

FCC TEST REPORT

FCC ID: 2AFCB-C5 On Behalf of Shanghai EFIX Geomatics Co.,Ltd Geodetic GNSS Receiver Model No.: C5

| Prepared for | : | Shanghai EFIX Geomatics Co.,Ltd |
|--------------|---|--|
| Address | : | Building 1, 158 Shuanglian Road, Qingpu District, Shanghai |

| Prepared By | Shenzhen Alpha Product Testing Co., Ltd. | | | |
|-------------|--|--|--|--|
| Address | Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China | | | |

| Report Number | : | A2206032-C02-R05 |
|-----------------|---|------------------------------|
| Date of Receipt | : | June 6, 2022 |
| Date of Test | : | June 6, 2022 - June 30, 2022 |
| Date of Report | : | July 1, 2022 |
| Version Number | : | VO |

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TEST REPORT DECLARATION

| Applicant | : | Shanghai EFIX Geomatics Co.,Ltd | | |
|-----------------|---|--|--|--|
| Address | : | Building 1, 158 Shuanglian Road, Qingpu District, Shanghai | | |
| Manufacturer | : | Shanghai EFIX Geomatics Co.,Ltd | | |
| Address | : | Building 1, 158 Shuanglian Road, Qingpu District, Shanghai | | |
| EUT Description | : | Geodetic GNSS Receiver | | |
| | | (A) Model No. : C5 | | |
| | | | | |

(B) Trademark : EF

Measurement Standard Used:

FCC CFR Title 47 Part 90, FCC CFR Title 47 Part 2, RSS-119 Issue 12, RSS-Gen Issue 5, ANSI C63.26: 2015, ANSI TIA-603-E:2016

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 2, Part 90, RSS-119, RSS-Gen limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:

Reak Yang Project Engineer

Rom. Ky

Approved by (name + signature).....:

Simple Guan Project Manager

Date of issue.....

July 1, 2022

Revision History

| Revision | Issue Date | Revisions | Revised By |
|----------|--------------|------------------------|------------|
| V0 | July 1, 2022 | Initial released Issue | Reak Yang |

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

| Test Item | Test Requirement | Standards Paragraph | Result |
|--|--|--|--------|
| Transmitter Power(Conducted) | FCC PART 90§ 90.205,RSS-119§ RSS-119(5.4) | | Р |
| Occupied Bandwidth & Emission Mask | FCC PART 90§ 90.209,§ 90.210RSS-119§ RSS-119(5.5) | | Ρ |
| Spurious Emissions(conducted) | FCC PART 90 RSS-119 | § 90.210, § RSS-119(5.8) | Ρ |
| Spurious Emissions(Radiated) | FCC PART 90 § 90.210, RSS-119 § RSS-119(5.8) | | Р |
| Transient Frequency Behavior | FCC PART 90 RSS-119 | § 90.214, § RSS-119(5.9) | Р |
| Frequency Stability | FCC PART 90 RSS-119 | § 90.213, § RSS-119(5.3) | Ρ |
| Modulation Characteristics - Audio Frequency Response | FCC PART 2 FCC PART 90 § 2.1047(a), § 90.2 | | N/A |
| Modulation Characteristics - Modulation Limiting | FCC PART 2 FCC PART 90 | PART 2 § 2.1047(b), § 90.207 PART 90 | |
| Adjacent channel power | FCC PART 90 | § 90.221 | Р |

Note: 1. P is an abbreviation for Pass.

2. F is an abbreviation for Fail.

3. N/A is an abbreviation for Not Applicable.

4. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

| Description | : | Geodetic GNSS Receiver |
|---------------------|---|---|
| Trademark | : | EFIX |
| Model Number | : | C5 |
| DIFF. | : | N/A |
| Test Voltage | : | DC 8.4V From Battery, DC 5V From Adapter |
| UHF | | |
| Operation frequency | : | 410MHz-470MHz |
| Conducted Power | : | 0.5W(26.99dBm), 1W(30dBm) |
| Channel spacing | : | 12.5KHz, 25KHz |
| Modulation type | : | GMSK |
| Antenna Type | : | External Antenna, Maximum Gain is 4.0dBi. (Antenna information is provided by applicant.) |
| Software version | : | V1.0 |
| Hardware version | : | V1.7.2 |

Remark: 1. The worst-case simultaneous transmission configuration was evaluated with no non-compliance found. Results in this report are only for UHF function, and there is no other transmitter involved.

Note: All Conducted Power have been tested, and recorded the worst case 1W(30dBm) results in this report.

2.2. Accessories of Device (EUT)

| Accessories | : | AC Adapter |
|--------------|---|---|
| Manufacturer | : | Yisheng Electronics Co., Ltd. |
| Model | : | EA1012AVRU-050 |
| Ratings | : | Input: AC 100-240V, 1.0A, 50-60Hz Output: DC 5V,2.4A |

2.3. Tested Supporting System Details

| No. | Description | Manufacturer | Model | Serial Number | Certification or SDOC |
|-----|-------------|--------------|----------|---------------|--------------------------|
| 1. | DC Power | JUNKE | JK120100 | / | / |

2.4. Block Diagram of connection between EUT and simulators



The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

2.5. Test Mode

All modes and data rates and positions were investigated. Test modes are chosen to be reported as the worst case configuration below:

| Test Mode | | | | | |
|-----------|-------------------------------|--|--|--|--|
| Item | Description of operation mode | Note | | | |
| 1 | GMSK+CS12.5KHz+TX | at maximum rated power for transmitter | | | |
| 2 | GMSK+CS25KHz+TX | at maximum rated power for transmitter | | | |

Note: The worst case modes for all test are the item 1 and item 3.

Description Operation Frequency

| GMSK | | | | | |
|--------------|-----------------------|----------------|--|--|--|
| Test Channel | Channel spacing (KHz) | Frequency(MHz) | | | |
| Low | 12.5 | 410.050 | | | |
| LOW | 25 | 410.050 | | | |
| Mid | 12.5 | 451.000 | | | |
| IVIId | 25 | 451.000 | | | |
| Llink | 12.5 | 469.950 | | | |
| High | 25 | 469.950 | | | |

2.6. Test Conditions

| ltems | Required | Actual |
|--------------------|----------------|-------------|
| Temperature range: | 15-35 ℃ | 24 ℃ |
| Humidity range: | 25-75% | 56% |
| Pressure range: | 86-106kPa | 980kPa |

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission Registration Number: 293631

July 15, 2019 Certificated by IC Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

| Item | Uncertainty |
|---|---------------------------|
| Uncertainty for Power point Conducted Emissions Test | 1.63dB |
| Uncertainty for Radiation Emission test in 3m chamber | 3.5dB |
| (below 30MHz) | 3.74dB(Polarize: V) |
| Uncertainty for Radiation Emission test in 3m chamber | 3.76dB(Polarize: H) |
| (30MHz to 1GHz) | 3.77dB(Polarize: V) |
| Uncertainty for Radiation Emission test in 3m chamber | 3.80dB(Polarize: H) |
| (1GHz to 25GHz) | 5.06×10 ⁻⁸ GHz |
| Uncertainty for radio frequency | 0.40dB |
| Uncertainty for conducted RF Power | 1.63dB |
| Uncertainty for temperature | 0.2°C |
| Uncertainty for humidity | 1% |
| Uncertainty for DC and low frequency voltages | 0.06% |

2.9. Test Equipment List

| Equipment | Manufacture | Model No. | Firmware version | Serial No. | Last cal. | Cal Interval |
|--------------------------------|---------------|----------------------|------------------|----------------------------|------------|-----------------|
| 9*6*6 anechoic chamber | CHENYU | 9*6*6 | / | N/A | 2020.09.02 | 3Year |
| Spectrum analyzer | ROHDE&SCHWARZ | FSV40-N | 2.3 | 102137 | 2021.08.25 | 1Year |
| Spectrum analyzer | Agilent | N9020A | A.14.16 | MY499100060 | 2021.08.25 | 1Year |
| Receiver | ROHDE&SCHWARZ | ESR | 2.28 SP1 | 1316.3003K03-102 082-Wa | 2021.08.25 | 1Year |
| Receiver | R&S | ESCI | 4.42 SP1 | 101165 | 2021.08.25 | 1Year |
| Bilog Antenna | Schwarzbeck | VULB 9168 | / | VULB 9168#627 | 2021.08.30 | 2Year |
| Horn Antenna | SCHWARZBECK | BBHA 9120 D | / | 2106 | 2021.08.30 | 2Year |
| Active Loop Antenna | SCHWARZBECK | FMZB 1519B | / | 00059 | 2021.08.30 | 2Year |
| RF Cable | Resenberger | Cable 1 | / | RE1 | 2021.08.25 | 1Year |
| RF Cable | Resenberger | Cable 2 | / | RE2 | 2021.08.25 | 1Year |
| RF Cable | Resenberger | Cable 3 | / | CE1 | 2021.08.25 | 1Year |
| Pre-amplifier | HP | HP8347A | / | 2834A00455 | 2021.08.25 | 1Year |
| Pre-amplifier | Agilent | 8449B | / | 3008A02664 | 2021.08.25 | 1Year |
| L.I.S.N.#1 | Schwarzbeck | NSLK8126 | / | 8126-466 | 2021.08.25 | 1Year |
| L.I.S.N.#2 | ROHDE&SCHWARZ | ENV216 | / | 101043 | 2021.08.25 | 1 Year |
| Horn Antenna | SCHWARZBECK | BBHA9170 | / | 00946 | 2021.08.30 | 2 Year |
| Preamplifier | SKET | LNPA_1840- 50 | / | SK2018101801 | 2021.08.25 | 1 Year |
| Power Meter | Agilent | E9300A | / | MY41496628 | 2021.08.25 | 1 Year |
| Power Sensor | DARE | RPR3006W | / | 15100041SNO91 | 2021.08.25 | 1 Year |
| Temp. & Humid. Chamber | Weihuang | WHTH-1000- 40-880 | / | 100631 | 2022.04.22 | 1 Year |
| Switching Mode Power Supply | JUNKE | JK12010S | / | 20140927-6 | 2021.08.25 | 1 Year |
| Adjustable attenuator | MWRFtest | N/A | / | N/A | N/A | N/A |
| 10dB Attenuator | Mini-Circuits | DC-6G | / | N/A | N/A | N/A |
| Oscilloscope | Agilent | 54833A | / | 165521 | 2021.08.25 | 1Year |

| Software Information | | | | | |
|----------------------|---------------|--------------|-----------|--|--|
| Test Item | Software Name | Manufacturer | Version | | |
| RE | EZ-EMC | farad | Alpha-3A1 | | |
| CE | EZ-EMC | farad | Alpha-3A1 | | |
| RF-CE | MTS 8310 | MWRFtest | V2.0.0.0 | | |

3. Test Results and Measurement Data

3.1. Transmitter Power (Conducted)

3.1.1.Test Specification

| Test Requirement: | Part 90.205, RSS-119(5.4) | | | |
|-------------------|---|--|--|--|
| Test Method: | FCC part 2.1046 | | | |
| Limits: | Please refer section FCC Part 90.205 and , RSS-119(5.4) | | | |
| Test Setup: | Power Meter EUT | | | |
| Test Procedure: | a) Connect the equipment as illustrated. b) Turn on the power meter c) Record value | | | |
| Test Result: | PASS | | | |

3.1.2. Test Results

| | GMSK mode (1W): | | | | | | |
|-----------------------------|------------------------|--|----------------------|---------------------------|---|--------|--|
| Channel spacing (KHz) | Frequenc y (MHz) | Maximum Conducted Output Power(Peak) (dBm) | Maximum ERP (dBm) | Stated ERP Power (dBm) | Conducte d Output Power Limit (dBm) | Result | |
| 12.5 | 410.050 | 29.833 | 31.683 | 31.85 | 30±1 | PASS | |
| 25 | 410.050 | 29.742 | 31.592 | 31.85 | 30±1 | PASS | |
| 12.5 | 451.000 | 29.876 | 31.726 | 31.85 | 30±1 | PASS | |
| 25 | 451.000 | 29.853 | 31.703 | 31.85 | 30±1 | PASS | |
| 12.5 | 469.950 | 29.846 | 31.696 | 31.85 | 30±1 | PASS | |
| 25 | 469.950 | 29.883 | 31.733 | 31.85 | 30±1 | PASS | |

| | GMSK mode (0.5W): | | | | | | |
|-----------------------------|------------------------|--|----------------------|---------------------------|---|--------|--|
| Channel spacing (KHz) | Frequenc y (MHz) | Maximum Conducted Output Power(Peak) (dBm) | Maximum ERP (dBm) | Stated ERP Power (dBm) | Conducte d Output Power Limit (dBm) | Result | |
| 12.5 | 410.050 | 26.675 | 28.525 | 28.84 | 26.99±1 | PASS | |
| 25 | 410.050 | 26.644 | 28.494 | 28.84 | 26.99±1 | PASS | |
| 12.5 | 451.000 | 26.851 | 28.701 | 28.84 | $26.99\!\pm\!1$ | PASS | |
| 25 | 451.000 | 26.773 | 28.623 | 28.84 | 26.99±1 | PASS | |
| 12.5 | 469.950 | 26.831 | 28.681 | 28.84 | $26.99\!\pm\!1$ | PASS | |
| 25 | 469.950 | 26.776 | 28.626 | 28.84 | 26.99±1 | PASS | |

Note: 1. ERP= Maximum Conducted Output Power(Peak) + Antenna Gain – 2.15dB

3.2. Occupied Bandwidth and Emission Mask

3.2.1.Test Specification

| Test Requirement: | FCC Part 90.209, FCC Part 90.210, RSS-119(5.5) |
|-------------------|---|
| Test Setup: | |
| | Spectrum Analyzer EUT |
| Test Procedure: | The resolution bandwidth of the spectrum analyzer was set at 300 Hz and the spectrum was recorded in the Frequency band \pm 50KHz from the carrier frequency for Occupied Bandwidth, the resolution bandwidth of the spectrum analyzer was set at 100 Hz and the spectrum was recorded in the Frequency band \pm 100KHz from the carrier frequency for Emission Mask. |
| Test Result: | PASS |

3.2.2.Test data

Occupied Bandwidth:

| GMSK 12.5KHz Channel Spacing: | | | | | | |
|-------------------------------|--------------------|-------------------------|------------------------------------|--|--------|--|
| Channel | Frequency (MHz) | 26dB Bandwidth (KHz) | 99% Occupied Bandwidth (KHz) | 99% Occupied Bandwidth Limit (KHz) | Result | |
| Low | 410.050 | 12.04 | 9.941 | 11.25 | PASS | |
| Mid | 451.000 | 12.14 | 9.853 | 11.25 | PASS | |
| High | 469.950 | 12.01 | 9.848 | 11.25 | PASS | |

| GMSK 25K | GMSK 25KHz Channel Spacing: | | | | | |
|----------|-----------------------------|-------------------------|------------------------------------|--|--------|--|
| Channel | Frequency (MHz) | 26dB Bandwidth (KHz) | 99% Occupied Bandwidth (KHz) | 99% Occupied Bandwidth Limit (KHz) | Result | |
| Low | 410.050 | 21.60 | 19.137 | 20 | PASS | |
| Mid | 451.000 | 21.61 | 19.079 | 20 | PASS | |
| High | 469.950 | 20.69 | 19.169 | 20 | PASS | |

Emission Mask:

| GMSK 12.5KHz Channel Spacing: | | | | | |
|-------------------------------|--------------------|-----------------|-------|--------|--|
| Channel | Frequency (MHz) | Applicable Mask | RBW | Result | |
| Low | 410.050 | D | 100Hz | PASS | |
| Mid | 451.000 | D | 100Hz | PASS | |
| High | 469.950 | D | 100Hz | PASS | |

| GMSK 25KHz Channel Spacing: | | | | | | |
|-----------------------------|--------------------|-----------------|-------|--------|--|--|
| Channel | Frequency (MHz) | Applicable Mask | RBW | Result | | |
| Low | 410.050 | С | 100Hz | PASS | | |
| Mid | 451.000 | С | 100Hz | PASS | | |
| High | 469.950 | С | 100Hz | PASS | | |

Test plots as follows: GMSK 12.5KHz Channel Spacing: Occupied Bandwidth



Low: 410.050MHz

Mid: 451.000MHz



High: 469.950MHz



GMSK 25KHz Channel Spacing: Occupied Bandwidth

| Agilent Spectrum Analyzer - Occupied BW | | | | | |
|--|----------------------------------|--|--|--|-------------------------------|
| Center Freq 410.050000 Mi | Hz Center Trig: Fr #Atten: | ENSE:INT SOURCE OFF Freq: 410.050000 MHz ee Run Avg Hol 30 dB | ALIGN OFF 07:25:194 Radio Sto d:>10/10 Radio De | M Jun 30, 2022 I: None vice: BTS | Frequency |
| Ref Offset 11 dB 10 dB/div Ref 35.00 dBm | | | | | |
| 250 150 500 | horman | man | 4 | | Center Freq 410.050000 MHz |
| 500 500 15.0 25.0 10.1 10 | <i>M</i> . | | Marry Marry | hong | |
| -35.0 | | | | | |
| Center 410.1 MHz #Res BW 300 Hz | #\ | /BW 1 kHz | Sp Sweep | an 50 kHz 527.2 ms | CF Step 5.000 kHz |
| Occupied Bandwidth 19 | .137 kHz | Total Power | 36.5 dBm | | Auto Man |
| Transmit Freq Error | 125 Hz | OBW Power | 99.00 % | | 0 Hz |
| x dB Bandwidth | 21.60 kHz | x dB | -26.00 dB | | |
| | | | | | |

Low: 410.050MHz

Mid: 451.000MHz

| 00 RF 50 Q AC Center Freq 451.000000 N | AlHz #IFGain:Low → Atten | SENSE:INT SOURCE OFF r Freq: 451.000000 MHz ree Run Avg Hol : 30 dB | ALIGN OFF 07: Rad d>10/10 Rad | 26:59 AM Jun 30, 2022 lio Std: None lio Device: BTS | Frequency |
|---|-----------------------------|---|--|---|--------------------------------|
| Ref Offset 11 dB 10 dB/div Ref 35.00 dBm | <u> </u> | | | | |
| 25.0 15.0 5.00 | Marmon | -long Monor | A | | Center Freq 451.000000 MHz |
| 500 150 250 360 | | | North Arrest | who who | |
| -45.0 | | | | | |
| Center 451 MHz #Res BW 300 Hz | #1 | VBW 1 kHz | Sw | Span 50 kHz eep 527.2 ms | CF Step 5.000 kHz |
| Occupied Bandwidt | ^h 9.079 kHz | Total Power | 36.4 dB | m | <u>Auto</u> Man Freg Offset |
| Transmit Freq Error | 144 Hz | OBW Power | 99.00 | % | 0 Hz |
| x dB Bandwidth | 21.61 kHz | x dB | -26.00 c | IB | |

High: 469.850MHz





GMSK 12.5KHz Channel Spacing: Emission Mask

Mid: 451.000MHz



High: 469.950MHz





GMSK 25KHz Channel Spacing: Emission Mask





High: 469.950MHz



3.3. Spurious Emissions (conducted)

3.3.1.Test Specification

| Test Requirement: | FCC Part 90.210, RSS-119(5.8) |
|-------------------|--|
| Test Setup: | |
| | Spectrum Analyzer EUT |
| Test Limit: | Spectrum Analyzer EUT Modulation Type: GMSK FCC Part 22.359, 74.462, 80.211 and 90.210 and RSS Gen, RSS 119 Issue 12: For 6.25 bandwidth: On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 6.25 kHz at least: 55 + 10 log (Pwatts) = 55 + 10 log (1.0) =55.00 dB Calculation: Limit (dBm) =EL-55-10log10 (TP) Notes: EL is the emission level of the Output Power expressed in dBm, In this application, the EL is 30 dBm for High rated power. High: Limit (dBm) = 30 - 55 - 10log (3.0) = -25 dBm For 12.5 bandwidth: On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz at least: 50 + 10 log (Pwatts) = 50 + 10 log (1.0) =50.00 dB Note: In general, the worst case attenuation requirement shown above was applied. Calculation: Limit (dBm) =EL-50-10log10 (TP) Notes: EL is the emission level of the Output Power expressed in dBm, In this application, the EL is 30 dBm for High rated power. Limit (dBm) = 30.00 - 50 - 10log (1.0) = -20 dBm For 25 kHz bandwidth: On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 62.5 kHz at least: 43 + 10 log (Pwatts) = 43 + 10 log (1.0) = 43.00 dB Note: In general, the worst case attenuation requirement shown above was applied. Calculation: Limit (dBm) |
| | 20 dB down than the limit. |
| | 4. ERP for below 1GHz and EIRP above 1GHz. |
| Test Result: | PASS |

3.3.2.Test data

Test plots as follows:

GMSK 12.5KHz Channel Spacing:

| Agiler 00 Mar | t Spectro ker 1 | um Anal RF 410.3 | lyzer - Swe 50 g 240000 | pt SA & 1000 MF | iz PNO: Fast G | Trig: Fre Atten: 3 | NSEINT SOUR e Run) dB | CE OFF Avg Type Avg Hold: | ALIGN OFF C Log-Pwr 37/100 | 08:32:11 AM TRACE TYPE DET | Jun 30, 2022 | Trace/Detector | Agilen W Star | t Spectrum t Freq 1 | Analyzer - Sw RF 50 s 1.000000 | nget SA AC 1000 GH: | Z PNO: Fast G | Trig: Fre Atten: 3 | e Run d B | Avg Type Avg Hold | ALIGN OFF : Log-Pwr >100/100 | 08:33:33 AM TRAC TYS DE | (Jun 30, 2022 2 2 3 4 5 1 7 P 1 1 1 1 1 1 | Frequency |
|---------------------|--------------------|------------------------|-------------------------------|-----------------------|-------------------|-----------------------|-------------------------------|------------------------------|--|-------------------------------------|---------------------|------------------------|----------------------|------------------------|--------------------------------------|---------------------------|------------------|-----------------------|--------------------|----------------------|------------------------------------|----------------------------------|--|--|
| 10 di | 3/div | Ref (Ref | offset 10 30.00 d | dB Bm | | | | | M | kr1 410.2 23.41 | 24 MHz 2 dBm | 1 | 10 dE | R Bidiv R | ef Offset 10 ef 30.00 | dBm | | | | | N | /kr1 1.2 -36.0 | 32 GHz 93 dBm | Auto Tune |
| 20.0 | | | | | | 1 | | | | | | Clear Write | 20.0 | | | | | | | | | | | Center Freq 3.00000000 GHz |
| 10.0 | | | | | | | | | | | | Trace Average | 10.0 0.00 | | | | | | | | | | | Start Freq 1.000000000 GHz |
| -10.0 | | | | | | | | | | | -13 00 dBH | Max Hold | -10.0 -20.0 | | | | | | | | | | -13.02 dB+ | Stop Freq 5.00000000 GHz |
| -30.0 | | | | | | | | | | | | Min Hold | -30.0 | 1 | | | مرور استون | والافار القامهم | لماسول العلوب عالي | to Salas and | | | whether | CF Step 400.000000 MHz <u>Auto</u> Man |
| -50.0 | h, h, h | Negger | hind | , dende | Westan | Whiteway | heinerei | mung | ara ang sang sang sang sang sang sang sang | oluguitero | pole-milan | View Blank Trace On | -50.0 | and the second | an in 1997 a star a star | | | | | | | | | Freq Offset 0 Hz |
| -60.0 | | | | | | | | | | | | More 1 of 3 | -60.0 | | | | | | | | | | | |
| Star #Re MSG | t 30.0 s BW | MHz 100 k | Hz | | #VB\ | N 300 kHz | | ę | Sweep 9 | Stop 1.00 2.73 ms (1 | 000 GHz 001 pts) | | Star #Res MISG | t 1.000 (5 BW 1.0 | GHZ) MHZ | | #VBV | / 3.0 MHz | | | Sweep 6 | Stop 5 .667 ms (| .000 GHz 1001 pts) | |

Low: 410.050MHz

Mid: 451.000MHz



High: 469.950MHz

| Agilent Spectrum Analyzer - Swept SA | | Agilent Spectrum Analyzer - Swept SA | |
|--|-------------------------------------|---|-----------------|
| Kernel 1 470.380000000 MHz Marker 1 470.380000000 MHz Trig: Free Run Avg Type: Log-Pwr Trig: Free | 30,2022 2 3 4 5 6 Peak Search | Recall St Row 1 Fig. Free Run Trin: Free Run Availed Spf100 Trin: Free Run Availed Spf100 Trin: Free Run Availed Spf100 Trin: Free Run Trin: Free Run Trin | te |
| IFGain:Low Atten: 30 dB | NNNNN NextPeak | IFGaint.ow Atten: 30 dB | File |
| Ref Offset 10 dB 23.650 | dBm | Ref Offset 10 dB -34.142 dBm 10 dB/div -34.142 dBm | |
| | Next Pk Right | 200 Edit Reg | ster, |
| 10.0 | | 10.0 | |
| 0.00 | Next Pk Left | 0.00 | mpty) |
| -10.0 | -13 00 08M | -18.0 | ster 2 |
| -20.0 | Marker Delta | | mpty) |
| 0.02 | Mkr→CF | -3001 Reg | ster 3 mpty) |
| | | -00 marshallet all the design of the second and the second and the second and the second and the second sec | |
| 500 March March Martin Contact March Martin Martin March Mar | Mkr→RefLvl | -500 | iter 4 mpty) |
| -50.0 | | -600 | |
| Start 30.0 MHz Stop 1.000 | 0 GHz 1 of 2 | Start 1.000 GHz Stop 5.000 GHz | 1 of 3 |
| #Res BW 100 kHz #VBW 300 kHz Sweep 92.73 ms (100 | 01 pts) | #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 6.667 ms (1001 pts) | |
| MSG STATUS | | MSG File <uhf 25k_0001.state="" mask420=""> recalled STATUS</uhf> | |



GMSK 25KHz Channel Spacing:

Mid: 451.000MHz





| Agiler 00 Mar | t Spectru ker 1 | um Analy RF 470.3 | zer - Swe 50 g 80000 | Pt SA AC 1000 MI | Hz PNO: Fa FGain:Lo | я (р | Trig: F Atten: | sense in ree Rur 30 dB | VT SOURCE | OFF ▲ Avg Type Avg Hold: | ALIGN OFF C Log-Pwr 40/100 | 08:39:19 A TRA TY D | M Jun 30, 2022 CE 1 2 3 4 5 C PE M CT P N N N N N | Peak Search | Agiler 01 Rov | nt Spectrum v 1 | RF 501 | ept SA | PNO: Fast G | Trig: Fre Atten: 3 | NSE:INT SOUR | Avg Type Avg Hold | ALIGN OFF Cog-Pwr 60/100 | 08:39:31 Al TRAC TVI D | 4.Jun 30, 2022 E 1 2 3 4 5 1 E M M M M M M | Recall State |
|-------------------------------|--------------------|-------------------------|----------------------------|------------------------|---------------------------|--------------|-------------------|------------------------------|-----------|--------------------------------|----------------------------------|------------------------------|--|---------------|---------------------|---|---------------------------|-------------|------------------------|-----------------------|--------------|----------------------|--------------------------------|---------------------------------|--|------------------------|
| 10 dl | 3/div | Ref O Ref 3 | ffset 10 10.00 d | dB Bm | | | | | | | М | kr1 470. 23.7 | 38 MHz 95 dBm | Next Peak | 10 dl | B/div | Ref Offset 1 Ref 30.00 | 0 dB dBm | | | | | ٨ | /kr1 1.4 -36.0 | 08 GHz 31 dBm | From File |
| 20.0 | | | | | | | 1 | | | | | | | Next Pk Right | | | | | | | | | | | | Edit Register Names |
| 10.0 0.00 | | | | | | | | | | | | | | Next Pk Left | | | | | | | | | | | | Register 1 (empty) |
| -10.0 | | | | | | | | | | | | | -13.00 dBn | Marker Delta | | | | | | | | | | | -13.00 dBn | Register 2 (empty) |
| -30.0 | | | | | | | | | | | | | | Mkr→CF | | | •1 | | | ath ab a ta | . atticked | dit | | | 11 descut | Register 3 (empty) |
| -50.0 | us f | a st aan | Lab aver | nteres and | , ing , light open | 4hap | | ellery) | migand | h-part-g-igge | wyzenapółkate | alderproversjed | etaletation | Mkr⊸RefLvl | | esteritory | u, liyyerkanadi | ملحسماليعيش | | | | | romo _{nte} je | and the second | | Register 4 (empty) |
| -60.0 | | | | | | | | | | | | | | More | | | | | | | | | | | | More |
| Star #Re ^{MSG} | 8 BW 1 | MHz 100 kł | lz | | # | VBW : | 300 kl | lz | | | Sweep 9 | Stop 1. 92.73 ms | 0000 GHz (1001 pts) | 1012 | Star #Re | t 1.000 s BW 1 VFile <u< th=""><th>GHZ 0 MHZ HF MASK4</th><th>20 25K_00</th><th>#WEW 001.state> rec</th><th>3.0 MHz</th><th>:</th><th></th><th>Sweep 6</th><th>Stop 5 .667 ms (</th><th>000 GHz 1001 pts)</th><th>TOIS</th></u<> | GHZ 0 MHZ HF MASK4 | 20 25K_00 | #WEW 001.state> rec | 3.0 MHz | : | | Sweep 6 | Stop 5 .667 ms (| 000 GHz 1001 pts) | TOIS |

3.4. Radiated Spurious Emission

3.4.1.Test Specification

| Test Requirement: | FCC Part 90.210, RSS-119(5.8) | | | | | | | | | | | |
|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Test Method: | ANSI C63.26 | | | | | | | | | | | |
| Measurement Distance: | 3 m | | | | | | | | | | | |
| Antenna Polarization: | Horizontal & Vertical | | | | | | | | | | | |
| Operation mode: | Refer to item 4.1 | | | | | | | | | | | |
| Receiver Setup: | FrequencyRBWVBW9kHz- 150kHz200Hz1kHz150kHz- 30MHz9kHz30kHz30MHz-1GHz100KHz300KHzAbove 1GHz1MHz3MHz | | | | | | | | | | | |
| Limit: | For equipment using 25 kHz channel spacing, on any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10log (P) dB. For equipment using 12.5 kHz channel spacing, on any frequency removed from the center of The authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10 log(P) dB or 70 dB, | | | | | | | | | | | |
| Test setup: | Receiver Test Antenna Antenna RECEIVER UNDER TEST TURNTABLE STANDARD TEST SITE | | | | | | | | | | | |
| Test Procedure: | The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on turntable. The measurement antenna was placed at a distance of 3 meter from the EUT. During the tests, the antenna height and polariza as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT .The test was perform by placing the EUT on 3-orthogonal axis. The frequency range up to teeth harmonic of the fundamental frequency was investigated. Remove the EUT and replace it with substitution antenna. A sig generator was connected to the substitution antenna by a | | | | | | | | | | | |

| | non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. Spurious emissions in dB =10, 1g (TXpwr in Watts/0.001)-the absolute level Spurious attenuation limit in dB =50+10 Log ₁₀ (power out in Watts) for EUT with a 12.5 kHz and 25KHz channel bandwidth. |
|---------------|--|
| Test results: | PASS |

3.4.2.Test Data

GMSK:

Test Mode: Low: 410.050MHz, Channel Spacing 12.5KHz

| _ | Reading | | | | Emission | | |
|-----------|---------|--------------|------------|----------|----------|-------|--------|
| Frequency | level | Antenna | Cable loss | Ant.Gain | level | Limit | Margin |
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 152.648 | -92.11 | V | 0.24 | 31.35 | -61.00 | -20 | -41.00 |
| 360.904 | -96.67 | V | 0.26 | 31.34 | -65.59 | -20 | -45.59 |
| 673.313 | -94.80 | V | 0.42 | 31.24 | -63.98 | -20 | -43.98 |
| 863.444 | -100.11 | V | 0.58 | 30.71 | -69.98 | -20 | -49.98 |
| 1263.509 | -82.47 | V | 1.23 | 26.38 | -57.32 | -20 | -37.32 |
| 3864.166 | -80.59 | V | 1.68 | 25.47 | -56.8 | -20 | -36.8 |
| 285.253 | -97.23 | Н | 0.43 | 31.24 | -66.42 | -20 | -46.42 |
| 399.050 | -95.76 | Н | 0.45 | 30.68 | -65.53 | -20 | -45.53 |
| 479.190 | -92.05 | Н | 0.64 | 30.85 | -61.84 | -20 | -41.84 |
| 675.773 | -101.53 | Н | 0.79 | 31.12 | -71.2 | -20 | -51.2 |
| 1368.694 | -83.14 | Н | 1.29 | 26.12 | -58.31 | -20 | -38.31 |
| 3258.712 | -76.82 | Н | 1.62 | 25.41 | -53.03 | -20 | -33.03 |

Test Mode: Mid: 451.000MHz, Channel Spacing 12.5KHz

| Frequency | Reading level | Antenna | Cable loss | Ant.Gain | Emission level | Limit | Margin |
|-----------|------------------|--------------|------------|----------|-------------------|-------|--------|
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 155.210 | -89.82 | V | 0.24 | 31.35 | -58.71 | -20 | -38.71 |
| 364.462 | -91.47 | V | 0.26 | 31.34 | -60.39 | -20 | -40.39 |
| 669.814 | -97.30 | V | 0.42 | 31.24 | -66.48 | -20 | -46.48 |
| 862.247 | -94.03 | V | 0.58 | 30.71 | -63.90 | -20 | -43.90 |
| 1261.405 | -90.30 | V | 1.23 | 26.38 | -65.15 | -20 | -45.15 |
| 3858.853 | -79.33 | V | 1.68 | 25.47 | -55.54 | -20 | -35.54 |
| 290.754 | -100.48 | Н | 0.43 | 31.24 | -69.67 | -20 | -49.67 |
| 397.852 | -91.98 | Н | 0.45 | 30.68 | -61.75 | -20 | -41.75 |
| 479.276 | -102.01 | Н | 0.64 | 30.85 | -71.80 | -20 | -51.8 |
| 683.561 | -100.66 | Н | 0.79 | 31.12 | -70.33 | -20 | -50.33 |
| 1368.272 | -79.58 | Н | 1.29 | 26.12 | -54.75 | -20 | -34.75 |
| 3262.627 | -81.15 | Н | 1.62 | 25.41 | -57.36 | -20 | -37.36 |

| Frequency | Reading level | Antenna | Cable loss | Ant.Gain | Emission level | Limit | Margin |
|-----------|------------------|--------------|------------|----------|-------------------|-------|--------|
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 149.976 | -91.69 | V | 0.24 | 31.35 | -60.58 | -20 | -40.58 |
| 363.698 | -93.99 | V | 0.26 | 31.34 | -62.91 | -20 | -42.91 |
| 672.157 | -101.44 | V | 0.42 | 31.24 | -70.62 | -20 | -50.62 |
| 867.135 | -99.31 | V | 0.58 | 30.71 | -69.18 | -20 | -49.18 |
| 1259.426 | -86.44 | V | 1.23 | 26.38 | -61.29 | -20 | -41.29 |
| 3858.867 | -85.14 | V | 1.68 | 25.47 | -61.35 | -20 | -41.35 |
| 290.920 | -99.75 | Н | 0.43 | 31.24 | -68.94 | -20 | -48.94 |
| 405.147 | -91.49 | Н | 0.45 | 30.68 | -61.26 | -20 | -41.26 |
| 473.758 | -97.39 | Н | 0.64 | 30.85 | -67.18 | -20 | -47.18 |
| 677.316 | -101.15 | Н | 0.79 | 31.12 | -70.82 | -20 | -50.82 |
| 1372.894 | -83.19 | Н | 1.29 | 26.12 | -58.36 | -20 | -38.36 |
| 3264.131 | -80.05 | Н | 1.62 | 25.41 | -56.26 | -20 | -36.26 |

Test Mode: High: 469.950MHz, Channel Spacing 12.5KHz

Test Mode: Low: 410.050MHz, Channel Spacing 25KHz

| Frequency | Reading level | Antenna | Cable loss | Ant.Gain | Emission level | Limit | Margin |
|-----------|------------------|--------------|------------|----------|-------------------|-------|--------|
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 149.365 | -95.61 | V | 0.24 | 31.35 | -64.50 | -13 | -51.50 |
| 360.122 | -91.23 | V | 0.26 | 31.34 | -60.15 | -13 | -47.15 |
| 672.254 | -94.81 | V | 0.42 | 31.24 | -63.99 | -13 | -50.99 |
| 867.320 | -98.91 | V | 0.58 | 30.71 | -68.78 | -13 | -55.78 |
| 1259.385 | -84.91 | V | 1.23 | 26.38 | -59.76 | -13 | -46.76 |
| 3856.570 | -82.80 | V | 1.68 | 25.47 | -59.01 | -13 | -46.01 |
| 287.978 | -96.61 | Н | 0.43 | 31.24 | -65.80 | -13 | -52.80 |
| 402.660 | -92.99 | Н | 0.45 | 30.68 | -62.76 | -13 | -49.76 |
| 475.190 | -90.79 | Н | 0.64 | 30.85 | -60.58 | -13 | -47.58 |
| 678.902 | -93.17 | Н | 0.79 | 31.12 | -62.84 | -13 | -49.84 |
| 1370.493 | -81.64 | Н | 1.29 | 26.12 | -56.81 | -13 | -43.81 |
| 3258.430 | -80.11 | Н | 1.62 | 25.41 | -56.32 | -13 | -43.32 |

| Frequency | Reading level | Antenna | Cable loss | Ant.Gain | Emission level | Limit | Margin |
|-----------|------------------|--------------|------------|----------|-------------------|-------|--------|
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 157.727 | -97.90 | V | 0.24 | 31.35 | -66.79 | -13 | -53.79 |
| 361.299 | -92.36 | V | 0.26 | 31.34 | -61.28 | -13 | -48.28 |
| 670.384 | -90.08 | V | 0.42 | 31.24 | -59.26 | -13 | -46.26 |
| 859.190 | -94.09 | V | 0.58 | 30.71 | -63.96 | -13 | -50.96 |
| 1262.116 | -82.57 | V | 1.23 | 26.38 | -57.42 | -13 | -44.42 |
| 3860.246 | -75.65 | V | 1.68 | 25.47 | -51.86 | -13 | -38.86 |
| 285.515 | -96.14 | Н | 0.43 | 31.24 | -65.33 | -13 | -52.33 |
| 404.347 | -99.32 | Н | 0.45 | 30.68 | -69.09 | -13 | -56.09 |
| 472.970 | -93.59 | Н | 0.64 | 30.85 | -63.38 | -13 | -50.38 |
| 682.270 | -91.48 | Н | 0.79 | 31.12 | -61.15 | -13 | -48.15 |
| 1370.178 | -80.51 | Н | 1.29 | 26.12 | -55.68 | -13 | -42.68 |
| 3261.045 | -77.16 | Н | 1.62 | 25.41 | -53.37 | -13 | -40.37 |

Test Mode; Mid: 451.000MHz, Channel Spacing 25KHz

Test Mode: High: 469.950MHz, Channel Spacing 25KHz

| Frequency | Reading | Antenna | Cable loss | Ant Gain | Emission | Limit | Margin |
|-----------|---------|--------------|------------|----------|----------|-------|--------|
| (MHz) | (dBm) | Polarization | (dB) | (dBi) | (dBm) | (dBm) | (dB) |
| 154.820 | -95.69 | V | 0.24 | 31.35 | -64.58 | -13 | -51.58 |
| 363.368 | -91.14 | V | 0.26 | 31.34 | -60.06 | -13 | -47.06 |
| 670.811 | -94.58 | V | 0.42 | 31.24 | -63.76 | -13 | -50.76 |
| 865.805 | -90.69 | V | 0.58 | 30.71 | -60.56 | -13 | -47.56 |
| 1258.551 | -79.61 | V | 1.23 | 26.38 | -54.46 | -13 | -41.46 |
| 3858.923 | -79.25 | V | 1.68 | 25.47 | -55.46 | -13 | -42.46 |
| 291.012 | -90.29 | Н | 0.43 | 31.24 | -59.48 | -13 | -46.48 |
| 400.454 | -93.94 | Н | 0.45 | 30.68 | -63.71 | -13 | -50.71 |
| 475.645 | -94.15 | Н | 0.64 | 30.85 | -63.94 | -13 | -50.94 |
| 680.453 | -98.10 | Н | 0.79 | 31.12 | -67.77 | -13 | -54.77 |
| 1373.809 | -85.31 | Н | 1.29 | 26.12 | -60.48 | -13 | -47.48 |
| 3264.509 | -75.24 | Н | 1.62 | 25.41 | -51.45 | -13 | -38.45 |

3.5. Transient Frequency Behavior

3.5.1.Test Specification

| Test Requirement: | FCC Part 90.214, RSS-119(5.9) | | | | | |
|-------------------|---|----------------|----------------------|-------------------------------------|------------------|--------------------------|
| Test Setup: | Oscilloscope EUT | | | | EUT | |
| | Channel Bandwidth | | Maximum Frequency | Transient Duration Limit (ms) | | |
| | (kHz) | (Notes 1, 2) | (kHz) | 138-174 MHz | 406.1-512 MHz | |
| | 25 | t ₁ | ±25 | 5 | 10 | |
| | | t2 | ±12.5 | 20 | 25 | |
| Test Limit | | t3 | ±25 | 5 | 10 | - |
| | 12.5 | t ₁ | ±12.5 | 5 | 10 | - |
| | | t ₂ | ±6.25 | 20 | 25 | - |
| | | t3 | ±12.5 | 5 | 10 | |
| | 6.25 | t ₁ | ±6.25 | 5 | 10 | - |
| | 0.25 | t ₂ | ±3.125 | 20 | 25 | |
| | The FUT | | ± 0.25 | climate | chamb | ar and connected to an |
| | The EUT was set in the chinate champer and connected to an | | | | | |
| | external L | JC power | supply a | | Jowers | upply. The RF output was |
| Test Procedure: | directly of | connecte | d to Os | cillosco | pe. Th | e coupling loss of the |
| | additional cables was recorded and taken in account for all the | | | | | |
| | measure | ments. Th | ne result v | was rec | orded. | |
| Test Result: | PASS | | | | | |

3.5.2.Test data

Test Plots for channel spacing 25KHz, EUT power setting: Maximum.



Remark: Only list the worst data for channel spacing 25KHz, modulation GMSK.

3.6. Behavior Frequency Stability

3.6.1.Test Specification

| Test Requirement: | FCC Part 90.213, RSS-119(5.3) | | | | |
|-------------------|---|--|--|--|--|
| Test Method: | ANSI C63.26, RSS-Gen | | | | |
| Test Setup: | Laptop RF Communication Test Set Test Set Equipment Attenuator(s) Mini-Circuit Under Test Attenuator(s) Mini-Circuit Attenuator(s) Mini-Circuit RF Detector Modulation Hewlett Packard AC/DC Adapter Modulation | | | | |
| Test Procedure: | Method of Measurement: After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply or AC power supply and the voltage was adjusted in the required ranges. | | | | |
| Test Result: | PASS | | | | |

3.6.2. Test data

| Conclusion: PASS | | | | | | |
|------------------|------------|-----------------|-----------------|--|--|--|
| Mode | Voltage | Frequency error | frequency error | | | |
| | (V) | (Hz) | (ppm) | | | |
| | 9.0 | 3 | 0.007 | | | |
| | 8.8 | 2 | 0.005 | | | |
| | 8.6 | 2 | 0.005 | | | |
| | 8.4 | 1 | 0.002 | | | |
| Opacing | 8.2 | 3 | 0.007 | | | |
| | 8.0 | 2 | 0.005 | | | |
| Limit | 2.5ppm | | | | | |
| | 9.0 | 6 | 0.014 | | | |
| | 8.8 | 5 | 0.011 | | | |
| Middle Channel | 8.6 | 5 | 0.011 | | | |
| Spacing | 8.4 | 3 | 0.007 | | | |
| Opacing | 8.2 | 4 | 0.009 | | | |
| | 8.0 | 5 | 0.011 | | | |
| Limit | Limit 5ppm | | | | | |

| Mode | Temperature | Frequency error | frequency error | | |
|-----------------|-------------|-----------------|-----------------|--|--|
| | (°C) | (HZ) | (ppm) | | |
| | -20 | 6 | 0.014 | | |
| | -10 | 4 | 0.009 | | |
| Middle Channel | 0 | 6 | 0.014 | | |
| 12.5KHz | 10 | 6 | 0.014 | | |
| Channel Spacing | 20 | 6 | 0.014 | | |
| | 30 | 8 | 0.018 | | |
| | 40 | 4 | 0.009 | | |
| | 50 | 5 | 0.011 | | |
| Limit | | 2.5ppm | | | |
| | -20 | 10 | 0.023 | | |
| | -10 | 12 | 0.017 | | |
| Middle Channel | 0 | 10 | 0.023 | | |
| 25KHz | 10 | 9 | 0.020 | | |
| Channel Spacing | 20 | 8 | 0.018 | | |
| | 30 | 10 | 0.023 | | |
| | 40 | 12 | 0.027 | | |
| | 50 | 12 | 0.027 | | |
| Limit | 5ppm | | | | |

3.7. Modulation Characteristic

| Test Requirement: | FCC Part 90.207 |
|-------------------|--|
| Test Result: | According to FCC § 2.1047(d), Part 22, 74, 90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented. |

3.8. Adjacent channel power

| Test Requirement: | FCC Part 90.221 | | | | |
|-------------------|---|---|--|---------|--|
| Test Setup: | Spectrum Analyzer EUT | | | | |
| | Maximum adjacent power levels for MHz band, no need compliance with | or frequend below -360 | cies in the dBm: | 450–470 | |
| Test Limit: | Frequency offset | Maximum ACP (dBc) for devices 1 watt and less | Maximum ACP (dBc) for devices above 1 watt | | |
| | 25 kHz 50 kHz 75 kHz | – 55 dBc – 70 dBc – 70 dBc | – 60 dBc – 70 dBc – 70 dBc | | |
| Test method: | The resolution bandwidth of the spectrum analyzer was set at 100 Hz and the spectrum was recorded in the Frequency band 0Kz from the wanted frequency | | | | |
| Test result: | Pass. | | | | |

GMSK 25KHz spacing 450MHz-470MHz

| Carrier frequency | Test Frequency | Test Value | Limit | Result |
|-------------------|----------------|------------|-----------|--------|
| (MHz) | (MHz) | (dBm) | (dBm) | |
| | 449.925 | -63.052 | 30-70=-40 | PASS |
| | 449.95 | -58.426 | 30-70=-40 | PASS |
| 450,000 | 449.975 | -58.449 | 30-55=-25 | PASS |
| 450.000 | 450.025 | -60.632 | 30-55=-25 | PASS |
| | 450.05 | -65.130 | 30-70=-40 | PASS |
| | 450.075 | -64.142 | 30-70=-40 | PASS |
| | 469.875 | -61.621 | 30-70=-40 | PASS |
| | 469.900 | -60.494 | 30-70=-40 | PASS |
| 460.050 | 469.925 | -59.142 | 30-55=-25 | PASS |
| 409.950 | 469.975 | -61.156 | 30-55=-25 | PASS |
| | 470.000 | -62.305 | 30-70=-40 | PASS |
| | 470.025 | -62.840 | 30-70=-40 | PASS |

GMSK 25KHz spacing 450MHz-470MHz





----- END OF REPORT------