



**Estech**  
your best partner

## Test Report for FCC

FCC ID :TKWBSL2-OM

|                                                                                                                                                                                                                                                                                                               |                                                                                             |                                                                                        |                                             |             |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------|-------------|----|
| Report Number                                                                                                                                                                                                                                                                                                 |                                                                                             | ESTEFC1603-008                                                                         |                                             |             |    |
| Applicant                                                                                                                                                                                                                                                                                                     | Company name                                                                                | SUPREMA INC                                                                            |                                             |             |    |
|                                                                                                                                                                                                                                                                                                               | Address                                                                                     | 16F Parkview Office Tower, Jeongja-dong, Bundang-gu, Seongnam, Gyeonggi, 463-863 Korea |                                             |             |    |
|                                                                                                                                                                                                                                                                                                               | Telephone                                                                                   | 82-31-710-5674                                                                         |                                             |             |    |
|                                                                                                                                                                                                                                                                                                               | Contact Person                                                                              | Tae-Hoon Lee                                                                           |                                             |             |    |
|                                                                                                                                                                                                                                                                                                               | Factory address                                                                             | 16F Parkview Office Tower, Jeongja-dong, Bundang-gu, Seongnam, Gyeonggi, 463-863 Korea |                                             |             |    |
| Product                                                                                                                                                                                                                                                                                                       | Product name                                                                                | BioStation L2                                                                          |                                             |             |    |
|                                                                                                                                                                                                                                                                                                               | Model No.                                                                                   | BSL2-OM                                                                                | Manufacturer                                | SUPREMA INC |    |
|                                                                                                                                                                                                                                                                                                               | Serial No.                                                                                  | 542500814                                                                              | Country of origin                           | KOREA       |    |
| Test date                                                                                                                                                                                                                                                                                                     | 8-Mar-16 ~ 9-Mar-16                                                                         |                                                                                        | Date of issued                              | 28-Mar-16   |    |
| Test location                                                                                                                                                                                                                                                                                                 | 347-69, Jungbu-daero 147beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do 467-811, R. O. Korea |                                                                                        |                                             |             |    |
| Standard                                                                                                                                                                                                                                                                                                      | FCC PART 15 Subpart B, ANSI C 63.4(2009)                                                    |                                                                                        |                                             |             |    |
| Test item                                                                                                                                                                                                                                                                                                     | <input checked="" type="checkbox"/> Conducted Emission                                      | <input type="checkbox"/> Class A                                                       | <input checked="" type="checkbox"/> Class B | Test result | OK |
|                                                                                                                                                                                                                                                                                                               | <input checked="" type="checkbox"/> Radiated Emission                                       | <input type="checkbox"/> Class A                                                       | <input checked="" type="checkbox"/> Class B | Test result | OK |
| Measurement facility registration number                                                                                                                                                                                                                                                                      |                                                                                             | 659627                                                                                 |                                             |             |    |
| Tested by                                                                                                                                                                                                                                                                                                     | Senior Engineer K.H. Chung (Signature)                                                      |                                                                                        |                                             |             |    |
| Reviewed by                                                                                                                                                                                                                                                                                                   | Engineering Manager J.M. Yang (Signature)                                                   |                                                                                        |                                             |             |    |
| Abbreviation                                                                                                                                                                                                                                                                                                  | OK, Pass = Complied, Fail = Failed, N/A = not applicable                                    |                                                                                        |                                             |             |    |
| <p>* Note</p> <ul style="list-style-type: none"> <li>- This test report is not permitted to copy partly without our permission</li> <li>- This test result is dependent on only equipment to be used</li> <li>- This test result based on a single evaluation of one sample of the above mentioned</li> </ul> |                                                                                             |                                                                                        |                                             |             |    |

## Contents

|                                            |     |
|--------------------------------------------|-----|
| 1. Laboratory Information .....            | 3   |
| 2. Description of EUT .....                | 4   |
| 3. Test Standards .....                    | 5   |
| 4. Measurement condition .....             | 6   |
| 5. Measurement of radiated emission .....  | 8   |
| 5.1 Measurement equipment .....            | 8   |
| 5.2 Environmental conditions .....         | 8   |
| 5.3 Test data(below 1 GHz) .....           | 9-1 |
| 5.4 Test data(above 1 GHz) .....           | 9-2 |
| 6. Measurement of conducted emission ..... | 10  |
| 6.1 Measurement equipment .....            | 10  |
| 6.2 Environmental conditions .....         | 10  |
| 6.3 Test data .....                        | 11  |
| 7. Photographs of test setup .....         | 12  |
| 8. Photographs of EUT .....                | 14  |

Appendix 1. Special diagram

## 1. Laboratory Information

### 1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report. ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

### 1.2 Test Lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Suite 1015 World Meridian II, 123 Gasan Digital 2-ro, Geumcheon-gu, Seoul 153-759, R. O. Korea

EMC Test Lab : 347-69, Jungbu-daero 147beon-gil, Majang-myeon, Icheon-si,  
Gyeonggi-do 467-811, R. O. Korea

### 1.3 Official Qualification(s)

MSIP : Granted Accreditation from Ministry of Information & Communication for EMC, Safety  
and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC  
requirements

FCC : Conformity Assessment Body(CAB) with registration number 659627 under APEC TEL MRA  
between the RRA and the FCC.

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

## 2. Description of EUT

### 2.1 Summary of Equipment Under Test

|                                               |                                                  |
|-----------------------------------------------|--------------------------------------------------|
| Product                                       | : BioStation L2                                  |
| Model Number                                  | : BSL2-OM                                        |
| Serial Number                                 | : 542500814                                      |
| Manufacturer                                  | : SUPREMA INC                                    |
| Country of origin                             | : Korea                                          |
| Sample Receipt Date                           | : 11-Feb-16                                      |
| Rating                                        | : DC 12 V, MAX 600 mA                            |
| Testing Voltage                               | : AC 120 V, 60 Hz                                |
| " X-tallist(s) or<br>Frequencies<br>generated | : The highest operating frequency is CPU 1.2 GHz |

### 2.2 General descriptions of EUT

|            |                                 |                                                              |
|------------|---------------------------------|--------------------------------------------------------------|
| General    | CPU                             | 1.2 GHz Quad Core                                            |
|            | Memory                          | 2GB Flash + 256 MB RAM                                       |
|            | LCD type                        | 2" color TFT LCD                                             |
|            | LCD resolution                  | 220 x 176 pixels                                             |
|            | Sound                           | 16-bit Hi-Fi                                                 |
|            | Operating temperature           | -20 °C ~ 50 °C                                               |
|            | Storage temperature             | -40 °C ~ 70 °C                                               |
|            | Operating humidity              | 0 % ~ 80 %, non-condensed                                    |
|            | Storage humidity                | 0 % ~ 90 %, non-condensed                                    |
|            | Dimension (W x H x D)           | 71 mm x 201 mm x 44 mm (Bottom) / 34 mm (Top)                |
|            | Weight                          | Device: 280 g<br>Bracket: 61 g (including washers and bolts) |
|            | Certificates                    | CE, FCC, KC, RoHS, REACH, WEEE                               |
|            | Power                           | Voltage: 12VDC<br>Current: Max. 600 mA                       |
| Electrical | Switch input V <sub>H</sub>     | Min. 4 V<br>Max. 5 V                                         |
|            | Switch input V <sub>L</sub>     | Max. 1 V                                                     |
|            | Switch pull-up resistor         | 4.7 kΩ (The input ports are pulled up with 4.7 kΩ)           |
|            | Wiegand output V <sub>OH</sub>  | Min. 4 V<br>Max. 5 V                                         |
|            | Wiegand output V <sub>OL</sub>  | Max. 1 V                                                     |
|            | Wiegand output pull-up resistor | Internal pull-up with 1 kΩ                                   |
|            | Relay                           | Voltage: Max. 30VDC<br>Current: 1A, Max. 2A                  |

### 3. Test Standards

#### Test Standard : FCC PART 15 Subpart B

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

#### Test Method : ANSI C 63.4 (2009)

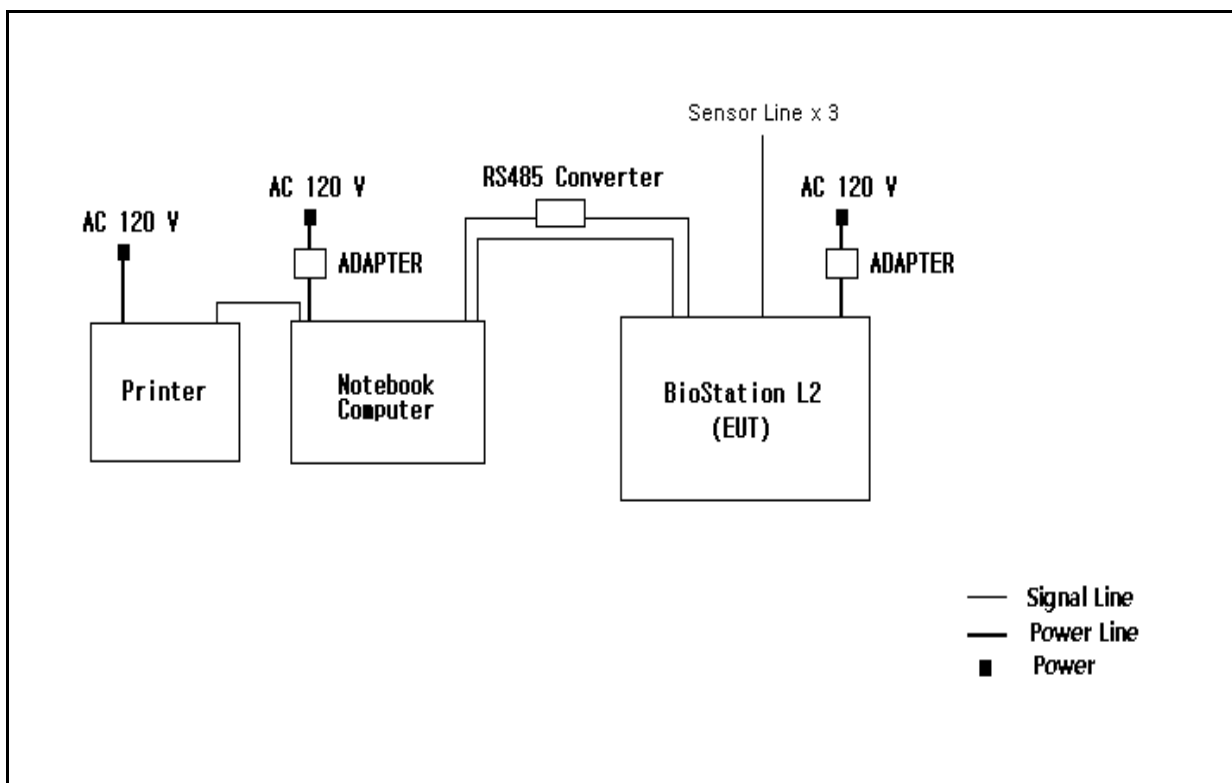
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment. These methods apply to the measurement of individual units or systems comprised of multiple units.

## 4. Measurement Condition

### 4.1 EUT Operation.

- The EUT was in the following operation mode during all testing.
- 1. Connect the EUT to External Network / LAN port of the Note PC.
- 2. Install the provided test program by the manufacturer.
- 3. Execute the test program and check the operating status of the EUT.  
(Check fingerprint detection and RFID Card display on the note pc continuously.)

### 4.2 Configuration and Peripherals



### 4.3 EUT and Support equipment

| Equipment Name    | Model Name     | S/N                    | Manufacturer                            | Remark (FCC ID) |
|-------------------|----------------|------------------------|-----------------------------------------|-----------------|
| BioStation L2     | BSL2-OM        | 542500814              | SUPREMA INC                             | EUT             |
| ADAPTER           | DZ036DL120250F | NONE                   | Guangdong Keerda Electronics Co.,Ltd    |                 |
| Notebook Computer | LG15N54        | 412NZZ305045           | LG Electronics Nanjing Display Co., Ltd |                 |
| ADAPTER           | PA-1900-14     | OENT263348701J137(1.0) | LITE-ON TECHNOLOGY (CHANGZHOU) CO., LTD |                 |
| RS485 Converter   | TCC-80         | TACGC1082106           | MOXA                                    |                 |
| Printer           | K10229         | NONE                   | CANON VIETNAM CO.,LTD.                  |                 |
|                   |                |                        |                                         |                 |

### 4.4 Cable Connecting

| Start Equipment   |           | End Equipment     |          | Cable Standard |            | Remark |
|-------------------|-----------|-------------------|----------|----------------|------------|--------|
| Name              | I/O port  | Name              | I/O port | Length         | Shielded   |        |
| BioStation L2     | POWER     | ADAPTER           | -        | 2.0            | Unshielded |        |
| BioStation L2     | LAN       | Notebook Computer | LAN      | 3.0            | Unshielded |        |
| BioStation L2     | RS-485    | RS485 Converter   | SERIAL   | 3.0            | Shielded   |        |
| BioStation L2     | Jack Line | Sensor Line x 3   | -        | 3.0            | Shielded   |        |
| RS485 Converter   | SERIAL    | Notebook Computer | USB      | 2.0            | Shielded   |        |
| Notebook Computer | POWER     | ADAPTER           | -        | 2.0            | Shielded   |        |
| Notebook Computer | USB       | Printer           | USB      | 2.0            | Shielded   |        |
|                   |           |                   |          |                |            |        |
|                   |           |                   |          |                |            |        |

## 5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC PART 15 Subpart B. The test setup was made according to ANSI C 63.4 (2009) on an 10 m semi-anechoic chamber, which allows a 3 m distance measurement. The EUT was placed in the center of Plastic table. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

### 5.1 Measurement equipments

| Equipment Name                         | Type       | Manufacturer      | Serial No.             | Next Calibration date |
|----------------------------------------|------------|-------------------|------------------------|-----------------------|
| TEST Receiver                          | ESCI7      | ROHDE & SCHWARZ   | 100916                 | 7-Dec-16              |
| Logbicon Antenna                       | VULB 9168  | SCHWARZBECK       | 9168-193               | 30-Sep-16             |
| Turn Table                             | DT3000-2t  | Innco System GmbH | N/A                    | -                     |
| Antenna Mast                           | MA4000-EP  | Innco System GmbH | N/A                    | -                     |
| PREAMPLIFIER                           | 8449B      | AGILENT           | 3008A00581             | 7-Dec-16              |
| Test Receiver                          | ESPI7      | ROHDE & SCHWARZ   | 100185                 | 7-Dec-16              |
| Horn Antenna                           | BBHA 9120D | SCHWARZBECK       | 469                    | 3-Sep-16              |
| Turn Table                             | DT1500-S   | Innco System GmbH | N/A                    | -                     |
| Antenna Mast                           | MA4000-EP  | Innco System GmbH | N/A                    | -                     |
| Antenna Master & Turn table controller | C02000-P   | Innco System GmbH | CO2000/642 /28051111/L | -                     |

### 5.2 Environmental Condition

**Below 1 GHz –Test Place : 10 m Semi-anechoic chamber**

Temperature (°C) : 20.8 °C  
 Humidity (% R.H.) : 51.1 % R.H.

**Above 1 GHz–Test Place : 3 m Semi-anechoic chamber**

Temperature (°C) : 21.0 °C  
 Humidity (% R.H.) : 54.1 % R.H.

### 5.3 Test data (Below 1 GHz)

Test Date : 8-Mar-16

Measurement Distance : 3 m

| Frequency<br>(MHz) | Reading<br>(dB $\mu$ V)                                                                                                                                                                                                              | Position<br>(V/H) | Height<br>(m) | Correction Factor  |               | Result Value(Quasi-peak) |                          |                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|--------------------|---------------|--------------------------|--------------------------|----------------|
|                    |                                                                                                                                                                                                                                      |                   |               | Ant Factor<br>(dB) | Cable<br>(dB) | Limit<br>(dB $\mu$ V/m)  | Result<br>(dB $\mu$ V/m) | Margin<br>(dB) |
| 99.90              | 23.88                                                                                                                                                                                                                                | V                 | 1.2           | 8.57               | 1.57          | 43.50                    | 34.02                    | 9.48           |
| 250.00             | 24.46                                                                                                                                                                                                                                | H                 | 2.1           | 11.67              | 2.52          | 46.00                    | 38.65                    | 7.35           |
| 366.00             | 23.90                                                                                                                                                                                                                                | V                 | 2.4           | 14.98              | 3.07          | 46.00                    | 41.95                    | 4.05           |
| 586.10             | 18.99                                                                                                                                                                                                                                | V                 | 2.1           | 19.79              | 3.96          | 46.00                    | 42.74                    | 3.26           |
| 712.80             | 14.04                                                                                                                                                                                                                                | H                 | 2.1           | 21.47              | 4.39          | 46.00                    | 39.91                    | 6.09           |
| 799.90             | 15.58                                                                                                                                                                                                                                | V                 | 1.8           | 22.72              | 4.69          | 46.00                    | 42.99                    | 3.01           |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
|                    |                                                                                                                                                                                                                                      |                   |               |                    |               |                          |                          |                |
| Remark             | H : Horizontal, V : Vertical<br>*Result Value = Reading + Ant Factor + Cable loss<br>*Margin= Limit - Result<br>*The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection |                   |               |                    |               |                          |                          |                |

## 5.4 Test data (Above 1 GHz)

Test Date : 9-Mar-16

Measurement Distance : 3 m

| Frequency<br>(MHz)           | Reading<br>(dB $\mu$ V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Position<br>(V/H) | Height<br>(m) | Correction Factor  |               | Result Value            |                          |                |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------|--------------------|---------------|-------------------------|--------------------------|----------------|
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               | Ant Factor<br>(dB) | Cable<br>(dB) | Limit<br>(dB $\mu$ V/m) | Result<br>(dB $\mu$ V/m) | Margin<br>(dB) |
| Peak(RBW:1 MHz VBW:1 MHz)    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
| 2398.00                      | 42.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 26.23              | -29.23        | 74.00                   | 39.41                    | 34.59          |
| 2398.00                      | 53.63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 26.23              | -29.23        | 74.00                   | 50.63                    | 23.37          |
| 2640.00                      | 43.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 26.89              | -29.09        | 74.00                   | 41.56                    | 32.44          |
| 2640.00                      | 48.33                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 26.89              | -29.09        | 74.00                   | 46.14                    | 27.86          |
| 2932.00                      | 41.74                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 27.88              | -28.94        | 74.00                   | 40.68                    | 33.32          |
| 2932.00                      | 51.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 27.88              | -28.94        | 74.00                   | 50.44                    | 23.56          |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
| Average(RBW:1 MHz VBW:10 Hz) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
| 2398.00                      | 32.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 26.23              | -29.23        | 54.00                   | 29.11                    | 24.89          |
| 2398.00                      | 37.34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 26.23              | -29.23        | 54.00                   | 34.34                    | 19.66          |
| 2640.00                      | 37.79                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 26.89              | -29.09        | 54.00                   | 35.60                    | 18.40          |
| 2640.00                      | 39.19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 26.89              | -29.09        | 54.00                   | 37.00                    | 17.00          |
| 2932.00                      | 31.16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | H                 | 1.0           | 27.88              | -28.94        | 54.00                   | 30.10                    | 23.90          |
| 2932.00                      | 37.07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | V                 | 1.0           | 27.88              | -28.94        | 54.00                   | 36.01                    | 17.99          |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
| Remark                       | H : Horizontal, V : Vertical<br>* Result Value = Reading + Ant Factor + Cable loss - Amplifier Gain<br>* Margin= Limit - Result<br>* The resolution bandwidth and video bandwidth of spectrum analyzer is 1 MHz and 10 Hz for average detection at frequency above 1 GHz.<br>*The highest operating frequency of the EUT is 1.2 GHz , so the radiated emission measurement was performed up to 6 GHz by requested applicant.<br>*Application method of the highest frequency is in the following<br>*Highest frequency of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.<br>*Highest frequency of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.<br>*Highest frequency of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.<br>*Highest frequency of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |               |                    |               |                         |                          |                |

## 6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 MHz to 30 MHz was measured in accordance to FCC PART 15 Subpart B . The test setup was made according to ANSI C 63.4 (2009) in a shielded room. The EUT was placed on a non-conductive table at least 0.8 m above the ground plan. A grounded vertical reference plane was positioned in a distance of 0.4 m from the EUT. The distance from the EUT to other metal surfaces was at least 0.8 m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0 m. The test receiver with Quasi Peak detector complies with CISPR 16.

### 6.1 Measurement equipments

| Equipment Name | Type    | Manufacturer    | Serial No. | Next Calibration date |
|----------------|---------|-----------------|------------|-----------------------|
| Test Receiver  | ESPI    | Rohde & Schwarz | 100005     | 7-Dec-16              |
| LISN           | ENV 216 | ROHDE & SCHWARZ | 101231     | 7-Dec-16              |
| LISN           | ESH3-Z5 | Rohde & Schwarz | 836679/025 | 7-Dec-16              |
| Pulse Limiter  | ESH3-Z2 | Rohde & Schwarz | NONE       | 7-Dec-16              |
|                |         |                 |            |                       |

### 6.2 Environmental Condition

Test Place : Shielded Room

Temperature (°C) : 21.1 °C

Humidity (% R.H.) : 41.5 % R.H.

## 6.3 Test data

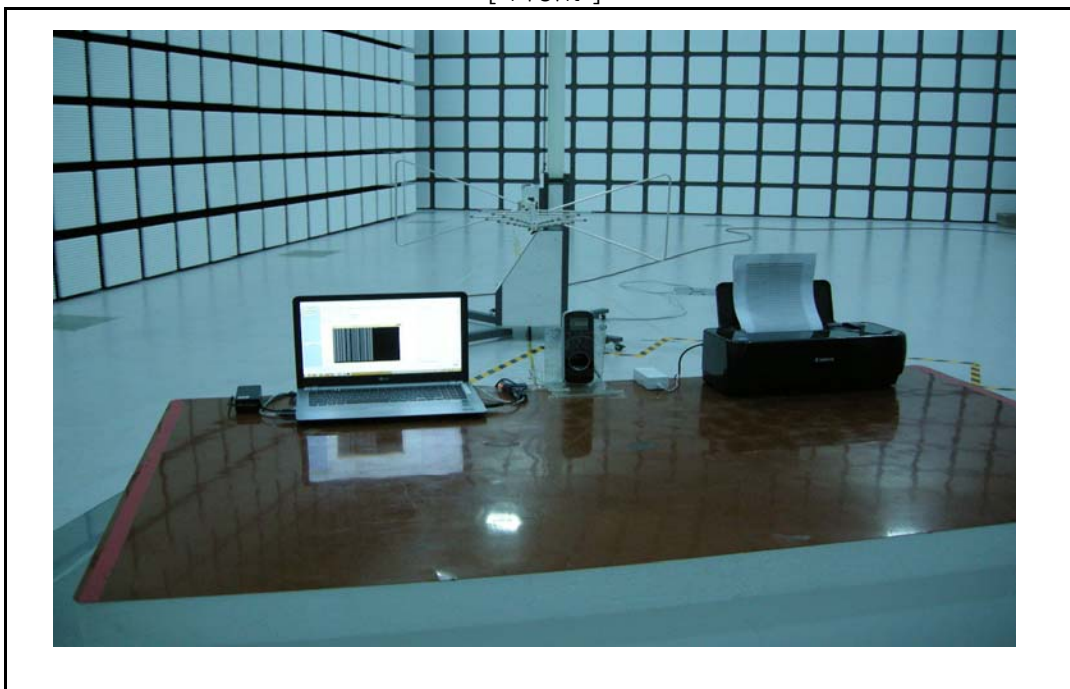
Test Date : 9-Mar-16

| Frequency<br>(MHz) | Correction Factor                                                                                            |               | Line<br>(H/N) | Quasi-peak Value      |                         |                        | Cispr Average Value   |                         |                |
|--------------------|--------------------------------------------------------------------------------------------------------------|---------------|---------------|-----------------------|-------------------------|------------------------|-----------------------|-------------------------|----------------|
|                    | Lisn<br>(dB)                                                                                                 | Cable<br>(dB) |               | Limit<br>(dB $\mu$ V) | Reading<br>(dB $\mu$ V) | Result<br>(dB $\mu$ V) | Limit<br>(dB $\mu$ V) | Reading<br>(dB $\mu$ V) | Result<br>(dB) |
| 0.15               | 0.12                                                                                                         | 0.12          | H             | 66.00                 | 34.27                   | 34.51                  | 56.00                 |                         |                |
| 0.17               | 0.13                                                                                                         | 0.13          | N             | 64.77                 | 37.92                   | 38.18                  | 54.77                 |                         |                |
| 0.20               | 0.13                                                                                                         | 0.14          | N             | 63.82                 | 37.93                   | 38.20                  | 53.82                 |                         |                |
| 0.22               | 0.12                                                                                                         | 0.14          | H             | 62.86                 | 35.25                   | 35.51                  | 52.86                 |                         |                |
| 0.31               | 0.13                                                                                                         | 0.15          | N             | 59.92                 | 33.08                   | 33.36                  | 49.92                 |                         |                |
| 0.44               | 0.14                                                                                                         | 0.16          | N             | 57.04                 | 40.43                   | 40.73                  | 47.04                 |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
|                    |                                                                                                              |               |               |                       |                         |                        |                       |                         |                |
| Remark             | H : Hot Line, N : Neutral Line<br>*Correction Factor = Lisn + Cable<br>*Result = Correction Factor + Reading |               |               |                       |                         |                        |                       |                         |                |

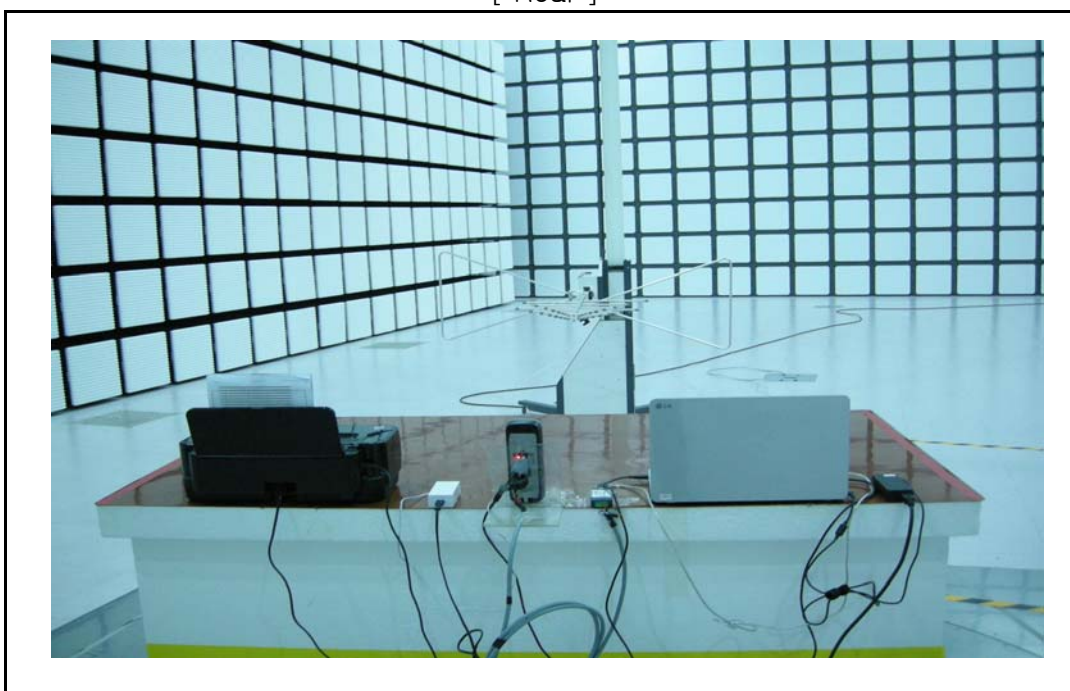
## 7. Photographs of test setup

### 7.1 Setup for Radiated Test : (30 ~ 1 000) MHz

[ Front ]

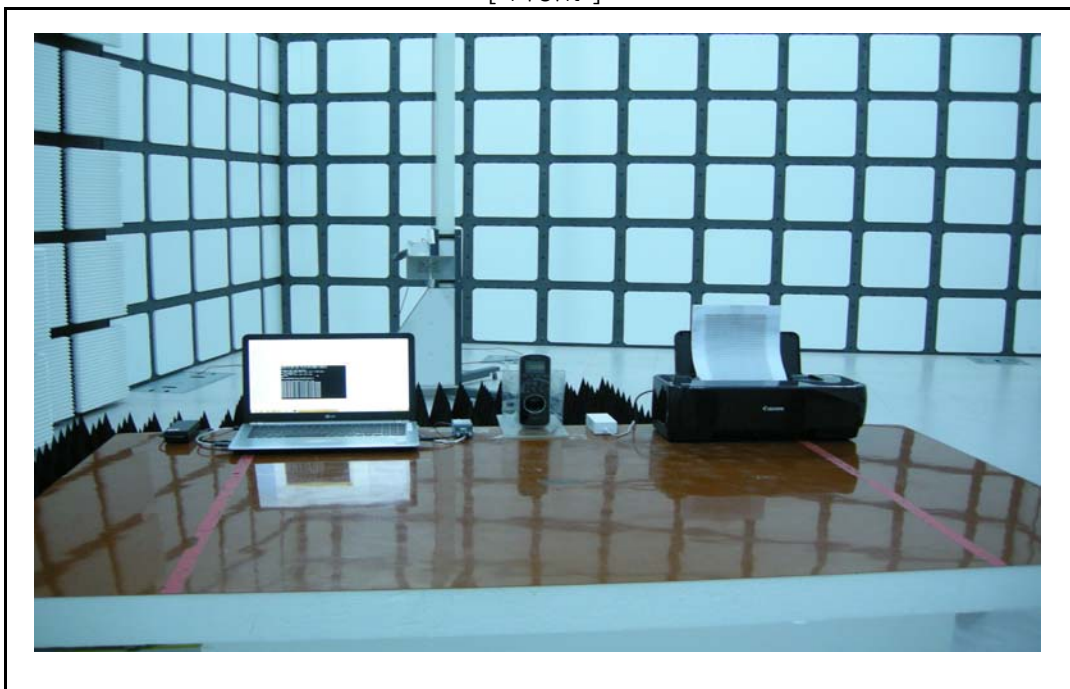


[ Rear ]

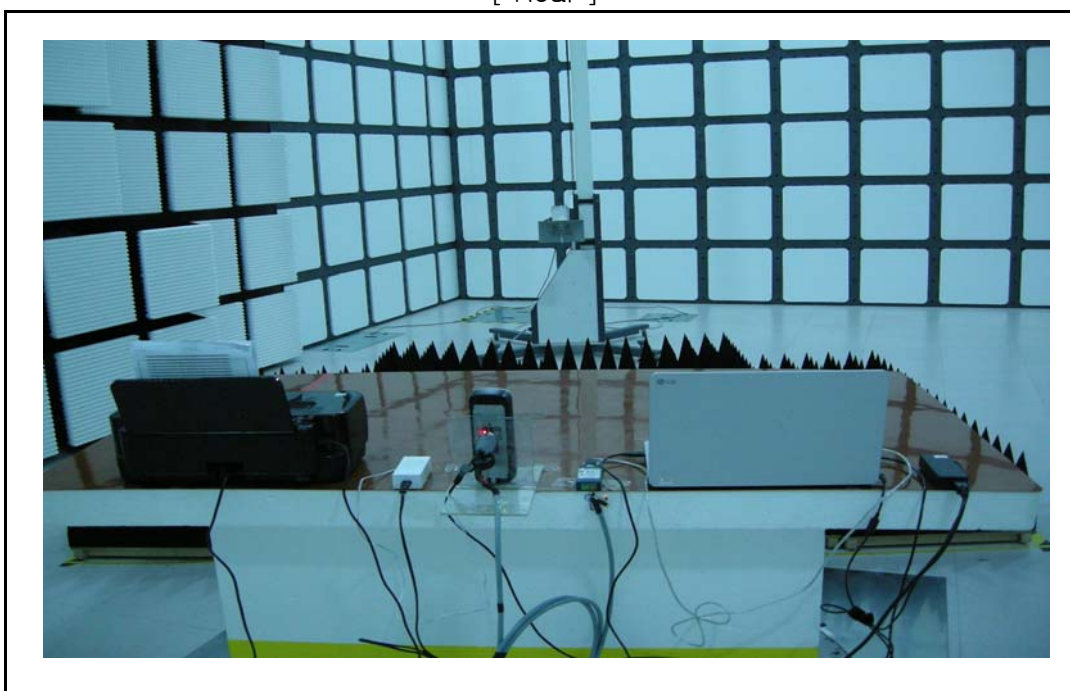


## 7.2 Setup for Radiated Test : above 1 GHz

[ Front ]

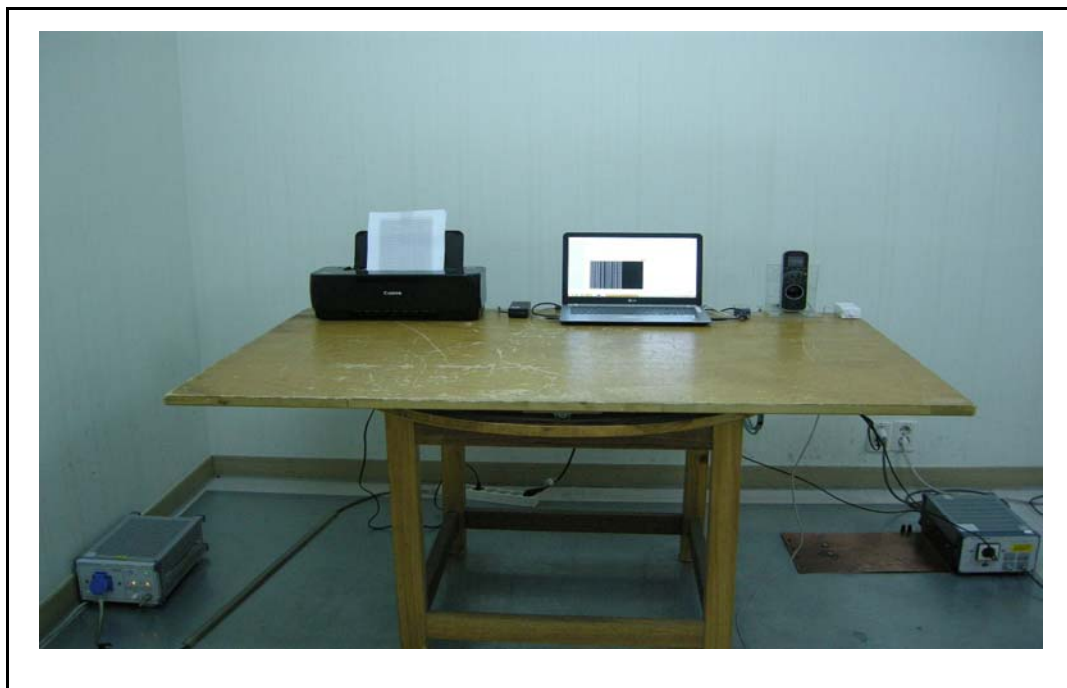


[ Rear ]



### 7.3 Setup for Conducted Test : (0.15 ~ 30) MHz

[ Front ]



[ Rear ]



## 8. Photographs of EUT

[ Front ]

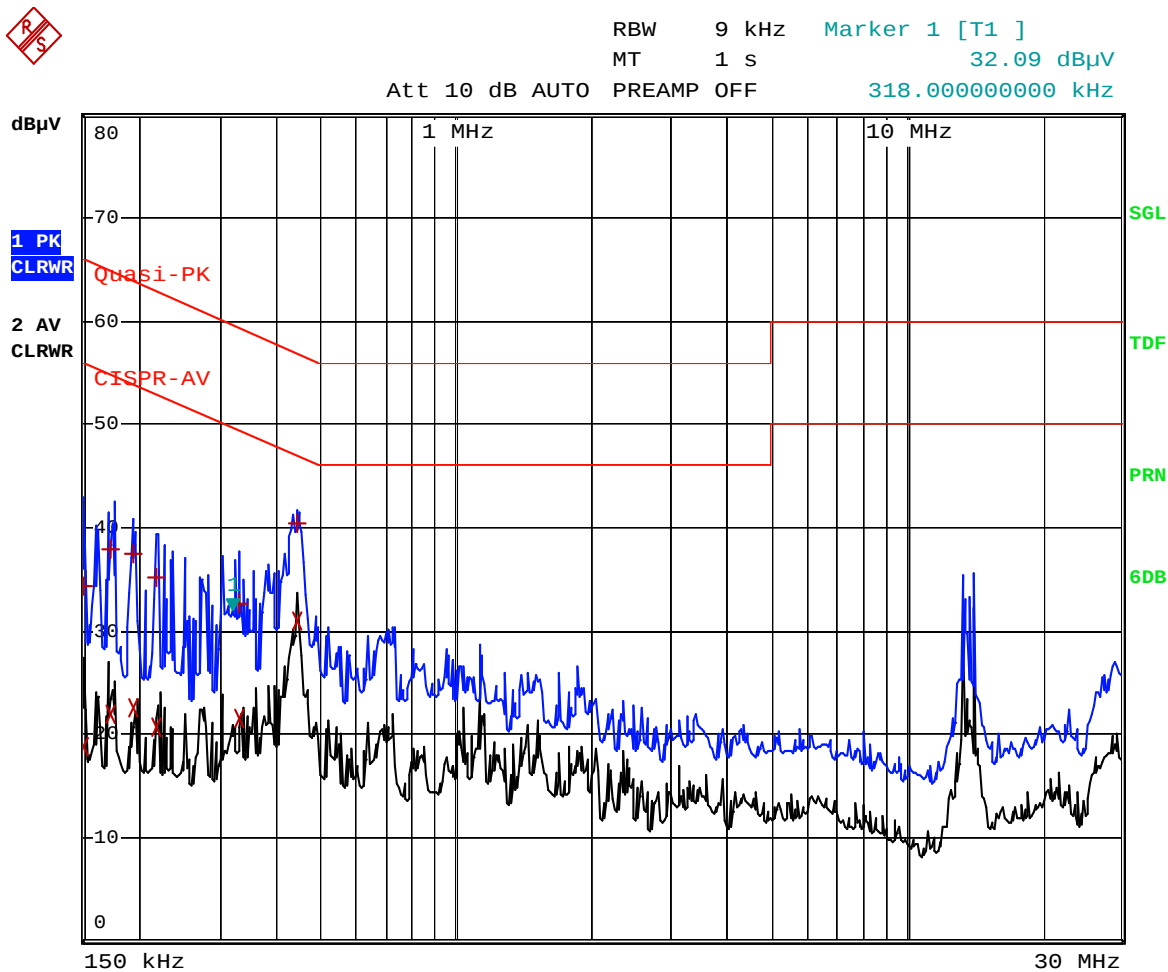


[ Rear ]



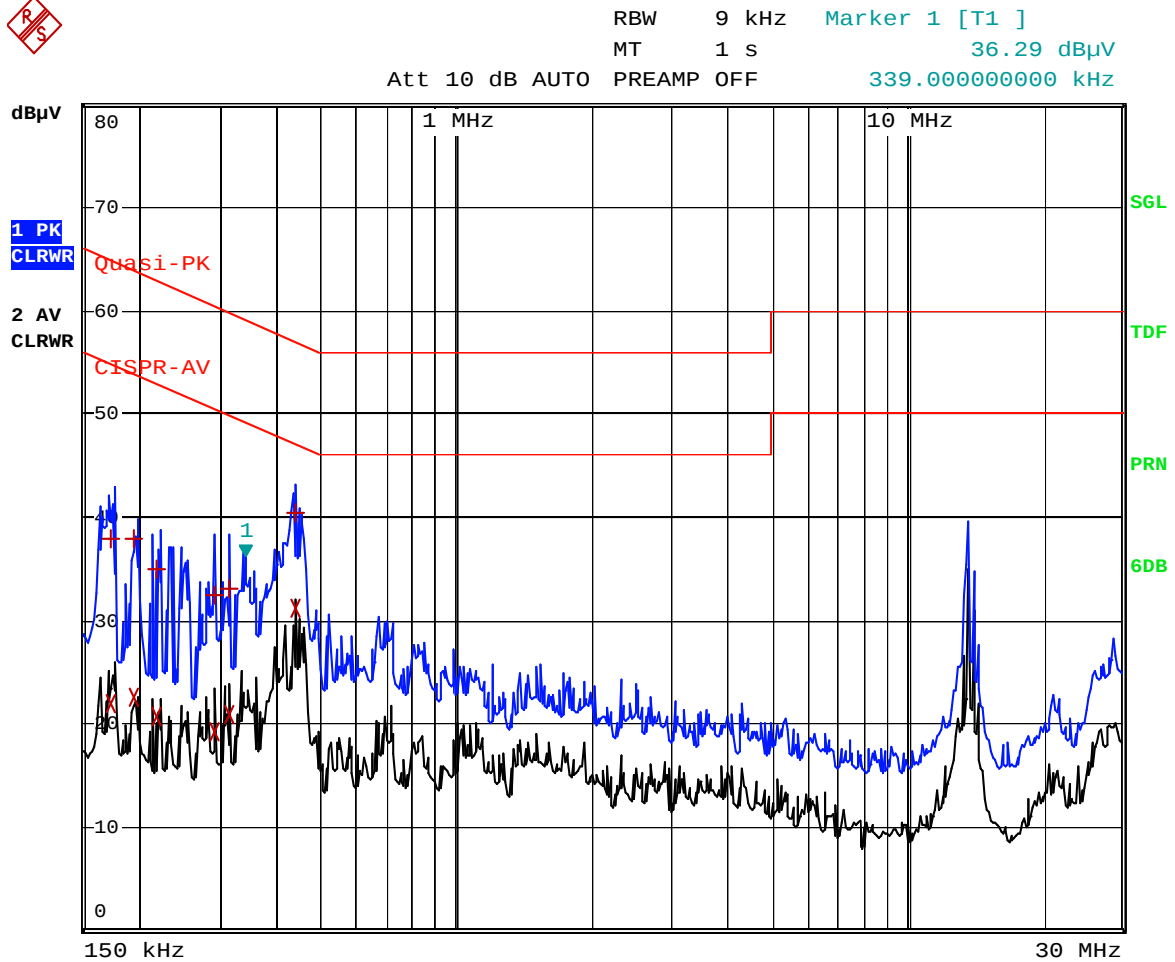
# Appendix 1. Special diagram

\*HOT



Comment: 16-02061\_HOT  
Date: 9.MAR.2016 15:21:01

\*NEUTRAL



Comment: 16-02061\_NEUTRAL

Date: 9.MAR.2016 15:16:50