

TEST REPORT

| | |
|------------------------------------|--|
| Application No.: | KSCR2503000401HS |
| FCC ID: | 2A4A3-HL3240 |
| IC: | 32735-HL3240 |
| Applicant: | Hisense Ronshen (Guangdong) Refrigerator Co., Ltd |
| Address of Applicant: | No.8 Ronggang Road Ronggui Shunde Foshan Guangdong P.R.China |
| Manufacturer: | Hisense Ronshen (Guangdong) Refrigerator Co., Ltd |
| Address of Manufacturer: | No.8 Ronggang Road Ronggui Shunde Foshan Guangdong P.R.China |
| Factory: | Hisense Home Appliances Group Co., Ltd.Qingdao Branch |
| Address of Factory: | Hisense R/D center,#399 Songling Road, Qingdao, Shandong 266000, China |
| Equipment Under Test (EUT): | |
| EUT Name: | Human Sensory Module |
| Model No.: | HL3240CG |
| Standard(s) : | 47 CFR Part 15, Subpart C 15.249 RSS-210 Issue 11 June 25, 2024 RSS-Gen Issue5 Amendment 2 (February 2021) |
| Date of Receipt: | 2025-03-12 |
| Date of Test: | 2025-03-19 to 2025-04-08 |
| Date of Issue: | 2025-04-10 |

| | |
|---------------------|--------------|
| Test Result: | Pass* |
|---------------------|--------------|

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

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

| Revision Record | | | |
|------------------------|--------------------|-------------|---------------|
| Version | Description | Date | Remark |
| 00 | Original | 2025-04-10 | / |
| | | | |
| | | | |

| | | | |
|---------------------------------|--|--|--|
| Authorized for issue by: | | | |
| Tested By | |  Tommie Tang | |
| | | <hr/> Tommie_Tang/Project Engineer | |
| Approved By | |  Terry Hou | |
| | | <hr/> Terry Hou /Reviewer | |

2 Test Summary

| Radio Spectrum Technical Requirement | | | | |
|--------------------------------------|----------------------------------|--------------------|--------|--------|
| Item | FCC Requirement | IC Requirement | Method | Result |
| Antenna Requirement | 47 CFR Part 15, Subpart C 15.249 | RSS-Gen Clause 6.8 | N/A | Pass |

N/A: Not applicable

| Radio Spectrum Matter Part | | | | |
|---|----------------------------------|---------------------|---------------------------------|--------|
| Item | FCC Requirement | IC Requirement | Method | Result |
| 20dB Emission bandwidth | 47 CFR Part 15, Subpart C 15.249 | RSS-210 Annex B 10 | ANSI C63.10 (2013) Section 6.9 | Pass |
| Filed strength of fundamental | 47 CFR Part 15, Subpart C 15.249 | RSS-210 Annex B 10 | ANSI C63.10 (2013) Section 6.6 | Pass |
| Radiation Spurious Emission | 47 CFR Part 15, Subpart C 15.249 | RSS-210 Annex B 10 | ANSI C63.10 (2013) Section 6.6 | Pass |
| Radiated Emissions which fall in the restricted bands | 47 CFR Part 15, Subpart C 15.249 | RSS-210 Annex B 10 | ANSI C63.10 (2013) Section 6.10 | Pass |
| 99% Bandwidth | N/A | RSS-Gen Section 6.7 | RSS-Gen Section 6.7 | Pass |

N/A: Not applicable

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4 General Information

4.1 Details of E.U.T.

| | |
|----------------------------|-------------------------------------|
| Power supply: | DC 5V |
| Operation Frequency Range: | 24GHz-24.25GHz |
| Modulation: | FMCW |
| Antenna type: | PCB Antenna |
| Antenna Gain: | 5dBi (Provided by the manufacturer) |

4.2 Description of Support Units

| Description | Manufacturer | Model No. | Serial No. |
|-------------|--|--------------|------------|
| Adapter | Sichuan Jiuzhou Electronic technology Co., Ltd | DYS05200CQ-U | / |

4.3 Measurement Uncertainty

| No. | Item | Measurement Uncertainty |
|-----|---------------------------------|--|
| 1 | Radio Frequency | 8.4×10^{-8} |
| 2 | Timeout | 2s |
| 3 | Duty Cycle | 0.37% |
| 4 | Occupied Bandwidth | 3% |
| 5 | RF Radiated Power | 5.2dB (Below 1GHz) 5.9dB (Above 1GHz) |
| 6 | Radiated Spurious Emission Test | 4.2dB (Below 30MHz) 4.5dB (30MHz-1GHz) 5.1dB (1GHz-18GHz) 5.4dB (Above 18GHz) |
| 7 | Temperature Test | 1°C |
| 8 | Humidity Test | 3% |
| 9 | Supply Voltages | 1.5% |
| 10 | Time | 3% |

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

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

| Item | Equipment | Manufacturer | Model | Inventory No | Cal Date | Cal. Due Date |
|------|--------------------------------|--------------------|----------------|--------------|-------------|---------------|
| 1 | Spectrum Analyzer | R&S | FSV40 | KUS1806E003 | 08/06/2024 | 08/05/2025 |
| 2 | PXA Spectrum Analyzer | KEYSIGHT | N9030B | KSEM021-1 | 01/15/2025 | 01/14/2026 |
| 3 | Signal Generator | Agilent | E8257C | KS301066 | 08/06/2024 | 08/05/2025 |
| 4 | Loop Antenna | COM-POWER | AL-130R | KUS1806E001 | 03/01/2025 | 02/28/2027 |
| 5 | Bilog Antenna | TESEQ | CBL 6112D | KUS1806E005 | 06/29/2023 | 06/28/2025 |
| 6 | Amplifier(30MHz~18GHz) | PANSHAN TECHNOLOGY | LNA:1~18G | KSEM010-1 | 01/15/2025 | 01/14/2026 |
| 8 | Horn-antenna(1-18GHz) | Schwarzbeck | BBHA9120D | KS301079 | 03/23/2024 | 03/22/2026 |
| 9 | Amplifier(18~40GHz) | PANSHAN TECHNOLOGY | LNA180400G40 | KSEM038 | 08/12/2024 | 08/11/2025 |
| 10 | Horn Antenna(18-40GHz) | Schwarzbeck | BBHA9170 | CZ301058 | 01/07/2024 | 01/06/2026 |
| 11 | Horn-antenna(40-60GHz) | ERAVANT | SAZ-2410-19-S1 | KSEM003-1 | 02/02/2021* | 02/01/2031** |
| 12 | Horn-antenna(50-75GHz) | ERAVANT | SAZ-2410-15-S1 | KSEM003-2 | 02/02/2021* | 02/01/2031** |
| 13 | Horn-antenna(50-75GHz) | ERAVANT | SAZ-2410-15-S1 | KSEM003-7 | 12/14/2022* | 12/13/2032** |
| 14 | Horn-antenna(60-90GHz) | ERAVANT | SAZ-2410-12-S1 | KSEM003-8 | 12/14/2022* | 12/13/2032** |
| 15 | Horn-antenna(75-110GHz) | ERAVANT | SAZ-2410-10-S1 | KSEM003-3 | 02/02/2021* | 02/01/2031** |
| 16 | Horn-antenna(90-140GHz) | ERAVANT | SAZ-2410-08-S1 | KSEM003-9 | 12/14/2022* | 12/13/2032** |
| 17 | Horn-antenna(110-170GHz) | ERAVANT | SAZ-2410-06-S1 | KSEM003-4 | 02/02/2021* | 02/01/2031** |
| 18 | Horn-antenna(140-220GHz) | ERAVANT | SAZ-2410-05-S1 | KSEM003-5 | 02/02/2021* | 02/01/2031** |
| 19 | Horn-antenna(140-220GHz) | ERAVANT | SAZ-2410-05-S1 | KSEM003-10 | 12/14/2022* | 12/13/2032** |
| 20 | Horn-antenna(220-325GHz) | ERAVANT | SAR-2309-03-S2 | KSEM003-6 | 02/02/2021* | 02/01/2031** |
| 21 | Extended waveguide(40-60GHz) | ERAVANT | SWG-19025-FB | KSEM004-1 | 02/02/2021* | 02/01/2031** |
| 22 | Extended waveguide(50-75GHz) | ERAVANT | SWG-15025-FB | KSEM004-2 | 02/02/2021* | 02/01/2031** |
| 23 | Extended waveguide(50-75GHz) | ERAVANT | SWG-15025-FB | KSEM004-7 | 12/14/2022* | 12/13/2032** |
| 24 | Extended waveguide(60-90GHz) | ERAVANT | SWG-12025-FB | KSEM004-8 | 12/14/2022* | 12/13/2032** |
| 25 | Extended waveguide(75-110GHz) | ERAVANT | SWG-10025-FB | KSEM004-3 | 02/02/2021* | 02/01/2031** |
| 26 | Extended waveguide(90-140GHz) | ERAVANT | SWG-08025-FB | KSEM004-9 | 12/14/2022* | 12/13/2032** |
| 27 | Extended waveguide(110-170GHz) | ERAVANT | SWG-06025-FB | KSEM004-4 | 02/02/2021* | 02/01/2031** |
| 28 | Extended waveguide(140-220GHz) | ERAVANT | SWG-05025-FB | KSEM004-5 | 02/02/2021* | 02/01/2031** |
| 29 | Extended waveguide(140-220GHz) | ERAVANT | SWG-05025-FB | KSEM004-10 | 12/14/2022* | 12/13/2032** |
| 30 | Extended waveguide(220-325GHz) | ERAVANT | SWG-03025-FB | KSEM004-6 | 02/02/2021* | 02/01/2031** |
| 31 | Harmonic mixer(40-60GHz) | ERAVANT | STH-19SF-S1 | KSEM005-2 | 10/01/2020* | 09/30/2030** |
| 32 | Harmonic Mixer(50-75GHz) | VDI | SAX WR15 | KSEM007-1 | 08/23/2023* | 08/23/2033** |
| 33 | Harmonic Mixer(60-90GHz) | VDI | SAX WR12 | KSEM007-2 | 08/23/2023* | 08/23/2033** |

| | | | | | | |
|----|---------------------------------|-------------------|------------------------|-----------|-------------|--------------|
| 34 | Harmonic mixer(90-140GHz) | VDI | SAX WR8.0 | KSEM007-3 | 08/23/2023* | 08/23/2033** |
| 35 | Harmonic mixer(140-220GHz) | VDI | SAX WR5.1 | KSEM007-4 | 08/23/2023* | 08/23/2033** |
| 36 | Harmonic mixer(220-325GHz) | ERAVANT | HM 220-325 | KSEM005-4 | 04/20/2021* | 04/19/2031** |
| 37 | Upconverter | Talent | TMAM-060090-0612-12-AC | KSEM043 | 01/18/2022* | 01/17/2032** |
| 38 | RE Test Cable | ERAVANT MICROWAVE | / | CZ301097 | 11/10/2024 | 11/09/2025 |
| 39 | Temperature & Humidity Recorder | Renke Control | RS-WS-N01-6J | KSEM024-4 | 03/18/2025 | 03/17/2026 |
| 40 | Software | Faratronic | EZ EMC-v 3A1 | / | NCR | NCR |
| 41 | Software | ESE | E3_V 6.111221a | / | NCR | NCR |

*Calibration date provided by the equipment manufacturer.

**Calibration every ten years. During this period, there will be daily check files for the equipment and the requirements for operators will be clearly defined through SOP.

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203; RSS-Gen Section 6.8

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is Patch Antenna and no consideration of replacement.

Antenna location: Refer to EUT Photos.

7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9

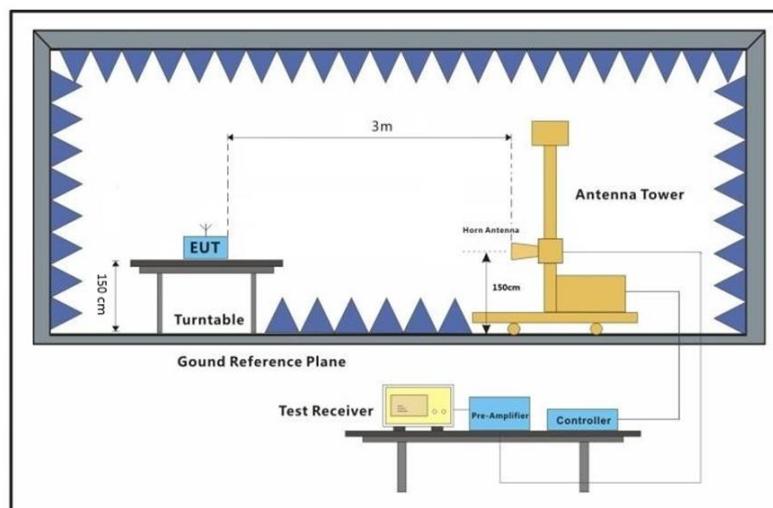
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C Humidity: 51.1 % RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.1.2 Test Setup Diagram



7.1.3 Measurement Procedure and Data

- 1) Place the EUT on the table and set it in the transmitting mode
- 2) SA set RBW=1%~5% OBW, VBW=3RBW and Detector=Peak
- 3) Measure and record the result of 20dB bandwidth

Please Refer to Appendix for Details

7.2 99% Bandwidth

Test Requirement RSS-Gen Section 6.7
Test Method: ANSI C63.10 (2013) Section 6.9

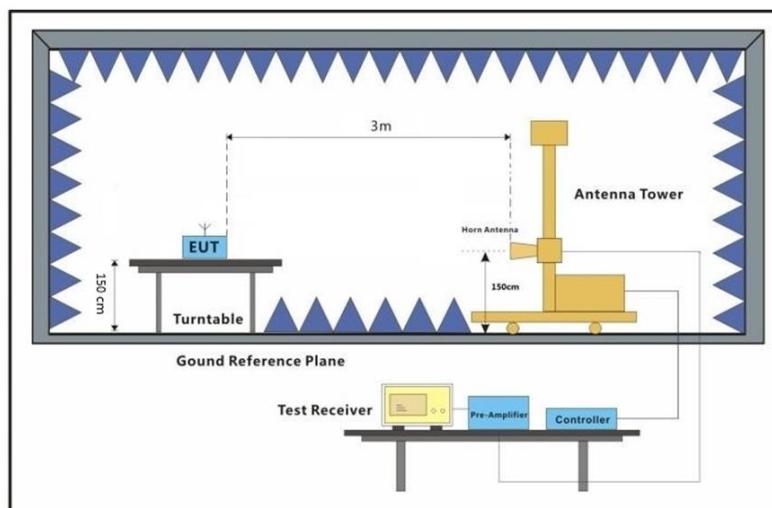
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C Humidity: 51.1 % RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

- 4) Place the EUT on the table and set it in the transmitting mode
- 5) SA set RBW=1%~5% OBW, VBW=3RBW and Detector=Peak
- 6) Measure and record the result of 99% bandwidth

Please Refer to Appendix for Details

7.3 Filed Strength of Fundamental and Radiation Spurious Emission

Test Requirement 47 CFR Part 15, Subpart C 15.249(a); RSS-210 Annex B 10

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

(1) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

| Fundamental frequency (MHz) | Field strength of fundamental (millivolts/meter) | Field strength of harmonics (microvolts/meter) |
|-----------------------------|--|--|
| 2400-2483.5 | 50 | 500 |
| 5725-5875 | 50 | 500 |
| 24000-24250 | 250 | 2500 |

* Field strength limits are specified at a distance of 3 meters.

| Harmonic Limit Conversion | | | |
|---------------------------|------------------------|------------------------|---------------------|
| Average (uV/m) at 3M | Average (dBuV/m) at 3M | Average (dBuV/m) at 1M | Peak (dBuV/m) at 1M |
| 2500 | 67.9588 | 77.50 | 97.50 |

*(Limit = $67.96 + 20\log(3/1) = 77.5$ dBuV/m)

(2) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits (follow the table), whichever is the lesser attenuation.

Below 30MHz

| Frequency | Field Strength (μ A/m) | Magnetic field strength (H-Field) (μ A/m) | Measurement Distance (metres) |
|---------------|-----------------------------|--|-------------------------------|
| 9-490 kHz | 2,400/F (F in kHz) | 2,400/F (F in kHz) | 300 |
| 490-1,705 kHz | 24,000/F (F in kHz) | 24,000/F (F in kHz) | 30 |
| 1.705-30 MHz | 30 | N/A | 30 |

Above 30MHz

| Frequency (MHz) | Field Strength microvolts/m at 3 metres (watts, e.i.r.p.) | |
|-----------------|---|--------------|
| | Transmitters | Receivers |
| 30-88 | 100 (3 nW) | 100 (3 nW) |
| 88-216 | 150 (6.8 nW) | 150 (6.8 nW) |
| 216-960 | 200 (12 nW) | 200 (12 nW) |
| Above 960 | 500 (75 nW) | 500 (75 nW) |

| Frequency | Field Strength microvolts/m at specific distance | |
|-------------|--|------------------|
| | Peak | AVG |
| Above 40GHz | 83.52dBuV/m @ 1m | 63.52dBuV/m @ 1m |

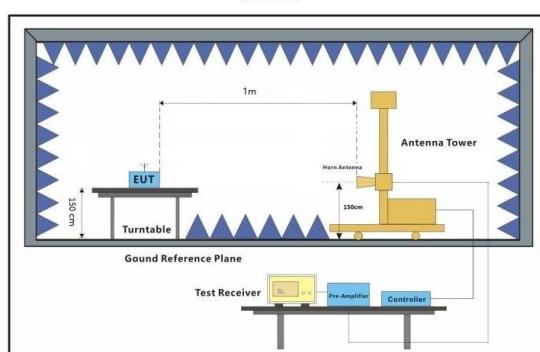
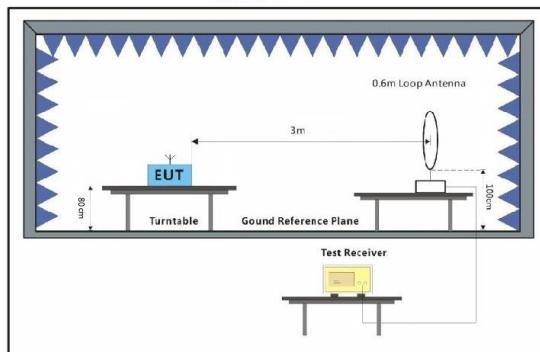
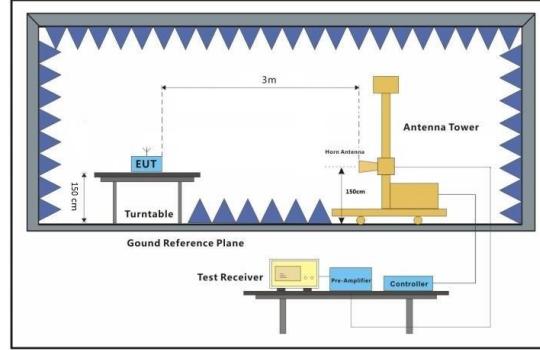
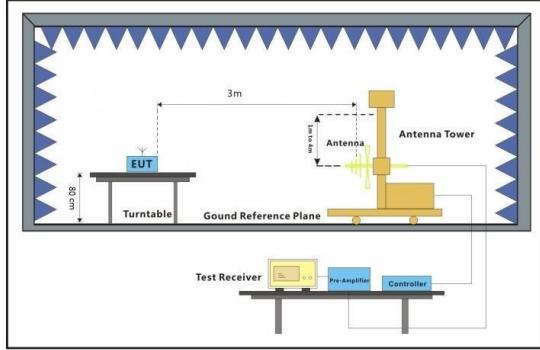
*(Limit = $53.98 + 20\log(3/1) = 63.52$ dBuV/m)

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C Humidity: 51.1% RH Atmospheric Pressure: 1010 mbar
Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.3.2 Test Setup Diagram



7.3.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For 1-18GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. For 18-40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. For above 40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 1 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation
- e. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Please Refer to Appendix for Details

7.4 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209; RSS-210 Annex B 10

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

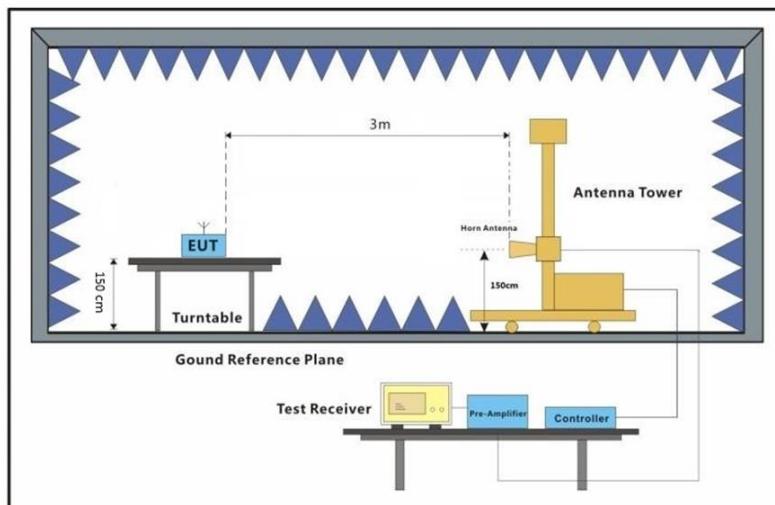
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.3 °C Humidity: 51.1% RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

- 1) The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 4) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 5) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- 6) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- 7) Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2503000401HS

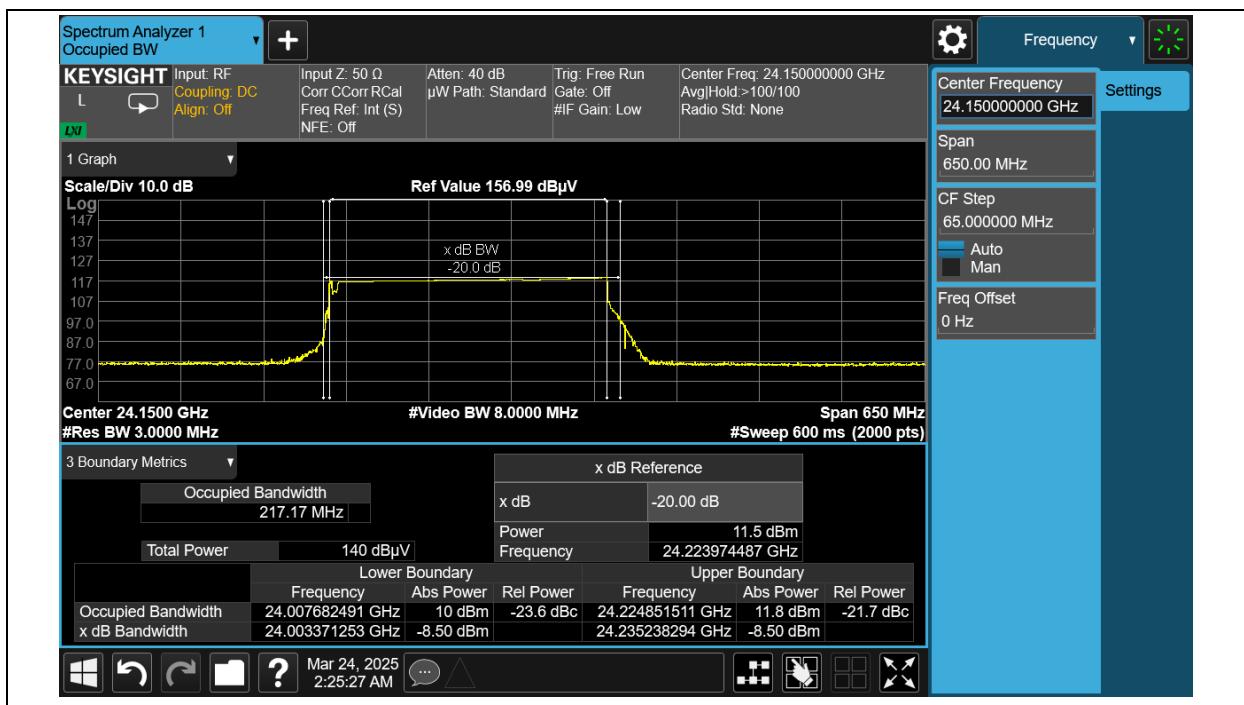
9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2503000401HS

10 Appendix

10.1 20dB Bandwidth

| Low Frequency (GHz) | Limit (GHz) | High Frequency (GHz) | Limit (GHz) | 20dB Bandwidth (MHz) | Result |
|---------------------|-------------|----------------------|-------------|----------------------|--------|
| 24.0033 | 24.00 | 24.2352 | 24.25 | 231.9 | Pass |



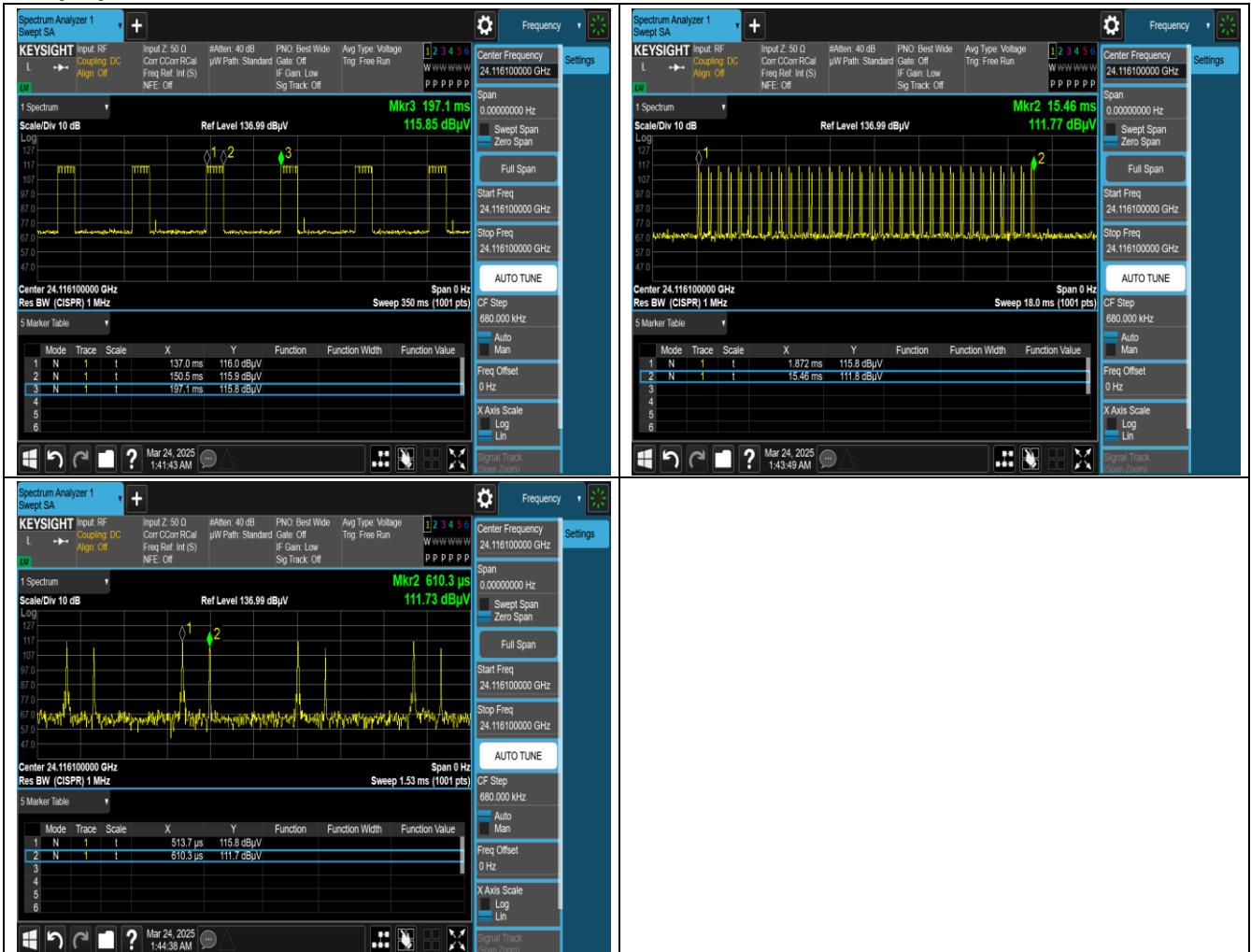
10.2 99% Bandwidth

| Low Frequency (GHz) | Limit (GHz) | High Frequency (GHz) | Limit (GHz) | 99% Bandwidth (MHz) | Result |
|---------------------|-------------|----------------------|-------------|---------------------|--------|
| 24.0076 | 24.00 | 24.2248 | 24.25 | 217.2 | Pass |



10.3 Filed Strength of Fundamental

Duty Cycle Factor



$$\text{Duty Cycle Factor} = 20\lg(\text{Duty Cycle}) = -25.25$$

Note 1: Duty Cycle = Transmission Time / Burst Period

2: Transmission Time = Chirp Width * Chirp number = 96.6 * 34uS = 3284.4uS

3: Burst Period = 60.1mS

Filed Strength of Fundamental

| Frequency (GHz) | Distance (m) | Desensitization factor (dB) | Peak Power @3m dBuV/m | Peak Power Limit @3m dBuV/m | Average Power @3m dBuV/m | Average Power Limit @3m dBuV/m | Result | Polarity |
|-----------------|--------------|-----------------------------|-----------------------|-----------------------------|--------------------------|--------------------------------|--------|------------|
| 24.115 | 3 | 1.49 | 107.93 | 127.96 | 82.68 | 107.96 | Pass | Horizontal |
| 24.115 | 3 | 1.49 | 93.91 | 127.96 | 68.66 | 107.96 | Pass | Vertical |

Note 1: Average Power = Peak Power + Duty Cycle Factor

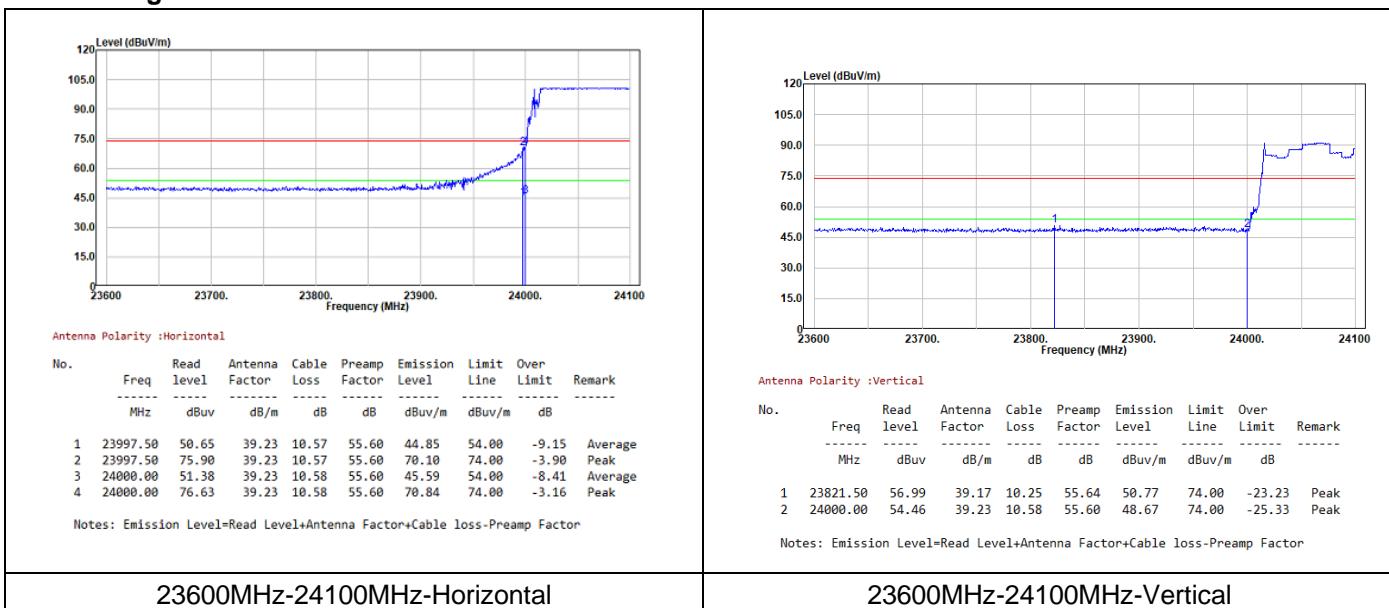
Note 2: The FMCW modulation desensitization correct factor 1.49 was calculated with equation below, where the $BW_{Chirp}=217.2\text{MHz}$, $T_{Chirp}=96.6\mu\text{s}$, $B=1\text{MHz}$.

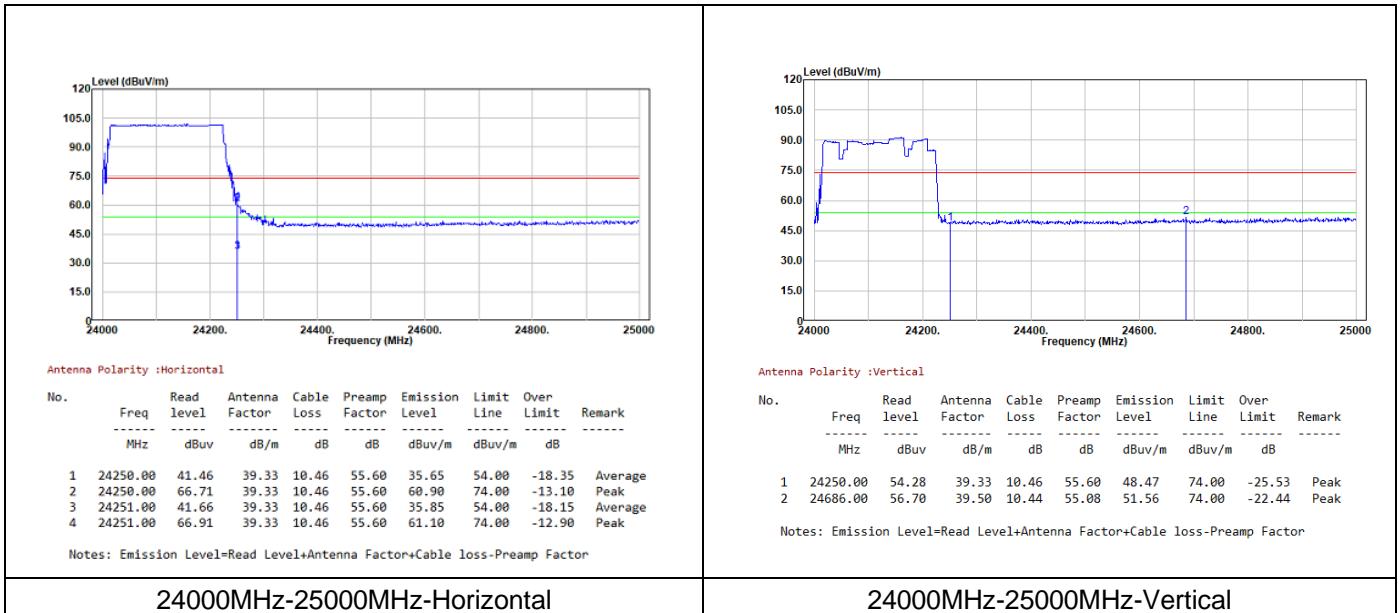
$$\alpha = \frac{1}{\sqrt{1 + \left(\frac{2 \ln(2)}{\pi}\right)^2 \left(\frac{BW_{Chirp}}{T_{Chirp} B^2}\right)^2}}$$

where

α is the reduction in amplitude
 BW_{Chirp} is the FMCW Chirp Bandwidth
 T_{Chirp} is the FMCW Chirp Time
 B is the 3 dB IF Bandwidth = RBW

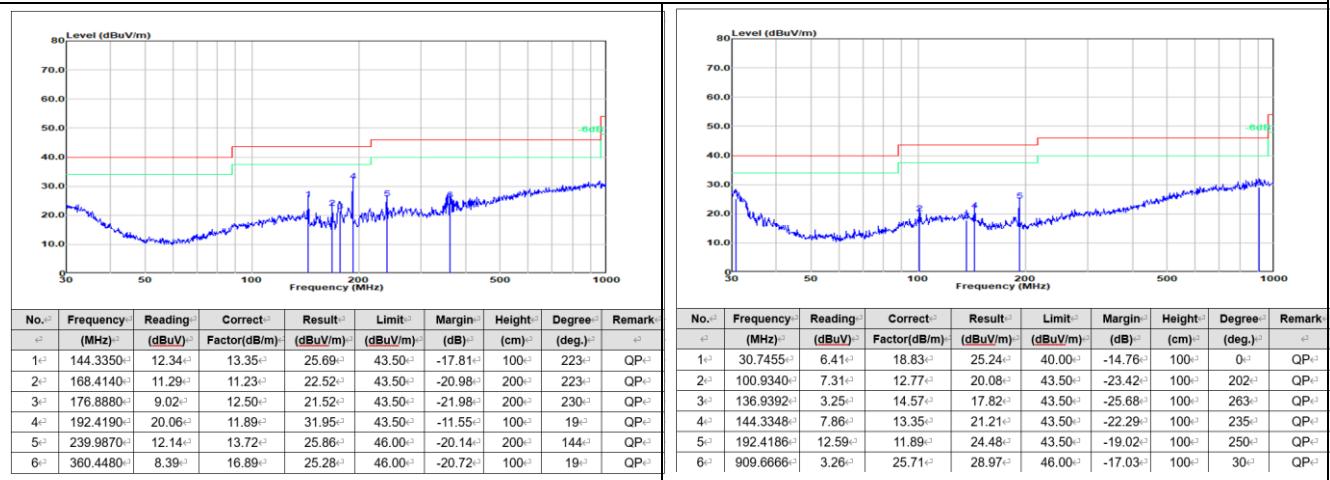
Bandedge





10.4 Radiation Spurious Emissions below 40 GHz

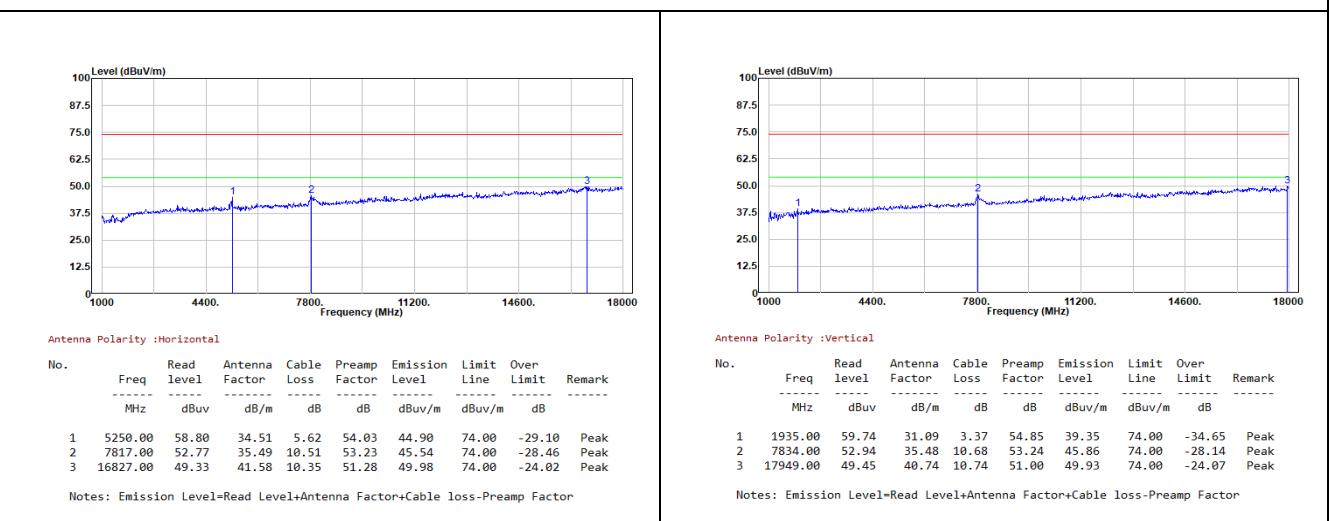
30MHz-1GHz



Horizontal

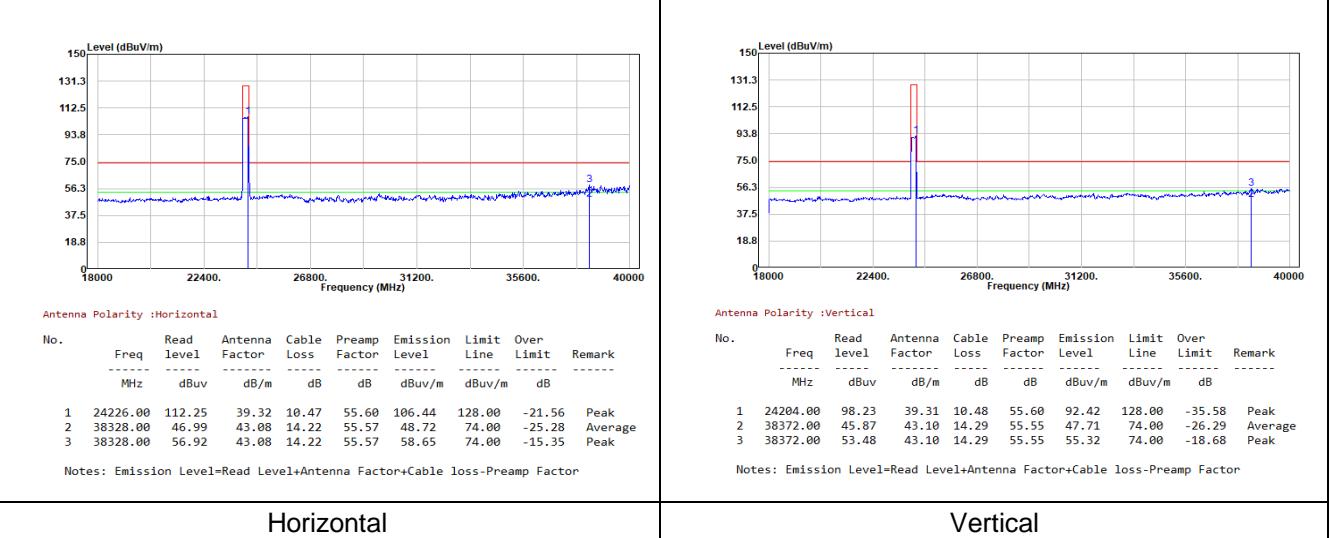
Vertical

1GHz-18GHz



Horizontal

Vertical

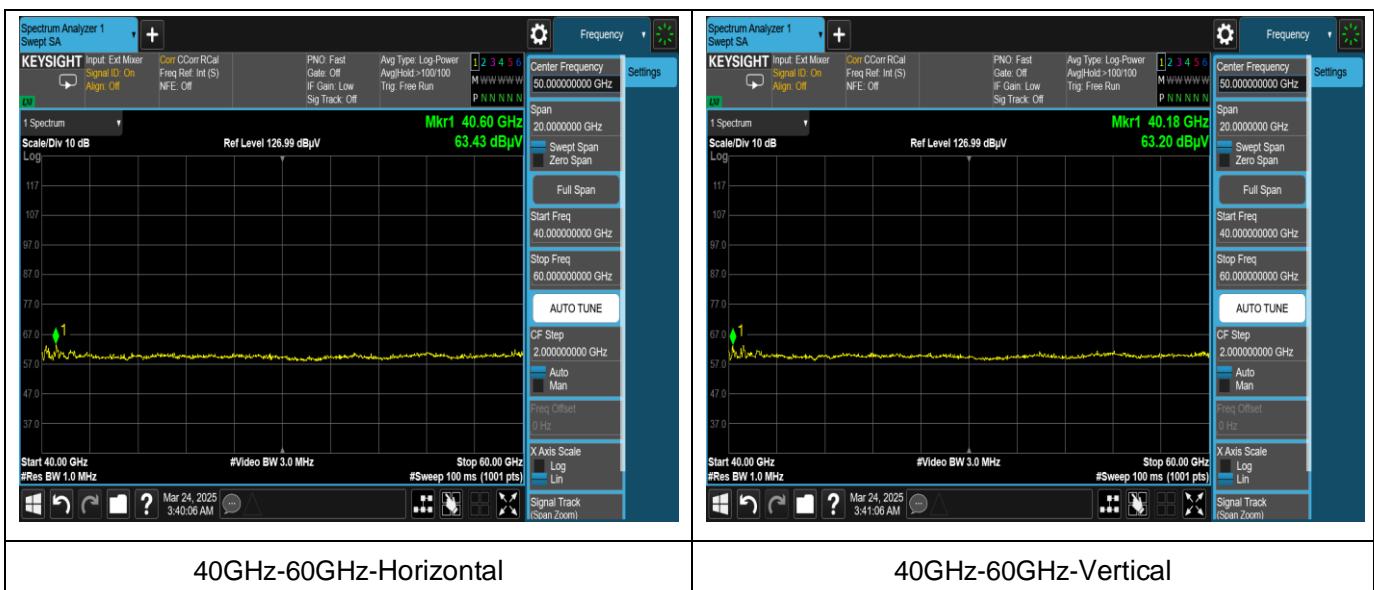


Horizontal

Vertical

10.5 Radiated emissions above 40 GHz

| Frequency (GHz) | Distance (M) | Peak Value (dBuV/m) | PK Limit (dBuV/m) | AV Limit (dBuV/m) | Polarization | Result |
|-----------------|--------------|---------------------|-------------------|-------------------|--------------|--------|
| 40.60 | 1 | 63.43 | 83.52 | 63.52 | Horizontal | Pass |
| 40.18 | 1 | 63.20 | 83.52 | 63.52 | Vertical | Pass |

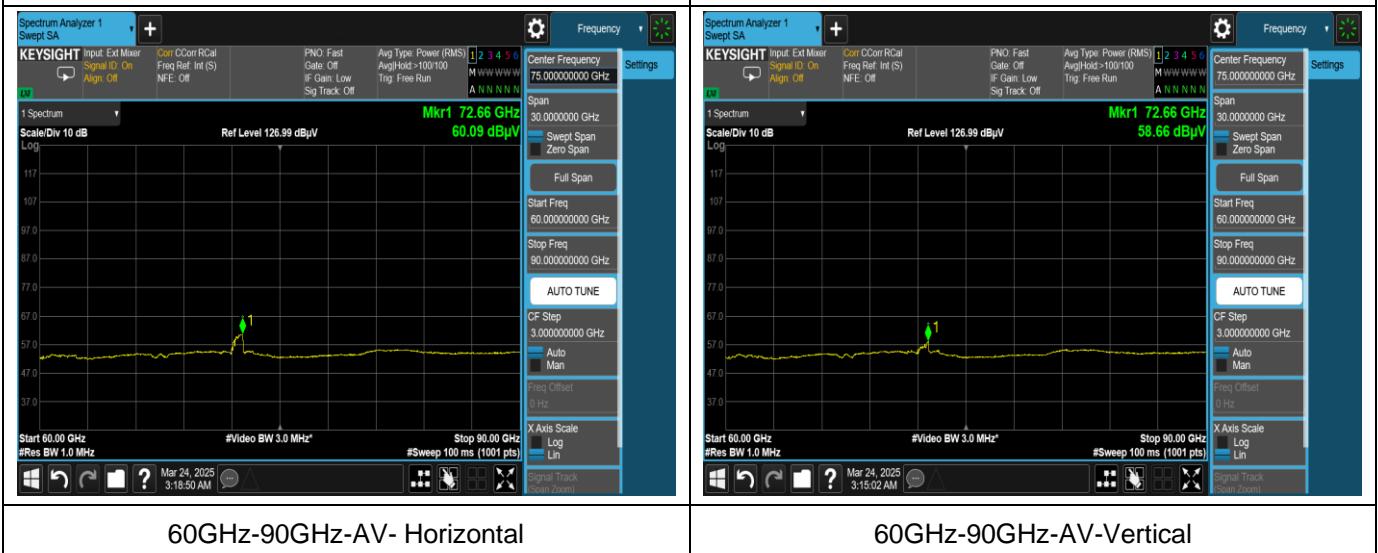


| Frequency (GHz) | Distance (M) | Peak Value (dBuV/m) | Average Value (dBuV/m) | PK Limit (dBuV/m) | AV Limit (dBuV/m) | Polarization | Result |
|-----------------|--------------|---------------------|------------------------|-------------------|-------------------|--------------|--------|
| 72.69 | 1 | 79.51 | / | 83.52 | / | Horizontal | Pass |
| 72.66 | 1 | 76.07 | / | 83.52 | / | Vertical | Pass |
| 72.66 | 1 | / | 60.09 | / | 63.52 | Horizontal | Pass |
| 72.66 | 1 | / | 58.66 | / | 63.52 | Vertical | Pass |



60GHz-90GHz-PK- Horizontal

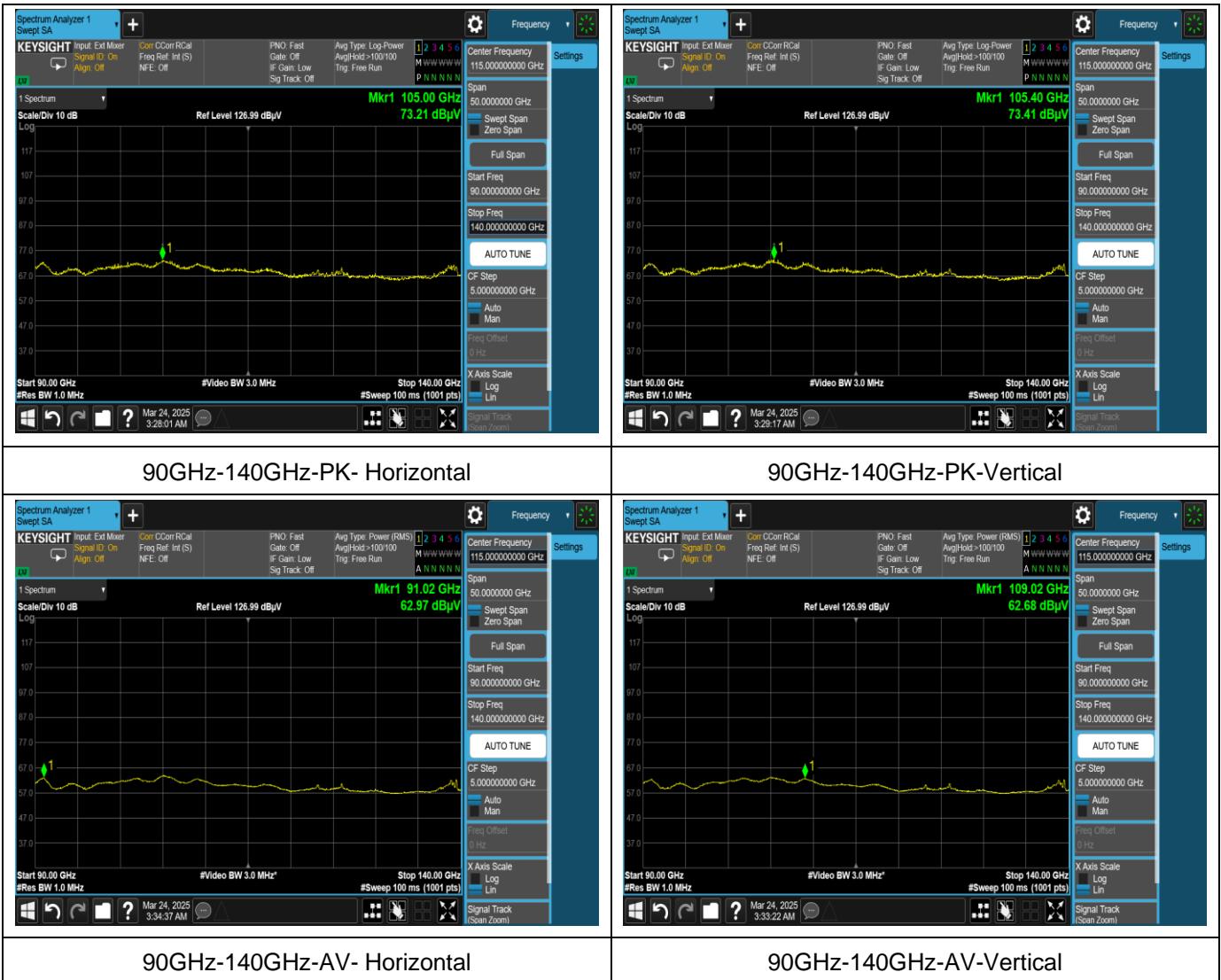
60GHz-90GHz-PK-Vertical



60GHz-90GHz-AV- Horizontal

60GHz-90GHz-AV-Vertical

| Frequency (GHz) | Distance (M) | Peak Value (dBuV/m) | Average Value (dBuV/m) | PK Limit (dBuV/m) | AV Limit (dBuV/m) | Polarization | Result |
|-----------------|--------------|---------------------|------------------------|-------------------|-------------------|--------------|--------|
| 105.00 | 1 | 73.21 | / | 83.52 | / | Horizontal | Pass |
| 105.40 | 1 | 73.41 | / | 83.52 | / | Vertical | Pass |
| 91.02 | 1 | / | 62.97 | / | 63.52 | Horizontal | Pass |
| 109.02 | 1 | / | 62.68 | / | 63.52 | Vertical | Pass |



- End of the Report -