

Ericsson AB

RF TEST REPORT

Report Type:

FCC Part 27 RF report

PRODUCT NAME:

AIR 6449 B41

REPORT NUMBER:

231200855SHA-001

ISSUE DATE:

December 25, 2023

DOCUMENT CONTROL NUMBER:

TTRFFCC Part 27_V1 © 2018 Intertek



Applicant: Ericsson AB
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Manufacturer: Ericsson AB
Isafjordsgatan 10 SE-164 80 Stockholm 16480 Sweden

FCC ID: TA8AKRD901141

SUMMARY:

The equipment is tested according to the following standard(s) or Specification:

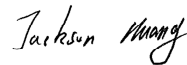
FCC CFR 47 Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

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TEST REPORT

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Revision History

| Report No. | Version | Description | Issued Date |
|------------------|---------|-------------------------|-------------------|
| 231200855SHA-001 | Rev. 01 | Initial issue of report | December 25, 2023 |

Measurement result summary

| TEST ITEM | FCC REFERANCE | RESULT |
|---|--------------------|--------|
| Max Output Power and Peak to Average Power Ratio and EIRP | 27.50(h) 2.1046 | Pass |
| Occupied Bandwidth | 27.53(m) 2.1049 | Pass |
| Unwanted Emissions at Band Edge | 27.53(m) 2.1051 | Pass |
| Conducted Unwanted Emission | 27.53(m) 2.1051 | Pass |

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

| | |
|-----------------------|---|
| Description: | Antenna Integrated Radio |
| Product name: | AIR 6449 B41 |
| | KRD 901 141/1 (with un-security software and antenna) KRD 901 141/11 (with security software and antenna) KRD 901 141/2* (with un-security software and RDNB board for testing purpose) KRD 901 141/21 (with security software and RDNB board for testing purpose) |
| Product number: | Note *: This is the tested unit. |
| Serial Number(s) | C82A593818 |
| Rating: | -48V DC |
| Software Version: | PIS: CXP2030038/1_R113C06, UP: CXP2010174/1_R83A105 |
| Hardware Version: | R1H |
| Sample received date: | December 12, 2023 |
| Date of test: | December 12, 2023 ~ December 15, 2023 |

1.2 Technical Specification

| | |
|-------------------------------|--|
| Frequency Range: | TX/RX: 2496 - 2690 MHz |
| Number of Antenna ports: | 64 TX/RX |
| Supported RAT: | LTE, NR |
| Max RF bandwidth (IBW): | 194 MHz |
| Supported Number of Carriers: | LTE: 4, NR: 2, LTE+NR: 5 |
| Supported modulation: | QPSK, 16QAM, 64QAM, 256QAM |
| Supported Channel Bandwidth: | LTE: 10, 15, 20 MHz NR: 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100 MHz, SCS: 30kHz |
| Declaration output power: | 4W/MHz up to 320 W |
| Antenna: | 23.8 dBi |

TEST REPORT**1.3 Description of Test Facility**

Conducted testing:

| | |
|---|--|
| Name: | Intertek Testing Services Shanghai |
| Address 1: | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China |
| Address 2: | No. 5 Lize East Street, Ericsson Tower, Chaoyang District, Beijing 100102 P.R.C. |
| Telephone: | +86 21 61278200 |
| Telefax: | +86 21 54262353 |
| The test facility is recognized, certified, or accredited by these organizations: | FCC Accredited Lab Designation Number: CN0175 |
| | IC Registration Lab CAB identifier.: CN0014 |
| | A2LA Accreditation Lab Certificate Number: 3309.02 |

2 TEST SPECIFICATIONS

2.1 Related documents

FCC Part 27 (2022)

FCC Part 2 (2022)

ANSI C63.26:2015

KDB 971168 D01 v03r01

KDB 662911 D01 v02r01

2.2 Product Information

The Equipment Under Test (EUT) AIR 6449 B41 is an Ericsson Radio Unit working in the wireless communication services 2496-2690 MHz band which provides communication connections to 2496-2690 MHz network. AIR 6449 B41 operates from a -48V DC.

AIR 6449 B41 has 4 variants. Their difference is listed as below, and others are same.

KRD 901 141/1 (with un-security software and antenna)

KRD 901 141/11 (with security software and antenna)

KRD 901 141/2 (with un-security software and RDNB board for testing purpose)

KRD 901 141/21 (with security software and RDNB board for testing purpose)

Full tests were performed on KRD 901 141/2.

The EUT includes 64 TX/RX ports. It can be configured to transmit in MIMO mode, and MIMO mode was used for measurements as the worst configuration. The complete testing was performed with the EUT transmitting at maximum RF power unless otherwise stated.

A full technical description can be found in the Manufacturer's documentation.

2.3 Configuration Description

The following settings were used to represent all traffic scenarios. The output power was measured on the bottom, middle and top channel of all applicable antenna ports. By measuring the output power of QPSK, 16QAM, 64QAM and 256QAM on one of the antenna ports, it was determined that QPSK for NR was the worst case modulation schemes and were used for all testing.

Complete testing was carried out on the worst case antenna port which was established as being the highest output power from the 64 measured ports on worst case modulation scheme. This antenna port was Port 23 for all modes.

The settings below were used for all measurements unless otherwise noted:

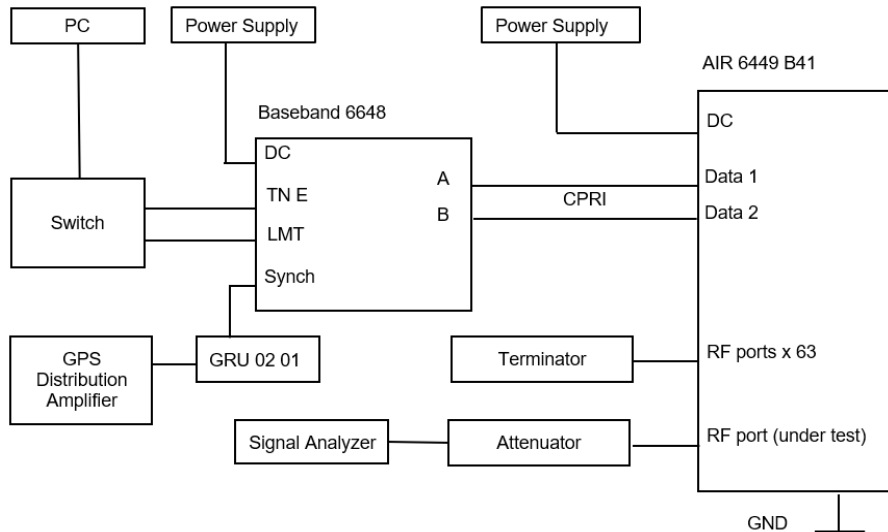
| Configuration | Carrier | NR Carrier Bandwidth (MHz) | Carrier Frequency Configuration (MHz) | | |
|---------------|---------|----------------------------|---------------------------------------|-----------------|---------|
| | | | Bottom | Middle | Top |
| NR-1C | 1 | 15 | 2503.50 | 2593.02 | 2682.51 |
| NR-2C | 2 | 15 | - | 2503.50+2682.48 | - |

| Configuration | Carrier | NR Carrier Bandwidth (MHz) | Carrier Frequency Configuration (MHz) | | |
|---------------|---------|----------------------------|---------------------------------------|--------|-----------------|
| | | | Bottom | Middle | Top |
| NR-1C-BE | 1 | 15 | 2503.50 | - | 2682.51 |
| NR-2C-BE | 2 | 15 | 2503.50+2518.50 | - | 2667.51+2682.51 |

| Configuration | Carrier | NR Carrier Bandwidth (MHz) | Carrier Frequency Configuration (MHz) | | |
|---------------|---------|----------------------------|---------------------------------------|-----------------|---------|
| | | | Bottom | Middle | Top |
| NR-1C-UE | 1 | 15 | 2503.50 | 2593.02 | 2682.51 |
| NR-2C-UE | 2 | 15 | - | 2503.50+2682.48 | - |

2.4 Test Setup

Conducted Measurement:



| No. | Auxiliary Equipment | Product Number / Model Type | Version |
|-----|----------------------------|-----------------------------|---------|
| 1 | PC | PowerEdge R230 | - |
| 2 | DC Power Supply | N8737A | - |
| 3 | Baseband 6648 | KDU 137 0015/1 | R3D |
| 4 | GRU 02 01 | NCD 901 41/1 | R1D |
| 5 | GPS Distribution Amplifier | 58536A | - |
| 6 | Switch | LS-S5024E-CN | - |
| 7 | Terminator | AETFZ-10W-SMAM | - |
| 8 | 40dB Attenuator | TDS200 | - |
| 9 | 20dB Attenuator | 3.5TS100 | - |

Proper Attenuator will be chosen to use in relative test case. And the cable loss of specified Attenuator with connect cable will be calibrated before test for relative frequency range and the worst reading will be used as offset in the relative test case.

2.5 Test environment condition:

| Test items | Temperature | Humidity |
|---|--------------|----------------|
| Max Output Power and Peak to Average Power Ratio and EIRP | 20°C to 24°C | 45%RH to 55%RH |
| Occupied Bandwidth | | |
| Unwanted Emissions at Band Edge | | |
| Conducted Unwanted Emission | | |

2.6 Instrument list

| Intertek Testing Services | | | | | |
|-------------------------------------|---------------------|--------------|----------------|--------|-----------|
| Used | Equipment | Manufacturer | Type | S/N | Due date |
| <input checked="" type="checkbox"/> | PXA Signal Analyzer | Keysight | N9030A | EC1046 | 2024.4.7 |
| <input type="checkbox"/> | Signal Generator | R&S | SMU200A | EC1050 | 2024.4.2 |
| <input checked="" type="checkbox"/> | Multi-meter | Fluke | 117 | EC1051 | 2024.2.5 |
| <input type="checkbox"/> | Climatic Chamber | 赛宝 | CEEC-WR16H-50W | EC1052 | 2024.8.28 |
| <input checked="" type="checkbox"/> | Humiture meter | 托普 | TPJ-20 | EC1053 | 2024.2.21 |

2.7 Measurement uncertainty

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

| Test item | Measurement uncertainty |
|---------------------------------|-------------------------|
| Maximum output power | 0.73dB |
| Occupied Bandwidth | 0.88% |
| Unwanted Emissions at Band Edge | 3.03dB |
| Conducted Unwanted Emission | 3.03dB |

TEST REPORT

3 Maximum Output Power and Peak to Average Power Ratio and EIRP

Test result: Pass

3.1 Limit

Output Power:

$$\text{EIRP} \leq 33 \text{ dBW} + 10\log(X/Y) \text{ dBW} + 10\log(360/\text{Beamwidth}) \text{ dBW}$$

X = actual channel bandwidth

Y = 5.5 or 6 MHz

(Y=6, Beamwidth=12 as declared by manufacturer)

Peak to Average Ratio: ≤ 13 dB

3.2 Measurement Procedure

The EUT was configured to transmit on maximum power and proper modulation. The transmitter power shall be measured in terms of a root-mean-square (RMS) average value.

A peak to average ratio measurement is performed at the conducted ports of the EUT for single carrier for single RAT mode. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) was used and 0.1% probability value recorded.

3.3 Measurement result

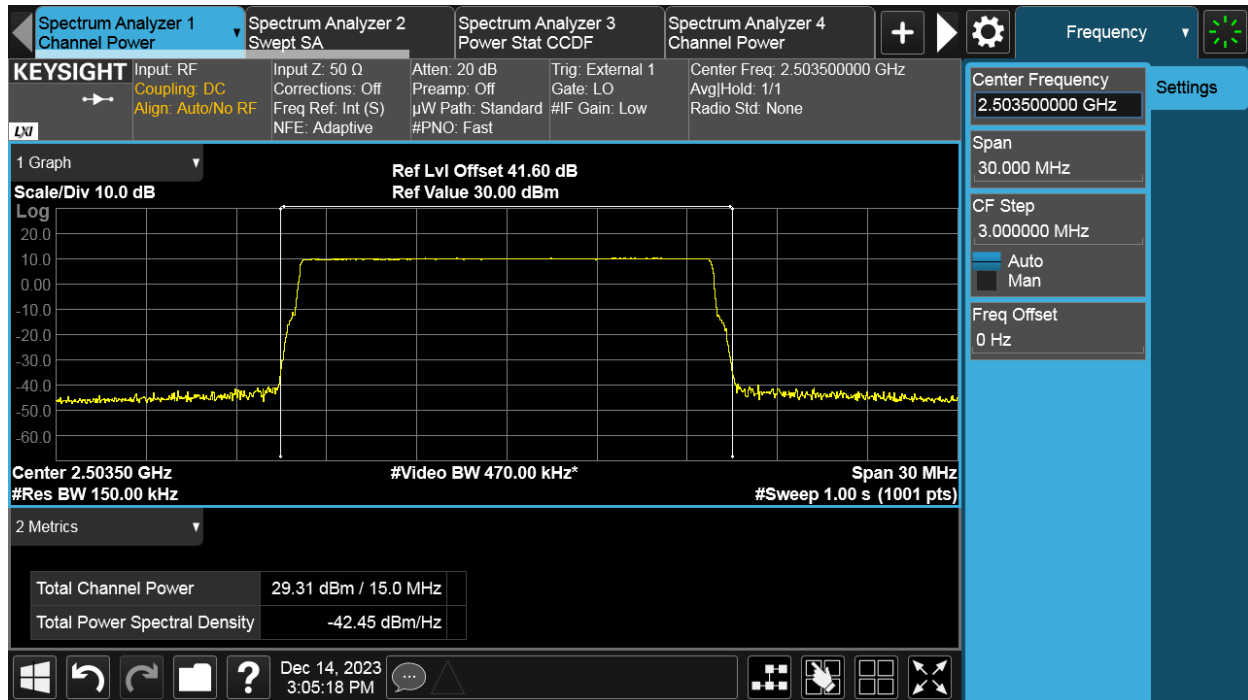
NR-1C:

| Antenna Port | Modulation | Carrier Bandwidth (MHz) | Output power / Peak-to-Average Ratio (PAR) | | | | | | | | |
|--------------|------------|-------------------------|--|------------------|----------|--------------------|------------------|----------|--------------------|------------------|----------|
| | | | Channel position B | | | Channel position M | | | Channel position T | | |
| | | | Power (dBm) | Power (dBm /MHz) | PAR (dB) | Power (dBm) | Power (dBm /MHz) | PAR (dB) | Power (dBm) | Power (dBm /MHz) | PAR (dB) |
| 1 | QPSK | 15 | 29.22 | 18.31 | 8.32 | 29.67 | 18.77 | 8.33 | 29.49 | 18.62 | 8.31 |
| 2 | QPSK | 15 | 29.27 | 18.35 | 8.31 | 29.79 | 18.75 | 8.31 | 29.46 | 18.66 | 8.28 |
| 3 | QPSK | 15 | 29.34 | 18.38 | 8.32 | 29.77 | 18.76 | 8.34 | 29.59 | 18.75 | 8.30 |
| 4 | QPSK | 15 | 29.34 | 18.40 | 8.35 | 29.81 | 18.79 | 8.35 | 29.47 | 18.38 | 8.32 |
| 5 | QPSK | 15 | 29.37 | 18.43 | 8.32 | 29.78 | 18.77 | 8.32 | 29.30 | 18.52 | 8.28 |
| 6 | QPSK | 15 | 29.31 | 18.35 | 8.31 | 29.71 | 18.75 | 8.31 | 29.43 | 18.51 | 8.29 |
| 7 | QPSK | 15 | 29.13 | 18.17 | 8.35 | 29.60 | 18.59 | 8.34 | 29.40 | 18.43 | 8.32 |
| 8 | QPSK | 15 | 29.25 | 18.31 | 8.34 | 29.67 | 18.63 | 8.35 | 29.42 | 18.53 | 8.32 |
| 9 | QPSK | 15 | 29.19 | 18.27 | 8.34 | 29.56 | 18.63 | 8.34 | 29.40 | 18.52 | 8.31 |
| 10 | QPSK | 15 | 29.29 | 18.37 | 8.35 | 29.68 | 18.65 | 8.35 | 29.35 | 18.44 | 8.31 |
| 11 | QPSK | 15 | 29.27 | 18.36 | 8.31 | 29.68 | 18.71 | 8.33 | 29.49 | 18.52 | 8.30 |
| 12 | QPSK | 15 | 29.30 | 18.39 | 8.33 | 29.81 | 18.78 | 8.34 | 29.44 | 18.53 | 8.30 |
| 13 | QPSK | 15 | 29.32 | 18.31 | 8.34 | 29.60 | 18.55 | 8.35 | 29.42 | 18.45 | 8.32 |
| 14 | QPSK | 15 | 29.27 | 18.34 | 8.33 | 29.66 | 18.62 | 8.34 | 29.37 | 18.42 | 8.30 |
| 15 | QPSK | 15 | 29.24 | 18.32 | 8.31 | 29.55 | 18.52 | 8.31 | 29.41 | 18.55 | 8.29 |
| 16 | QPSK | 15 | 29.20 | 18.30 | 8.32 | 29.68 | 18.64 | 8.34 | 29.46 | 18.59 | 8.30 |
| 17 | QPSK | 15 | 29.31 | 18.42 | 8.27 | 29.71 | 18.67 | 8.28 | 29.47 | 18.63 | 8.24 |
| 18 | QPSK | 15 | 29.37 | 18.47 | 8.23 | 29.88 | 18.84 | 8.25 | 29.46 | 18.62 | 8.22 |
| 19 | QPSK | 15 | 29.25 | 18.34 | 8.27 | 29.81 | 18.78 | 8.28 | 29.51 | 18.59 | 8.25 |
| 20 | QPSK | 15 | 29.24 | 18.28 | 8.30 | 29.71 | 18.72 | 8.30 | 29.34 | 18.40 | 8.29 |
| 21 | QPSK | 15 | 29.32 | 18.41 | 8.25 | 29.64 | 18.64 | 8.28 | 29.46 | 18.53 | 8.24 |
| 22 | QPSK | 15 | 29.43 | 18.54 | 8.25 | 29.79 | 18.77 | 8.26 | 29.42 | 18.52 | 8.23 |
| 23 | QPSK | 15 | 29.34 | 18.41 | 8.29 | 29.96 | 18.82 | 8.30 | 29.55 | 18.65 | 8.26 |
| 24 | QPSK | 15 | 29.32 | 18.41 | 8.29 | 29.75 | 18.74 | 8.29 | 29.53 | 18.61 | 8.26 |
| 25 | QPSK | 15 | 29.23 | 18.34 | 8.28 | 29.73 | 18.68 | 8.30 | 29.50 | 18.60 | 8.28 |
| 26 | QPSK | 15 | 29.80 | 18.32 | 8.30 | 29.62 | 18.60 | 8.31 | 29.37 | 18.45 | 8.28 |
| 27 | QPSK | 15 | 29.37 | 18.43 | 8.25 | 29.62 | 18.66 | 8.26 | 29.52 | 18.56 | 8.24 |
| 28 | QPSK | 15 | 29.36 | 18.50 | 8.27 | 29.76 | 18.73 | 8.20 | 29.53 | 18.64 | 8.24 |
| 29 | QPSK | 15 | 29.34 | 18.40 | 8.30 | 29.64 | 18.64 | 8.30 | 29.44 | 18.52 | 8.27 |
| 30 | QPSK | 15 | 29.36 | 18.40 | 8.28 | 29.70 | 18.70 | 8.29 | 29.46 | 18.55 | 8.25 |
| 31 | QPSK | 15 | 29.48 | 18.58 | 8.25 | 29.77 | 18.72 | 8.26 | 29.52 | 18.75 | 8.23 |
| 32 | QPSK | 15 | 29.25 | 18.35 | 8.27 | 29.75 | 18.70 | 8.29 | 29.39 | 18.63 | 8.24 |
| 33 | QPSK | 15 | 29.17 | 18.29 | 8.35 | 29.66 | 18.64 | 8.37 | 29.35 | 18.59 | 8.35 |
| 34 | QPSK | 15 | 29.28 | 18.39 | 8.34 | 29.78 | 18.76 | 8.34 | 29.31 | 18.58 | 8.31 |
| 35 | QPSK | 15 | 29.12 | 18.19 | 8.36 | 29.53 | 18.52 | 8.37 | 29.35 | 18.50 | 8.34 |
| 36 | QPSK | 15 | 29.55 | 18.52 | 8.35 | 29.52 | 18.50 | 8.39 | 29.25 | 18.34 | 8.36 |

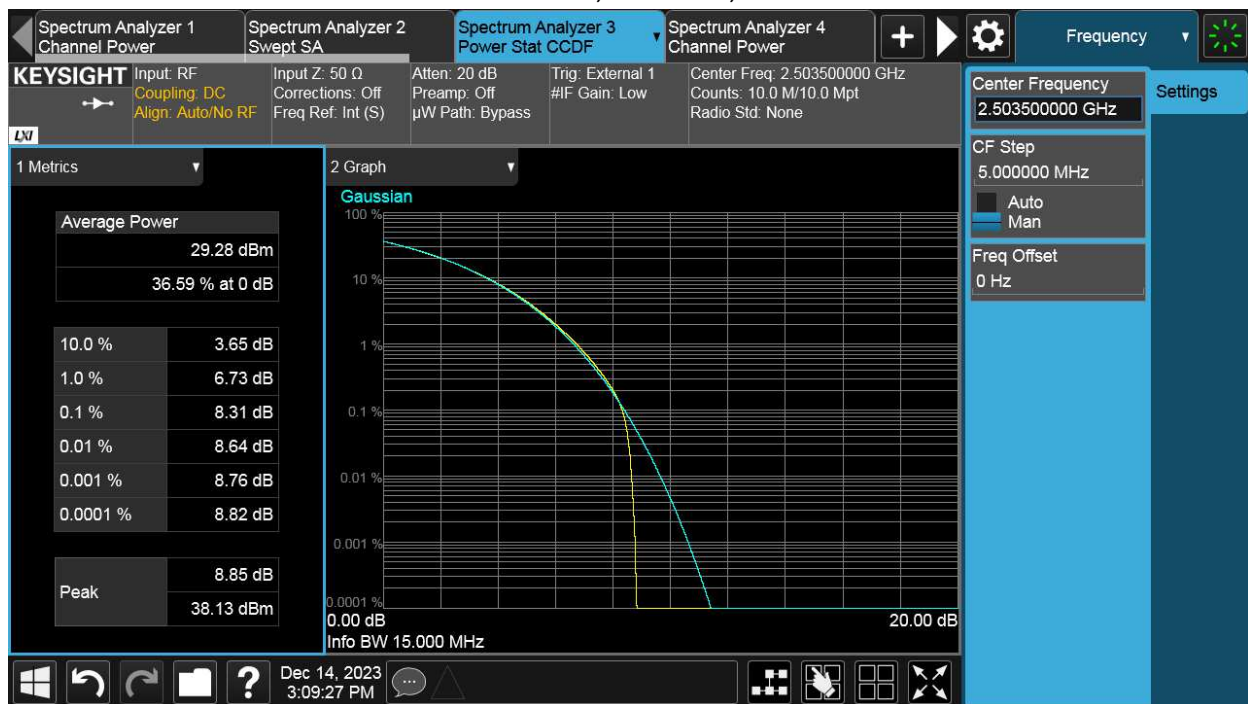
TEST REPORT

| | | | | | | | | | | | |
|--------------|------|----|-------|-------|------|-------|-------|-------|-------|-------|------|
| 37 | QPSK | 15 | 29.13 | 18.23 | 8.39 | 29.48 | 18.49 | 8.36 | 29.27 | 18.34 | 8.34 |
| 38 | QPSK | 15 | 29.20 | 18.31 | 8.35 | 29.65 | 18.60 | 8.36 | 29.35 | 18.43 | 8.33 |
| 39 | QPSK | 15 | 29.11 | 18.22 | 8.38 | 29.55 | 18.53 | 8.38 | 29.35 | 18.42 | 8.35 |
| 40 | QPSK | 15 | 29.17 | 18.23 | 8.38 | 29.55 | 18.55 | 8.40 | 29.36 | 18.43 | 8.36 |
| 41 | QPSK | 15 | 29.21 | 18.34 | 8.39 | 29.51 | 18.52 | 8.38 | 29.31 | 18.38 | 8.35 |
| 42 | QPSK | 15 | 29.17 | 18.28 | 8.38 | 29.54 | 18.49 | 8.38 | 29.23 | 18.27 | 8.37 |
| 43 | QPSK | 15 | 29.20 | 18.28 | 8.37 | 29.59 | 18.59 | 8.36 | 29.41 | 18.50 | 8.32 |
| 44 | QPSK | 15 | 29.24 | 18.33 | 8.36 | 29.61 | 18.57 | 8.36 | 29.36 | 18.46 | 8.34 |
| 45 | QPSK | 15 | 29.03 | 18.10 | 8.39 | 29.61 | 18.41 | 18.38 | 29.26 | 18.32 | 8.38 |
| 46 | QPSK | 15 | 29.10 | 18.18 | 8.36 | 29.50 | 18.54 | 8.38 | 29.24 | 18.34 | 8.34 |
| 47 | QPSK | 15 | 29.14 | 18.20 | 8.33 | 29.49 | 18.45 | 8.35 | 29.33 | 18.54 | 8.30 |
| 48 | QPSK | 15 | 29.17 | 18.27 | 8.35 | 29.57 | 18.55 | 8.36 | 29.21 | 18.34 | 8.35 |
| 49 | QPSK | 15 | 29.07 | 18.18 | 8.34 | 29.56 | 18.54 | 8.34 | 29.23 | 18.46 | 8.32 |
| 50 | QPSK | 15 | 29.17 | 18.30 | 8.32 | 29.58 | 18.64 | 8.34 | 29.42 | 18.60 | 8.29 |
| 51 | QPSK | 15 | 29.23 | 18.31 | 8.35 | 29.59 | 18.61 | 8.35 | 29.37 | 18.39 | 8.34 |
| 52 | QPSK | 15 | 29.16 | 18.24 | 8.37 | 29.58 | 18.60 | 8.37 | 29.29 | 18.37 | 8.35 |
| 53 | QPSK | 15 | 29.22 | 18.30 | 8.34 | 29.60 | 18.57 | 8.34 | 29.45 | 18.49 | 8.32 |
| 54 | QPSK | 15 | 29.31 | 18.39 | 8.34 | 29.70 | 18.67 | 8.34 | 29.40 | 18.47 | 8.31 |
| 55 | QPSK | 15 | 29.09 | 18.16 | 8.36 | 29.52 | 18.51 | 8.37 | 29.28 | 18.39 | 8.33 |
| 56 | QPSK | 15 | 29.23 | 18.32 | 8.36 | 29.61 | 18.58 | 8.36 | 29.41 | 18.52 | 8.34 |
| 57 | QPSK | 15 | 29.29 | 18.38 | 8.35 | 29.66 | 18.65 | 8.36 | 29.39 | 18.46 | 8.33 |
| 58 | QPSK | 15 | 29.16 | 18.24 | 8.35 | 29.58 | 18.56 | 8.37 | 29.30 | 18.38 | 8.34 |
| 59 | QPSK | 15 | 29.28 | 18.40 | 8.33 | 29.63 | 18.59 | 8.34 | 29.47 | 18.54 | 8.32 |
| 60 | QPSK | 15 | 29.41 | 18.43 | 8.34 | 29.70 | 18.66 | 8.35 | 29.38 | 18.49 | 8.31 |
| 61 | QPSK | 15 | 29.12 | 18.20 | 8.36 | 29.62 | 18.48 | 8.36 | 29.38 | 18.45 | 8.34 |
| 62 | QPSK | 15 | 29.54 | 18.62 | 8.35 | 29.92 | 18.94 | 8.35 | 29.82 | 18.92 | 8.32 |
| 63 | QPSK | 15 | 29.31 | 18.41 | 8.32 | 29.75 | 18.75 | 8.32 | 29.45 | 18.68 | 8.29 |
| 64 | QPSK | 15 | 29.22 | 18.31 | 8.34 | 29.68 | 18.66 | 8.36 | 29.36 | 18.59 | 8.32 |
| Total | | | 47.33 | 36.40 | - | 47.72 | 36.70 | - | 47.46 | 36.57 | - |
| Antenna gain | | | 23.8 | - | - | 23.8 | - | - | 23.8 | - | - |
| EIRP limit | | | 81.7 | - | - | 81.7 | - | - | 81.7 | - | - |

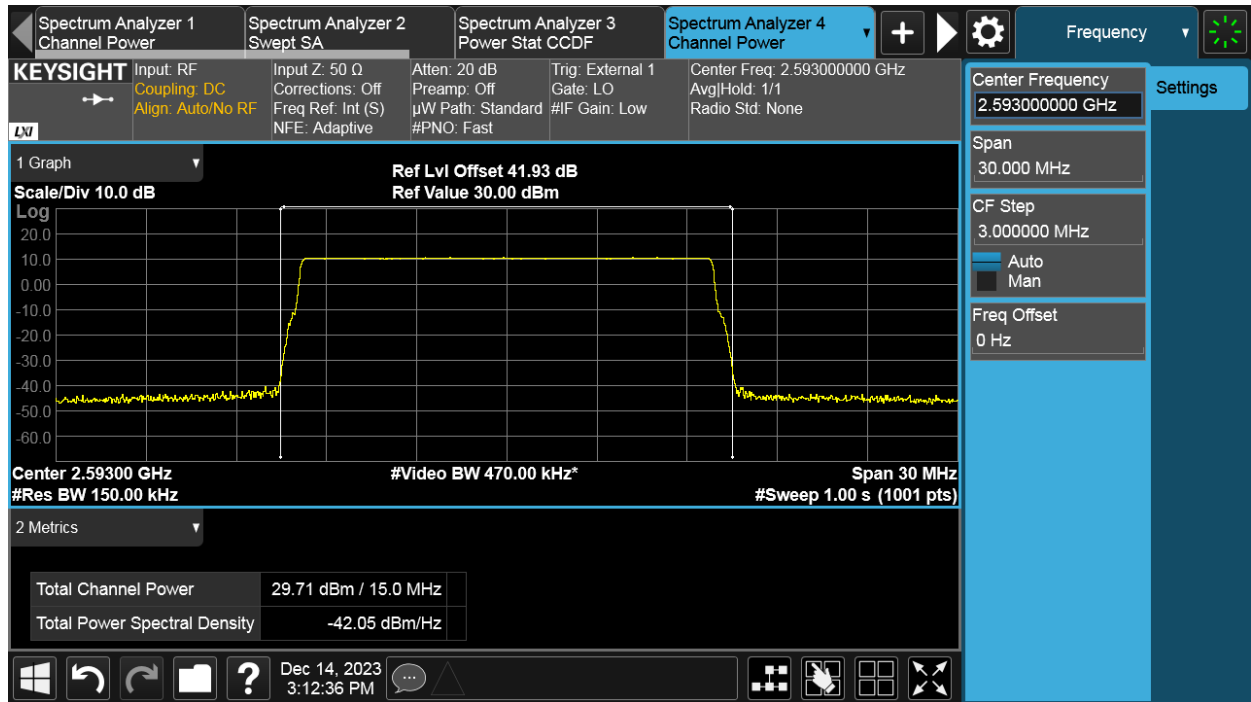
NR 15MHz, Channel B, Power



NR 15MHz, Channel B, PAR



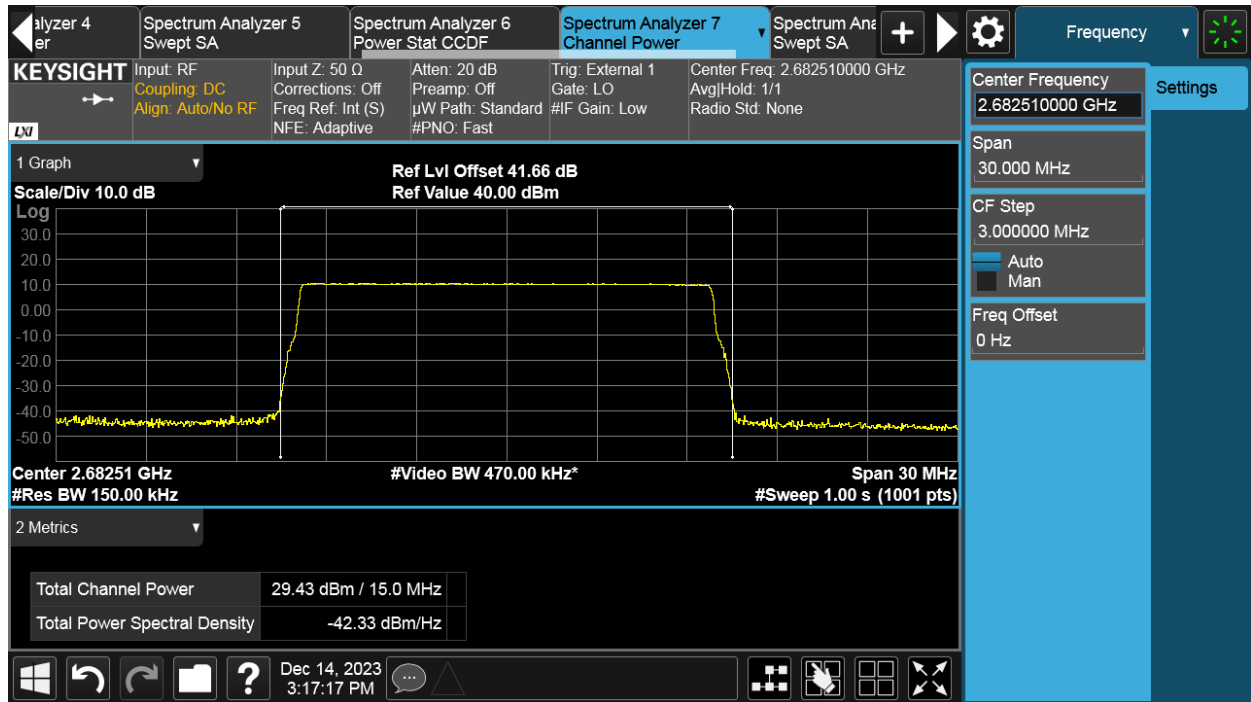
NR 15MHz, Channel M, Power



NR 15MHz, Channel M, PAR



NR 15MHz, Channel T, Power



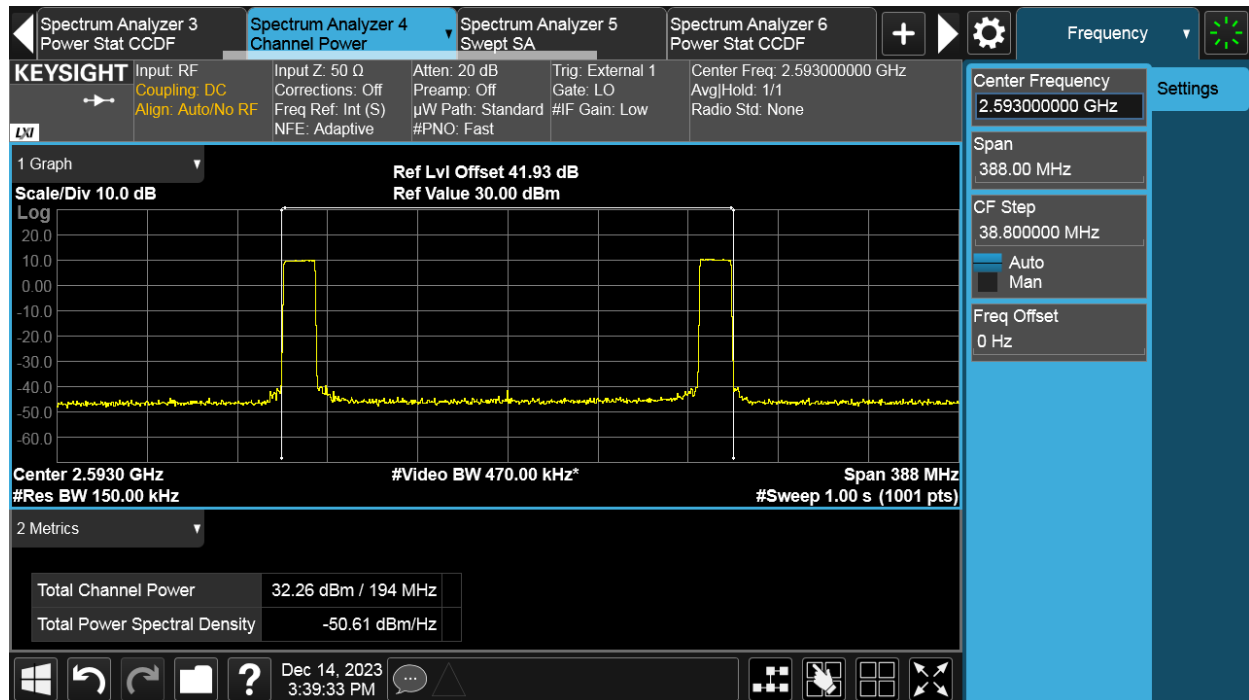
NR 15MHz, Channel T, PAR



NR-2C:

| Antenna Port | Modulation | Carrier Bandwidth (MHz) | Output power / Peak-to-Average Ratio (PAR) | | | | | | | | |
|--------------|------------|-------------------------|--|------------------|----------|--------------------|------------------|----------|--------------------|------------------|----------|
| | | | Channel position B | | | Channel position M | | | Channel position T | | |
| | | | Power (dBm) | Power (dBm /MHz) | PAR (dB) | Power (dBm) | Power (dBm /MHz) | PAR (dB) | Power (dBm) | Power (dBm /MHz) | PAR (dB) |
| 23 | QPSK | 15 | - | - | - | 32.26 | 18.48 | - | - | - | - |
| 10log64 | | | - | - | - | 18.06 | 18.06 | - | - | - | - |
| Total | | | - | - | - | 50.32 | 36.54 | - | - | - | - |
| Antenna gain | | | - | - | - | 23.8 | - | - | - | - | - |
| EIRP limit | | | - | - | - | 81.7 | - | - | - | - | - |

NR 15MHz, Channel M, Power



4 Occupied Bandwidth

Test result: Pass

4.1 Measurement Procedure

The EUT was set to transmit at maximum power and testing was carried out on bottom, middle and top channels. Using the Occupied Bandwidth measurement function in the spectrum analyzer, the 26dB bandwidth was measured in accordance with FCC KDB 971168 D01 Clause 4.2.

The measurement method is from KDB 971168 4.2:

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) Set the detection mode to peak, and the trace mode to max hold.
- e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

TEST REPORT

4.2 Measurement result

Configuration NR- 1C

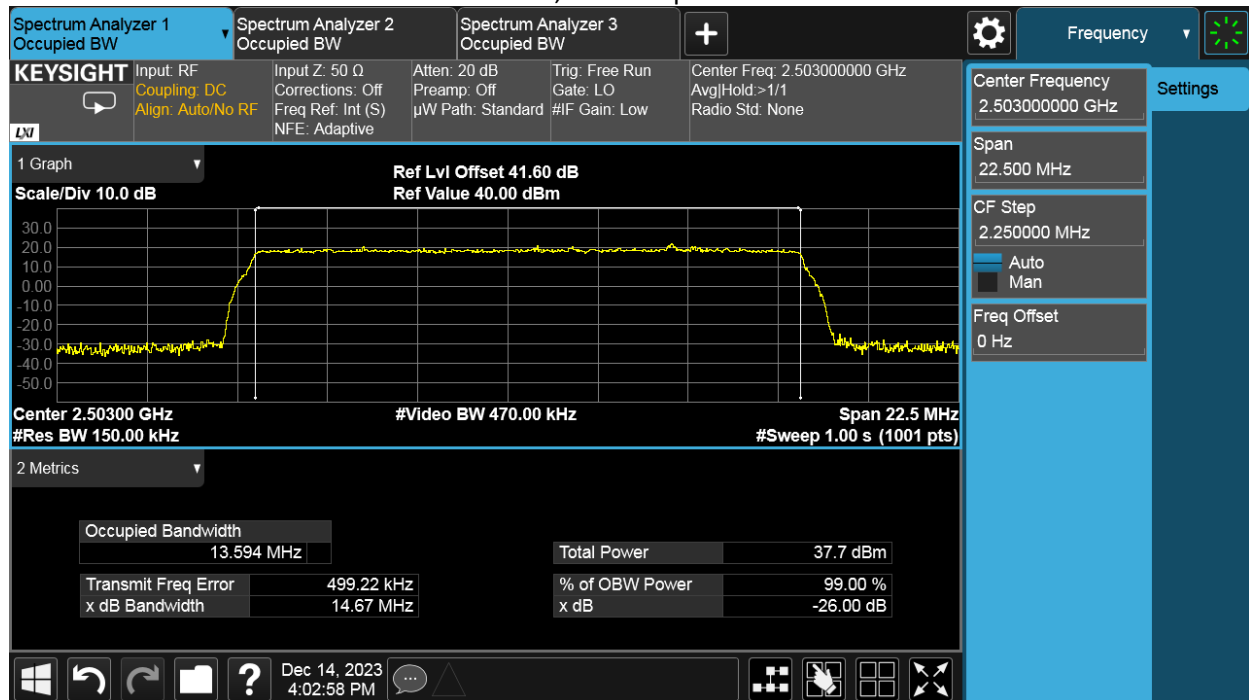
99% Occupied Bandwidth

| Antenna Port | Modulation | Bandwidth | Occupied Bandwidth (MHz) | | |
|--------------|------------|-----------|--------------------------|--------------------|--------------------|
| | | | Channel Position B | Channel Position M | Channel Position T |
| 23 | QPSK | 15MHz | 13.594 | 13.593 | 13.573 |

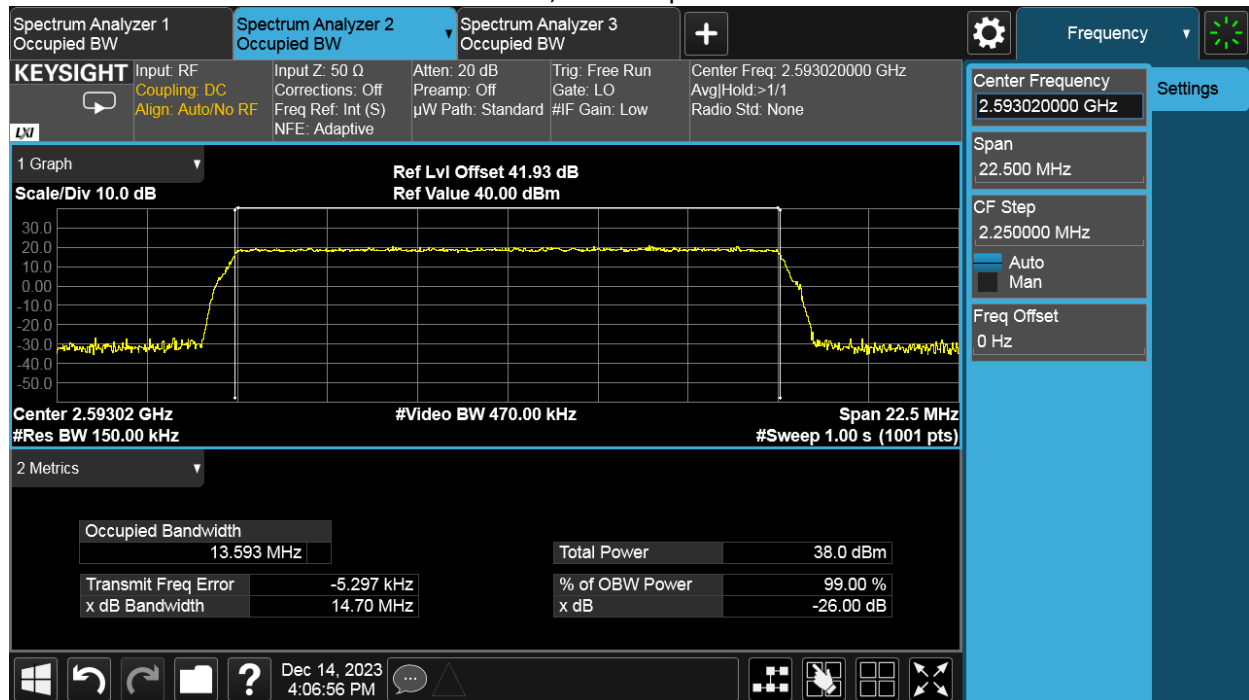
-26dBc Occupied Bandwidth

| Antenna Port | Modulation | Bandwidth | Occupied Bandwidth (MHz) | | |
|--------------|------------|-----------|--------------------------|--------------------|--------------------|
| | | | Channel Position B | Channel Position M | Channel Position T |
| 23 | QPSK | 15MHz | 14.67 | 14.70 | 14.65 |

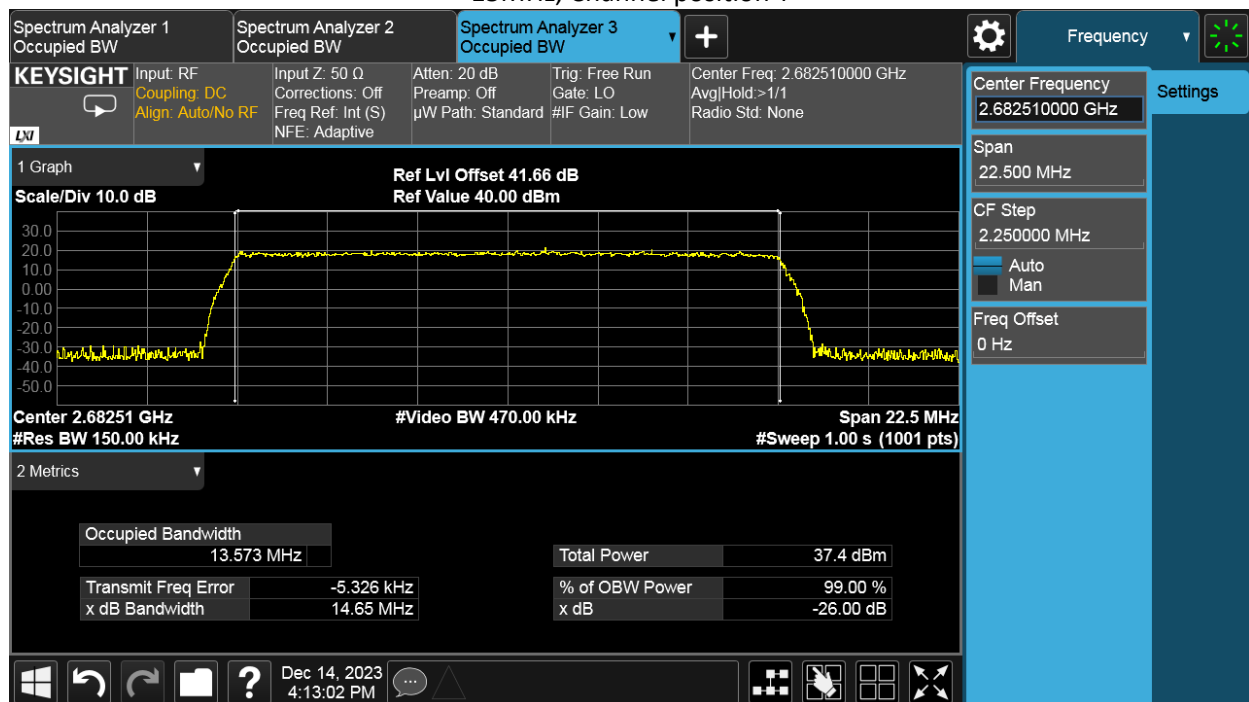
15MHz, Channel position B



15MHz, Channel position M



15MHz, Channel position T



TEST REPORT

5 Unwanted Emissions at Band Edge

Test result: Pass

5.1 Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

5.2 Measurement Procedure

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

For MIMO mode configurations, the limit was adjusted with a correction of -18.06dB [$10\log(1/64)$] by using the Measure and Add $10\log(N)$ dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports . Then the limit was adjusted to -31.06dBm .

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed and a RBW of 1MHz for measurements of emissions $> 1\text{MHz}$ away from the band edges.

Spectrum analyzer detector was set as RMS.

TEST REPORT

5.3 Measurement result

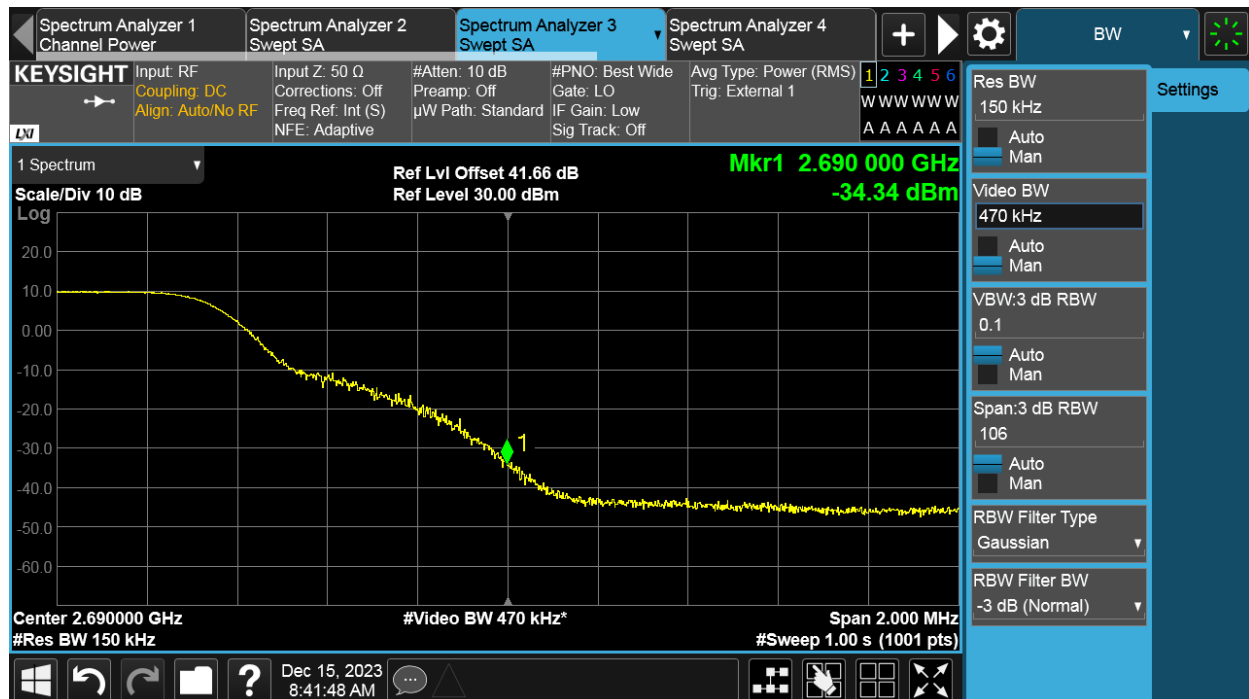
NR-1C-BE:

| Antenna Port | Channel Position | Modulation | Channel Bandwidth (MHz) | RBW (kHz) | Limit (dBm) |
|--------------|------------------|------------|-------------------------|-----------|-------------|
| 23 | B | QPSK | 15 | 150 | -31.06 |
| 23 | T | QPSK | 15 | 150 | -31.06 |

Channel Position B



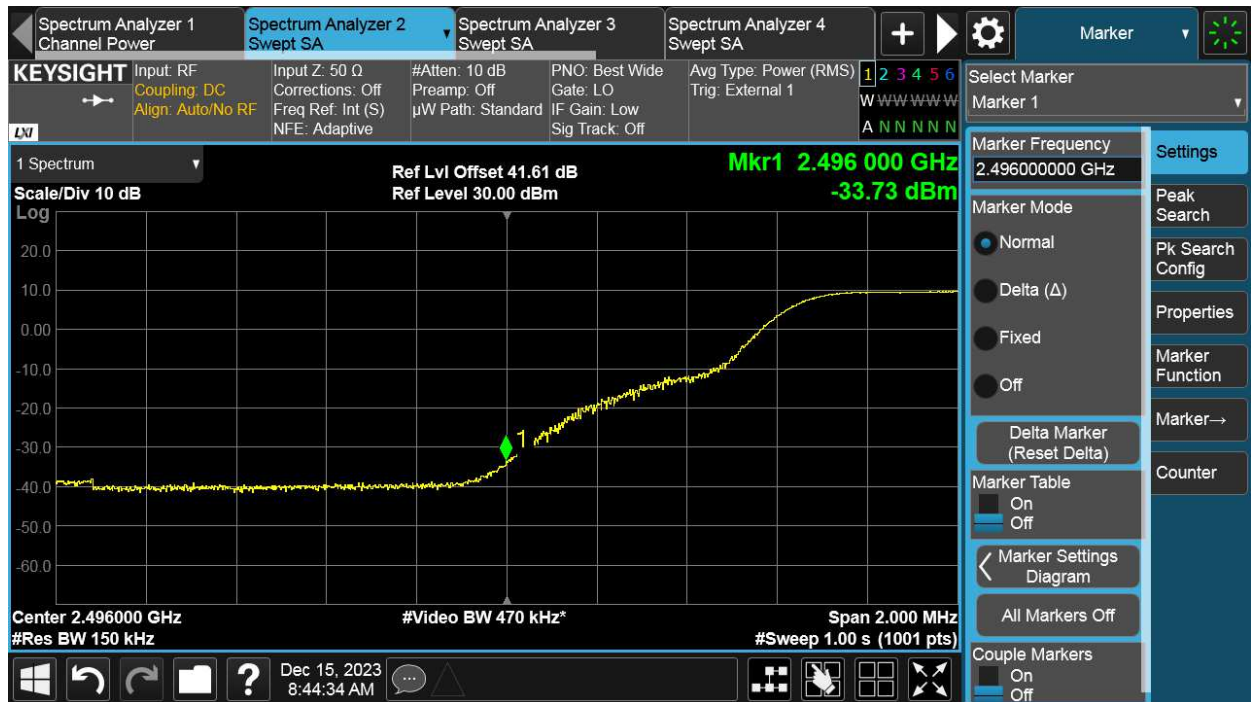
Channel Position T



NR-2C-BE:

| Antenna Port | Channel Position | Modulation | Channel Bandwidth (MHz) | RBW (kHz) | Limit (dBm) |
|--------------|------------------|------------|-------------------------|-----------|-------------|
| 23 | B | QPSK | 15 | 150 | -31.06 |
| 23 | T | QPSK | 15 | 150 | -31.06 |

Channel Position B



Channel Position T



TEST REPORT

6 Conducted Unwanted Emission

Test result: Pass

6.1 Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.

6.2 Measurement Procedure

In accordance with FCC rules, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

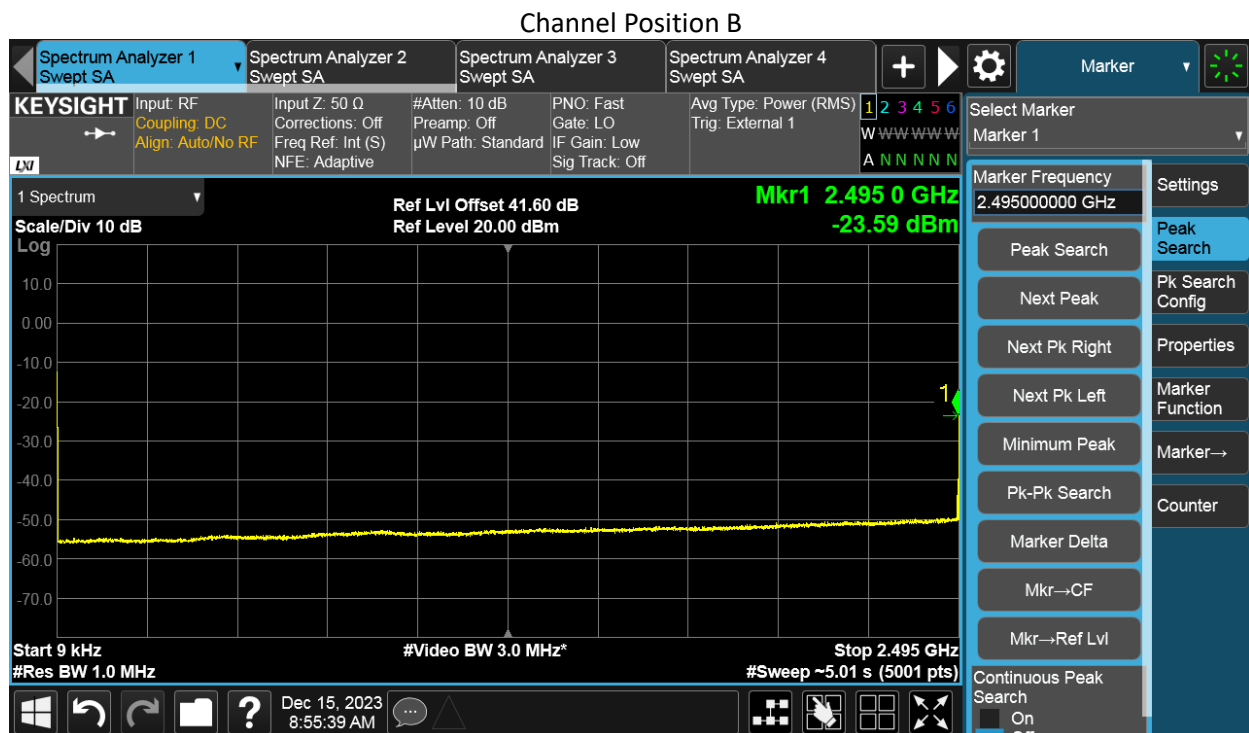
The spurious emissions from the antenna terminal were measured. The transmitter output power was attenuated using an attenuator and the frequency spectrum investigated from 9kHz to 27GHz. The resolution bandwidth of 1MHz was employed for frequency band 9kHz to 27GHz. The spectrum analyzer detector was set to RMS.

For MIMO mode configurations, the limit was adjusted with a correction of -18.06dB [$10\log(1/64)$] by using the Measure and Add $10\log(N)$ dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports. Then the limit was adjusted to -31.06dBm .

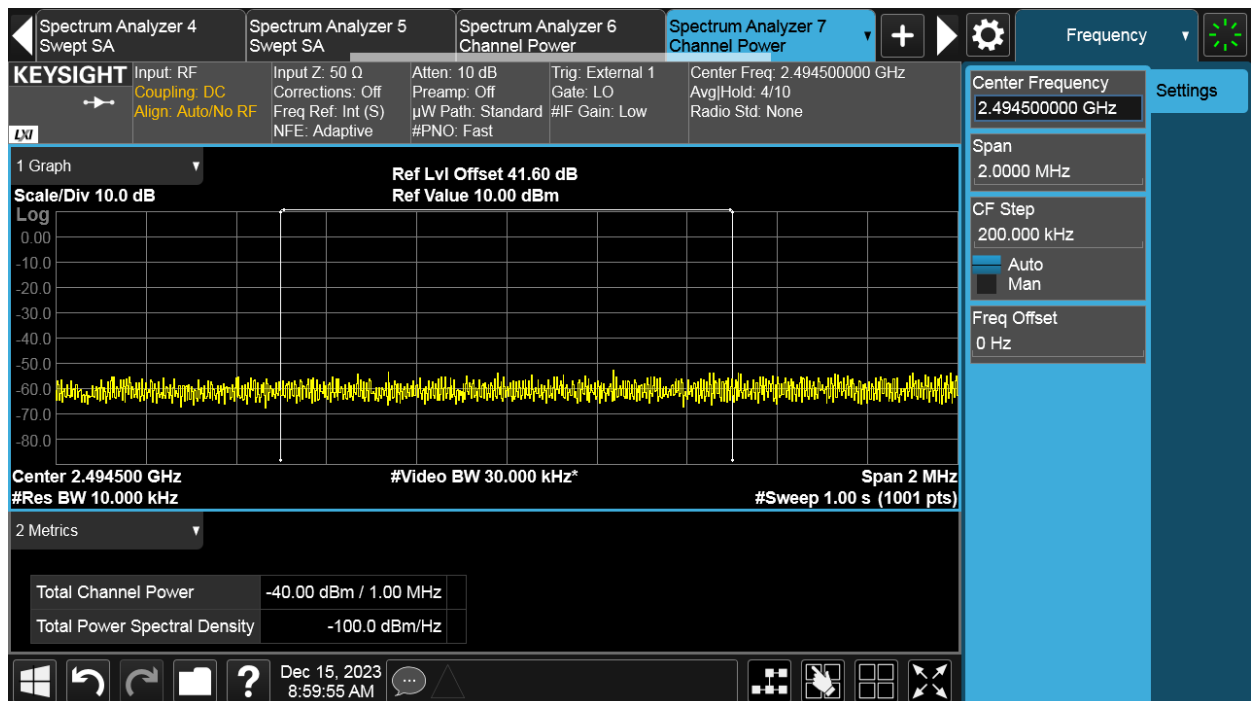
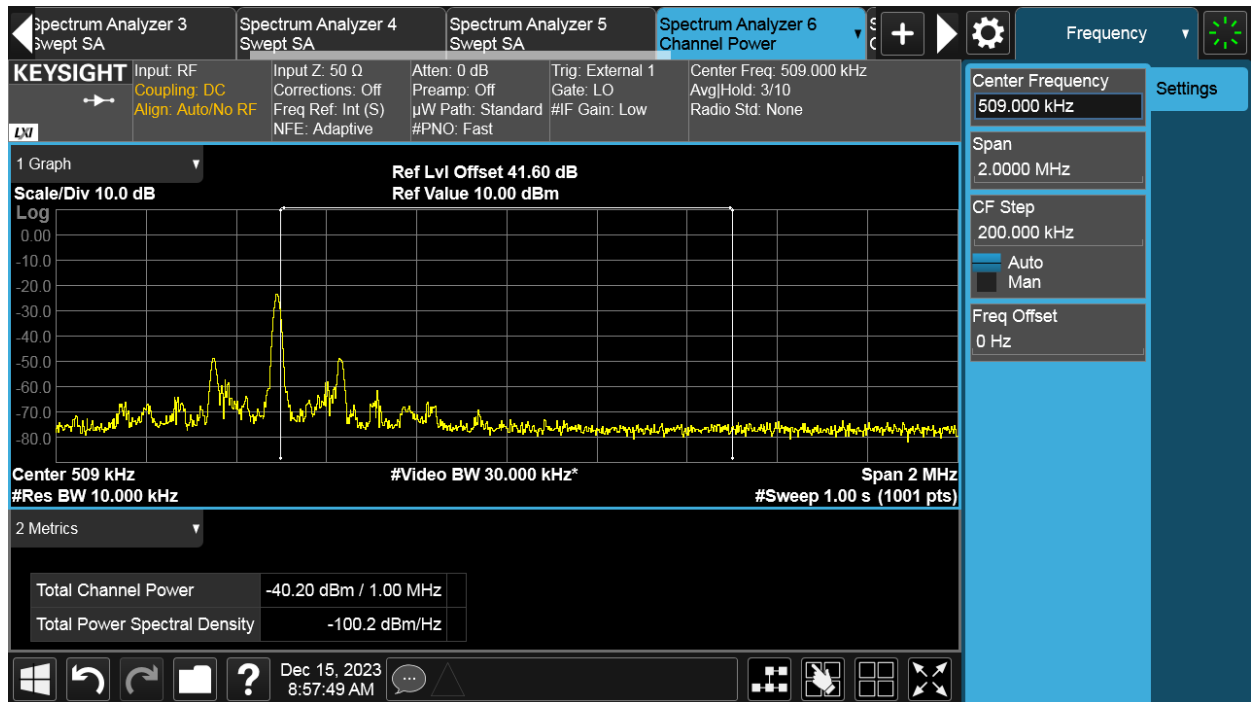
6.3 Measurement result

NR-1C-UE:

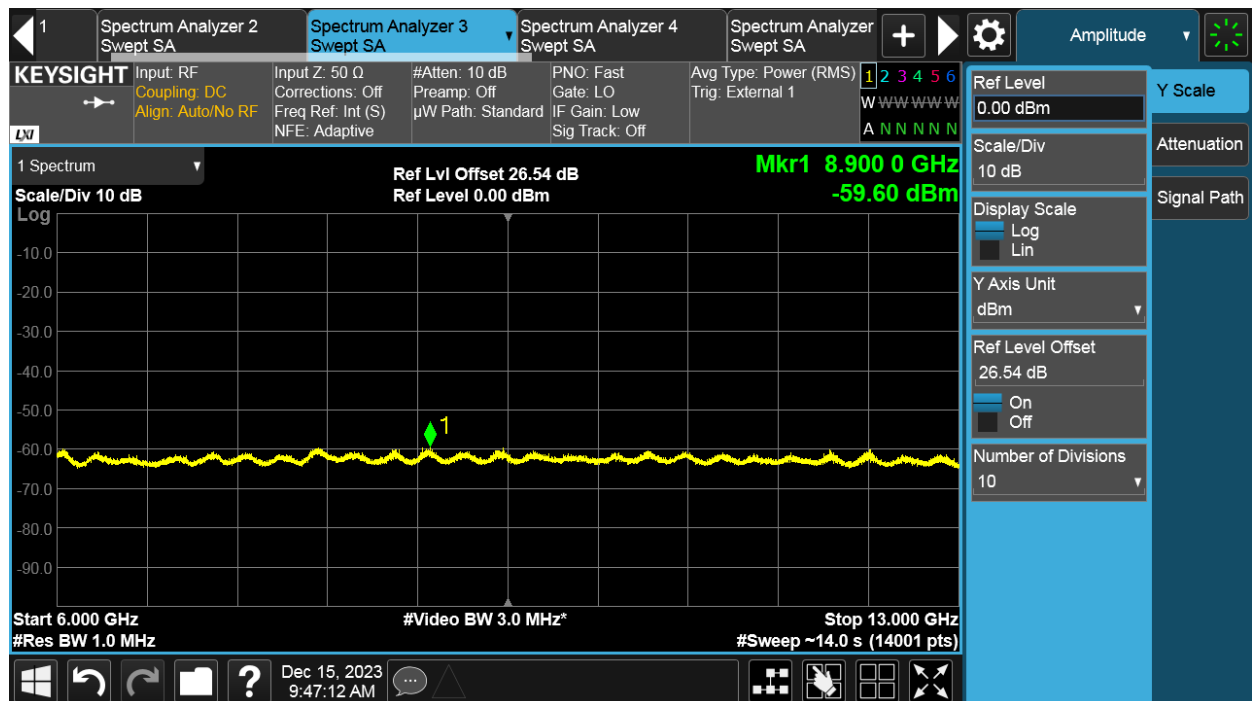
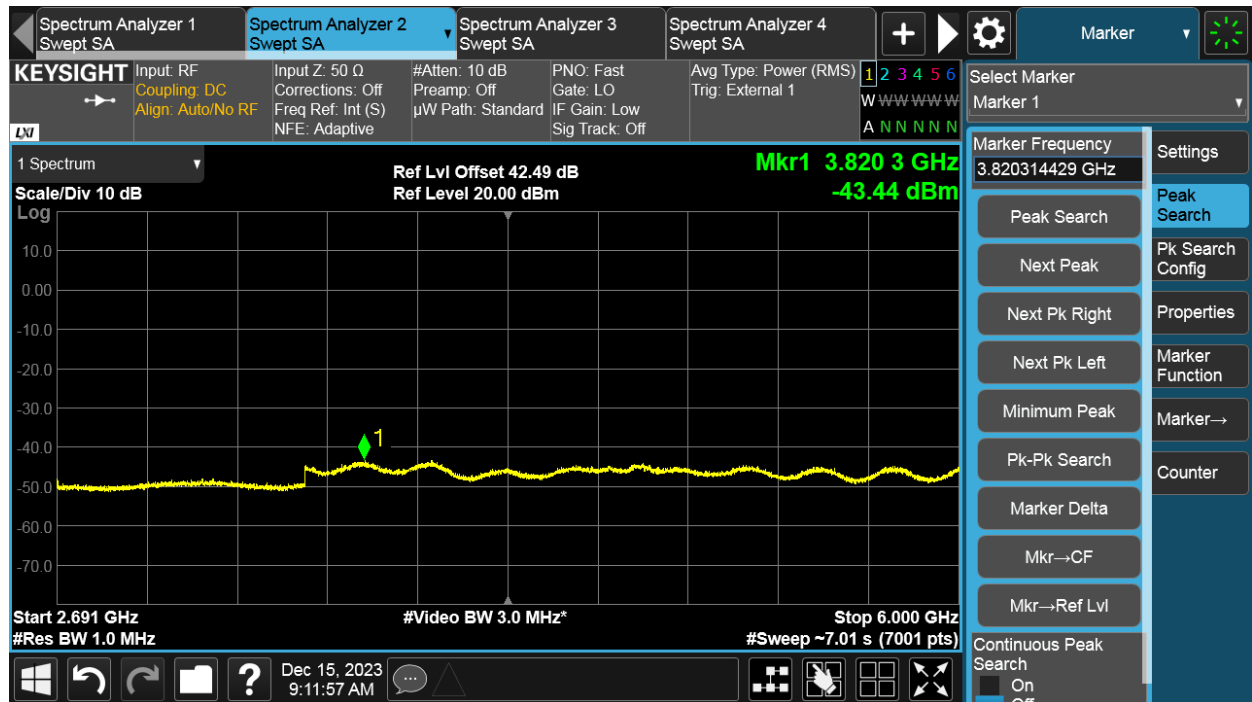
| Antenna Port | Channel Position | Modulation | Channel Bandwidth (MHz) | RBW (kHz) | Limit (dBm) |
|--------------|------------------|------------|-------------------------|-----------|-------------|
| 23 | B | QPSK | 15 | 1000 | -31.06 |
| 23 | M | QPSK | 15 | 1000 | -31.06 |
| 23 | T | QPSK | 15 | 1000 | -31.06 |



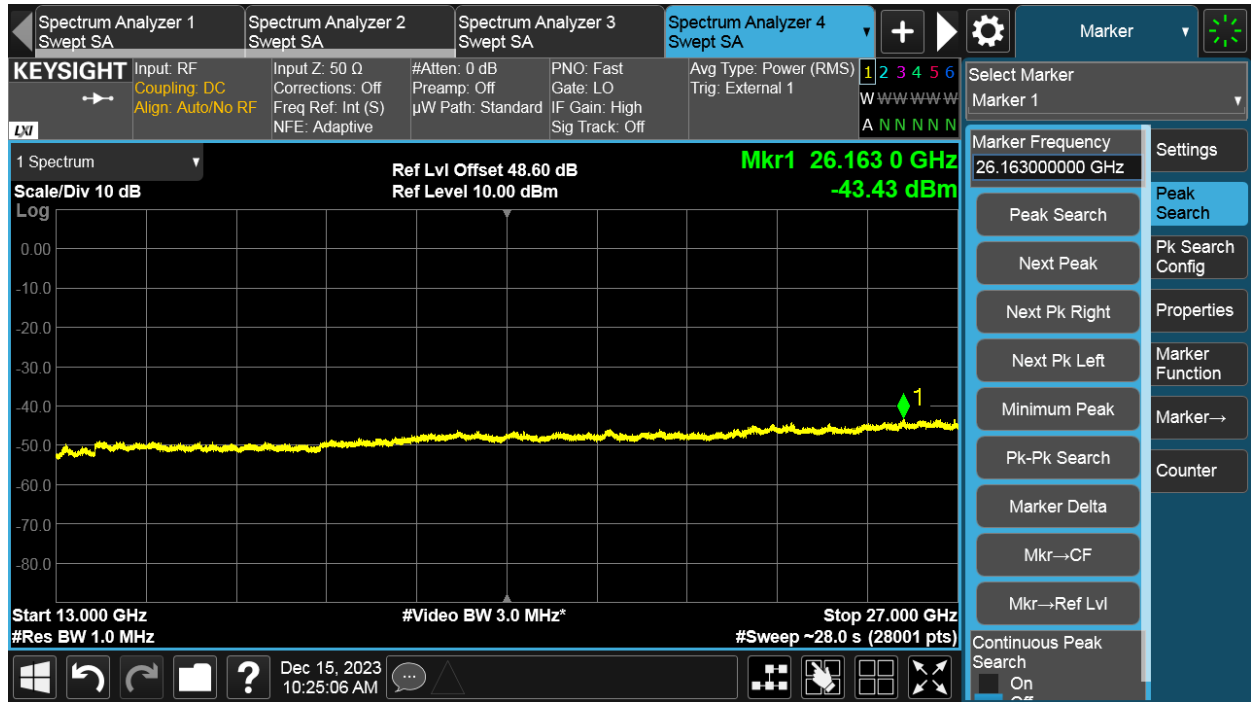
TEST REPORT



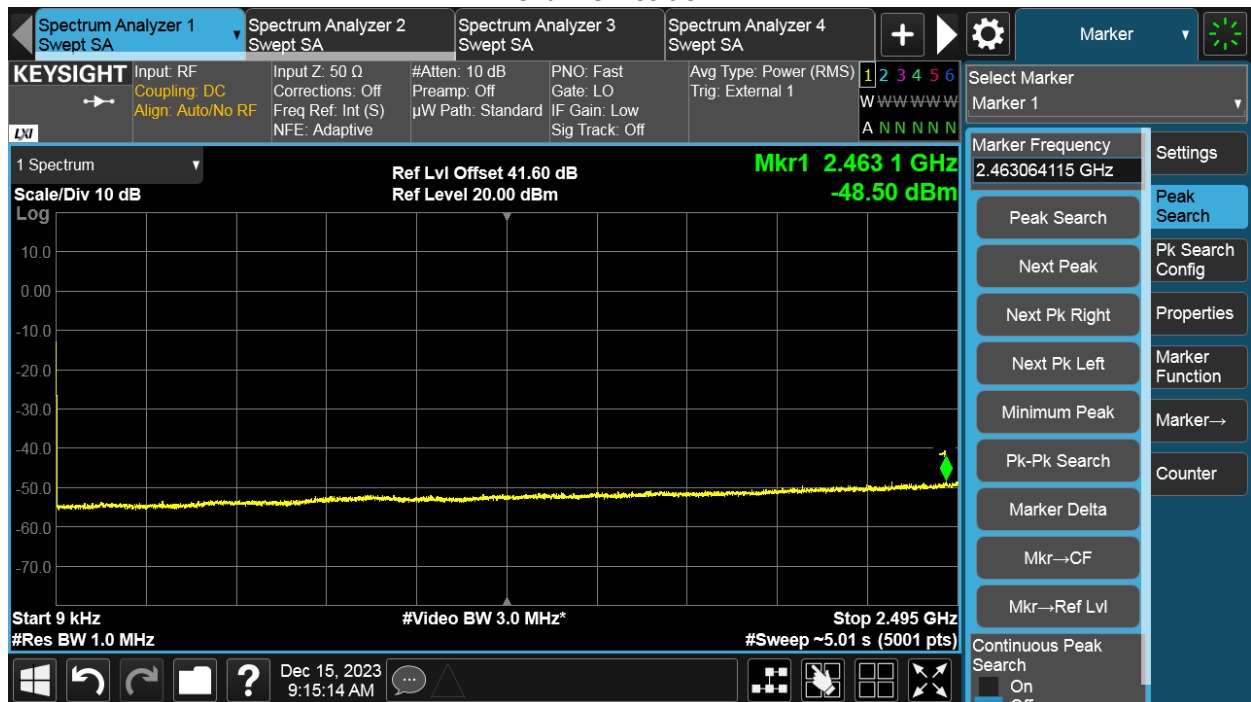
TEST REPORT



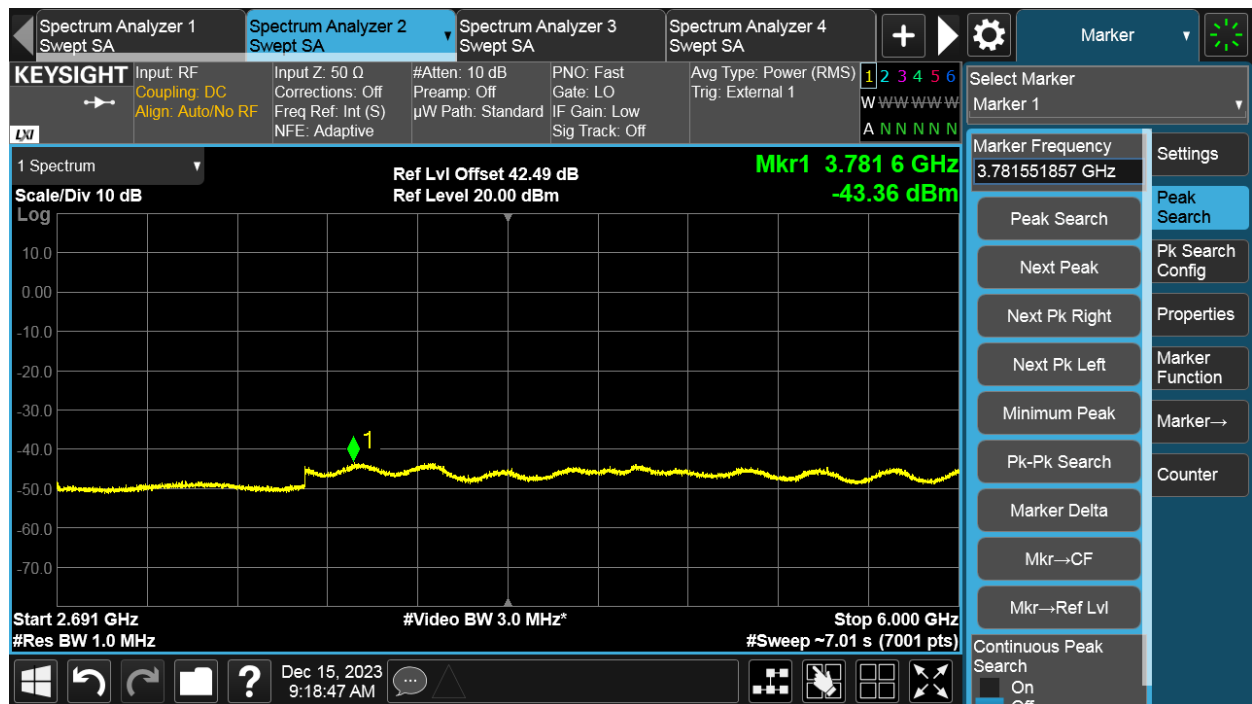
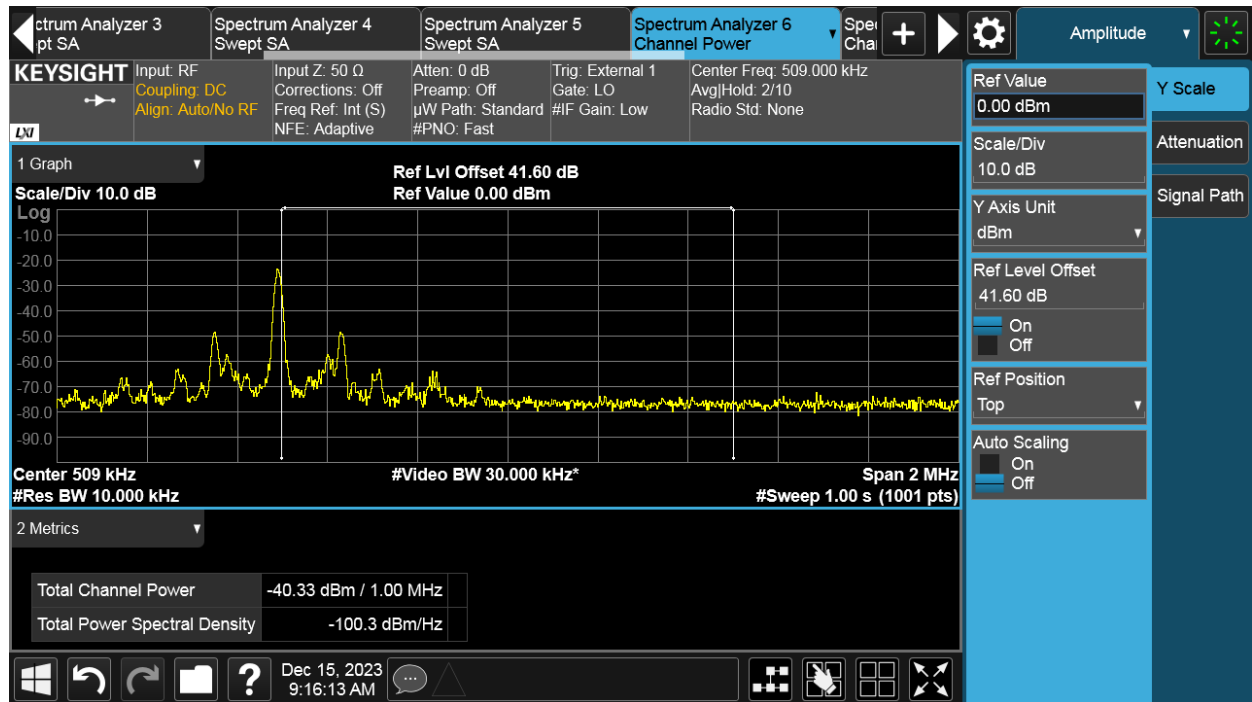
TEST REPORT



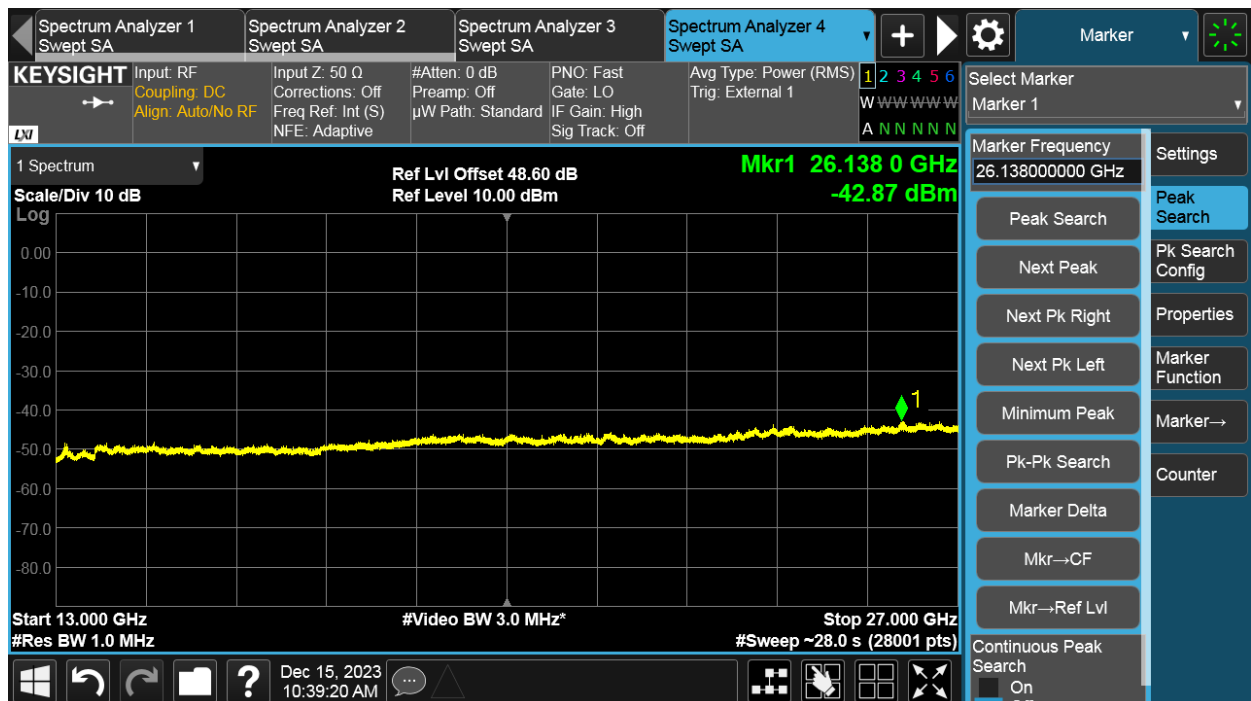
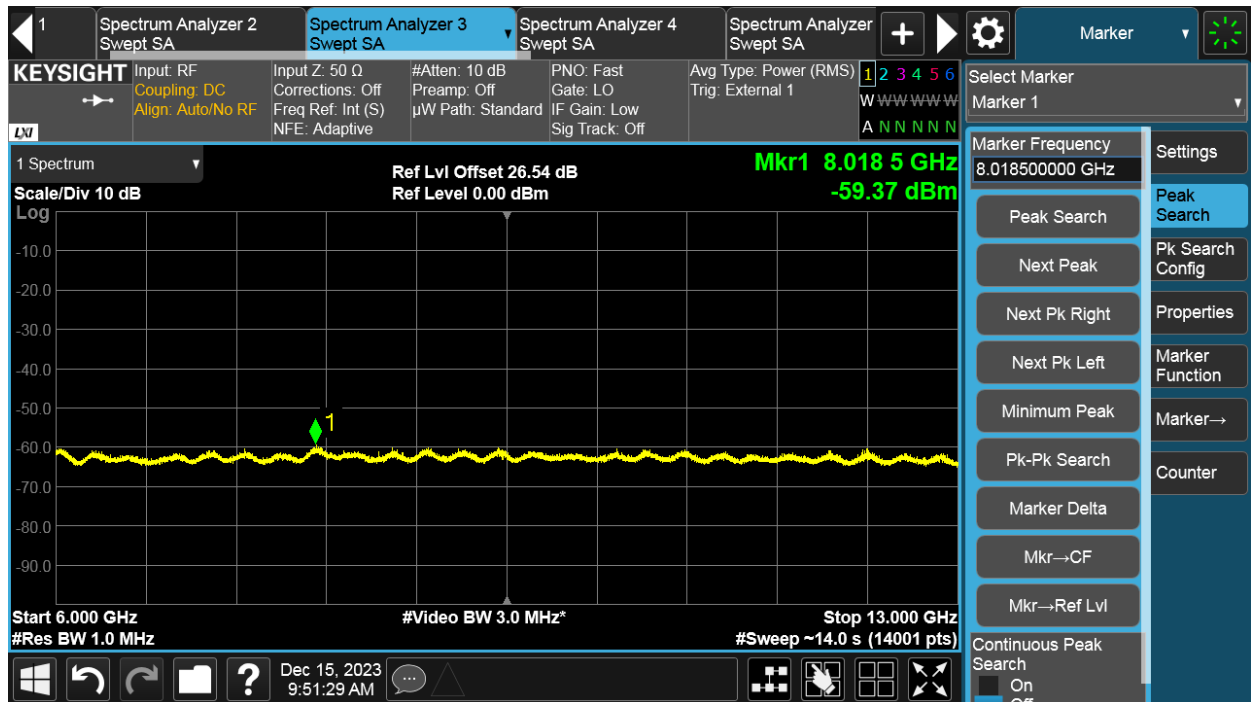
Channel Position M



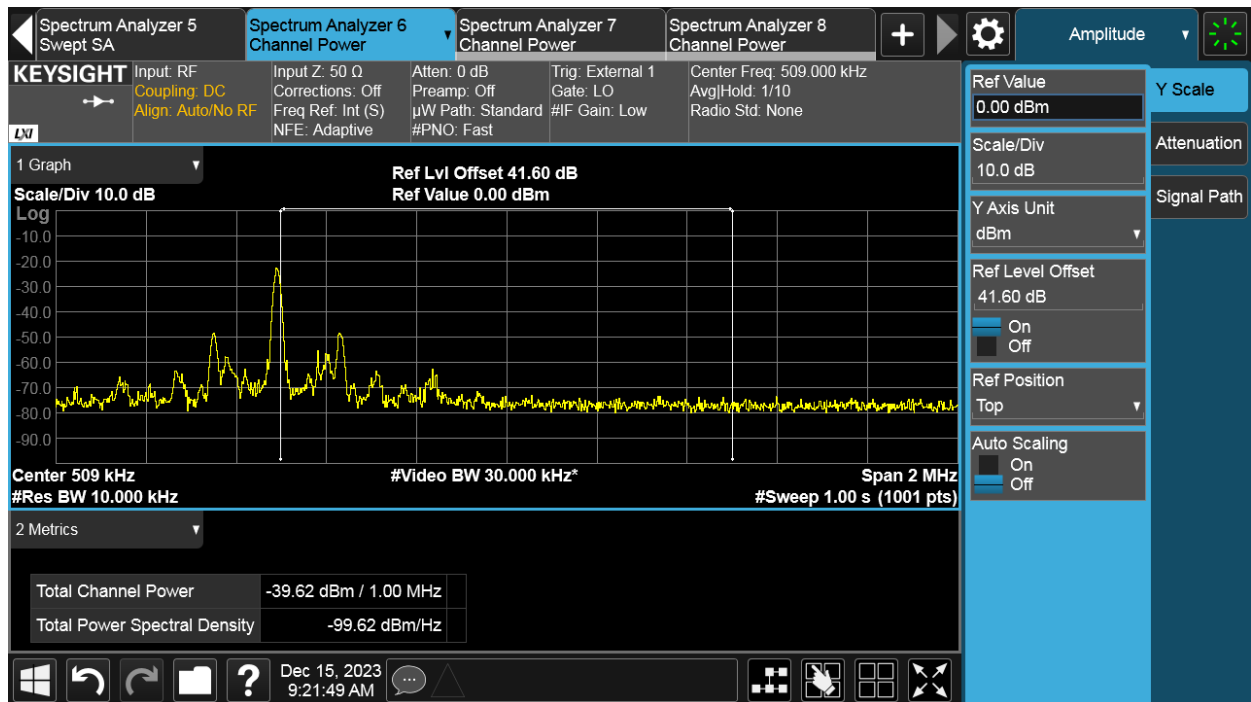
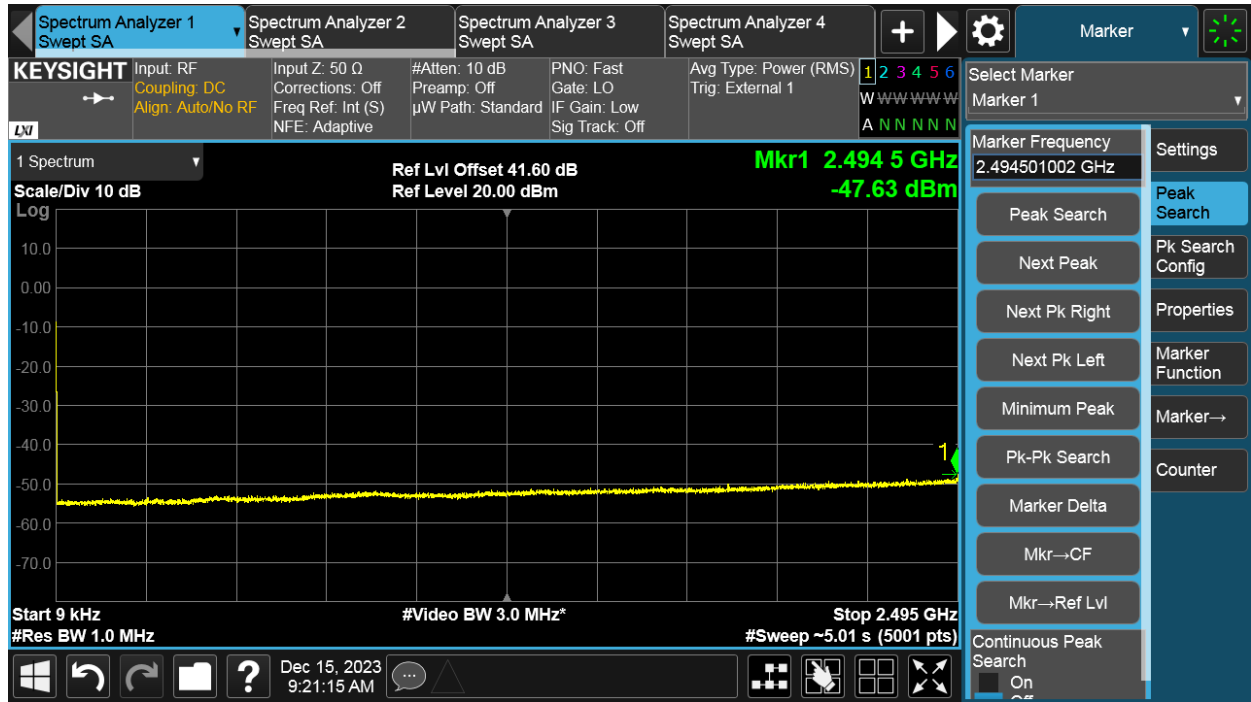
TEST REPORT



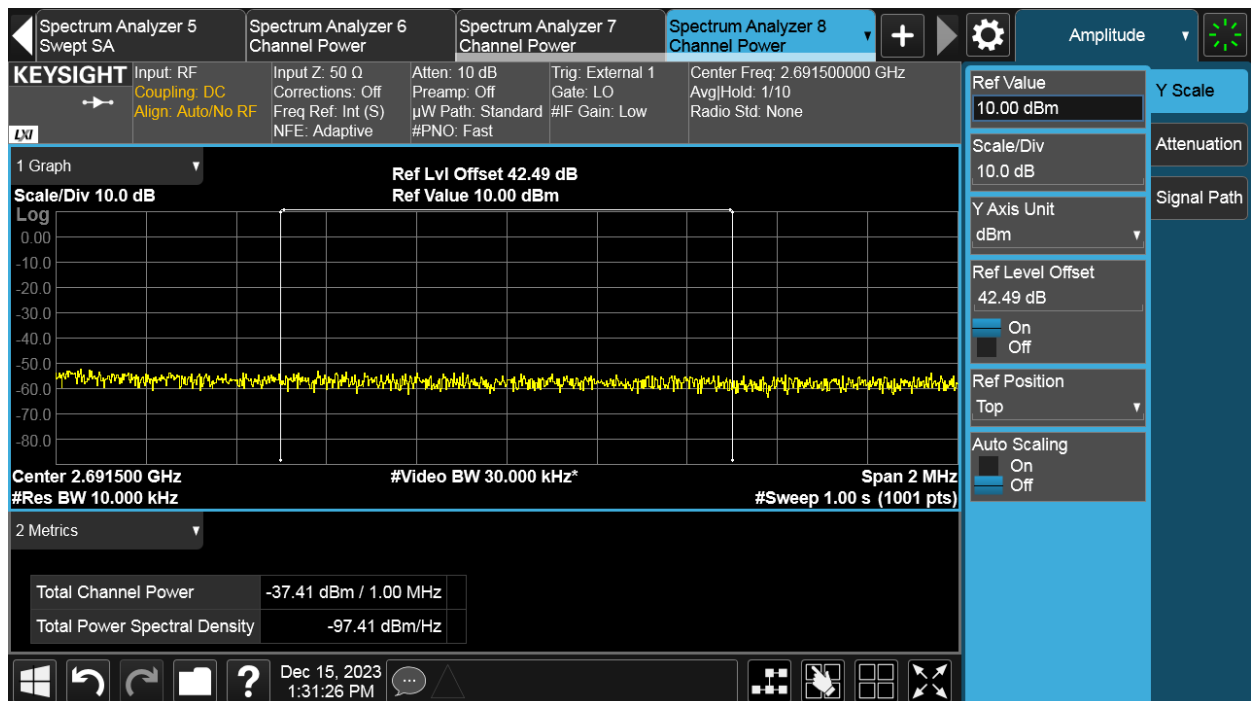
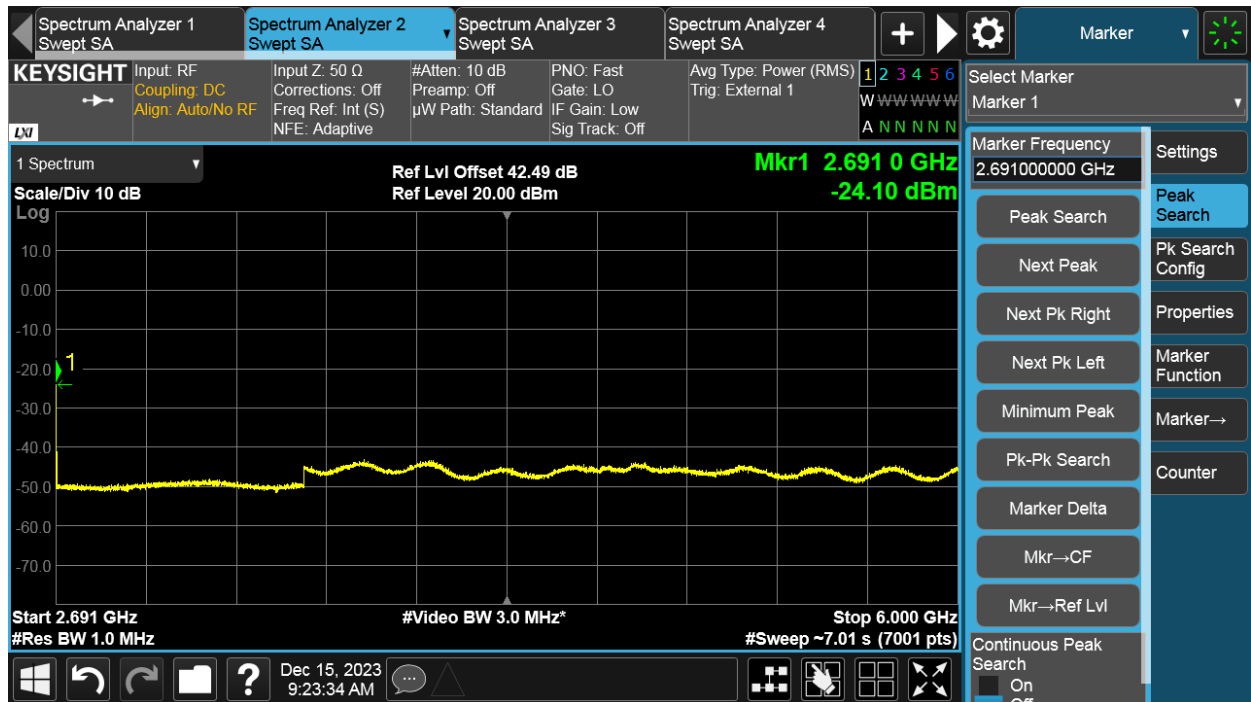
TEST REPORT



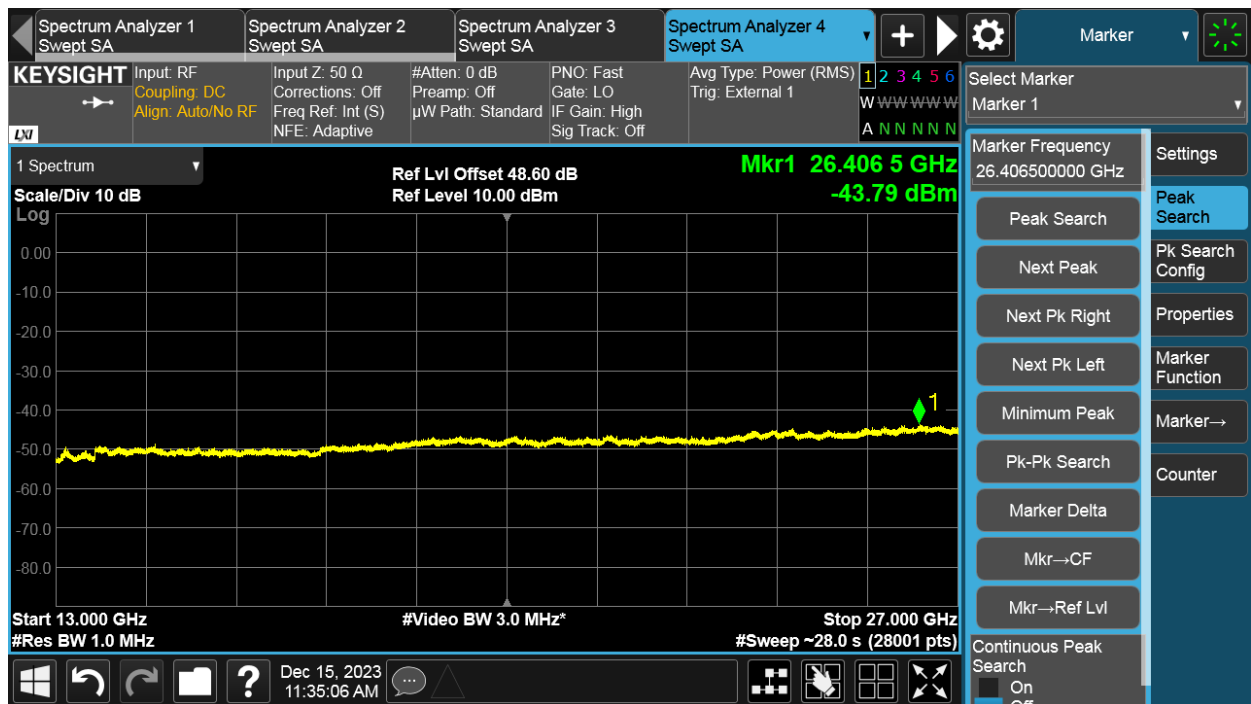
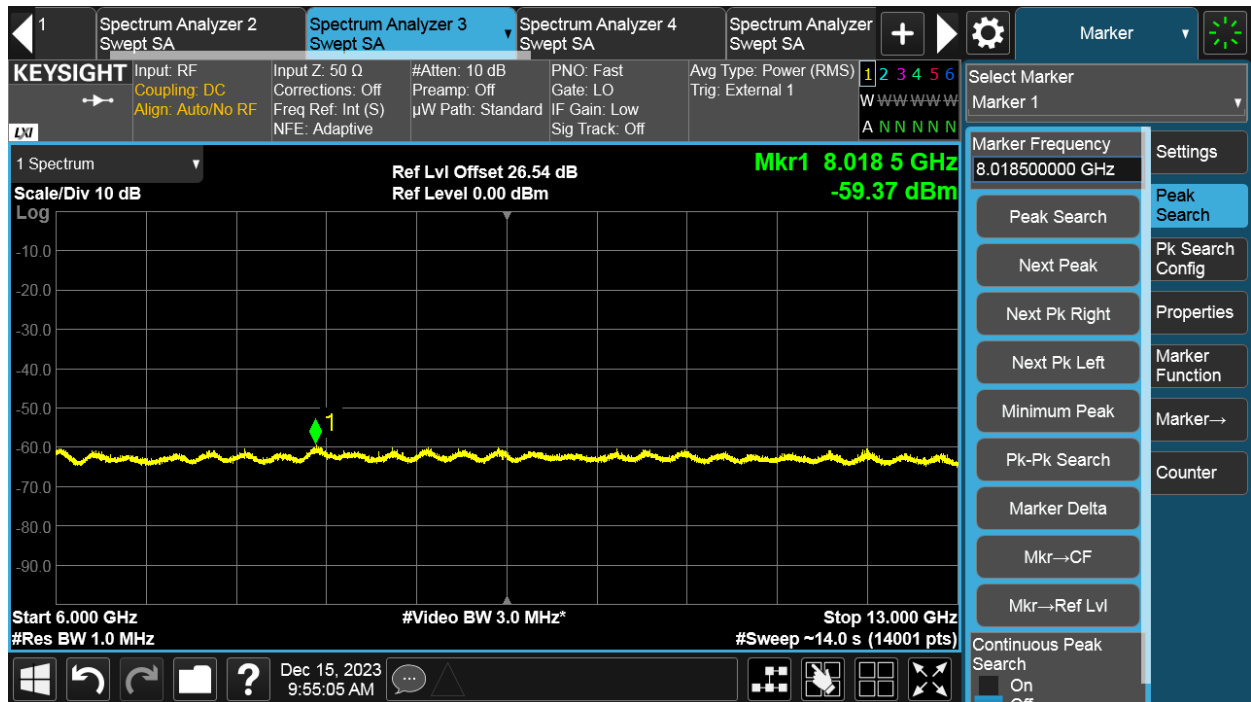
Channel Position T



TEST REPORT



TEST REPORT

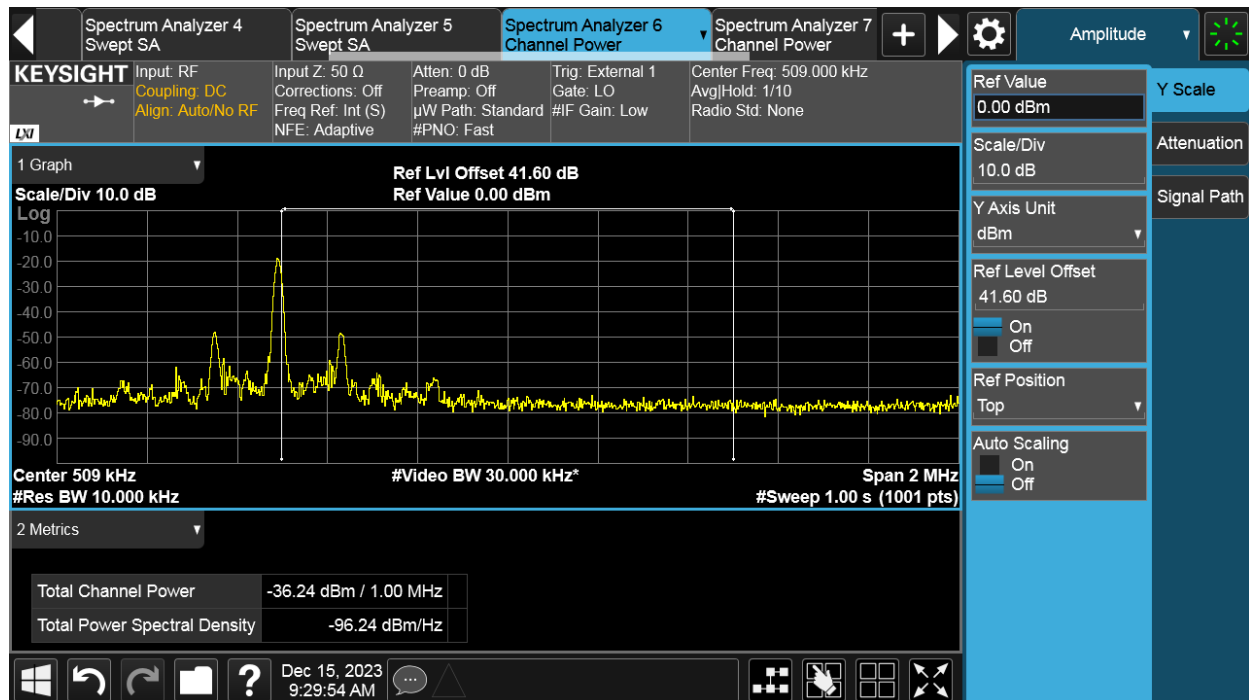
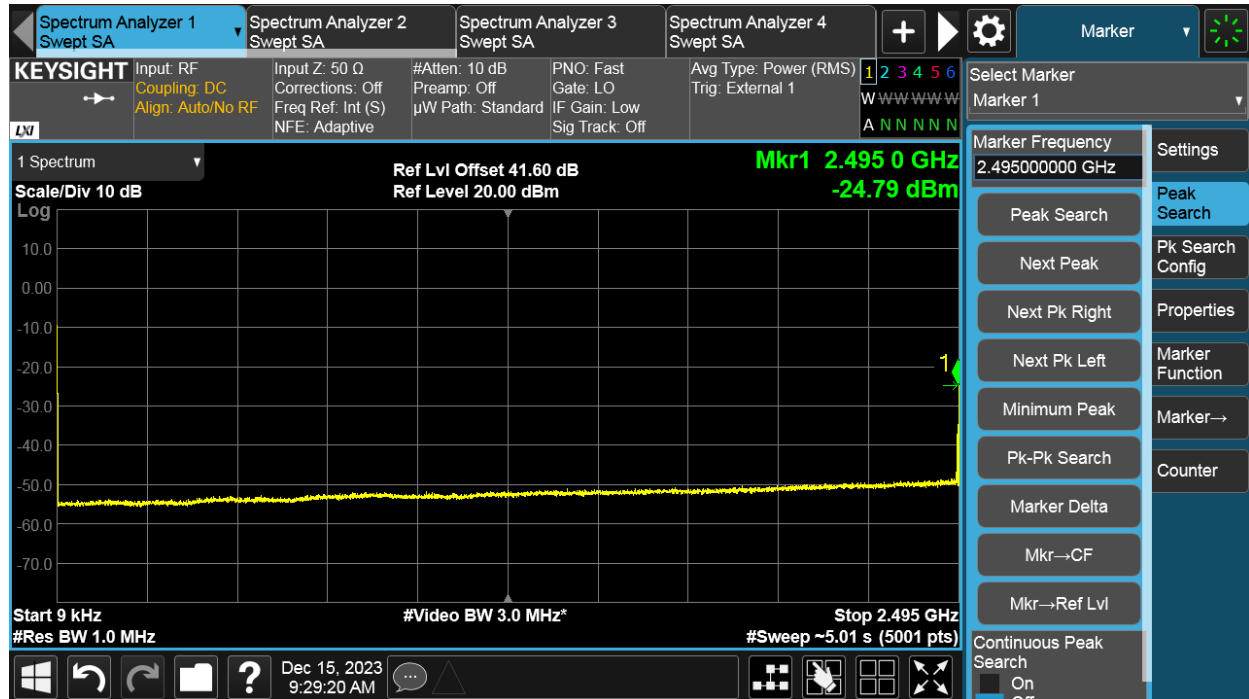


TEST REPORT

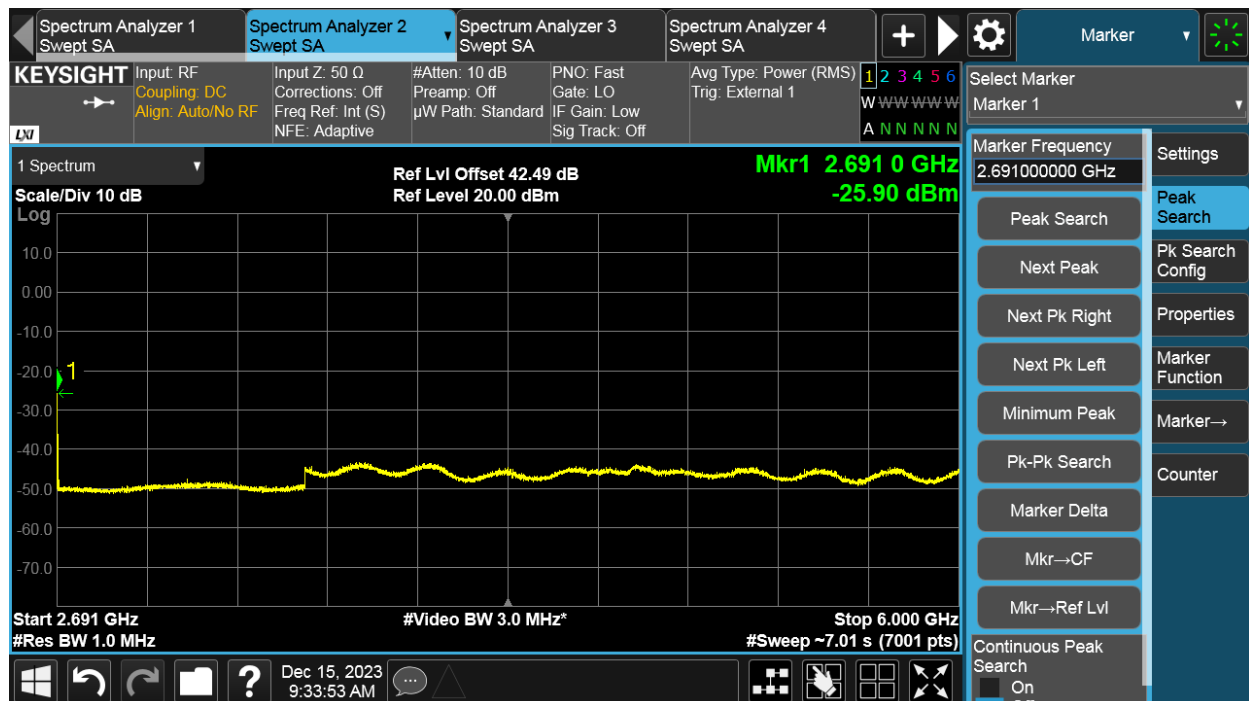
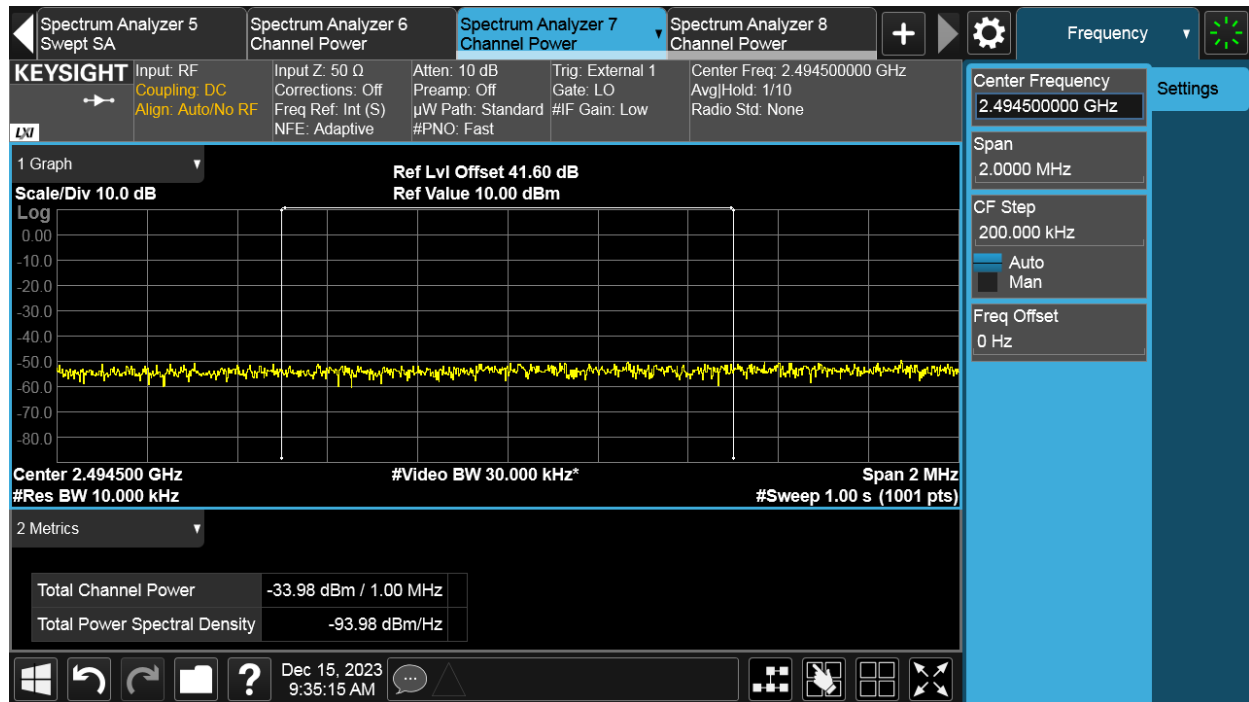
NR-2C-UE:

| Antenna Port | Channel Position | Modulation | Channel Bandwidth (MHz) | RBW (kHz) | Limit (dBm) |
|--------------|------------------|------------|-------------------------|-----------|-------------|
| 23 | M | QPSK | 15 | 1000 | -31.06 |

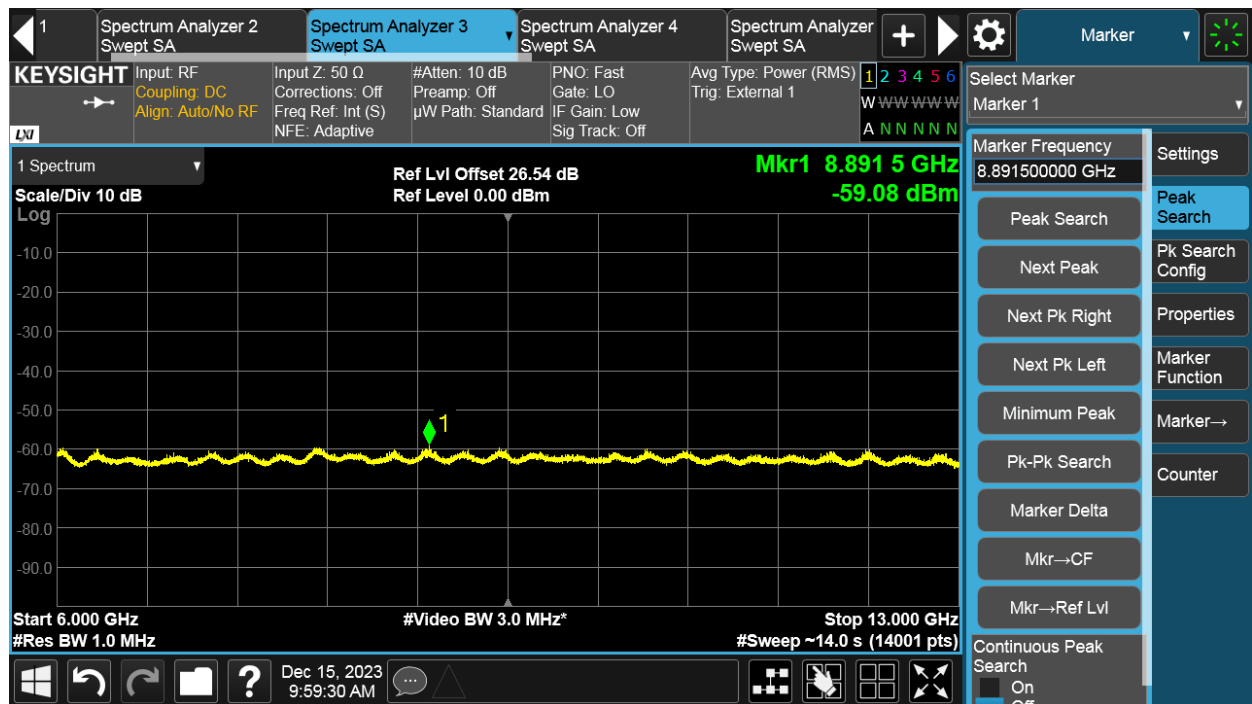
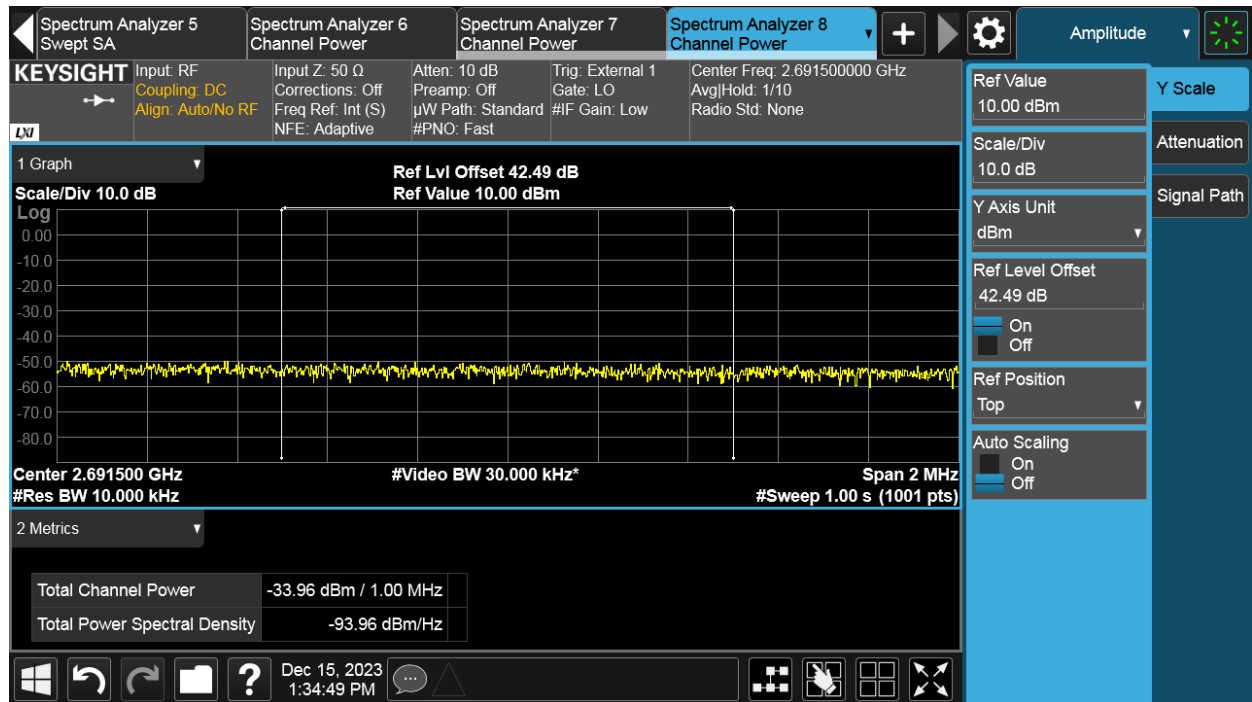
Channel Position M



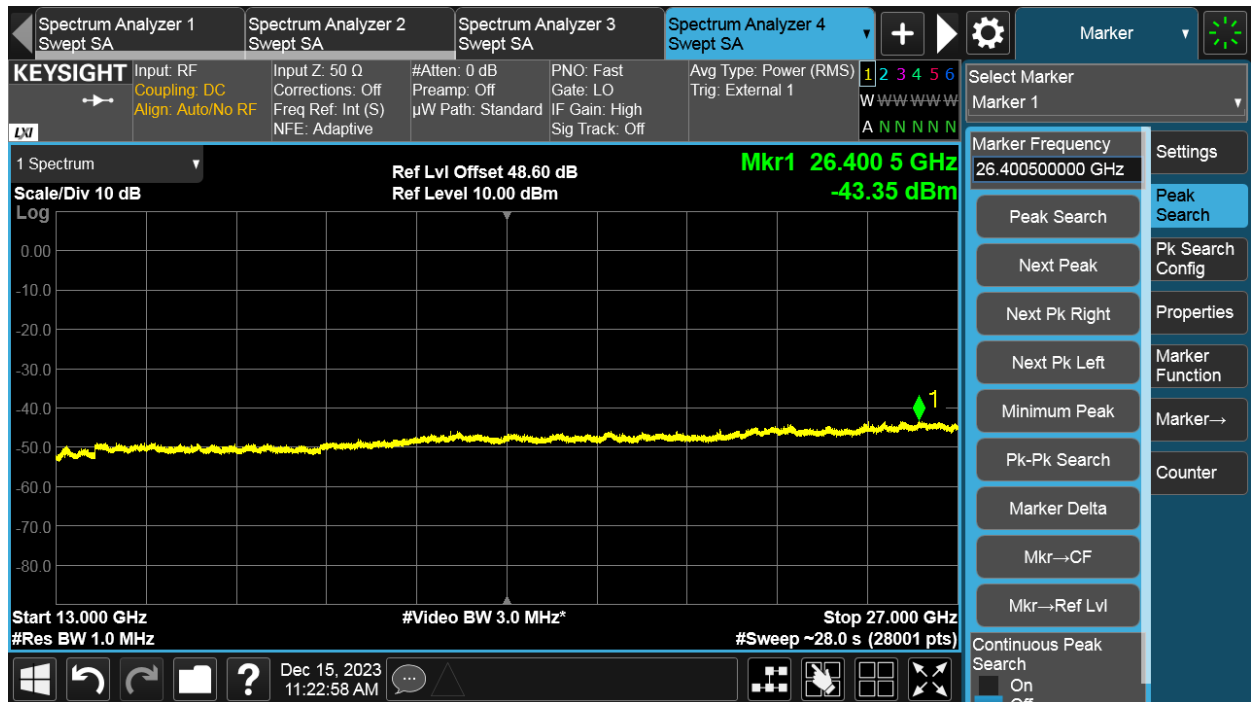
TEST REPORT



TEST REPORT



TEST REPORT



***** END *****