

Page 1 of 55

Report No.: KS2502S0602E04

|                          | TEST REPO   | ORT N  |  |
|--------------------------|---|--|--|
| Report No                | KS2502S0602E04  | SZ LAST  |  |
| FCC ID                   | 2BNXM-M43-YZZM  |  |  |
| Applicant                | Suzhou KuYue Network Technol  | logy Co., Ltd.   |  |
| Address:                 | Room 302, information Building, No. 66 Huanfu Road, Suzhou industrial Park  |  |  |
| Manufacturer:            | Suzhou KuYue Network Technol  | logy Co., Ltd.   |  |
| Address                  | Room 302, information Building,<br>Park                                     | , No. 66 Huanfu Road, Suzhou industrial  |  |
| Product Name             | Motion-Sensing Interactive Sma  | rt Screen  |  |
| Trademark                | Cosmic Gate   | 7 (23)   |  |
| Model/Type reference     | M43-YZZM  |  |  |
| Standard                 | 47 CFR Part 15E   |  |  |
| Date of Receipt          | February 21, 2025   |  |  |
| Date of Test Date        | February 21, 2025 to April 18, 20   | 025  |  |
| Date of issue:           | April 18, 2025  |  |  |
| Test result:             | Pass  | 1987 - SS  |  |
| Conclusion               | The submitted sample was foun   | d to COMPLY with the standards above.  |  |
| Prepared by:             | Name: Chad Lin<br>Title: Project Engineer                                   | ol Lin   |  |
| Approved by:             | Name: Sky Dong<br>Title: EMC Supervisor                                     | day  |  |
| Testing Laboratory Name: | KSIGN(Guangdong) Testing C  | co., Ltd.  |  |
| Address:                 | West Side of 1/F., Building C, Zo<br>Park, Minzhu, Shatou, Shajing<br>China | one A, Fuyuan New Factory, Jiujiu Industrial<br>g, Bao'an District, Shenzhen, Guangdong, |  |

TRF No. RF\_R1



#### TABLE OF CONTENTS

#### Page

| 1. TEST SUMMARY                                |         | 3  |
|--|---------|----|
| 1.1. Test Standards                            |         | 3  |
| 1.2. Report Version                            | ×       |    |
| 1.3. Test Description                          | A 14    | 4  |
| 1.4. Test Facility                             |         |    |
| 1.5. Measurement Uncertainty                   |         | 5  |
| 2. GENERAL INFORMATION                         |         |    |
| 2.1. General Description Of EUT                |         |    |
| 2.2. Accessory Equipment Information           | Mathing | 6  |
| 2.3. Description of Test Modes                 |         |    |
| 2.4. Operation channel list                    | V       | 8  |
| 2.5. Measurement Instruments List              |         | 9  |
| 3. Radio Spectrum Matter Test Results (RF)     |         |    |
| 3.1. Conducted Emission at AC power line       |         | 11 |
| 3.2. Duty Cycle                                |         |    |
| 3.3. Emission bandwidth and occupied bandwidth |         | 15 |
| 3.4. Maximum conducted output power            | AXA     | 17 |
| 3.5. Power spectral density                    |         | 19 |
| 3.6. Band edge emissions (Radiated)            |         | 21 |
| 3.7. Undesirable emission limits (below 1GHz)  |         | 32 |
| 3.8. Undesirable emission limits (above 1GHz)  |         | 37 |
| 4. EUT TEST PHOTOS                             |         |    |
| 5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL           |         |    |
|  |         |    |

#### TRF No. RF\_R1

# KSIGN

# 1. TEST SUMMARY

# 1.1. Test Standards

The tests were performed according to following standards:

47 CFR Part 15E: Unlicensed National Information Infrastructure Devices

**ANSI C63.10-2013:** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

**KDB 789033 D02 General U-NII Test Procedures New Rules v02r01:** Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) devices part 15, subpart E.

# 1.2. Report Version

| Revised No. | Date of issue  | Description |
|-------------|----------------|-------------|
| 01          | April 18, 2025 | Original    |
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#### TRF No. RF\_R1



# **1.3. Test Description**

| Test Item                                   | Standard        | Requirement   | Result |
|---|-----------------|---|--------|
| Conducted Emission at AC power line         | 47 CFR Part 15E | 47 CFR Part 15.207(a)   | Pass   |
| Duty Cycle                                  | 47 CFR Part 15E |   | Pass   |
| Emission bandwidth and occupied bandwidth   | 47 CFR Part 15E | U-NII 1, U-NII 2A, U-NII 2C:<br>No limits, only for report<br>use.<br>47 CFR Part 15.407(e) | Pass   |
| Maximum conducted output power              | 47 CFR Part 15E | 47 CFR Part<br>15.407(a)(1)(iv)<br>47 CFR Part 15.407(a)(3)(i)                              | Pass   |
| Power spectral density                      | 47 CFR Part 15E | 47 CFR Part<br>15.407(a)(1)(iv)<br>47 CFR Part 15.407(a)(3)(i)                              | Pass   |
| Band edge emissions<br>(Radiated)           | 47 CFR Part 15E | 47 CFR Part 15.407(b)(1)<br>47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)           | Pass   |
| Undesirable emission limits (below 1GHz)    | 47 CFR Part 15E | 47 CFR Part 15.407(b)(9)  | Pass   |
| Undesirable emission limits<br>(above 1GHz) | 47 CFR Part 15E | 47 CFR Part 15.407(b)(1)<br>47 CFR Part 15.407(b)(4)<br>47 CFR Part 15.407(b)(10)           | Pass   |

TRF No. RF\_R1



# 1.4. Test Facility

#### KSIGN(Guangdong) Testing Co., Ltd .

West Side of 1/F., Building C, Zone A, Fuyuan New Factory, Jiujiu Industrial Park, Minzhu, Shatou, Shajing, Bao'an District, Shenzhen, Guangdong, China

# The test facility is recognized, certified, or accredited by the following organizations: **CNAS-Lab Code: L 13261**

KSIGN(Guangdong) Testing Co., Ltd. has been assessed and proved to be in Compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### A2LA-Lab Cert. No.: 5457.01

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## ISED# : 25693 CAB identifier.: CN0096

KSIGN(Guangdong) Testing Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

#### FCC-Registration No.: 294912 Designation Number: CN1328

KSIGN(Guangdong) Testing Co., Ltd. EMC Laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

## 1.5. Measurement Uncertainty

| Test Items                      | Measurement Uncertainty |
|---------------------------------|-------------------------|
| Conducted Emission (150k-30MHz) | ± 3.34dB                |
| Output Power, Conducted         | ± 1.4dB                 |
| PSD, Conducted                  | ± 1.0dB                 |
| RSE (1-18GHz)                   | ± 4.68dB                |
| RSE (30-1000MHz)                | ± 5.7dB                 |
| RSE (18-40GHz)                  | ± 5.18dB                |

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %. Otherwise required by the applicant or Product Regulations.Decision Rule in this report did not consider the uncertainty.

#### TRF No. RF\_R1

Report No.: KS2502S0602E04

# 2. GENERAL INFORMATION

# 2.1. General Description Of EUT

| Test Sample Number:     | KS2502S0602E-01, KS2502S0602E-02   |
|-------------------------|--|
| Product Name:           | Motion-Sensing Interactive Smart Screen  |
| Trademark:              | Cosmic Gate  |
| Model / Type reference: | M43-YZZM   |
| Power Supply:           | AC 120V/60Hz   |
| Operation Frequency:    | 802.11a/n(HT20)/ac(HT20):<br>U-NII Band 1: 5180MHz to 5240MHz;<br>U-NII Band 3: 5745MHz to 5825MHz;<br>802.11n(HT40)/ac(HT40):             |
| ST                      | U-NII Band 3: 5755MHz to 5795MHz   |
| Number of Channels:     | 802.11a/n(HT20)/ac(HT20):<br>U-NII Band 1: 4;<br>U-NII Band 3: 5;<br>802.11n(HT40)/ac(HT40):<br>U-NII Band 1: 2;<br>U-NII Band 3: 2        |
| Modulation Type:        | 802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM);<br>802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM);<br>802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) |
| Antenna Type:           | External   |
| Antenna Gain:           | U-NII Band 1:2.52dBi; U-NII Band 3:1.53dBi   |
| Max TX Power:           | 9.76dBm  |
| Hardware Version:       | V1.0   |
| Software Version:       | V1.0.0   |

Note:Antenna gain provided by the applicant Can affect the validity of results

# 2.2. Accessory Equipment Information

| Title    | Manufacturer | Model No.  | Technical Parameters | Provided by |
|----------|--------------|------------|----------------------|-------------|
| Computer | HP           | 15-cd028AX |                      | Laboratory  |

# 2.3. Description of Test Modes

| No.        | Title         | Description of Mode  |
|------------|---------------|--|
| Test Mode1 | 802.11a mode  | Keep the EUT in continuously transmitting mode with 802.11a modulation type at lowest, middle and highest channel. All data rates has been tested and found the data rate @ 6Mbps is the worst case. Only the data of worst case is recorded in the report.              |
| Test Mode2 | 802.11n mode  | Keep the EUT in continuously transmitting mode with 802.11n modulation type at lowest, middle and highest channel. All bandwidth and data rates has been tested and found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report. |
| Test Mode3 | 802.11ac mode | Keep the EUT in continuously transmitting mode with<br>802.11ac modulation type at lowest, middle and highest<br>channel. All bandwidth and data rates has been tested and   |

TRF No. RF\_R1



|                            | found the data rate @ MCS0 is the worst case. Only the data of worst case is recorded in the report. |
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Shajing, Bao'an District, Shenzhen, Guangdong, China

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# 2.4. Operation channel list

## U-NII Band 1

| Bandwidth: | 20MHz              | Bandwidth: | 40MHz              | Bandwidth: | 80MHz              |
|------------|--------------------|------------|--------------------|------------|--------------------|
| Channel    | Frequency<br>(MHz) | Channel    | Frequency<br>(MHz) | Channel    | Frequency<br>(MHz) |
| 36         | 5180               | 38         | 5190               | 1          |                    |
| 40         | 5200               | 46         | 5230               | 1          |                    |
| 44         | 5220               | 1 🔨        | 1                  | 1          | 1                  |
| 48         | 5240               | 1          | 1                  | 1          | 1                  |

#### U-NII Band 3

| Bandwidth: | 20MHz              | Bandwidth: | 40MHz              | Bandwidth: | 80MHz              |
|------------|--------------------|------------|--------------------|------------|--------------------|
| Channel    | Frequency<br>(MHz) | Channel    | Frequency<br>(MHz) | Channel    | Frequency<br>(MHz) |
| 149        | 5745               | 151        | 5755               | 1          |                    |
| 153        | 5765               | 159        | 5795               | 1          |                    |
| 157        | 5785               | 1          | 1                  | 1          | 1                  |
| 161        | 5805               |            | 1                  | 1          | 1                  |
| 165        | 5825               |            | 1                  |            | 1                  |

#### TRF No. RF\_R1

# 2.5. Measurement Instruments List

| Conducted Emission at AC power line |                |           |                      |            |  |  |
|-------------------------------------|----------------|-----------|----------------------|------------|--|--|
| Test Equipment                      | Manufacturer   | Model No. | Serial No.           | Cal. Until |  |  |
| LISN                                | R&S            | ENV432    | 1326.6105.02         | 2025-12-22 |  |  |
| EMI Test Receiver                   | R&S            | ESR       | 102524               | 2026-01-10 |  |  |
| Manual RF Switch                    | JS TOYO        |           | MSW-01/002           | 2025-12-22 |  |  |
| ISN CAT6                            | Schwarzbeck    | CAT5 8158 | 227                  | 2025-12-22 |  |  |
| Color Signal Generator              | Philips        | PM5418    | 672926               | 2025-12-22 |  |  |
| Power Absorbing Clamp               | R&S            | MDS-21    | 100925               | 2025-12-25 |  |  |
| LISN                                | EVERFINE       | LS-5      | G657431CD14311<br>12 | 2025-12-22 |  |  |
| Current Sensor Probe                | Beijin ZHINAN  | ZN23101   | 23013                | 2025-12-10 |  |  |
| PV Artificial power<br>network      | Beijing KeHuan | KH8301    | 830120007            | 2025-07-23 |  |  |

| Duty Cycle<br>Emission bandwidth and occupied bandwidth<br>Maximum conducted output power<br>Power spectral density |                               |                         |            |            |  |
|---|-------------------------------|-------------------------|------------|------------|--|
| Test Equipment  | Manufacturer                  | Model No.               | Serial No. | Cal. Until |  |
| Wideband Radio<br>Communication Tester  | R&S                           | CMU200                  | 115297     | 2025-12-22 |  |
| Audio Analyzer  | R&S                           | UPL16                   | 100001     | 2025-12-22 |  |
| Shielding box   | Gxiong                        | GX-5915A                | 2201113    | 2025-12-22 |  |
| High Pass Filter  | COM-MW<br>Technology Co., Ltd | ZHPF-M1.2-9G-1<br>87    | 09203403   | 2025-12-22 |  |
| Band Stop Filter  | COM-MW<br>Technology Co., Ltd | ZBSF6-C820-920<br>-188  | 09203401   | 2025-12-22 |  |
| Splitter  | COM-MW<br>Technology Co., Ltd | ZPD-M1-8-2103           | 09203407   | 2025-12-22 |  |
| Coaxial Cable   | BEBES                         | A40-2.92M2.92F-<br>4.5M | 1907021    | 2025-12-22 |  |
| Hygrothermograph  | Anymetre                      | JB913                   | 1          | 2025-12-22 |  |
| Climate Chamber   | Angul                         | AGNH80L                 | 1903042120 | 2025-12-22 |  |
| Spectrum Analyzer   | HP                            | 8593E                   | 3831U02087 | 2025-12-22 |  |
| Dual Output DC Power<br>Supply  | Agilent                       | E3646A                  | MY40009992 | 2025-12-29 |  |
| RF Control Unit   | Tonscend                      | JS0806-2                |            | 2025-12-22 |  |
| Analog Signal Generator   | HP                            | 83752A                  | 3344A00337 | 2025-12-22 |  |
| Vector Signal Generator   | Agilent                       | N5182A                  | MY50142520 | 2025-12-22 |  |
| Wideband Radio<br>Communication Tester  | R&S                           | CMW500                  | 157282     | 2025-12-22 |  |
| Spectrum Analyzer   | R&S                           | FSV40-N                 | 101798     | 2026-02-11 |  |

#### TRF No. RF\_R1



| Undesirable emission limits (below 1GHz)<br>Undesirable emission limits (above 1GHz)<br>Band edge emissions (Radiated) |               |             |            |            |  |  |  |
|--|---------------|-------------|------------|------------|--|--|--|
| Test Equipment Manufacturer Model No. Serial No. Cal. Un   |               |             |            |            |  |  |  |
| Color Signal Generator   | Philips       | PM5418      | 672926     | 2025-12-22 |  |  |  |
| Log Periodic Antenna   | Schwarzbeck   | VULB 9163   | 1230       | 2026-01-13 |  |  |  |
| Pre-Amplifier  | Schwarzbeck   | BBV 9745    | 9745#129   | 2025-12-22 |  |  |  |
| Broadcast Television<br>Signal Generator   | R&S           | SFE100      | 141038     | 2025-12-22 |  |  |  |
| Analog Signal Generator  | Agilent       | 8648A       | 3847M00445 | 2025-12-22 |  |  |  |
| EMI Test Receiver  | R&S           | ESR         | 102525     | 2026-01-10 |  |  |  |
| Loop Antenna   | Beijin ZHINAN | ZN30900C    | 18050      | 2025-12-22 |  |  |  |
| Horn Antenna   | Schwarzbeck   | BBHA 9120 D | 2023       | 2025-12-25 |  |  |  |
| Pre-Amplifier  | EMCI          | EMC051835SE | 980662     | 2025-12-22 |  |  |  |
| Spectrum Analyzer  | Keysight      | N9020A      | MY46471971 | 2025-12-22 |  |  |  |



# 3. Radio Spectrum Matter Test Results (RF)

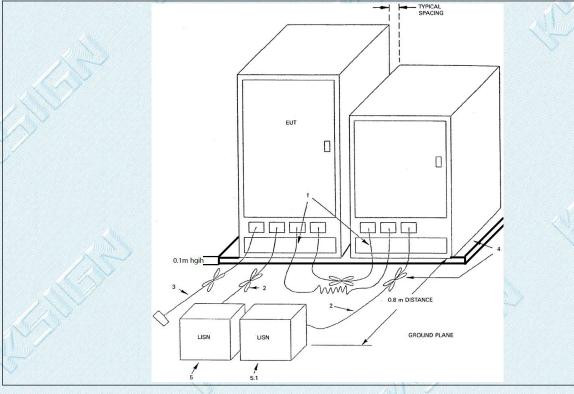
# 3.1. Conducted Emission at AC power line

| Test Requirement: | 47 CFR Part 15.207(a)                           | 1 P                    |           |  |
|-------------------|---|------------------------|-----------|--|
|                   | Frequency of emission (MHz)                     | Conducted limit (dBµV) |           |  |
|                   |   | Quasi-peak             | Average   |  |
| Test Limit:       | 0.15-0.5  | 66 to 56*              | 56 to 46* |  |
|                   | 0.5-5   | 56                     | 46        |  |
|                   | 5-30  | 60                     | 50        |  |
|                   | *Decreases with the logarithm of the frequency. |                        |           |  |
| Test Method:      | ANSI C63.10-2013 section 6.2                    | ×                      |           |  |

## 3.1.1. E.U.T. Operation:

| Operating Environment: |            |
|------------------------|------------|
| Temperature:           | 23.1 °C    |
| Humidity:              | 44.2 %     |
| Atmospheric Pressure:  | 101 kPa    |
| Final test mode:       | Test Mode1 |

# 3.1.2. Test Setup Diagram:



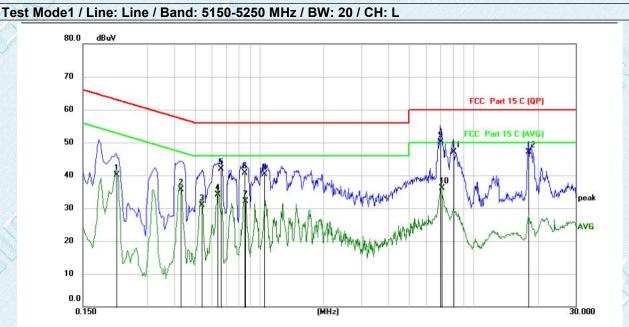
#### TRF No. RF\_R1



#### Page 12 of 55

Report No.: KS2502S0602E04

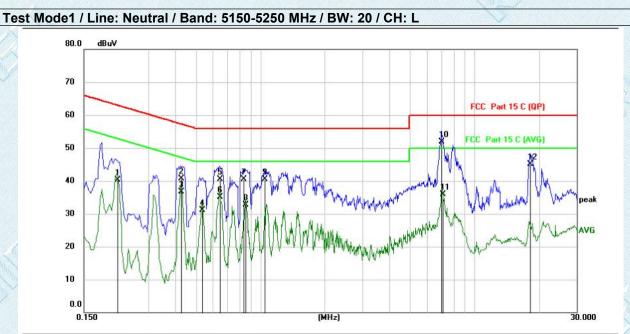
#### 3.1.3. Test Data:



| No. Mk. | Freq.   | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Over   |          |         |  |
|---------|---------|------------------|-------------------|------------------|-------|--------|----------|---------|--|
|         | MHz     | dBuV             | dB                | dBuV             | dBuV  | dB     | Detector | Comment |  |
| 1       | 0.2140  | 19.24            | 20.81             | 40.05            | 53.05 | -13.00 | AVG      |         |  |
| 2       | 0.4300  | 14.90            | 20.73             | 35.63            | 47.25 | -11.62 | AVG      |         |  |
| 3       | 0.5380  | 10.18            | 20.68             | 30.86            | 46.00 | -15.14 | AVG      |         |  |
| 4       | 0.6380  | 13.55            | 20.65             | 34.20            | 46.00 | -11.80 | AVG      |         |  |
| 5       | 0.6580  | 21.36            | 20.64             | 42.00            | 56.00 | -14.00 | QP       |         |  |
| 6       | 0.8540  | 20.12            | 20.58             | 40.70            | 56.00 | -15.30 | QP       |         |  |
| 7       | 0.8580  | 11.57            | 20.58             | 32.15            | 46.00 | -13.85 | AVG      |         |  |
| 8       | 1.0540  | 19.82            | 20.57             | 40.39            | 56.00 | -15.61 | QP       |         |  |
| 9 *     | 7.0180  | 29.31            | 20.71             | 50.02            | 60.00 | -9.98  | QP       |         |  |
| 10      | 7.0860  | 15.35            | 20.72             | 36.07            | 50.00 | -13.93 | AVG      |         |  |
| 11      | 8.0500  | 26.37            | 20.75             | 47.12            | 60.00 | -12.88 | QP       |         |  |
| 12      | 18.0620 | 26.17            | 20.92             | 47.09            | 60.00 | -12.91 | QP       |         |  |

#### TRF No. RF\_R1





| No. Mk. | Freq.   | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit | Over   |          |         |             |
|---------|---------|------------------|-------------------|------------------|-------|--------|----------|---------|-------------|
|         | MHz     | dBuV             | dB                | dBuV             | dBuV  | dB     | Detector | Comment |             |
| 1       | 0.2140  | 19.57            | 20.81             | 40.38            | 53.05 | -12.67 | AVG      |         |             |
| 2       | 0.4260  | 19.89            | 20.73             | 40.62            | 57.33 | -16.71 | QP       |         | 3           |
| 3       | 0.4260  | 15.94            | 20.73             | 36.67            | 47.33 | -10.66 | AVG      |         |             |
| 4       | 0.5340  | 10.46            | 20.69             | 31.15            | 46.00 | -14.85 | AVG      |         |             |
| 5       | 0.6460  | 19.87            | 20.65             | 40.52            | 56.00 | -15.48 | QP       |         |             |
| 6       | 0.6500  | 14.52            | 20.64             | 35.16            | 46.00 | -10.84 | AVG      |         |             |
| 7       | 0.8340  | 20.02            | 20.58             | 40.60            | 56.00 | -15.40 | QP       |         |             |
| 8       | 0.8500  | 12.04            | 20.58             | 32.62            | 46.00 | -13.38 | AVG      |         |             |
| 9       | 1.0460  | 19.94            | 20.57             | 40.51            | 56.00 | -15.49 | QP       |         | 1<br>1<br>1 |
| 10 *    | 7.0220  | 31.13            | 20.71             | 51.84            | 60.00 | -8.16  | QP       |         |             |
| 11      | 7.0860  | 15.14            | 20.72             | 35.86            | 50.00 | -14.14 | AVG      |         |             |
| 12      | 18.1940 | 24.23            | 20.92             | 45.15            | 60.00 | -14.85 | QP       |         |             |

#### Note:

1.Measurement = Reading level + Correct Factor

2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor

#### TRF No. RF\_R1



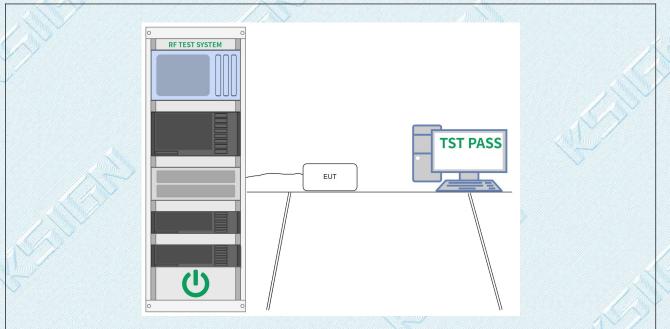
# 3.2. Duty Cycle

| Test Requirement: | All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.   |
|-------------------|--|
| Test Limit:       | No limits, only for report use.  |
| Test Method:      | ANSI C63.10-2013 section 12.2 (b)  |
| Procedure:        | <ul> <li>i) Set the center frequency of the instrument to the center frequency of the transmission.</li> <li>ii) Set RBW &gt;= EBW if possible; otherwise, set RBW to the largest available value.</li> <li>iii) Set VBW &gt;= RBW.</li> <li>iv) Set detector = peak.</li> <li>v) The zero-span measurement method shall not be used unless both RBW and VBW are &gt; 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.</li> </ul> |

## 3.2.1. E.U.T. Operation:

| Operating Environment: |                                    |
|------------------------|------------------------------------|
| Temperature:           | 23.1 °C                            |
| Humidity:              | 44.2 %                             |
| Atmospheric Pressure:  | 101 kPa                            |
| Final test mode:       | Test Mode1, Test Mode2, Test Mode3 |

## 3.2.2. Test Setup Diagram:



**3.2.3. Test Data:** Please Refer to Appendix for Details.

#### TRF No. RF\_R1



# 3.3. Emission bandwidth and occupied bandwidth

|                       | U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.  |
|-----------------------|---|
| Test Requirement:     | U-NII 3, U-NII 4: 47 CFR Part 15.407(e)   |
|                       | U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use.  |
| Test Limit:           | U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.  |
| Test Method:          | ANSI C63.10-2013, section 6.9 & 12.4<br>KDB 789033 D02, Clause C.2  |
|                       | Emission bandwidth:<br>a) Set RBW = approximately 1% of the emission bandwidth.<br>b) Set the VBW > RBW.<br>c) Detector = peak.<br>d) Trace mode = max hold.<br>e) Measure the maximum width of the emission that is 26 dB down from the<br>peak of the emission.<br>Compare this with the RBW setting of the instrument. Readjust RBW and<br>repeat measurement<br>as needed until the RBW/EBW ratio is approximately 1%.                                |
|                       | <ul> <li>Occupied bandwidth:</li> <li>a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.</li> <li>b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.</li> </ul> |
| Procedure:            | c) Set the reference level of the instrument as required, keeping the signal from<br>exceeding the<br>maximum input mixer level for linear operation. In general, the peak of the<br>spectral envelope<br>shall be more than [10 log (OBW/RBW)] below the reference level. Specific<br>guidance is given  |
|                       | <ul> <li>in 4.1.5.2.</li> <li>d) Step a) through step c) might require iteration to adjust within the specified range.</li> <li>e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode</li> <li>shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be</li> </ul>   |
|                       | <ul> <li>used.</li> <li>f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.</li> <li>g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached;</li> </ul>    |
| A Martine Contraction | that frequency is recorded as the lower frequency. The process is repeated unti   |

TRF No. RF\_R1

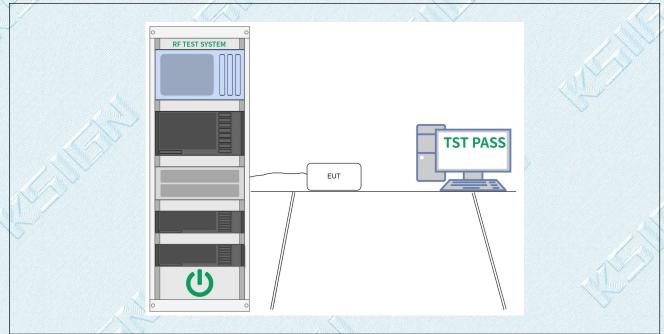


|           | 99.5% of the   |
|-----------|--|
| 25°       | total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is  |
|           | the difference between these two frequencies.  |
| ~         | h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument   |
| . S       | display; the plot axes and the scale units per division shall be clearly labeled.<br>Tabular data may  |
|           | be reported in addition to the plot(s).  |
|           | 6 dB emission bandwidth:   |
|           | a) Set RBW = 100 kHz.  |
| × .       | b) Set the video bandwidth (VBW) ≥ 3 >= RBW.   |
|           | c) Detector = Peak.  |
|           | d) Trace mode = max hold.  |
|           | e) Sweep = auto couple.  |
|           | f) Allow the trace to stabilize.   |
|           | g) Measure the maximum width of the emission that is constrained by the  |
| )<br>I fa | frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. |
|           |  |

### 3.3.1. E.U.T. Operation:

| 23.1 °C                            |                   |
|------------------------------------|-------------------|
| 44.2 %                             |                   |
| 101 kPa                            |                   |
| Test Mode1, Test Mode2, Test Mode3 |                   |
|                                    | 44.2 %<br>101 kPa |

## 3.3.2. Test Setup Diagram:



#### 3.3.3. Test Data:

Please Refer to Appendix for Details.

#### TRF No. RF\_R1

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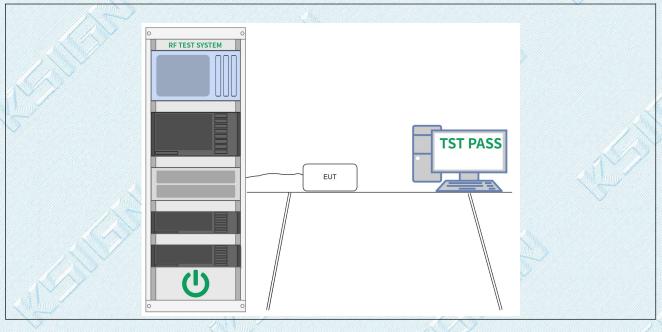
# 3.4. Maximum conducted output power

| Test Requirement: | 47 CFR Part 15.407(a)(1)(iv)<br>47 CFR Part 15.407(a)(3)(i)  |
|-------------------|--|
| Test Limit:       | For client devices in the 5.15-5.25 GHz band, the maximum conducted output<br>power over the frequency band of operation shall not exceed 250 mW provided<br>the maximum antenna gain does not exceed 6 dBi.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the<br>maximum conducted output power shall be reduced by the amount in dB that<br>the directional gain of the antenna exceeds 6 dBi.<br>For the band 5.725-5.850 GHz, the maximum conducted output power over the<br>frequency band of operation shall not exceed 1 W.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the<br>maximum conducted output power shall be reduced by the amount in dB that<br>the directional gain of the antenna exceeds 6 dBi.<br>However, fixed point-to-point U-NII devices operating in this band may employ<br>transmitting antennas with directional gain greater than 6 dBi without any<br>corresponding reduction in transmitter conducted power. Fixed, point-to-point<br>operations, and multiple collocated transmitters transmitting the same<br>information. The operator of the U-NII device, or if the equipment is<br>professionally installed, the installer, is responsible for ensuring that systems<br>employing high gain directional antennas are used exclusively for fixed,<br>point-to-point operations. |
| Test Method:      | ANSI C63.10-2013, section 12.3   |
| Procedure:        | Refer to ANSI C63.10-2013 section 12.3   |

## 3.4.1. E.U.T. Operation:

| 23.1 °C                            |
|------------------------------------|
| 44.2 %                             |
| 101 kPa                            |
| Test Mode1, Test Mode2, Test Mode3 |
| -                                  |

#### 3.4.2. Test Setup Diagram:



#### TRF No. RF\_R1



Page 18 of 55

Report No.: KS2502S0602E04

# 3.4.3. Test Data:

Please Refer to Appendix for Details.

#### TRF No. RF\_R1



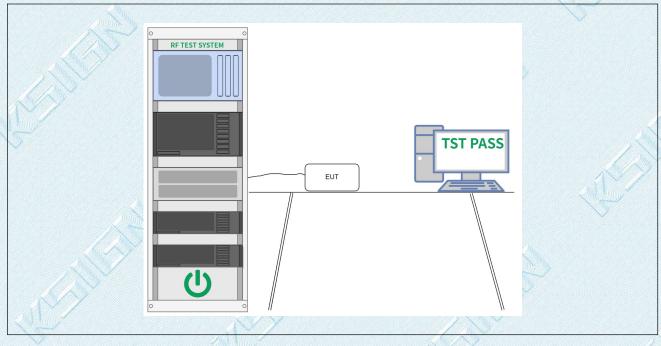
# 3.5. Power spectral density

| Test Requirement: | 47 CFR Part 15.407(a)(1)(iv)<br>47 CFR Part 15.407(a)(3)(i)  |
|-------------------|--|
| Test Limit:       | For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.<br>For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.<br>If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.<br>Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. |
| Test Method:      | ANSI C63.10-2013, section 12.5   |
| Procedure:        | Refer to ANSI C63.10-2013, section 12.5  |

# 3.5.1. E.U.T. Operation:

| Operating Environment: |                                    |
|------------------------|------------------------------------|
| Temperature:           | 23.1 °C                            |
| Humidity:              | 44.2 %                             |
| Atmospheric Pressure:  | 101 kPa                            |
| Final test mode:       | Test Mode1, Test Mode2, Test Mode3 |

## 3.5.2. Test Setup Diagram:



#### TRF No. RF\_R1



Page 20 of 55

Report No.: KS2502S0602E04

#### 3.5.3. Test Data:

Please Refer to Appendix for Details.

#### TRF No. RF\_R1



# 3.6. Band edge emissions (Radiated)

| Test Requirement: | 47 CFR Part 15.407(b)<br>47 CFR Part 15.407(b)<br>47 CFR Part 15.407(b)   | (4)  | lin.  | 20   |
|-------------------|---|--|---|--|
| S.                | For transmitters operati<br>the 5.15-5.35 GHz band<br>For transmitters operati<br>All emissions shall be li<br>above or below the band<br>above or below the band<br>edge increasing linearly<br>the band edge, and from<br>linearly to a level of 27 | d shall not exceed an e<br>ing solely in the 5.725-<br>mited to a level of -27<br>id edge increasing line<br>id edge, and from 25 M<br>/ to a level of 15.6 dBm<br>m 5 MHz above or belo   | e.i.r.p. of -27 dBr<br>5.850 GHz band<br>dBm/MHz at 75<br>arly to 10 dBm/M<br>1Hz above or be<br>n/MHz at 5 MHz<br>ow the band edge | n/MHz.<br>:<br>MHz or more<br>IHz at 25 MHz<br>ow the band<br>above or below     |
|                   | MHz   | MHz  | MHz   | GHz  |
|                   | 0.090-0.110   | 16.42-16.423   | 399.9-410   | 4.5-5.15   |
| $\sim$            | 10.495-0.505  | 16.69475-16.69525  | 608-614   | 5.35-5.46  |
|                   | 2.1735-2.1905   | 16.80425-16.80475  | 960-1240  | 7.25-7.75  |
|                   | 4.125-4.128   | 25.5-25.67   | 1300-1427   | 8.025-8.5  |
|                   | 4.17725-4.17775   | 37.5-38.25   | 1435-1626.5   | 9.0-9.2  |
| 201               | 4.20725-4.20775   | 73-74.6  | 1645.5-1646.  | 9.3-9.5  |
|                   | 4.20120 4.20110   | 1014.0   | 5   | 0.0 0.0  |
|                   | 6.215-6.218   | 74.8-75.2  | 1660-1710   | 10.6-12.7  |
|                   | 6.26775-6.26825   | 108-121.94   | 1718.8-1722.  | 13.25-13.4   |
|                   | 0.20110 0.20020   | 100 121.01   | 2   | 10.20 10.1   |
| A P               | 6.31175-6.31225   | 123-138  | 2200-2300   | 14.47-14.5   |
|                   | 8.291-8.294   | 149.9-150.05   | 2310-2390   | 15.35-16.2   |
|                   | 8.362-8.366   | 156.52475-156.525  | 2483.5-2500   | 17.7-21.4  |
|                   |   | 25   |   |  |
| $\sim$            | 8.37625-8.38675   | 156.7-156.9  | 2690-2900   | 22.01-23.12  |
| est Limit:        | 8.41425-8.41475   | 162.0125-167.17  | 3260-3267   | 23.6-24.0  |
|                   | 12.29-12.293  | 167.72-173.2   | 3332-3339   | 31.2-31.8  |
|                   | 12.51975-12.52025   | 240-285  | 3345.8-3358   | 36.43-36.5   |
|                   | 12.57675-12.57725   | 322-335.4  | 3600-4400   | (2)  |
|                   | 13.36-13.41   |  |   |  |
|                   | <sup>1</sup> Until February 1, 1999<br><sup>2</sup> Above 38.6<br>The field strength of em<br>not exceed the limits sh<br>1000 MHz, compliance<br>measurement instrume<br>1000 MHz, compliance<br>demonstrated based or<br>provisions in § 15.35ap    | nissions appearing with<br>nown in § 15.209. At free<br>with the limits in § 15.2<br>ntation employing a CI<br>with the emission limit<br>in the average value of  | in these frequen<br>equencies equal<br>209shall be dem<br>SPR quasi-peak<br>s in § 15.209sha<br>the measured er                     | cy bands shall<br>to or less than<br>onstrated using<br>detector. Above<br>Il be |
|                   | Except as provided else radiator shall not excee  | 1. / Million Control Control Control Control Control Control (Control Control Cont |   |  |

| Frequency (MHz) | Field strength<br>(microvolts/meter) | Measurement<br>distance<br>(meters) |
|-----------------|--------------------------------------|-------------------------------------|
| 0.009-0.490     | 2400/F(kHz)                          | 300                                 |
| 0.490-1.705     | 24000/F(kHz)                         | 30                                  |
| 1.705-30.0      | 30                                   | 30                                  |

TRF No. RF\_R1

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|  |  | ×  | Chi August  |
|--|--|--|---|
|  | 30-88  | 100 **   | 3   |
|  | 88-216   | 150 **   | 3   |
|  | 216-960  | 200 **   | 3   |
|  | Above 960  | 500  | 3   |
|  | ** Except as provided  | l in paragraph (g), fundamental                                | emissions from intentiona   |
|  |  | nder this section shall not be loo                             |   |
|  |  | -88 MHz, 174-216 MHz or 470                                    |   |
|  |  | e frequency bands is permitted                                 |   |
|  | part, e.g., §§ 15.231 a  | and 15.241.  |   |
| $\sim$   | In the emission table  | above, the tighter limit applies a                             | at the band edges.  |
|  | The emission limits s  | hown in the above table are bas                                | sed on measurements   |
|  | employing a CISPR of   | uasi-peak detector except for t                                | he frequency bands 9–90   |
|  | kHz, 110–490 kHz an  | d above 1000 MHz. Radiated e                                   | emission limits in these  |
|  | three bands are base   | d on measurements employing                                    | an average detector.  |
| Test Method:   | ANSI C63.10-2013, s  | ection 12.7.4, 12.7.6, 12.7.7                                  |   |
|  | Above 1GHz:  |  |   |
| $\sim$   |  | he EUT was placed on the top of                                | of a rotating table 0.1   |
| 9  | The second s | und at a 3 meter fully-anechoic                                |   |
|  |  | to determine the position of the                               |   |
| . I  |  | 8 meters away from the interfere                               | a contenent a contra contra contra contra contra da contra contra contra contra contra contra contra contra con |
|  |  | on the top of a variable-height a                              |   |
|  | c. The antenna height is varied from one meter to four meters above the ground                                 |  |   |
|  | · · · · · · · · · · · · · · · · · · ·  | imum value of the field strength                               |   |
|  |  | of the antenna are set to make                                 |   |
|  |  | d emission, the EUT was arran                                  |   |
|  | then the antenna was   | tuned to heights from 1 meter                                  | to 4 meters (for the test   |
|  | frequency of below 30  | OMHz, the antenna was tuned t                                  | o heights 1 meter) and the  |
|  | rotatable table was tu   | rned from 0 degrees to 360 deg                                 | grees to find the maximum   |
|  | reading.   |  |   |
|  | e. The test-receiver s   | ystem was set to Peak Detect F                                 | Function and Specified  |
| d and a second s | Bandwidth with Maxir   | num Hold Mode.   |   |
|  | f. If the emission leve  | I of the EUT in peak mode was                                  | 10dB lower than the limit   |
|  |  | g could be stopped and the pea                                 |   |
|  |  | se the emissions that did not ha                               |   |
|  | re-tested one by one   | using peak or average method                                   | as specified and then   |
| Procedure:   | reported in a data she   |  |   |
|  |  | lowest channel, the middle cha                                 |   |
|  |  | surements are performed in X, `                                |   |
|  |  | nd found the X axis positioning                                |   |
|  |  | edures until all frequencies mea                               | asured was complete.  |
|  | Remark:  | L Cabla Lacard Anta  |   |
| N  |  | + Cable Loss+ Antenna Factor-                                  | •   |
|  |  | to 40GHz, the disturbance above above plate are the highest or |   |
|  |  | above plots are the highest er                                 |   |
|  |  | above points had been display                                  | an a  |
|  |  | om the radiator which are atten                                | luated more than 200B   |
|  | below the limit need r   | · · · · · · · · · · · · · · · · · · ·                          | Uz the field strength limit   |
| - M.   |  | ction, for frequencies above 1G                                |   |
|  |  | e limits. However, the peak field                              |   |
|  |  | maximum permitted average lin                                  |   |
|  |  | er any condition of modulation.                                | No. 2010.   |
|  |  | an the average limit, only the pe                              | eak measurement is shown  |
|  | in the report.   | ave 19CHz were very low and                                    | the hormonics were the  |
|  |  | bove 18GHz were very low and                                   |   |
|  |  | e found when testing, so only th                               | le above narmonics nad  |
|  | been displayed.  |  |   |

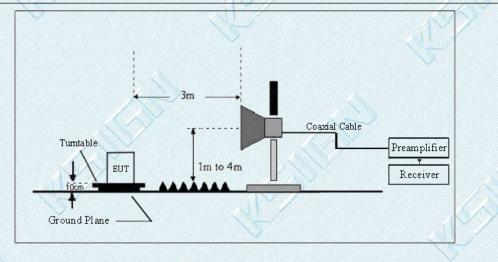


Report No.: KS2502S0602E04

## 3.6.1. E.U.T. Operation:

| Operating Environment: |                                    |
|------------------------|------------------------------------|
| Temperature:           | 23.1 °C                            |
| Humidity:              | 44.2 %                             |
| Atmospheric Pressure:  | 101 kPa                            |
| Final test mode:       | Test Mode1, Test Mode2, Test Mode3 |

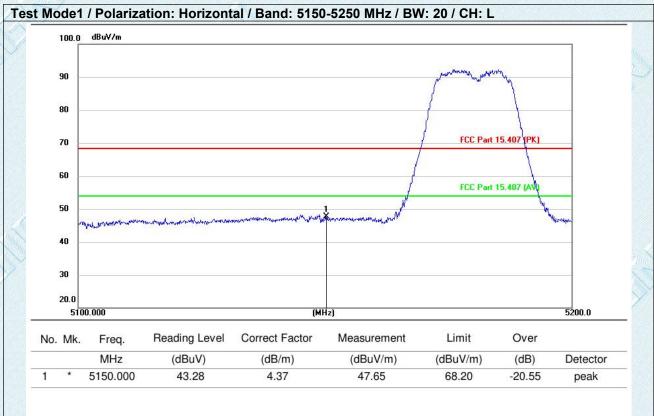
## 3.6.2. Test Setup Diagram:



#### TRF No. RF\_R1

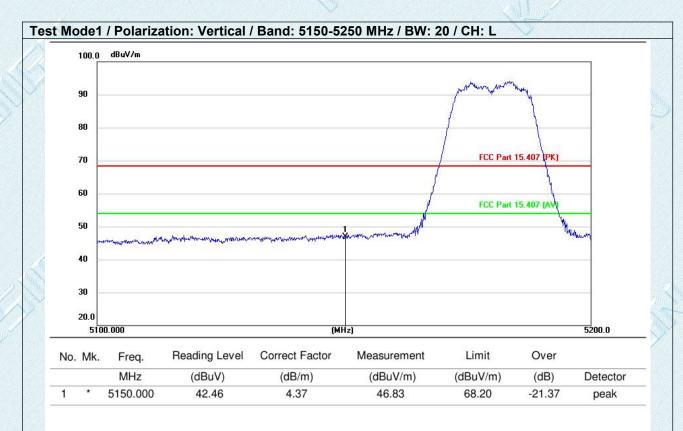


#### 3.6.3. Test Data:



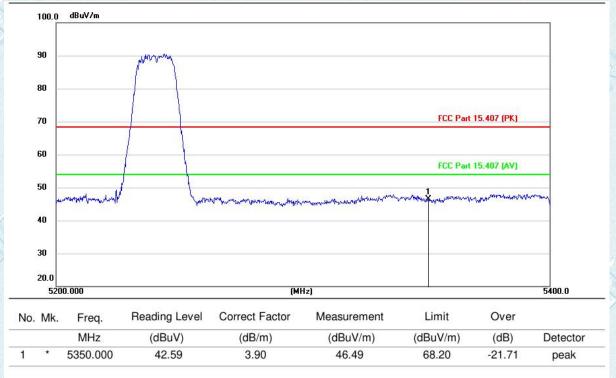
#### TRF No. RF\_R1



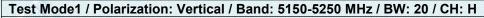


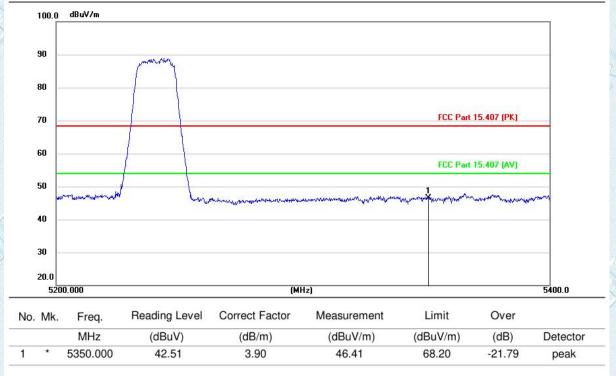




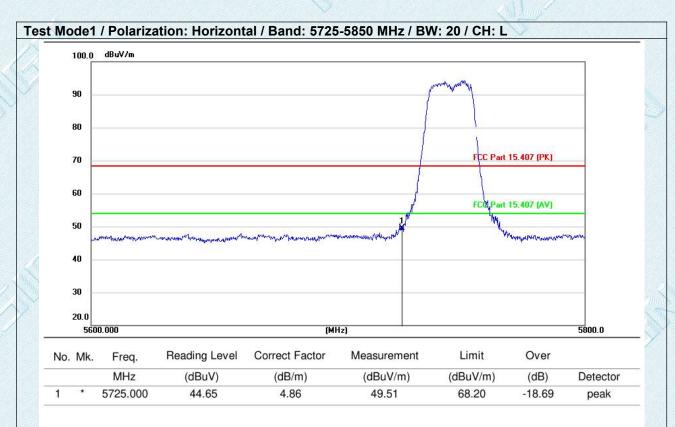




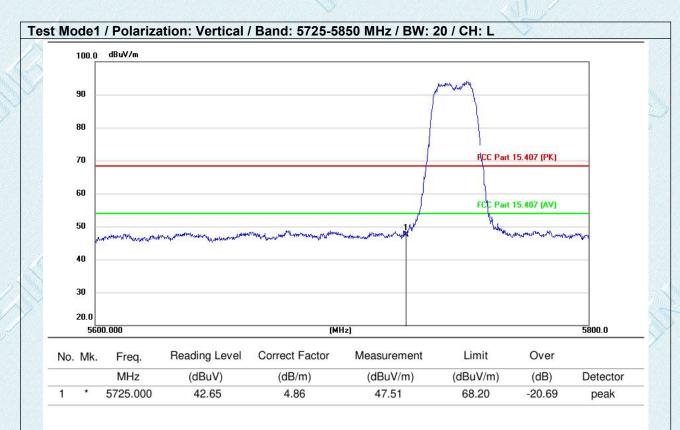






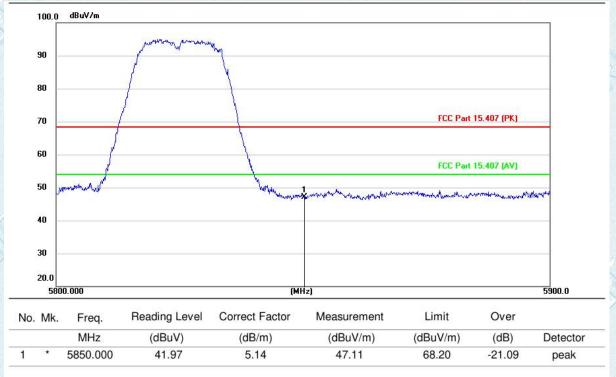






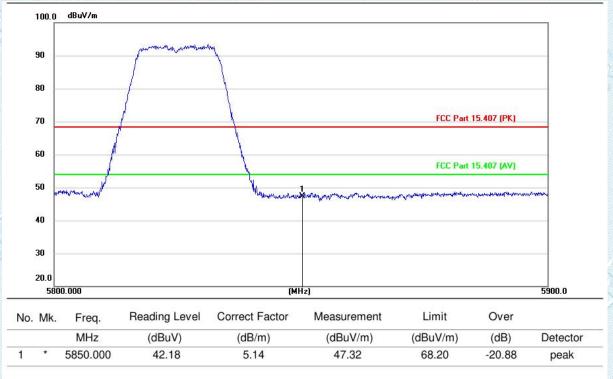












#### Note:

1.Measurement = Reading level + Correct Factor

- 2.Correct Factor=Antenna Factor + Cable Loss -Preamplifier Factor
- 3. Since the peak value is less than the limit of the AVG value, there is no AVG data
- 4.Pre-scan all mode, and found the A mode which it is worse case, so only show the test data for worse case.

#### TRF No. RF R1



# 3.7. Undesirable emission limits (below 1GHz)

| Test Requirement:         | 47 CFR Part 15.407(b)(9)  |   |  |  |
|---------------------------|---|---|--|--|
|                           |   | Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.  |  |  |
| Ń                         | Except as provided elsewhere in this subpart, the emissions from an intentiona radiator shall not exceed the field strength levels specified in the following table   |   |  |  |
|                           | Frequency (MHz)   | Field strength<br>(microvolts/meter)  | Measurement<br>distance<br>(meters)  |  |
|                           | 0.009-0.490   | 2400/F(kHz)   | 300  |  |
|                           | 0.490-1.705   | 24000/F(kHz)  | 30   |  |
| AP I                      | 1.705-30.0  | 30  | 30   |  |
| $\langle \rangle \rangle$ | 30-88   | 100 **  | 3  |  |
| Test Limit:               | 88-216  | 150 **  | 3  |  |
|                           | 216-960   | 200 **  | 3  |  |
|                           | Above 960   | 500   | 3  |  |
|                           |   | paragraph (g), fundamental em   |  |  |
|                           | part, e.g., §§ 15.231 and<br>In the emission table ab<br>The emission limits show<br>employing a CISPR qua<br>kHz, 110–490 kHz and a  | ove, the tighter limit applies at th<br>wn in the above table are based<br>si-peak detector except for the t<br>above 1000 MHz. Radiated emis   | ne band edges.<br>on measurements<br>frequency bands 9–90<br>ssion limits in these   |  |
|                           |   | on measurements employing an  | average detector.  |  |
| Test Method:              | ANSI C63.10-2013, sec   | tion 12.7.4, 12.7.5   |  |  |
| Procedure:                | <ul> <li>meters above the groun rotated 360 degrees to or b. The EUT was set 3 or antenna, which was more c. The antenna height is to determine the maximu vertical polarizations of the d. For each suspected end then the antenna was the frequency of below 30M rotatable table was turned reading.</li> <li>e. The test-receiver system Bandwidth with Maximum f. If the emission level of specified, then testing carbon be reported. Otherwise the re-tested one by one usin a data sheet.</li> <li>g. Test the EUT in the low h. The radiation measured</li> </ul> | EUT was placed on the top of a d at a 3 meter semi-anechoic character and at a 3 meter semi-anechoic character and the position of the high the position of the high the position of the high the anterna are set to make the mission, the EUT was arranged ned to heights from 1 meter to 4 Hz, the antenna was tuned to he defrom 0 degrees to 360 degree and the EUT in peak mode was 100 be stopped and the peak variable be anternal to the top and the peak variable be stopped be | namber. The table was<br>hest radiation.<br>erence-receiving<br>eight antenna tower.<br>heters above the ground<br>oth horizontal and<br>measurement.<br>I to its worst case and<br>4 meters (for the test<br>eights 1 meter) and the<br>es to find the maximum<br>ction and Specified<br>dB lower than the limit<br>alues of the EUT would<br>10dB margin would be<br>fied and then reported<br>el, the Highest channel<br>axis positioning for |  |
|                           | i. Repeat above procedu<br>Remark:<br>1. Level= Read Level+ (   | ires until all frequencies measu  | red was complete.  |  |



2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 0.1 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. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. 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. d. 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. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. 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 or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. 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. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. As shown in this section, 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. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

## 3.7.1. E.U.T. Operation:

| Operating Environment: |         |
|------------------------|---------|
| Temperature:           | 23.1 °C |
| Humidity:              | 44.2 %  |
| Atmospheric Pressure:  | 101 kPa |

#### TRF No. RF\_R1

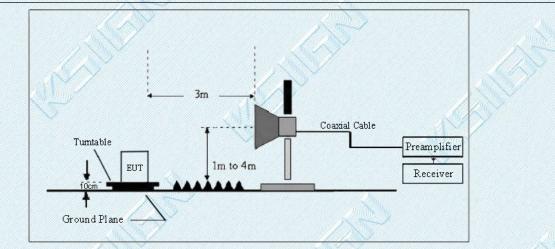


Report No.: KS2502S0602E04

Final test mode:

Test Mode1, Test Mode2, Test Mode3

## 3.7.2. Test Setup Diagram:



#### TRF No. RF\_R1



#### Page 35 of 55

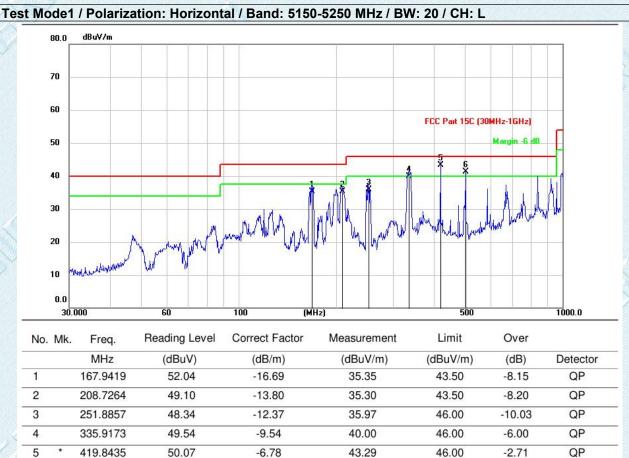
#### 3.7.3. Test Data:

503.8220

6

47.00

-5.75



41.25

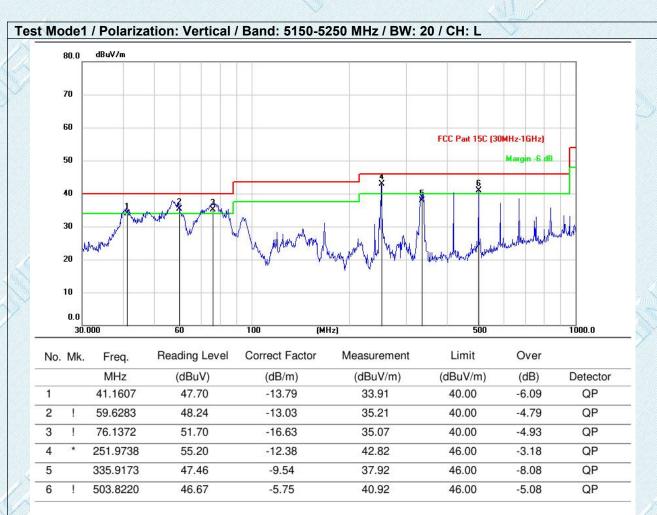
46.00

-4.75

QP

#### TRF No. RF\_R1





#### Note:

1.Measurement = Reading level + Correct Factor

2.Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

3.Over = Measurement -Limit

4.Pre-scan all mode, and found the low channel of A Mode which it is worse case, so only show the test data for worse case.

#### TRF No. RF R1



### **3.8. Undesirable emission limits (above 1GHz)**

| est Requirement:                        | 47 CFR Part 15.407(b)<br>47 CFR Part 15.407(b)<br>47 CFR Part 15.407(b)  | (4)                     | <b>%</b>          |             |
|---|--|-------------------------|-------------------|-------------|
| R.                                      | For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of $-27$ dBm/MHz.<br>For transmitters operating solely in the 5.725-5.850 GHz band:<br>All emissions shall be limited to a level of $-27$ dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at 5 MHz above or below the band edge. |                         |                   |             |
|   | MHz  | MHz                     | MHz               | GHz         |
|   | 0.090-0.110  | 16.42-16.423            | 399.9-410         | 4.5-5.15    |
|   | 10.495-0.505   | 16.69475-16.69525       | 608-614           | 5.35-5.46   |
|   | 2.1735-2.1905  | 16.80425-16.80475       | 960-1240          | 7.25-7.75   |
| 1 A A A A A A A A A A A A A A A A A A A | 4.125-4.128  | 25.5-25.67              | 1300-1427         | 8.025-8.5   |
| 2011                                    | 4.17725-4.17775  | 37.5-38.25              | 1435-1626.5       | 9.0-9.2     |
|   | 4.20725-4.20775  | 73-74.6                 | 1645.5-1646.      | 9.3-9.5     |
|   |  |                         | 5                 |             |
|   | 6.215-6.218  | 74.8-75.2               | 1660-1710         | 10.6-12.7   |
| 1. P                                    | 6.26775-6.26825  | 108-121.94              | 1718.8-1722.<br>2 | 13.25-13.4  |
| XX                                      | 6.31175-6.31225  | 123-138                 | 2200-2300         | 14.47-14.5  |
|   | 8.291-8.294  | 149.9-150.05            | 2310-2390         | 15.35-16.2  |
|   | 8.362-8.366  | 156.52475-156.525<br>25 | 2483.5-2500       | 17.7-21.4   |
| Test Limit:                             | 8.37625-8.38675  | 156.7-156.9             | 2690-2900         | 22.01-23.12 |
|   | 8.41425-8.41475  | 162.0125-167.17         | 3260-3267         | 23.6-24.0   |
|   | 12.29-12.293   | 167.72-173.2            | 3332-3339         | 31.2-31.8   |
|   | 12.51975-12.52025  | 240-285                 | 3345.8-3358       | 36.43-36.5  |
|   | 12.57675-12.57725  | 322-335.4               | 3600-4400         | (2)         |
|   | 13.36-13.41  |                         |                   |             |

1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Field strength<br>(microvolts/meter) | Measurement<br>distance<br>(meters) |
|--------------------------------------|-------------------------------------|
| 2400/F(kHz)                          | 300                                 |
| 24000/F(kHz)                         | 30                                  |
|                                      | (microvolts/meter)<br>2400/F(kHz)   |

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|              | 4 705 00 0   | 20   |  |
|--------------|--|--|--|
|              | 1.705-30.0   | 30   | 30   |
|              | 30-88  | 100 **   | 3  |
| $\sim$       | 88-216   | 150 **   | 3  |
|              | 216-960  | 200 **   | 3  |
|              | Above 960  | 500  | 3  |
|              | radiators operating ur<br>bands 54-72 MHz, 76<br>operation within these<br>part, e.g., §§ 15.231 a<br>In the emission table<br>The emission limits sh<br>employing a CISPR q<br>kHz, 110–490 kHz an  | in paragraph (g), fundamental<br>der this section shall not be loc<br>-88 MHz, 174-216 MHz or 470-<br>e frequency bands is permitted us<br>and 15.241.<br>above, the tighter limit applies a<br>nown in the above table are bas<br>uasi-peak detector except for the<br>d above 1000 MHz. Radiated ed<br>d on measurements employing | cated in the frequency<br>806 MHz. However,<br>under other sections of this<br>at the band edges.<br>sed on measurements<br>he frequency bands 9–90<br>mission limits in these   |
| Test Method: |  | ection 12.7.4, 12.7.6, 12.7.7  | dir aronago aotooton.  |
|              | Above 1GHz:  |  |  |
| Procedure:   | <ul> <li>above the ground at a 360 degrees to determ</li> <li>b. The EUT was set 3 which was mounted of c. The antenna height to determine the maximum vertical polarizations of d. For each suspected then the antenna was frequency of below 30 rotatable table was tureading.</li> <li>e. The test-receiver sy Bandwidth with Maxim f. If the emission level specified, then testing be reported. Otherwise re-tested one by one</li> </ul> | of the EUT in peak mode was<br>could be stopped and the peal<br>e the emissions that did not ha<br>using peak or average method  | er. The table was rotated<br>radiation.<br>ence-receiving antenna,<br>intenna tower.<br>In meters above the ground<br>be both horizontal and<br>the measurement.<br>ged to its worst case and<br>to 4 meters (for the test<br>o heights 1 meter) and the<br>grees to find the maximum<br>function and Specified<br>10dB lower than the limit<br>k values of the EUT would<br>ve 10dB margin would be |
| Procedure:   | reported in a data she<br>g. Test the EUT in the<br>h. The radiation meas<br>Transmitting mode, an<br>i. Repeat above proce<br>Remark:   |  | annel, the Highest channel<br>Y, Z axis positioning for<br>which it is the worst case.<br>asured was complete.   |
|              | 2. Scan from 18GHz t<br>The points marked on<br>when testing, so only<br>spurious emissions fro  | to 40GHz, the disturbance above<br>above plots are the highest en<br>above points had been display<br>om the radiator which are atten  | ve 18GHz was very low.<br>nissions could be found<br>ed. The amplitude of  |
|              | are based on average<br>shall not exceed the r<br>more than 20 dB unde<br>peak level is lower tha<br>in the report.  | not be reported.<br>ction, for frequencies above 1G<br>e limits. However, the peak field<br>naximum permitted average lim<br>er any condition of modulation.<br>an the average limit, only the pe<br>nove 18GHz were very low and  | strength of any emission<br>hits specified above by<br>For the emissions whose<br>eak measurement is shown   |
|              |  | e found when testing, so only th   |  |
|              | 2 Mil Monte  |  |  |

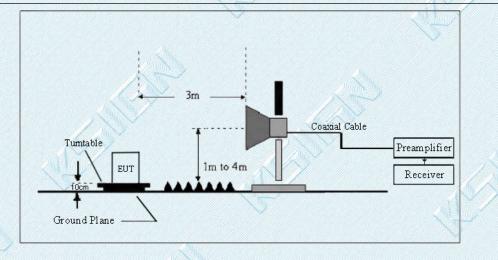


| 12 2 2 | 42.4.4 |        |
|--------|--------|--------|
| been   | aisp   | layed. |

## 3.8.1. E.U.T. Operation:

| Operating Environment: |                                    |
|------------------------|------------------------------------|
| Temperature:           | 23.1 °C                            |
| Humidity:              | 44.2 %                             |
| Atmospheric Pressure:  | 101 kPa                            |
| Final test mode:       | Test Mode1, Test Mode2, Test Mode3 |

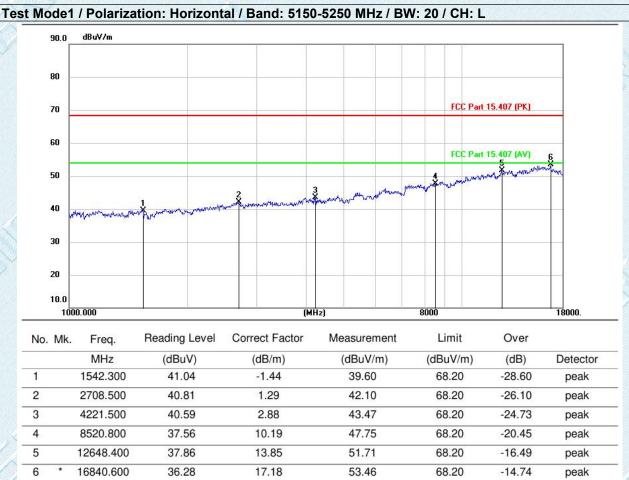
## 3.8.2. Test Setup Diagram:



#### TRF No. RF\_R1

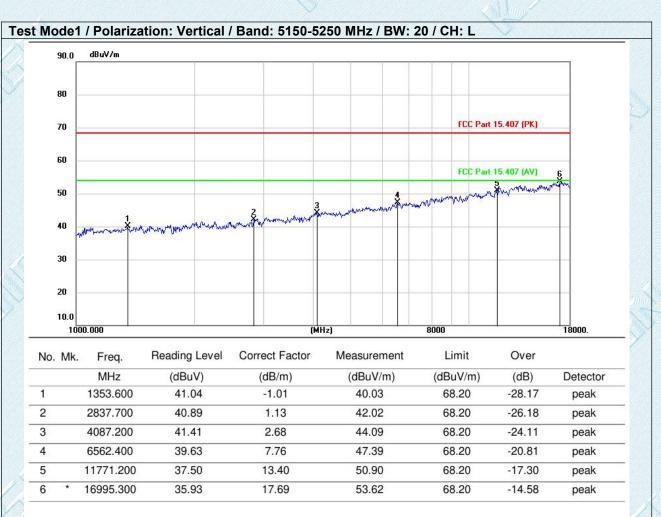


#### 3.8.3. Test Data:

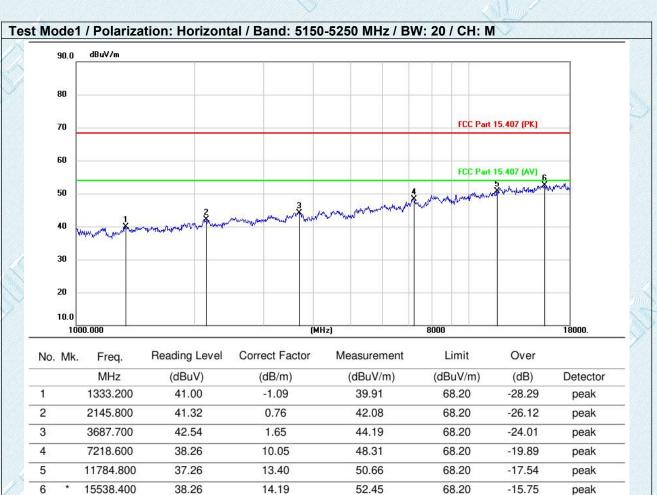


#### TRF No. RF\_R1

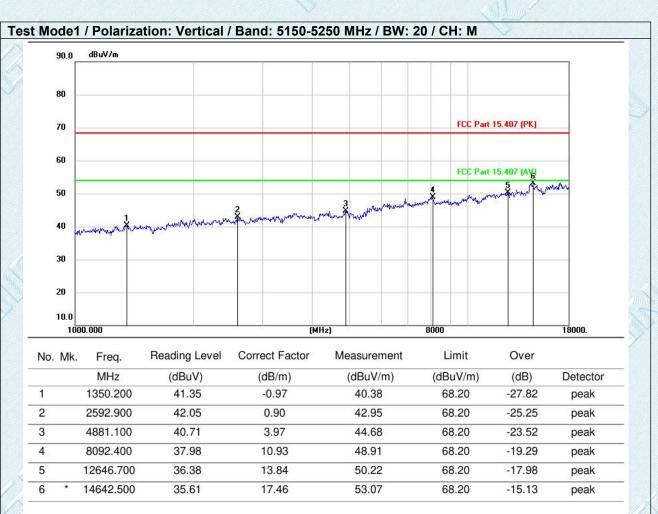




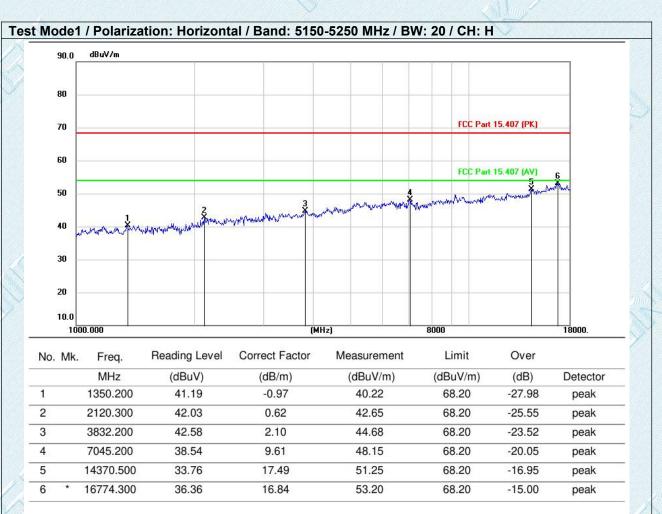




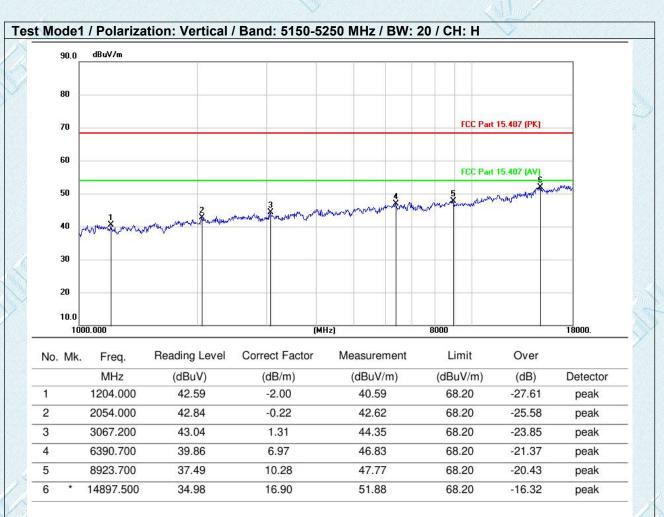




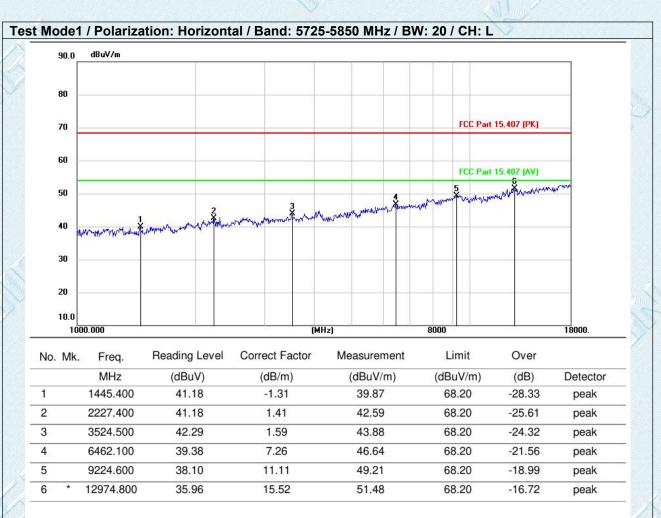




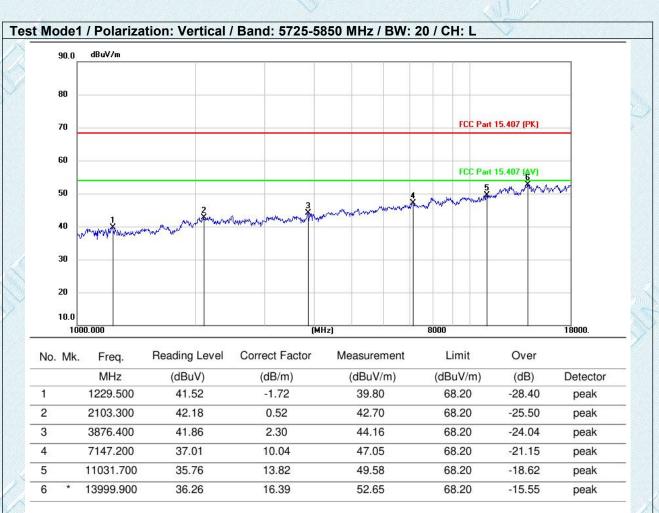








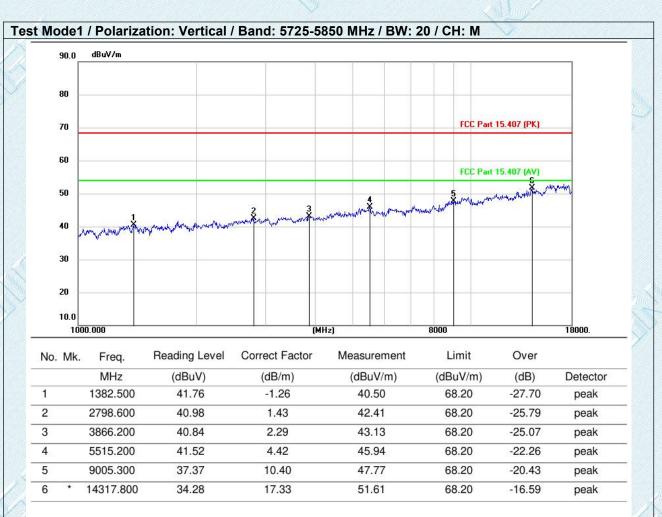








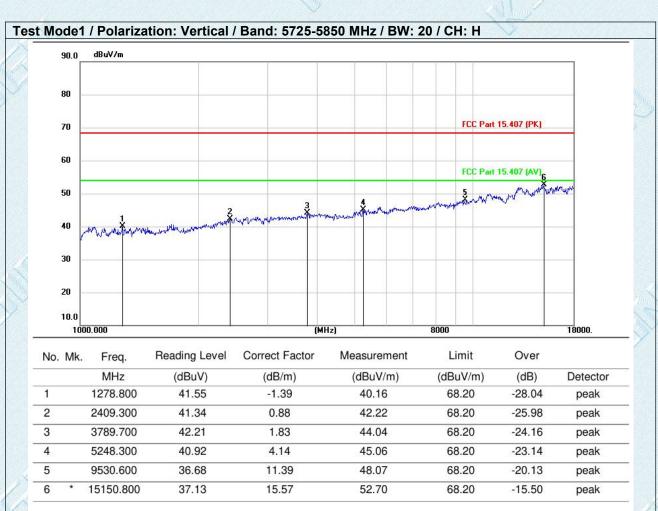












#### Note:

1.Measurement = Reading level + Correct Factor

Correct Factor=Antenna Factor + Cable Loss - Preamplifier Factor

Over = Measurement -Limit

2.Pre-scan all mode, and found the A mode which it is worse case, so only show the test data for worse case.3. Since the peak value is less than the limit of the AVG value, there is no AVG data.

4.From 18GHz to 40GHz,the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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## 4. EUT TEST PHOTOS





#### TRF No. RF\_R1





#### TRF No. RF\_R1



Page 54 of 55

Report No.: KS2502S0602E04

## 5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Refer to Appendix - EUT Photos for KS2502S0602E.

--THE END--

#### TRF No. RF\_R1



# **Important Notice**

- 1. The results are valid only for the samples submitted.
- 2. The report is invalid without the "APPROVED Seal" and the "Riding Seam Seal".
- 3. This report is invalid without the signature of the main inspector, reviewer, or approver.
- 4. The testing report cannot be partially copied without the written consent of our laboratory.
- 5. If the report is not stamped with the "CMA" logo, it indicates that the report does not have any social certification effect in China.
- 6. Product information, customer information, and sample sources are all provided by the client, and we are not responsible for their authenticity.
- 7. The inspection basis or inspection items marked with "★" are not within the scope of CNAS,CMA and A2LA accreditation in this laboratory.
- 8. Reports that are transferred, copied, stolen, impersonated, altered, or tampered with in any media form without authorization are invalid.
- 9. If you have any objections to this report, you can appeal to our unit within 15 days after receiving the report. Failure to do so will not be accepted.
- 10. For situations where compliance decision needs to be made based on test result, such as when there are no relevant decision rules required by the regulations, standards, or technical specifications used, or when there are no relevant customer requirements, the report issued by our laboratory refer to ILAC-G8:09-2019 and CNAS-GL015:2022 using simple acceptance decision rules.

| Laboratory: | KSIGN(Guangdong) | Testing Co., Ltd. |
|-------------|------------------|-------------------|
|             |                  |                   |

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