# *TEST REPORT*

| | |
|---|---|
| **Application No.:** | KSCR2403000374AT |
| **FCC ID:** | 2BFRXELT622PI |
| **Applicant:** | EasyCell Co., Ltd |
| **Address of Applicant:** | #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea |
| **Manufacturer:** | EasyCell Co., Ltd |
| **Address of Manufacturer:** | #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea |
| **Factory:** | EasyCell Co., Ltd |
| **Address of Factory:** | #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | CBRS CAT-A Indoor CBSD |
| **Model No.:** | ELT-622PI |
| **Standard(s) :** | 47 CFR Part 15, Subpart B |
| **Date of Receipt:** | 2024-03-08 |
| **Date of Test:** | 2024-04-03 to 2024-04-07 |
| **Date of Issue:** | 2024-04-08 |
| **Test Result:** | **Pass*** |

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

| *Revision Record* | | | |
|---|---|---|---|
| ***Version*** | **Description** | ***Date*** | ***Remark*** |
| 00 | Original | 2024-04-08 | / |
| | | | |
| | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Tested By** | | Damon zhou<br>**Damon_Zhou/Project Engineer** | | |
| **Approved By** | | Terry Hou<br>**Terry Hou /Reviewer** | | |

# 2 Test Summary

| Emission Part | | | | |
|---|---|---|---|---|
| **Item** | **Standard** | **Method** | **Requirement** | **Result** |
| Conducted Emissions at Mains Terminals (150kHz-30MHz) | 47 CFR Part 15, Subpart B | ANSI C63.4:2014 | 15.107(b);Class A | Pass |
| Radiated Emissions (30MHz-1GHz) | | ANSI C63.4:2014 | 15.109(b);Class A | Pass |
| Radiated Emissions (Above 1GHz) | | ANSI C63.4:2014 | 15.109(g);Class A | Pass |

# 3 Contents

# 4 General Information

## 4.1 Details of E.U.T.

| | |
|---|---|
| Power supply: | AC 120V/60Hz by adapter<br>Adapter：<br>Model No：SW42-12003500-W<br>Input：AC 100~240V 50/60Hz<br>Output：DC 12V/3.5A |

## 4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|---|---|---|---|
| PC | LENOVO | M920t | PC1JMG92 |

## 4.3 Measurement Uncertainty & Decision Rule

**Measurement Uncertainty:**

| No. | Item | Measurement Uncertainty ($U_{LAB}$) * | $U_{CISPR}$ |
|---|---|---|---|
| 1 | Conducted Emission at mains port using AMN | 2.4dB (9kHz to 150kHz) | 3.8dB (9kHz to 150kHz) |
| | | 2.2dB (150kHz to 30MHz) | 3.4dB (150kHz to 30MHz) |
| 2 | Conducted Emission at telecommunication port using AAN | 4.0 dB (150kHz to 30MHz) | 5.0dB (150kHz to 30MHz) |
| 3 | Radiated Power | 3.2dB | 4.5dB (30MHz to 300MHz) |
| 4 | Radiated Emission (10m) | 4.1 dB | 6.3dB (30MHz-1GHz) |
| 5 | Radiated Emission (3m) | 4.6 dB (30MHz-1GHz) | 6.3dB (30MHz-1GHz) |
| | | 5.0dB (1GHz-6GHz) | 5.2dB (1GHz-6GHz) |
| | | 5.2dB (6GHz-18GHz) | 5.5dB (6GHz-18GHz) |
| | | 5.3dB (18GHz-40GHz) | N/A |

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

**Decision Rule:**

• CISPR 16-4-2 for emission measurements is as below described.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

$U_{LAB}$ less than $U_{CISPR}$, therefore:

– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit.

– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

• For immunity testing no decision rule is applicable.

## 4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

## 4.5 Test Facility

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

**• A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

**• FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

**• ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

**• VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

## 4.6 Deviation from Standards

None

## 4.7 Abnormalities from Standard Conditions

None

# 5 Equipment List

| Conducted Emissions at Mains Terminals (150kHz-30MHz) | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| EMI TEST RECEIVER | R&S | ESCI | KS301101 | 01/15/2024 | 01/14/2025 |
| TWO-LINE V-NETWORK | R&S | ENV216 | KS301197 | 01/15/2024 | 01/14/2025 |
| V (V-LISN) | SCHWARZBECK | NNLK 8129 | KS301091 | 01/15/2024 | 01/14/2025 |
| Pulse LIMITER | R&S | ESH3-Z2 | KUS1902E001 | 01/15/2024 | 01/14/2025 |
| Software | Faratronic | EZ_EMC-v 3A1 | N/A | N/A | N/A |

| Radiated Emissions (30MHz-1GHz) | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| EMI Test Receiver | R&S | ESCI | KS301196 | 08/24/2023 | 08/23/2024 |
| Antenna | TESEQ | CBL 6112D | KUS1806E006 | 03/19/2024 | 03/18/2025 |
| Spectrum Analyzer | R&S | FSU26 | KS301206 | 03/19/2024 | 03/18/2025 |
| Signal Analyzer | R&S | FSV40 | KUS1806E003 | 08/24/2023 | 08/23/2024 |
| Software | Faratronic | EZ_EMC v 3A1 | N/A | N/A | N/A |

| Radiated Emissions (Above 1GHz) | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| Spectrum Analyzer | R&S | FSU26 | KS301206 | 03/19/2024 | 03/18/2025 |
| Preamplifier | PANSHAN TECHNOLOGY | LNA:1~18G | KSEM010-2 | 01/15/2024 | 01/14/2025 |
| Horn-antenna | SCHWARZBECK | BBHA9120D | KS301079 | 03/19/2024 | 03/18/2025 |
| Antenna | SCHAFFNER | CBL6143 | CZ301091 | 10/25/2022 | 10/24/2024 |
| Software | Faratronic | EZ_EMC-v 3A1 | N/A | N/A | N/A |

| General used equipment | | | | | |
|---|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal Date** | **Cal Due Date** |
| Digital Pressure Meter | Mengde | DYM3 | CZ750023 | 01/15/2024 | 01/14/2025 |
| Temperature & Humidity Recorder | JDRK | RS-WS-N01-6J | KSEM024-1<br>KSEM024-2<br>KSEM024-3<br>KSEM024-6<br>KSEM024-7<br>KSEM024--8<br>KSEM024--9 | 03/19/2024 | 03/18/2025 |

# 6 Emission Test Results

## 6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement: 47 CFR Part 15, Subpart B
Test Method: ANSI C63.4:2014

Limit:

| | |
|---|---|
| 0.15MHz-0.5MHz: | 79dB(μV) quasi-peak, 66dB(μV) average |
| 0.5MHz-30MHz: | 73dB(μV) quasi-peak, 60dB(μV) average |
| Detector: | Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz |

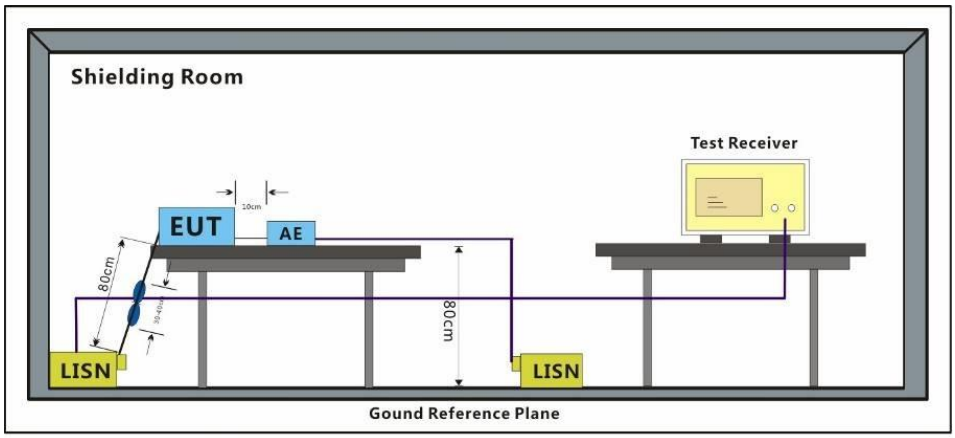
### 6.1.1 E.U.T. Operation

Operating Environment:
Temperature: 21.1 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

### 6.1.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | Power on and transmit QPSK signal and EUT link with PC by WAN port |

### 6.1.3 Test Setup Diagram

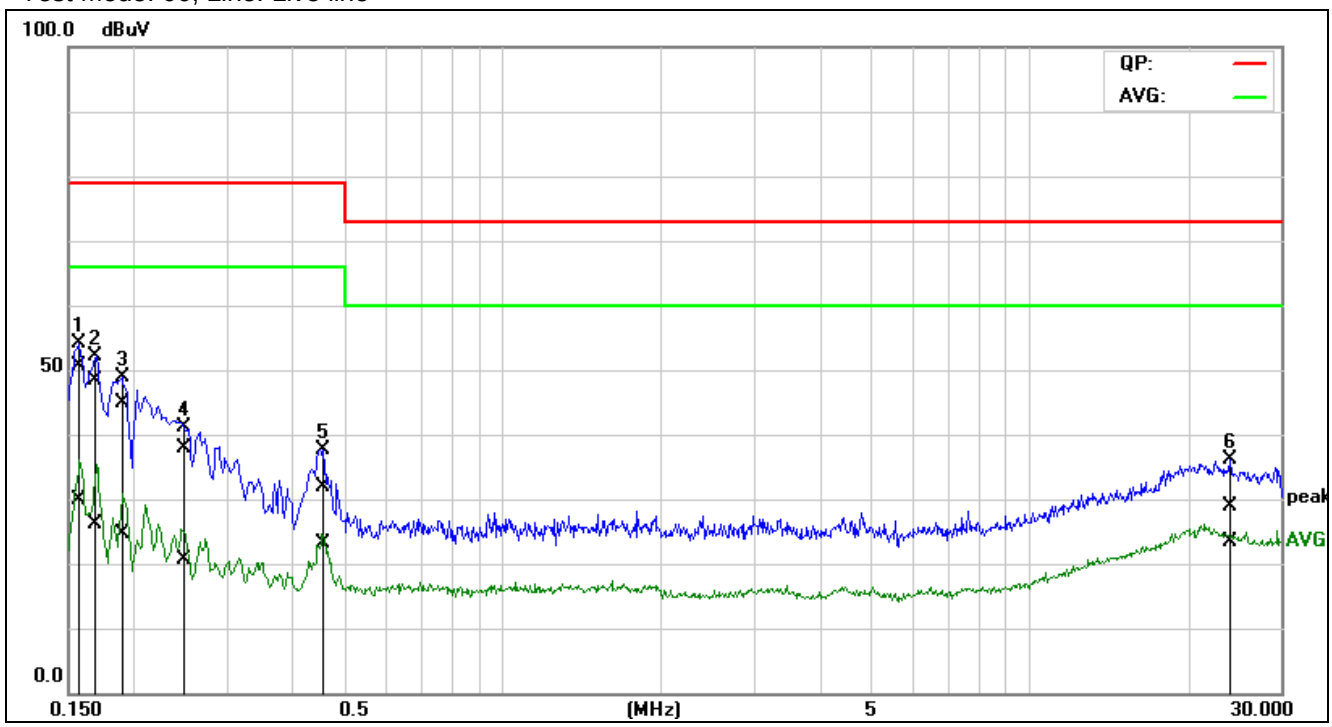



### 6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

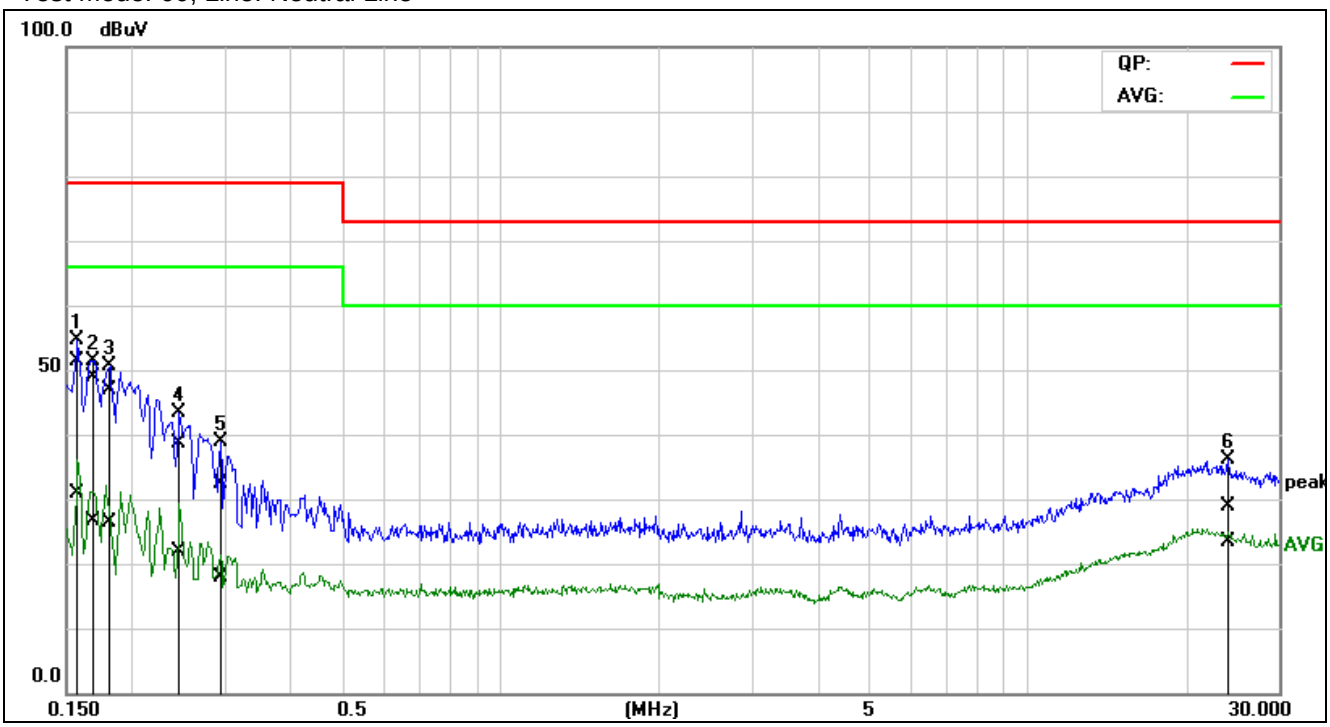
Remark: Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1* | 0.1559 | 30.48 | 9.77 | 20.18 | 50.66 | 29.95 | 79.00 | 66.00 | -28.34 | -36.05 | Pass |
| 2 | 0.1672 | 28.25 | 5.98 | 20.14 | 48.39 | 26.12 | 79.00 | 66.00 | -30.61 | -39.88 | Pass |
| 3 | 0.1863 | 24.85 | 4.46 | 20.07 | 44.92 | 24.53 | 79.00 | 66.00 | -34.08 | -41.47 | Pass |
| 4 | 0.2508 | 17.89 | 0.67 | 20.02 | 37.91 | 20.69 | 79.00 | 66.00 | -41.09 | -45.31 | Pass |
| 5 | 0.4581 | 11.79 | 3.12 | 20.05 | 31.84 | 23.17 | 79.00 | 66.00 | -47.16 | -42.83 | Pass |
| 6 | 24.0894 | 8.96 | 3.33 | 20.00 | 28.96 | 23.33 | 73.00 | 60.00 | -44.04 | -36.67 | Pass |

Test Mode: 00; Line: Neutral Line




| No. | Frequency | QuasiPeak reading | Average reading | Correction factor | QuasiPeak result | Average result | QuasiPeak limit | Average limit | QuasiPeak margin | Average margin | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dBuV) | (dBuV) | (dBuV) | (dBuV) | (dB) | (dB) | |
| 1* | 0.1553 | 31.21 | 10.75 | 20.25 | 51.46 | 31.00 | 79.00 | 66.00 | -27.54 | -35.00 | Pass |
| 2 | 0.1676 | 28.61 | 6.51 | 20.22 | 48.83 | 26.73 | 79.00 | 66.00 | -30.17 | -39.27 | Pass |
| 3 | 0.1793 | 26.77 | 6.10 | 20.19 | 46.96 | 26.29 | 79.00 | 66.00 | -32.04 | -39.71 | Pass |
| 4 | 0.2470 | 18.48 | 1.72 | 20.15 | 38.63 | 21.87 | 79.00 | 66.00 | -40.37 | -44.13 | Pass |
| 5 | 0.2935 | 12.32 | -2.22 | 20.15 | 32.47 | 17.93 | 79.00 | 66.00 | -46.53 | -48.07 | Pass |
| 6 | 24.1213 | 8.79 | 3.33 | 19.99 | 28.78 | 23.32 | 73.00 | 60.00 | -44.22 | -36.68 | Pass |

## 6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B
Test Method: ANSI C63.4:2014

Limit:

| | Class A |
|---|---|
| Test Distance: | 3m |
| 30MHz -88MHz | 49.5 (dBμV/m) quasi-peak |
| 88MHz-216MHz | 54.0 (dBμV/m) quasi-peak |
| 216MHz-960MHz | 56.9 (dBμV/m) quasi-peak |
| 960MHz-1000MHz | 60.0 (dBμV/m) quasi-peak |
| Detector: | Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz |

| | Class A |
|---|---|
| Test Distance: | 10m |
| 30MHz -88MHz | 39.1 (dBμV/m) quasi-peak |
| 88MHz-216MHz | 43.5 (dBμV/m) quasi-peak |
| 216MHz-960MHz | 46.4 (dBμV/m) quasi-peak |
| 960MHz-1000MHz | 49.5 (dBμV/m) quasi-peak |
| Detector: | Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz |

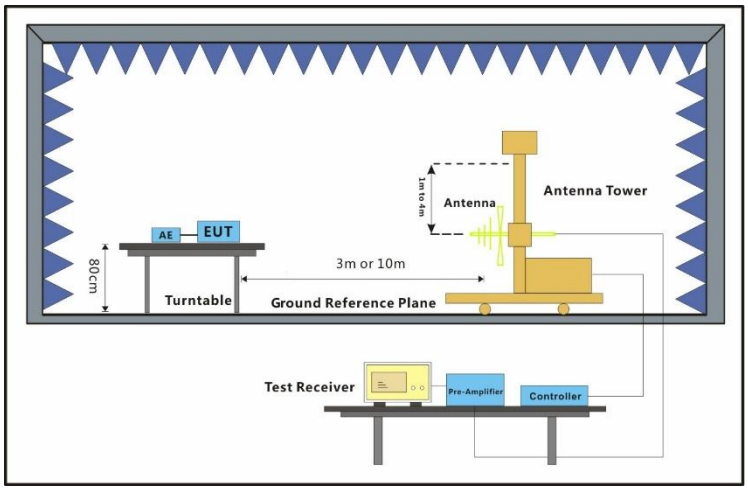
### 6.2.1 E.U.T. Operation

Operating Environment:
Temperature: 23.5 °C Humidity: 50.2 % RH Atmospheric Pressure: 1010 mbar

### 6.2.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | Power on and transmit QPSK signal and EUT link with PC by WAN port |

### 6.2.3 Test Setup Diagram

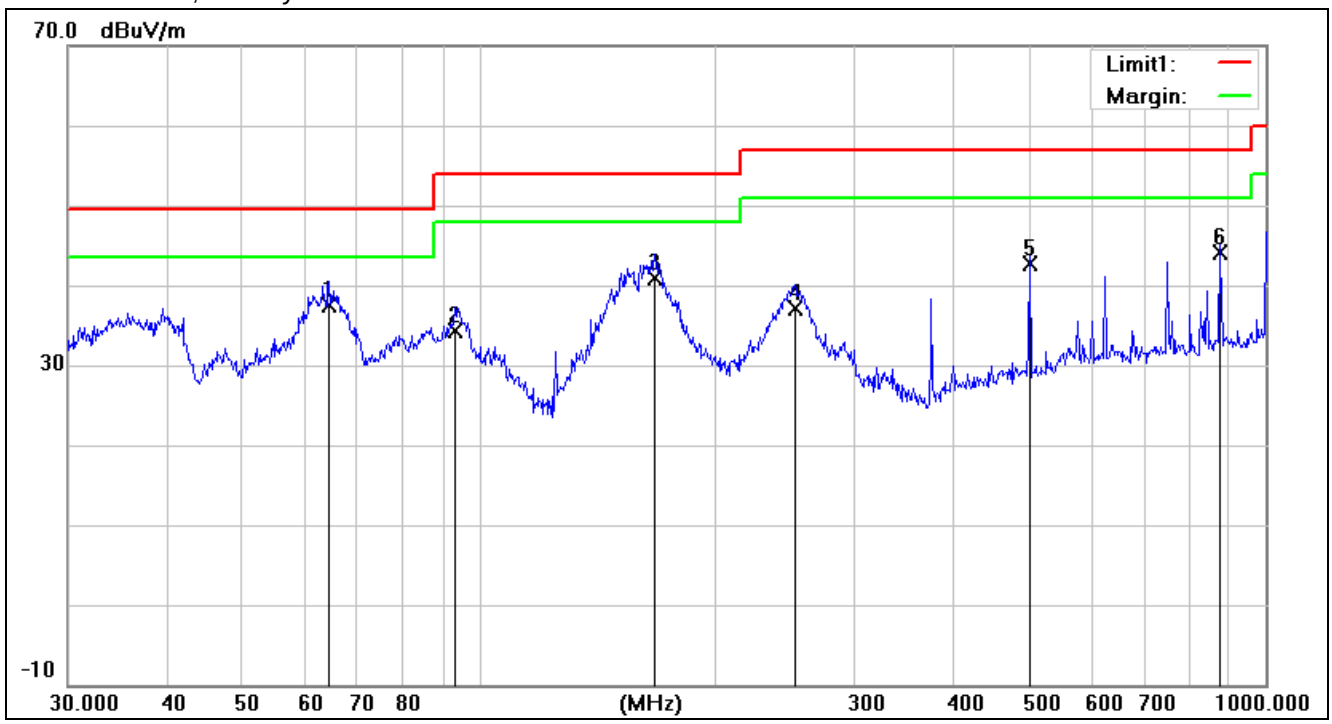


### 6.2.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

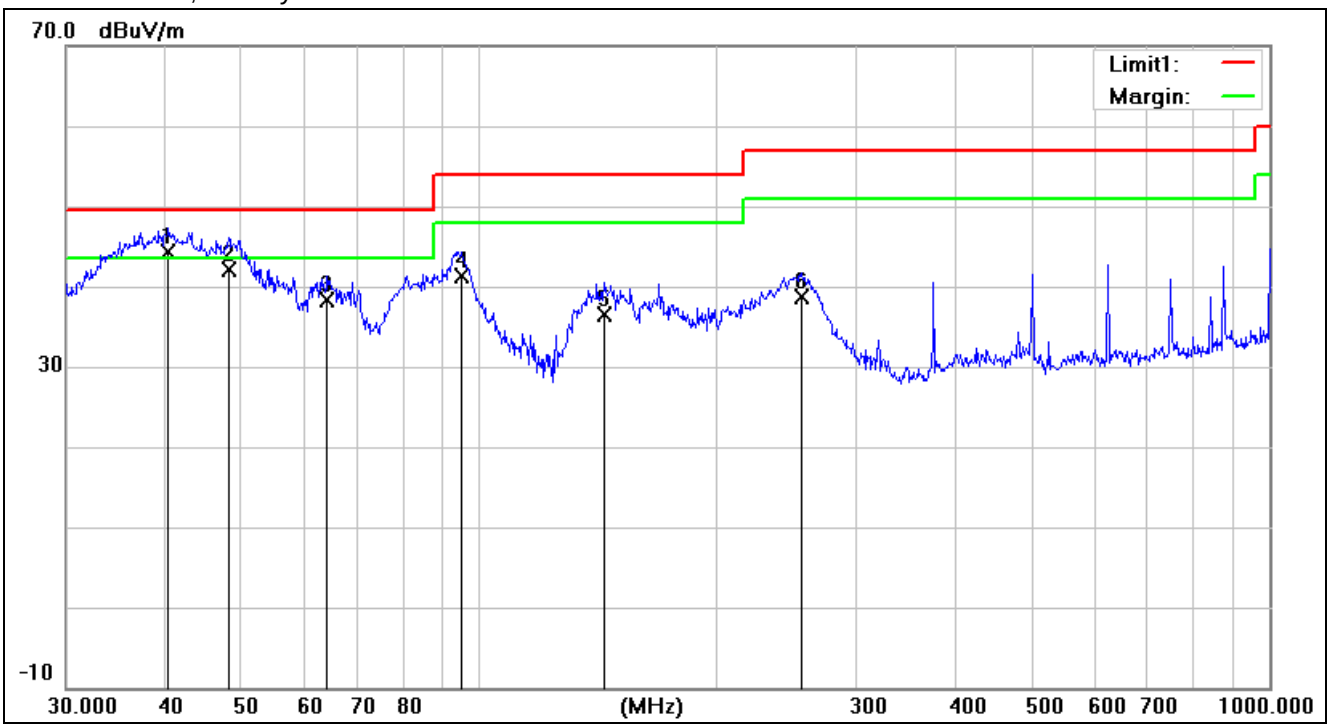
Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (deg.) | |
| 1 | 64.4331 | 22.66 | 14.89 | 37.55 | 49.50 | -11.95 | 200 | 338 | QP |
| 2 | 93.1132 | 18.67 | 15.59 | 34.26 | 54.00 | -19.74 | 151 | 360 | QP |
| 3 | 167.2368 | 23.68 | 17.16 | 40.84 | 54.00 | -13.16 | 200 | 281 | QP |
| 4 | 252.0627 | 17.24 | 19.89 | 37.13 | 56.90 | -19.77 | 100 | 303 | QP |
| 5 | 501.1790 | 16.81 | 25.83 | 42.64 | 56.90 | -14.26 | 140 | 360 | QP |
| 6 | 875.2470 | 14.87 | 29.16 | 44.03 | 56.90 | -12.87 | 103 | 360 | QP |

Test Mode: 00; Polarity: Vertical




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (deg.) | |
| 1 | 40.4172 | 22.33 | 22.06 | 44.39 | 49.50 | -5.11 | 100 | 88 | QP |
| 2 | 48.1626 | 23.52 | 18.49 | 42.01 | 49.50 | -7.49 | 100 | 97 | QP |
| 3 | 64.2074 | 23.51 | 14.86 | 38.37 | 49.50 | -11.13 | 200 | 249 | QP |
| 4 | 94.7601 | 25.33 | 16.00 | 41.33 | 54.00 | -12.67 | 100 | 346 | QP |
| 5 | 143.8295 | 18.39 | 18.20 | 36.59 | 54.00 | -17.41 | 100 | 232 | QP |
| 6 | 255.6231 | 18.42 | 20.27 | 38.69 | 56.90 | -18.21 | 147 | 360 | QP |

## 6.3 Radiated Emissions (Above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B
Test Method: ANSI C63.4:2014

Limit:

| | Class A |
|---|---|
| Above 1GHz | 80(dBμV/m) peak, 60(dBμV/m) average |
| Detector: | Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz |

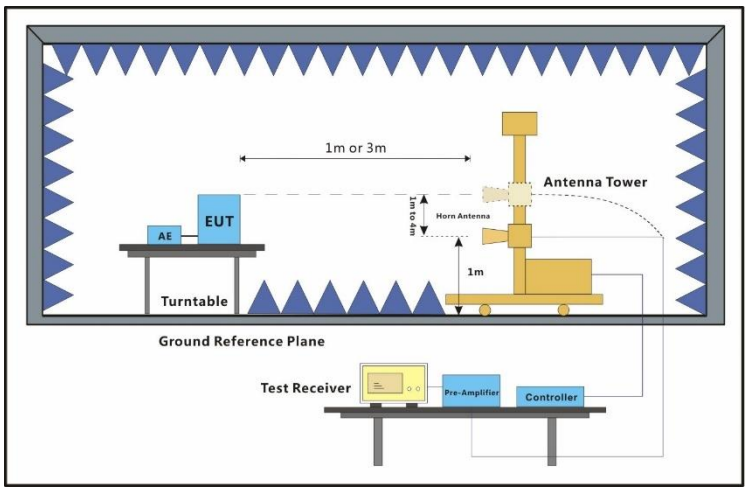
### 6.3.1 E.U.T. Operation

Operating Environment:
Temperature: 24.4 °C Humidity: 48.5 % RH Atmospheric Pressure: 1010 mbar

### 6.3.2 Test Mode Description

| Pre-scan / Final test | Mode Code | Description |
|---|---|---|
| Final test | 00 | Power on and transmit QPSK signal and EUT link with PC by WAN port |

### 6.3.3 Test Setup Diagram



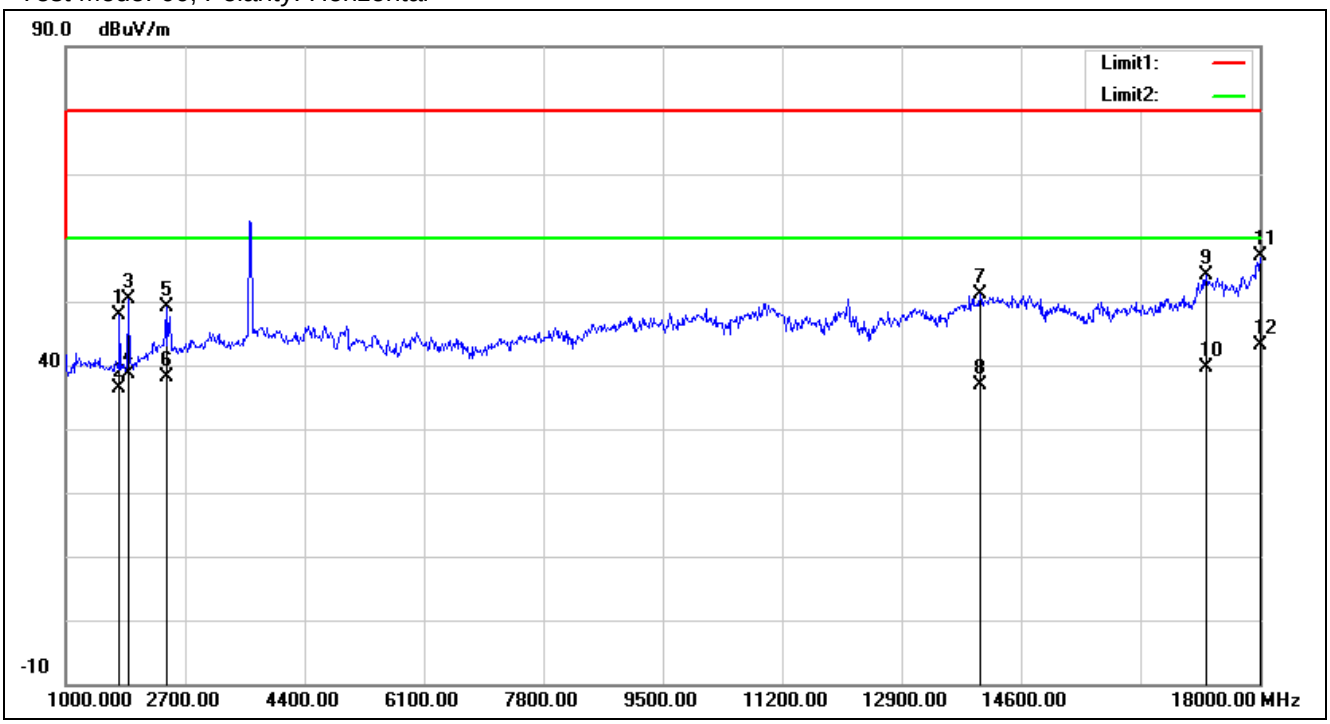

### 6.3.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

The red line show in graphic is the limit in standard used in this section.

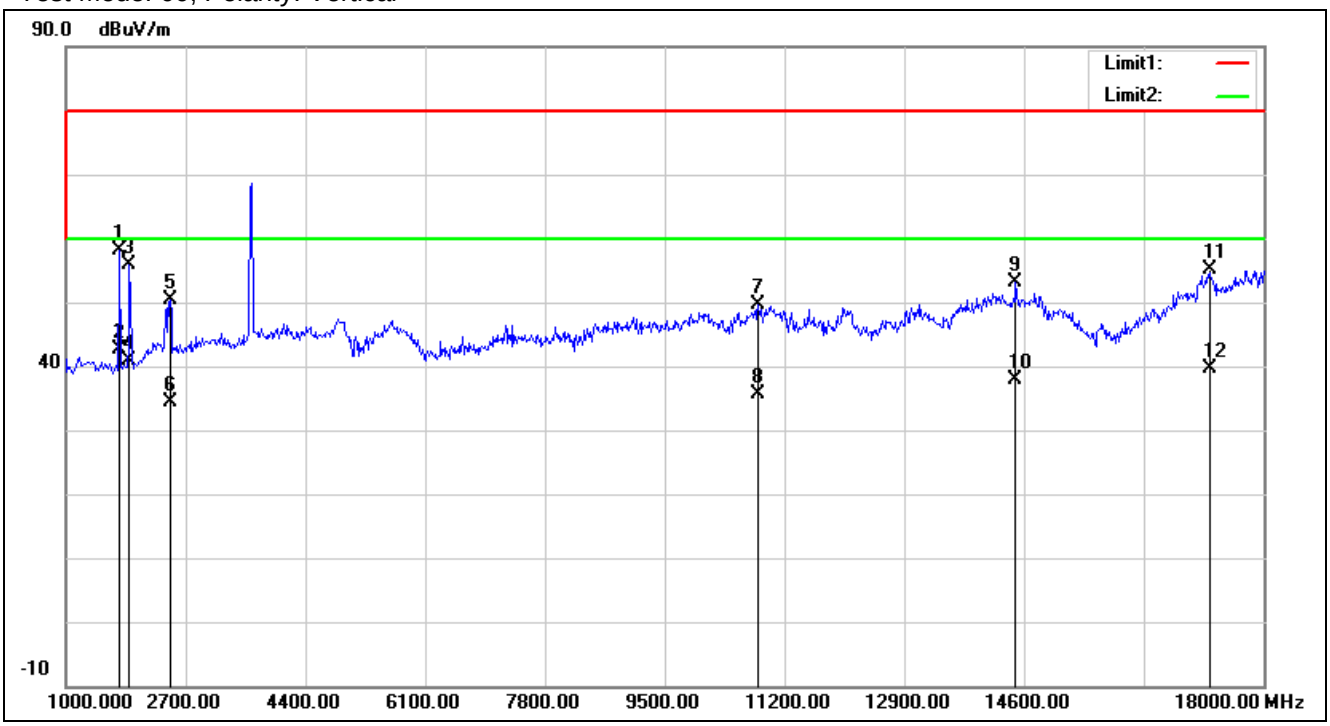
Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (deg.) | |
| 1 | 1752.000 | 69.89 | -22.10 | 47.79 | 80.00 | -32.21 | 200 | 349 | peak |
| 2 | 1752.000 | 58.39 | -22.10 | 36.29 | 60.00 | -23.71 | 200 | 349 | AVG |
| 3 | 1884.000 | 71.99 | -21.61 | 50.38 | 80.00 | -29.62 | 100 | 188 | peak |
| 4 | 1884.000 | 60.12 | -21.61 | 38.51 | 60.00 | -21.49 | 100 | 188 | AVG |
| 5 | 2420.000 | 67.79 | -18.77 | 49.02 | 80.00 | -30.98 | 200 | 357 | peak |
| 6 | 2420.000 | 56.88 | -18.77 | 38.11 | 60.00 | -21.89 | 200 | 357 | AVG |
| 7 | 14022.000 | 91.02 | -40.00 | 51.02 | 80.00 | -28.98 | 100 | 195 | peak |
| 8 | 14022.000 | 76.81 | -40.00 | 36.81 | 60.00 | -23.19 | 100 | 195 | AVG |
| 9 | 17220.000 | 89.8 | -35.56 | 54.24 | 80.00 | -25.76 | 100 | 82 | peak |
| 10 | 17220.000 | 75.24 | -35.56 | 39.68 | 60.00 | -20.32 | 100 | 82 | AVG |
| 11 | 18000.000 | 91.69 | -34.65 | 57.04 | 80.00 | -22.96 | 100 | 0 | peak |
| 12 | 18000.000 | 77.67 | -34.65 | 43.02 | 60.00 | -16.98 | 100 | 0 | AVG |

Test Mode: 00; Polarity: Vertical




| No. | Frequency | Reading | Correct | Result | Limit | Margin | Height | Degree | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | (MHz) | (dBuV) | Factor(dB/m) | (dBuV/m) | (dBuV/m) | (dB) | (cm) | (deg.) | |
| 1 | 1752.000 | 80.23 | -22.1 | 58.13 | 80.00 | -21.87 | 200 | 36 | peak |
| 2 | 1752.000 | 64.61 | -22.1 | 42.51 | 60.00 | -17.49 | 200 | 36 | AVG |
| 3 | 1892.000 | 77.34 | -21.55 | 55.79 | 80.00 | -24.21 | 100 | 360 | peak |
| 4 | 1892.000 | 62.37 | -21.55 | 40.82 | 60.00 | -19.18 | 100 | 360 | AVG |
| 5 | 2464.000 | 69.02 | -18.76 | 50.26 | 80.00 | -29.74 | 200 | 360 | peak |
| 6 | 2464.000 | 53.15 | -18.76 | 34.39 | 60.00 | -25.61 | 200 | 360 | AVG |
| 7 | 10811.000 | 51.68 | -1.96 | 49.72 | 80.00 | -30.28 | 100 | 324 | peak |
| 8 | 10811.000 | 37.57 | -1.96 | 35.61 | 60.00 | -24.39 | 100 | 324 | AVG |
| 9 | 14477.000 | 51.56 | 1.57 | 53.13 | 80.00 | -26.87 | 100 | 226 | peak |
| 10 | 14477.000 | 36.35 | 1.57 | 37.92 | 60.00 | -22.08 | 100 | 226 | AVG |
| 11 | 17220.000 | 50.29 | 4.73 | 55.02 | 80.00 | -24.98 | 100 | 22 | peak |
| 12 | 17220.000 | 34.92 | 4.73 | 39.65 | 60.00 | -20.35 | 100 | 22 | AVG |

# 7 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2403000374AT

# 8 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2403000374AT

- End of the Report -