

# Test report

**REP088059-1R2TRFWL**

Date of issue: August 8, 2025

Applicant:

**Fujitsu Network Communications, Inc.**

Product:

**Single band radio unit**

Model:

**44R14-N77a**

Model variant:

**N/A**

FCC ID:

**CFD5GTRUSB**

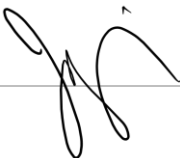
Specifications:

◆ **FCC 47 CFR Part 27**

Miscellaneous Wireless Communications Services

#### Lab and test locations

|              |                             |
|--------------|-----------------------------|
| Company name | Nemko USA Inc.              |
| Address      | 2210 Faraday Ave, Suite 150 |
| City         | Carlsbad                    |
| Province     | California                  |
| Postal code  | 92008                       |
| Country      | USA                         |
| Telephone    | +1 760 444 3500             |
| Website      | www.nemko.com               |

|                    |                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|
| Tested by          | Martha Espinoza, Wireless Test Engineer                                           |
| Reviewed by        | James Cunningham, EMC/MIL/WL Supervisor                                           |
| Review date        | August 8, 2025                                                                    |
| Reviewer signature |  |

#### Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko USA's ISO/IEC 17025 accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by ANAB, NIST, or any agency of the U.S. Government.

#### Copyright notification

Nemko USA Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.

Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

© Nemko USA Inc.

## Table of contents

|                                                                      |           |
|----------------------------------------------------------------------|-----------|
| <b>Table of contents .....</b>                                       | <b>3</b>  |
| <b>Section 1. Report summary .....</b>                               | <b>4</b>  |
| 1.1 Applicant and manufacturer .....                                 | 4         |
| 1.2 Test specifications .....                                        | 4         |
| 1.3 Statement of compliance .....                                    | 4         |
| 1.4 Exclusions .....                                                 | 4         |
| 1.5 Test report revision history .....                               | 4         |
| <b>Section 2. Summary of test results .....</b>                      | <b>5</b>  |
| 2.1 FCC Part 27 test results .....                                   | 5         |
| <b>Section 3. Equipment under test (EUT) details .....</b>           | <b>6</b>  |
| 3.1 Sample information .....                                         | 6         |
| 3.2 EUT information .....                                            | 6         |
| 3.3 Technical information .....                                      | 6         |
| 3.4 Product description and theory of operation .....                | 6         |
| 3.5 EUT exercise details .....                                       | 6         |
| 3.6 EUT setup diagram .....                                          | 7         |
| <b>Section 4. Engineering considerations .....</b>                   | <b>8</b>  |
| 4.1 Modifications incorporated in the EUT .....                      | 8         |
| 4.2 Technical judgment .....                                         | 8         |
| 4.3 Deviations from laboratory tests procedures .....                | 8         |
| <b>Section 5. Test conditions .....</b>                              | <b>9</b>  |
| 5.1 Atmospheric conditions .....                                     | 9         |
| 5.2 Power supply range .....                                         | 9         |
| <b>Section 6. Measurement uncertainty .....</b>                      | <b>10</b> |
| 6.1 Uncertainty of measurement .....                                 | 10        |
| <b>Section 7. Test equipment .....</b>                               | <b>11</b> |
| 7.1 Test equipment list .....                                        | 11        |
| <b>Section 8. Testing data .....</b>                                 | <b>12</b> |
| 8.1 FCC §2.1033(c)(4) Modulation type .....                          | 12        |
| 8.2 FCC §2.1049(h) 99% Occupied Bandwidth and frequency ranges ..... | 13        |
| 8.3 FCC §27.53 (h)(3) 26 dB Occupied Bandwidth .....                 | 18        |
| 8.4 FCC 27.50(j)(2) Output power .....                               | 23        |
| 8.5 FCC 27.50(B) Peak to Average Power Ratio .....                   | 26        |
| 8.6 FCC 27.53(l)(1) Emission Limits .....                            | 29        |
| 8.7 FCC 27.54 Frequency stability .....                              | 61        |

## Section 1. Report summary

---

### 1.1 Applicant and manufacturer

---

|                 |                                       |
|-----------------|---------------------------------------|
| Company name    | Fujitsu Networks Communications, Inc. |
| Address         | 2801 Telecom Parkway                  |
| City            | Richardson                            |
| Province/State  | TX                                    |
| Postal/Zip code | 75082                                 |
| Country         | United States of America              |

### 1.2 Test specifications

---

|                    |                                                |
|--------------------|------------------------------------------------|
| FCC 47 CFR Part 27 | Miscellaneous Wireless Communications Services |
|--------------------|------------------------------------------------|

### 1.3 Statement of compliance

---

In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See "Summary of test results" for full details.

### 1.4 Exclusions

---

None

### 1.5 Test report revision history

---

| Revision #         | Details of changes made to test report |
|--------------------|----------------------------------------|
| REP088059-1TRFWL   | Original report issued                 |
| REP088059-1R1TRFWL | Updated following TCB feedback         |
| REP088059-1R2TRFWL | Additional TCB feedback                |

## Section 2. Summary of test results

---

### 2.1 FCC Part 27 test results

---

| Part             | Test description                     | Verdict |
|------------------|--------------------------------------|---------|
| §2.1033(c)(4)    | Modulation type                      | Pass    |
| §2.1049(h)       | 99% Occupied bandwidth               | Pass    |
| §27.50(h)(j)     | Frequency ranges                     | Pass    |
| §27.50(d)(2)(ii) | Output power at RF antenna connector | Pass    |
| §27.50(d)(5)     | Peak to average power ratio          | Pass    |
| §27.53(h)(1)     | Conducted spurious emissions         | Pass    |
| §27.53(h)(1)     | Radiated spurious emissions          | Pass    |
| §27.53(h)(3)     | 26 dB Occupied bandwidth             | Pass    |
| §27.54           | Frequency stability                  | Pass    |

Note: None

## Section 3. Equipment under test (EUT) details

---

### 3.1 Sample information

---

|                        |                |
|------------------------|----------------|
| Receipt date           | March 25, 2025 |
| Nemko sample ID number | PRJ0074436     |

### 3.2 EUT information

---

|               |                        |
|---------------|------------------------|
| Product name  | Single Band Radio Unit |
| Model         | 44R14-N77a             |
| Part Number   | TA08029-B489-R         |
| Serial number | A1770000212            |

### 3.3 Technical information

---

|                             |                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------|
| Frequency band              | 3700-3980 MHz                                                                               |
| Frequency Min (MHz)         | 3710 MHz                                                                                    |
| Frequency Max (MHz)         | 3970 MHz                                                                                    |
| RF power Max (W), Conducted | 37.41 Watts or 45.73 dBm (Port A); 149.62 Watts or 51.75 dBm (Total power across all ports) |
| Channel bandwidth (MHz)     | 20 MHz; 40 MHz; 60 MHz; 80 MHz; 100 MHz                                                     |
| Type of modulation          | QPSK; 16QAM; 64QAM; 256QAM; 1024QAM                                                         |
| Power requirements          | -48 VDC                                                                                     |
| Antenna information         | The EUT is professionally installed.<br>17 dBi maximum gain                                 |

### 3.4 Product description and theory of operation

---

The TDD 44R14-N77a 5G ORAN C-band Radio Unit (RU) operates in the 3700–3980 MHz frequency range, supporting a single mid-band for high-capacity 5G connectivity. With a 4T4R configuration and 30W output power per port, it efficiently handles RF signal transmission and reception. It interfaces with the Distributed Unit (DU) via an ORAN-compliant fronthaul, enabling robust uplink and downlink communication for user devices).

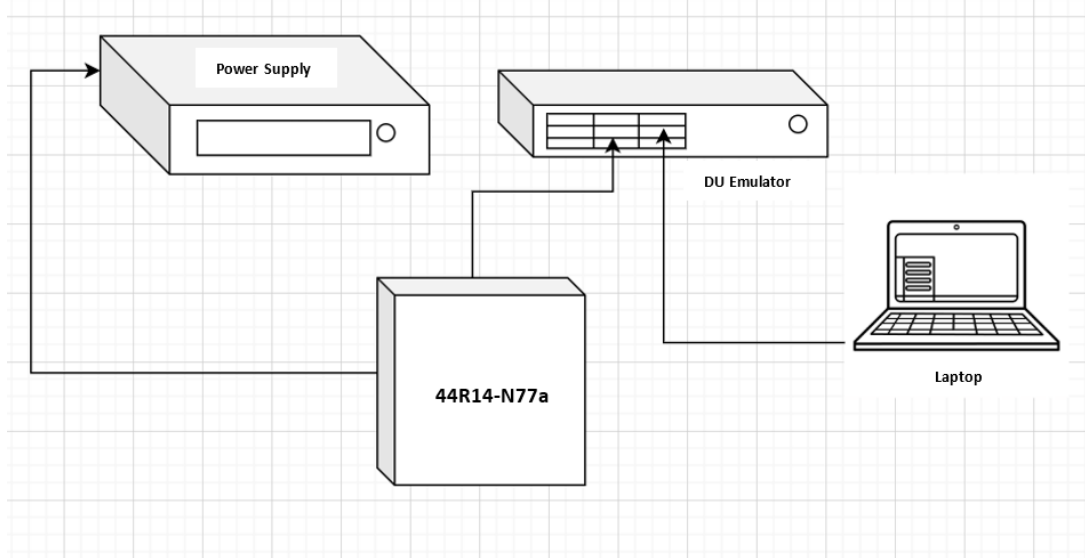
### 3.5 EUT exercise details

---

A laptop computer was used to send test commands to EUT to force it to transmit the appropriate signal. Unit transmit the selected signal at full power. The unit was tested using a conducted port. The antenna installation shall be done by professionals, and they are not within the scope of the tests evaluated on this document.

### 3.6 EUT setup diagram

---



*Figure 3.6-1: Setup diagram*

## Section 4. Engineering considerations

---

### 4.1 Modifications incorporated in the EUT

---

There were no modifications performed to the EUT during this assessment.

### 4.2 Technical judgment

---

None

### 4.3 Deviations from laboratory tests procedures

---

No deviations were made from laboratory procedures.

## Section 5. Test conditions

---

### 5.1 Atmospheric conditions

---

|                   |               |
|-------------------|---------------|
| Temperature       | 15–30 °C      |
| Relative humidity | 20–75 %       |
| Air pressure      | 860–1060 mbar |

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

### 5.2 Power supply range

---

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages  $\pm 5\%$ , for which the equipment was designed.

## Section 6. Measurement uncertainty

---

### 6.1 Uncertainty of measurement

---

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of  $K = 2$  with 95% certainty.

**Table 6.1-1:** *Measurement uncertainty.*

| Test name                                    | Measurement uncertainty, dB |
|----------------------------------------------|-----------------------------|
| All antenna port measurements/ including OBW | 0.55                        |
| Conducted spurious emissions                 | 1.13                        |
| Radiated spurious emissions                  | 3.78                        |
| AC power line conducted emissions            | 1.38                        |
| Supply Voltages                              | 0.05%                       |
| Time                                         | 2.09%                       |

## Section 7. Test equipment

### 7.1 Test equipment list

*Table 7.1-1: Equipment list*

| Equipment                    | Manufacturer    | Model no.           | Asset no. | Cal cycle | Next cal.    |
|------------------------------|-----------------|---------------------|-----------|-----------|--------------|
| EMC Test Receiver            | Rohde & Schwarz | ESU 40              | E1121     | 1 year    | 03-Oct-2025  |
| Signal and spectrum analyzer | Rohde & Schwarz | FSV 40              | E1120     | 2 years   | 14-Dec-2025  |
| Power sensor                 | ETS-Lindgren    | 7002-006            | E1061     | 2 years   | 27-July-2025 |
| Antenna, Bilog               | Schaffner-Chase | CBL6111C            | 1763      | 2 years   | 16-July-2026 |
| DRG Horn (medium)            | ETS-Lindgren    | 3117-PA             | E1139     | 2 years   | 17-May-2026  |
| Standard Gain Horn Antenna   | Eravant         | SAZ-2410-42-S1      | EW107     | 1 year    | 11-Feb-2026  |
| Gain Horn Antenna            | Eravant         | SAZ-2410-28-S1      | EW108     | 1 year    | 11-Feb-2026  |
| Low Noise Amplifier          | Eravant         | SBL-1834034038-KFKF | EW111     | NCR       | NCR          |
| Temperature chamber          | TestEquity      | 115A                | E1162     | 1 year    | 12-Sep-2025  |

Note: NCR - no calibration required

## Section 8. Testing data

### 8.1 FCC §2.1033(c)(4) Modulation type

#### 8.1.1 Definitions and limits

(c) Applications for equipment other than that operating under parts 15, 11 and 18 of this chapter shall be accompanied by a technical report containing the following information:

(4) Type or types of emission

#### 8.1.2 Test summary

|               |                                         |                   |           |
|---------------|-----------------------------------------|-------------------|-----------|
| Test date     | March 25, 2025                          | Temperature       | 20 °C     |
| Test engineer | Martha Espinoza, Wireless Test Engineer | Air pressure      | 1003 mbar |
| Verdict       | Pass                                    | Relative humidity | 51 %      |

#### 8.1.3 Observations, settings and special notes

None

#### 8.1.4 Test data

**Table 8.1-1: Types of emission**

| Band | Bandwidth (MHz) | Emission type                      |
|------|-----------------|------------------------------------|
| n77  | 20              | QPSK; 16QAM; 64QAM; 256QAM;1024QAM |
| n77  | 40              | QPSK; 16QAM; 64QAM; 256QAM;1024QAM |
| n77  | 60              | QPSK; 16QAM; 64QAM; 256QAM;1024QAM |
| n77  | 80              | QPSK; 16QAM; 64QAM; 256QAM;1024QAM |
| n77  | 100             | QPSK; 16QAM; 64QAM; 256QAM;1024QAM |

## 8.2 FCC §2.1049(h) 99% Occupied Bandwidth and frequency ranges

### 8.2.1 Definitions and limits

§2.1049 (h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter network, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the use.

### 8.2.2 Test summary

|               |                                                |                   |                                 |
|---------------|------------------------------------------------|-------------------|---------------------------------|
| Test date     | March 26, 2025; March 27, 2025; March 28, 2025 | Temperature       | 20 °C; 19 °C; 19 °C             |
| Test engineer | Martha Espinoza, Wireless Test Engineer        | Air pressure      | 1005 mbar; 1007 mbar; 1003 mbar |
| Verdict       | Pass                                           | Relative humidity | 53 %; 55 %; 51 %                |

### 8.2.3 Observations, settings and special notes

None.

### 8.2.4 Test data

**Table 8.2-1:** 99% Occupied bandwidth test results.

| Frequency channel (MHz) | Modulation | Occupied Bandwidth Declared (MHz) | 99% OBW (MHz) |
|-------------------------|------------|-----------------------------------|---------------|
| 3710                    | QPSK       | 20                                | 18.524        |
| 3830                    | QPSK       | 20                                | 18.640        |
| 3970                    | QPSK       | 20                                | 18.582        |
| 3720                    | QPSK       | 40                                | 38.205        |
| 3840                    | QPSK       | 40                                | 38.205        |
| 3960                    | QPSK       | 40                                | 38.205        |
| 3730                    | QPSK       | 60                                | 57.829        |
| 3830                    | QPSK       | 60                                | 58.176        |
| 3950                    | QPSK       | 60                                | 58.003        |
| 3740                    | QPSK       | 80                                | 77.569        |
| 3840                    | QPSK       | 80                                | 77.569        |
| 3940                    | QPSK       | 80                                | 77.569        |
| 3750                    | QPSK       | 100                               | 96.961        |
| 3830                    | QPSK       | 100                               | 96.961        |
| 3930                    | QPSK       | 100                               | 96.961        |
| 3710                    | 16QAM      | 20                                | 18.466        |
| 3830                    | 16QAM      | 20                                | 18.466        |
| 3970                    | 16QAM      | 20                                | 18.466        |
| 3720                    | 16QAM      | 40                                | 38.205        |
| 3840                    | 16QAM      | 40                                | 38.205        |
| 3960                    | 16QAM      | 40                                | 38.205        |
| 3730                    | 16QAM      | 60                                | 57.829        |
| 3830                    | 16QAM      | 60                                | 58.177        |
| 3950                    | 16QAM      | 60                                | 58.003        |
| 3740                    | 16QAM      | 80                                | 77.568        |
| 3840                    | 16QAM      | 80                                | 77.568        |
| 3940                    | 16QAM      | 80                                | 77.568        |
| 3750                    | 16QAM      | 100                               | 97.829        |
| 3830                    | 16QAM      | 100                               | 97.829        |
| 3930                    | 16QAM      | 100                               | 97.829        |
| 3710                    | 64QAM      | 20                                | 18.408        |
| 3830                    | 64QAM      | 20                                | 18.408        |
| 3970                    | 64QAM      | 20                                | 18.408        |
| 3720                    | 64QAM      | 40                                | 38.090        |
| 3840                    | 64QAM      | 40                                | 38.205        |
| 3960                    | 64QAM      | 40                                | 38.090        |

| Frequency channel<br>(MHz) | Modulation | Occupied Bandwidth<br>Declared (MHz) | 99% OBW (MHz) |
|----------------------------|------------|--------------------------------------|---------------|
| 3730                       | 64QAM      | 60                                   | 57.829        |
| 3830                       | 64QAM      | 60                                   | 58.003        |
| 3950                       | 64QAM      | 60                                   | 58.003        |
| 3740                       | 64QAM      | 80                                   | 77.337        |
| 3840                       | 64QAM      | 80                                   | 77.569        |
| 3940                       | 64QAM      | 80                                   | 77.337        |
| 3750                       | 64QAM      | 100                                  | 97.829        |
| 3830                       | 64QAM      | 100                                  | 97.829        |
| 3930                       | 64QAM      | 100                                  | 97.829        |
| 3710                       | 256QAM     | 20                                   | 18.292        |
| 3830                       | 256QAM     | 20                                   | 18.350        |
| 3970                       | 256QAM     | 20                                   | 18.292        |
| 3720                       | 256QAM     | 40                                   | 38.090        |
| 3840                       | 256QAM     | 40                                   | 38.090        |
| 3960                       | 256QAM     | 40                                   | 38.090        |
| 3730                       | 256QAM     | 60                                   | 57.829        |
| 3830                       | 256QAM     | 60                                   | 58.003        |
| 3950                       | 256QAM     | 60                                   | 58.003        |
| 3740                       | 256QAM     | 80                                   | 77.337        |
| 3840                       | 256QAM     | 80                                   | 77.337        |
| 3940                       | 256QAM     | 80                                   | 77.337        |
| 3750                       | 256QAM     | 100                                  | 97.829        |
| 3830                       | 256QAM     | 100                                  | 97.829        |
| 3930                       | 256QAM     | 100                                  | 97.829        |
| 3710                       | 1024QAM    | 20                                   | 18.292        |
| 3830                       | 1024QAM    | 20                                   | 18.292        |
| 3970                       | 1024QAM    | 20                                   | 18.292        |
| 3720                       | 1024QAM    | 40                                   | 37.974        |
| 3840                       | 1024QAM    | 40                                   | 38.090        |
| 3960                       | 1024QAM    | 40                                   | 37.974        |
| 3730                       | 1024QAM    | 60                                   | 57.829        |
| 3830                       | 1024QAM    | 60                                   | 58.003        |
| 3950                       | 1024QAM    | 60                                   | 58.003        |
| 3740                       | 1024QAM    | 80                                   | 77.337        |
| 3840                       | 1024QAM    | 80                                   | 77.569        |
| 3940                       | 1024QAM    | 80                                   | 77.337        |
| 3750                       | 1024QAM    | 100                                  | 97.540        |
| 3830                       | 1024QAM    | 100                                  | 97.540        |
| 3930                       | 1024QAM    | 100                                  | 97.829        |

Sample plots below for 1024QAM operation:

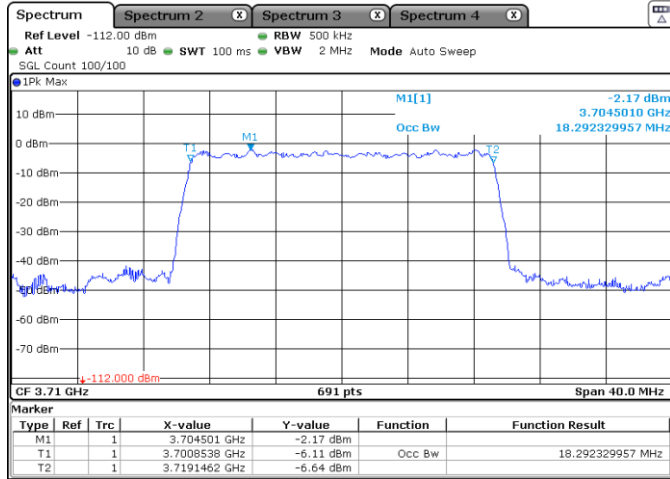


Figure 8.2-1: 99% OBW, Low CH 3710 MHz, 20 MHz, 1024QAM.

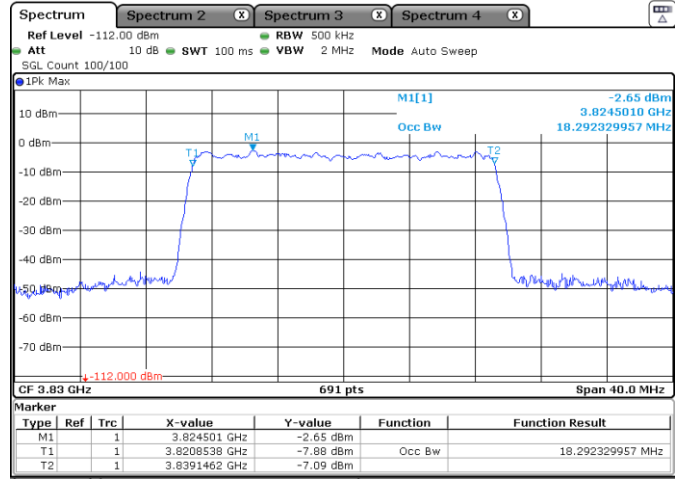


Figure 8.2-2: 99% OBW, Mid CH 3830 MHz, 20 MHz, 1024QAM.

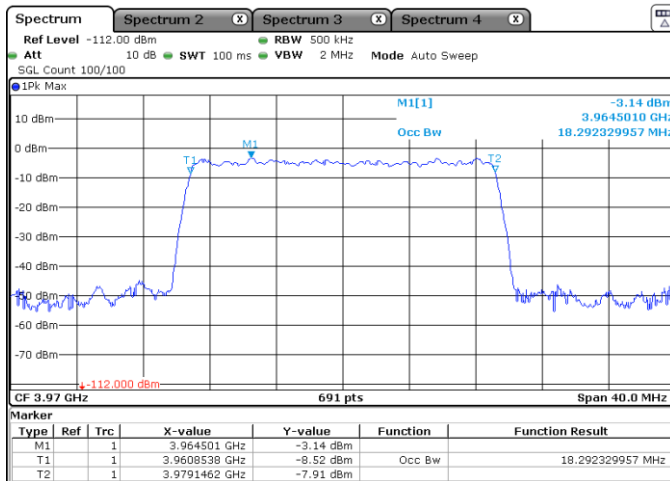


Figure 8.2-3: 99% OBW, High CH 3970 MHz, 20 MHz, 1024QAM.

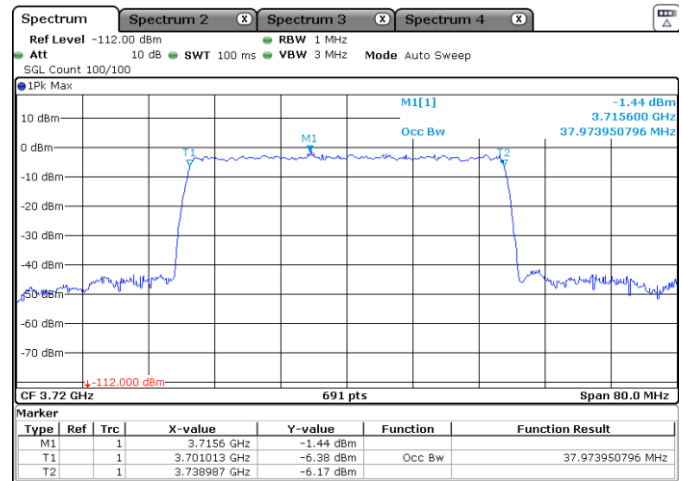


Figure 8.2-4: 99% OBW, Low CH 3720 MHz, 40 MHz, 1024QAM.

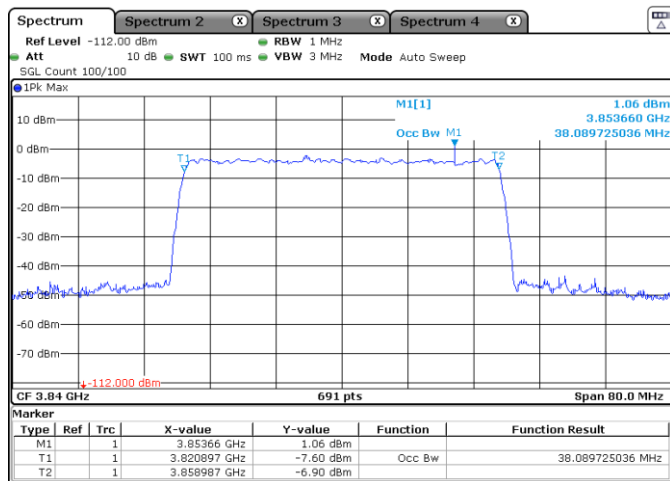


Figure 8.2-5: 99% OBW, Mid CH 3840 MHz, 40 MHz, 1024QAM.

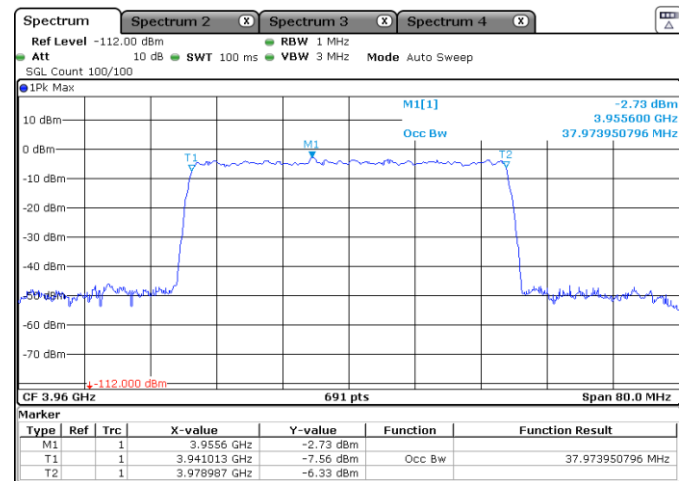


Figure 8.2-6: 99% OBW, High CH 3960 MHz, 40 MHz, 1024QAM.

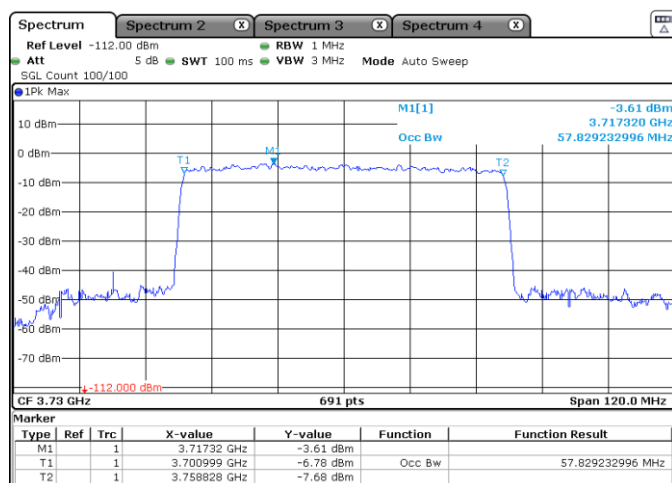


Figure 8.2-7: 99% OBW, Low CH 3730 MHz, 60 MHz, 1024QAM.

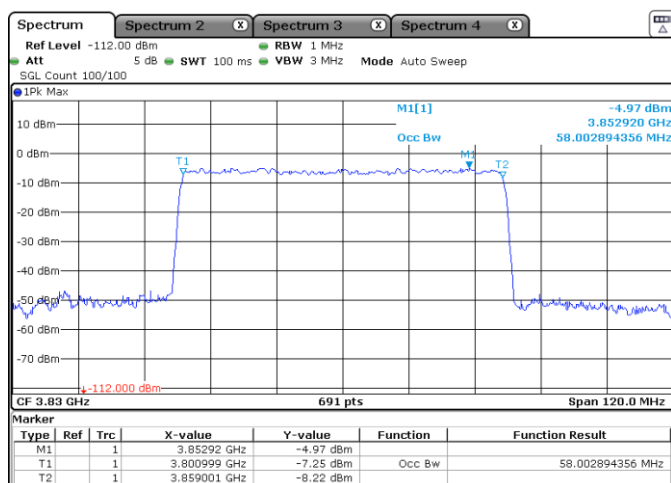


Figure 8.2-8: 99% OBW, Mid CH 3830 MHz, 60 MHz, 1024QAM.

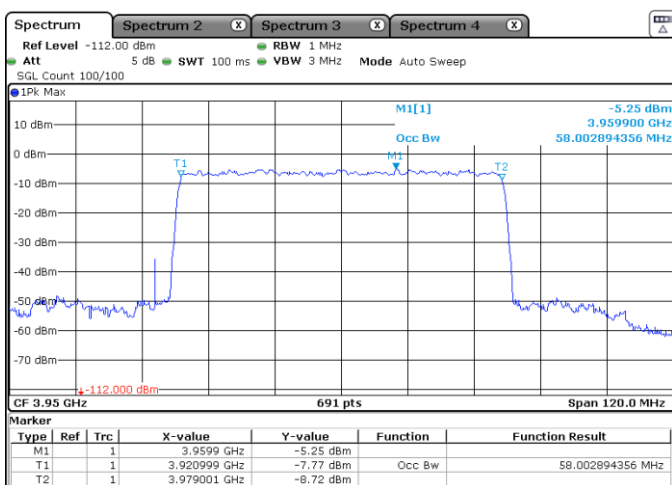


Figure 8.2-9: 99% OBW, High CH 3950 MHz, 60 MHz, 1024QAM.

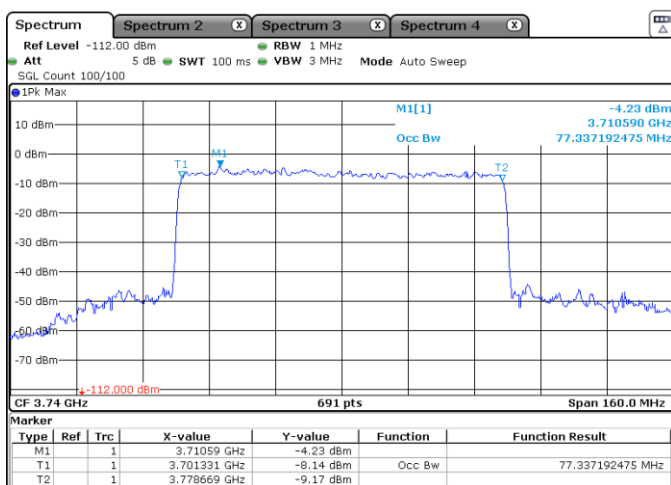


Figure 8.2-10: 99% OBW, Low CH 3740 MHz, 80 MHz, 1024QAM.

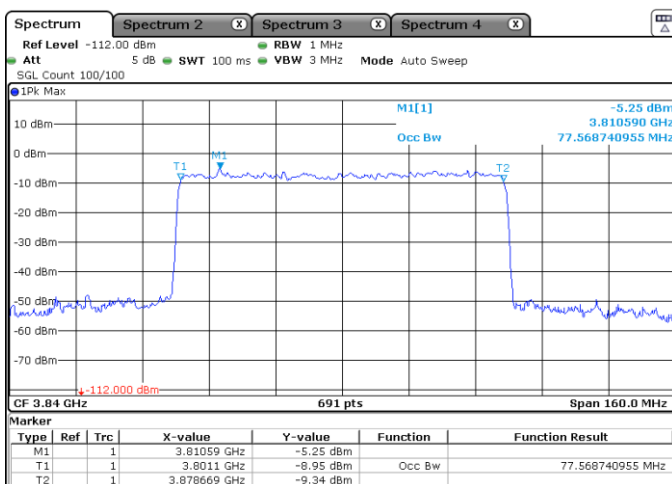


Figure 8.2-11: 99% OBW, Mid CH 3840 MHz, 80 MHz, 1024QAM.

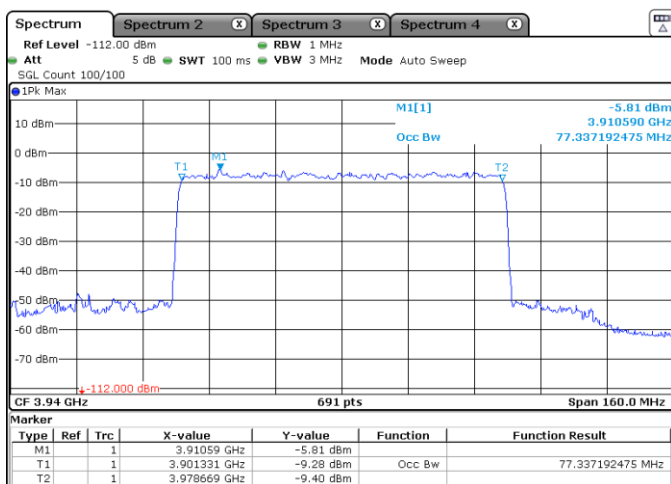


Figure 8.2-12: 99% OBW, High CH 3940 MHz, 80 MHz, 1024QAM.

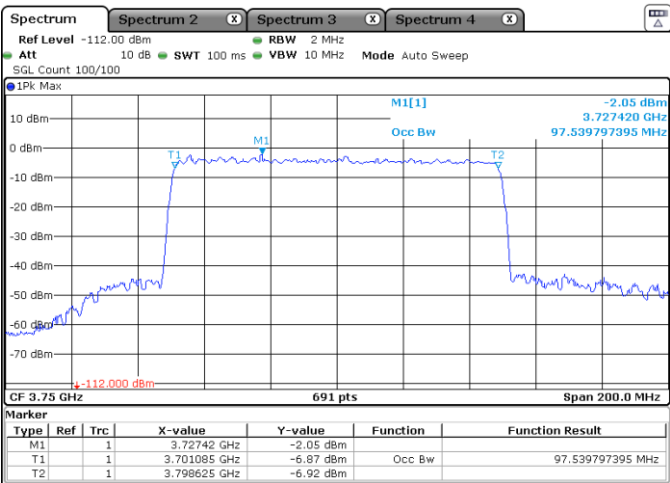


Figure 8.2-13: 99% OBW, Low CH 3750 MHz, 100 MHz, 1024QAM.

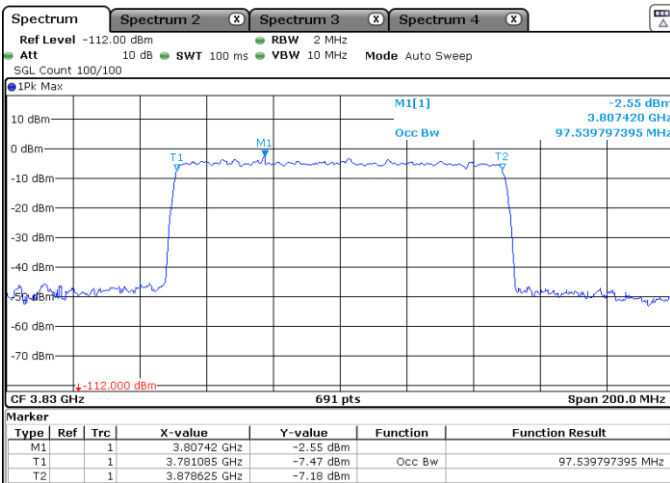


Figure 8.2-14: 99% OBW, Mid CH 3830 MHz, 100 MHz, 1024QAM.

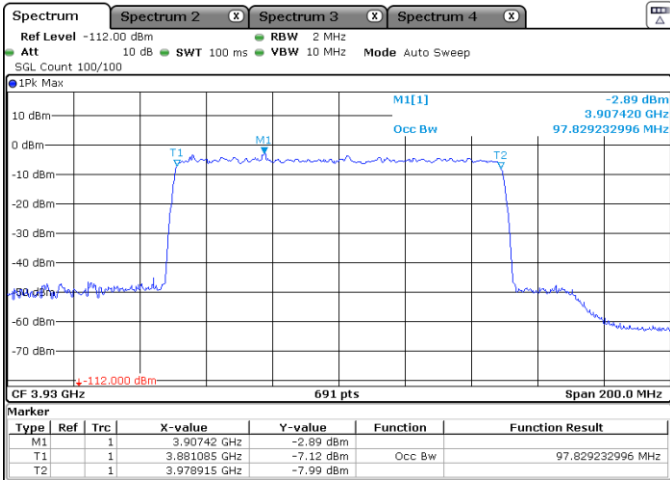


Figure 8.2-15: 99% OBW, High CH 3930 MHz, 100 MHz, 1024QAM.

### 8.3 FCC §27.53 (h)(3) 26 dB Occupied Bandwidth

#### 8.3.1 Definitions and limits

(3) Measurement procedure. (i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

#### 8.3.2 Test summary

|               |                                                |                   |                                 |
|---------------|------------------------------------------------|-------------------|---------------------------------|
| Test date     | March 26, 2025; March 27, 2025; March 28, 2025 | Temperature       | 20 °C; 19 °C; 19 °C             |
| Test engineer | Martha Espinoza, Wireless Test Engineer        | Air pressure      | 1005 mbar; 1007 mbar; 1003 mbar |
| Verdict       | Pass                                           | Relative humidity | 53 %; 55 %; 51 %                |

#### 8.3.3 Observations, settings and special notes

Selection of port A and port B was according to section 8.4 of this document.

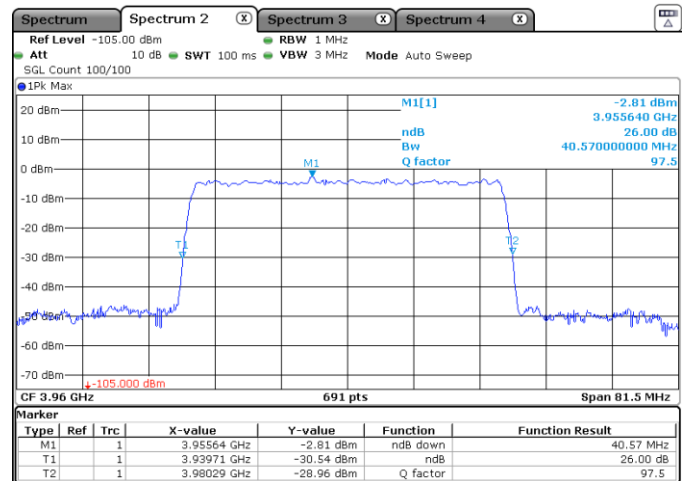
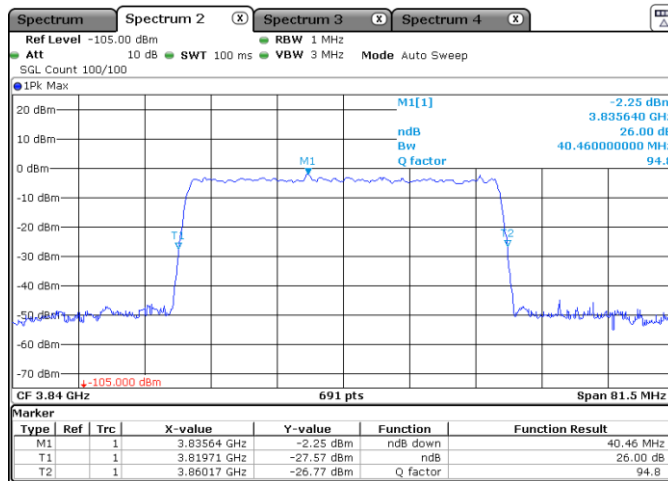
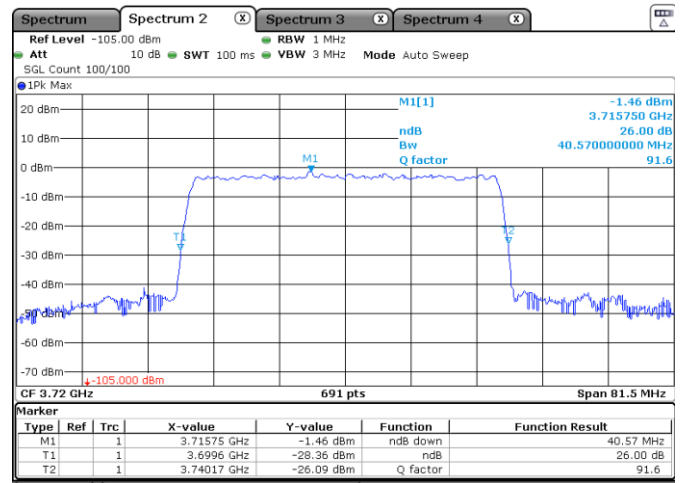
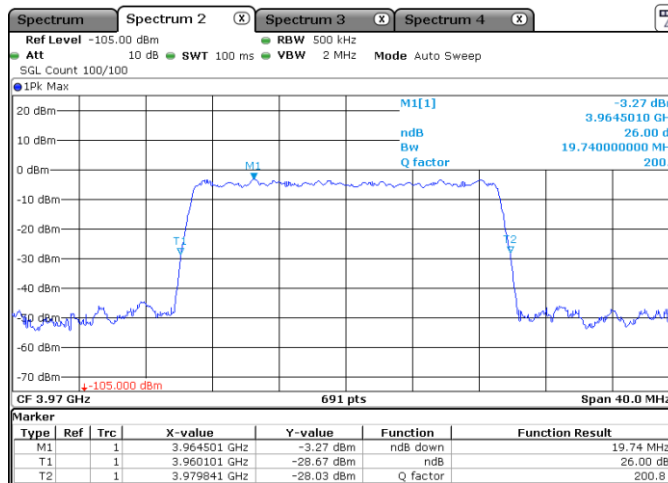
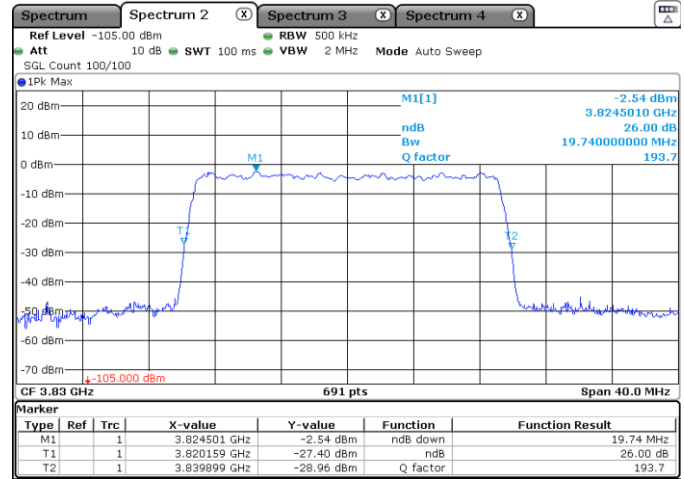
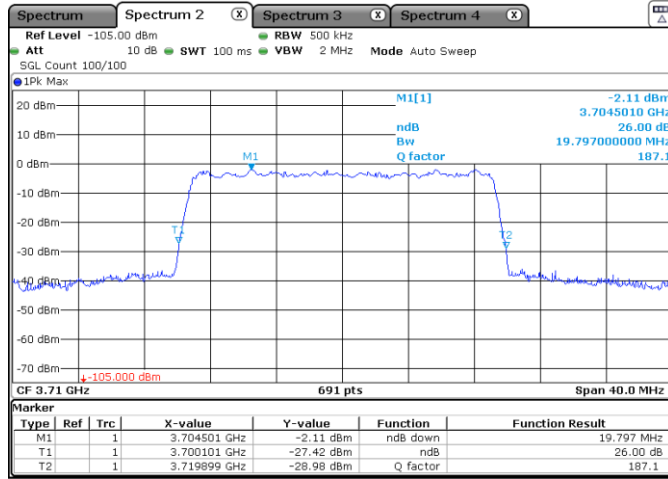
#### 8.3.4 Test data

**Table 8.3-1: 26 dB Occupied bandwidth test results.**

| Frequency channel (MHz) | Modulation | Occupied Bandwidth Declared (MHz) | 26 dB OBW (MHz) |
|-------------------------|------------|-----------------------------------|-----------------|
| 3710                    | QPSK       | 20                                | 19.913          |
| 3830                    | QPSK       | 20                                | 19.913          |
| 3970                    | QPSK       | 20                                | 19.913          |
| 3720                    | QPSK       | 40                                | 40.460          |
| 3840                    | QPSK       | 40                                | 40.460          |
| 3960                    | QPSK       | 40                                | 40.340          |
| 3730                    | QPSK       | 60                                | 60.740          |
| 3830                    | QPSK       | 60                                | 60.740          |
| 3950                    | QPSK       | 60                                | 60.740          |
| 3740                    | QPSK       | 80                                | 80.650          |
| 3840                    | QPSK       | 80                                | 80.650          |
| 3940                    | QPSK       | 80                                | 80.650          |
| 3750                    | QPSK       | 100                               | 102.550         |
| 3830                    | QPSK       | 100                               | 102.550         |
| 3930                    | QPSK       | 100                               | 102.550         |
| 3710                    | 16QAM      | 20                                | 19.797          |
| 3830                    | 16QAM      | 20                                | 19.797          |
| 3970                    | 16QAM      | 20                                | 19.797          |
| 3720                    | 16QAM      | 40                                | 40.570          |
| 3840                    | 16QAM      | 40                                | 40.460          |
| 3960                    | 16QAM      | 40                                | 40.460          |
| 3730                    | 16QAM      | 60                                | 60.740          |
| 3830                    | 16QAM      | 60                                | 60.740          |
| 3950                    | 16QAM      | 60                                | 60.740          |
| 3740                    | 16QAM      | 80                                | 80.650          |
| 3840                    | 16QAM      | 80                                | 80.650          |
| 3940                    | 16QAM      | 80                                | 80.410          |
| 3750                    | 16QAM      | 100                               | 102.850         |
| 3830                    | 16QAM      | 100                               | 102.850         |
| 3930                    | 16QAM      | 100                               | 102.850         |
| 3710                    | 64QAM      | 20                                | 19.740          |
| 3830                    | 64QAM      | 20                                | 19.740          |
| 3970                    | 64QAM      | 20                                | 19.740          |
| 3720                    | 64QAM      | 40                                | 40.570          |

| Frequency channel<br>(MHz) | Modulation | Occupied Bandwidth<br>Declared (MHz) | 26 dB OBW (MHz) |
|----------------------------|------------|--------------------------------------|-----------------|
| 3840                       | 64QAM      | 40                                   | 40.460          |
| 3960                       | 64QAM      | 40                                   | 40.570          |
| 3730                       | 64QAM      | 60                                   | 60.740          |
| 3830                       | 64QAM      | 60                                   | 60.740          |
| 3950                       | 64QAM      | 60                                   | 60.740          |
| 3740                       | 64QAM      | 80                                   | 80.650          |
| 3840                       | 64QAM      | 80                                   | 80.650          |
| 3940                       | 64QAM      | 80                                   | 80.650          |
| 3750                       | 64QAM      | 100                                  | 102.850         |
| 3830                       | 64QAM      | 100                                  | 102.850         |
| 3930                       | 64QAM      | 100                                  | 102.850         |
| 3710                       | 256QAM     | 20                                   | 19.740          |
| 3830                       | 256QAM     | 20                                   | 19.682          |
| 3970                       | 256QAM     | 20                                   | 19.797          |
| 3720                       | 256QAM     | 40                                   | 40.570          |
| 3840                       | 256QAM     | 40                                   | 40.570          |
| 3960                       | 256QAM     | 40                                   | 40.570          |
| 3730                       | 256QAM     | 60                                   | 60.740          |
| 3830                       | 256QAM     | 60                                   | 60.740          |
| 3950                       | 256QAM     | 60                                   | 60.740          |
| 3740                       | 256QAM     | 80                                   | 80.410          |
| 3840                       | 256QAM     | 80                                   | 80.650          |
| 3940                       | 256QAM     | 80                                   | 80.650          |
| 3750                       | 256QAM     | 100                                  | 102.550         |
| 3830                       | 256QAM     | 100                                  | 102.550         |
| 3930                       | 256QAM     | 100                                  | 102.550         |
| 3710                       | 1024QAM    | 20                                   | 19.797          |
| 3830                       | 1024QAM    | 20                                   | 19.740          |
| 3970                       | 1024QAM    | 20                                   | 19.740          |
| 3720                       | 1024QAM    | 40                                   | 40.570          |
| 3840                       | 1024QAM    | 40                                   | 40.460          |
| 3960                       | 1024QAM    | 40                                   | 40.570          |
| 3730                       | 1024QAM    | 60                                   | 60.740          |
| 3830                       | 1024QAM    | 60                                   | 60.740          |
| 3950                       | 1024QAM    | 60                                   | 60.740          |
| 3740                       | 1024QAM    | 80                                   | 80.410          |
| 3840                       | 1024QAM    | 80                                   | 80.650          |
| 3940                       | 1024QAM    | 80                                   | 80.650          |
| 3750                       | 1024QAM    | 100                                  | 102.550         |
| 3830                       | 1024QAM    | 100                                  | 102.850         |
| 3930                       | 1024QAM    | 100                                  | 102.550         |

Sample plots below for 1024QAM operation:



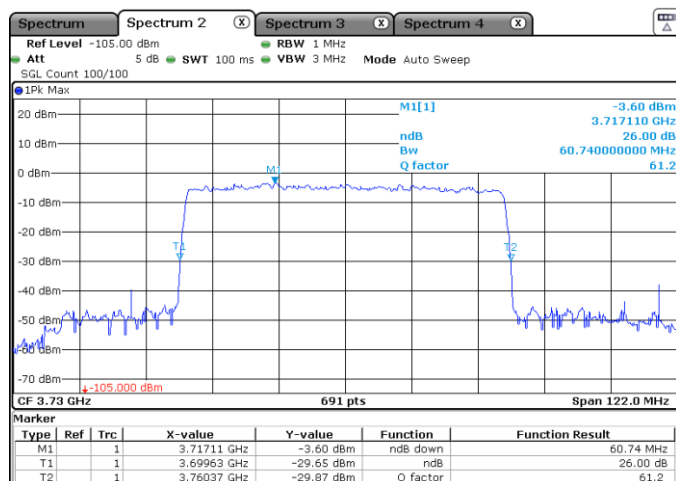


Figure 8.3-7: 26 dB OBW, Low CH 3730 MHz, 60 MHz, 1024QAM.

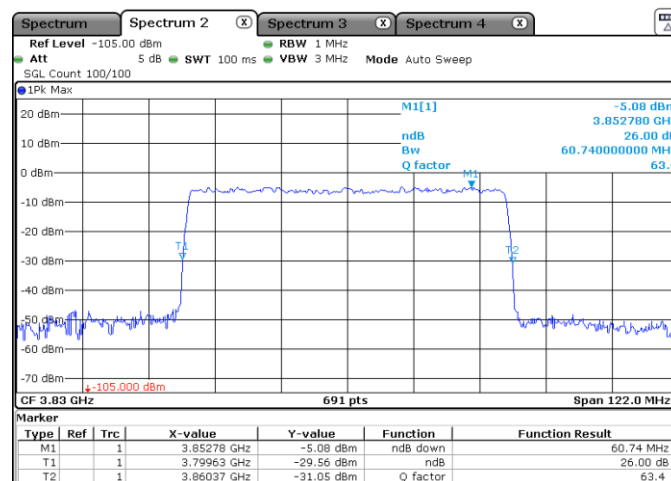


Figure 8.3-8: 26 dB OBW, Mid CH 3830 MHz, 60 MHz, 1024QAM.

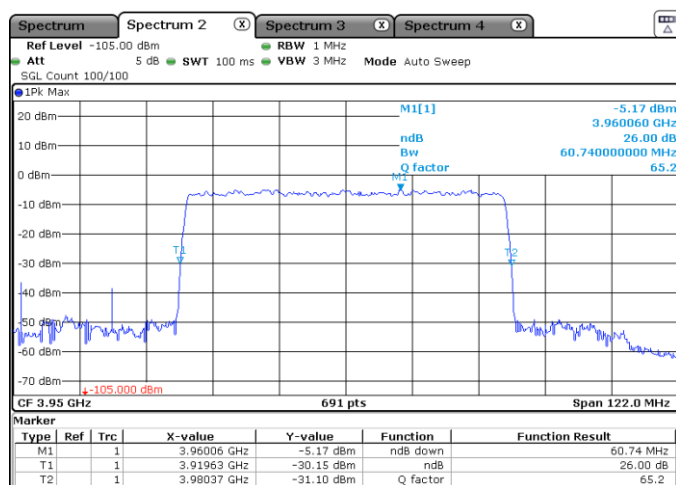


Figure 8.3-9: 26 dB OBW, High CH 3950 MHz, 60 MHz, 1024QAM.

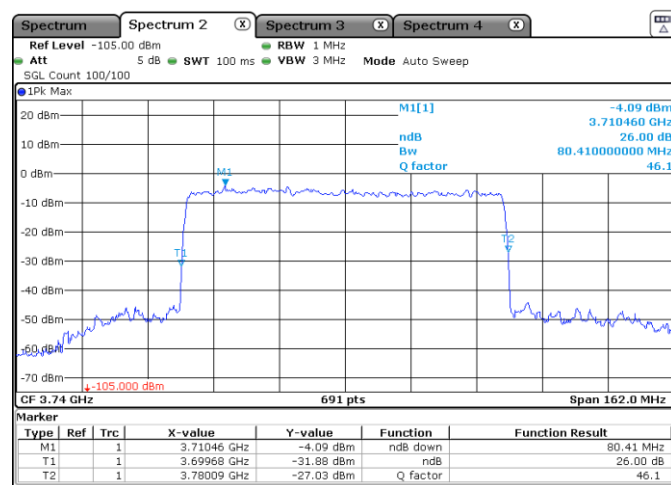


Figure 8.3-10: 26 dB OBW, Low CH 3740 MHz, 80 MHz, 1024QAM.

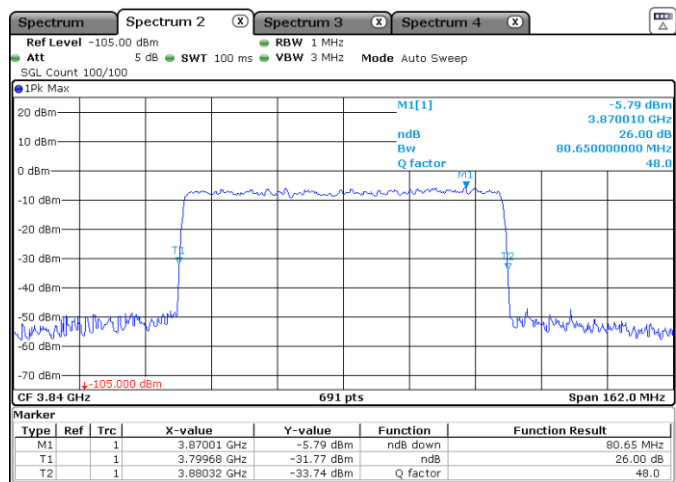


Figure 8.3-11: 26 dB OBW, Mid CH 3840 MHz, 80 MHz, 1024QAM.

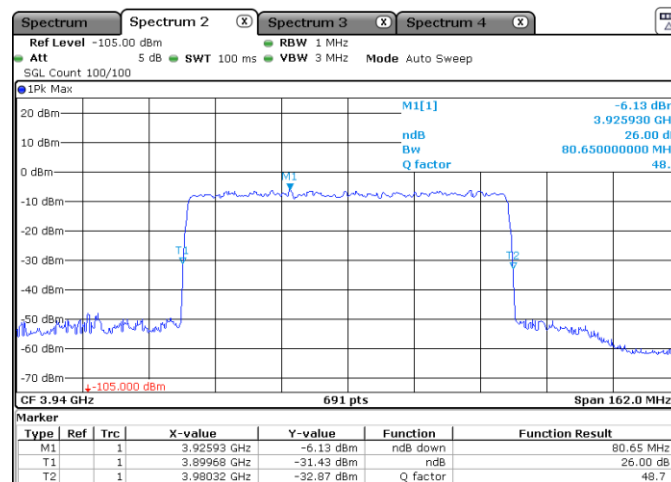


Figure 8.3-12: 26 dB OBW, High CH 3940 MHz, 80 MHz, 1024QAM.

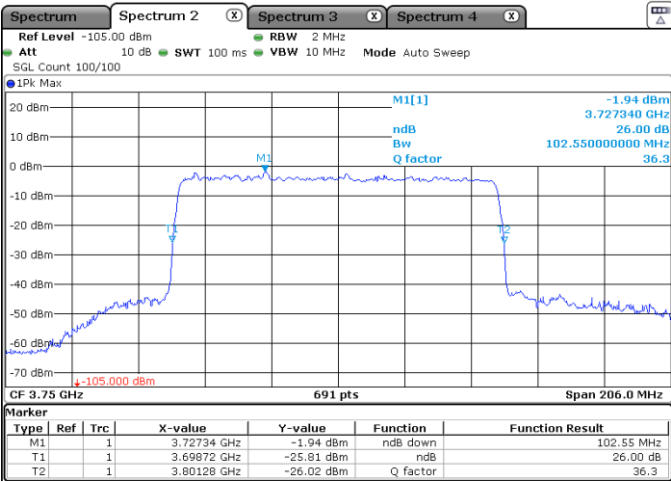


Figure 8.3-13: 26 dB OBW, Low CH 3750 MHz, 100 MHz, 1024QAM.

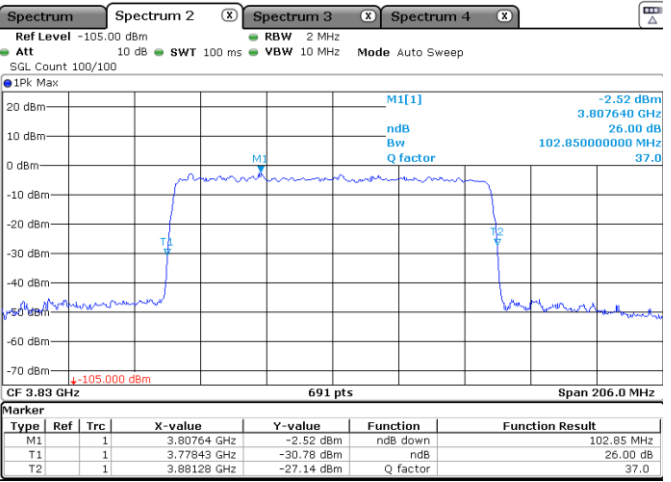


Figure 8.3-14: 26 dB OBW, Mid CH 3830 MHz, 100 MHz, 1024QAM.

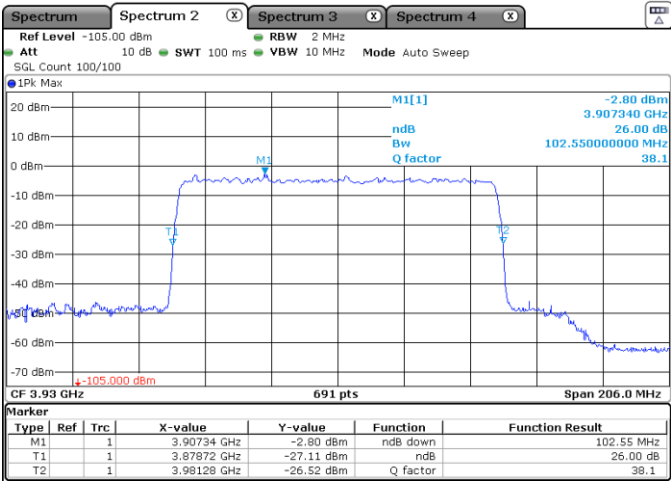


Figure 8.3-15: 26 dB OBW, High CH 3930 MHz, 100 MHz, 1024QAM.

## 8.4 FCC 27.50(j)(2) Output power

### 8.4.1 Definitions and limits

(j) The following power requirements apply to stations transmitting in the 3700-3980 MHz band:

(2) The power of each fixed or base station transmitting in the 3700-3980 MHz band and situated in any geographic location other than that described in paragraph (j)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

### 8.4.2 Test summary

|               |                                         |                   |                      |
|---------------|-----------------------------------------|-------------------|----------------------|
| Test date     | March 25, 2025; March 26, 2025          | Temperature       | 20 °C; 20 °C         |
| Test engineer | Martha Espinoza, Wireless Test Engineer | Air pressure      | 1002 mbar; 1005 mbar |
| Verdict       | Pass                                    | Relative humidity | 56 %; 53 %           |

### 8.4.3 Observations, settings and special notes

EIRP limits are deployment-dependent. To ensure compliance with legal limits, radio setup and carrier configurations are addressed during site commissioning. Reported results reflect maximum rated output power for worst-case emission assessment. EIRP values, based on possible beam configurations, represent worst-case scenarios using ideal antenna parameters. Customer configurations will be limited to comply with the legal limit of 1640 W/MHz during site setup. Non-compliant configurations will be restricted to lower carrier power. Refer to RF exposure report for information regarding maximum permissible antenna gain.

Measurements were made using an RMS RF power meter. EIRP density in dBm/MHz calculated (worst-case) by dividing the measured power (in Watts) by the 26 dB occupied bandwidth (in MHz).

This test was made across the conducted port and using a sensor power and transmitting at full power. An offset was added via transducer factor to compensate for the losses from the cable and attenuator (40 dB) used.

EUT has four antenna ports which can be transmit at the same time in a correlated way. This correlation permits to make the measurement in one port, getting as a result the total power from the four ports adding a factor calculated from the next equation:

$$\text{Correlation factor} = 10\text{Log}(N)$$

Where N is the number of ports. In this specific case,  $N = 4$ ,

$$\text{Correlation factor} = 10\text{Log}(4) = 6.02 \text{ dB}$$

To select the measurement port, a quick power test was done. The four ports are similar, however, the port with maximum power was chosen to make all the remaining tests.

**Table 8.4-1: Power evaluation per port.**

| Band | Modulation | OBW    | Channel  | Power Port A | Power Port B | Power Port C | Power Port D |
|------|------------|--------|----------|--------------|--------------|--------------|--------------|
| n77  | QPSK       | 20 MHz | 3710 MHz | 45.46 dBm    | 45.30 dBm    | 45.16 dBm    | 45.32 dBm    |

## 8.4.4 Test data

Table 8.4-2: FCC 27.50(j)(2) Output power results.

| Frequency (MHz) | Mod.    | Channel Bandwidth (MHz) | Conducted power (dBm) | Conducted power density (dBm/MHz) | Antenna gain (dBi) | EIRP (dBm) | EIRP density (dBm/MHz) | MIMO Correction (dB) | EIRP (4 ports) (dBm) | EIRP density (4 ports) (dBm/MHz) | EIRP density (4 ports) (W/MHz) |
|-----------------|---------|-------------------------|-----------------------|-----------------------------------|--------------------|------------|------------------------|----------------------|----------------------|----------------------------------|--------------------------------|
| 3710            | QPSK    | 20                      | 45.46                 | 32.47                             | 17.00              | 62.46      | 49.47                  | 6.02                 | 68.48                | 55.49                            | 354.00                         |
| 3830            | QPSK    | 20                      | 45.62                 | 32.63                             | 17.00              | 62.62      | 49.63                  | 6.02                 | 68.64                | 55.65                            | 367.28                         |
| 3970            | QPSK    | 20                      | 45.51                 | 32.52                             | 17.00              | 62.51      | 49.52                  | 6.02                 | 68.53                | 55.54                            | 358.10                         |
| 3720            | QPSK    | 40                      | 45.52                 | 29.45                             | 17.00              | 62.52      | 46.45                  | 6.02                 | 68.54                | 52.47                            | 176.60                         |
| 3840            | QPSK    | 40                      | 45.52                 | 29.45                             | 17.00              | 62.52      | 46.45                  | 6.02                 | 68.54                | 52.47                            | 176.60                         |
| 3960            | QPSK    | 40                      | 45.51                 | 29.45                             | 17.00              | 62.51      | 46.45                  | 6.02                 | 68.53                | 52.47                            | 176.60                         |
| 3730            | QPSK    | 60                      | 45.28                 | 27.45                             | 17.00              | 62.28      | 44.45                  | 6.02                 | 68.3                 | 50.47                            | 111.43                         |
| 3830            | QPSK    | 60                      | 45.22                 | 27.39                             | 17.00              | 62.22      | 44.39                  | 6.02                 | 68.24                | 50.41                            | 109.90                         |
| 3950            | QPSK    | 60                      | 45.44                 | 27.61                             | 17.00              | 62.44      | 44.61                  | 6.02                 | 68.46                | 50.63                            | 115.61                         |
| 3740            | QPSK    | 80                      | 45.21                 | 26.14                             | 17.00              | 62.21      | 43.14                  | 6.02                 | 68.23                | 49.16                            | 82.41                          |
| 3840            | QPSK    | 80                      | 45.27                 | 26.20                             | 17.00              | 62.27      | 43.20                  | 6.02                 | 68.29                | 49.22                            | 83.56                          |
| 3940            | QPSK    | 80                      | 45.25                 | 26.18                             | 17.00              | 62.25      | 43.18                  | 6.02                 | 68.27                | 49.20                            | 83.18                          |
| 3750            | QPSK    | 100                     | 45.50                 | 25.39                             | 17.00              | 62.50      | 42.39                  | 6.02                 | 68.52                | 48.41                            | 69.34                          |
| 3830            | QPSK    | 100                     | 45.37                 | 25.26                             | 17.00              | 62.37      | 42.26                  | 6.02                 | 68.39                | 48.28                            | 67.30                          |
| 3930            | QPSK    | 100                     | 45.35                 | 25.24                             | 17.00              | 62.35      | 42.24                  | 6.02                 | 68.37                | 48.26                            | 66.99                          |
| 3710            | 16QAM   | 20                      | 45.61                 | 32.64                             | 17.00              | 62.61      | 49.64                  | 6.02                 | 68.63                | 55.66                            | 368.13                         |
| 3830            | 16QAM   | 20                      | 45.69                 | 32.72                             | 17.00              | 62.69      | 49.72                  | 6.02                 | 68.71                | 55.74                            | 374.97                         |
| 3970            | 16QAM   | 20                      | 45.61                 | 32.64                             | 17.00              | 62.61      | 49.64                  | 6.02                 | 68.63                | 55.66                            | 368.13                         |
| 3720            | 16QAM   | 40                      | 45.65                 | 29.57                             | 17.00              | 62.65      | 46.57                  | 6.02                 | 68.67                | 52.59                            | 181.55                         |
| 3840            | 16QAM   | 40                      | 45.60                 | 29.53                             | 17.00              | 62.60      | 46.53                  | 6.02                 | 68.62                | 52.55                            | 179.89                         |
| 3960            | 16QAM   | 40                      | 45.57                 | 29.50                             | 17.00              | 62.57      | 46.5                   | 6.02                 | 68.59                | 52.52                            | 178.65                         |
| 3730            | 16QAM   | 60                      | 45.33                 | 27.50                             | 17.00              | 62.33      | 44.50                  | 6.02                 | 68.35                | 50.52                            | 112.72                         |
| 3830            | 16QAM   | 60                      | 45.31                 | 27.48                             | 17.00              | 62.31      | 44.48                  | 6.02                 | 68.33                | 50.5                             | 112.20                         |
| 3950            | 16QAM   | 60                      | 45.32                 | 27.49                             | 17.00              | 62.32      | 44.49                  | 6.02                 | 68.34                | 50.51                            | 112.46                         |
| 3740            | 16QAM   | 80                      | 45.20                 | 26.13                             | 17.00              | 62.20      | 43.13                  | 6.02                 | 68.22                | 49.15                            | 82.22                          |
| 3840            | 16QAM   | 80                      | 45.27                 | 26.20                             | 17.00              | 62.27      | 43.2                   | 6.02                 | 68.29                | 49.22                            | 83.56                          |
| 3940            | 16QAM   | 80                      | 45.25                 | 26.20                             | 17.00              | 62.25      | 43.2                   | 6.02                 | 68.27                | 49.22                            | 83.56                          |
| 3750            | 16QAM   | 100                     | 45.42                 | 25.30                             | 17.00              | 62.42      | 42.3                   | 6.02                 | 68.44                | 48.32                            | 67.92                          |
| 3830            | 16QAM   | 100                     | 45.39                 | 25.27                             | 17.00              | 62.39      | 42.27                  | 6.02                 | 68.41                | 48.29                            | 67.45                          |
| 3930            | 16QAM   | 100                     | 45.38                 | 25.26                             | 17.00              | 62.38      | 42.26                  | 6.02                 | 68.4                 | 48.28                            | 67.30                          |
| 3710            | 64QAM   | 20                      | 45.60                 | 32.65                             | 17.00              | 62.60      | 49.65                  | 6.02                 | 68.62                | 55.67                            | 368.98                         |
| 3830            | 64QAM   | 20                      | 45.63                 | 32.68                             | 17.00              | 62.63      | 49.68                  | 6.02                 | 68.65                | 55.70                            | 371.54                         |
| 3970            | 64QAM   | 20                      | 45.58                 | 32.63                             | 17.00              | 62.58      | 49.63                  | 6.02                 | 68.6                 | 55.65                            | 367.28                         |
| 3720            | 64QAM   | 40                      | 45.51                 | 29.43                             | 17.00              | 62.51      | 46.43                  | 6.02                 | 68.53                | 52.45                            | 175.79                         |
| 3840            | 64QAM   | 40                      | 45.60                 | 29.53                             | 17.00              | 62.60      | 46.53                  | 6.02                 | 68.62                | 52.55                            | 179.89                         |
| 3960            | 64QAM   | 40                      | 45.55                 | 29.47                             | 17.00              | 62.55      | 46.47                  | 6.02                 | 68.57                | 52.49                            | 177.42                         |
| 3730            | 64QAM   | 60                      | 45.32                 | 27.49                             | 17.00              | 62.32      | 44.49                  | 6.02                 | 68.34                | 50.51                            | 112.46                         |
| 3830            | 64QAM   | 60                      | 45.28                 | 27.45                             | 17.00              | 62.28      | 44.45                  | 6.02                 | 68.3                 | 50.47                            | 111.43                         |
| 3950            | 64QAM   | 60                      | 45.23                 | 27.40                             | 17.00              | 62.23      | 44.40                  | 6.02                 | 68.25                | 50.42                            | 110.15                         |
| 3740            | 64QAM   | 80                      | 45.20                 | 26.13                             | 17.00              | 62.20      | 43.13                  | 6.02                 | 68.22                | 49.15                            | 82.22                          |
| 3840            | 64QAM   | 80                      | 45.22                 | 26.15                             | 17.00              | 62.22      | 43.15                  | 6.02                 | 68.24                | 49.17                            | 82.60                          |
| 3940            | 64QAM   | 80                      | 45.22                 | 26.15                             | 17.00              | 62.22      | 43.15                  | 6.02                 | 68.24                | 49.17                            | 82.60                          |
| 3750            | 64QAM   | 100                     | 45.32                 | 25.20                             | 17.00              | 62.32      | 42.2                   | 6.02                 | 68.34                | 48.22                            | 66.37                          |
| 3830            | 64QAM   | 100                     | 45.45                 | 25.33                             | 17.00              | 62.45      | 42.33                  | 6.02                 | 68.47                | 48.35                            | 68.39                          |
| 3930            | 64QAM   | 100                     | 45.33                 | 25.21                             | 17.00              | 62.33      | 42.21                  | 6.02                 | 68.35                | 48.23                            | 66.53                          |
| 3710            | 256QAM  | 20                      | 45.50                 | 32.55                             | 17.00              | 62.50      | 49.55                  | 6.02                 | 68.52                | 55.57                            | 360.58                         |
| 3830            | 256QAM  | 20                      | 45.62                 | 32.68                             | 17.00              | 62.62      | 49.68                  | 6.02                 | 68.64                | 55.70                            | 371.54                         |
| 3970            | 256QAM  | 20                      | 45.53                 | 32.56                             | 17.00              | 62.53      | 49.56                  | 6.02                 | 68.55                | 55.58                            | 361.41                         |
| 3720            | 256QAM  | 40                      | 45.57                 | 29.49                             | 17.00              | 62.57      | 46.49                  | 6.02                 | 68.59                | 52.51                            | 178.24                         |
| 3840            | 256QAM  | 40                      | 45.56                 | 29.48                             | 17.00              | 62.56      | 46.48                  | 6.02                 | 68.58                | 52.50                            | 177.83                         |
| 3960            | 256QAM  | 40                      | 45.46                 | 29.38                             | 17.00              | 62.46      | 46.38                  | 6.02                 | 68.48                | 52.40                            | 173.78                         |
| 3730            | 256QAM  | 60                      | 45.35                 | 27.52                             | 17.00              | 62.35      | 44.52                  | 6.02                 | 68.37                | 50.54                            | 113.24                         |
| 3830            | 256QAM  | 60                      | 45.30                 | 27.47                             | 17.00              | 62.3       | 44.47                  | 6.02                 | 68.32                | 50.49                            | 111.94                         |
| 3950            | 256QAM  | 60                      | 45.37                 | 27.54                             | 17.00              | 62.37      | 44.54                  | 6.02                 | 68.39                | 50.56                            | 113.76                         |
| 3740            | 256QAM  | 80                      | 45.26                 | 26.21                             | 17.00              | 62.26      | 43.21                  | 6.02                 | 68.28                | 49.23                            | 83.75                          |
| 3840            | 256QAM  | 80                      | 45.30                 | 26.23                             | 17.00              | 62.30      | 43.23                  | 6.02                 | 68.32                | 49.25                            | 84.14                          |
| 3940            | 256QAM  | 80                      | 45.26                 | 26.19                             | 17.00              | 62.26      | 43.19                  | 6.02                 | 68.28                | 49.21                            | 83.37                          |
| 3750            | 256QAM  | 100                     | 45.31                 | 25.20                             | 17.00              | 62.31      | 42.20                  | 6.02                 | 68.33                | 48.22                            | 66.37                          |
| 3830            | 256QAM  | 100                     | 45.08                 | 24.97                             | 17.00              | 62.08      | 41.97                  | 6.02                 | 68.1                 | 47.99                            | 62.95                          |
| 3930            | 256QAM  | 100                     | 45.12                 | 25.01                             | 17.00              | 62.12      | 42.01                  | 6.02                 | 68.14                | 48.03                            | 63.53                          |
| 3710            | 1024QAM | 20                      | 45.65                 | 32.68                             | 17.00              | 62.65      | 49.68                  | 6.02                 | 68.67                | 55.70                            | 371.54                         |
| 3830            | 1024QAM | 20                      | 45.73                 | 32.78                             | 17.00              | 62.73      | 49.78                  | 6.02                 | 68.75                | 55.8                             | 380.19                         |
| 3970            | 1024QAM | 20                      | 45.59                 | 32.64                             | 17.00              | 62.59      | 49.64                  | 6.02                 | 68.61                | 55.66                            | 368.13                         |
| 3720            | 1024QAM | 40                      | 45.56                 | 29.48                             | 17.00              | 62.56      | 46.48                  | 6.02                 | 68.58                | 52.50                            | 177.83                         |
| 3840            | 1024QAM | 40                      | 45.57                 | 29.50                             | 17.00              | 62.57      | 46.50                  | 6.02                 | 68.59                | 52.52                            | 178.65                         |

| Frequency (MHz) | Mod.    | Channel Bandwidth (MHz) | Conducted power (dBm) | Conducted power density (dBm/MHz) | Antenna gain (dBi) | EIRP (dBm) | EIRP density (dBm/MHz) | MIMO Correction (dB) | EIRP (4 ports) (dBm) | EIRP density (4 ports) (dBm/MHz) | EIRP density (4 ports) (W/MHz) |
|-----------------|---------|-------------------------|-----------------------|-----------------------------------|--------------------|------------|------------------------|----------------------|----------------------|----------------------------------|--------------------------------|
| 3960            | 1024QAM | 40                      | 45.64                 | 29.56                             | 17.00              | 62.64      | 46.56                  | 6.02                 | 68.66                | 52.58                            | 181.13                         |
| 3730            | 1024QAM | 60                      | 45.31                 | 27.48                             | 17.00              | 62.31      | 44.48                  | 6.02                 | 68.33                | 50.50                            | 112.20                         |
| 3830            | 1024QAM | 60                      | 45.32                 | 27.49                             | 17.00              | 62.32      | 44.49                  | 6.02                 | 68.34                | 50.51                            | 112.46                         |
| 3950            | 1024QAM | 60                      | 45.37                 | 27.54                             | 17.00              | 62.37      | 44.54                  | 6.02                 | 68.39                | 50.56                            | 113.76                         |
| 3740            | 1024QAM | 80                      | 45.20                 | 26.15                             | 17.00              | 62.20      | 43.15                  | 6.02                 | 68.22                | 49.17                            | 82.60                          |
| 3840            | 1024QAM | 80                      | 45.32                 | 26.25                             | 17.00              | 62.32      | 43.25                  | 6.02                 | 68.34                | 49.27                            | 84.53                          |
| 3940            | 1024QAM | 80                      | 45.28                 | 26.21                             | 17.00              | 62.28      | 43.21                  | 6.02                 | 68.30                | 49.23                            | 83.75                          |
| 3750            | 1024QAM | 100                     | 45.34                 | 25.23                             | 17.00              | 62.34      | 42.23                  | 6.02                 | 68.36                | 48.25                            | 66.83                          |
| 3830            | 1024QAM | 100                     | 45.14                 | 25.02                             | 17.00              | 62.14      | 42.02                  | 6.02                 | 68.16                | 48.04                            | 63.68                          |
| 3930            | 1024QAM | 100                     | 45.34                 | 25.23                             | 17.00              | 62.34      | 42.23                  | 6.02                 | 68.36                | 48.25                            | 66.83                          |

## 8.5 FCC 27.50(B) Peak to Average Power Ratio

### 8.5.1 Definitions and limits

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

### 8.5.2 Test summary

|               |                                         |                   |                      |
|---------------|-----------------------------------------|-------------------|----------------------|
| Test date     | March 25, 2025; March 26, 2025          | Temperature       | 20 °C; 20 °C         |
| Test engineer | Martha Espinoza, Wireless Test Engineer | Air pressure      | 1002 mbar; 1005 mbar |
| Verdict       | Pass                                    | Relative humidity | 56 %; 53 %           |

### 8.5.3 Observations, settings and special notes

The 20 MHz bandwidth was tested using the CCDF measurement function of the equipment for the peak to average power ratio. The 40 MHz, 60 MHz, 80 MHz and 100 MHz bandwidth, due to the equipment limitation could not being tested with this function. Instead, two plots were measured, one using a peak detector and another using RMS detector. The difference between both magnitudes were recorded as peak to average power ratio.

### 8.5.4 Test data

**Table 8.5-1: Peak to average power ratio test results.**

| Frequency channel (MHz) | Modulation | Occupied Bandwidth Declared (MHz) | PAPR 0.1% (dB) | Limit (dB) |
|-------------------------|------------|-----------------------------------|----------------|------------|
| 3710                    | QPSK       | 20                                | 8.96           | 13         |
| 3830                    | QPSK       | 20                                | 8.93           | 13         |
| 3970                    | QPSK       | 20                                | 8.93           | 13         |
| 3720                    | QPSK       | 40                                | 6.34           | 13         |
| 3840                    | QPSK       | 40                                | 6.36           | 13         |
| 3960                    | QPSK       | 40                                | 6.37           | 13         |
| 3730                    | QPSK       | 60                                | 7.86           | 13         |
| 3830                    | QPSK       | 60                                | 7.81           | 13         |
| 3950                    | QPSK       | 60                                | 7.84           | 13         |
| 3740                    | QPSK       | 80                                | 7.71           | 13         |
| 3840                    | QPSK       | 80                                | 7.75           | 13         |
| 3940                    | QPSK       | 80                                | 7.79           | 13         |
| 3750                    | QPSK       | 100                               | 7.91           | 13         |
| 3830                    | QPSK       | 100                               | 7.92           | 13         |
| 3930                    | QPSK       | 100                               | 7.93           | 13         |
| 3710                    | 16QAM      | 20                                | 8.99           | 13         |
| 3830                    | 16QAM      | 20                                | 8.96           | 13         |
| 3970                    | 16QAM      | 20                                | 8.96           | 13         |
| 3720                    | 16QAM      | 40                                | 6.62           | 13         |
| 3840                    | 16QAM      | 40                                | 6.50           | 13         |
| 3960                    | 16QAM      | 40                                | 6.50           | 13         |
| 3730                    | 16QAM      | 60                                | 7.86           | 13         |
| 3830                    | 16QAM      | 60                                | 7.87           | 13         |
| 3950                    | 16QAM      | 60                                | 7.86           | 13         |
| 3740                    | 16QAM      | 80                                | 8.13           | 13         |
| 3840                    | 16QAM      | 80                                | 8.08           | 13         |
| 3940                    | 16QAM      | 80                                | 8.07           | 13         |
| 3750                    | 16QAM      | 100                               | 8.01           | 13         |
| 3830                    | 16QAM      | 100                               | 7.98           | 13         |
| 3930                    | 16QAM      | 100                               | 7.99           | 13         |
| 3710                    | 64QAM      | 20                                | 9.01           | 13         |
| 3830                    | 64QAM      | 20                                | 8.96           | 13         |

| Frequency channel<br>(MHz) | Modulation | Occupied Bandwidth<br>Declared (MHz) | PAPR 0.1%<br>(dB) | Limit<br>(dB) |
|----------------------------|------------|--------------------------------------|-------------------|---------------|
| 3970                       | 64QAM      | 20                                   | 8.96              | 13            |
| 3720                       | 64QAM      | 40                                   | 6.49              | 13            |
| 3840                       | 64QAM      | 40                                   | 6.51              | 13            |
| 3960                       | 64QAM      | 40                                   | 6.49              | 13            |
| 3730                       | 64QAM      | 60                                   | 8.02              | 13            |
| 3830                       | 64QAM      | 60                                   | 8.00              | 13            |
| 3950                       | 64QAM      | 60                                   | 8.01              | 13            |
| 3740                       | 64QAM      | 80                                   | 8.04              | 13            |
| 3840                       | 64QAM      | 80                                   | 7.97              | 13            |
| 3940                       | 64QAM      | 80                                   | 7.97              | 13            |
| 3750                       | 64QAM      | 100                                  | 8.03              | 13            |
| 3830                       | 64QAM      | 100                                  | 8.01              | 13            |
| 3930                       | 64QAM      | 100                                  | 8.08              | 13            |
| 3710                       | 256QAM     | 20                                   | 9.01              | 13            |
| 3830                       | 256QAM     | 20                                   | 8.99              | 13            |
| 3970                       | 256QAM     | 20                                   | 8.96              | 13            |
| 3720                       | 256QAM     | 40                                   | 6.32              | 13            |
| 3840                       | 256QAM     | 40                                   | 6.38              | 13            |
| 3960                       | 256QAM     | 40                                   | 6.33              | 13            |
| 3730                       | 256QAM     | 60                                   | 8.02              | 13            |
| 3830                       | 256QAM     | 60                                   | 7.98              | 13            |
| 3950                       | 256QAM     | 60                                   | 8.03              | 13            |
| 3740                       | 256QAM     | 80                                   | 7.99              | 13            |
| 3840                       | 256QAM     | 80                                   | 8.10              | 13            |
| 3940                       | 256QAM     | 80                                   | 8.05              | 13            |
| 3750                       | 256QAM     | 100                                  | 7.88              | 13            |
| 3830                       | 256QAM     | 100                                  | 7.93              | 13            |
| 3930                       | 256QAM     | 100                                  | 8.03              | 13            |
| 3710                       | 1024QAM    | 20                                   | 8.96              | 13            |
| 3830                       | 1024QAM    | 20                                   | 8.93              | 13            |
| 3970                       | 1024QAM    | 20                                   | 8.90              | 13            |
| 3720                       | 1024QAM    | 40                                   | 6.61              | 13            |
| 3840                       | 1024QAM    | 40                                   | 6.68              | 13            |
| 3960                       | 1024QAM    | 40                                   | 6.65              | 13            |
| 3730                       | 1024QAM    | 60                                   | 7.87              | 13            |
| 3830                       | 1024QAM    | 60                                   | 7.81              | 13            |
| 3950                       | 1024QAM    | 60                                   | 7.89              | 13            |
| 3740                       | 1024QAM    | 80                                   | 7.76              | 13            |
| 3840                       | 1024QAM    | 80                                   | 7.90              | 13            |
| 3940                       | 1024QAM    | 80                                   | 7.83              | 13            |
| 3750                       | 1024QAM    | 100                                  | 8.05              | 13            |
| 3830                       | 1024QAM    | 100                                  | 8.06              | 13            |
| 3930                       | 1024QAM    | 100                                  | 8.11              | 13            |



Sample plots below for 1024QAM operation:

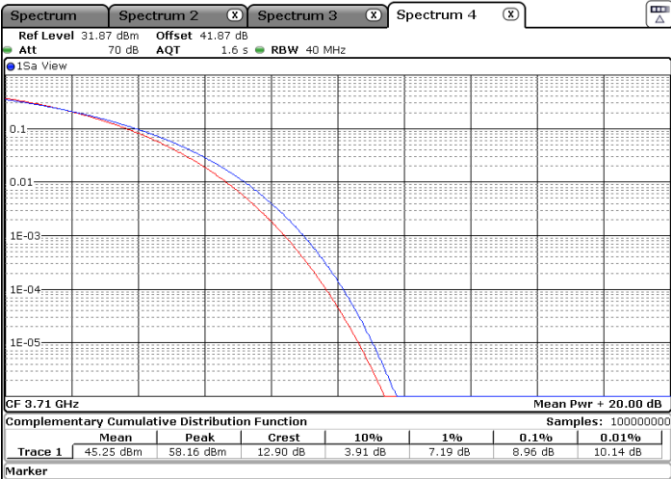


Figure 8.5-1: PAPR, Low CH 3710 MHz, 20 MHz, 1024QAM.

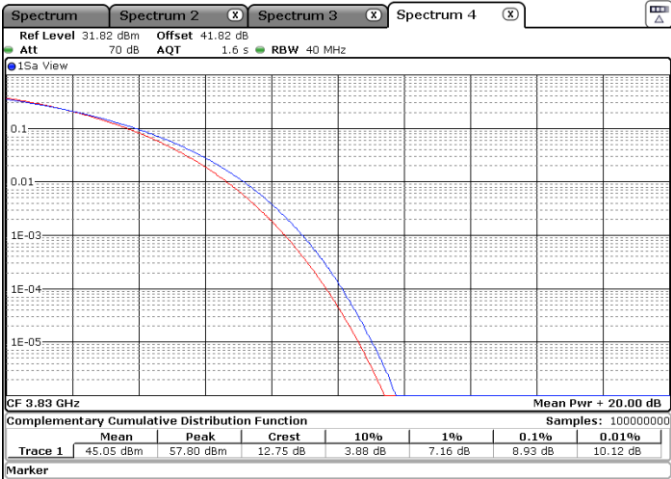


Figure 8.5-2: PAPR, Mid CH 3830 MHz, 20 MHz, 1024QAM.

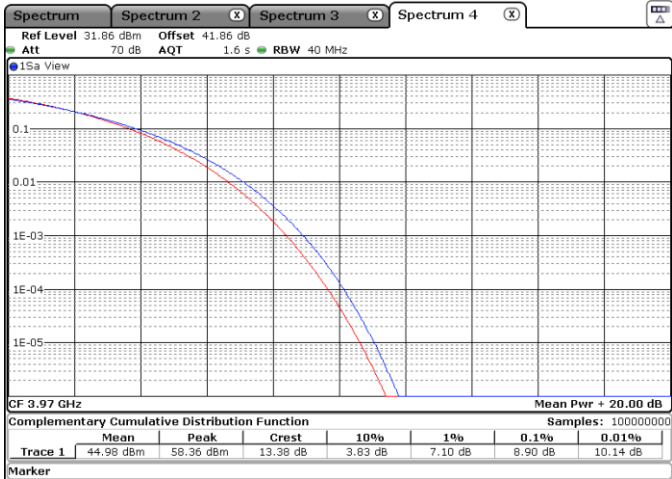


Figure 8.5-3: PAPR, High CH 3970 MHz, 20 MHz, 1024QAM.

## 8.6 FCC 27.53(l)(1) Emission Limits

### 8.6.1 Definitions and limits

(1) For base station operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (l)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### 8.6.2 Test summary

|               |                                         |                   |                 |
|---------------|-----------------------------------------|-------------------|-----------------|
| Test date     | March 28, 2025; March 31, 2025          | Temperature       | 19 °C; 19 °C    |
| Test engineer | Martha Espinoza, Wireless Test Engineer | Air pressure      | 1003; 1006 mbar |
| Verdict       | Pass                                    | Relative humidity | 51%; 54%        |

### 8.6.3 Observations, settings and special notes

|                          |                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT setup configuration  | Table top                                                                                                                                                                                                                                                                                                                          |
| Test facility            | 3 m Semi anechoic chamber                                                                                                                                                                                                                                                                                                          |
| Measuring distance       | 3m                                                                                                                                                                                                                                                                                                                                 |
| Antenna height variation | 1–4 m                                                                                                                                                                                                                                                                                                                              |
| Turn table position      | 0–360°                                                                                                                                                                                                                                                                                                                             |
| Measurement details      | A preview measurement was generated with receiver in continuous scan or sweep mode while the EUT was rotated and antenna adjusted to maximize radiated emission. Emissions detected within 6 dB or above limit were re-measured with the appropriate detector against the correlating limit and recorded as the final measurement. |

Receiver/spectrum analyzer settings for frequencies below 1 GHz:

|                      |                                                                                 |
|----------------------|---------------------------------------------------------------------------------|
| Resolution bandwidth | 120 kHz                                                                         |
| Video bandwidth      | 300 kHz                                                                         |
| Detector mode        | – Peak (Preview measurement)<br>– Quasi-peak (Final measurement)                |
| Trace mode           | Max Hold                                                                        |
| Measurement time     | – 100 ms (Peak preview measurement)<br>– 5000 ms (Quasi-peak final measurement) |

Receiver/spectrum analyzer settings for frequencies above 1 GHz:

|                      |                                                                                        |
|----------------------|----------------------------------------------------------------------------------------|
| Resolution bandwidth | 1 MHz                                                                                  |
| Video bandwidth      | 3 MHz                                                                                  |
| Detector mode        | Peak (Preview measurement)<br>Peak and CAverage (Final measurement)                    |
| Trace mode           | Max Hold                                                                               |
| Measurement time     | – 100 ms (Peak preview measurement)<br>– 5000 ms (Peak and CAverage final measurement) |

Spectrum analyzer settings (conducted test):

|                      |                                               |
|----------------------|-----------------------------------------------|
| Resolution bandwidth | 1 MHz                                         |
| Video bandwidth      | 3 MHz                                         |
| Frequency span       | Sufficient for making an accurate measurement |
| Detector mode        | RMS                                           |
| Trace mode           | Max Hold                                      |

This test was realized in two parts: one with a conducted setup and another one with a radiated setup.

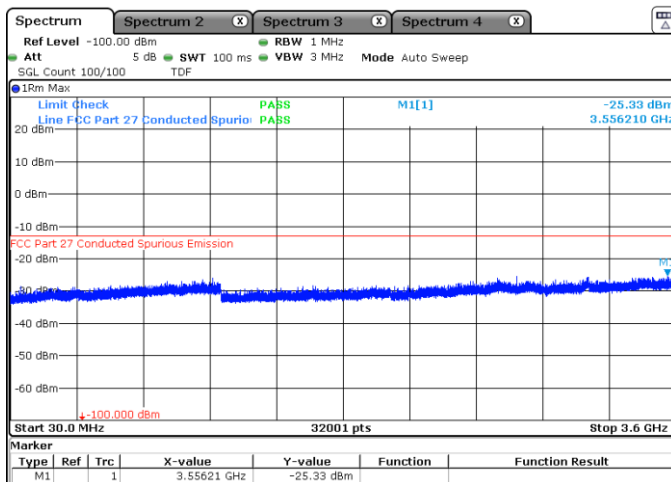
The conducted test was made one antenna port, transmitting at max power and with the other three ports loaded with 50  $\Omega$  loads. Transducer factors to compensate the losses caused by a cable and attenuator used to protect the test equipment. Additional to this number, a 6 dB correlation factor was added to evaluate the complete power across the four ports, considering the ranges where harmonic can be observed. The evaluation was made using the three channels and all the modulations. Only the worst case (1024QAM modulation) is shown is the complete range.

The radiated test was made transmitting at maximum power with the four ports terminated with 50  $\Omega$  loads. The scans were made from 30 MHz to 40 GHz considering all the channels. Only the worst case modulation with the highest power, is reported below.

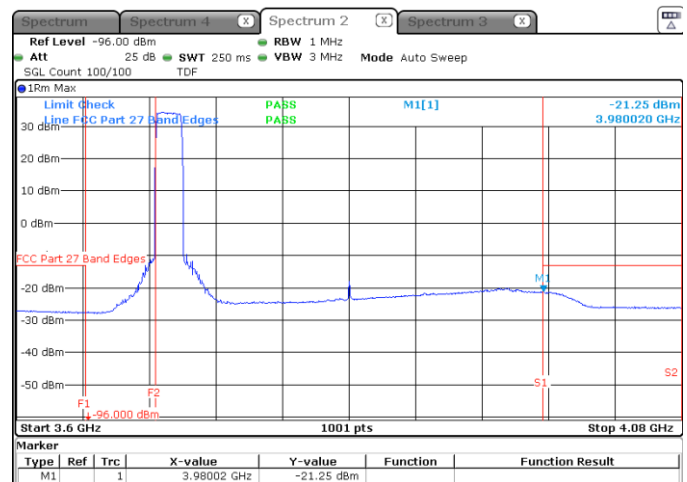
The emission limit is -13 dBm/MHz (conducted and radiated test) or the equivalent field strength at 3m: 82.23 dB $\mu$ V/m above 1 GHz and 84.38 dB $\mu$ V/m below 1 GHz.

The band edges testing is included. The RBW for this testing was made around the 1% of the bandwidth under test. For the cases where the 1% was not available due to the equipment limitations or due to the high RBW associated with wide bandwidths, the evaluation was made in intervals, making a special measurement adjacent to the band, corresponding to 1 MHz bandwidth using a 100 kHz of RBW and making the integration over the 1 MHz.

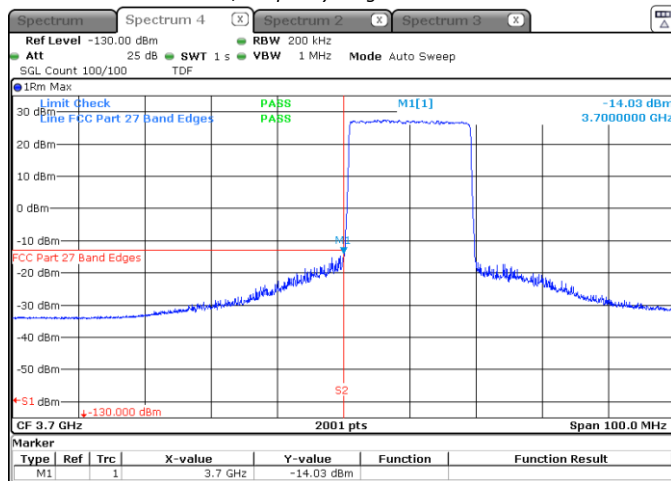
#### 8.6.4 Test data (conducted testing)



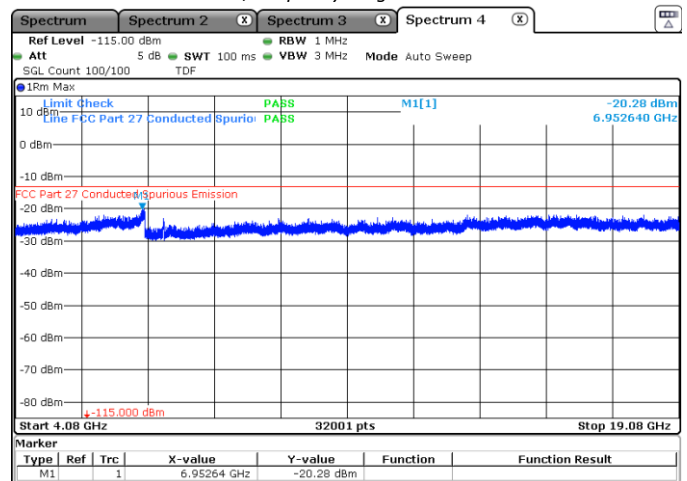
**Figure 8.6-1:** Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Frequency range: 0.030 – 3.6 GHz.



**Figure 8.6-2:** Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Frequency range: 3.6 -4.080 GHz.



**Figure 8.6-3:** Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Low band edge.



**Figure 8.6-4:** Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Frequency range: 4.080 – 19.080 GHz.

**The evaluation of range F1 to F2 was excluded from the figure 8.6-2. The detailed evaluation was made in the figure 8.6-3.**

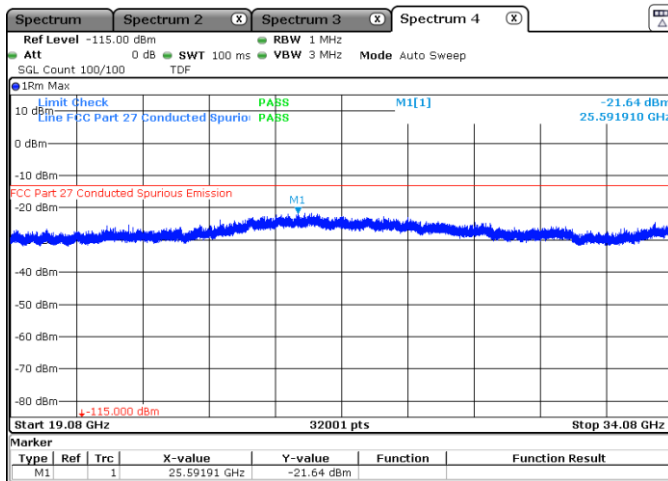


Figure 8.6-5: Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz.

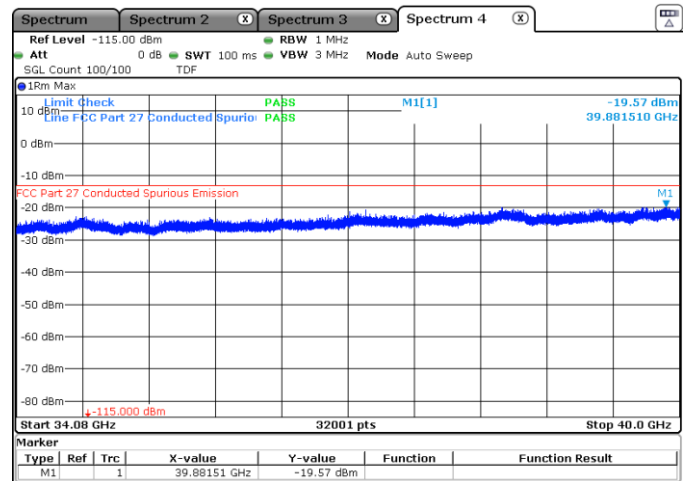


Figure 8.6-6: Conducted Spurious Emissions, Low CH 3710 MHz, 20 MHz, 1024QAM, Frequency range: 34.080 -40 GHz.

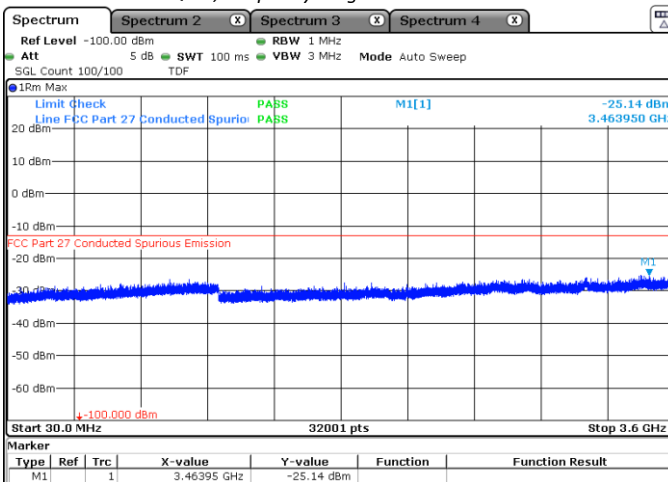


Figure 8.6-7: Conducted Spurious Emissions, Mid CH 3830 MHz, 20 MHz, 1024QAM, Frequency range: 0.030 – 3.6 GHz.

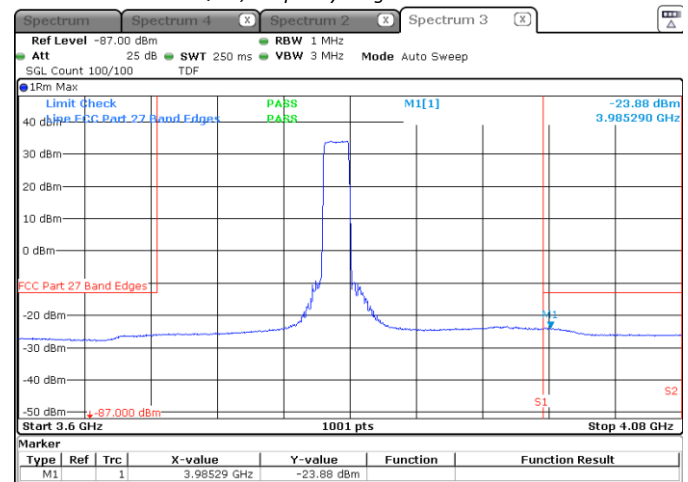


Figure 8.6-8: Conducted Spurious Emissions, Mid CH 3830 MHz, 20 MHz, 1024QAM, Frequency range: 3.6 – 4.080 GHz.

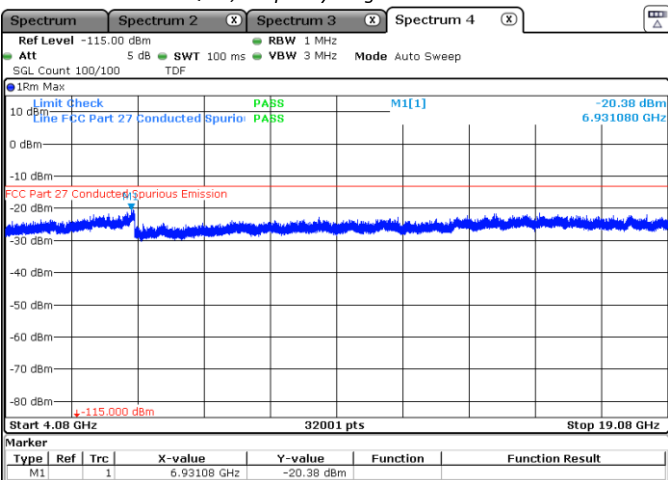


Figure 8.6-9: Conducted Spurious Emissions, Mid CH 3830 MHz, 20 MHz, 1024QAM, Frequency range: 4.080 -19.080 GHz.

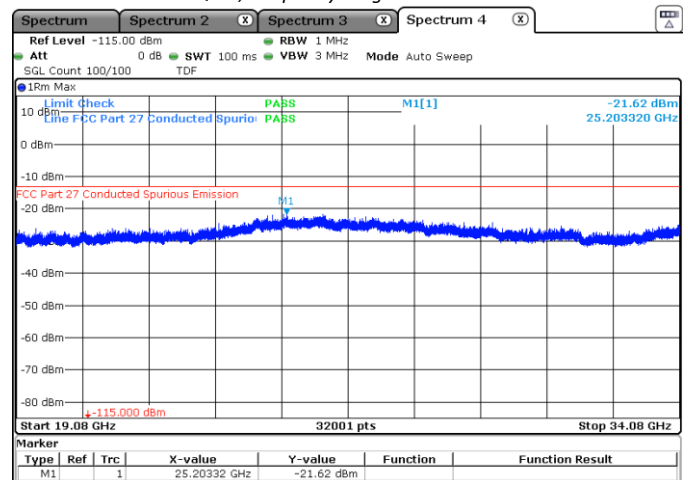


Figure 8.6-10: Conducted Spurious Emissions, Mid CH 3830 MHz, 20 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz.

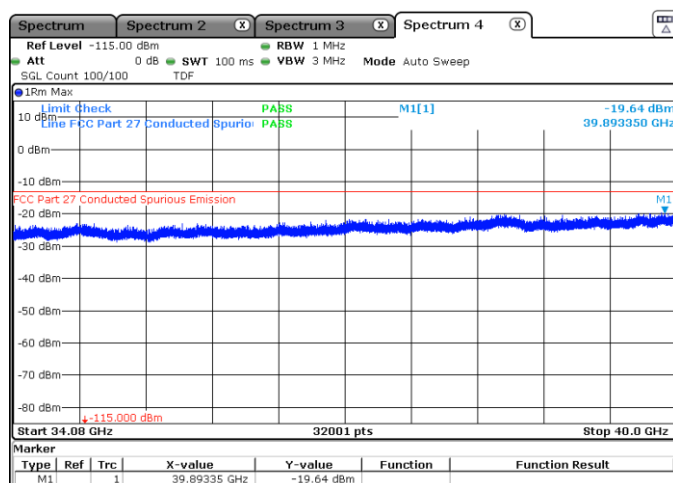


Figure 8.6-11: Conducted Spurious Emissions, Mid CH 3830 MHz, 20 MHz, 1024QAM, Frequency range: 34.080 -40 GHz

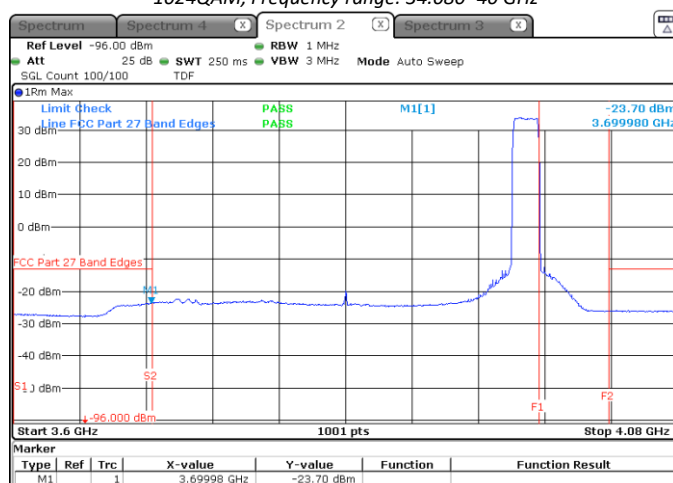


Figure 8.6-13: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, Frequency range: 3.6 – 4.080 GHz.

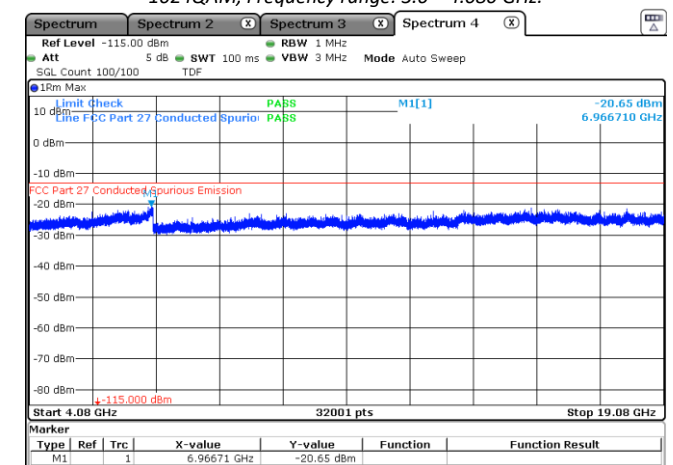


Figure 8.6-15: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, Frequency range: 4.080 -19.080 GHz

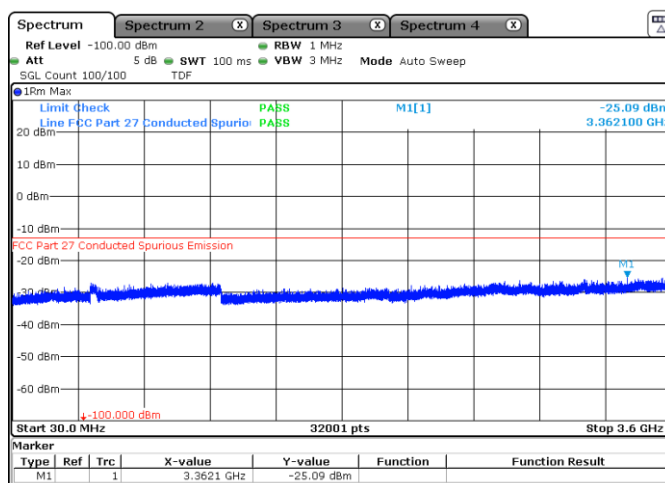


Figure 8.6-12: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, Frequency range: 0.030 – 3.6 GHz.

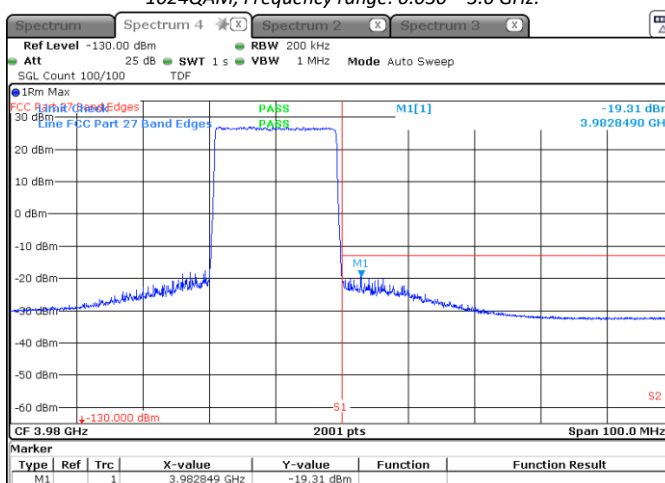


Figure 8.6-14: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, High band edge.

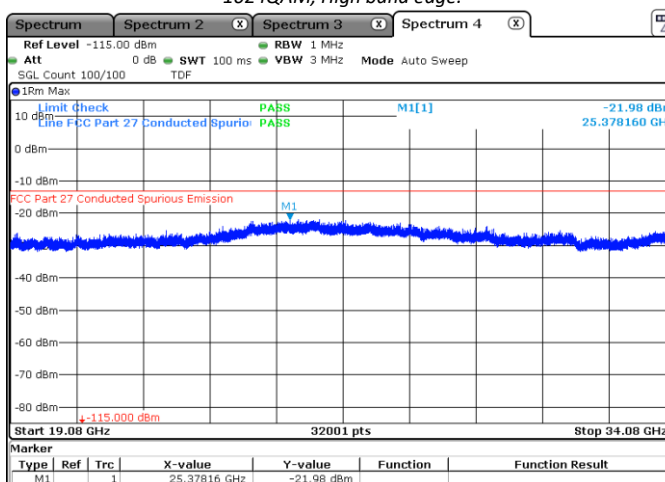


Figure 8.6-16: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz

The evaluation of range F1 to F2 was excluded from the figure 8.6-13. The detailed evaluation was made in the figure 8.6-14.

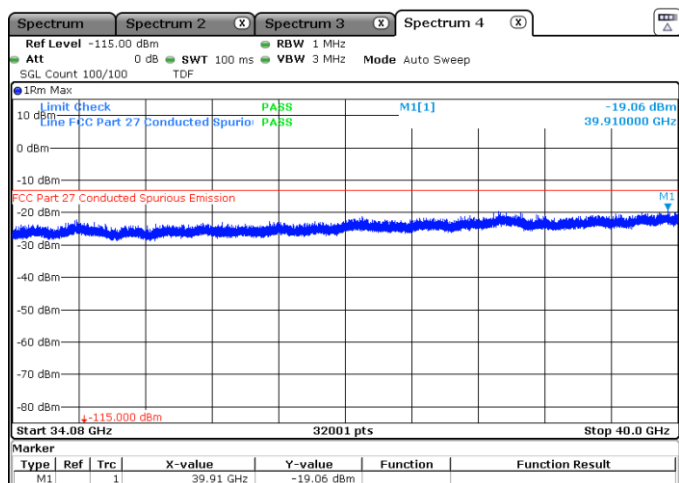


Figure 8.6-17: Conducted Spurious Emissions, High CH 3970 MHz, 20 MHz, 1024QAM, Frequency range: 34.080 -40 GHz.

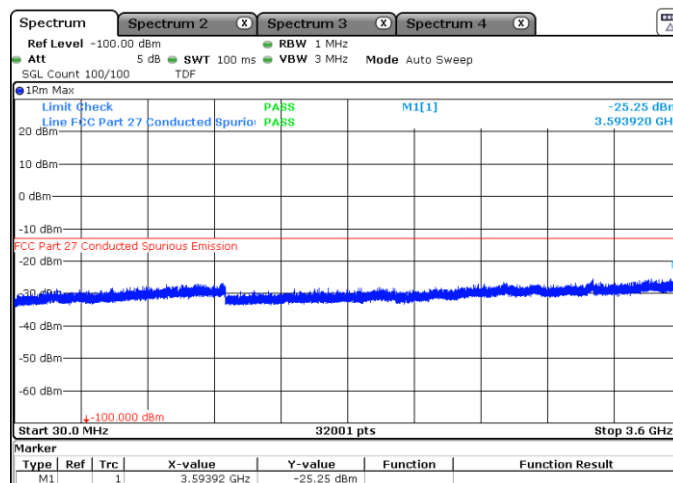


Figure 8.6-18: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Frequency range: 0.030 – 3.6 GHz.

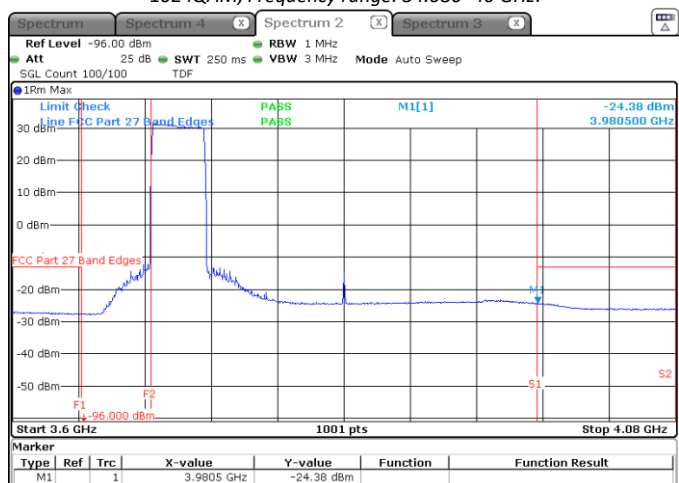


Figure 8.6-19: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Frequency range: 3.6 -4.080 GHz.

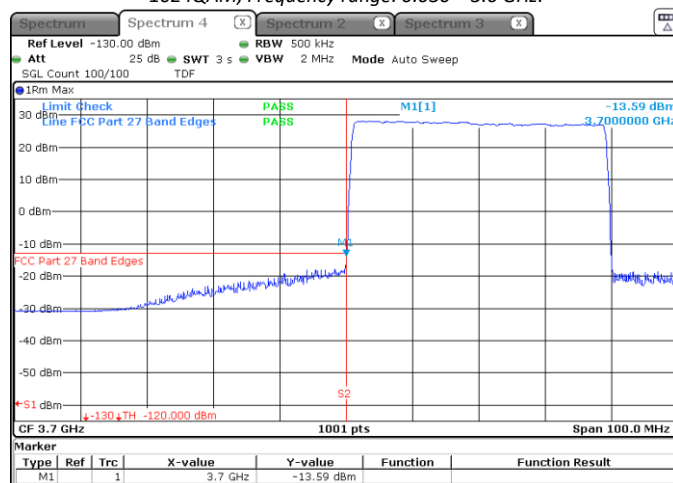


Figure 8.6-20: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Low band edge.

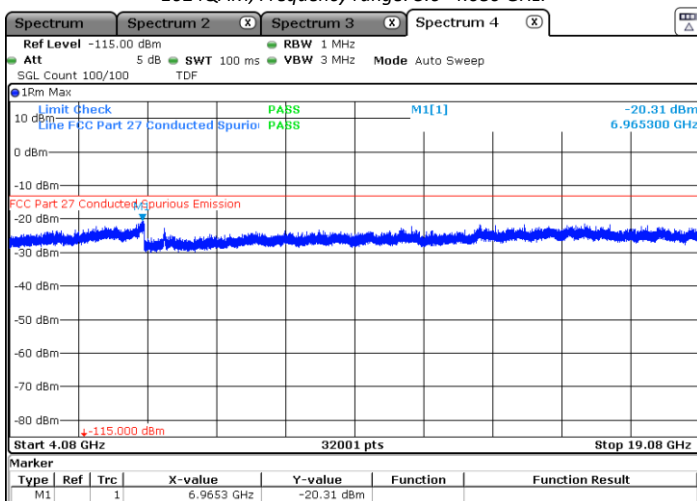


Figure 8.6-21: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Frequency range: 4.080 – 19.080 GHz.

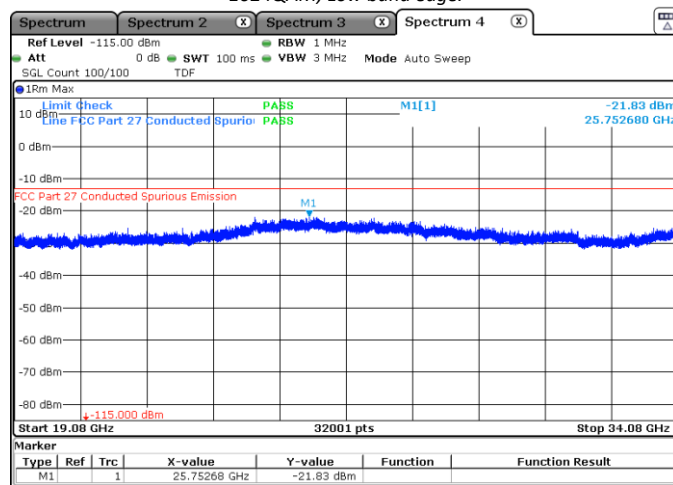


Figure 8.6-22: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz.

The evaluation of range F1 to F2 was excluded from the figure 8.6-19. The detailed evaluation was made in the figure 8.6-20.

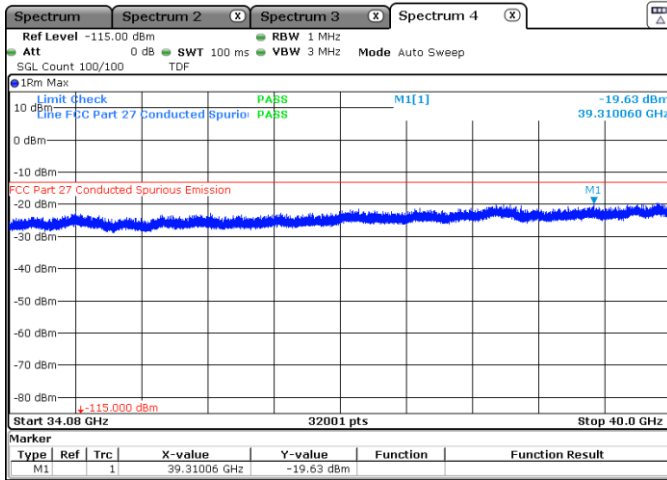


Figure 8.6-23: Conducted Spurious Emissions, Low CH 3720 MHz, 40 MHz, 1024QAM, Frequency range: 34.080 -40 GHz.

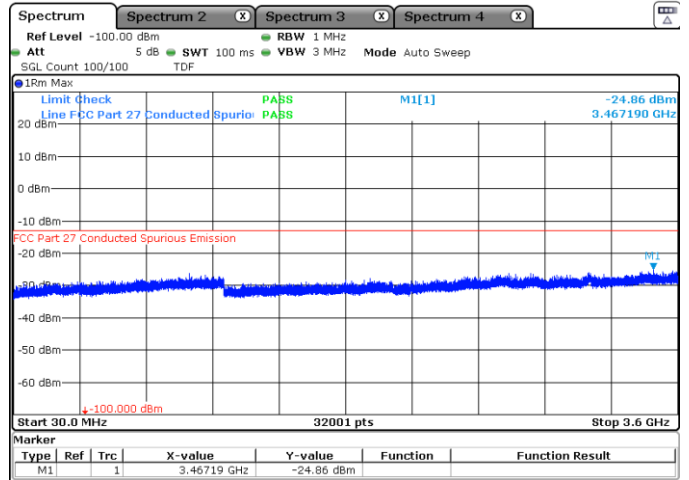


Figure 8.6-24: Conducted Spurious Emissions, Mid CH 3840 MHz, 40 MHz, 1024QAM, Frequency range: 0.030 - 3.6 GHz.

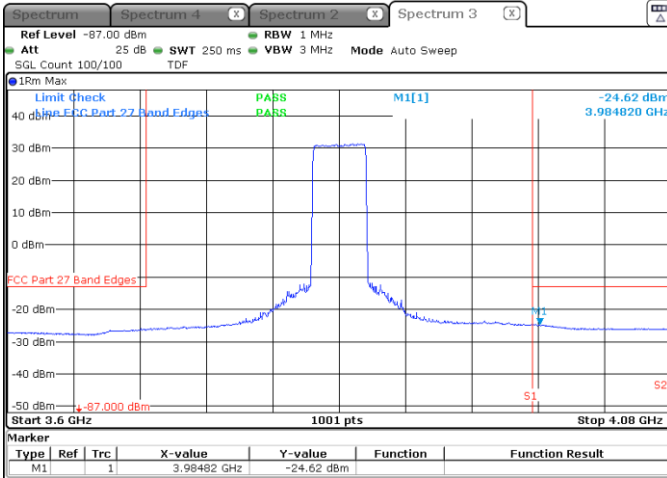


Figure 8.6-25: Conducted Spurious Emissions, Mid CH 3840 MHz, 40 MHz, 1024QAM, Frequency range: 3.6 - 4.080 GHz

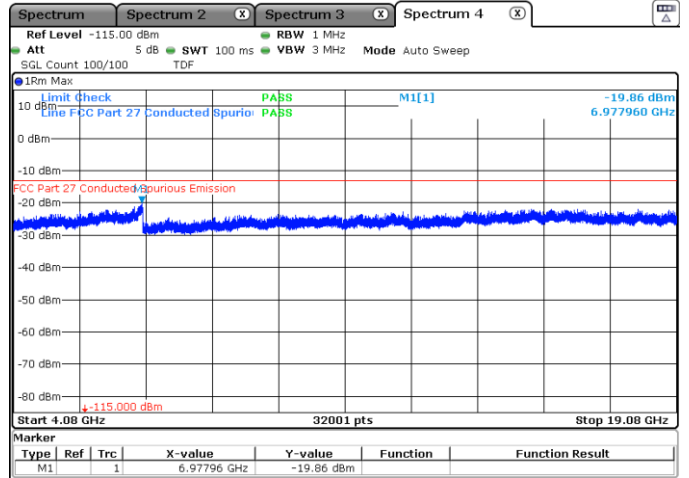


Figure 8.6-26: Conducted Spurious Emissions, Mid CH 3840 MHz, 40 MHz, 1024QAM, Frequency range: 4.080 - 19.080 GHz..

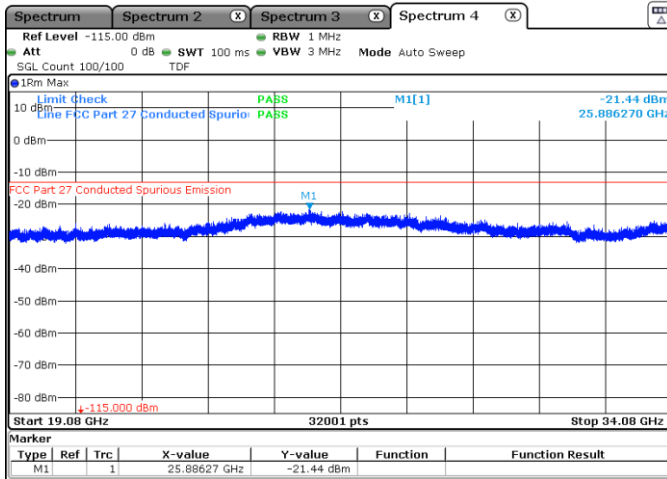


Figure 8.6-27: Conducted Spurious Emissions, Mid CH 3840 MHz, 40 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz

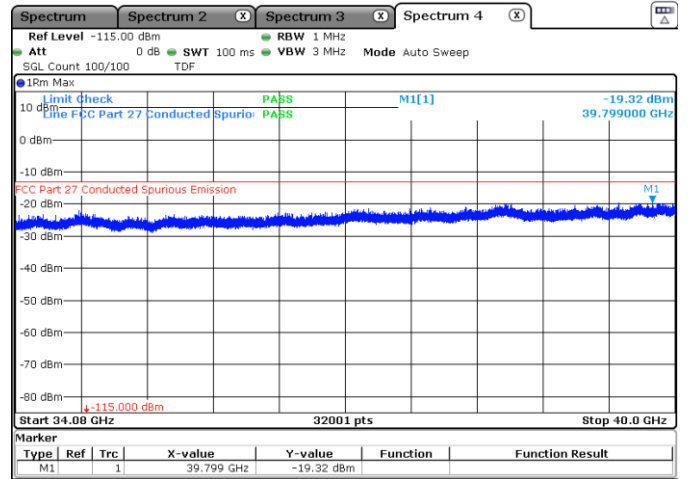
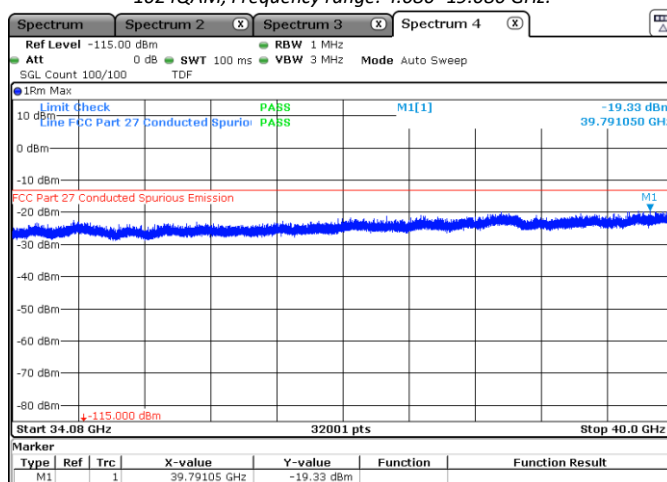
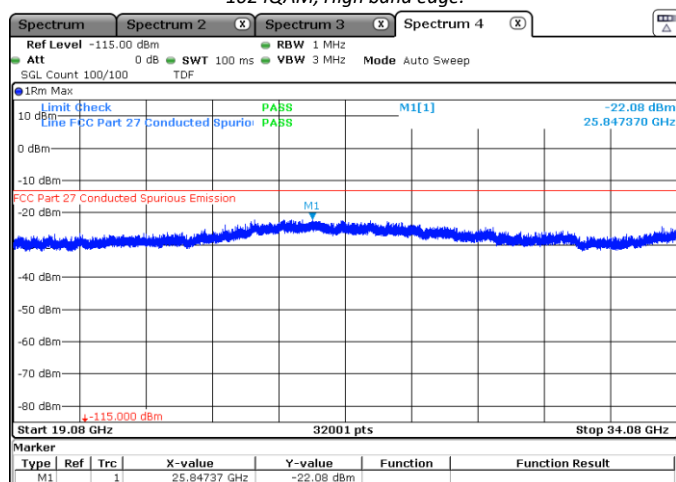
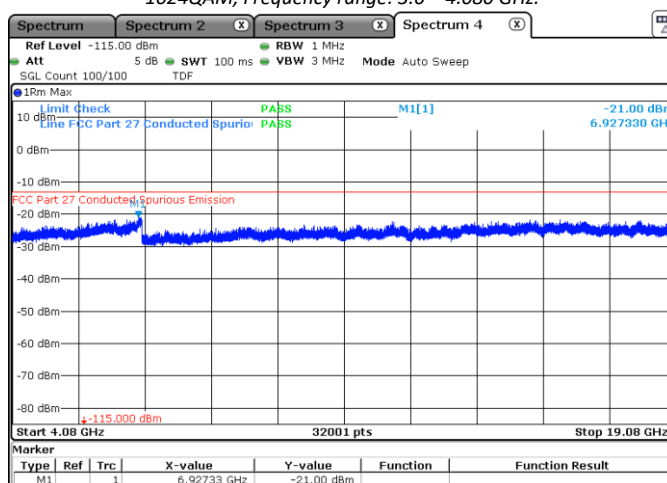
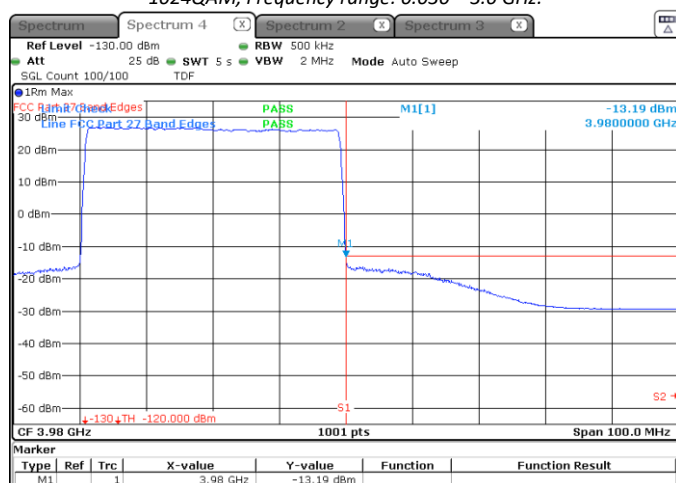
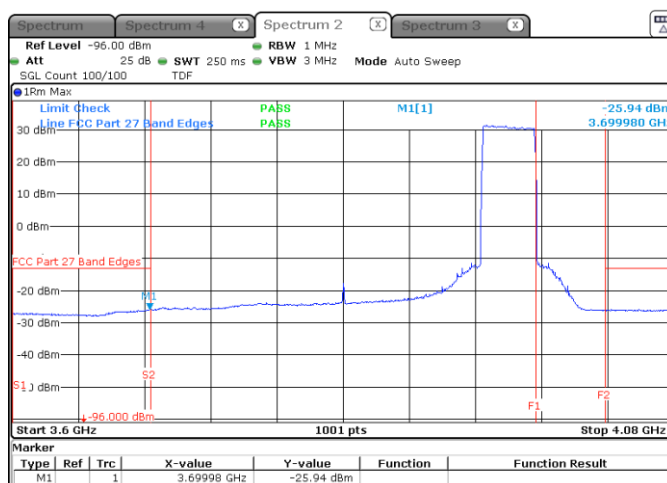
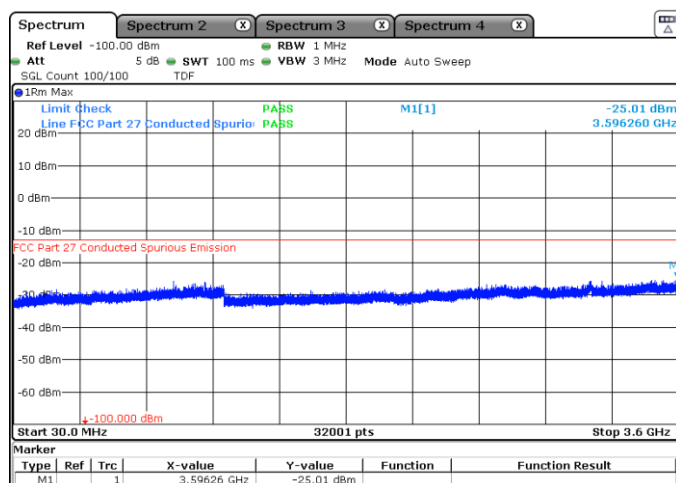


Figure 8.6-28: Conducted Spurious Emissions, Mid CH 3840 MHz, 40 MHz, 1024QAM, Frequency range: 34.080 -40 GHz.



**The evaluation of range F1 to F2 was excluded from the figure 8.6-30. The detailed evaluation was made in the figure 8.6-31.**

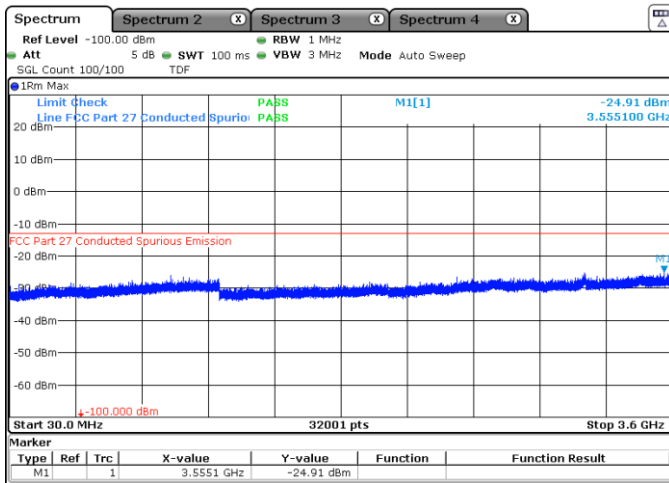


Figure 8.6-35: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Frequency range: 0.030 – 3.6 GHz.

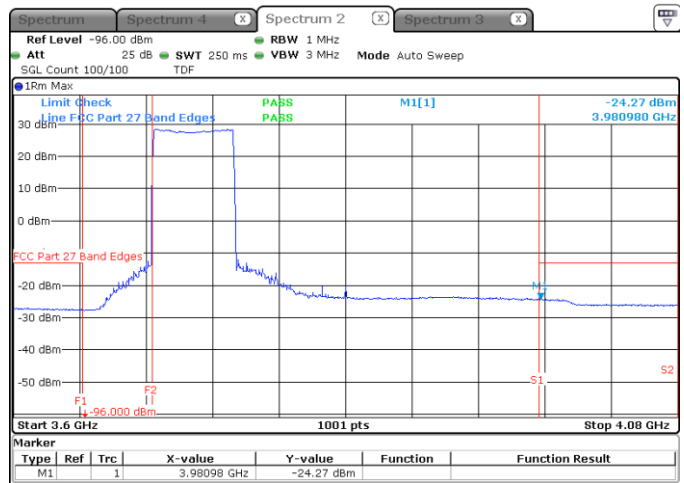


Figure 8.6-36: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Frequency range: 3.6 -4.080 GHz.

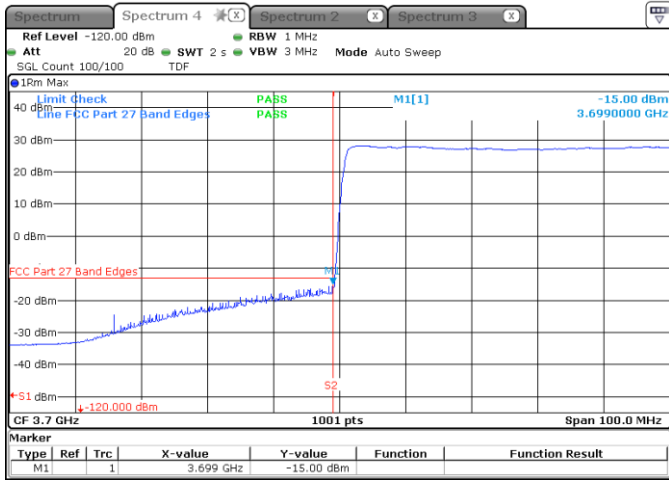


Figure 8.6-37: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Low band edge.

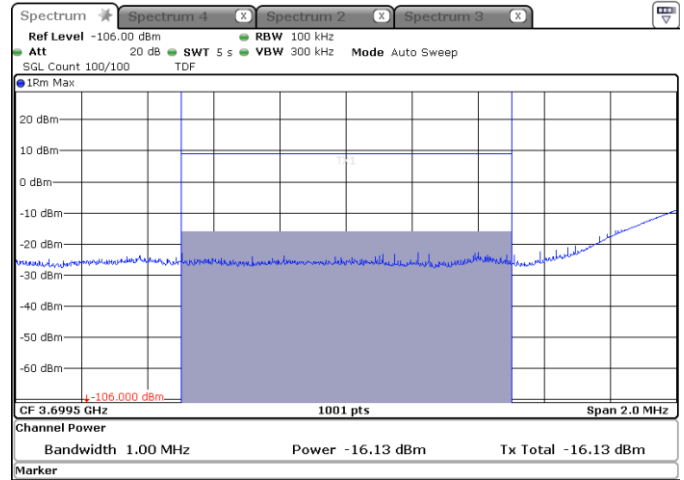


Figure 8.6-38: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Low band edge (1 MHz next to the band).

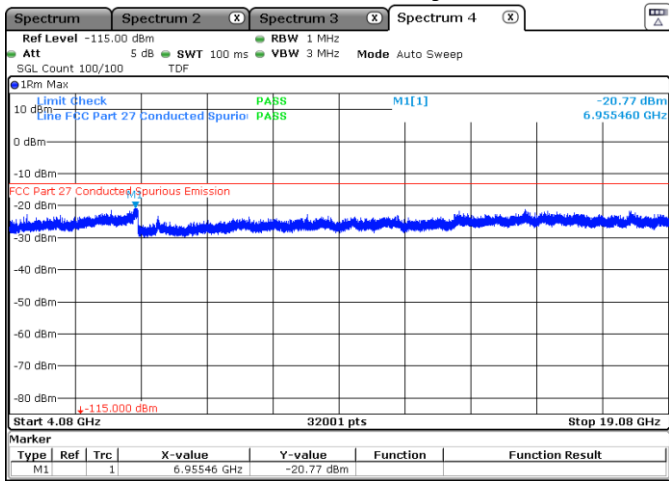


Figure 8.6-39: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Frequency range: 4.080 – 19.080 GHz.

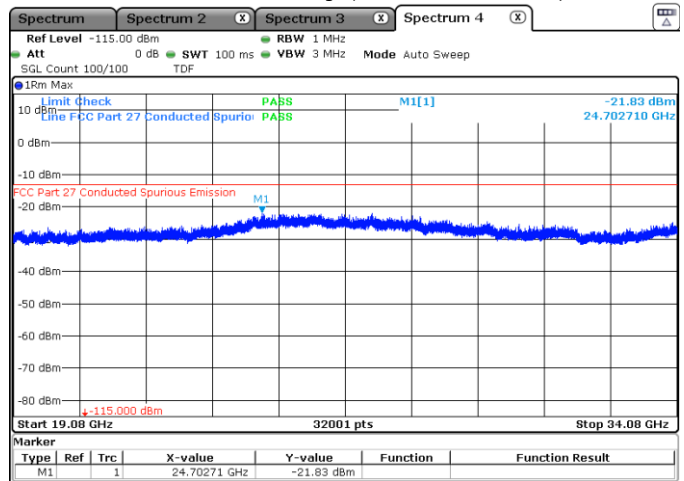


Figure 8.6-40: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Frequency range: 19.080 -34.080 GHz.

**The evaluation of range F1 to F2 was excluded from the figure 8.6-36. The detailed evaluation was made in the figure 8.6-37, except the 1 MHz range before the edge which was evaluated in the figure 8.6-38 (3699 MHz to 3700 MHz).**

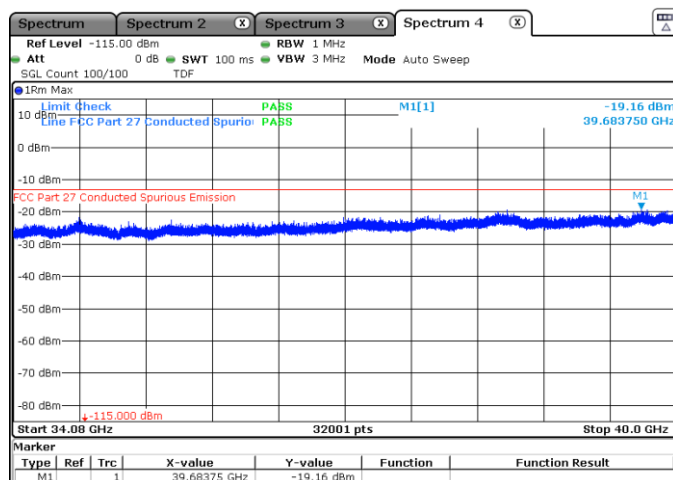


Figure 8.6-41: Conducted Spurious Emissions, Low CH 3730 MHz, 60 MHz, 1024QAM, Frequency range: 34.080 - 40 GHz.

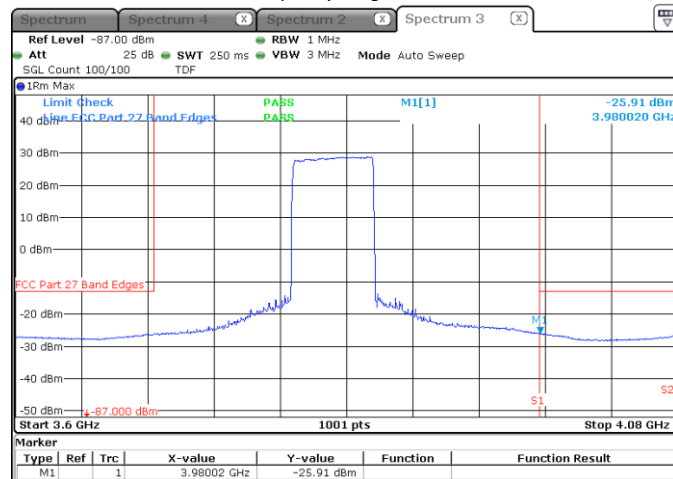


Figure 8.6-43: Conducted Spurious Emissions, Mid CH 3830 MHz, 60 MHz, 1024QAM, Frequency range: 3.6 - 4.080 GHz.

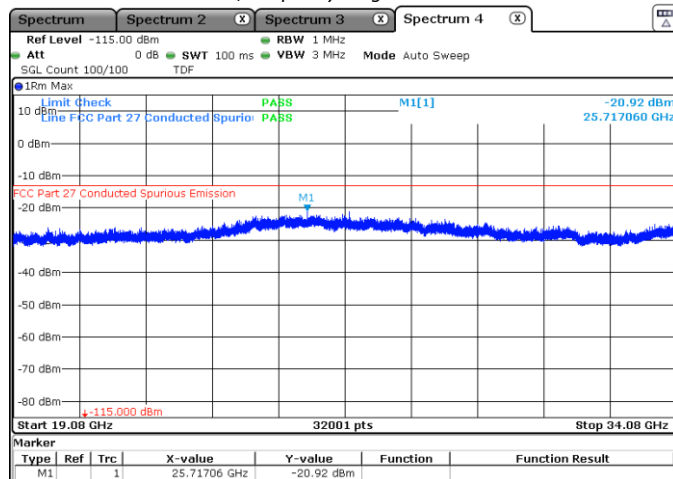


Figure 8.6-45: Conducted Spurious Emissions, Mid CH 3830 MHz, 60 MHz, 1024QAM, Frequency range: 19.080 - 34.080 GHz.

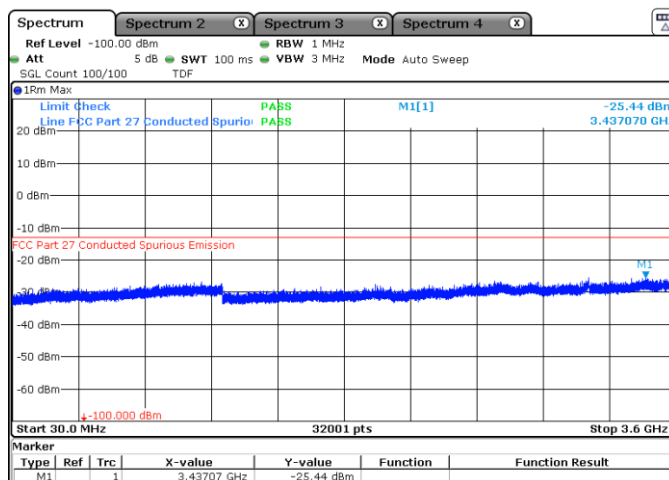


Figure 8.6-42: Conducted Spurious Emissions, Mid CH 3830 MHz, 60 MHz, 1024QAM, Frequency range: 0.030 - 3.6 GHz

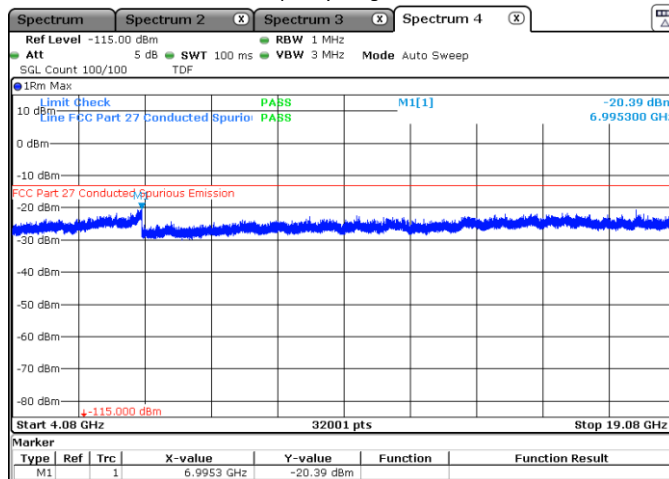


Figure 8.6-44: Conducted Spurious Emissions, Mid CH 3830 MHz, 60 MHz, 1024QAM, Frequency range: 4.080 - 19.080 GHz.

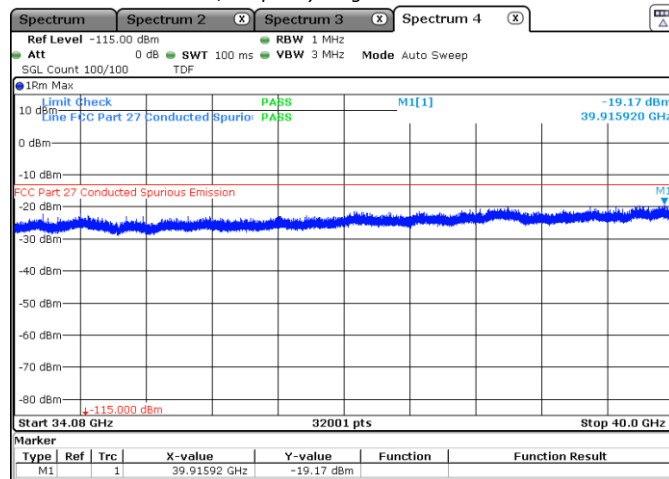
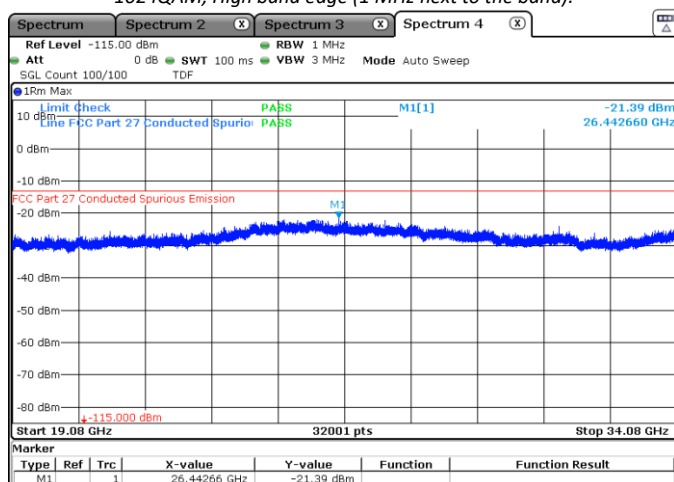
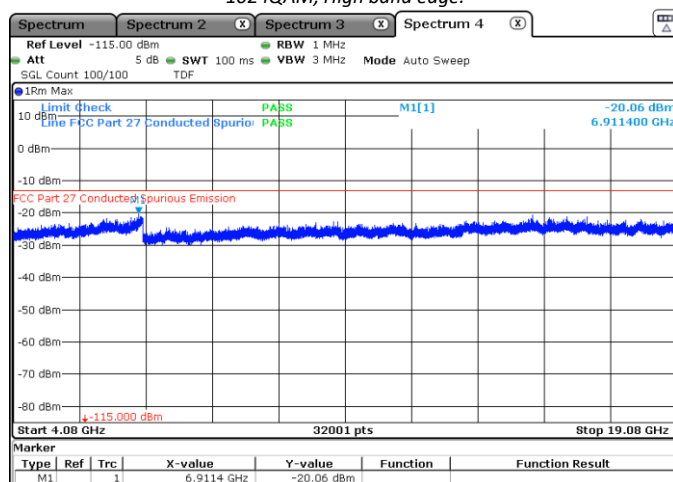
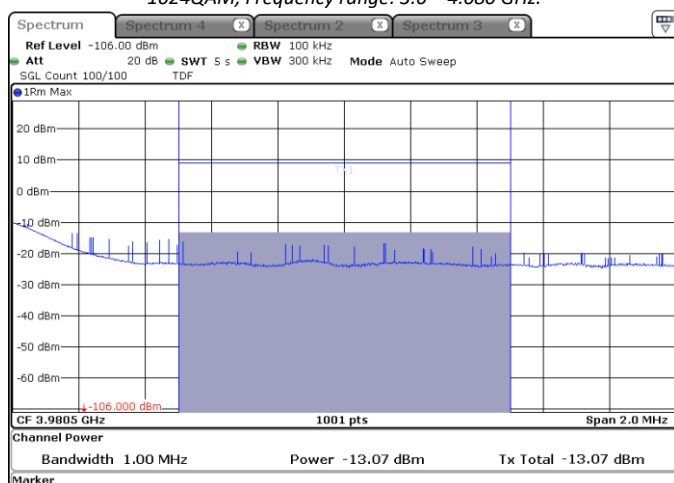
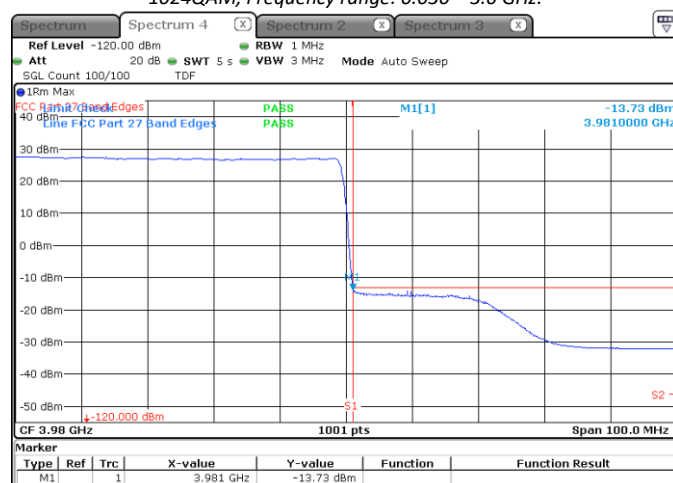
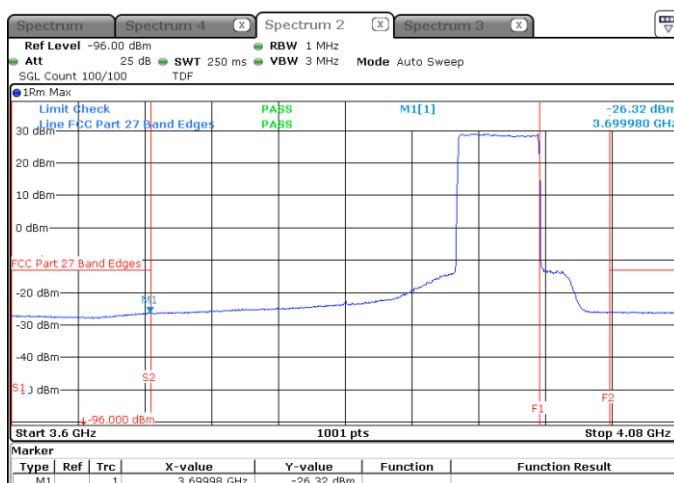
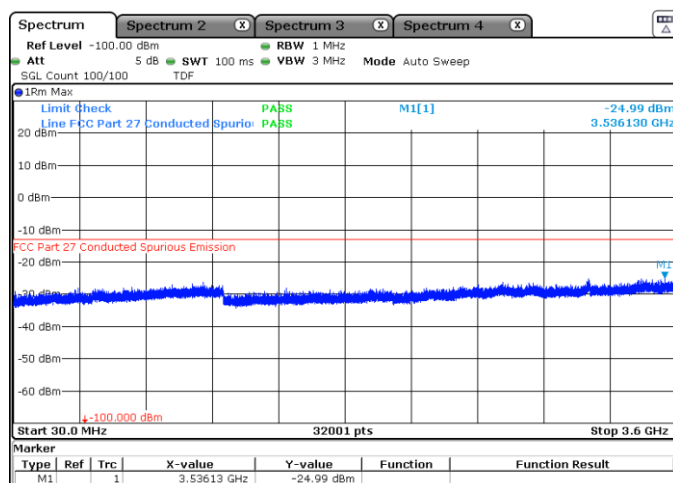


Figure 8.6-46: Conducted Spurious Emissions, Mid CH 3830 MHz, 60 MHz, 1024QAM, Frequency range: 34.080 - 40 GHz.



**The evaluation of range F1 to F2 was excluded from the figure 8.6-48. The detailed evaluation was made in the figure 8.6-49, except the 1 MHz range before the edge which was evaluated in the figure 8.6-50 (3980 MHz to 3981 MHz).**