

EMC Test Report

Product Name: Wireless LAN Access Point

**Product Name: AP5030DN
AP5130DN**

Report Number: SYBH(E)01233509EB

Reliability Laboratory of Huawei Technologies Co., Ltd.

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2. The laboratory has been listed by the US Federal Communications Commission to perform electromagnetic emission measurements. The site recognition number is 684868.
3. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 6369D-1 and 6369D-2.
4. The laboratory has been listed by the VCCI to perform EMC measurements. The accreditation numbers of test site No.1 are R-3892, G-415, C-4361, and T-1348, and the accreditation numbers of test site No.2 are R-3760, G-485, C-4210 and T-1237.
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7. The test report is only valid for the test samples.
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Applicant: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
Product Name: Wireless LAN Access Point
Product Model: AP5030DN
 AP5130DN

Date of Receipt Sample: 2014-02-08
Start Date of Test: 2014-02-10
End Date of Test: 2014-02-13

Test Result: Pass

| | | | |
|-------------------------------------|------------|---------------|-----------------------|
| Approved by Senior Engineer: | 2014-02-15 | Zhang Xinghai | <i>Zhang Xing hai</i> |
| | Date | Name | Signature |

| | | | |
|---------------------|------------|----------|-----------------|
| Prepared by: | 2014-02-14 | Wang Jia | <i>Wang Jia</i> |
| | Date | Name | Signature |



Modification Record

| No. | Last Report No. | Modification Description |
|-----|-----------------|--------------------------|
| 1 | N/A | First report |

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1 General Information

1.1 Applied Standard

Applied Product Standard: FCC CFR47 Part 15 Subpart B:2012
ICES-003 Issue 5:2012

Test Method: ANSI C63.4:2003

1.2 Test Location

Test Location 1: Reliability Laboratory of Huawei Technologies Co., Ltd.
Address: No.2222,Xin Jinqiao Road, Pudong New Area, Shanghai, 201206,
P.R.C

1.3 Test Environment Condition

Ambient Temperature: 20-25°C
Relative Humidity: 45-55%
Atmospheric Pressure: 101kPa



2 **Summary of Test Results**

Table 1 Test summary

| EUT Classification: Class B Digital Device | | | | |
|--|--------------------|---------|-------------|-----------|
| Test Items | Test Configuration | Limit | Test Result | Location |
| <u>Radiated Emissions</u> Enclosure Port | TC1~TC4 | Class B | Pass | Location1 |
| <u>Conducted Emissions</u> AC Power Port | TC1, TC3 | Class B | Pass | Location1 |

Note:
1, Measurement taken is within the uncertainty of measurement system.
2, TC = Test configuration



3 Equipment Specification

3.1 General Description

The AP5030DN and AP5130DN are performance-enhanced AP. It supports 3 x 3 MIMO and provides comprehensive service support capabilities. The AP5030DN/AP5130DN is deployed indoors and feature high reliability, high security, simple network deployment, automatic AC discovery and configuration, and real-time management and maintenance.

The following table lists the differences between AP5030DN and AP5130DN:

Table 2 Different Items

| Features | Model | |
|-----------------|---|--|
| | AP5030DN | AP5130DN |
| Main Board | H85D2TT1D300 | H85D2TT1D300 |
| Adapter | All the adapters in table 5 | All the adapters in table 5 |
| Ports | DC input port * 1 GE/PoE port * 1 GE port * 1 Console port * 1 | DC input port * 1 GE/PoE port * 1 GE port * 1 Console port * 1 RF port * 3 |
| Antenna Type | Internal integrated Omni Antenna | External Omni Antenna |
| Frequency Range | Wifi 2.4~2.4835GHz; 5.15~5.35GHz, 5.47~5.825GHz | Wifi 2.4~2.4835GHz; 5.15~5.35GHz, 5.47~5.825GHz |

3.2 Specification

Table 3 Main equipment specification

| | |
|--|---|
| Adapter Input voltage | ~ 100 V to 240 V (50/60 Hz) |
| Equipment Input voltage | DC: --- 12 V Power over Ethernet: --- -48V |
| Rated Power (W) | 13 W |
| Dimensions(W x D x H) | \leq 220 mm x 220 mm x 60 mm |
| Weight (kg) | \leq 1.5kg |
| Transmit frequency | 2.4~2.4835GHz; 5.15~5.35GHz, 5.47~5.825GHz |
| Receive frequency | 2.4~2.4835GHz; 5.15~5.35GHz, 5.47~5.825GHz |
| Frequency of the Internal Source (MHz) | 25 MHz; 40 MHz; 300 MHz |



Figure 1.EUT appearance (AP5030DN)



Figure 2.EUT appearance (AP5130DN)



Figure 3. Adapter appearance (FUHUA HW-120200U1W)



Figure 4. Adapter appearance (FUHUA HW-120200C1W)



Figure 5. Adapter appearance (FUHUA HW-120200E1W)



Figure 6. Adapter appearance (FUHUA HW-120200B1W)



Figure 7. Adapter appearance (HUNTKEY HW-120200U1W)



Figure 8. Adapter appearance (HUNTKEY HKA02412020-1K)



Figure 9. Adapter appearance (HUNTKEY HKA02412020-3K)



Figure 10. Adapter appearance (HUNTKEY HKA02412020-4K)



Figure 11. EUT appearance (HUNTKEY HW-120200A1W Black)



Figure 12. EUT appearance (HUNTKEY HW-120200A1W White)

**3.3 Board and SubAssembly**

Table 4 Board list

| Board | | |
|--------------|------------------|---|
| Board Name | Hardware Version | Description |
| H85D2TT1D300 | VER.A | Main Board for AP5030DN and AP5130DN, 2.4GHz and 5.8GHz, 3T3R |

Table 5 Subassembly list

| Subassembly | | | |
|-------------------|----------------|--------------|--|
| Subassembly Name | Model | Manufacturer | Description |
| AC/DC Adapter | HW-120200U1W | FUHUA | Adapter, -5degC,45degC,90V,270V,12V/2A,US Standard/DC inlet |
| AC/DC Adapter | HW-120200C1W | FUHUA | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-China Standard-DC inlet |
| AC/DC Adapter | HW-120200E1W | FUHUA | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-Europe Standard-DC inlet |
| AC/DC Adapter | HW-120200B1W | FUHUA | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-UK Standard-DC inlet |
| AC/DC Adapter | HW-120200U1W | HUNTKEY | Adapter, -5degC,45degC,90V,270V,12V/2A,US Standard/DC inlet |
| AC/DC Adapter | HKA02412020-1K | HUNTKEY | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-China Standard-DC inlet |
| AC/DC Adapter | HKA02412020-3K | HUNTKEY | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-Europe Standard-DC inlet |
| AC/DC Adapter | HKA02412020-4K | HUNTKEY | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-UK Standard-DC inlet |
| AC/DC Adapter | HW-120200A1W | HUNTKEY | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-Australia Standard-DC inlet-Black |
| AC/DC Adapter | HW-120200A1W | HUNTKEY | AC/DC Adapter--5degC-45degC-90V-270V-12V/2A-Australia Standard-DC inlet-White |
| Isotropic Antenna | C15N13Z100BB | RiAn | Isotropic Antenna for AP5030DN, 2400~2500/5150~5850MHz,4dBi(2.4GHz)/5dBi(5GHz),linear polarized ,1W,U.FL*3,without bracket |
| Isotropic Antenna | SL10301A | ShengLu | Isotropic Antenna for AP5130DN, 2400~2500MHz/5150~5850MHz, 2.5dBi(2.4G)/4dBi(5G), isotropic, without bracket |
| Isotropic Antenna | TT-245804-6W1 | TongYu | Isotropic Antenna for AP5130DN, 2400~2500MHz/5150~5850MHz, 2.5dBi(2.4G)/4dBi(5G), isotropic, without bracket |

4 System Configuration during EMC Test

The Equipment under Test (EUT) was functioning correctly during all tests. The EUT was installed within the test site and was configured to simulate a typical configuration.

4.1 Ports and Cables

Table 6 Ports and cables

| Port | Quantity | Length (m) | Connector | Type of Cable |
|------------------------|----------|------------|-----------|---------------|
| AC Power Port(adapter) | 1 | / | / | / |
| DC Power Port(AP) | 1 | 1.5m | / | / |
| GE1 | 1 | 10m | RJ45 | Unshielded |
| GE0/PoE | 1 | 10m | RJ45 | Unshielded |
| Console | 1 | 10m | RJ45 | Unshielded |
| RF port | 3 | / | SMA | Shielded |

4.2 Auxiliary Equipment

Table 7 Auxiliary equipment

| Name | Model | Manufacturer | S/N | Calibration Date | Cal Interval (month) | Remark |
|-------------------|--------|--------------|-------------------------|------------------|----------------------|--------|
| Access Controller | AC6605 | HUAWEI | 210235396810 D300214 | N/A | N/A | N/A |
| PC(2G STA) | T420 | THINKPAD | A120813099 | N/A | N/A | N/A |
| PC(5G STA) | T420 | THINKPAD | A120842136 | N/A | N/A | N/A |
| PC(server) | T420 | THINKPAD | A120815462 | N/A | N/A | N/A |
| PC(server) | T420 | THINKPAD | A120829377 | N/A | N/A | N/A |

4.3 Test Configurations

The equipment under test (EUT) was connected to ancillary devices in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment). There were four test configurations. TC1~TC4 were shown in the following table and figures:

Table 8 Test configuration

| Configuration | Configuration Description |
|---------------|---------------------------------|
| TC1 | AP5030DN, powered by adapter |
| TC2 | AP5030DN, powered over ethernet |
| TC3 | AP5130DN, powered by adapter |
| TC4 | AP5130DN, powered over ethernet |

Note: During the test, all the adapters with the different manufactures and models were used for TC1 and TC3.

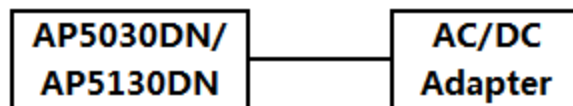


Figure 13. Test configuration 1 & 3 (TC1 and TC3)

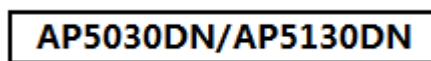


Figure 14. Test configuration 2 & 4 (TC2 and TC4)

4.4 Test Conditions and Connections

4.4.1 Test Condition and Connection for TC1 and TC3

In this connection, the AP functions as a Fit AP that provides only data forwarding function. The Access Controller (AC) is responsible for user access, authentication, AP management, and configurations of security protocols, routing, and Qos. The sta is used as WLAN terminal user and Powered by POE.

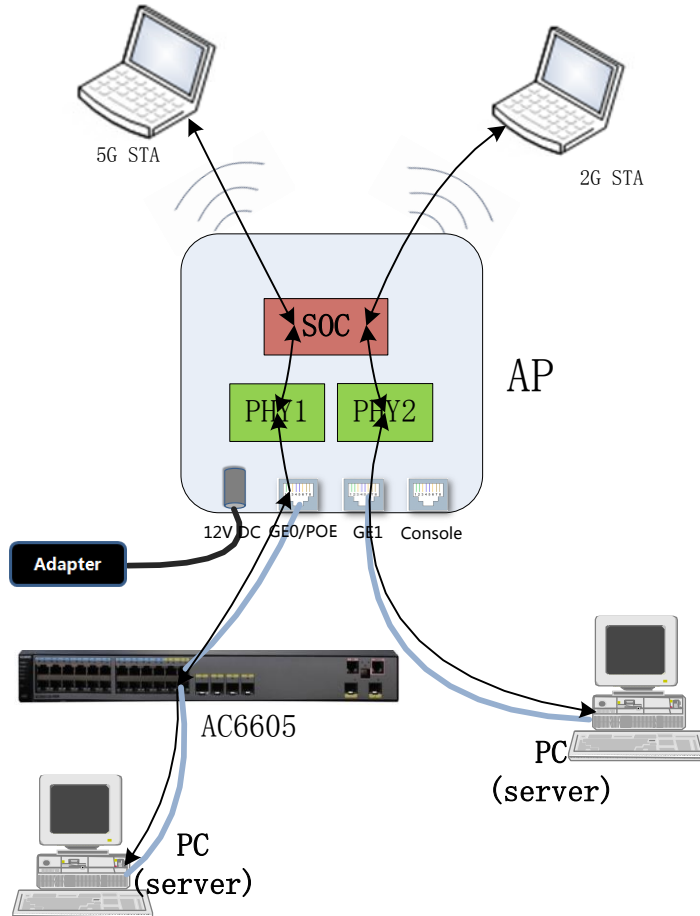


Figure 15. Test connection for TC1 and TC3

4.4.2 Test Condition and Connection for TC2 and TC4

In this connection, the AP functions as a Fit AP that provides only data forwarding function. The Access Controller (AC) is responsible for user access, authentication, AP management, and configurations of security protocols, routing, and Qos. The sta is used as WLAN terminal user and Powered by POE.

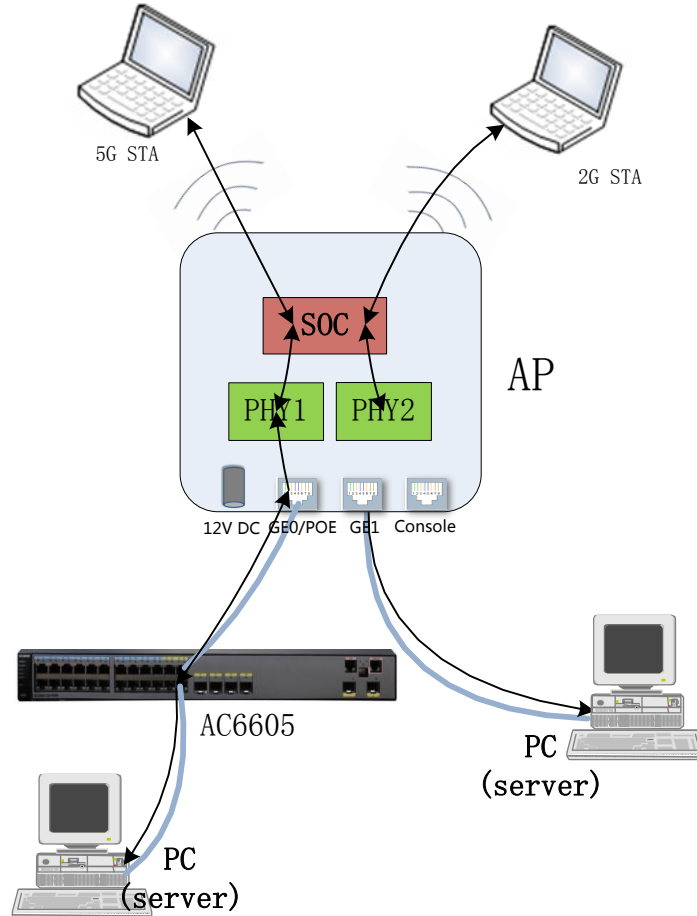


Figure 16. Test connection for TC2 and TC4

5 Details of Test Items

5.1 Radiated Emission 30 MHz to 18 GHz

5.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standard ANSI C63.4. The test distance was 3m. The set-up and test methods were according to ANSI C63.4.

A preliminary scan and a final scan of the emissions were made from 30 MHz to 18 GHz by using test script of software; the emissions were measured using Quasi-Peak Detector for 30 MHz to 1 GHz, Average and Peak detector for above 1 GHz. The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1 m to 4 m, the azimuth range of turntable was 0° to 360°, The receive antenna has two polarizations V and H.

The test set-up is shown in diagram as below:

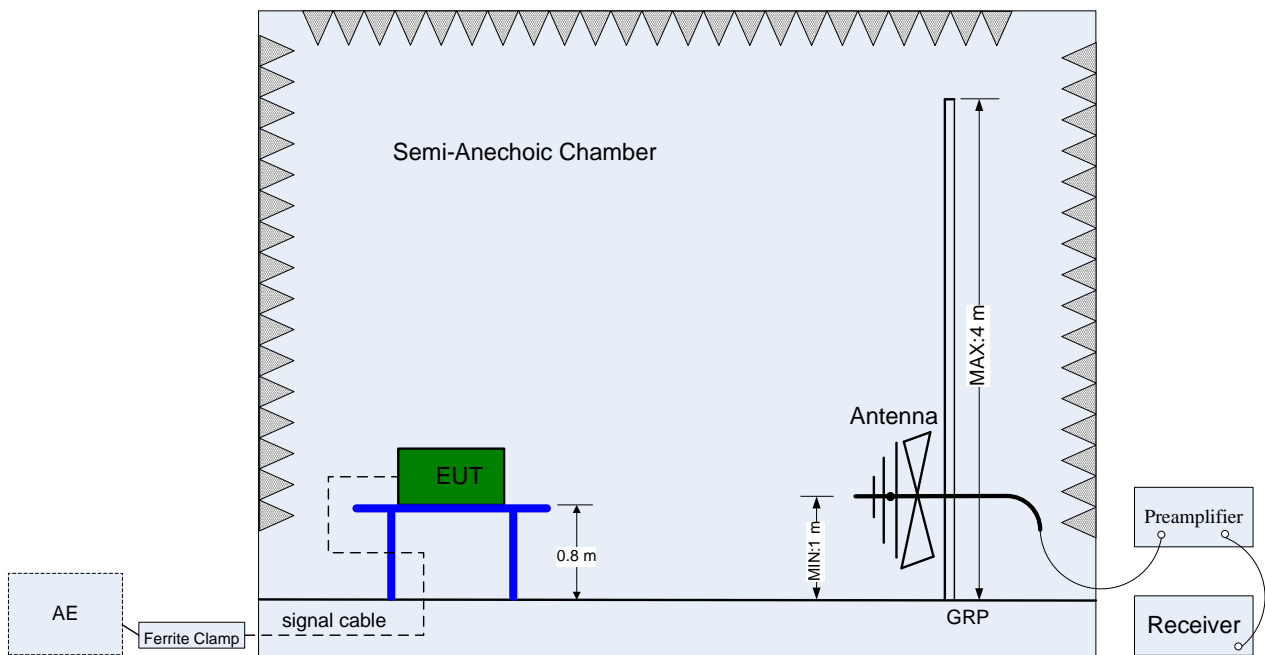


Figure 17. Test set-up of radiated disturbance (30 MHz-1 GHz)

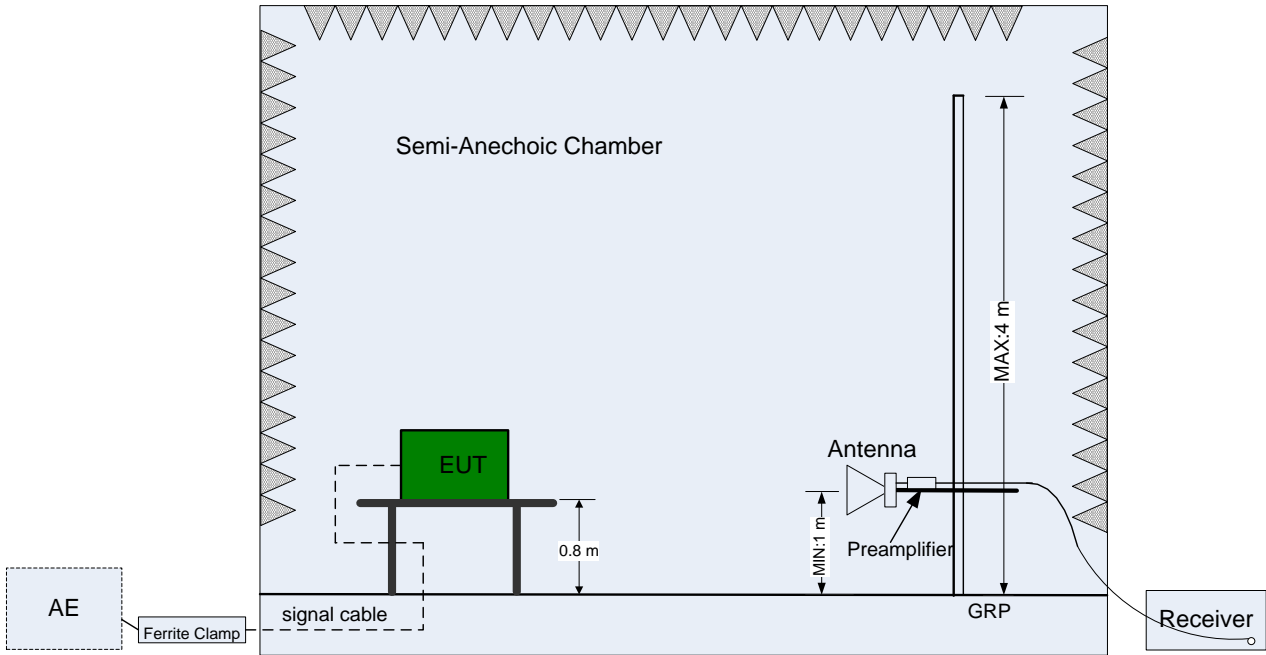


Figure 18. Test set-up of radiated disturbance (above 1 GHz)

5.1.2 Test Results

The EUT has met the requirements for radiated emission of enclosure port.
For the test data, see section 8.1.

Table 9 Test limits for 30MHz to 1GHz at a measuring distance of 3m

| | | |
|--------------------|--------------------|-------------------|
| Frequency range | 30 MHz to 1 GHz | |
| Measuring distance | 3 m | |
| Classification | Class B | |
| Limits(Class B) | 30 MHz to 88 MHz | 40.0 dB μ V/m |
| | 88 MHz to 216 MHz | 43.5 dB μ V/m |
| | 216 MHz to 960 MHz | 46.0 dB μ V/m |
| | 960 MHz to 1 GHz | 53.9 dB μ V/m |

Table 10 Test limits for above 1GHz at a measuring distance of 3m

| | | |
|--------------------|-------------------|-------------------|
| Frequency range | 1 GHz to 18 GHz | |
| Measuring distance | 3 m | |
| Classification | Class B | |
| Limits(Class B) | AV Detector | PK Detector |
| | 53.9 dB μ V/m | 73.9 dB μ V/m |

Note: The highest frequency of the internal sources of the EUT is 300 MHz, the measurement was made up to 18 GHz.

5.2 Conducted Disturbance 0.15 MHz to 30 MHz

5.2.1 Test Procedure

The EUT was configured as described in section 4. The mains cable of the EUT must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

The test set-up is shown in diagram as below:

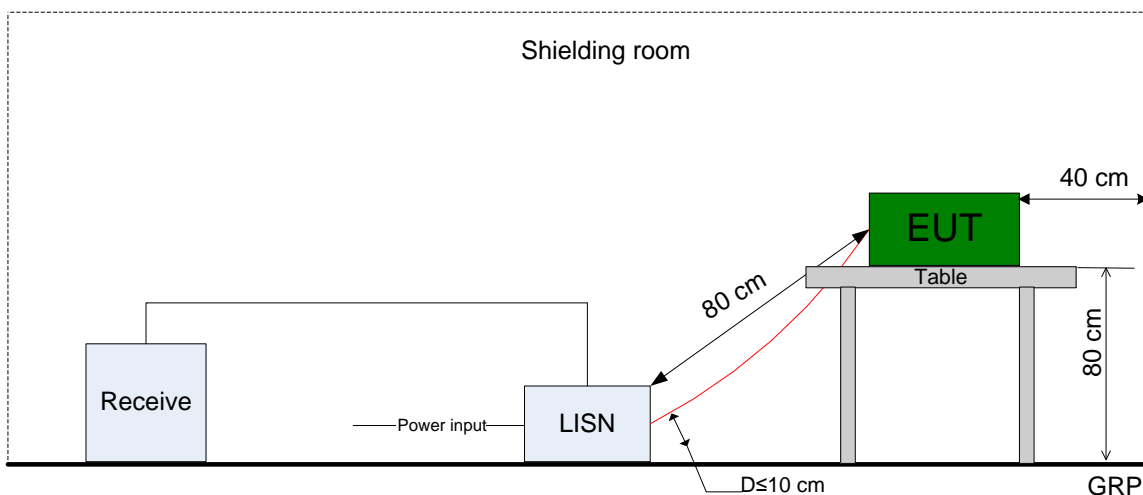


Figure 19. Test set-up of conducted disturbance for AC power port

5.2.2 Test Results

The EUT has met the requirements of FCC Part15 and ICES 003 for Conducted Disturbance of AC Power Port

For the test data, see section 8.2

Table 11 Limits of AC power port

| | | |
|-----------------|-----------------------------|----------|
| Frequency range | 150 kHz to 30 MHz | |
| Classification | Class B | |
| Limit(Class B) | Voltage limits (dB μ V) | |
| | QP | AV |
| 0.15 to 0.5 MHz | 66 to 56 | 56 to 46 |
| 0.5 to 5 MHz | 56 | 46 |
| 5 to 30 MHz | 60 | 50 |



6 Main Test Instruments

Table 12 Main test instrument

| Test Item | Test Instrument | Model | Manufacturer | Calibration Date | Calibration Interval (Month) |
|----------------------|--------------------------|------------------|--------------|------------------|------------------------------|
| Radiated Emission | EMI Test Receiver | ESU40 (100303) | R&S | 2014-01-13 | 12 |
| | Bilog antenna | VULB 9163 (480) | SCHWARZBECK | 2013-05-11 | 24 |
| | Horn antenna | 9120D (878) | SCHWARZBECK | 2013-03-21 | 24 |
| | Chamber _NSA | 3m chamber | Albatross | 2011-12-02 | 36 |
| Conducted Emission | EMI test receiver | ESCI 3 (101619) | R&S | 2014-01-13 | 12 |
| | Artificial Mains Network | ENV4200 (100141) | R&S | 2014-01-13 | 12 |
| Software Information | | | | | |
| | Test Item | Software Name | Manufacturer | Version | |
| | Radiated emission | EMC32 | R&S | V8.5.3 | |
| | Conducted emission | EMC32 | R&S | V8.3 | |



7 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Table 13 System measurement uncertainty

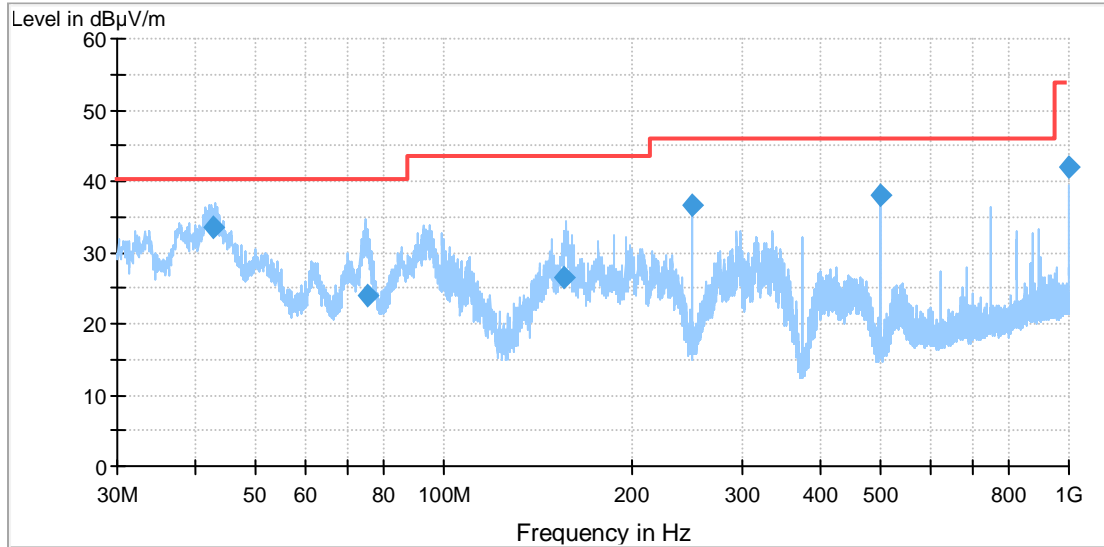
| Items | | Extended Uncertainty |
|--------------------|----------------------------------|-------------------------------|
| Radiated Emission | Field strength (dB μ V/m) | U=4.3 dB; k=2 (30 MHz -1 GHz) |
| | | U=3.1 dB; k=2(1GHz - 18GHz) |
| Conducted Emission | Disturbance Voltage (dB μ V) | U=2.7dB; k=2 |



8 Graph and Data of Emission Test

8.1 Radiated Disturbance

8.1.1 Radiated Disturbance of TC1 (30 MHz – 1GHz)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 42.892065 | 33.6 | -26.0 | 40.0 | 6.4 | 100.0 | 267.0 | V |
| 75.326000 | 23.8 | -32.7 | 40.0 | 16.2 | 100.0 | 206.0 | V |
| 155.667000 | 26.6 | -30.8 | 43.5 | 16.9 | 100.0 | 2.0 | V |
| 250.016000 | 36.5 | -25.7 | 46.0 | 9.5 | 126.0 | 136.0 | H |
| 500.005500 | 38.0 | -18.6 | 46.0 | 8.0 | 175.0 | 192.0 | H |
| 1000.000000 | 42.0 | -9.9 | 53.9 | 11.9 | 100.0 | 116.0 | H |

Note:

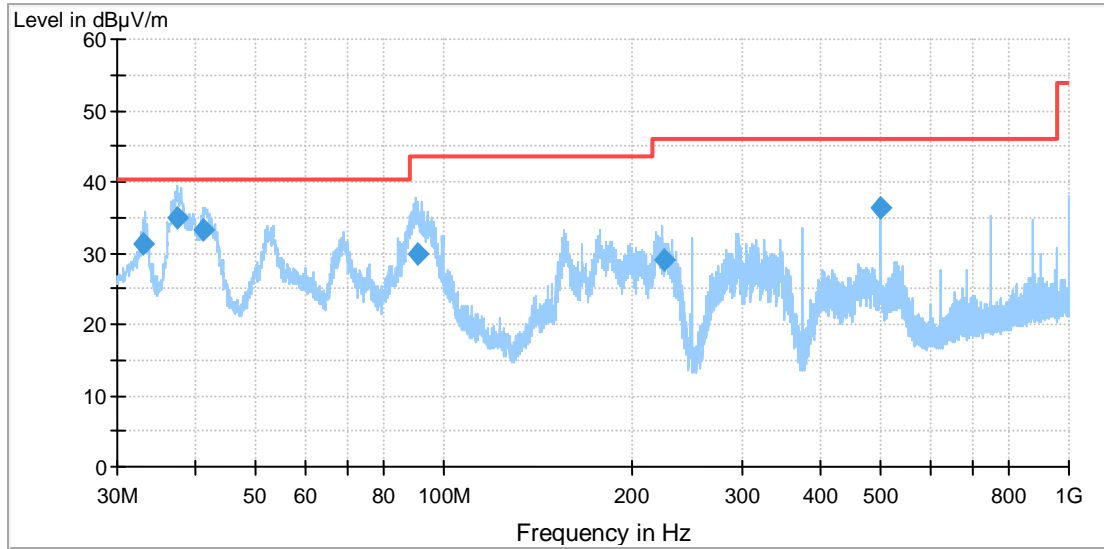
Margin=Limit-Level

Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is used to calculate by software which is not shown in the sheet.



8.1.2 Radiated Disturbance of TC2 (30 MHz – 1GHz)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 33.108990 | 31.2 | -27.3 | 40.0 | 8.8 | 100.0 | 203.0 | V |
| 37.394310 | 35.0 | -26.6 | 40.0 | 5.0 | 100.0 | 141.0 | V |
| 41.271540 | 33.3 | -26.0 | 40.0 | 6.7 | 100.0 | 135.0 | V |
| 90.690500 | 29.8 | -28.3 | 43.5 | 13.7 | 144.0 | 79.0 | V |
| 224.412000 | 29.0 | -26.7 | 46.0 | 17.0 | 100.0 | 42.0 | H |
| 499.993500 | 36.4 | -18.6 | 46.0 | 9.6 | 176.0 | -2.0 | H |

Note:

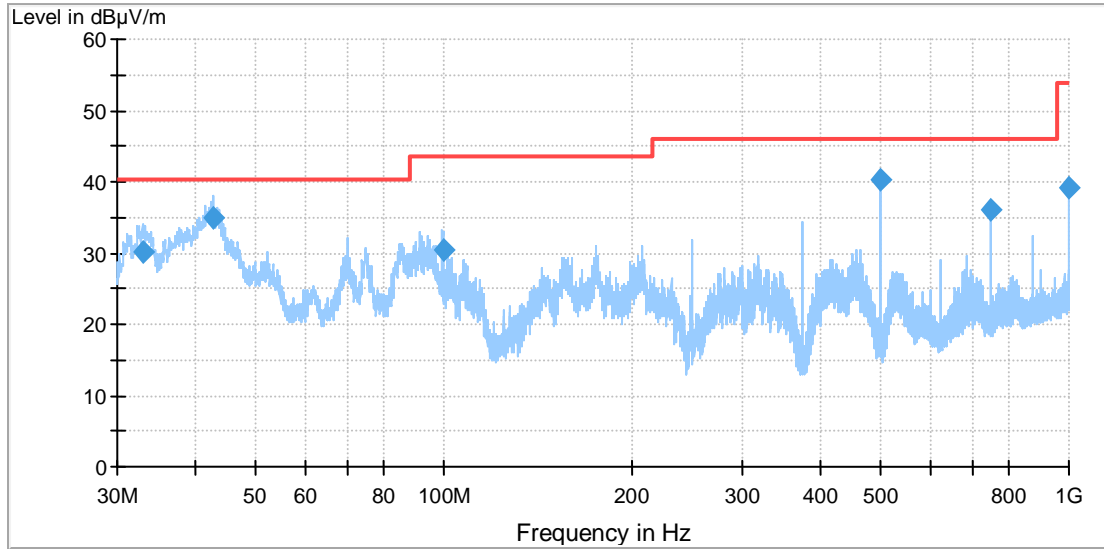
Margin=Limit-Level

Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is used to calculate by software which is not shown in the sheet.



8.1.3 Radiated Disturbance of TC3 (30 MHz – 1GHz)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 33.000900 | 30.2 | -27.3 | 40.0 | 9.8 | 100.0 | 274.0 | V |
| 42.687945 | 34.8 | -26.0 | 40.0 | 5.2 | 100.0 | 314.0 | V |
| 99.705500 | 30.5 | -27.1 | 43.5 | 13.0 | 100.0 | 224.0 | V |
| 500.005500 | 40.2 | -18.6 | 46.0 | 5.8 | 175.0 | 6.0 | H |
| 749.970500 | 35.9 | -13.2 | 46.0 | 10.1 | 100.0 | 67.0 | H |
| 1000.000000 | 39.2 | -9.9 | 53.9 | 14.7 | 100.0 | 59.0 | H |

Note:

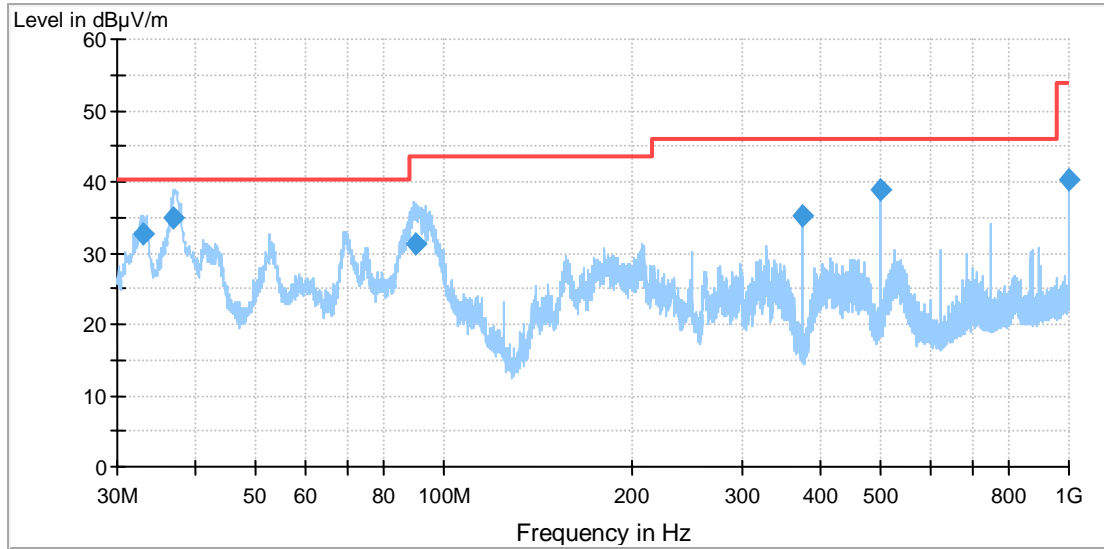
Margin=Limit-Level

Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is used to calculate by software which is not shown in the sheet.



8.1.4 Radiated Disturbance of TC4 (30 MHz – 1GHz)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 32.994175 | 32.7 | -27.3 | 40.0 | 7.3 | 100.0 | 261.0 | V |
| 36.842175 | 35.0 | -26.7 | 40.0 | 5.0 | 114.0 | 274.0 | V |
| 90.006500 | 31.3 | -28.5 | 43.5 | 12.2 | 126.0 | 11.0 | V |
| 375.010500 | 35.1 | -21.8 | 46.0 | 10.9 | 100.0 | 180.0 | H |
| 499.993500 | 38.9 | -18.6 | 46.0 | 7.1 | 187.0 | 15.0 | H |
| 1000.000000 | 40.2 | -9.9 | 53.9 | 13.7 | 100.0 | 69.0 | H |

Note:

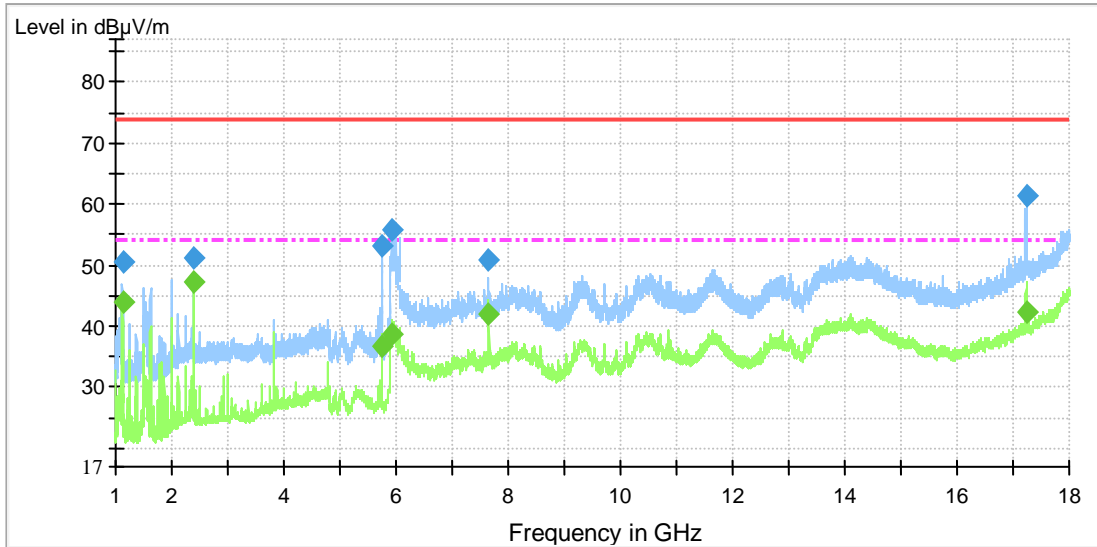
Margin=Limit-Level

Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain)

The reading level is used to calculate by software which is not shown in the sheet.



8.1.5 Radiated Disturbance of TC1 and TC2 (1 – 18GHz)



Measurement Result: PK Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 1125.043167 | 50.5 | -12.7 | 73.9 | 23.4 | 100.0 | 139.0 | V |
| 2400.068167 | 51.3 | -7.5 | 73.9 | 22.6 | 100.0 | 94.0 | V |
| 5742.121333 | 53.0 | -0.5 | 73.9 | 20.9 | 128.0 | 8.0 | V |
| 5921.930667 | 55.9 | 0.1 | 73.9 | 18.0 | 122.0 | 11.0 | V |
| 7660.133333 | 50.7 | 5.4 | 73.9 | 23.2 | 136.0 | 37.0 | V |
| 17233.952833 | 61.3 | 19.7 | 73.9 | 12.6 | 100.0 | 187.0 | V |

Measurement Result: AV Detector

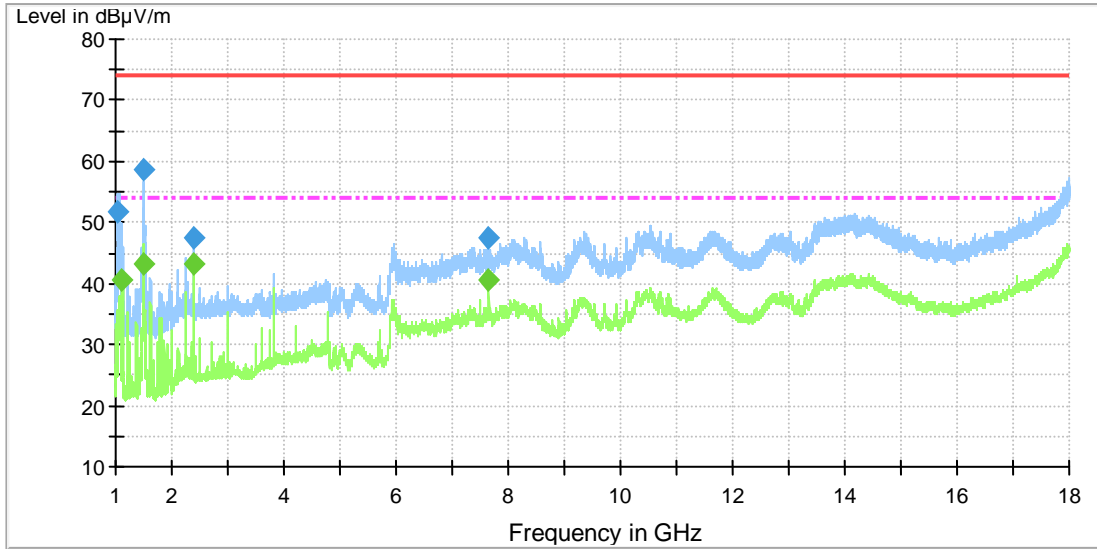
| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 1125.043167 | 44.1 | -12.7 | 53.9 | 9.8 | 100.0 | 136.0 | V |
| 2400.068167 | 47.1 | -7.5 | 53.9 | 6.8 | 100.0 | 94.0 | V |
| 5741.812833 | 36.6 | -0.5 | 53.9 | 17.3 | 100.0 | 3.0 | V |
| 5925.564667 | 38.6 | 0.1 | 53.9 | 15.3 | 122.0 | 10.0 | V |
| 7660.133333 | 42.1 | 5.4 | 53.9 | 11.8 | 138.0 | 36.0 | V |
| 17233.952833 | 42.5 | 19.7 | 53.9 | 11.4 | 100.0 | 181.0 | V |

Note:

- Margin=Limit-Level
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain).The reading level is used to calculate by software which is not shown in the sheet.
- The test configuration TC1 and TC2 were tested, but the worse result was supplied.



8.1.6 Radiated Disturbance of TC3 and TC4 (1 – 18GHz)



Measurement Result: PK Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 1047.889833 | 51.8 | -12.8 | 73.9 | 22.1 | 100.0 | 257.0 | H |
| 1499.901000 | 58.8 | -11.4 | 73.9 | 15.1 | 131.0 | 203.0 | V |
| 2400.068167 | 47.6 | -7.5 | 73.9 | 26.3 | 100.0 | 97.0 | V |
| 7660.133333 | 47.3 | 5.4 | 73.9 | 26.6 | 106.0 | 351.0 | V |

Measurement Result: AV Detector

| Frequency (MHz) | Level (dBµV/m) | Transd (dB) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Azimuth (deg) | Polarisation |
|-----------------|----------------|-------------|----------------|-------------|-------------|---------------|--------------|
| 1124.807333 | 40.5 | -12.7 | 53.9 | 13.4 | 106.0 | 139.0 | V |
| 1499.901000 | 43.1 | -11.4 | 53.9 | 10.8 | 143.0 | 207.0 | V |
| 2400.068167 | 43.3 | -7.5 | 53.9 | 10.6 | 100.0 | 99.0 | V |
| 7660.133333 | 40.7 | 5.4 | 53.9 | 13.2 | 100.0 | 352.0 | V |

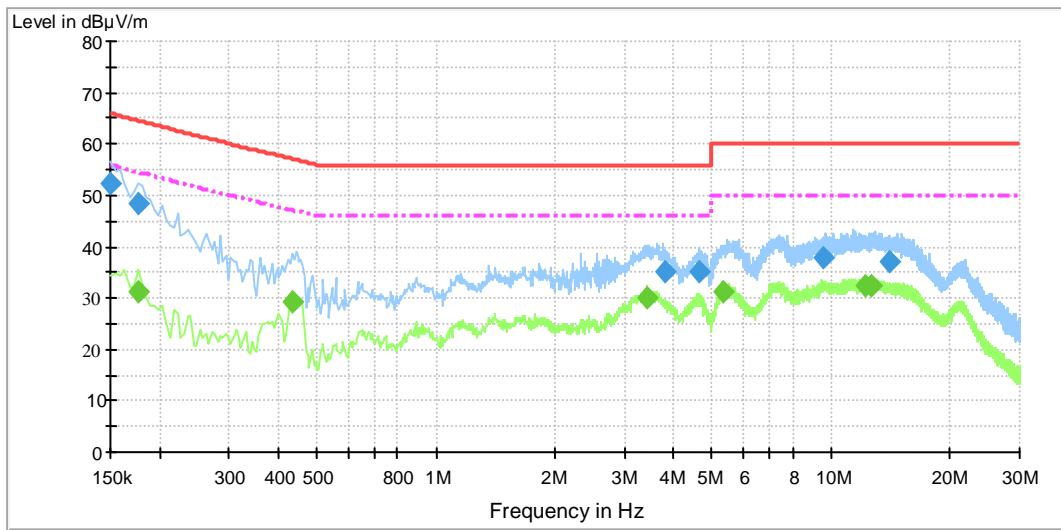
Note:

- Margin=Limit-Level
Level =Reading level by receiver + Transd (Antenna factor + cable loss – preamplifier gain).The reading level is used to calculate by software which is not shown in the sheet.
- The test configuration TC3 and TC4 were tested, but the worse result was supplied.



8.2 Conducted Disturbance

8.2.1 AC Power Port Test Data of TC1 and TC3 (HUNTKEY)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV) | Transd (dB) | Limit (dBµV) | Margin (dB) | Line | PE |
|-----------------|--------------|-------------|--------------|-------------|------|----|
| 0.150000 | 52.2 | 10.6 | 66.0 | 13.8 | L3 | - |
| 0.177000 | 48.5 | 10.6 | 64.5 | 16.0 | L3 | - |
| 3.785138 | 35.2 | 10.4 | 56.0 | 20.8 | L3 | - |
| 4.617818 | 35.0 | 10.4 | 56.0 | 21.0 | N | - |
| 9.569910 | 37.8 | 10.5 | 60.0 | 22.2 | N | - |
| 13.971518 | 37.2 | 10.4 | 60.0 | 22.8 | N | - |

Measurement Result: AV Detector

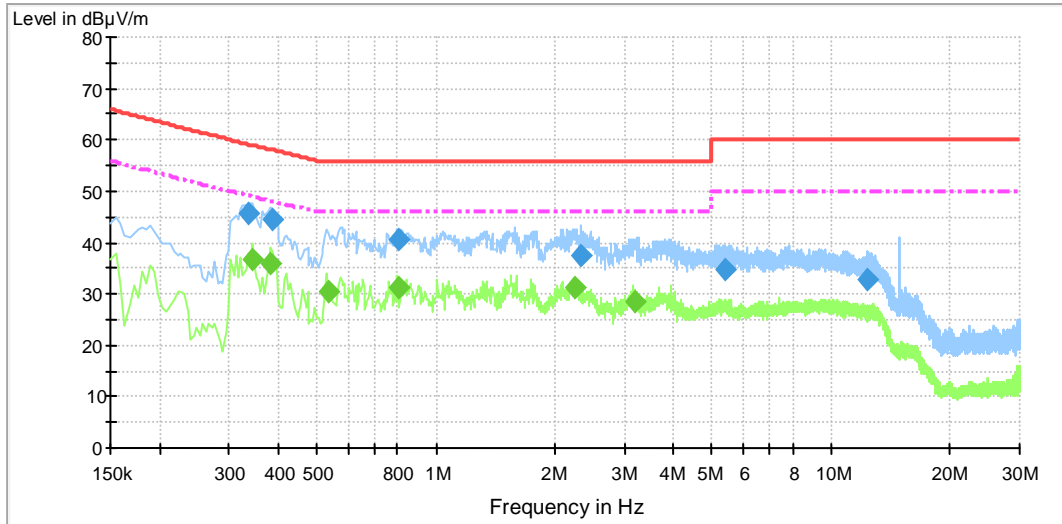
| Frequency (MHz) | Level (dBµV) | Transd (dB) | Limit (dBµV) | Margin (dB) | Line | PE |
|-----------------|--------------|-------------|--------------|-------------|------|----|
| 0.177000 | 31.1 | 10.6 | 54.5 | 23.4 | N | - |
| 0.433500 | 29.2 | 10.4 | 47.1 | 17.9 | N | - |
| 3.425040 | 30.2 | 10.4 | 46.0 | 15.8 | L3 | - |
| 5.334195 | 31.1 | 10.5 | 50.0 | 18.9 | N | - |
| 12.230152 | 32.5 | 10.4 | 50.0 | 17.5 | N | - |
| 12.641790 | 32.6 | 10.4 | 50.0 | 17.4 | N | - |

Note:

- Margin=Limit-Level
Level= Reading level+ Transd (cable loss + correction factor). The reading level is used to calculate by software which is not shown in the sheet.
- The test configuration TC1 and TC3 were tested, but the worse result was supplied.



8.2.2 AC Power Port Test Data of TC1 and TC3 (FUHUA)



Measurement Result: QP Detector

| Frequency (MHz) | Level (dBµV) | Transd (dB) | Limit (dBµV) | Margin (dB) | Line | PE |
|-----------------|--------------|-------------|--------------|-------------|------|----|
| 0.334500 | 45.7 | 10.5 | 59.2 | 13.5 | N | - |
| 0.384001 | 44.6 | 10.5 | 58.1 | 13.5 | N | - |
| 0.802500 | 40.6 | 10.4 | 56.0 | 15.4 | L3 | - |
| 2.335118 | 37.5 | 10.4 | 56.0 | 18.5 | L3 | - |
| 5.370038 | 34.8 | 10.4 | 60.0 | 25.2 | L3 | - |
| 12.409095 | 32.7 | 10.4 | 60.0 | 27.3 | N | - |

Measurement Result: AV Detector

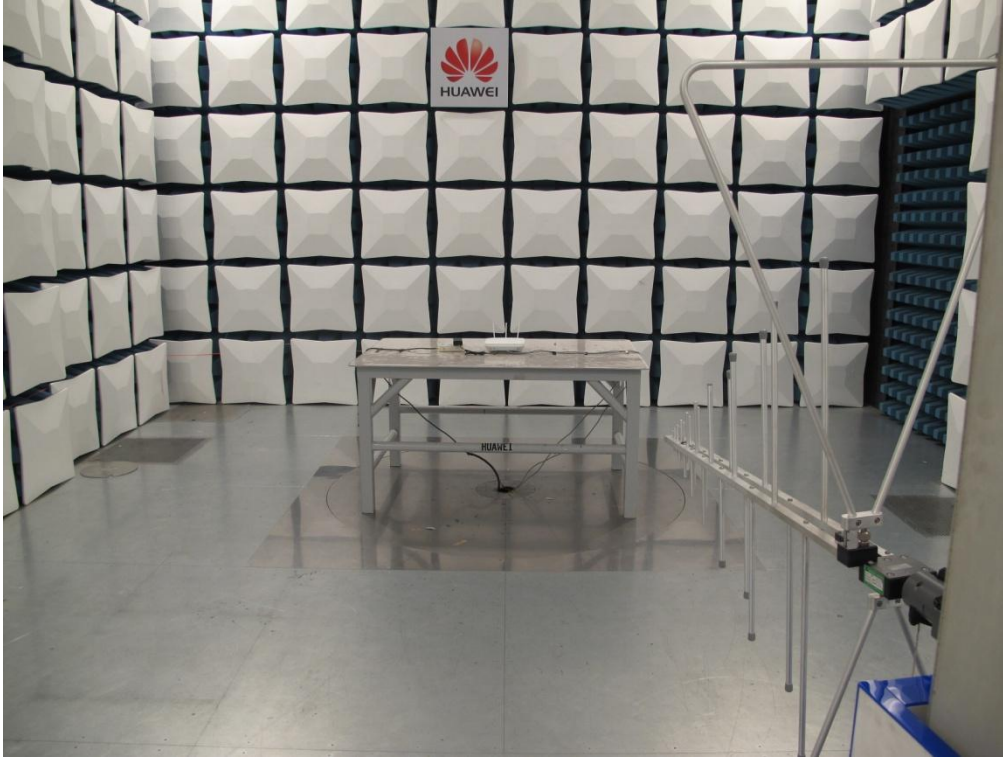
| Frequency (MHz) | Level (dBµV) | Transd (dB) | Limit (dBµV) | Margin (dB) | Line | PE |
|-----------------|--------------|-------------|--------------|-------------|------|----|
| 0.343500 | 36.9 | 10.5 | 48.9 | 12.0 | N | - |
| 0.379499 | 35.8 | 10.5 | 48.1 | 12.3 | N | - |
| 0.532499 | 30.3 | 10.4 | 46.0 | 15.7 | L3 | - |
| 0.802500 | 31.3 | 10.4 | 46.0 | 14.7 | L3 | - |
| 2.244788 | 31.1 | 10.4 | 46.0 | 14.9 | L3 | - |
| 3.176175 | 28.7 | 10.4 | 46.0 | 17.3 | N | - |

Note:

- Margin=Limit-Level
Level= Reading level+ Transd (cable loss + correction factor). The reading level is used to calculate by software which is not shown in the sheet.
- The test configuration TC1 and TC3 were tested, but the worse result was supplied.

9 Photographs of Test Set-up

9.1 Radiated Emission



Radiated emission for 30 MHz-1 GHz



Radiated emission for 1GHz to 18GHz



9.2 Conducted Emission



Conducted emissions of AC power port

**Appendix: Abbreviation**

Table 14 Abbreviation

| Abbreviation | Full Name |
|--------------|--------------------------------------|
| EMC | Electromagnetic Compatibility |
| EMI | Electromagnetic Interference |
| EUT | Equipment Under Test |
| AE | Auxiliary Equipment |
| AC | Alternate Current |
| DC | Direct Current |
| NSA | Normalized Site Attenuation |
| LISN | Line Impedance Stabilization Network |
| TC | Test configuration |
| N/A | Not Applicable |

END