



SHENZHEN GCL ELECTRONICS CO.,LTD

FCC REPORT

| | |
|------------------|---|
| Prepared For : | SHENZHEN GCL ELECTRONICS CO.,LTD Building 2, Jingding Industrial Park , No. 2 Jinlong Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| Product Name: | LED MONITOR |
| Model : | GC-IFS-P3.91, SDL-8622,SDL-8623E,SDL-868,GC-IFS-P3.91, SDL-988,SDL-988E,SDL-8610,SDL-2008A, SDL-898,SDL-898S,SDL-899,SDL-899E,HG-886, GC-IFS-P3.91LCD,SDL-828E,SDL-8861,SDL-8861E, SDL-2008A,SDL-2818, SDL2818S,SDL-2818E SDL2819, SDL-2819S, SDL-2819E SDL-2910, SDL-2910S, SDL-2911, SDL-2911E,SDL2911S,HG501,HG519,HG618,HG725, HG797,HG350,HG3501,HG3502, HG3503, HG3505, HG3506, HG3508, HG3509 |
| Prepared By : | BST Testing (Shenzhen) Co.,Ltd. No.7, New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China |
| Test Date: | Mar.28-Apr. 11, 2022 |
| Date of Report : | Apr. 11, 2022 |



| | |
|-------------|---------------------|
| Report No.: | BSTXD220321209001ER |
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TEST REPORT DECLARATION

| | | |
|-----------------|---|---|
| Applicant | : | SHENZHEN GCL ELECTRONICS CO.,LTD |
| Address | : | Building 2, Jingding Industrial Park , No. 2 Jinlong Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| EUT Description | : | LED MONITOR |
| Model Number | : | GC-IFS-P3.91, GC-IFS-P0.7, GC-IFS-P0.8, GC-IFS-P0.9, GC-IFS-P1.0, GC-IFS-P1.2, GC-IFS-P1.25, GC-IFS-P1.26, GC-IFS-P1.X, GC-IFS-P1.3, GC-IFS-P1.35, GC-IFS-P1.38, GC-IFS-P1.4, GC-IFS-P1.48, GC-IFS-P1.5, GC-IFS-P1.56, GC-IFS-P1.5625, GC-IFS-P1.583, GC-IFS-P1.6, GC-IFS-P1.667, GC-IFS-P1.8, GC-IFS-P1.875, GC-IFS-P1.9, GC-IFS-P1.923, GC-IFS-P2.0, GC-IFS-P2.5, GC-IFS-P2.6, GC-IFS-P2.9, GC-IFS-P2.976, GC-IFS-P3, GC-IFS-P3.07, GC-IFS-P3.81, GC-IFS-P3.91, GC-IFS-P4, GC-IFS-P4.81, GC-IFS-P5, GC-IFS-P5.9, GC-IFS-P6, GC-IFS-P6.25, GC-IFS-P7.62, GC-IFS-P8, GC-IFS-P10, GC-IFS-P12, GC-IFS-P16, GC-IFS-P20, GC-IFS-P22, GC-IFS-P24, GC-IFS-P25, GC-IFS-P30, GC-IFS-P31.25, GC-IFS-P50, GC-IFS-PS1, GC-IFS-P100 General product information: The series products have the same circuit diagram, PCB layout and functionality. The differences are the model name and appearance, so, we select GC-IFS-P3.91 to test |



Test Standards:

FCC Part 15:2016

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 limits. The measurement results are contained in this test report. and BST Testing (Shenzhen) Co.,Ltd. is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of BST Testing (Shenzhen) Co.,Ltd.

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Reviewer :

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Supervisor

Approved & Authorized Signer :



Salon/Manager



1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BST approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BST in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BST therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BST, unless the applicant has authorized BST in writing to do so.

1.2. Test Facility

The test site used to collect the data is located on the address of
BSL Testing Co.,LTD.

(FCC Registered Test Site Number: 191509) on
NO. 24, ZH Park, Nantou, Shenzhen, 518000 China

The Test Site is constructed and calibrated to meet the FCC requirements.

1.3. Test Uncertainty

(95% confidence levels, $k=2$)

| Test Item | Uncertainty |
|--|-------------|
| Uncertainty for Conduction emission test | 2.2dB |
| Uncertainty for Radiation emission test (30MHz to 1GHz) | 4.0dB |



2. PRODUCT DESCRIPTION

2.1.EUT Description

| | | |
|--------------|---|---|
| Description | : | LED MONITOR |
| Applicant | : | SHENZHEN GCL ELECTRONICS CO.,LTD Building 2, Jingding Industrial Park , No. 2 Jinlong Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| Manufacturer | : | SHENZHEN GCL ELECTRONICS CO.,LTD Building 2, Jingding Industrial Park , No. 2 Jinlong Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China |
| Model Number | : | GC-IFS-P3.91, GC-IFS-P0.7, GC-IFS-P0.8, GC-IFS-P0.9, GC-IFS-P1.0, GC-IFS-P1.2, GC-IFS-P1.25, GC-IFS-P1.26, GC-IFS-P1.X, GC-IFS-P1.3, GC-IFS-P1.35, GC-IFS-P1.38, GC-IFS-P1.4, GC-IFS-P1.48, GC-IFS-P1.5, GC-IFS-P1.56, GC-IFS-P1.5625, GC-IFS-P1.583, GC-IFS-P1.6, GC-IFS-P1.667, GC-IFS-P1.8, GC-IFS-P1.875, GC-IFS-P1.9, GC-IFS-P1.923, GC-IFS-P2.0, GC-IFS-P2.5, GC-IFS-P2.6, GC-IFS-P2.9, GC-IFS-P2.976, GC-IFS-P3, GC-IFS-P3.07, GC-IFS-P3.81, GC-IFS-P3.91, GC-IFS-P4, GC-IFS-P4.81, GC-IFS-P5, GC-IFS-P5.9, GC-IFS-P6, GC-IFS-P6.25, GC-IFS-P7.62, GC-IFS-P8, GC-IFS-P10, GC-IFS-P12, GC-IFS-P16, GC-IFS-P20, GC-IFS-P22, GC-IFS-P24, GC-IFS-P25, GC-IFS-P30, GC-IFS-P31.25, GC-IFS-P50, GC-IFS-PS1, GC-IFS-P100 |

2.2.Test Conditions

Temperature: 23~25 °C

Relative Humidity: 55~63 %



3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

| Test Items | Test Results |
|-----------------------|--------------|
| Conducted disturbance | Pass |
| Radiated disturbance | Pass |

Remark: "N/A" means "Not applicable."



4. TEST EQUIPMENT USED

4.1.For Conducted Emission Test

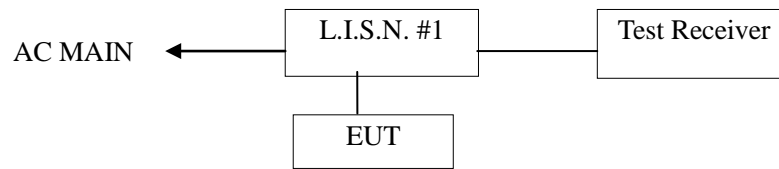
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------|-----------------|-----------|------------|-----------|---------------|
| 1. | Test Receiver | Rohde & Schwarz | ESHS30 | 828985/018 | May 23,22 | 1 Year |
| 2. | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100006 | May 23,22 | 1 Year |
| 3. | L.I.S.N. | Rohde & Schwarz | ESH2-Z5 | 834549/005 | May 23,22 | 1 Year |
| 4. | Conical | Emtek | N/A | N/A | N/A | N/A |
| 5. | Voltage Probe | Schwarzbeck | TK9416 | N/A | May 23,22 | 1 Year |
| 6. | Coaxial Switch | Anritsu | MP59B | 6100214550 | May 23,22 | 1 Year |

4.2.For Radiated Emission Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|--------------------------------|---------------|-----------|------------|-----------|---------------|
| 1. | Spectrum Analyzer | ANRITSU | MS2661C | 6200140915 | May 23,22 | 1 Year |
| 2. | Test Receiver | Rohde&Schwarz | ESC830 | 828982/018 | May 23,22 | 1 Year |
| 3. | Bilog Antenna | Schwarzbeck | VULB9163 | 142 | May 23,22 | 1 Year |
| 4. | 50 Coaxial Switch | Anritsu Corp | MP59B | 6100237248 | May 23,22 | 1 Year |
| 5. | Cable | Schwarzbeck | AK9513 | ACRX1 | May 23,22 | 1 Year |
| 6. | Cable | Rosenberger | N/A | FR2RX2 | May 23,22 | 1 Year |
| 7. | Cable | Schwarzbeck | AK9513 | CRRX2 | May 23,22 | 1 Year |
| 8. | Cable | Schwarzbeck | AK9513 | CRRX2 | May 23,22 | 1 Year |
| 9. | Single Phase Power Line Filter | MPE | 23332C | N/A | May 23,22 | 1 Year |
| 10. | Single Phase Power Line Filter | MPE | 23333C | N/A | May 23,22 | 1 Year |
| 11. | Signal Generator | HP | 864A | 3625U00573 | May 23,22 | 1 Year |

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



(EUT: LED MONITOR)

5.2. Test Standard

FCC Part 15: 2016

5.3. Conducted Emission Limit(Class B)

| Frequency MHz | Limits dB(μV) | |
|------------------|------------------|---------------|
| | Quasi-peak Level | Average Level |
| 0.15 ~ 0.50 | 66 ~ 56* | 56 ~ 46* |
| 0.50 ~ 5.00 | 56 | 46 |
| 5.00 ~ 30.00 | 60 | 50 |

Notes: 1. *Decreasing linearly with logarithm of frequency.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1. EUT Information

Model Number : **GC-IFS-P3.91**
 Serial Number : **N/A**

5.5. Operating Condition of EUT

5.5.1. Setup the EUT and simulators as shown in Section 5.1.

5.5.2. Turn on the power of all equipments.

5.5.3. Let the EUT work in test modes (On) and test it.



5.6.Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver is set at 9kHz. and all the scanning waveform are attached within **Appendix I**.

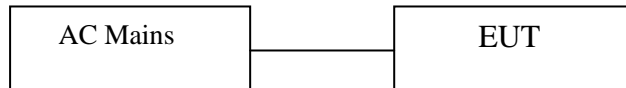
5.7.Test Result

PASS

6. RADIATED EMISSION MEASUREMENT

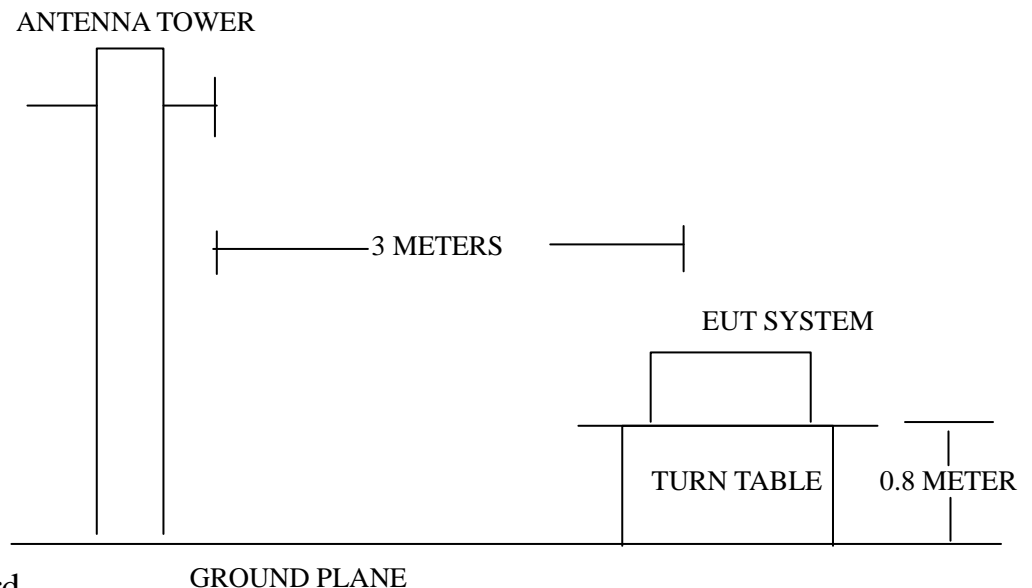
6.1. Block Diagram of EUT Configuration

6.1.1. Block Diagram of connection between the EUT and the simulators



(EUT: LED MONITOR)

6.1.2. Semi-Anechoic Chamber Test Setup Diagram



6.2. Test Standard

FCC Part 15: 2016

6.3. Radiated Emission Limit(Class B)

| FREQUENCY (MHz) | DISTANCE (Meters) | FIELD STRENGTHS LIMITS (dB μ V/m) |
|-----------------|-------------------|---------------------------------------|
| 30 ~ 88 | 3 | 40.0 |
| 88 ~ 216 | 3 | 43.5 |
| 216 ~ 960 | 3 | 46.0 |
| 960 ~ 1000 | 3 | 54.0 |

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

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.



6.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the Commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

6.5.Operating Condition of EUT

- 6.5.1.Setup the EUT as shown on Section 6.1.2
- 6.5.2.Turn on the power of all equipments.
- 6.5.3.Let the EUT work in test mode(On) and measure it.

6.6.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table 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 move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz.

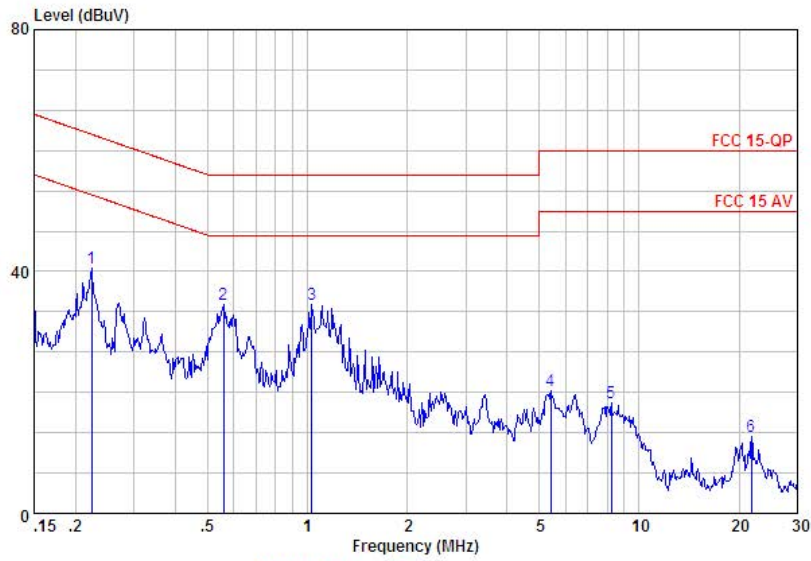
The EUT is tested in Semi-Anechoic Chamber. The frequency range from 30MHz to 1000 MHz is checked.All the test results are listed in Section 6.7. and all the scanning waveform are attached within **Appendix II**.

6.7.Test Result

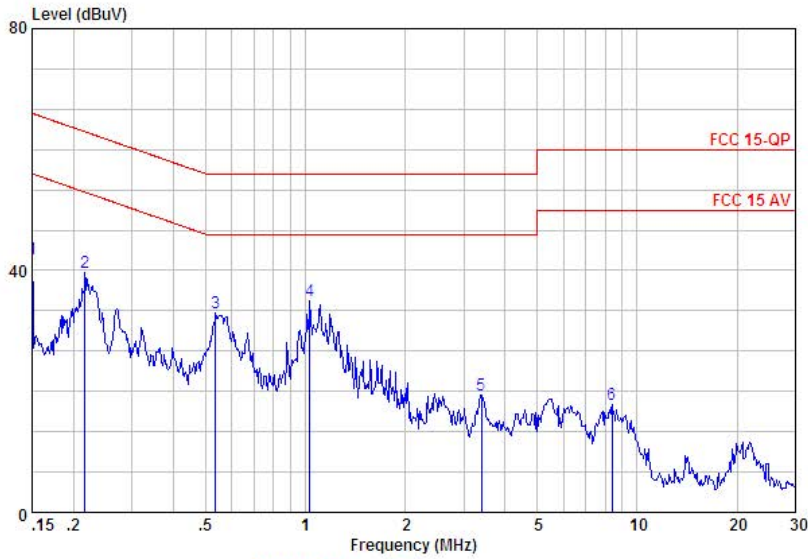
PASS



APPENDIX I



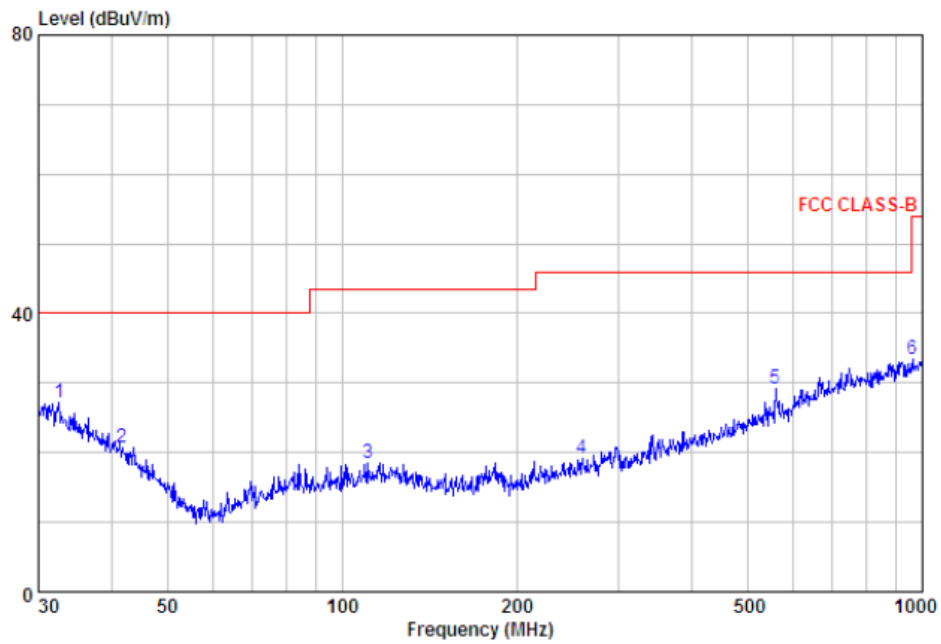
| | Freq | Level | Pol/Phase | Read Level | Limit Line | Over Limit | Remark |
|-------|-------|-------|-----------|------------|------------|------------|--------|
| | MHz | dBuV | | dBuV | dBuV | dB | |
| 1 | 0.22 | 40.48 | LINE | 40.48 | 62.70 | -22.22 | Peak |
| 2 | 0.56 | 34.47 | LINE | 34.47 | 56.00 | -21.53 | Peak |
| 3 max | 1.03 | 34.53 | LINE | 34.53 | 56.00 | -21.47 | Peak |
| 4 | 5.42 | 20.37 | LINE | 20.37 | 60.00 | -39.63 | Peak |
| 5 | 8.24 | 18.17 | LINE | 18.17 | 60.00 | -41.83 | Peak |
| 6 | 21.83 | 12.64 | LINE | 12.64 | 60.00 | -47.36 | Peak |



| | Freq | Level | Pol/Phase | Read Level | Limit Line | Over Limit | Remark |
|-------|------|-------|-----------|------------|------------|------------|--------|
| | MHz | dBuV | | dBuV | dBuV | dB | |
| 1 | 0.15 | 41.91 | NEUTRAL | 41.91 | 66.00 | -24.09 | Peak |
| 2 | 0.22 | 39.61 | NEUTRAL | 39.61 | 62.96 | -23.35 | Peak |
| 3 | 0.53 | 32.88 | NEUTRAL | 32.88 | 56.00 | -23.12 | Peak |
| 4 max | 1.03 | 34.96 | NEUTRAL | 34.96 | 56.00 | -21.04 | Peak |
| 5 | 3.40 | 19.32 | NEUTRAL | 19.32 | 56.00 | -36.68 | Peak |
| 6 | 8.41 | 17.88 | NEUTRAL | 17.88 | 60.00 | -42.12 | Peak |

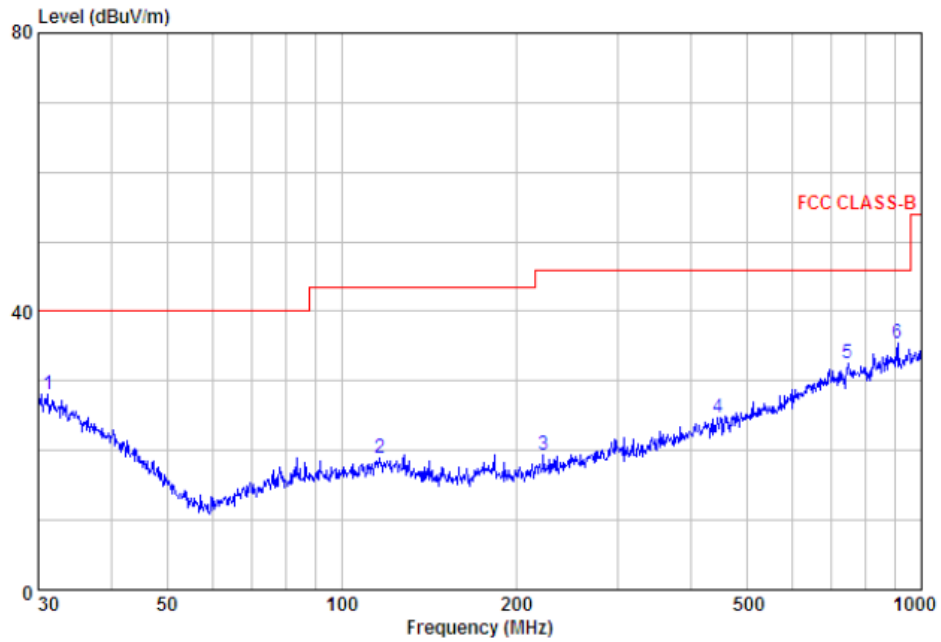


APPENDIX II



Condition : FCC CLASS-B 3m HORIZONTAL
 : RBW:120.000KHz VBW:300.000KHz SWT:Auto

| | Limit | Over | | | |
|-------|--------|--------|-------|-------------|------------|
| Freq | Level | Line | Limit | Remark | Pol/Phase |
| MHz | dBuV/m | dBuV/m | dB | | |
| 1 max | 32.52 | 27.24 | 40.00 | -12.76 Peak | HORIZONTAL |
| 2 | 41.86 | 20.80 | 40.00 | -19.20 Peak | HORIZONTAL |
| 3 | 110.96 | 18.57 | 43.50 | -24.93 Peak | HORIZONTAL |
| 4 | 259.23 | 19.21 | 46.00 | -26.79 Peak | HORIZONTAL |
| 5 | 558.73 | 29.11 | 46.00 | -16.89 Peak | HORIZONTAL |
| 6 | 962.16 | 33.48 | 54.00 | -20.52 Peak | HORIZONTAL |



Condition : FCC CLASS-B 3m VERTICAL
 : RBW:120.000KHz VBW:300.000KHz SWT:Auto

| | Freq | Level | Limit | Over | Remark | Pol/Phase |
|-------|--------|--------|--------|--------|--------|-----------|
| | MHz | dBuV/m | dBuV/m | dB | | |
| 1 | 31.18 | 28.04 | 40.00 | -11.96 | Peak | VERTICAL |
| 2 | 116.54 | 18.90 | 43.50 | -24.60 | Peak | VERTICAL |
| 3 | 222.95 | 19.44 | 46.00 | -26.56 | Peak | VERTICAL |
| 4 | 444.85 | 24.70 | 46.00 | -21.30 | Peak | VERTICAL |
| 5 | 747.48 | 32.53 | 46.00 | -13.47 | Peak | VERTICAL |
| 6 max | 909.67 | 35.44 | 46.00 | -10.56 | Peak | VERTICAL |



APPENDIX III

Photo 1 General Appearance of the EUT

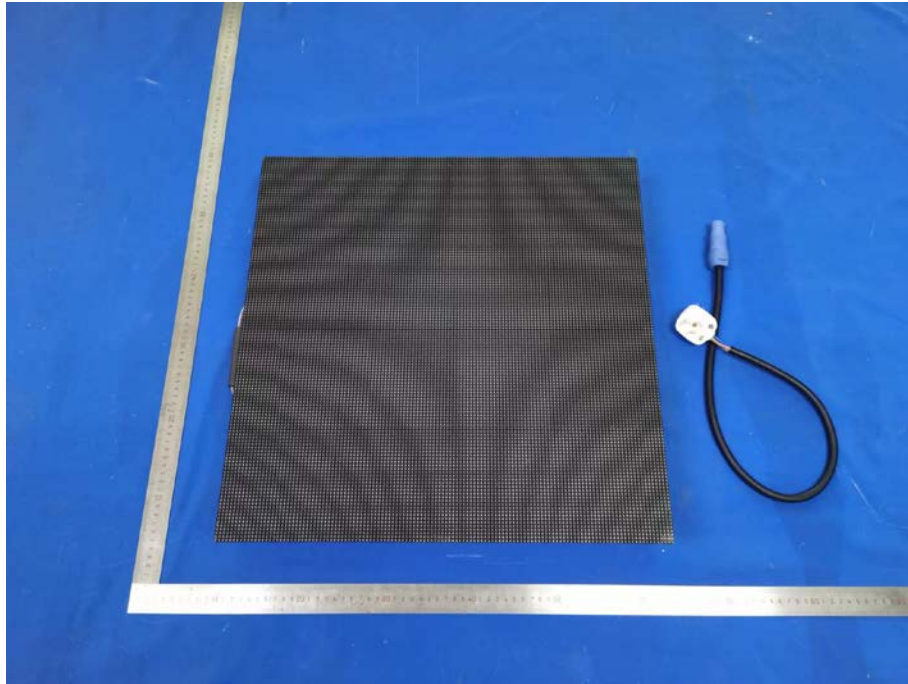


Photo 2 General Appearance of the EUT

