# Test Report

| | |
|---|---|
| **Applicant:** | Darmuoba, S.A. de C.V |
| **Address of Applicant:** | Mar Negro 1, Col. Tacuba, CDMX. C.P 11410 Miguel Hidalgo, Distrito Federal, Mexico |
| **Manufacturer/Factory:** | Z-TECH COMMUNICATION(SZ)CO;LTD |
| **Address of Manufacturer/Factory:** | 7L BLK D BAO'AN ZHIGU YIN'TIAN ROAD NO.4 XI'XIANG, BAO'AN DISTRICT SZ CHINA |

**Equipment Under Test (EUT)**

| | |
|---|---|
| Product Name: | MOBIE PHONES |
| Model No.: | SD70 |
| Trade Mark: | UNEONE |
| **FCC ID:** | 2AIFYSD70 |
| **Applicable standards:** | FCC CFR Title 47 Part 15 Subpart B |
| **Date of sample receipt:** | May 20, 2019 |
| **Date of Test:** | May 21-June 28, 2019 |
| **Date of report issued:** | June 28, 2019 |
| **Test Result :** | PASS * |

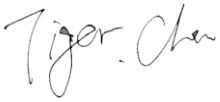
* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

**Robinson Lo**
**Laboratory Manager**

## 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *June 28, 2019* | *Original* |
| | | |
| | | |
| | | |
| | | |

***Prepared By:***  ***Date:*** *June 28, 2019*

***Project Engineer***

***Check By:***  ***Date:*** *June 28, 2019*

***Reviewer***

# 3 Contents

# 4 Test Summary

| Test Item | Test Requirement | Test Method | Class / Severity | Result |
|---|---|---|---|---|
| Conducted Emission | FCC Part15.107 | ANSI C63.4 | Class B | PASS |
| Radiated Emissions # | FCC Part15.109 | ANSI C63.4 | Class B | PASS |

*Remarks:*

*1. Pass: The EUT complies with the essential requirements in the standard.*

*2. # Refer to FCC Part 15.33 (b)(1) conditional testing procedure :*

| *The highest frequency generated or used in the EUT* | *Test frequency range of Radiated emission* |
|---|---|
| *<108MHz* | *30MHz ~ 1GHz* |
| *108MHz ~ 500MHz* | *30MHz ~ 2GHz* |
| *500MHz ~ 1GHz* | *30MHz ~ 5GHz* |
| *>1GHz* | *30MHz ~ 5th harmonic of the highest frequency or 40 GHz, whichever is lower.* |

*Note: the EUT Internal clock frequency above 108MHz.*

**Measurement Uncertainty**

| Test Item | Frequency Range | Measurement Uncertainty | Notes |
|---|---|---|---|
| Radiated Emission | 30MHz ~ 200MHz | ± 4.34dB | (1) |
| Radiated Emission | 200MHz~1000 MHz | ±4.24dB | (1) |
| Radiated Emission | 1GHz ~ 6GHz | ± 4.68dB | (1) |
| AC Power Line Conducted Emission | 0.15MHz ~ 30MHz | ± 3.45dB | (1) |
| Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%. | | | |

# 5 General Information

## 5.1 General Description of EUT

| | |
|---|---|
| Product Name: | MOBIE PHONES |
| Model No.: | SD70 |
| Serial No.: | 352968090000839 |
| Hardware Version: | SD70_V1.1 |
| Software Version: | SD70_002R |
| Test sample(s) ID: | GTS201905000145-2 |
| Sample(s) Status: | Normal sample |
| Power Supply: | Adaptor<br>Model:SD70-A<br>Input: AC 100-240V, 50-60Hz, 200mA<br>Output: DC 5V, 1A<br>Or<br>Battery: DC 3.8V, 2300mAh, 8.74W |

## 5.2 Test mode and Test voltage

| | |
|---|---|
| **Test mode:** | |
| PC mode | Keep the EUT in exchanging data mode. |
| REC mode | Keep the EUT in REC mode. |
| Audio play mode | Keep the EUT in Audio play mode. |
| Video play mode | Keep the EUT in Video play mode. |
| **Test voltage** | |
| AC 120V and DC 3.8V | |

## 5.3 Description of Support Units

| Manufacturer | Description | Model | Serial Number |
|---|---|---|---|
| Lenovo | Notebook PC | E40-80 | N/A |
| Canon | Printer | IP1600 | N/A |
| DELL | KEYBOARD | SK-8115 | GTS237-2 |
| DELL | MOUSE | MOC5UO | GTS237-3 |
| SanDisk | TF card | 16GB | N/A |

## 5.4 Deviation from Standards

None.

## 5.5 Abnormalities from Standard Conditions

None.

## 5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383.

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

## 5.7 Test Location

The test was performed at:

Global United Technology Services Co., Ltd.
Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

# 6 Test Instruments list

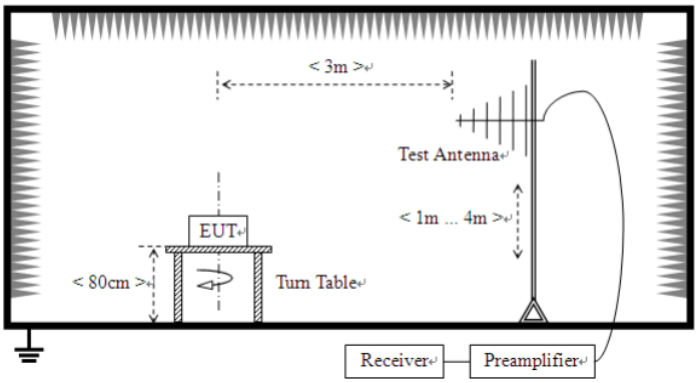
| Radiated Emission: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | 3m Semi- Anechoic Chamber | ZhongYu Electron | 9.2(L)*6.2(W)* 6.4(H) | GTS250 | July. 03 2015 | July. 02 2020 |
| 2 | Control Room | ZhongYu Electron | 6.2(L)*2.5(W)* 2.4(H) | GTS251 | N/A | N/A |
| 3 | EMI Test Receiver | Rohde & Schwarz | ESU26 | GTS203 | June. 26 2019 | June. 25 2020 |
| 4 | BiConiLog Antenna | SCHWARZBECK MESS-ELEKTRONIK | VULB9163 | GTS214 | June. 26 2019 | June. 25 2020 |
| 5 | Double -ridged waveguide horn | SCHWARZBECK MESS-ELEKTRONIK | BBHA 9120 D | GTS208 | June. 26 2019 | June. 25 2020 |
| 6 | Horn Antenna | ETS-LINDGREN | 3160 | GTS217 | June. 26 2019 | June. 25 2020 |
| 7 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 8 | Coaxial Cable | GTS | N/A | GTS213 | June. 26 2019 | June. 25 2020 |
| 9 | Coaxial Cable | GTS | N/A | GTS211 | June. 26 2019 | June. 25 2020 |
| 10 | Coaxial cable | GTS | N/A | GTS210 | June. 26 2019 | June. 25 2020 |
| 11 | Coaxial Cable | GTS | N/A | GTS212 | June. 26 2019 | June. 25 2020 |
| 12 | Amplifier(100kHz-3GHz) | HP | 8347A | GTS204 | June. 26 2019 | June. 25 2020 |
| 13 | Amplifier(2GHz-20GHz) | HP | 84722A | GTS206 | June. 26 2019 | June. 25 2020 |
| 14 | Amplifier (18-26GHz) | Rohde & Schwarz | AFS33-18002 650-30-8P-44 | GTS218 | June. 26 2019 | June. 25 2020 |
| 15 | Band filter | Amindeon | 82346 | GTS219 | June. 26 2019 | June. 25 2020 |
| 16 | Power Meter | Anritsu | ML2495A | GTS540 | June. 26 2019 | June. 25 2020 |
| 17 | Power Sensor | Anritsu | MA2411B | GTS541 | June. 26 2019 | June. 25 2020 |
| 18 | Wideband Radio Communication Tester | Rohde & Schwarz | CMW500 | GTS575 | June. 26 2019 | June. 25 2020 |
| 19 | Splitter | Agilent | 11636B | GTS237 | June. 26 2019 | June. 25 2020 |
| 20 | Loop Antenna | ZHINAN | ZN30900A | GTS534 | June. 26 2019 | June. 25 2020 |
| 21 | Breitband hornantenne | SCHWARZBECK | BBHA 9170 | GTS579 | Oct. 20 2018 | Oct. 19 2019 |
| 22 | Amplifier | TDK | PA-02-02 | GTS574 | Oct. 20 2018 | Oct. 19 2019 |
| 23 | Amplifier | TDK | PA-02-03 | GTS576 | Oct. 20 2018 | Oct. 19 2019 |
| 24 | PSA Series Spectrum Analyzer | Rohde & Schwarz | FSP | GTS578 | June. 26 2019 | June. 25 2020 |

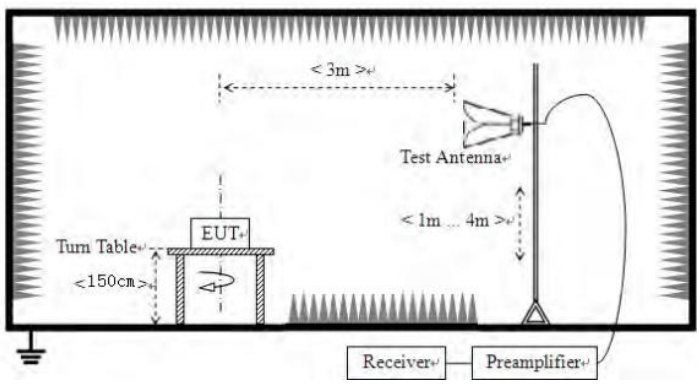
| Conducted Emission | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Shielding Room | ZhongYu Electron | 7.3(L)x3.1(W)x2.9(H) | GTS252 | May.15 2019 | May.14 2022 |
| 2 | EMI Test Receiver | R&S | ESCI 7 | GTS552 | June. 26 2019 | June. 25 2020 |
| 3 | Coaxial Switch | ANRITSU CORP | MP59B | GTS225 | June. 26 2019 | June. 25 2020 |
| 4 | Artificial Mains Network | SCHWARZBECK MESS | NSLK8127 | GTS226 | June. 26 2019 | June. 25 2020 |
| 5 | Coaxial Cable | GTS | N/A | GTS227 | N/A | N/A |
| 6 | EMI Test Software | AUDIX | E3 | N/A | N/A | N/A |
| 7 | Thermo meter | KTJ | TA328 | GTS233 | June. 26 2019 | June. 25 2020 |
| 8 | Absorbing clamp | Elektronik-Feinmechanik | MDS21 | GTS229 | June. 26 2019 | June. 25 2020 |
| 9 | ISN | SCHWARZBECK | NTFM 8158 | GTD565 | June. 26 2019 | June. 25 2020 |

| General used equipment: | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal.Date (mm-dd-yy)** | **Cal.Due date (mm-dd-yy)** |
| 1 | Humidity/ Temperature Indicator | KTJ | TA328 | GTS243 | June. 26 2019 | June. 25 2020 |
| 2 | Barometer | ChangChun | DYM3 | GTS255 | June. 26 2019 | June. 25 2020 |

# 7 Test Results and Measurement Data

## 7.1 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td colspan="5">ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">30MHz to 6000MHz</td></tr>
<tr><td>Test site:</td><td colspan="5">Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td colspan="5"><table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table></td></tr>
<tr><td>Limit:</td><td colspan="5"><table>
<tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr>
<tr><td>74.00</td><td>Peak Value</td></tr>
</table></td></tr>
<tr><td>Test setup:</td><td colspan="5">For radiated emissions from 30MHz to1GHz<br> 

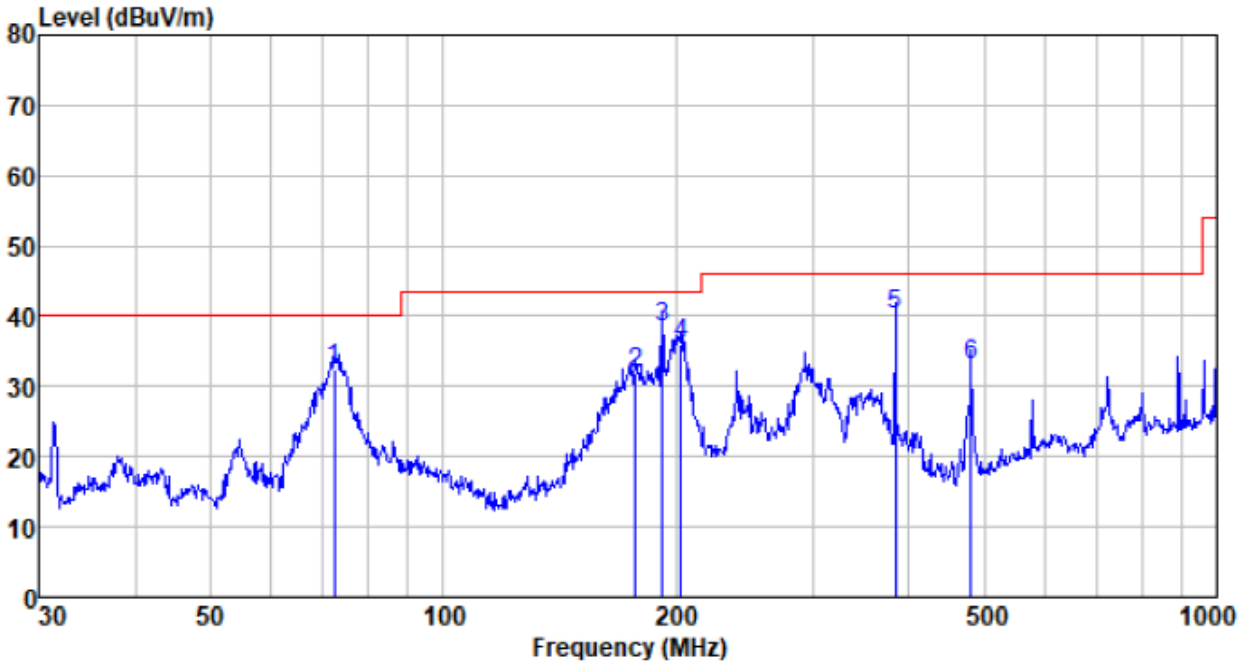
<br>For radiated emissions above 1GHz<br> 
</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1 012mbar</td></tr>
</table>

| | |
|---|---|
| Test Instruments: | Refer to section 6 for details |
| Test mode: | Refer to section 5.2 for details, only show the worst case. |
| Test results: | Pass |

**Measurement Data**

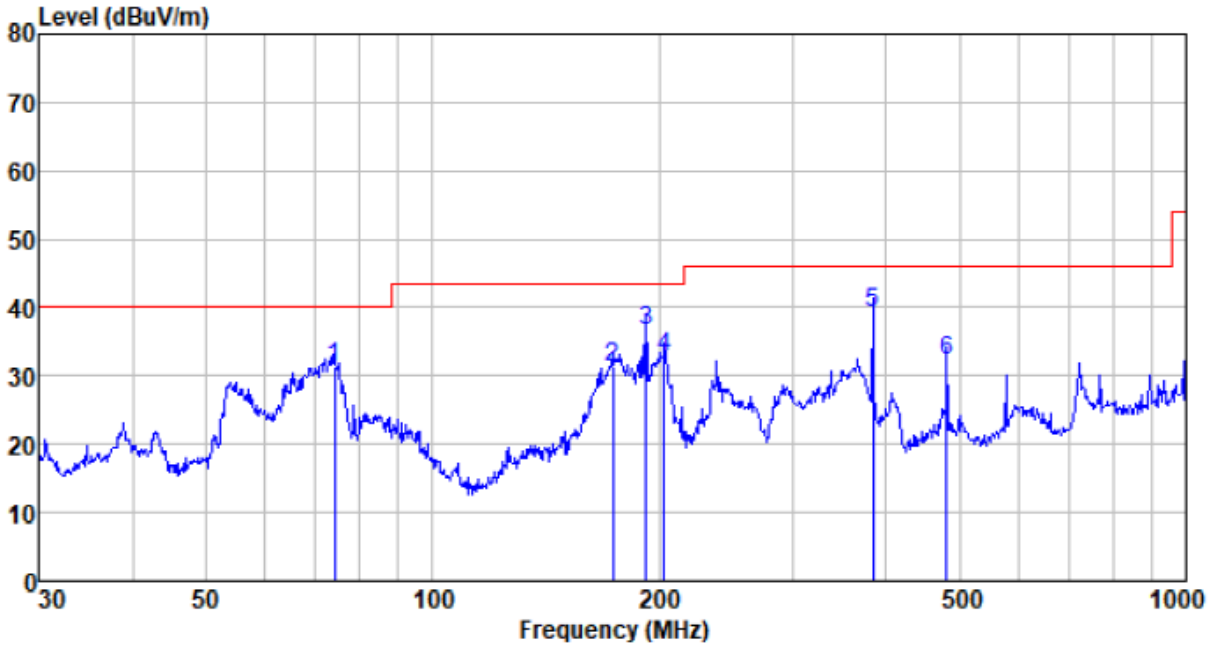
**Below 1GHz**

| | | | |
|---|---|---|---|
| Test mode: | PC mode | Antenna Polarity: | Horizontal |




| Freq | Reading level | Antenna factor | Cable loss | Preamp factor | level | Limit level | Over limit | Remark |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB/m | dB | dB | dBuV | dBuV/m | dB | |
| 72.338 | 60.60 | 7.48 | 0.96 | 36.47 | 32.57 | 40.00 | -7.43 | QP |
| 177.509 | 58.46 | 8.80 | 1.73 | 37.23 | 31.76 | 43.50 | -11.74 | QP |
| 191.745 | 63.81 | 9.99 | 1.80 | 37.29 | 38.31 | 43.50 | -5.19 | QP |
| 202.810 | 60.83 | 10.51 | 1.86 | 37.33 | 35.87 | 43.50 | -7.63 | QP |
| 383.932 | 59.68 | 15.08 | 2.78 | 37.51 | 40.03 | 46.00 | -5.97 | QP |
| 480.528 | 50.48 | 16.93 | 3.22 | 37.51 | 33.12 | 46.00 | -12.88 | QP |

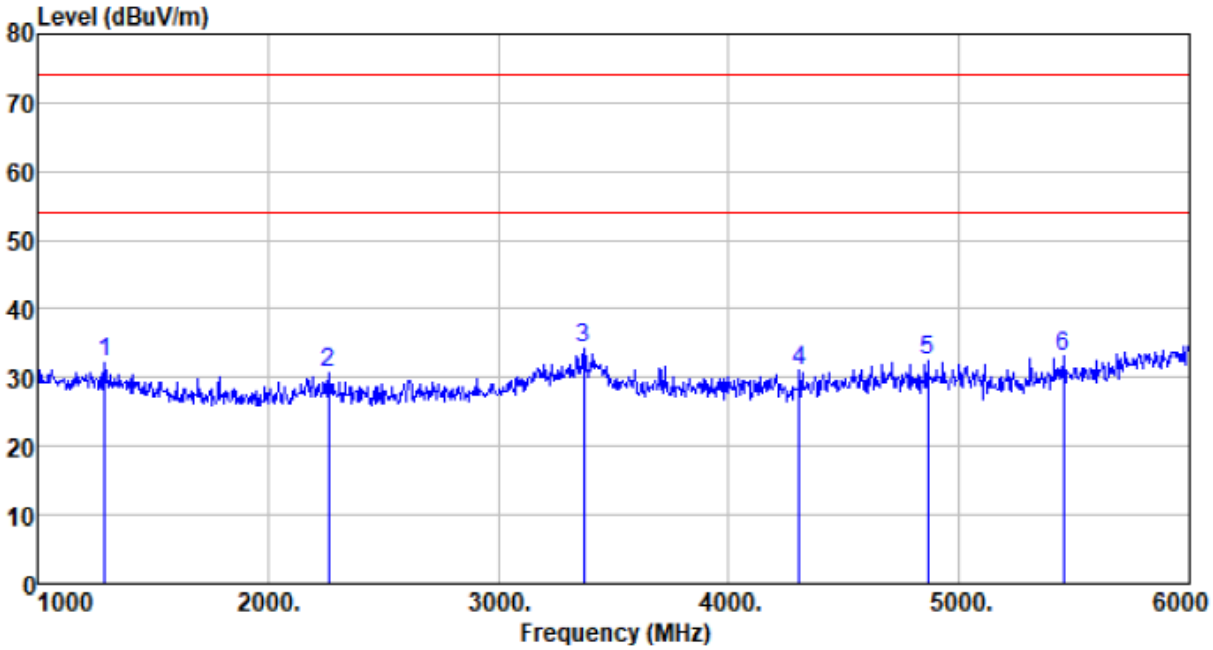
| Test mode: | PC mode | Antenna Polarity: | Vertical |
|---|---|---|---|




| Freq | Reading level | Antenna factor | Cable loss | Preamp factor | level | Limit level | Over limit | Remark |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB/m | dB | dB | dBuV | dBuV/m | dB | |
| 74.135 | 59.39 | 7.46 | 0.98 | 36.49 | 31.34 | 40.00 | -8.66 | QP |
| 173.205 | 58.16 | 8.63 | 1.70 | 37.20 | 31.29 | 43.50 | -12.21 | QP |
| 191.745 | 62.12 | 9.99 | 1.80 | 37.29 | 36.62 | 43.50 | -6.88 | QP |
| 202.810 | 57.81 | 10.51 | 1.86 | 37.33 | 32.85 | 43.50 | -10.65 | QP |
| 383.932 | 58.95 | 15.08 | 2.78 | 37.51 | 39.30 | 46.00 | -6.70 | QP |
| 480.528 | 49.68 | 16.93 | 3.22 | 37.51 | 32.32 | 46.00 | -13.68 | QP |

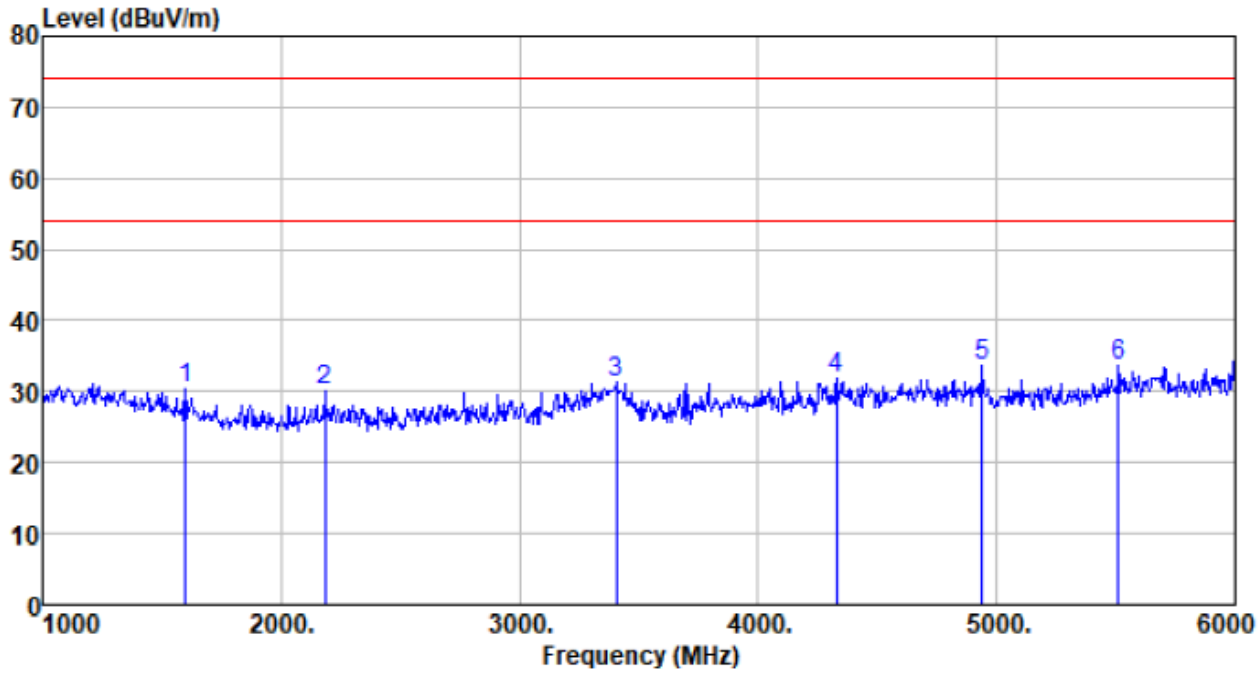
**Above 1GHz**

| Test mode: | PC mode | Antenna Polarity: | Horizontal |
|---|---|---|---|




| Freq | Reading level | Antenna factor | Cable loss | Preamp factor | level | Limit level | Over limit | Remark |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB/m | dB | dB | dBuV | dBuV/m | dB | |
| 1290.000 | 38.57 | 25.00 | 4.65 | 35.99 | 32.23 | 74.00 | -41.77 | Peak |
| 2265.000 | 34.10 | 27.09 | 6.12 | 36.75 | 30.56 | 74.00 | -43.44 | Peak |
| 3370.000 | 35.57 | 28.38 | 7.78 | 37.34 | 34.39 | 74.00 | -39.61 | Peak |
| 4305.000 | 29.21 | 30.33 | 8.97 | 37.53 | 30.98 | 74.00 | -43.02 | Peak |
| 4865.000 | 29.26 | 31.46 | 9.41 | 37.75 | 32.38 | 74.00 | -41.62 | Peak |
| 5455.000 | 28.85 | 31.61 | 9.86 | 37.13 | 33.19 | 74.00 | -40.81 | Peak |

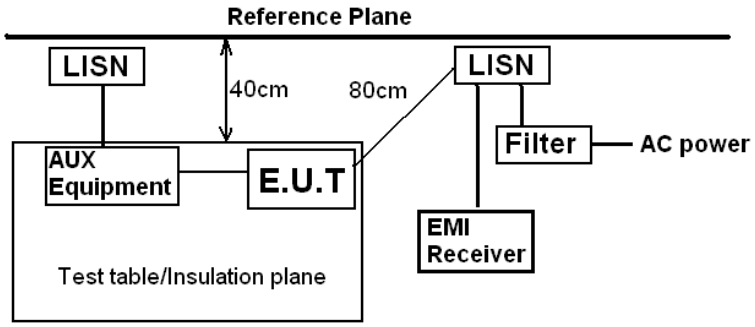
| Test mode: | PC mode | Antenna Polarity: | Vertical |
|---|---|---|---|




| Freq | Reading level | Antenna factor | Cable loss | Preamp factor | level | Limit level | Over limit | Remark |
|---|---|---|---|---|---|---|---|---|
| MHz | dBuV | dB/m | dB | dB | dBuV | dBuV/m | dB | |
| 1600.000 | 35.87 | 25.68 | 5.11 | 36.24 | 30.42 | 74.00 | -43.58 | Peak |
| 2185.000 | 33.92 | 26.88 | 6.00 | 36.67 | 30.13 | 74.00 | -43.87 | Peak |
| 3405.000 | 32.40 | 28.36 | 7.84 | 37.34 | 31.26 | 74.00 | -42.74 | Peak |
| 4330.000 | 30.11 | 30.39 | 8.99 | 37.54 | 31.95 | 74.00 | -42.05 | Peak |
| 4940.000 | 30.30 | 31.59 | 9.46 | 37.78 | 33.57 | 74.00 | -40.43 | Peak |
| 5510.000 | 29.10 | 31.62 | 9.90 | 37.07 | 33.55 | 74.00 | -40.45 | Peak |

*Note:*
*The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:*
*Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*

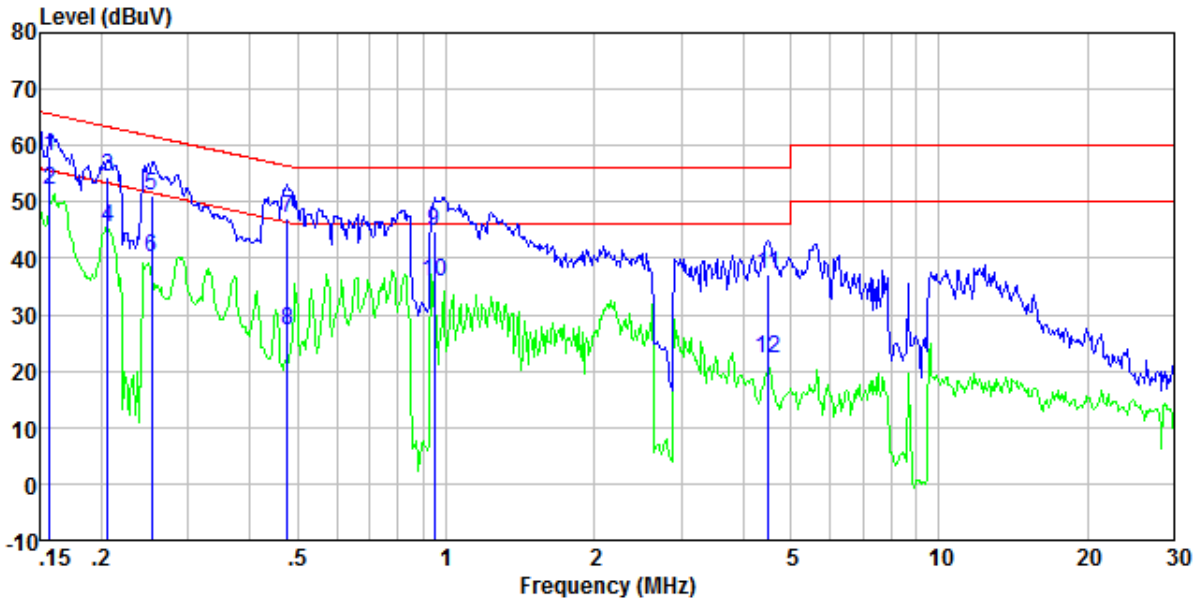
## 7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.107</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td>150kHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9kHz, VBW=30kHz</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBµV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>0.5-30</td><td>60</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 

Remark:<br>E.U.T: Equipment Under Test<br>LISN: Line Impedence Stabilization Network<br>Test table height=0.8m</td></tr>
<tr><td>Test environment:</td><td>Temp.: 25 °C | Humid.: 52% | Press.: 1 012mbar</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details, only show the worst case.</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

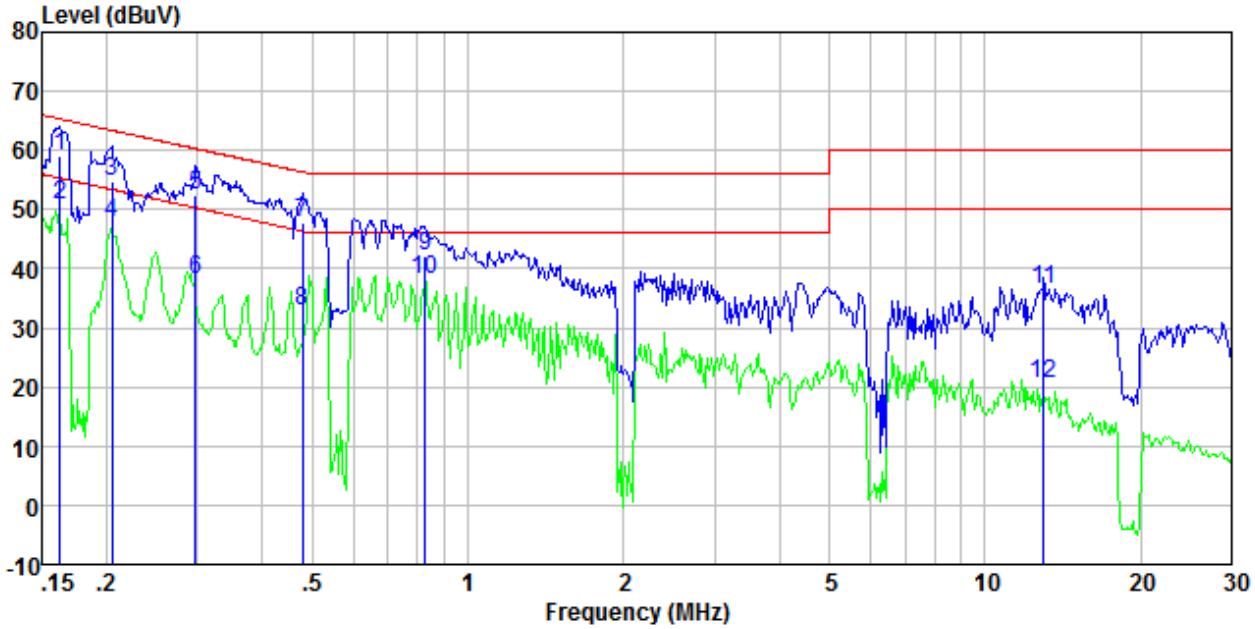
**Measurement Data**

| Test mode: | REC mode | Phase Polarity: | Line |
|---|---|---|---|




| Freq MHz | Reading level dBuV | LISN/ISN factor dB/m | Cable loss dB | Level dBuV | Limit level dBuV | Over limit dB | Remark |
|---|---|---|---|---|---|---|---|
| 0.16 | 57.56 | 0.40 | 0.08 | 58.04 | 65.60 | -7.56 | QP |
| 0.16 | 51.56 | 0.40 | 0.08 | 52.04 | 55.60 | -3.56 | Average |
| 0.21 | 54.00 | 0.40 | 0.11 | 54.51 | 63.36 | -8.85 | QP |
| 0.21 | 45.00 | 0.40 | 0.11 | 45.51 | 53.36 | -7.85 | Average |
| 0.25 | 50.54 | 0.40 | 0.10 | 51.04 | 61.64 | -10.60 | QP |
| 0.25 | 39.54 | 0.40 | 0.10 | 40.04 | 51.64 | -11.60 | Average |
| 0.48 | 46.81 | 0.32 | 0.11 | 47.24 | 56.41 | -9.17 | QP |
| 0.48 | 26.81 | 0.32 | 0.11 | 27.24 | 46.41 | -19.17 | Average |
| 0.95 | 44.50 | 0.21 | 0.15 | 44.86 | 56.00 | -11.14 | QP |
| 0.95 | 35.50 | 0.21 | 0.15 | 35.86 | 46.00 | -10.14 | Average |
| 4.50 | 36.71 | 0.20 | 0.17 | 37.08 | 56.00 | -18.92 | QP |
| 4.50 | 21.71 | 0.20 | 0.17 | 22.08 | 46.00 | -23.92 | Average |

| Test mode: | REC mode | Phase Polarity: | Neutral |
|---|---|---|---|




| Freq MHz | Reading level dBuV | LISN/ISN factor dB/m | Cable loss dB | Level dBuV | Limit level dBuV | Over limit dB | Remark |
|---|---|---|---|---|---|---|---|
| 0.16 | 58.45 | 0.40 | 0.08 | 58.93 | 65.34 | -6.41 | QP |
| 0.16 | 50.45 | 0.40 | 0.08 | 50.93 | 55.34 | -4.41 | Average |
| 0.21 | 54.14 | 0.40 | 0.11 | 54.65 | 63.40 | -8.75 | QP |
| 0.21 | 47.14 | 0.40 | 0.11 | 47.65 | 53.40 | -5.75 | Average |
| 0.30 | 51.80 | 0.40 | 0.10 | 52.30 | 60.32 | -8.02 | QP |
| 0.30 | 37.80 | 0.40 | 0.10 | 38.30 | 50.32 | -12.02 | Average |
| 0.48 | 47.32 | 0.32 | 0.11 | 47.75 | 56.36 | -8.61 | QP |
| 0.48 | 32.32 | 0.32 | 0.11 | 32.75 | 46.36 | -13.61 | Average |
| 0.83 | 41.72 | 0.23 | 0.14 | 42.09 | 56.00 | -13.91 | QP |
| 0.83 | 37.72 | 0.23 | 0.14 | 38.09 | 46.00 | -7.91 | Average |
| 12.99 | 36.13 | 0.20 | 0.21 | 36.54 | 60.00 | -23.46 | QP |
| 12.99 | 20.13 | 0.20 | 0.21 | 20.54 | 50.00 | -29.46 | Average |

*Notes:*

*1. The following Quasi-Peak and Average measurements were performed on the EUT:*

*2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.*

# 8 Test Setup Photo

Reference to the **appendix I** for details.

# 9 EUT Constructional Details

Reference to the **appendix II** for details.

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