



Shenzhen BCTC Testing Co., Ltd.
1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road,
Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China


Test Verification of Conformity

Verification Number: BCTC2410587438C

Applicant : Radxa Computer (Shenzhen) Co., Ltd.
1602, Smart Valley, tiezai Road, Gongle community, Xixiang,
Baoan, Shenzhen

Manufacturer : Radxa Computer (Shenzhen) Co., Ltd.
1602, Smart Valley, tiezai Road, Gongle community, Xixiang,
Baoan, Shenzhen

Product : Radxa E20C


Trademark : 

Model/Type Reference : Radxa E20C D1E801
Radxa E20C D1E001, Radxa E20C D1E002,
Radxa E20C D1E802, Radxa E20C D2E001,
Radxa E20C D2E002, Radxa E20C D2E1601,
Radxa E20C D2E1602, Radxa E20C D4E001,
Radxa E20C D4E002, Radxa E20C D4E3201,
Radxa E20C D4E3202

Report No. : BCTC2410587438E

Test Standard : EN 55032:2015+A11:2020+A1:2020, EN 55035:2017+A11:2020

On the basis of the referenced test report(s), sample(s) tested of the above product have been found to comply with the standards harmonized with Annex I of Council EMC Directive 2014/30/EU at the time the tests were carried out. Other standards and Directives may be relevant to the product. This verification is part of the full test report(s) and should be read in conjunction with it <them>.

Once compliance with all product relevant  mark directives are verified, including any relevant e.g. risk assessment and production control, the manufacturer may indicate compliance by signing a Declaration of Conformity themselves and applying the mark to products identical to the tested sample(s).



Tel: 400-788-9558 / 0755-32936262

www.chnbctc.com

This Verification is for the exclusive use of BCTC's client and is provided pursuant to agreement between BCTC and its client. BCTC's responsibility and liability are limited to the terms and conditions of the agreement. The observation and test results referenced in this Verification are relevant only to the sample tested. This Verification by itself does not imply that the material, product, or service is or has ever been under a BCTC certification program.

TEST REPORT

Report No.: BCTC2410587438E

Applicant: Radxa Computer (Shenzhen) Co., Ltd.

Product Name: Radxa E20C

Test Model: Radxa E20C D1E8O1

Tested Date: 2024-10-14 to 2024-10-24

Issued Date: 2024-10-29

Shenzhen BCTC Testing Co., Ltd.



Product Name: Radxa E20C
Trademark: **radxa**[®]
Model/Type Reference: Radxa E20C D1E8O1
Radxa E20C D1E0O1, Radxa E20C D1E0O2, Radxa E20C D1E8O2,
Radxa E20C D2E0O1, Radxa E20C D2E0O2, Radxa E20C D2E16O1,
Radxa E20C D2E16O2, Radxa E20C D4E0O1, Radxa E20C D4E0O2,
Radxa E20C D4E32O1, Radxa E20C D4E32O2
Prepared For: Radxa Computer (Shenzhen) Co., Ltd.
Address: 1602, Smart Valley, tiezai Road, Gongle community, Xixiang, Baoan, Shenzhen
Manufacturer: Radxa Computer (Shenzhen) Co., Ltd.
Address: 1602, Smart Valley, tiezai Road, Gongle community, Xixiang, Baoan, Shenzhen
Prepared By: Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road,
Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China.
Sample Received Date: 2024-10-14
Sample Tested Date: 2024-10-14 to 2024-10-24
Issue Date: 2024-10-29
Report No.: BCTC2410587438E
Test Standards: EN 55032:2015+A11:2020+A1:2020, EN 55035:2017+A11:2020
Test Results: PASS

Tested by:



Icey Chen/ Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.



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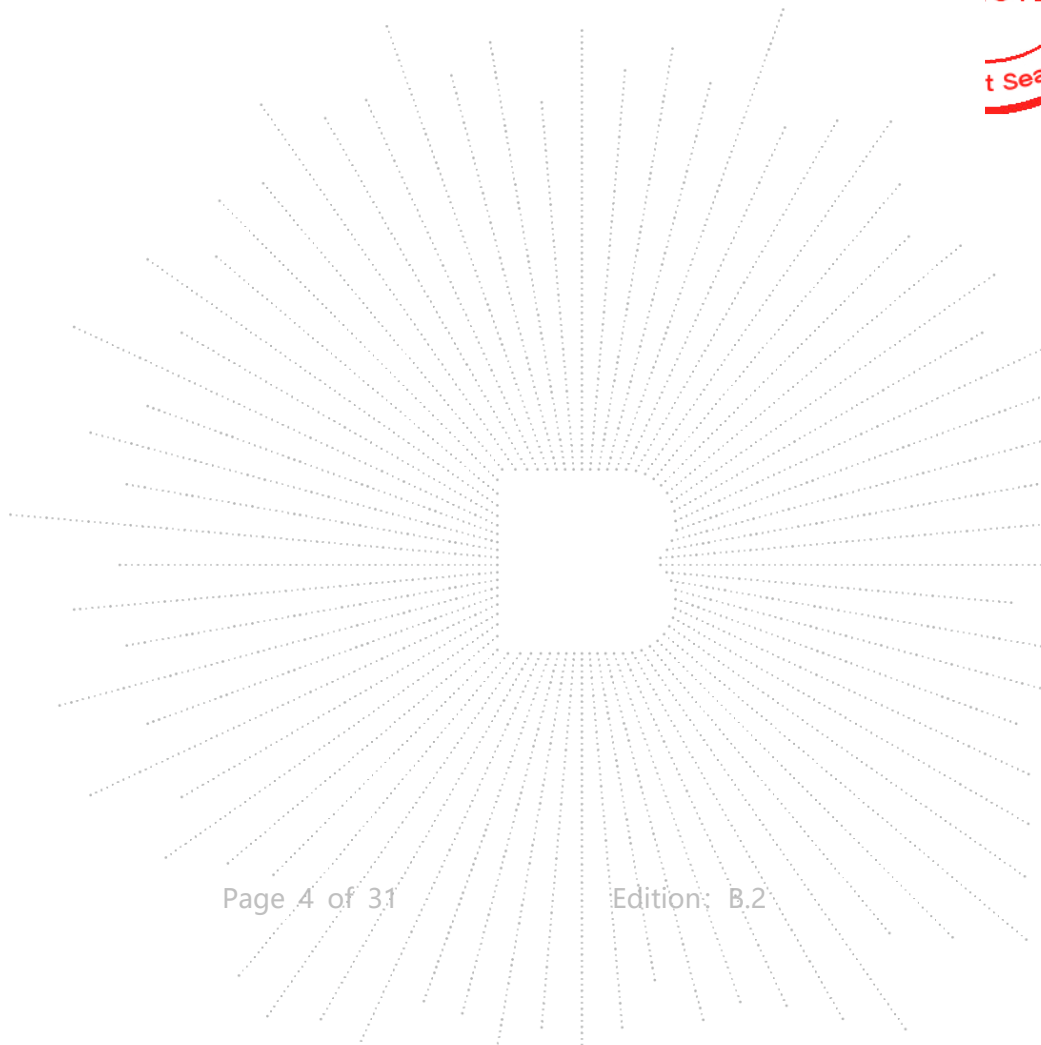
(Note: N/A Means Not Applicable)

BCTC
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 Report

1. Version

| Report No. | Issue Date | Description | Approved |
|-----------------|------------|-------------|----------|
| BCTC2410587438E | 2024-10-29 | Original | Valid |
| | | | |
| | | | |

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2. Test Summary

The Product has been tested according to the following specifications:

| EMISSION | | |
|----------|---|------------------|
| Standard | Test Item | Test result |
| EN 55032 | Conducted emissions from the AC mains power ports | Pass |
| EN 55032 | Asymmetric mode conducted emissions | Pass |
| EN 55032 | Conducted differential voltage emissions | N/A ² |
| EN 55032 | Radiated emissions | Pass |

| IMMUNITY (EN 55035) | | |
|---------------------|--|------------------|
| Standard | Test Item | Test result |
| EN 55035 | Electrostatic discharge (ESD) | Pass |
| EN 55035 | Continuous RF electromagnetic field disturbances(RS) | Pass |
| EN 55035 | Electrical fast transients/burst (EFT) | N/A ³ |
| EN 55035 | Surges | N/A ³ |
| EN 55035 | Continuous induced RF disturbances (CS) | N/A ³ |
| EN 55035 | Broadband impulse noise disturbances, repetitive | N/A ⁴ |
| EN 55035 | Broadband impulse noise disturbances, isolated | N/A ⁴ |
| EN 55035 | Power frequency magnetic field (PFMF) | N/A ⁵ |
| EN 55035 | Voltage dips and interruptions (DIPS) | N/A ³ |

Remark:

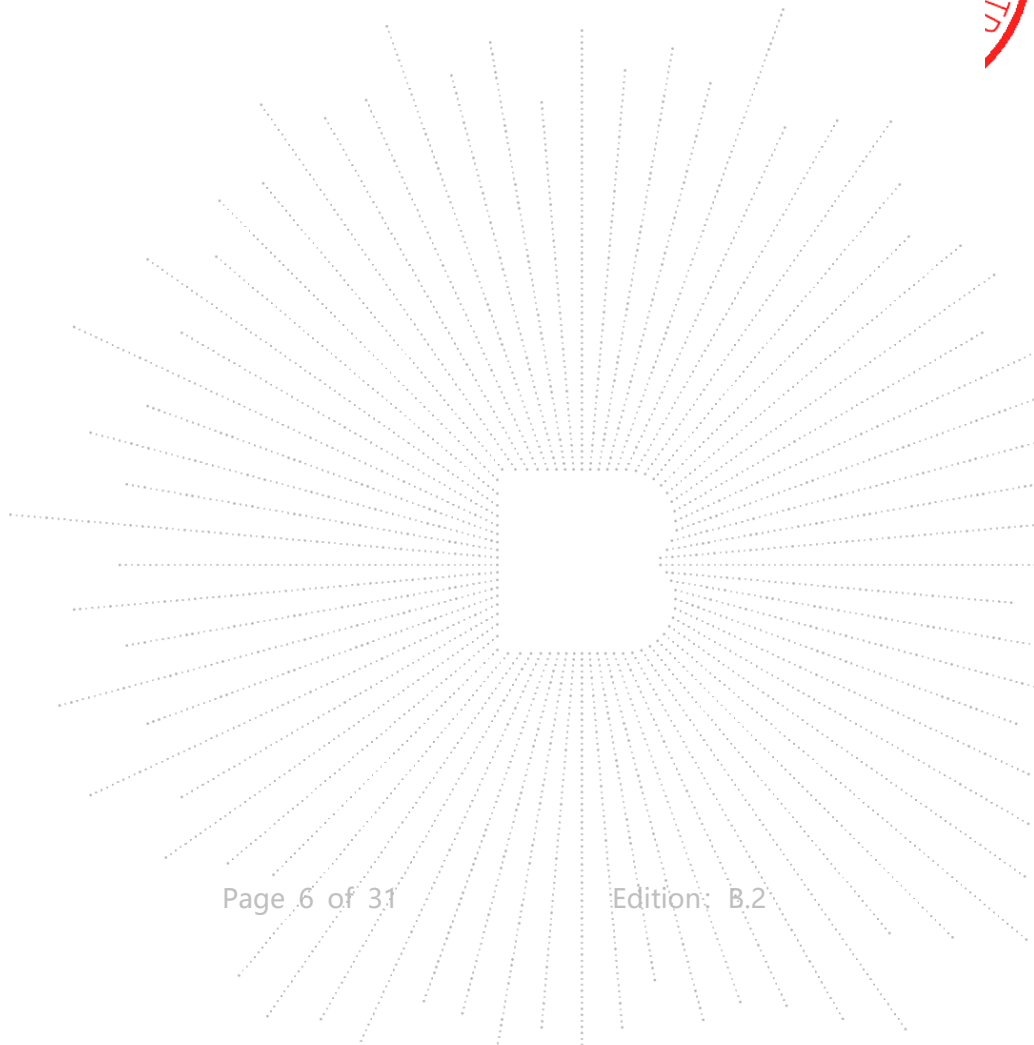
1. Applicable to ports listed above and intended to connect to cables longer than 3 m.
2. The Product has no antenna port.
3. The EUT is powered by the DC only, the test item is not applicable
4. Applicable only to CPE xDSL ports.
5. The Product doesn't contain any device susceptible to magnetic fields.



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

| Test item | Value (dB) |
|--|--|
| Conducted Emission (150kHz-30MHz) | 3.10 |
| Asymmetric mode conducted emissions (150KHz-30MHz) | 3.9(cat 3) 4.3(cat 5) 4.8(cat 6) |
| Radiated disturbance (30MHz-200MHz) | 4.60 |
| Radiated disturbance (200MHz-1000MHz) | 5.20 |

4. Product Information And Test Setup

4.1 Product Information

Ratings:

Input: DC5V 3A

Model difference:

All models are identical except for the appearance color and model named.

Cable of Product

| No. | Cable Type | Quantity | Provider | Length (m) | Specification | Note |
|-----|------------|----------|----------|------------|---------------|------|
| 1 | -- | -- | -- | -- | -- | -- |
| 2 | -- | -- | -- | -- | -- | -- |

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

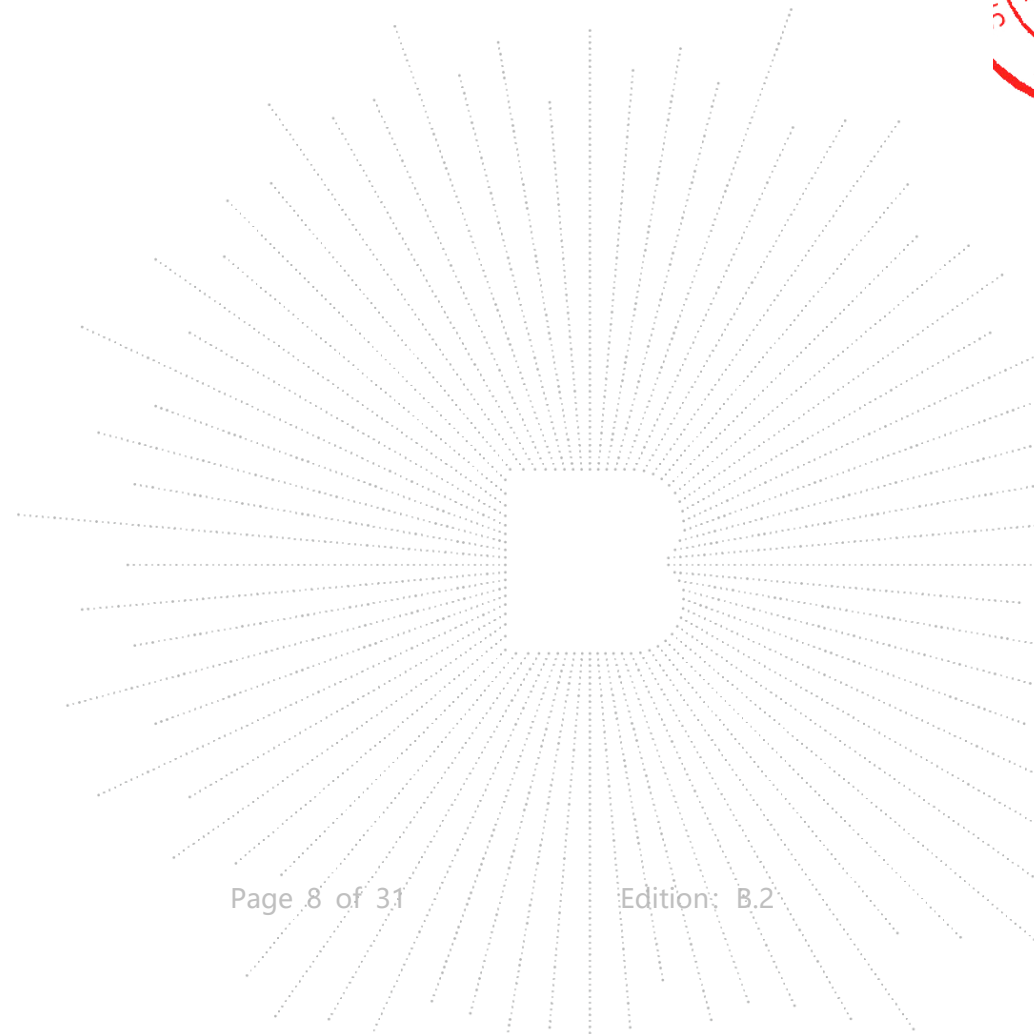
| No. | Device Type | Brand | Model | Series No. | Note |
|-----|-------------|-----------|--------------------|------------|------|
| 1. | PC | Lenovo | ThinkPad E15 Gen 2 | --- | --- |
| 2. | Router | Mi | R4A | --- | --- |
| 3. | Adapter | Invisible | NVZ469PH | --- | --- |

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Test Mode

| Test item | Test Mode | Test Voltage |
|---|-----------|--|
| Conducted emissions from the AC mains power ports (150KHz-30MHz) Class B | Working | DC 5V from adapter Input AC 230V/50Hz |
| Asymmetric mode conducted emissions(150KHz-30MHz) Class B | Working | DC 5V from adapter Input AC 230V/50Hz |
| Radiated emissions(30MHz-1GHz) Class B | Working | DC 5V from adapter Input AC 230V/50Hz* |
| Electrostatic discharge (ESD) B <input checked="" type="checkbox"/> Air Discharge: $\pm 8kV$ <input checked="" type="checkbox"/> Contact Discharge: $\pm 4kV$ <input checked="" type="checkbox"/> HCP & VCP: $\pm 4Kv$ 10 times each point/ | Working | DC 5V from adapter Input AC 230V/50Hz |
| Continuous RF electromagnetic field disturbances(RS) 80MHz-1000MHz, 1800MHz, 2600MHz,3500MHz,5000MHz 3V/m,80% AM Front, Rear, Left, Right H/V | Working | DC 5V from adapter Input AC 230V/50Hz |



5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

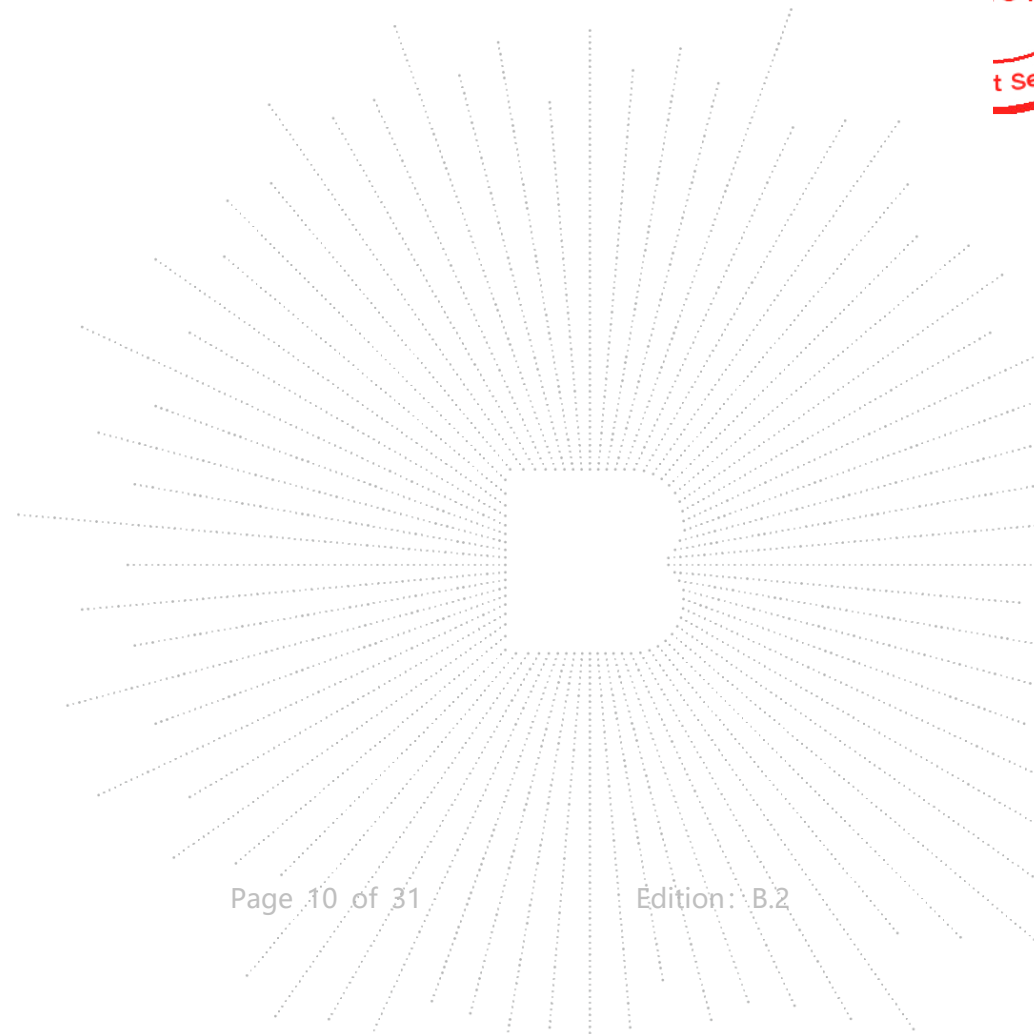
| Conducted Emissions Test | | | | | |
|--------------------------|--------------|-------------|-------------|--------------|--------------|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. |
| Receiver | R&S | ESR3 | 102075 | May 16, 2024 | May 15, 2025 |
| LISN | R&S | ENV216 | 101375 | May 16, 2024 | May 15, 2025 |
| ISN | HPX | ISN T800 | S1509001 | May 16, 2024 | May 15, 2025 |
| Software | Frad | EZ-EMC | EMC-CON 3A1 | \ | \ |
| Pulse limiter | Schwarzbeck | VTSD 9561-F | 01323 | May 16, 2024 | May 15, 2025 |

| Radiated Emissions Test (966 Chamber#01) | | | | | |
|--|--------------|----------------------|------------------|--------------|--------------|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. |
| 966 chamber | ChengYu | 966 Room | 966 | May 15, 2023 | May 14, 2026 |
| Receiver | R&S | ESRP | 101154 | May 16, 2024 | May 15, 2025 |
| Receiver | R&S | ESR3 | 102075 | May 16, 2024 | May 15, 2025 |
| Amplifier | SKET | LAPA_01G1 8G-45dB | SK202104090 1 | May 16, 2024 | May 15, 2025 |
| Amplifier | Schwarzbeck | BBV9744 | 9744-0037 | May 16, 2024 | May 15, 2025 |
| TRILOG Broadband Antenna | schwarzbeck | VULB9163 | 942 | May 21, 2024 | May 20, 2025 |
| Horn Antenna | schwarzbeck | BBHA9120D | 1541 | May 21, 2024 | May 20, 2025 |
| Software | Frad | EZ-EMC | FA-03A2 RE | \ | \ |

| Electrostatic Discharge Test | | | | | |
|---|--------------|---------|--------------------|---------------|---------------|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. |
| Electrostatic Discharge Simulator | 3C TEST | EDS 30T | ES031000123 059 | Mar. 13, 2024 | Mar. 12, 2025 |

| Continuous RF Electromagnetic Field Disturbances Test | | | | | |
|---|--------------|---------------------|-------------|--------------|--------------|
| Equipment | Manufacturer | Model# | Serial# | Last Cal. | Next Cal. |
| Power meter | Keysight | E4419 | A00065 | May 16, 2024 | May 15, 2025 |
| Power sensor | Keysight | E9300A | US39211659 | May 16, 2024 | May 15, 2025 |
| Power sensor | Keysight | E9300A | US39211305 | May 16, 2024 | May 15, 2025 |
| Amplifier | SKET | HAP_801000 -250W | 21201805013 | May 16, 2024 | May 15, 2025 |
| Amplifier | SKET | HAP_0103-7 5W | 21201805014 | May 16, 2024 | May 15, 2025 |
| Amplifier | SKET | HAP_0306-5 0W | 21201805015 | May 16, 2024 | May 15, 2025 |
| Stacked double Log.-Per. Antenna | Schwarzbeck | STLP 9129 | 00077 | \ | \ |
| Field Probe | Narda | EP-601 | 611WX80256 | May 25, 2024 | May 24, 2025 |
| Signal Generator | Agilent | N5181A | MY50143748 | May 16, 2024 | May 15, 2025 |
| Software | SKET | EMC-S | 1.2.0.18 | \ | \ |

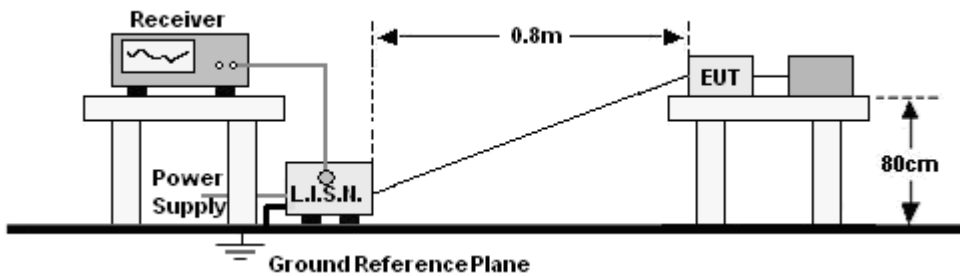
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6. Conducted Emissions

6.1 Block Diagram Of Test Setup

For mains ports:



6.2 Limit

Limits for Conducted emissions at the mains ports of Class B MME

| Frequency range (MHz) | Limits dB(μ V) | |
|-----------------------|---------------------|-----------|
| | Quasi-peak | Average |
| 0,15 to 0,50 | 66 to 56* | 56 to 46* |
| 0,50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

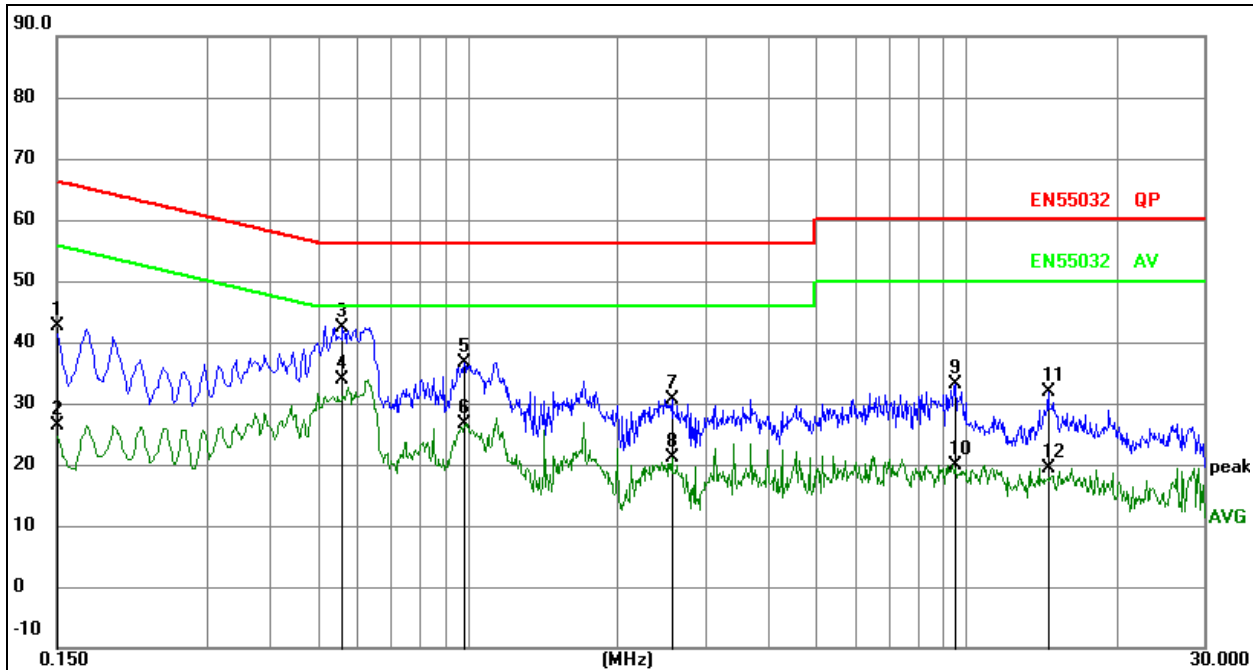
6.3 Test procedure

For mains ports:

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 Test Result

| | | | |
|----------------|--|--------------------|---------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101kPa | Phase : | Line |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | Test Mode: | Working |



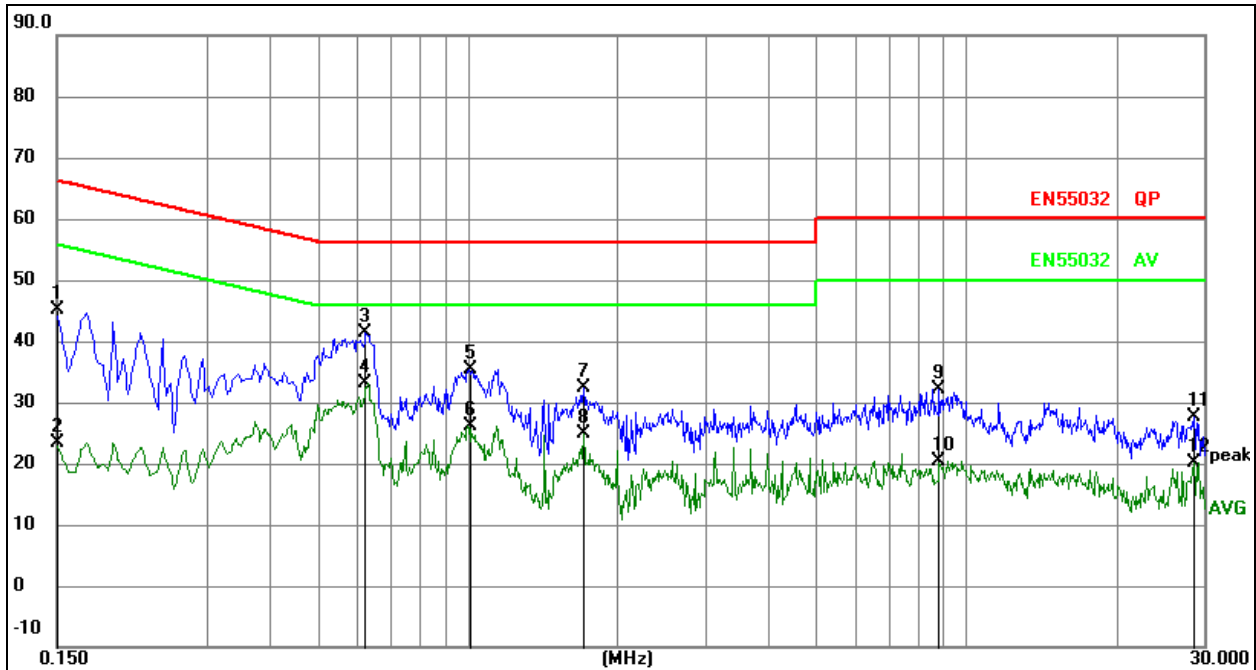
Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

| No. | Mk. | Freq. MHz | Reading Level | Correct Factor dB | Measure- ment dBuV | Limit dBuV | Over dB | Detector |
|-----|-----|--------------|------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1 | | 0.1500 | 22.50 | 20.07 | 42.57 | 66.00 | -23.43 | QP |
| 2 | | 0.1500 | 6.30 | 20.07 | 26.37 | 56.00 | -29.63 | AVG |
| 3 | | 0.5611 | 22.41 | 20.08 | 42.49 | 56.00 | -13.51 | QP |
| 4 | * | 0.5611 | 13.73 | 20.08 | 33.81 | 46.00 | -12.19 | AVG |
| 5 | | 0.9839 | 16.65 | 20.09 | 36.74 | 56.00 | -19.26 | QP |
| 6 | | 0.9839 | 6.61 | 20.09 | 26.70 | 46.00 | -19.30 | AVG |
| 7 | | 2.5671 | 10.56 | 20.11 | 30.67 | 56.00 | -25.33 | QP |
| 8 | | 2.5671 | 1.03 | 20.11 | 21.14 | 46.00 | -24.86 | AVG |
| 9 | | 9.5016 | 13.03 | 20.17 | 33.20 | 60.00 | -26.80 | QP |
| 10 | | 9.5016 | -0.25 | 20.17 | 19.92 | 50.00 | -30.08 | AVG |
| 11 | | 14.5942 | 11.49 | 20.30 | 31.79 | 60.00 | -28.21 | QP |
| 12 | | 14.5942 | -0.92 | 20.30 | 19.38 | 50.00 | -30.62 | AVG |

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| | | | |
|----------------|--|--------------------|---------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101kPa | Phase : | Neutral |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | Test Mode: | Working |


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

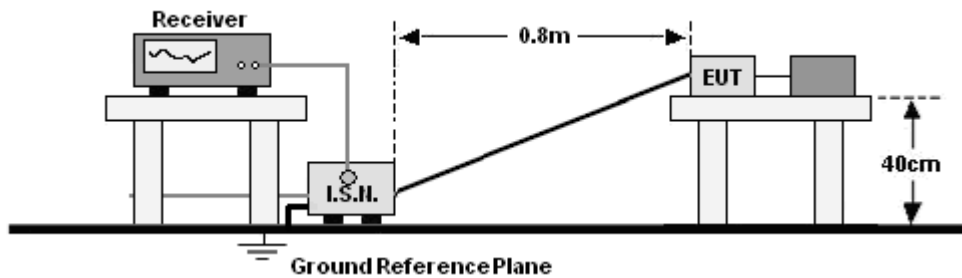
| No. | Mk. | Freq. MHz | Reading Level | Correct Factor dB | Measure- ment dBuV | Limit dBuV | Over dB | Detector |
|-----|-----|--------------|------------------|-------------------------|--------------------------|---------------|------------|----------|
| 1 | | 0.1500 | 25.08 | 20.07 | 45.15 | 66.00 | -20.85 | QP |
| 2 | | 0.1500 | 3.42 | 20.07 | 23.49 | 56.00 | -32.51 | AVG |
| 3 | | 0.6238 | 21.32 | 20.09 | 41.41 | 56.00 | -14.59 | QP |
| 4 | * | 0.6238 | 13.08 | 20.09 | 33.17 | 46.00 | -12.83 | AVG |
| 5 | | 1.0050 | 15.23 | 20.09 | 35.32 | 56.00 | -20.68 | QP |
| 6 | | 1.0050 | 6.02 | 20.09 | 26.11 | 46.00 | -19.89 | AVG |
| 7 | | 1.7071 | 12.39 | 20.10 | 32.49 | 56.00 | -23.51 | QP |
| 8 | | 1.7071 | 4.85 | 20.10 | 24.95 | 46.00 | -21.05 | AVG |
| 9 | | 8.8223 | 11.97 | 20.17 | 32.14 | 60.00 | -27.86 | QP |
| 10 | | 8.8223 | 0.31 | 20.17 | 20.48 | 50.00 | -29.52 | AVG |
| 11 | | 28.6030 | 7.47 | 20.28 | 27.75 | 60.00 | -32.25 | QP |
| 12 | | 28.6030 | -0.20 | 20.28 | 20.08 | 50.00 | -29.92 | AVG |

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7. Conducted Emissions

7.1 Block Diagram Of Test Setup

For asymmetric mode ports:



7.2 Limit

Limits for asymmetric mode conducted emissions of Class B MME

| Frequency range (MHz) | Voltage Limits dB(μ V) | | Current Limits dB(μ A) | |
|-----------------------|-----------------------------|---------|-----------------------------|---------|
| | Quasi-peak | Average | Quasi-peak | Average |
| 0,15 to 0,50 | 84-74 | 74-64 | 40-30 | 30-20 |
| 0,50 to 30 | 74 | 64 | 30 | 20 |

Notes: *Decreasing linearly with logarithm of frequency.

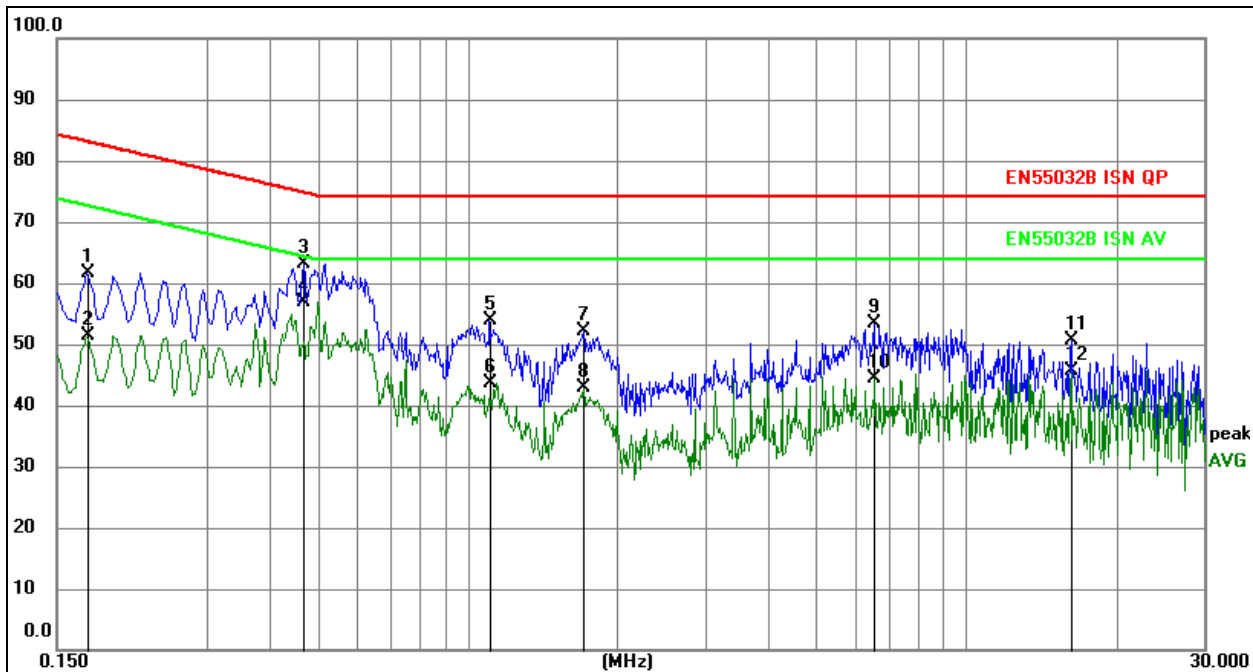
7.3 Test procedure

For asymmetric mode ports:

- The Product was placed on a non-conductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the associated port through voltage probe.
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

7.4 Test Result

| | | | |
|----------------|--|--------------------|---------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101kPa | Phase : | TELE |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | Test Mode: | Working |



Remark:

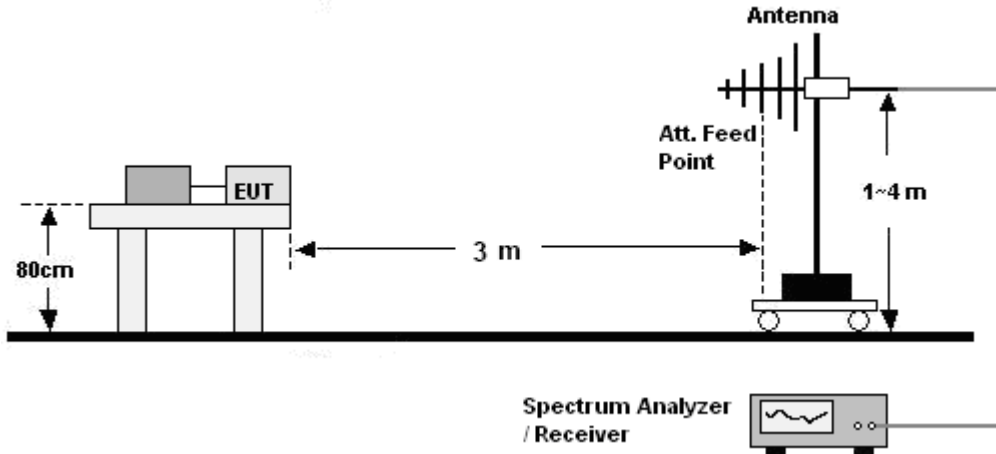
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

| No. | Mk. | Freq. | Reading Level | Correct Factor | Measurement | Limit | Over | |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|
| | | MHz | | dB | dBuV | dBuV | dB | Detector |
| 1 | | 0.1722 | 41.87 | 19.78 | 61.65 | 82.85 | -21.20 | QP |
| 2 | | 0.1722 | 31.52 | 19.78 | 51.30 | 72.85 | -21.55 | AVG |
| 3 | | 0.4686 | 43.07 | 19.95 | 63.02 | 74.54 | -11.52 | QP |
| 4 | * | 0.4686 | 36.88 | 19.95 | 56.83 | 64.54 | -7.71 | AVG |
| 5 | | 1.1056 | 33.78 | 20.08 | 53.86 | 74.00 | -20.14 | QP |
| 6 | | 1.1056 | 23.54 | 20.08 | 43.62 | 64.00 | -20.38 | AVG |
| 7 | | 1.7071 | 32.10 | 20.03 | 52.13 | 74.00 | -21.87 | QP |
| 8 | | 1.7071 | 22.91 | 20.03 | 42.94 | 64.00 | -21.06 | AVG |
| 9 | | 6.5227 | 33.22 | 20.22 | 53.44 | 74.00 | -20.56 | QP |
| 10 | | 6.5227 | 24.18 | 20.22 | 44.40 | 64.00 | -19.60 | AVG |
| 11 | | 16.2256 | 30.48 | 20.26 | 50.74 | 74.00 | -23.26 | QP |
| 12 | | 16.2256 | 25.40 | 20.26 | 45.66 | 64.00 | -18.34 | AVG |

8. Radiated Emissions Test

8.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



8.2 Limits

Limits for radiated disturbance of Class B MME

| Frequency (MHz) | Quasi-peak limits at 3m dB(μ V/m) |
|-----------------|--|
| 30-230 | 40 |
| 230-1000 | 47 |

Note: The lower limit shall apply at the transition frequencies.

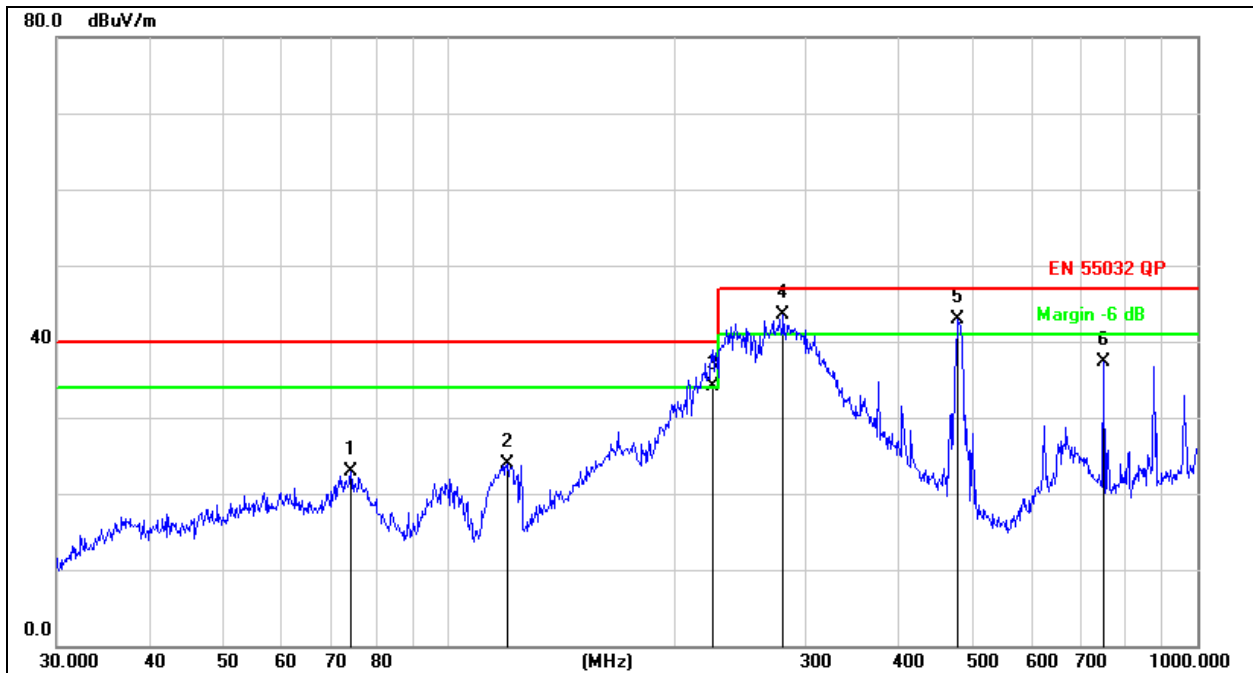
8.3 Test Procedure

30MHz ~ 1GHz:

- The Product was placed on the nonconductive turntable 0.8m above the ground in a semi anechoic chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

8.4 Test Results

| | | | |
|----------------|--|--------------------|------------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101KPa | Phase : | Horizontal |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | Test Mode: | Working |

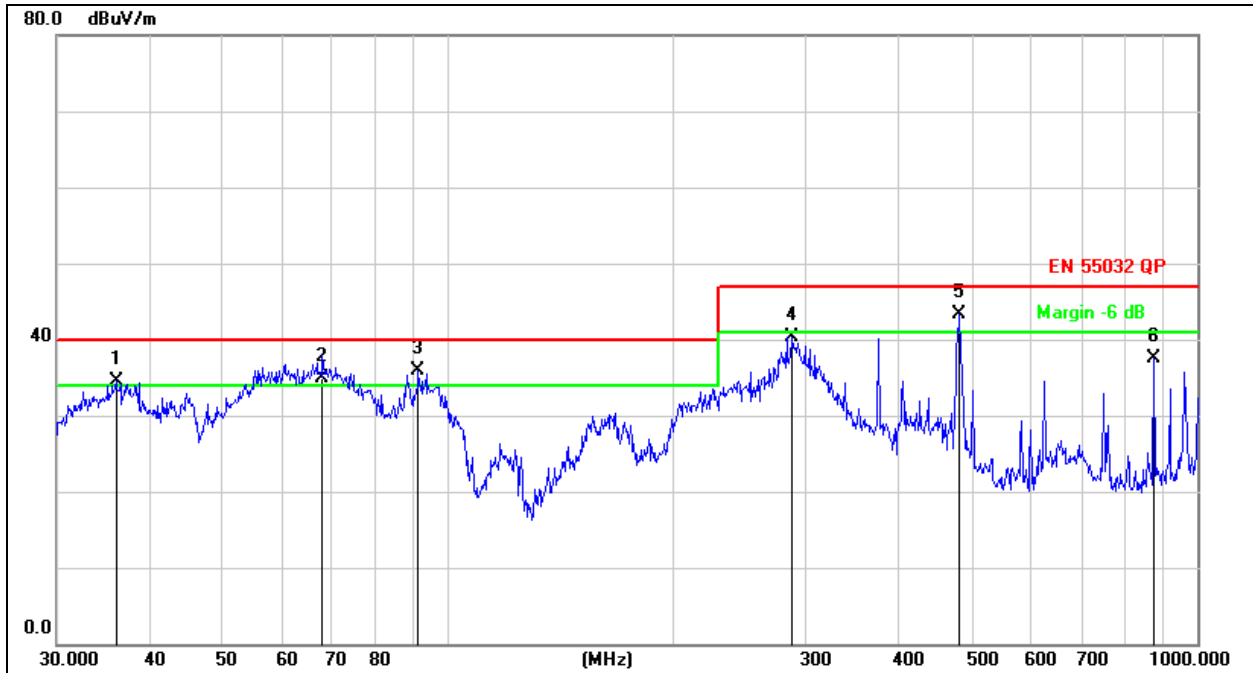


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure- ment dBuV/m | Limit dB/m | Over dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1 | | 74.1350 | 41.67 | -18.72 | 22.95 | 40.00 | -17.05 | QP |
| 2 | | 119.8555 | 41.25 | -17.32 | 23.93 | 40.00 | -16.07 | QP |
| 3 | ! | 225.3079 | 49.06 | -15.00 | 34.06 | 40.00 | -5.94 | QP |
| 4 | * | 280.0237 | 57.17 | -13.66 | 43.51 | 47.00 | -3.49 | QP |
| 5 | ! | 478.8455 | 51.99 | -9.14 | 42.85 | 47.00 | -4.15 | QP |
| 6 | | 750.1082 | 42.28 | -4.99 | 37.29 | 47.00 | -9.71 | QP |

| | | | |
|----------------|--|--------------------|----------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101KPa | Phase : | Vertical |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | Test Mode: | Working |


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure- ment dBuV/m | Limit dB/m | Over dB | Detector |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|---------------|------------|----------|
| 1 | ! | 36.0007 | 50.01 | -15.49 | 34.52 | 40.00 | -5.48 | QP |
| 2 | ! | 67.9128 | 52.28 | -17.43 | 34.85 | 40.00 | -5.15 | QP |
| 3 | ! | 91.1745 | 53.13 | -17.23 | 35.90 | 40.00 | -4.10 | QP |
| 4 | | 287.9904 | 53.82 | -13.49 | 40.33 | 47.00 | -6.67 | QP |
| 5 | * | 480.5276 | 52.40 | -9.10 | 43.30 | 47.00 | -3.70 | QP |
| 6 | | 875.2469 | 41.02 | -3.55 | 37.47 | 47.00 | -9.53 | QP |

9. Immunity Test Of General The Performance Criteria

| Product Standard | EN 55035:2017+A11:2020 clause 8 |
|--------------------|--|
| CRITERION A | <p>The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state 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.</p> |
| CRITERION B | <p>During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.</p> <p>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 specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.</p> <p>If the minimum performance level (or the permissible performance loss), or recovery time, 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.</p> |
| CRITERION C | <p>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 manufacturer's instructions. A reboot or re-start operation is allowed.</p> <p>Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.</p> |

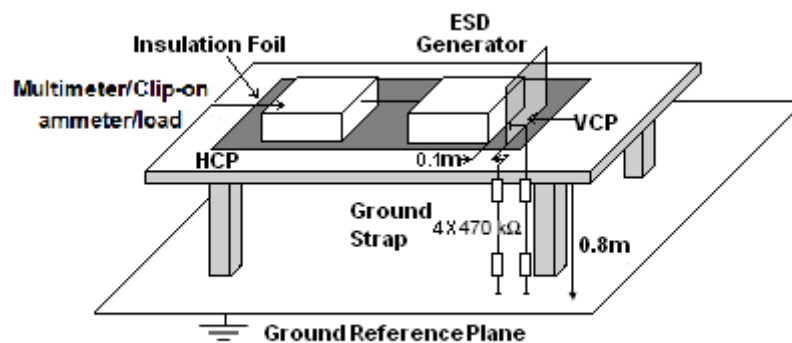


10. Electrostatic Discharge (ESD)

10.1 Test Specification

| | |
|----------------------------|-------------------------------------|
| Basic standard | : IEC 61000-4-2 |
| Test Port | : Enclosure port |
| Discharge Impedance | : 330 ohm / 150 pF |
| Discharge Mode | : Single Discharge |
| Discharge Period | : one second between each discharge |

10.2 Block Diagram of Test Setup



10.3 Test Procedure

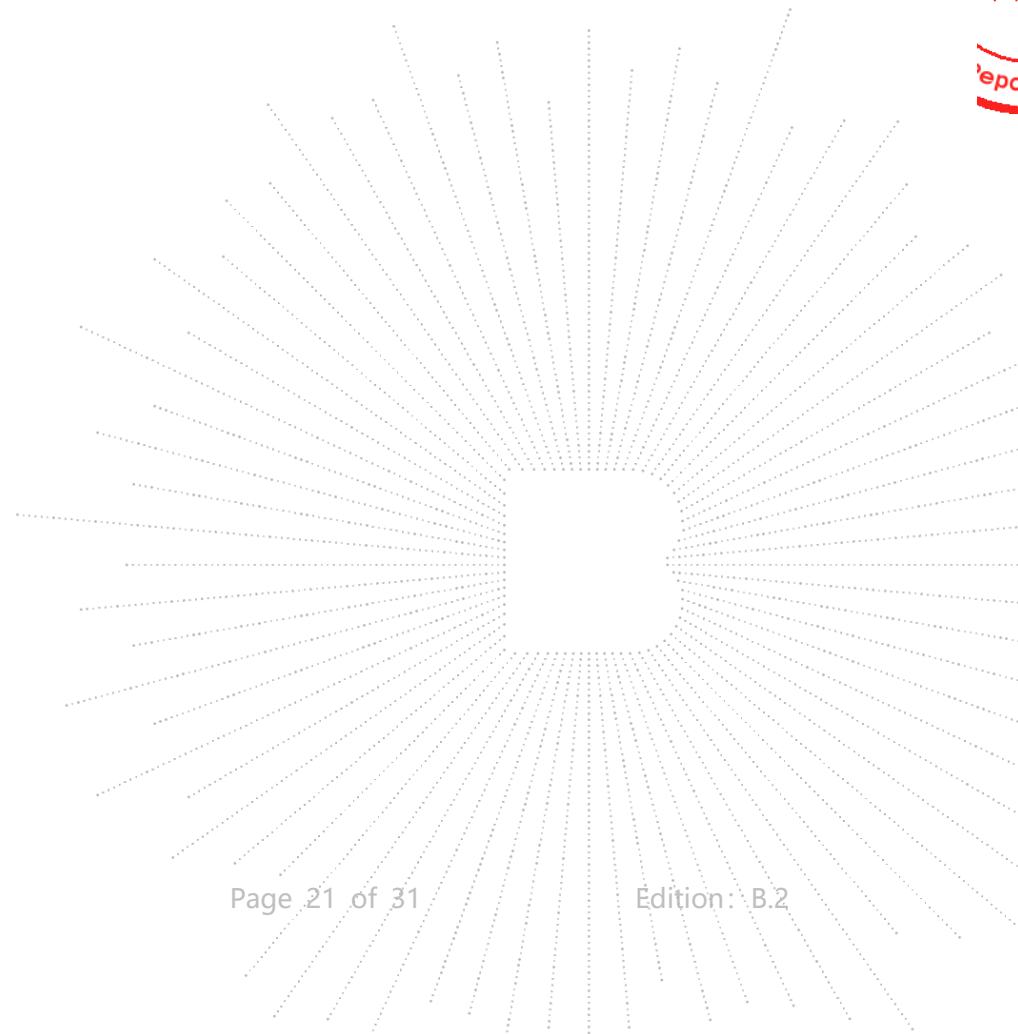
- Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.
- The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
- The time interval between two successive single discharges was at least 1 second.
- The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.
- Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
- Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.
- At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the Product. The ESD generator was positioned vertically at a distance of 0.1 meters from the Product with the discharge electrode touching the HCP.
- At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the Product were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the Product.

10.4 Test Results

| | | | |
|----------------|--|--------------------|---------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101kPa | Test Mode: | Working |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | | |

| Discharge Method | Discharge Position | Voltage (±kV) | Min. No. of Discharge per polarity (Each Point) | Required Level | Performance Criterion |
|-------------------|-------------------------------------|---------------|---|----------------|-----------------------|
| Contact Discharge | HCP | 4 | 10 | B | A |
| | VCP | 4 | 10 | B | A |
| | Surface metal, port, port C, port A | 4 | 10 | B | A |
| Air Discharge | N/A | 8 | 10 | B | N/A |

BCTC
 BCTC
 PPR
 Report

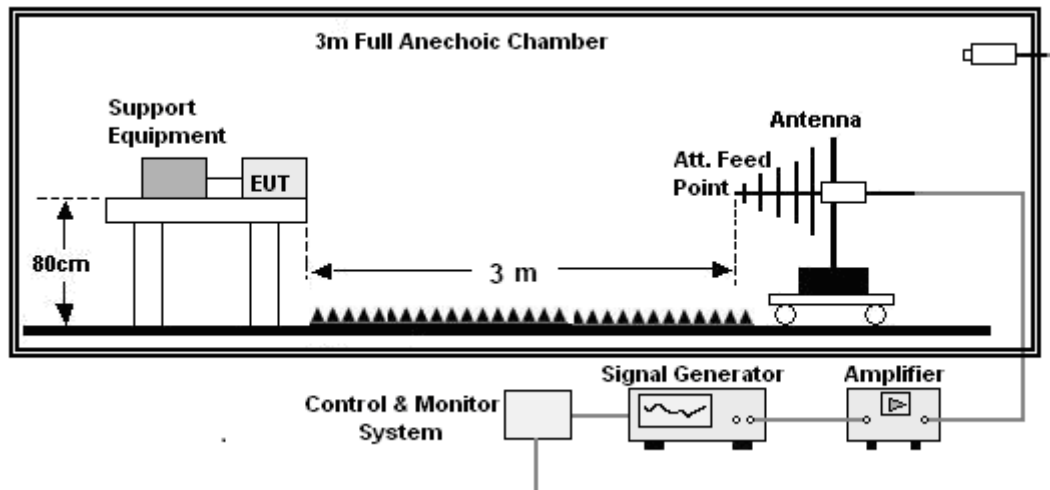


11. Continuous Rf Electromagnetic Field Disturbances (RS)

11.1 Test Specification

| | |
|-----------------------|-------------------------|
| Basic standard | : IEC 61000-4-3 |
| Test Port | : Enclosure port |
| Step Size | : 1% |
| Modulation | : 1kHz, 80% AM |
| Dwell Time | : 1 second |
| Polarization | : Horizontal & Vertical |

11.2 Block Diagram of Test Setup



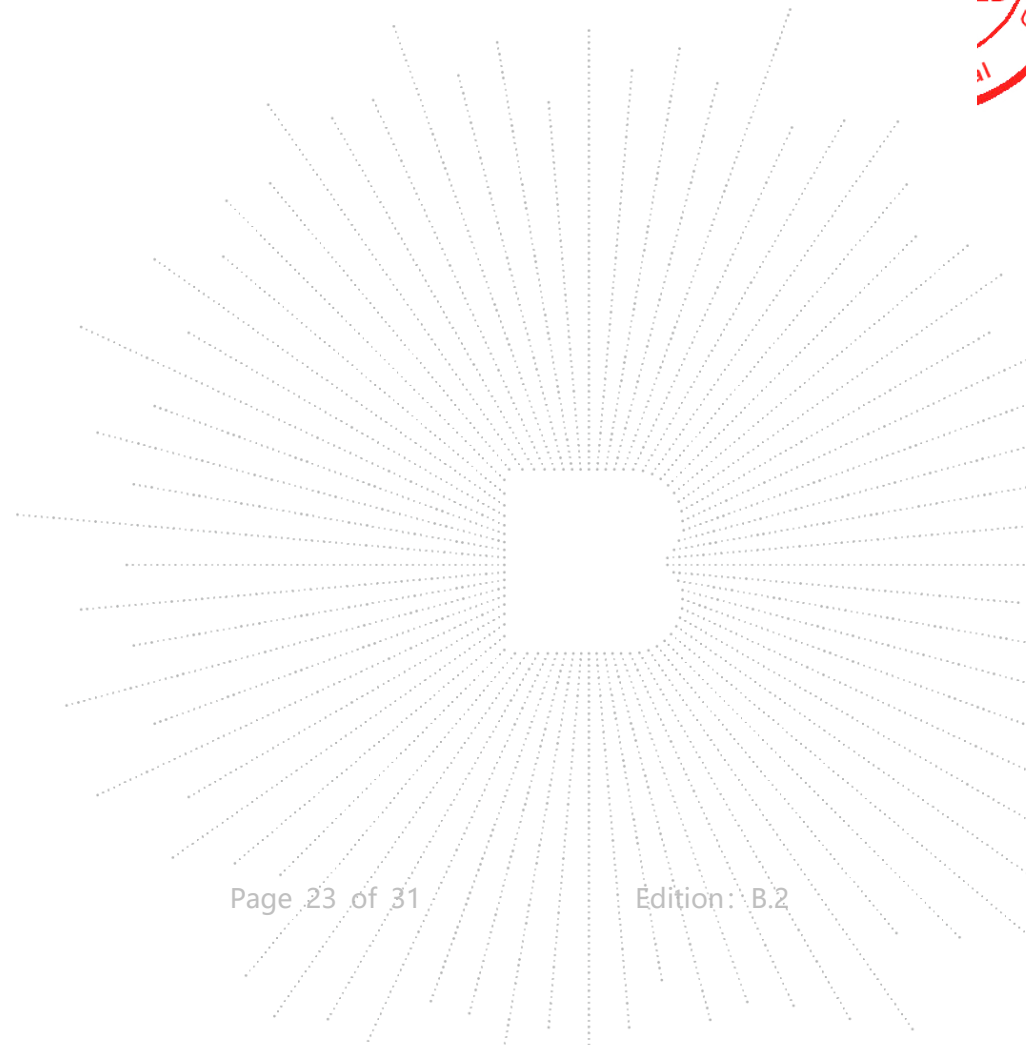
11.3 Test Procedure

- The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3 meters from the Product.
- The frequency range is swept from 80MHz to 1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave, and the step size was 1%.
- The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to be able to respond, but should not exceed 5 s at each of the frequencies during the scan.
- The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.
- For Broadcast reception function: Group 2 not apply in this test.

11.4 Test Results

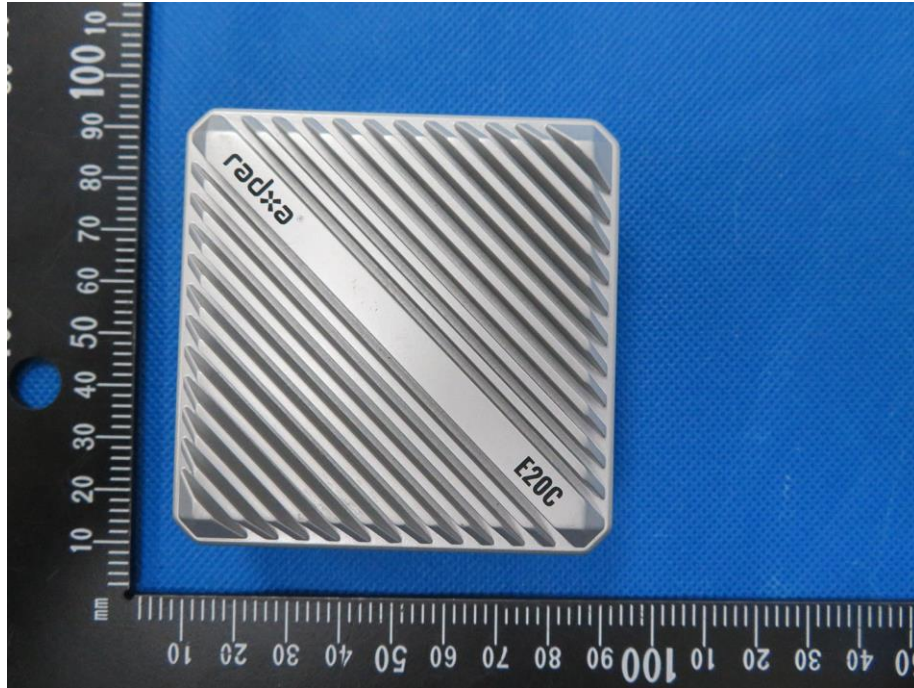
| | | | |
|----------------|--|--------------------|---------|
| Temperature: | 26 °C | Relative Humidity: | 54%RH |
| Pressure: | 101kPa | Test Mode: | Working |
| Test Voltage : | DC 5V from adapter Input AC 230V/50Hz | | |

| Frequency | Position | Field Strength (V/m) | Required Level | Performance Criterion |
|--|-----------------------------|----------------------|----------------|-----------------------|
| 80 - 1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz | Front, Right, Back, Left | 3 | A | A |

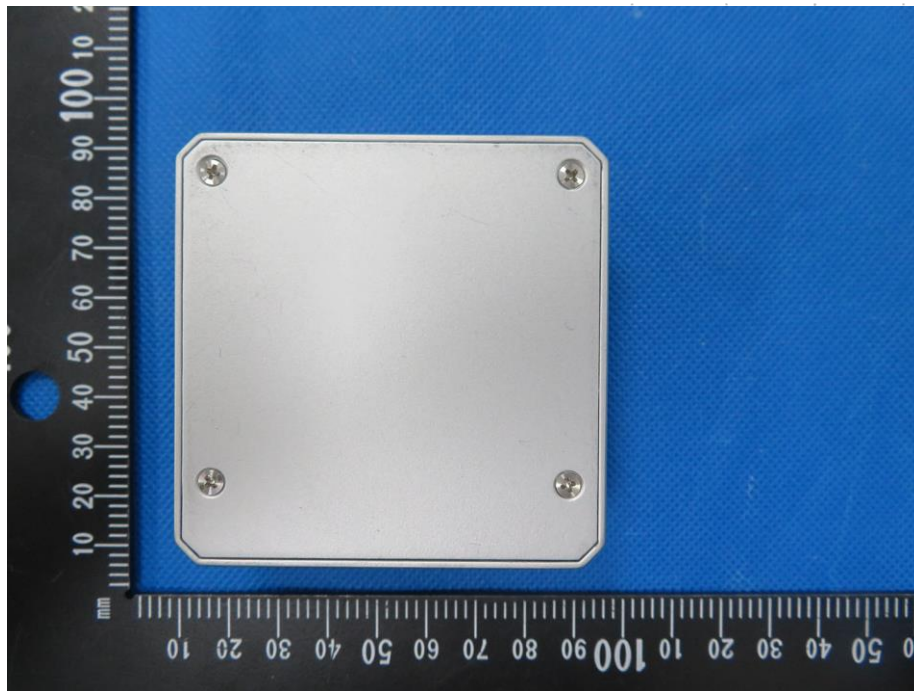


12. EUT Photographs

EUT Photo 1

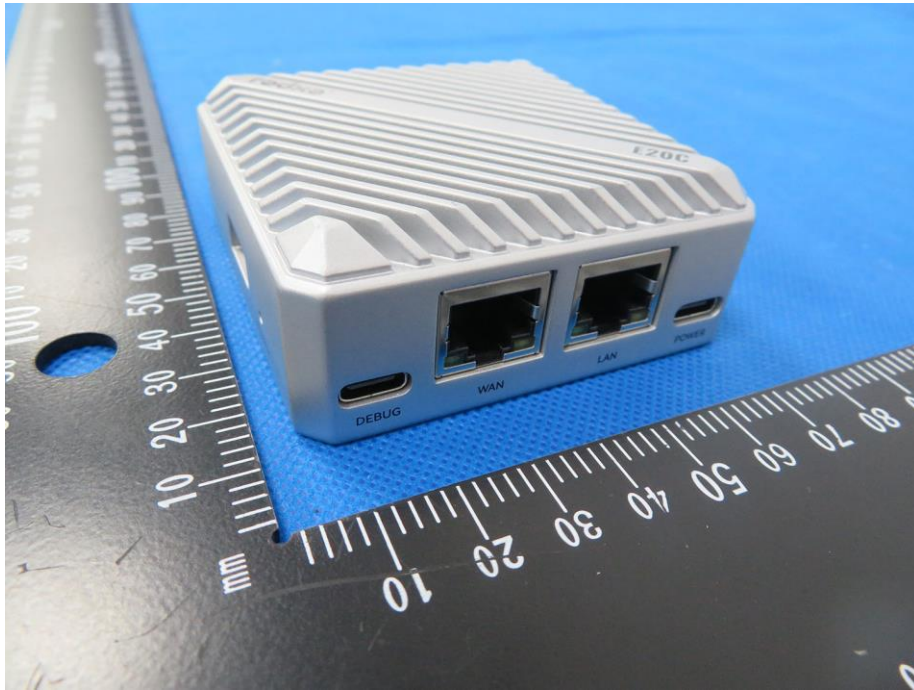


EUT Photo 2



CO., LTD.

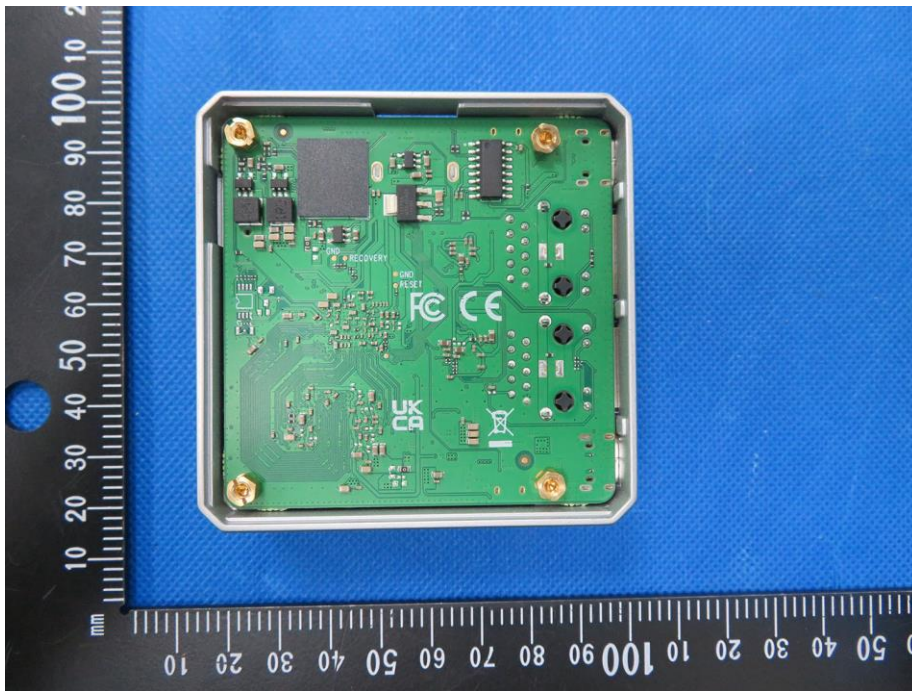
EUT Photo 3



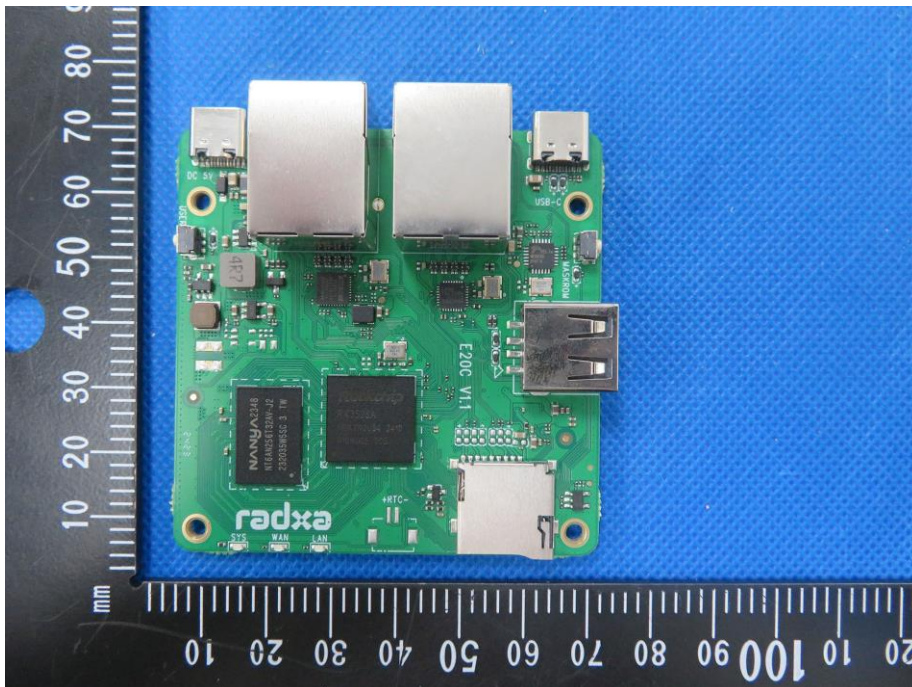
EUT Photo 4



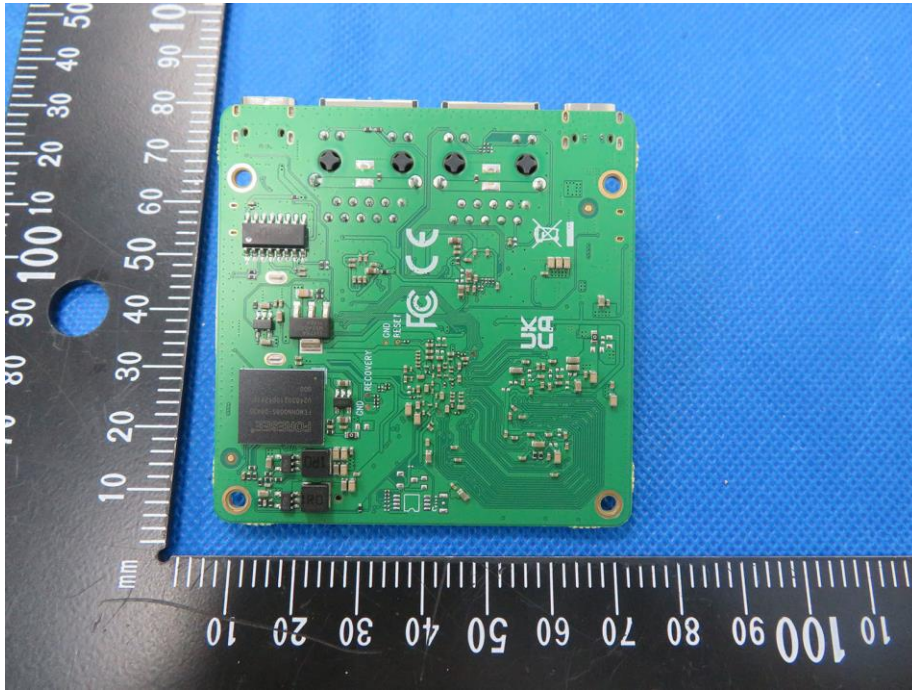
EUT Photo 5



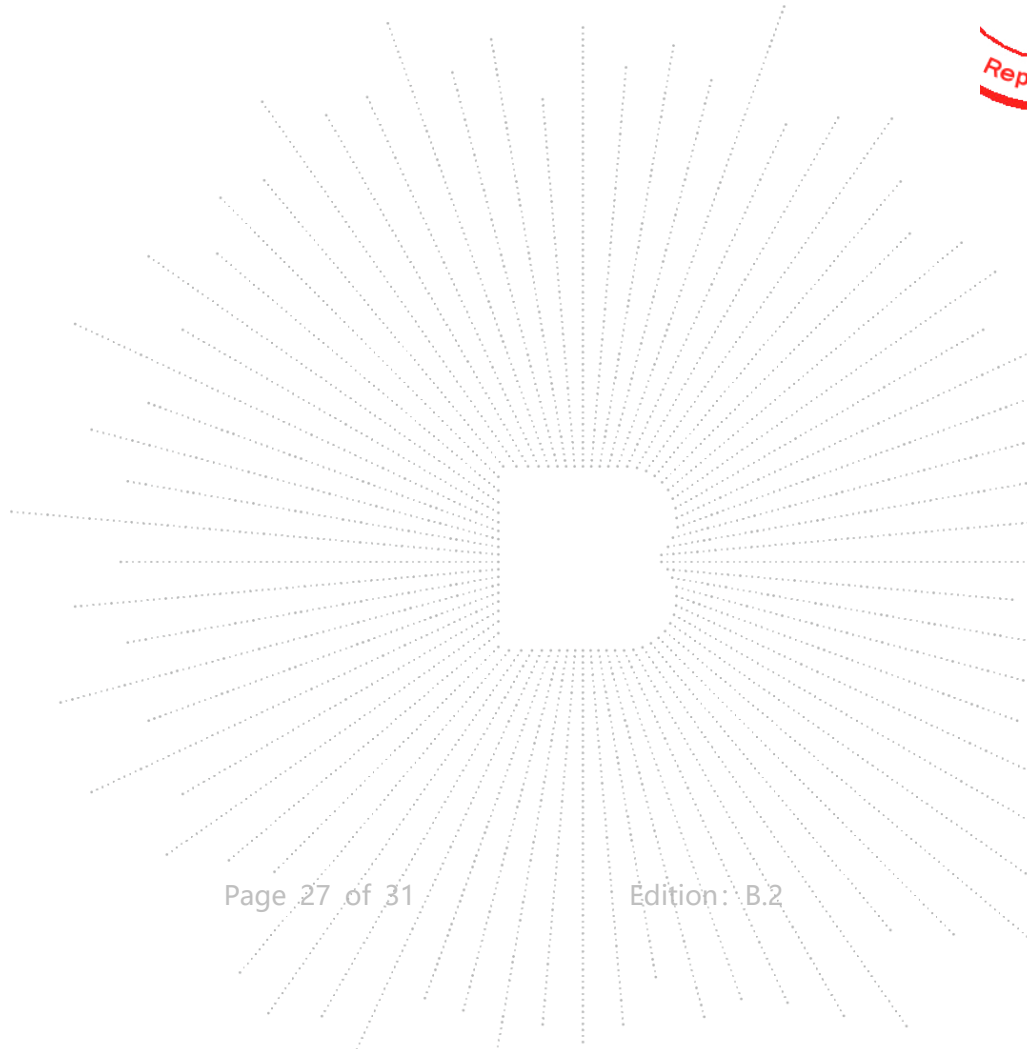
EUT Photo 6



EUT Photo 7



BCTC
BC
APP
Rep

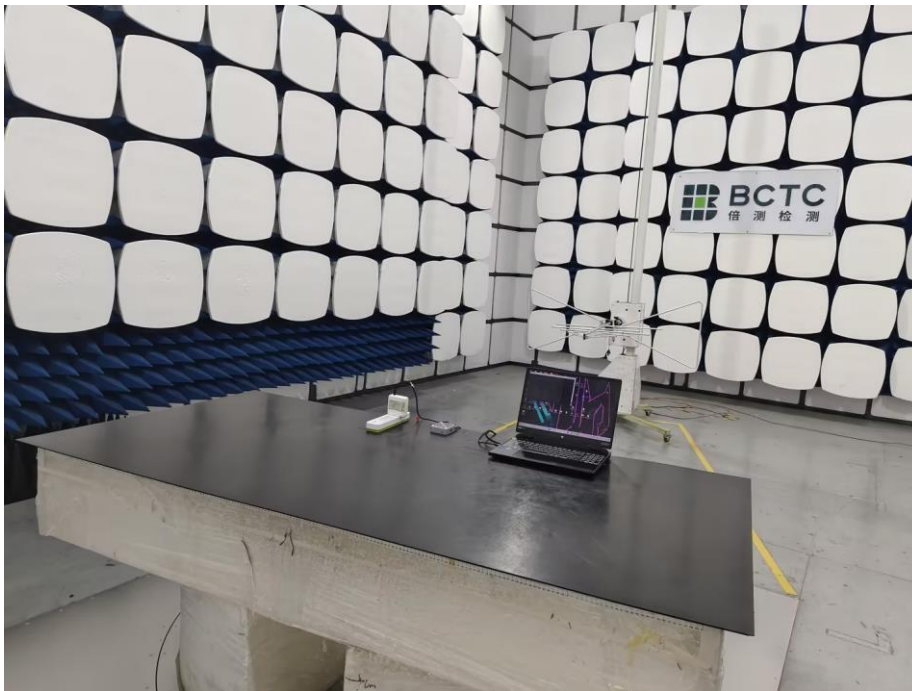


13. EUT Test Setup Photographs

Conducted emissions



Radiated emissions



CT
CT
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ort

ESD



RS



TEST
FOR
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SEAL

TELE



STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

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Complaint/Advice E-mail: advice@bctc-lab.com.cn

※※※※※ END ※※※※※

CO.,LTD