



TEST REPORT

EN55032:2015+A11:2020 / EN55035:2017+A11:2020

Report Reference No......: **TZ230504337-E**

Compiled by

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Date of issue.....: 2023/5/17

Testing Laboratory Name: Shenzhen Tongzhou Testing Co.,Ltd

Address.....: 1th Floor, Building 1, Haomai High-tech Park, Huating Road 387,
Dalang Street, Longhua, Shenzhen, China

Applicant's name.....: **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address.....: Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central, Hong Kong
S.A.R

Test specification:

Standard: **EN55032:2015+A11:2020**
EN55035:2017+A11:2020

TRF Originator: Shenzhen Tongzhou Testing Co.,Ltd

Master TRF: Dated 2021-07

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Test item description : USB Cable

Trade Mark: EGA

Model/Type reference.....: D2

Listed Models: N/A

Result.....: **Pass**



Report No.: TZ230504337-E

TEST REPORT

| | | |
|--------------------------|----------------------|---------------|
| Test Report No. : | TZ230504337-E | 2023/5/17 |
| | | Date of issue |

Equipment under Test : USB Cable

Model /Type : D2

Listed Models : N/A

Applicant : **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address : Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central,
Hong Kong S.A.R

Manufacturer : **HONGKONG EGA COMMERCIAL CO., LIMITED**

Address : Unit 2A, 17/F, Glenealy Tower, No.1 Glenealy Central,
Hong Kong S.A.R

| | |
|--|-------------|
| Test Result according to the standards on page 4: | PASS |
|--|-------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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1. TEST STANDARDS

The tests were performed according to following standards:

[EN55032:2015+A11:2020](#) Electromagnetic compatibility of multimedia equipment - Emission Requirements

[EN55035:2017+A11:2020](#) Electromagnetic compatibility of multimedia equipment - Immunity requirements



2. SUMMARY

2.1. General Remarks

| | | |
|--------------------------------|---|-----------|
| Date of receipt of test sample | : | 2023/5/14 |
| | | |
| Testing commenced on | : | 2023/5/14 |
| | | |
| Testing concluded on | : | 2023/5/16 |

2.2. Equipment Under Test

Power supply system utilised

| | | | |
|----------------------|---|--|-----------------------------------|
| Power supply voltage | : | <input checked="" type="radio"/> 230V / 50 Hz | <input type="radio"/> 115V / 60Hz |
| | | <input type="radio"/> 12 V DC | <input type="radio"/> 24 V DC |
| | | <input type="radio"/> Other (specified in blank below) | |

2.3. EUT operation mode

The EUT has been tested under typical operating condition.

| Mode(s) | Description | Conect to GRP |
|---------|----------------|---------------|
| 1 | Normal working | No |



2.4. EUT configuration

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

● - supplied by the manufacturer

○ - Supplied by the lab

| | | | |
|-----------------------|--------------|--------------|-----------------|
| <input type="radio"/> | PC | Model : | X454L |
| <input type="radio"/> | | Manufacture: | ASUS |
| <input type="radio"/> | Mobile Phone | Model : | A20S |
| <input type="radio"/> | | Lab. Code | SZTZ-ZB-EMC-028 |

2.5. Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test relative to a performance criteria defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product. 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;
- tests of all peripheral access(hard disks, floppy disks, printers, keyboard, mouse, etc.);
- quality of software execution
- quality of data display and transmission
- quality of speech transmission

Definition related to the performance level:

- based on the used product standard
- based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

The apparatus 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 manufacturer 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 derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

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 below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.



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2.6. Modifications

No modifications were implemented to meet testing criteria.

2.7. NOTE

| Function | Test Standards | Reference Report |
|----------|--|------------------|
| EMC | EN55032:2015+A11:2020 EN55035:2017+A11:2020 | TZ230504337-E |



3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Tongzhou Testing Co.,Ltd
1th Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen,
China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2014)
and CISPR Publication 22.

3.2. Environmental conditions

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

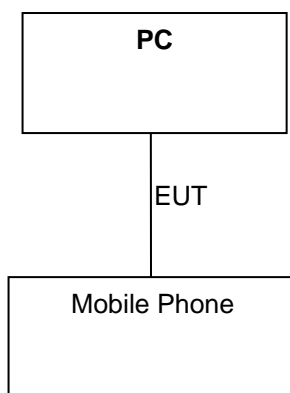
Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

3.3. Configuration of Tested System

Fig. 2-1 Configuration of Tested System





3.4. Test Description

| Emission Measurement requirements | | |
|--|---|------|
| Radiated Emission | EN55032:2015+A11:2020 | PASS |
| Conducted Disturbance | EN55032:2015+A11:2020 | N/A |
| Antenna Terminal Disturbance | EN55032:2015+A11:2020 | N/A |
| Harmonic Current | EN IEC 61000-3-2:2019 | N/A |
| Voltage Fluctuation and Flicker | EN61000-3-3:2013+A1:2019 | N/A |
| Immunity Measurement requirements | | |
| Electrostatic Discharge | EN55035:2017+A11:2020 IEC 61000-4-2: 2008 | PASS |
| RF Field Strength Susceptibility | EN55035:2017+A11:2020 IEC 61000-4-3: 2010 | PASS |
| Electrical Fast Transient/Burst Test | EN55035:2017+A11:2020 IEC 61000-4-4: 2012 | N/A |
| Surge Test | EN55035:2017+A11:2020 IEC 61000-4-5: 2005 | N/A |
| Conducted Susceptibility Test | EN55035:2017+A11:2020 IEC 61000-4-6: 2008 | N/A |
| Voltage Dips and Interruptions | EN55035:2017+A11:2020 IEC 61000-4-11: 2004 | N/A |
| Power Frequency Magnetic Field Susceptibility Test | EN55035:2017+A11:2020 IEC 61000-4-8: 2009 | N/A |
| Boardband impulsive conducted disturbance | EN55035:2017+A11:2020 | N/A |

Remark: The measurement uncertainty is not included in the test result.

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 Tongzhou Testing 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 Tongzhou Testing Co.,Ltd is reported:

| Test Item | Frequency Range | Uncertainty | Note |
|------------------------|-----------------|-------------|------|
| Radiation Uncertainty | 30MHz~1000MHz | ±3.92dB | (1) |
| Conduction Uncertainty | 150kHz~30MHz | ±2.71dB | (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

| Conducted emission | | | | | | |
|--------------------|-------------------|-----------------|-----------|------------|------------|------------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due |
| 1 | EMI Test Receiver | ROHDE & SCHWARZ | ESCI-7 | 100849/003 | 2022/12/28 | 2023/12/27 |
| 2 | Artificial Mains | ROHDE & SCHWARZ | ENV 216 | 101333-IP | 2022/12/28 | 2023/12/27 |
| 3 | EMI Test Software | ROHDE & SCHWARZ | ESK1 | V1.71 | N/A | N/A |

| Radiated emission | | | | | | |
|-------------------|----------------------|--------------|--------------|------------|------------|------------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due |
| 1 | Test Receiver | R&S | ESCI-7 | 100849/003 | 2022/12/28 | 2023/12/27 |
| 2 | wideband Antenna | Schwarzbeck | VULB 9163 | 958 | 2022/11/13 | 2025/11/12 |
| 3 | Horn Antenna | Schwarzbeck | BBHA 9120D | 01989 | 2022/11/13 | 2025/11/12 |
| 4 | Amplifier | Schwarzbeck | BBV 9743 | 209 | 2022/12/28 | 2023/12/27 |
| 5 | Amplifier | Tonscend | TSAMP-0518SE | -- | 2022/12/28 | 2023/12/27 |
| 6 | Postional Controller | MF | MF7802 | -- | -- | -- |
| 7 | RE test software | Tonscend | JS32-RE | V2.0.2.0 | -- | -- |

| RF Electromagnetic Field | | | | | | |
|--------------------------|------------------|----------------|-------------------|-------------|-----------|-----------|
| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Due |
| 1 | Horn Antenna | COMMW | ZAB-1-18G-50 | 20171109 | 2022/7/4 | 2023/7/3 |
| 2 | Bilog Antenna | Sunol Sciences | JB3 | N/A | 2022/7/3 | 2025/7/2 |
| 3 | Power Amplifier | Micotop | MPA-80-1000-250 | MPA1808208 | 2022/6/18 | 2023/6/17 |
| 4 | Power Amplifier | Micotop | MPA-1000-6000-100 | MPA1808210 | 2022/6/18 | 2023/6/17 |
| 5 | Signal Switch | Micotop | MSW-80-6000-PA | MPA1808211 | 2022/6/18 | 2023/6/17 |
| 6 | Signal generator | Agilent | N5181A | MY49060403 | 2022/6/18 | 2023/6/17 |
| 7 | Power Meter | Agilent | E4419B | US392155053 | 2022/6/18 | 2023/6/17 |
| 8 | Power Sensor | Agilent | E9301H | MY41495659 | 2022/6/18 | 2023/6/17 |
| 9 | RS test software | Farad | EMC-RS | V:2.0.1.3 | -- | -- |

4. TEST CONDITIONS AND RESULTS

4.1. Emission Measurement Requirements

4.1.1. Radiated Emission

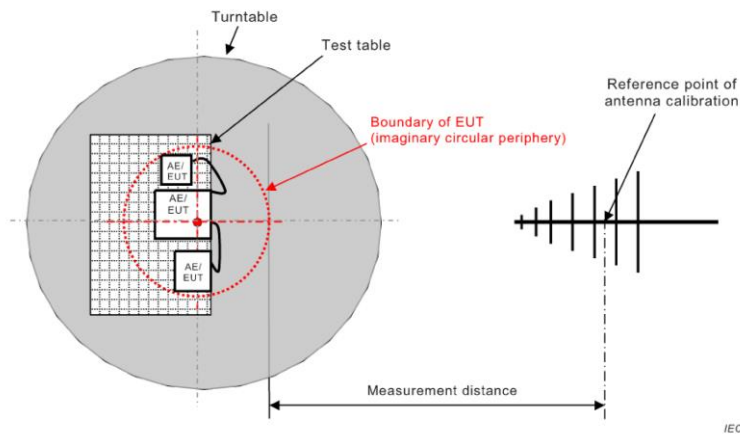
LIMIT

The ancillary equipment shall meet the class B limits given in CENELEC EN 55032 [1], annex A tables A.4 and A.5.

Alternatively, for ancillary equipment intended to be used exclusively in an industrial environment or telecommunication centres, the class A limits given in CENELEC EN 55032 [1], annex A tables A.2 and A.3 may be used.

If EUT is also a FM Receiver, it shall meet CENELEC EN 55032 [3], annex A tables A.6

TEST CONFIGURATION



Note: Cable on the RGP must be insulated.

TEST PROCEDURE

Please refer to CENELEC EN 55032 [1], annex A.2. for the measurement methods.

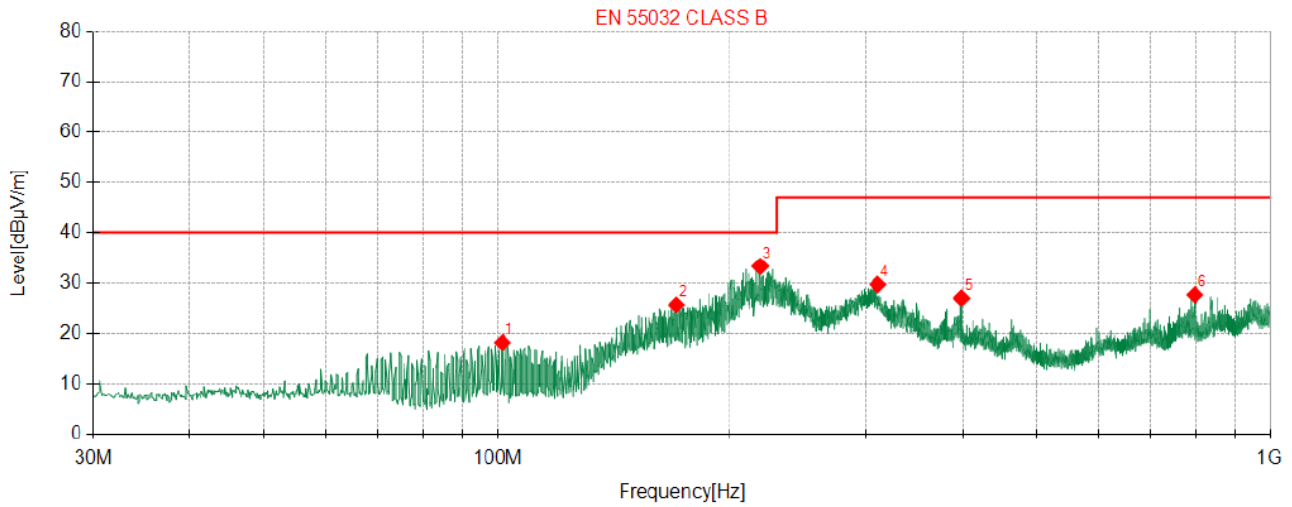
Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS



Radiated Emission Below 1000MHz

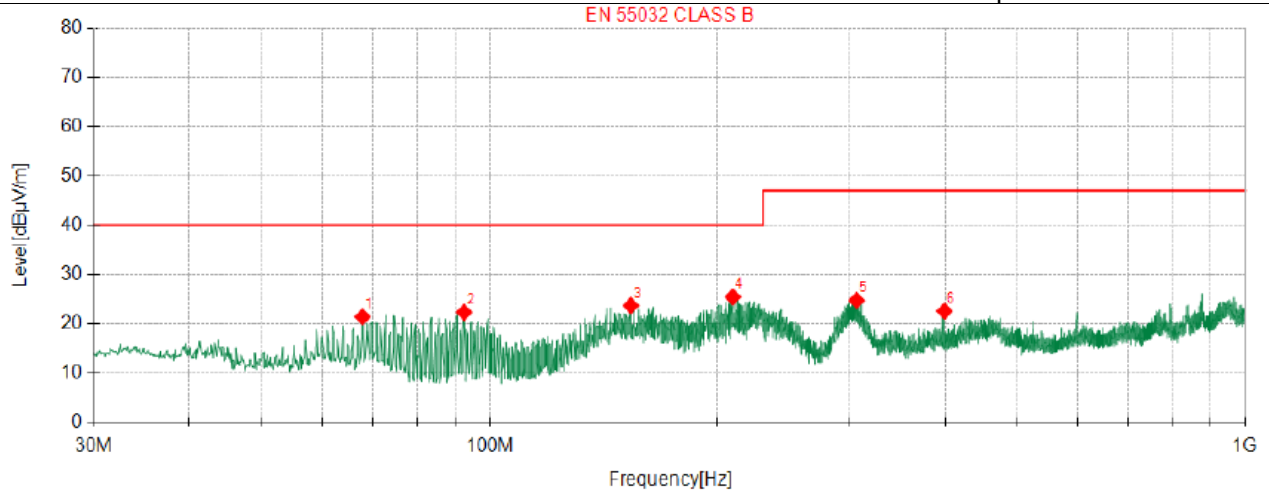


Suspected Data List

| NO. | Freq. [MHz] | Factor [dB/m] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|----------------|------------------|-------------------|-------------------|----------------|----------------|--------------|------------|
| 1 | 101.53 | -15.99 | 18.28 | 40.00 | 21.72 | 100 | 318 | Horizontal |
| 2 | 170.40 | -18.05 | 25.70 | 40.00 | 14.30 | 100 | 68 | Horizontal |
| 3 | 218.78 | -14.85 | 33.35 | 40.00 | 6.65 | 100 | 75 | Horizontal |
| 4 | 310.33 | -12.52 | 29.76 | 47.00 | 17.24 | 100 | 107 | Horizontal |
| 5 | 398.6 | -10.07 | 27.10 | 47.00 | 19.90 | 100 | 162 | Horizontal |
| 6 | 798.72 | -2.92 | 27.76 | 47.00 | 19.24 | 100 | 122 | Horizontal |

Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m].
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



◆ QP Detector

Suspected Data List

| NO. | Freq. [MHz] | Factor [dB/m] | Level [dBμV/m] | Limit [dBμV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|-----|-------------|---------------|----------------|----------------|-------------|-------------|-----------|----------|
| 1 | 67.83 | -16.82 | 21.47 | 40.00 | 18.53 | 100 | 305 | Vertical |
| 2 | 92.443 | -16.74 | 22.38 | 40.00 | 17.62 | 100 | 65 | Vertical |
| 3 | 153.67 | -17.66 | 23.74 | 40.00 | 16.26 | 100 | 350 | Vertical |
| 4 | 209.69 | -14.85 | 25.49 | 40.00 | 14.51 | 100 | 148 | Vertical |
| 5 | 305.84 | -12.14 | 24.77 | 47.00 | 22.23 | 100 | 177 | Vertical |
| 6 | 399.81 | -10.05 | 22.63 | 47.00 | 24.37 | 100 | 234 | Vertical |

Note:

1. Level [dBμV/m] = Reading [dBμV] + Factor [dB/m]
2. Margin [dB] = Limit [dBμV/m] - Level [dBμV/m].
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



4.2. Immunity Measurement Requirements

4.2.1. Electrostatic Discharge

LIMIT

Please refer to EN 61000-4-2

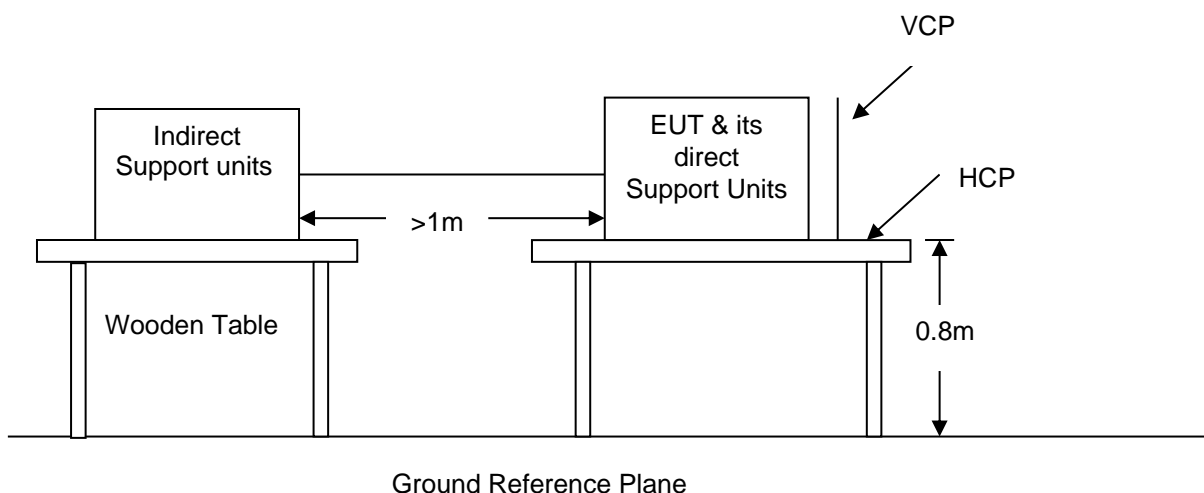
TEST LEVELS OF ELECTROSTATIC DISCHARGE

Test level: Contact Discharge at $\pm 2, \pm 4$ KV Air Discharge at $\pm 2, \pm 4, \pm 8$ KV

| 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 |

Performance criterion: **B**

Test Configuration



Test procedure

Please refer to EN 61000-4-2 for the measurement methods.

Test results

Contact Discharge:

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

Air Discharge:

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge



electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Indirect discharge for horizontal coupling plane:

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

Indirect discharge for vertical coupling plane:

At least 10 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

Description of the Electrostatic Discharges (ESD)

| Point of Discharge | Applied Voltage (KV) | Total No. of Discharge (Each Point) | Results | Criteria Level | Remark |
|-------------------------------|----------------------|-------------------------------------|---------|----------------|--------|
| Air Test Point | ±2 | 20 | Pass | B | - |
| | ±4 | 20 | Pass | B | - |
| | ±8 | 20 | Pass | B | - |
| Contact Discharge Test Points | ±2 | 20 | Pass | B | |
| | ±4 | 20 | Pass | B | |
| VCP (4 sides) | ±2 | 20 | Pass | B | - |
| | ±4 | 20 | Pass | B | - |
| HCP (4 sides) | ±2 | 20 | Pass | B | - |
| | ±4 | 20 | Pass | B | - |

The requirements are **Fulfilled**

Performance Criterion: **B**

Remarks: The ancillary equipment's specification for an acceptable level of performance or degradation of performance during and/or after the ESD tests.

Description of Discharge Point

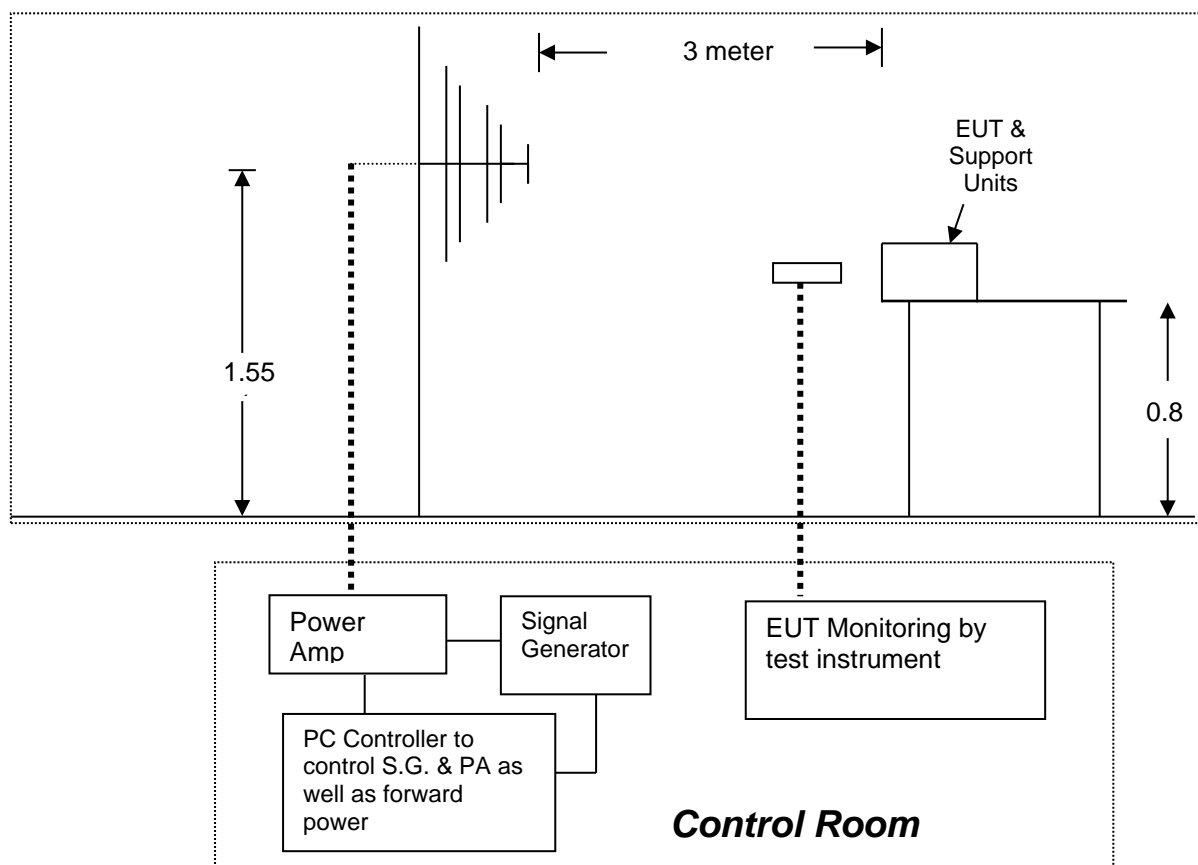
| Contact Discharge | | Air Discharge | |
|-------------------|------------------------|---------------|-----------------------|
| ● | Metallic Part | ○ | Plastic Screws |
| ○ | Metallic Case | ○ | Plastic Case(gap) |
| ○ | Metallic Connect ports | ○ | Plastic Connect Ports |
| ○ | Metallic Junctions | ○ | Plastic Junctions |
| ○ | Others (Antenna Port) | ○ | Others |

4.2.2. RF Field Strength Susceptibility

LIMIT

Please refer to EN 61000-4-3

Test Configuration



TEST LEVELS OF RF FIELD STRENGTH SUSCEPTIBILITY

Test level: RF Field Strength Susceptibility: 3V/m

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

Performance criterion: **A**

TEST PROCEDURE

Please refer to EN 61000-4-3 for the measurement methods.

Climatic conditions



- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS

☒ Result of Final Tests

☒ Swept Test

| Freq. Range (MHz) | Field | Modulation | Polarity | Position | Mode | Result (Pass/Fail) |
|-------------------|-------|------------|----------|----------|------------------|--------------------|
| 80-1000 | 3V/m | Yes | H / V | Front | Normal Operating | PASS |
| 80-1000 | 3V/m | Yes | H / V | Right | Normal Operating | PASS |
| 80-1000 | 3V/m | Yes | H / V | Back | Normal Operating | PASS |
| 80-1000 | 3V/m | Yes | H / V | Left | Normal Operating | PASS |

☐ Spot Test

| Freq. Range (MHz) | Field | Modulation | Polarity | Position | Mode | Result (Pass/Fail) |
|------------------------|-------|------------|----------|----------|------------------|--------------------|
| 1800, 2600, 3500, 5000 | 3V/m | Yes | H / V | Front | Normal Operating | PASS |
| 1800, 2600, 3500, 5000 | 3V/m | Yes | H / V | Right | Normal Operating | PASS |
| 1800, 2600, 3500, 5000 | 3V/m | Yes | H / V | Back | Normal Operating | PASS |
| 1800, 2600, 3500, 5000 | 3V/m | Yes | H / V | Left | Normal Operating | PASS |

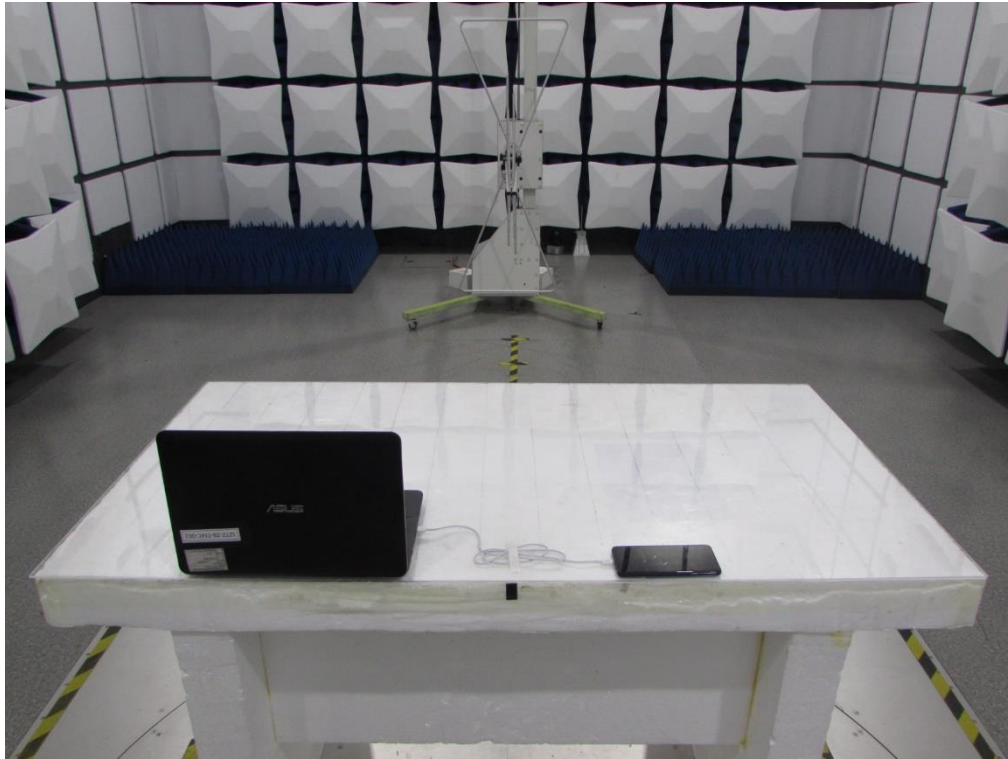
PERFORMANCE CRITERIA

| | |
|--------------------|---|
| Criteria requested | <input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C |
| Criteria meet | <input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C |



5. Test Setup Photos of the EUT

5.1. Radiated Emission Test Setup

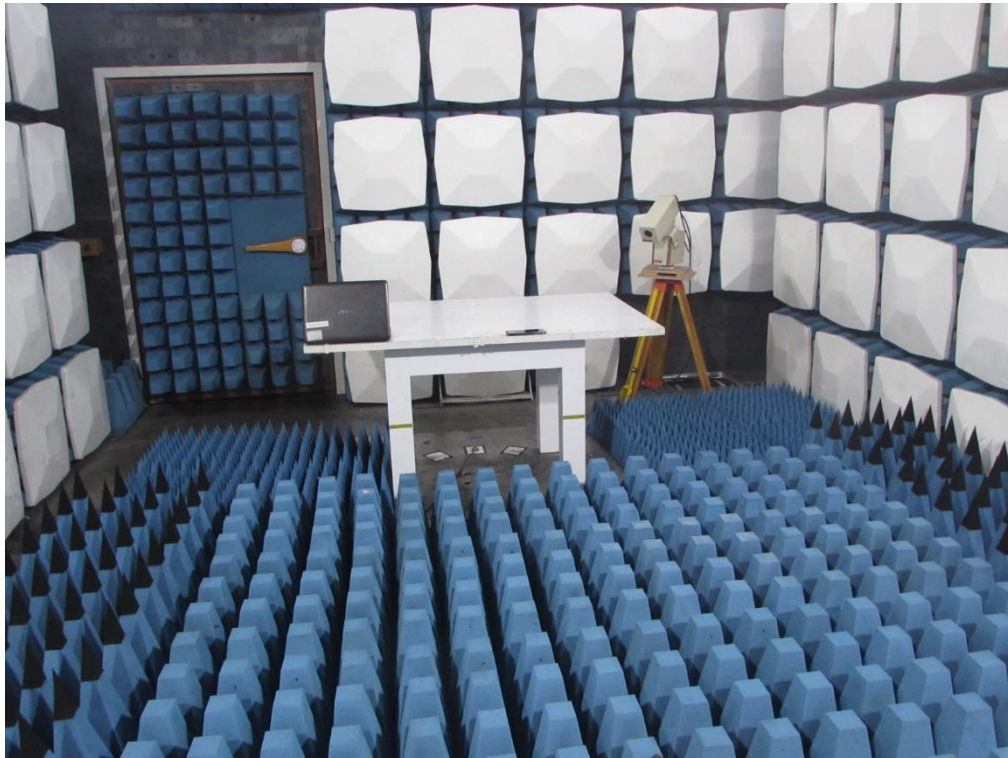


5.2. Electrostatic discharge Test Setup



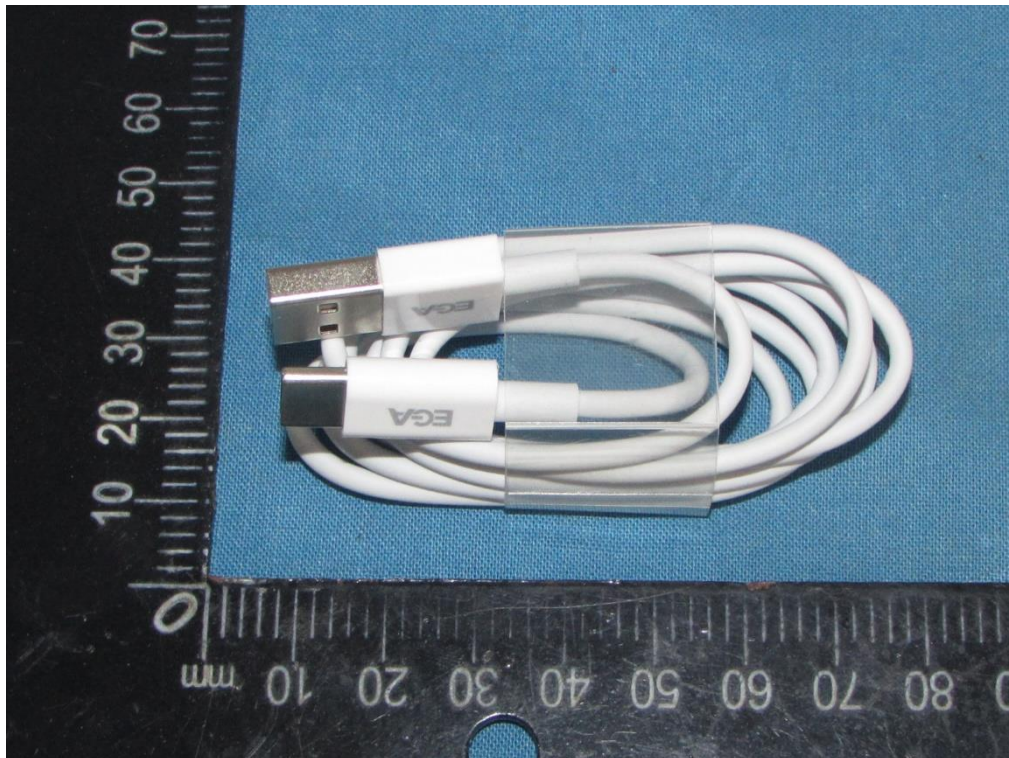


5.3. RF Electromagnetic Field





6. External and Internal Photos of the EUT



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