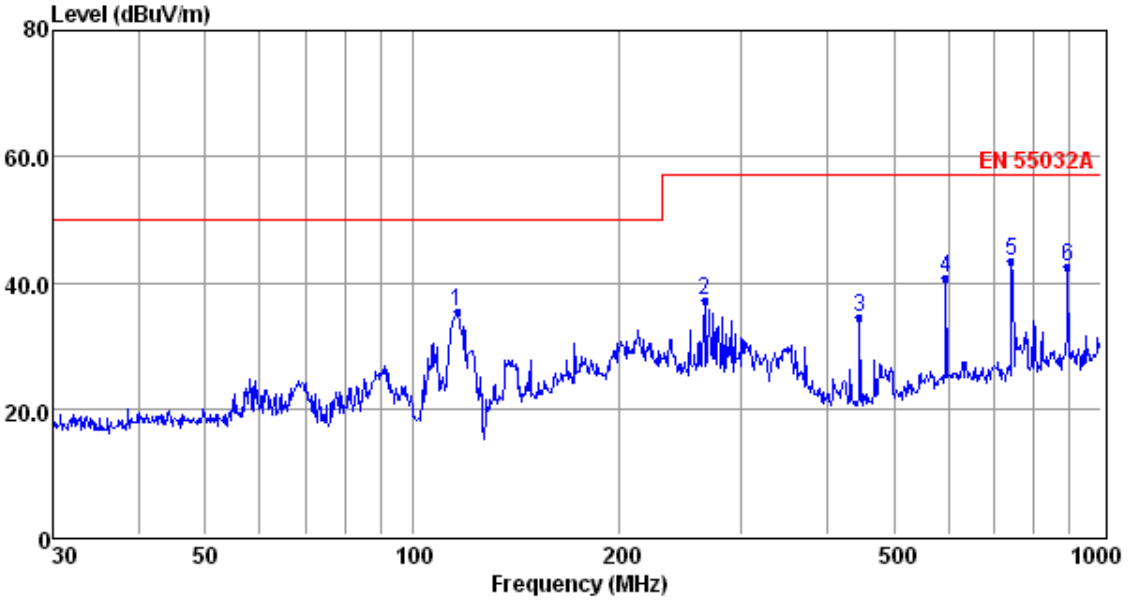
| | |
|---|---|
| Environmental Conditions: | 24.3℃, 56.3% RH |
| Test Voltage: | AC 230V,50Hz |
| Test Model: | IDD2627P |
| Test Mode: | Mode 1 |
| Test Engineer: | Carl Fu |
| Pol: | Vertical |
| Detailed results are shown below | |




| | Freq MHz | Reading dBuV | CabLos dB | Antfac dB/m | Measured dBuV/m | Limit dBuV/m | Over dB | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 67.91 | 25.54 | 0.51 | 9.51 | 35.56 | 50.00 | -14.44 | QP |
| 2 | 114.92 | 22.23 | 0.68 | 11.38 | 34.29 | 50.00 | -15.71 | QP |
| 3 | 228.49 | 18.82 | 0.93 | 11.58 | 31.33 | 50.00 | -18.67 | QP |
| 4 | 595.13 | 23.25 | 1.51 | 18.36 | 43.12 | 57.00 | -13.88 | QP |
| 5 | 742.26 | 22.02 | 1.78 | 19.34 | 43.14 | 57.00 | -13.86 | QP |
| 6 | 893.86 | 19.09 | 1.84 | 21.03 | 41.96 | 57.00 | -15.04 | QP |

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported

| | |
|---|---|
| Environmental Conditions: | 24.3℃, 56.3% RH |
| Test Voltage: | AC 230V,50Hz |
| Test Model: | IDD2627P |
| Test Mode: | Mode 1 |
| Test Engineer: | Carl Fu |
| Pol: | Horizontal |
| Detailed results are shown below | |




| | Freq MHz | Reading dBuV | Cablos dB | Antfac dB/m | Measured dBuV/m | Limit dBuV/m | Over dB | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 116.13 | 23.61 | 0.68 | 11.16 | 35.45 | 50.00 | -14.55 | QP |
| 2 | 265.68 | 23.84 | 1.03 | 12.23 | 37.10 | 57.00 | -19.90 | QP |
| 3 | 446.41 | 17.54 | 1.42 | 15.57 | 34.53 | 57.00 | -22.47 | QP |
| 4 | 595.13 | 20.94 | 1.51 | 18.36 | 40.81 | 57.00 | -16.19 | QP |
| 5 | 742.26 | 22.29 | 1.78 | 19.34 | 43.41 | 57.00 | -13.59 | QP |
| 6 | 893.86 | 19.71 | 1.84 | 21.03 | 42.58 | 57.00 | -14.42 | QP |

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported

## B.3 HARMONIC CURRENT EMISSION MEASUREMENT

**Pass**

Because the power of EUT is less than 75W, according to standard EN 61000-3-2, harmonic current unnecessary to test.

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## B.4 VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

| | | | |
|---|---|---|---|
| **Test Model** | IDD2627P | **Test Engineer** | Carl Fu |
| **Test Voltage** | AC 230V/50Hz | | |

| Overall Result: | Notes: |
|---|---|
| **PASS** | Measurement method - Voltage |

| | Pst | dc (%) | dmax (%) | d(t) > 3.3%(ms) |
|---|---|---|---|---|
| Limit | 1.000 | 3.300 | 4.000 | 500 |
| Reading 1 | 0.089 | 0.008 | 0.116 | 0 |

## B.5 ELECTROSTATIC DISCHARGE IMMUNITY TEST

# Electrostatic Discharge Test Results

| | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-2 ☑ EN 61000-4-2 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 24.8℃ |
| **M/N** | IDD2627P | **Humidity** | 53.8％ |
| **Criterion** | B | **Pressure** | 1021mbar |
| **Test Mode** | Mode 1 | **Test Engineer** | Carl Fu |

| **Air Discharge** | | | | | | |
|---|---|---|---|---|---|---|
| **Test Points** | **Test Levels** | | | **Results** | | |
| | **± 2kV** | **± 4kV** | **± 8kV** | **Passed** | **Fail** | **Performance Criterion** |
| Front | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Back | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Left | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Right | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Top | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Bottom | ☒ | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |

| **Contact Discharge** | | | | | |
|---|---|---|---|---|---|
| **Test Points** | **Test Levels** | | **Results** | | |
| | **± 2 kV** | **±4 kV** | **Passed** | **Fail** | **Performance Criterion** |
| Front | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Back | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Left | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Right | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Top | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Bottom | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |

| **Discharge To Horizontal Coupling Plane** | | | | | |
|---|---|---|---|---|---|
| **Side of EUT** | **Test Levels** | | **Results** | | |
| | **± 2 kV** | **± 4 kV** | **Passed** | **Fail** | **Performance Criterion** |
| Front | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Back | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Left | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Right | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |

| **Discharge To Vertical Coupling Plane** | | | | | |
|---|---|---|---|---|---|
| **Side of EUT** | **Test Levels** | | **Results** | | |
| | **± 2 kV** | **± 4 kV** | **Passed** | **Fail** | **Performance Criterion** |
| Front | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Back | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Left | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |
| Right | ☒ | ☒ | ☒ | ☐ | ☐A ☒B |

## B.6 RF FIELD STRENGTH SUSCEPTIBILITY TEST

| RF Field Strength Susceptibility Test Results | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-3 ☑ EN 61000-4-3 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 22.8℃ |
| **M/N** | IDD2627P | **Humidity** | 53.0％ |
| **Field Strength** | 3 V/m | **Criterion** | A |
| **Test Mode** | Mode 1 | **Test Engineer** | Carl Fu |
| **Test Frequency** | 80MHz to 1000MHz (swept test)<br>1800MHz, 2600MHz, 3500MHz, 5000MHz (spot test) | | |
| **Modulation** | ☐None ☐ Pulse ☑AM 1KHz 80% | | |
| **Steps** | 1% | | |

| | Horizontal | Vertical |
|---|---|---|
| **Front** | PASS | PASS |
| **Right** | PASS | PASS |
| **Rear** | PASS | PASS |
| **Left** | PASS | PASS |

Test Equipment:

1. Signal Generator: 2031 (MARCONI)
2. Power Amplifier: 500A100 & 100W/1000M1 (A&R)
3. Power Antenna: 3108 (EMCO) & AT1080 (A&R)
4. Field Monitor: FM2000 (A&R)

Note:

## B.7 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

| Electrical Fast Transient/Burst Test Results | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-4 ☑ EN 61000-4-4 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 22.9℃ |
| **M/N** | IDD2627P | **Humidity** | 53.4% |
| **Test Mode** | Mode 1 | **Criterion** | B |
| **Test Engineer** | Carl Fu | | |

| Line | Test Voltage | Result (+) | Result (-) |
|---|---|---|---|
| L | 1KV | PASS | PASS |
| N | 1KV | PASS | PASS |
| | | | |
| L-N | 1KV | PASS | PASS |
| L-PE | | | |
| N-PE | | | |
| L-N-PE | | | |
| Signal Line | | | |
| I/O Cable | | | |

Note:

## B.8 SURGE IMMUNITY TEST

| Surge Immunity Test Result | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-5 ☑ EN 61000-4-5 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 22.9℃ |
| **M/N** | IDD2627P | **Humidity** | 53.4％ |
| **Test Mode** | Mode 1 | **Criterion** | B |
| **Test Engineer** | Carl Fu | | |

| Location | Polarity | Phase Angle | Number of Pulse | Pulse Voltage (KV) | Result |
|---|---|---|---|---|---|
| L-N | + | $90^o$ | 5 | 1.0 | PASS |
| | - | $270^o$ | 5 | 1.0 | PASS |
| L-PE | | | | | |
| | | | | | |
| N-PE | | | | | |
| | | | | | |
| Signal Line | | | | | |
| | | | | | |
| Note | | | | | |

## B.9 INJECTED CURRENTS SUSCEPTIBILITY TEST

| Injected Currents Susceptibility Test Results | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-6 ☑ EN 61000-4-6 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 23.5℃ |
| **M/N** | IDD2627P | **Humidity** | 53.2％ |
| **Test Mode** | Mode 1 | **Criterion** | A |
| **Test Engineer** | Carl Fu | | |

| Frequency Range (MHz) | Injected Position | Strength (Unmodulated) | Criterion | Result |
|---|---|---|---|---|
| 0.15 ~ 10 | AC Mains | 3V | A | PASS |
| 10 ~ 30 | | 3V ~ 1V | | |
| 30 ~ 80 | | 1V | | |
| | | | | |
| | | | | |
| | | | | |

Remark:
1. Modulation Signal:1kHz 80% AM
2. Measurement Equipment :
   Simulator: CIT-10 (FRANKONIA)
   CDN : ☑CDN-M2 (FRANKONIA)
   ☐CDN-M3 (FRANKONIA)

Note:

## B.10 MAGNETIC FIELD SUSCEPTIBILITY TEST

| Magnetic Field Immunity Test Result | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-8 ☑ EN 61000-4-8 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 24.4℃ |
| **M/N** | IDD2627P | **Humidity** | 54.1％ |
| **Test Mode** | Mode 1 | **Criterion** | A |
| **Test Engineer** | Carl Fu | | |

| Test Level (A/M) | Testing Duration | Coil Orientation | Criterion | Result |
|---|---|---|---|---|
| 1 | 5 mins | X | A | PASS |
| 1 | 5 mins | Y | A | PASS |
| 1 | 5 mins | Z | A | PASS |

Note:

## B.11 VOLTAGE DIPS AND INTERRUPTIONS TEST

| Voltage Dips And Interruptions Test Results | | | |
|---|---|---|---|
| **Standard** | ☐ IEC 61000-4-11 ☑ EN 61000-4-11 | | |
| **Applicant** | Shanghai Panelmate Electronics Co.,Ltd. | | |
| **EUT** | Industrial Touch Screen Monitor | **Temperature** | 22.3℃ |
| **M/N** | IDD2627P | **Humidity** | 54.4％ |
| **Test Mode** | Mode 1 | **Criterion** | B&C |
| **Test Engineer** | Carl Fu | | |

| Test Level % $U_T$ | Voltage Dips & Short Interruptions % $U_T$ | Duration (in periods) | Criterion | Result |
|---|---|---|---|---|
| 0 | 100 | 0.5P | B | PASS |
| 70 | 30 | 25P | C | PASS |
| 0 | 100 | 250P | C | PASS |

Note:

# ANNEXE C

（External and internal photos of the EUT）

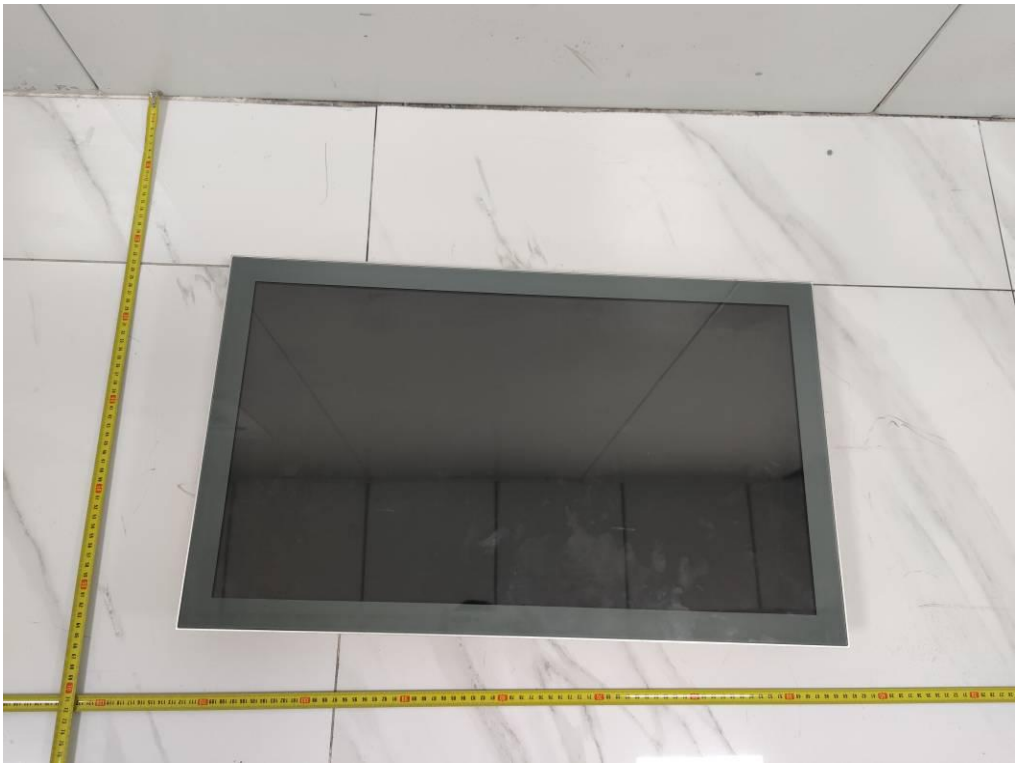

Fig.1

Fig.2

Fig.3

Fig.4

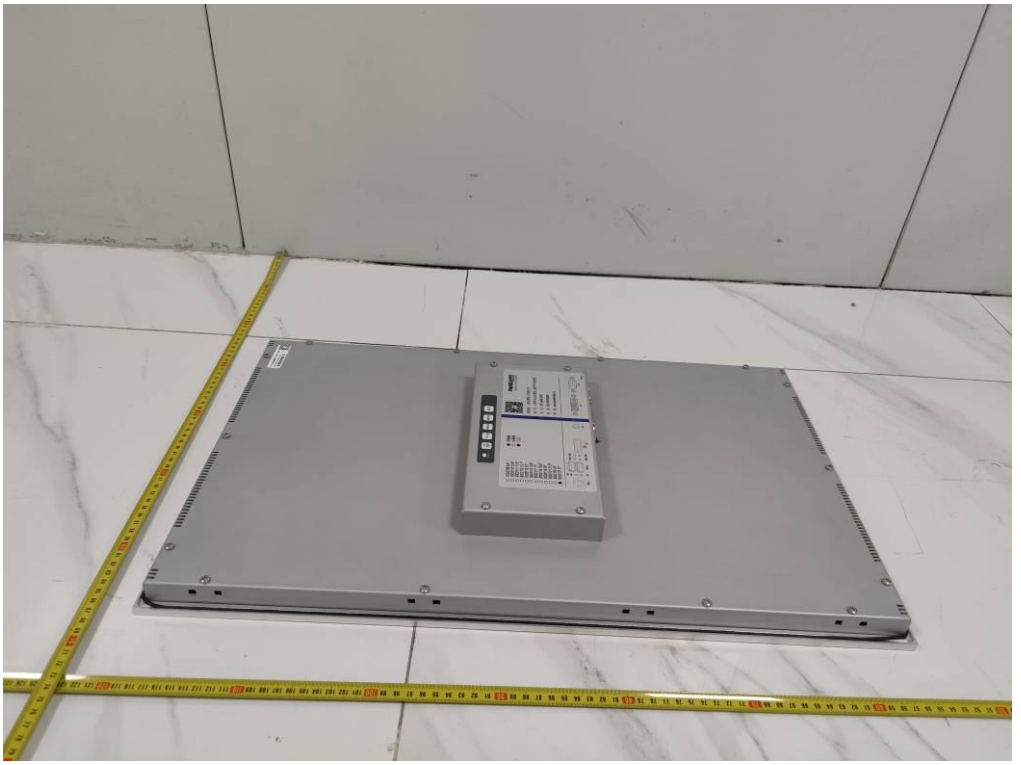

Fig.5

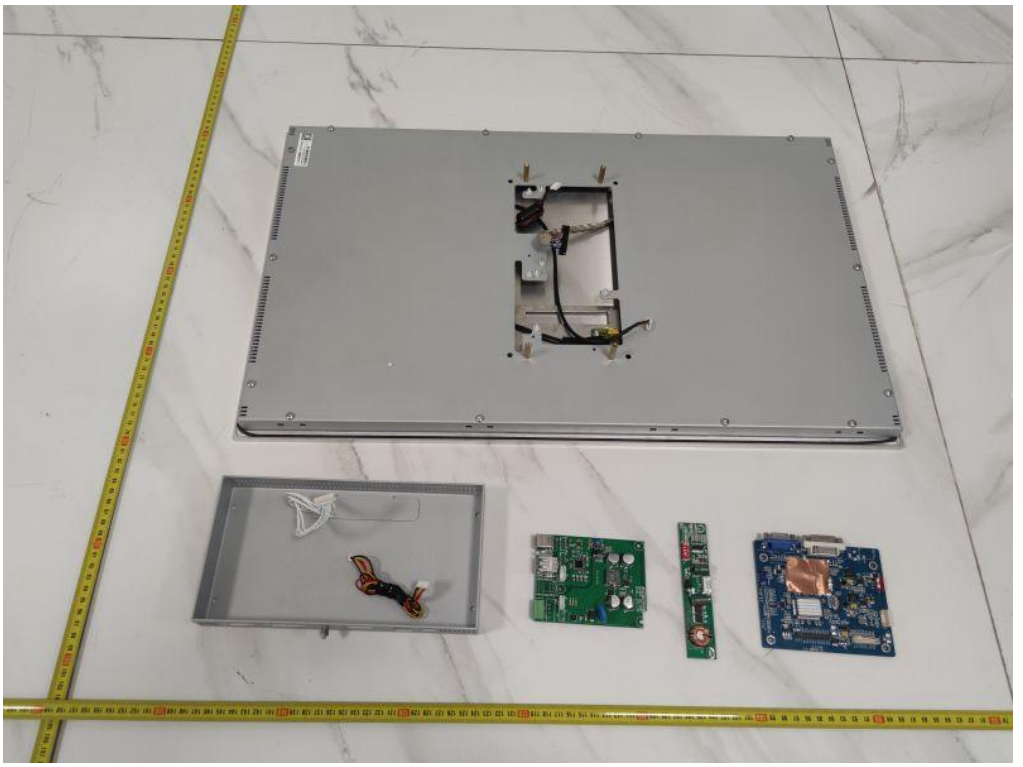

Fig.6

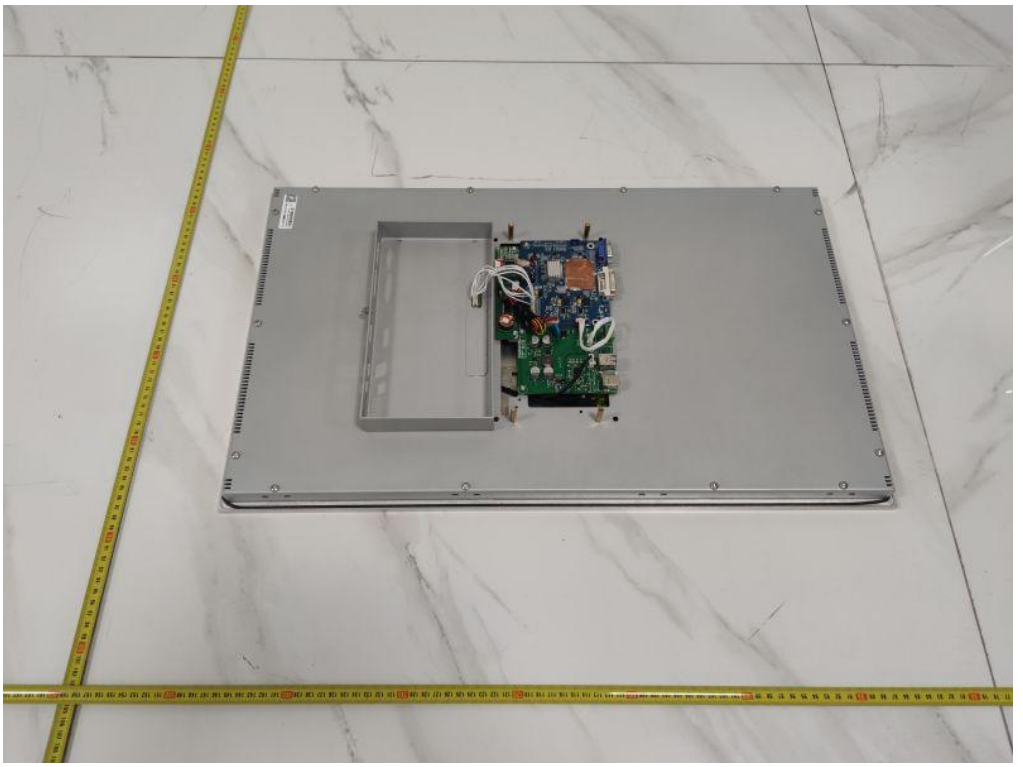

Fig.7

Fig.8

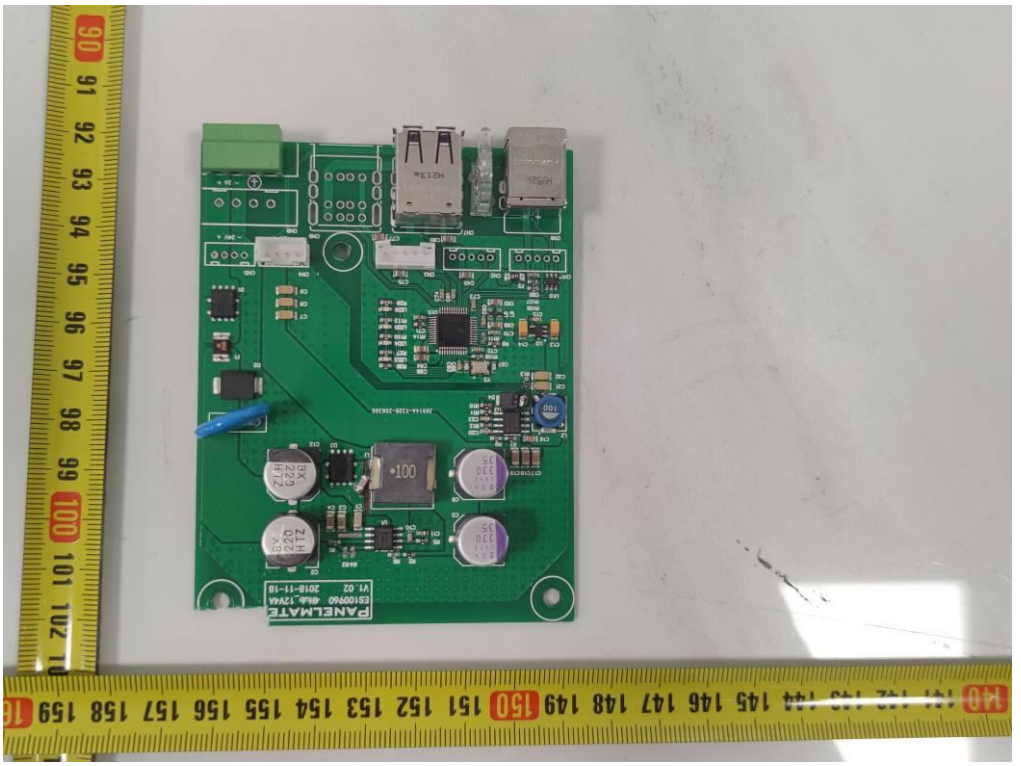

Fig.7

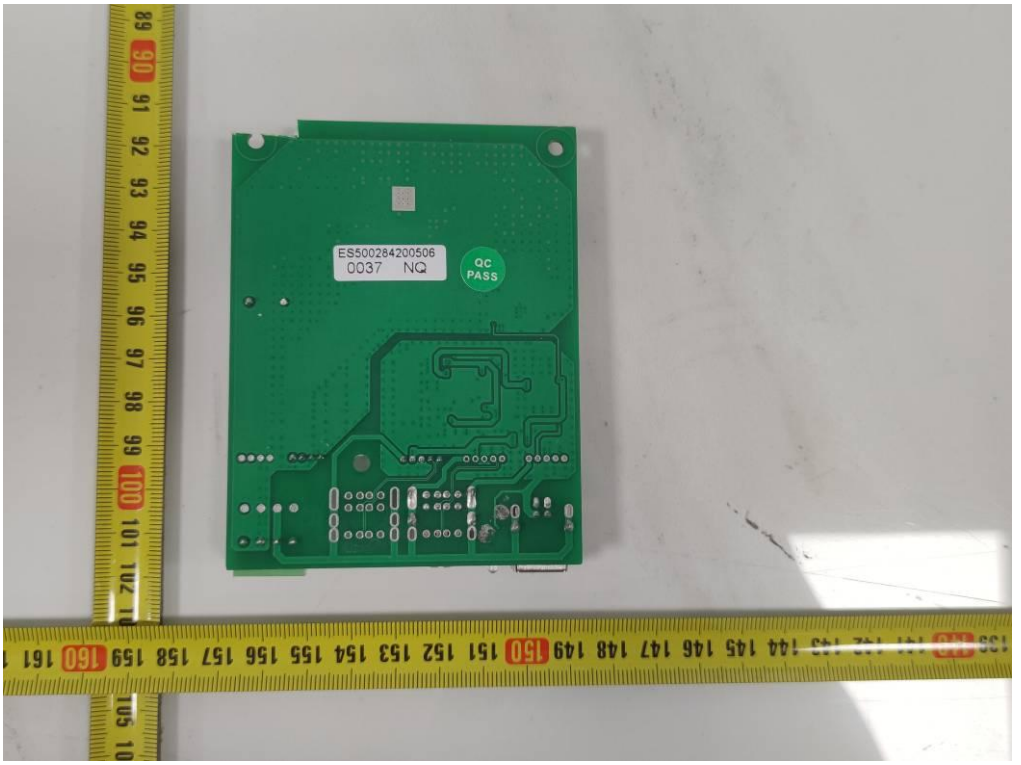


Fig.8

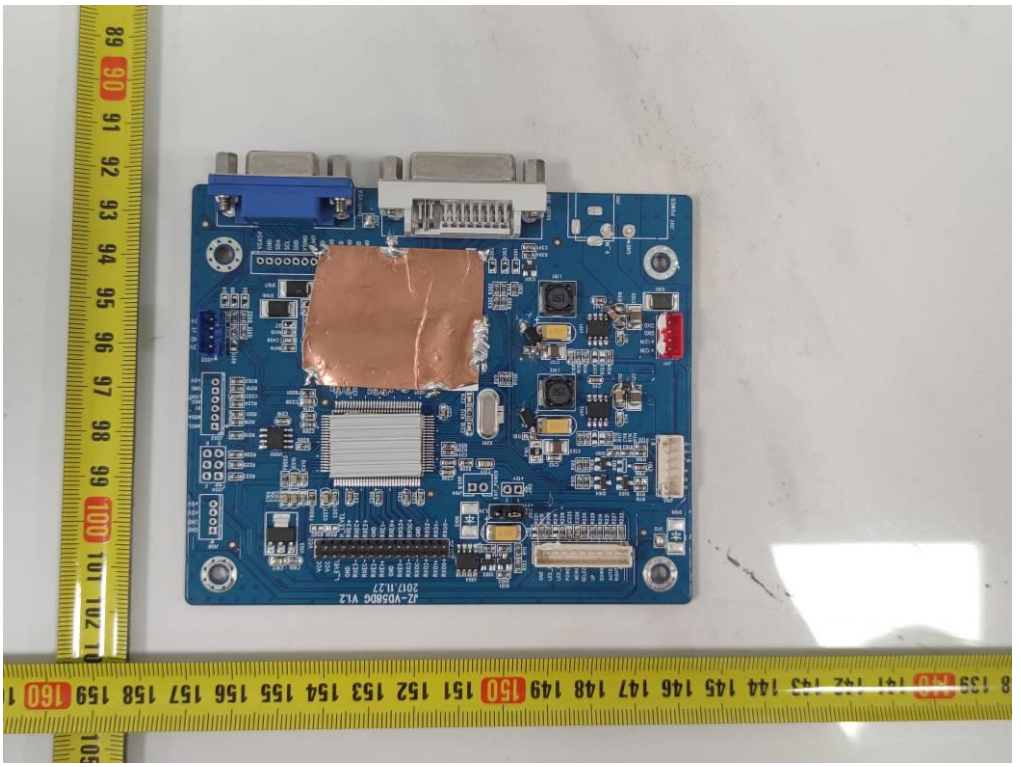

Fig.7

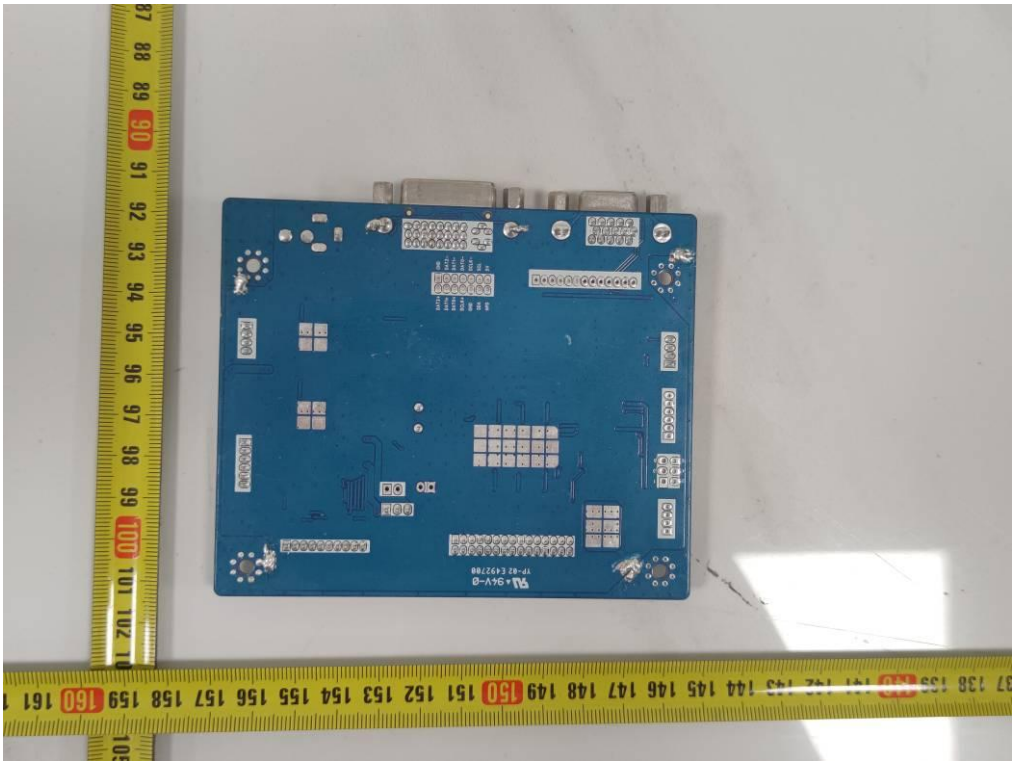

Fig.8

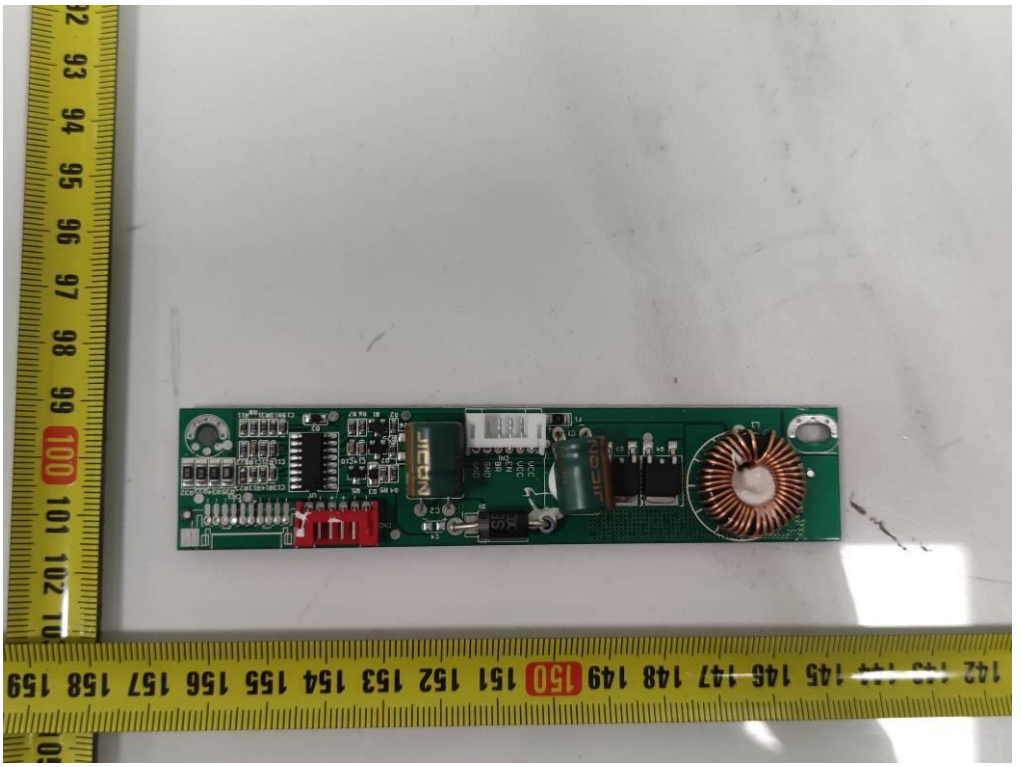

Fig.7

Fig.8

---------- THE END OF TEST REPORT ----------