

# **TEST REPORT**

**Report Number:** R15980274-E17aV2

**Applicant :** Samsung Electronics Co., Ltd.  
19 Chapin Rd., Building D  
Pine Brook, NJ 07058, USA

**Model(s) :** SM-S942U, SM-S942U1

**FCC ID :** A3LSMS942U

**EUT Description :** GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII  
a/b/g/n/ac/ax/be, WPT and NFC

**Test Standard(s) :** FCC 47 CFR PART 2, PART 27  
ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-199 ISSUE 4

**Date Of Issue:**  
2025-12-16

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Revision History

| Rev. | Issue Date | Revisions                                                                                                                     | Revised By   |
|------|------------|-------------------------------------------------------------------------------------------------------------------------------|--------------|
| V1   | 2025-12-04 | Initial Review                                                                                                                | --           |
| V2   | 2025-12-16 | Various Typos Resolved.<br>Added B38 SEM Data<br>Updated/Added SRS EIRP data<br>Added n41 IC SEM Plot<br>Removed B7 ULCA Data | Noah Bennett |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** Samsung Electronics Co Ltd.  
19 Chapin Rd., Building D  
Pine Brook, NJ 07058, USA

**EUT DESCRIPTION:** GSM/WCDMA/LTE/NR/SCS/NTN Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be,  
WPT and NFC

**SERIAL NUMBERS:** YHI0909M, YHK0046M, YHK0177M

**SAMPLE RECEIVE DATE:** 2025-09-11

**DATE TESTED:** 2025-09-11 to 2025-12-15

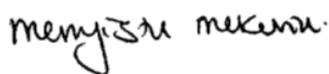
| APPLICABLE STANDARDS<br>STANDARD                                              | TEST RESULTS |
|-------------------------------------------------------------------------------|--------------|
| FCC 47 CFR PART 2, PART 27<br>ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-199 ISSUE 4 | Complies     |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document.

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## 2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL LLC is only responsible for correctly integrating customer-provided data with measurements performed by UL LLC.

| Requirement Description              | Requirement Clause Number (FCC) | Requirement Clause Number (ISED) | Result   | Remarks |
|--------------------------------------|---------------------------------|----------------------------------|----------|---------|
| Equivalent Isotropic Radiated Power  | 27.50 (h) (2)                   | RSS199§5.5                       | Complies |         |
| Occupied Bandwidth                   | 2.1049                          | RSS-GEN§6.7<br>RSS199§5.4        | Complies |         |
| Band Edge and Emission Mask          | 2.1051, 27.53 (m)(4) & (m) (6)  | RSS199§5.6                       | Complies |         |
| Out of Band Emissions                | 2.1051, 27.53 (m)(4) & (m) (6)  | RSS199§5.6                       | Complies |         |
| Frequency Stability                  | 2.1055, 27.54                   | RSS199§5.4                       | Complies |         |
| Peak-to-Average Ratio                | -                               | RSS199§5.5                       | Complies |         |
| Field Strength of Spurious Radiation | 2.1053, 27.53 (m)(4) & (m) (6)  | RSS199§5.6                       | Complies |         |

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:  
ANSI C63.26:2015 The tests documented in this report were performed in accordance with the following.  
FCC published lists of [measurement procedures](#) for compliance testing.  
ISED published lists of [normative test standards and acceptable alternatives procedures](#).

- ANSI C63.26:2015
- ANSI/TIA-603-E (2016)
- FCC 47 CFR Part 2, Part 27
- [FCC KDB 971168 D01](#): Power Meas License Digital Systems (ISED acceptable alternative procedure)
- [FCC KDB 971168 D02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01](#): Determining ERP and EIRP
- ISED RSS-Gen Issue 5 + A1 + A2, RSS-199 Issue 4.

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

|                                     | Address                                                                   | ISED CABID | ISED Company Number | FCC Registration |
|-------------------------------------|---------------------------------------------------------------------------|------------|---------------------|------------------|
| <input checked="" type="checkbox"/> | Building 2800 Suite Perimeter Park Dr. Suite B Morrisville, NC 27560, USA | US0067     | 27265               | 825374           |

## 5. DECISION RULES AND MEASUREMENT UNCERTAINTY

### 5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

### 5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

### 5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER                                           | U <sub>Lab</sub> |
|-----------------------------------------------------|------------------|
| Worst Case Radiated Disturbance, 9KHz to 30 MHz     | 2.52 dB          |
| Worst Case Radiated Disturbance, 30 to 1000 MHz     | 4.88 dB          |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz  | 4.24 dB          |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.37 dB          |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.17 dB          |
| Occupied Channel Bandwidth                          | ±0.39 %          |
| Temperature                                         | ±0.9 °C          |
| Supply voltages                                     | ±0.45 %          |
| Time                                                | ±0.02 %          |

Uncertainty figures are valid to a confidence level of 95%.

### 5.4. SAMPLE CALCULATION

#### RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)  
 $36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$

## 6. EQUIPMENT UNDER TEST

### 6.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE/NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be and NFC.

The EUT supports the following LTE and 5G NR Bands and their antenna configurations:

| Mode and Bands               | Config 0 | Config 1 | SRS |
|------------------------------|----------|----------|-----|
| LTE Band7 & 5G NR n7         | Ant F    | Ant B    | -   |
| LTE Band41FCC & 5G NR n41FCC | Ant F    | Ant B    | D/E |
| LTE Band41IC & 5G NR n41IC   | Ant F    | Ant B    | D/E |

Note: ULCA 41C is supported in JPN region only.

### 6.2. MAXIMUM OUTPUT POWER

#### EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015  
KDB 971168 D01 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

## LTE BAND 7

| Part 27 / RSS 199 |            |                     |                       |          |                    |                  |              |              |                     |
|-------------------|------------|---------------------|-----------------------|----------|--------------------|------------------|--------------|--------------|---------------------|
| EIRP Limit (W)    |            | 2.00                |                       |          |                    |                  |              |              |                     |
| Bandwidth (MHz)   | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Ant      | EIRP Average (dBm) | EIRP Average (W) | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
| 20.0              | QPSK       | 2510.0              | 2560.0                | Config_0 | 21.69              | 0.148            | 17.972       | 17972        | 18M0G7              |
|                   | 16QAM      |                     |                       |          | 21.91              | 0.155            | 17.959       | 17959        | 18M0D7              |
| 20.0              | QPSK       | 2510.0              | 2560.0                | Config_1 | 21.85              | 0.153            | 17.972       | 17972        | 18M0G7              |
|                   | 16QAM      |                     |                       |          | 21.28              | 0.134            | 17.959       | 17959        | 18M0D7              |

## 5G NR n7

| Part 27 / RSS 199 |            |                     |                       |          |                    |                  |              |              |                     |
|-------------------|------------|---------------------|-----------------------|----------|--------------------|------------------|--------------|--------------|---------------------|
| EIRP Limit (W)    |            | 2.00                |                       |          |                    |                  |              |              |                     |
| Bandwidth (MHz)   | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Ant      | EIRP Average (dBm) | EIRP Average (W) | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
| 40.0              | QPSK       | 2520.0              | 2550.0                | Config_0 | 22.89              | 0.195            | 38.677       | 38677        | 38M7G7              |
|                   | 16QAM      |                     |                       |          | 19.38              | 0.087            | 38.750       | 38750        | 38M8D7              |
| 40.0              | QPSK       | 2520.0              | 2550.0                | Config_1 | 20.31              | 0.107            | 38.677       | 38677        | 38M7G7              |
|                   | 16QAM      |                     |                       |          | 19.92              | 0.098            | 38.750       | 38750        | 38M8D7              |

## LTE BAND 41

| Part 27 / RSS 199 |            |                     |                       |          |                    |                  |              |              |                     |
|-------------------|------------|---------------------|-----------------------|----------|--------------------|------------------|--------------|--------------|---------------------|
| EIRP Limit (W)    |            | 2.00                |                       |          |                    |                  |              |              |                     |
| Bandwidth (MHz)   | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Ant      | EIRP Average (dBm) | EIRP Average (W) | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
| 20+20             | QPSK       | 2506.0              | 2680.0                | Config_0 | 21.33              | 0.136            | 17.936       | 17936        | 17M9G7              |
|                   | 16QAM      |                     |                       |          | 17.97              | 0.063            | 17.966       | 17966        | 18M0D7              |
| 20+20             | QPSK       | 2506.0              | 2680.0                | Config_1 | 19.26              | 0.084            | 17.936       | 17936        | 17M9G7              |
|                   | 16QAM      |                     |                       |          | 18.52              | 0.071            | 17.966       | 17966        | 18M0D7              |

## 5G NR n41

| Part 27 / RSS 199 |            |                     |                       |          |                    |                  |              |              |                     |
|-------------------|------------|---------------------|-----------------------|----------|--------------------|------------------|--------------|--------------|---------------------|
| EIRP Limit (W)    |            | 2.00                |                       |          |                    |                  |              |              |                     |
| Bandwidth (MHz)   | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Ant      | EIRP Average (dBm) | EIRP Average (W) | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
| 100.0             | QPSK       | 2546.0              | 2640.0                | Config_0 | 24.02              | 0.252            | 98.390       | 98390        | 98M4G7              |
|                   | 16QAM      |                     |                       |          | 22.68              | 0.185            | 98.171       | 98171        | 98M2D7              |
| 100.0             | QPSK       | 2546.0              | 2640.0                | Config_1 | 24.63              | 0.290            | 98.390       | 98390        | 98M4G7              |
|                   | 16QAM      |                     |                       |          | 23.58              | 0.228            | 98.171       | 98171        | 98M2D7              |

## ULCA LTE BAND 41

| Part 27 / RSS 199 |            |                     |                       |          |                    |                  |              |              |                     |
|-------------------|------------|---------------------|-----------------------|----------|--------------------|------------------|--------------|--------------|---------------------|
| EIRP Limit (W)    |            | 2.00                |                       |          |                    |                  |              |              |                     |
| Bandwidth (MHz)   | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Ant      | EIRP Average (dBm) | EIRP Average (W) | 99% BW (MHz) | 99% BW (kHz) | Emission Designator |
| 20+20             | QPSK       | 2506.0              | 2680.0                | Config_0 | 21.01              | 0.126            | 37.847       | 37847        | 37M8G7W             |
|                   | 16QAM      |                     |                       |          | 16.24              | 0.042            | 37.830       | 37830        | 37M8D7W             |
| 20+20             | QPSK       | 2506.0              | 2680.0                | Config_1 | 18.09              | 0.064            | 37.847       | 37847        | 37M8G7W             |
|                   | 16QAM      |                     |                       |          | 14.61              | 0.029            | 37.830       | 37830        | 37M8D7W             |

## 6.3. MAXIMUM ANTENNA GAIN

The antenna(s) gain, as provided by the manufacturer' are as follows:

| Frequency Band                                                | ANT F Antenna Gain (dBi) | ANT B Antenna Gain (dBi) |
|---------------------------------------------------------------|--------------------------|--------------------------|
| LTE Band 7 / 5G NR n7/ULCA Band 7<br>2500 – 2570 MHz          | -1.3                     | -1.7                     |
| LTE Band 41 / 5G NR n14/ULCA Band 41<br>2496 – 2690 MHz (FCC) | -1.6                     | -1.7                     |
| LTE Band 7 / 5G NR n7/ULCA Band 7<br>2500 – 2690 MHz (ISED)   | -1.3                     | -1.7                     |

## 6.4. WORST-CASE CONFIGURATION AND MODE

This report covers the following technologies:

- LTE Band 7, 5G NR n7,
- LTE Band 38, 5G NR n38, ULCA LTE Band 38
- LTE Band 41, 5G NR n41, 5G NR n41, ULCA LTE Band 41

LTE Band 38 and 5G NR n38 (2570-2620MHz) are covered by LTE Band 41 because it is a subset of LTE band 41. Also, they have the same or less output power and supported bandwidths.

LTE Band 41 and 5G NR n41 IC Band (2500-2680MHz) are covered by LTE Band 41 and 5G NR n41 FCC Band (2496-2680MHz) because it is a subset of FCC band. Also, they have the same or less output power and supported bandwidths. However, OBW, Emission Mask, and Out of Band emission tests have been done for Both IC and FCC Bands.

For 5G NRs, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

BPSK modulation applied only for 5G NR frequencies and has the same tune up power as QPSK modulations.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. Then, QPSK and BPSK were observed as the worst mode to LTE bands and 5G NR bands respectively and set for all conducted and radiated. Output power measurements were measured on BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulations. For testing purposes emissions on Section 9 were measured while QPSK/BPSK was set at or above target power for all bands. Conducted tests were performed on the worst-case antenna port because it has the highest conducted power. The worst-case antenna port is shown in the table below.

| LTE and 5G NR Bands     | Worst case Antenna Port |
|-------------------------|-------------------------|
| LTE Band 7 and 5G NR n7 | Ant B                   |
| LTE Band 41             | Ant F                   |
| 5G NR n41 (SISO)        | Ant F                   |

The EUT was investigated in three orthogonal orientations X/Y/Z on all available SISO and MIMO antennas to determine the worst-case orientation. The following table exhibits the worst-case orientation. The full tests of the EUT have made upon the orientations that are shown in the table below.

| Frequency Range | ANT F | ANT B |
|-----------------|-------|-------|
| 2496 – 2690 MHz | X     | Y     |

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 1GHz and above 18GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GHz WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

## 6.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Support Equipment List |              |           |               |        |
|------------------------|--------------|-----------|---------------|--------|
| Description            | Manufacturer | Model     | Serial Number | FCC ID |
| Power Adapter          | Flextronics  | G-1000-US | Na            | na     |

### I/O CABLES

| I/O Cable List |       |                      |                |            |                  |                        |
|----------------|-------|----------------------|----------------|------------|------------------|------------------------|
| Cable No.      | Port  | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks                |
| 1              | USB-C | 1                    | USB-C          | Shielded   | <3m              | Phone to power adapter |

### TEST SETUP

The EUT was connected to a base station simulator and set to transmit at max power for GSM/WCDMA testing

### SETUP DIAGRAM

Please see R15980274-EP1 for Setup Diagrams and Setup Photos.

## 7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

### Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 2)

| Equip. ID       | Description                                       | Manufacturer/Brand | Model Number              | Last Cal.  | Next Cal.  |
|-----------------|---------------------------------------------------|--------------------|---------------------------|------------|------------|
|                 | <b>1-18 GHz</b>                                   |                    |                           |            |            |
| 88761           | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren       | 3117                      | 2023-10-05 | 2025-10-05 |
|                 | <b>Gain-Loss Chains</b>                           |                    |                           |            |            |
| 91977           | Gain-loss string: 1-18GHz                         | Various            | Various                   | 2025-05-31 | 2026-05-31 |
|                 | <b>Receiver &amp; Software</b>                    |                    |                           |            |            |
| 206496          | Spectrum Analyzer                                 | Rohde & Schwarz    | ESW44                     | 2025-07-29 | 2026-07-29 |
| SOFTEMI         | EMI Software                                      | UL                 | Version 9.5 (18 Oct 2021) |            |            |
|                 | <b>Additional Equipment used</b>                  |                    |                           |            |            |
| 239540          | Environmental Meter                               | Fisher Scientific  | 15-077-963                | 2025-08-05 | 2027-08-05 |
| 213025          | Wideband Radio Communications Tester              | Rohde and Schwarz  | CMW500                    | 2025-01-14 | 2026-01-14 |
| 169106 (BRF008) | 1710-1785MHz notch filter, 2W, Fhigh = 9GHz       | Micro-Tronics      | BRM50713-01               | 2025-03-13 | 2026-03-13 |
| 169108 (BRF010) | 1.85-1.97GHz notch filter, 2W, Fhigh = 9GHz       | Micro-Tronics      | BRM50714-01               | 2025-03-13 | 2026-03-13 |
| 231408 (BRF011) | 2.495-2.690GHz notch filter, 2W, Fhigh = 18GHz    | Micro-Tronics      | BRM50709-01               | 2025-03-13 | 2026-03-13 |
| 169109 (BRF012) | 3.4-3.8GHz notch filter, 2W, Fhigh = 18GHz        | Micro-Tronics      | BRM50711-01               | 2025-03-13 | 2026-03-13 |
| 82635 (HPF009)  | 1GHz high-pass filter, 2W, Fhigh = 10GHz          | Micro-Tronics      | HPM17672                  | 2025-03-13 | 2026-03-13 |

**Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 1)**

| Equip. ID       | Description                                       | Manufacturer      | Model Number              | Last Cal.  | Next Cal.  |
|-----------------|---------------------------------------------------|-------------------|---------------------------|------------|------------|
|                 | <b>1-18 GHz</b>                                   |                   |                           |            |            |
| 135143          | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren      | 3117                      | 2024-02-07 | 2026-02-07 |
|                 | <b>Gain-Loss Chains</b>                           |                   |                           |            |            |
| 91979           | Gain-loss string: 1-18GHz                         | Various           | Various                   | 2025-05-31 | 2026-05-31 |
|                 | <b>Receiver &amp; Software</b>                    |                   |                           |            |            |
| 197955          | Spectrum Analyzer                                 | Rohde & Schwarz   | ESW44                     | 2025-05-12 | 2026-05-12 |
| SOFTEMI         | EMI Software                                      | UL                | Version 9.5 (18 Oct 2021) |            |            |
|                 | <b>Additional Equipment used</b>                  |                   |                           |            |            |
| 241205          | Environmental Meter                               | Fisher Scientific | 15-077-963                | 2025-08-05 | 2027-08-05 |
| 213025          | Wideband Radio Communications Tester              | Rohde and Schwarz | CMW500                    | 2025-01-14 | 2026-01-14 |
| 169108 (BRF010) | 1.85-1.97GHz notch filter, 2W, Fhigh = 9GHz       | Micro-Tronics     | BRM50714-01               | 2025-03-13 | 2026-03-13 |
| 82635 (HPF009)  | 1GHz high-pass filter, 2W, Fhigh =10GHz           | Micro-Tronics     | HPM17672                  | 2025-03-13 | 2026-03-13 |

**Test Equipment Used - Radiated Disturbance Emissions Test Equipment (Morrisville – Chamber 4)**

| Equip. ID | Description                                       | Manufacturer/Brand   | Model Number              | Last Cal.  | Next Cal.  |
|-----------|---------------------------------------------------|----------------------|---------------------------|------------|------------|
|           | <b>30-1000 MHz</b>                                |                      |                           |            |            |
| 90628     | Hybrid Broadband Antenna                          | Sunol Sciences Corp. | JB3                       | 2024-01-02 | 2026-01-02 |
|           | <b>1-18 GHz</b>                                   |                      |                           |            |            |
| 206211    | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren         | 3117                      | 2024-04-09 | 2026-04-09 |
|           | <b>Gain-Loss Chains</b>                           |                      |                           |            |            |
| 207639    | Gain-loss string: 25-1000MHz                      | Various              | Various                   | 2025-06-13 | 2026-06-13 |
| 207640    | Gain-loss string: 1-18GHz                         | Various              | Various                   | 2025-06-13 | 2026-06-13 |
|           | <b>Receiver &amp; Software</b>                    |                      |                           |            |            |
| 197954    | Spectrum Analyzer                                 | Rohde & Schwarz      | ESW44                     | 2025-04-21 | 2026-04-21 |
| SOFTEMI   | EMI Software                                      | UL                   | Version 9.5 (18 Oct 2021) |            |            |
|           | <b>Additional Equipment used</b>                  |                      |                           |            |            |
| 241204    | Environmental Meter                               | Fisher Scientific    | 15-077-963                | 2025-08-05 | 2027-08-05 |
| 213025    | Wideband Radio Communications Tester              | Rohde and Schwarz    | CMW500                    | 2025-01-14 | 2026-01-14 |
| 212167    | Wideband Radio Communications Tester              | Anritsu              | MT8821C                   | 2023-06-05 | 2024-06-05 |

**Wireless Conducted Measurement Equipment.**

| Equipment ID | Description                                           | Manufacturer          | Model Number | Last Cal.  | Next Cal.  |
|--------------|-------------------------------------------------------|-----------------------|--------------|------------|------------|
|              | <b>Additional Equipment used</b>                      |                       |              |            |            |
| 90411        | Spectrum Analyzer<br><b>MY54490314</b>                | Keysight Technologies | N9030A       | 2025-07-30 | 2026-07-30 |
| 212967       | Wideband Radio Communications Tester<br><b>170733</b> | Rohde and Schwarz     | CMW500       | 2025-02-07 | 2026-02-07 |
| 222797       | Wideband Radio Communications Tester                  | Rohde and Schwarz     | CMW500       | 2025-02-21 | 2026-02-28 |
| 262469       | Humidity and Temperature Probe                        | Control Company       | 15-077-963   | 2024-04-28 | 2026-04-28 |

**Test Equipment Used - Wireless Conducted Attenuators, Cables, and Couplers**

| Equipment ID           | Description                                     | Manufacturer   | Model Number | Last Cal.  | Next Cal.  |
|------------------------|-------------------------------------------------|----------------|--------------|------------|------------|
|                        | <b>Attenuators</b>                              |                |              |            |            |
| 226554                 | 20dB Attenuator                                 | CentricRF      | C18S2-20     | 2025-03-19 | 2026-03-19 |
| 226552                 | 20dB Attenuator                                 | CentricRF      | C18S2-20     | 2025-03-19 | 2026-03-19 |
|                        | <b>Cables</b>                                   |                |              |            |            |
| 80865                  | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
| 247384                 | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
| 246257                 | SMA Cable                                       | Huber + Suhner | 104PEA       | 2025-09-05 | 2026-09-05 |
|                        | <b>Couplers</b>                                 |                |              |            |            |
| 238018<br>(CPL003-SAR) | Ultra-Wideband Directional Coupler<br>0.5-18GHz | Mini-Circuits  | ZUDC10-183+  | 2025-04-48 | 2026-04-28 |

**NOTES:**

- \* Testing is completed before equipment expiration date.
- Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

## 8. CONDUCTED TEST RESULTS

### 8.1. OCCUPIED BANDWIDTH

#### RULE PART(S)

FCC: §2.1049  
ISED: RSS-GEN§6.7, RSS199§5.4

#### LIMITS

For reporting purposes only.

#### TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths were also measured and recorded.

#### RESULTS

There is no limit required, and power is the same for low, middle and high channel; therefore, only middle channel was tested.

## LTE BAND 7

| Band       | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 7 | 5MHz, QPSK   | 25/0                    | 2535.0 | 4.450        | 5.20           |
|            | 5MHz, 16QAM  |                         |        | 4.512        | 5.19           |
|            | 10MHz, QPSK  | 50/0                    |        | 8.982        | 10.02          |
|            | 10MHz, 16QAM |                         |        | 8.996        | 10.02          |
|            | 15MHz, QPSK  | 75/0                    |        | 13.470       | 14.81          |
|            | 15MHz, 16QAM |                         |        | 13.468       | 14.86          |
|            | 20MHz, QPSK  | 100/0                   |        | 17.972       | 19.60          |
|            | 20MHz, 16QAM |                         |        | 17.959       | 19.63          |
|            | 20MHz, QPSK  | 1/0                     |        | 0.277        | 0.48           |

## 5G NR n7

| Band     | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------|--------------|-------------------------|--------|--------------|----------------|
| 5G NR n7 | 5MHz, BPSK   | 25/0                    | 2535.0 | 4.498        | 5.18           |
|          | 5MHz, 16QAM  |                         |        | 4.510        | 5.10           |
|          | 10MHz, BPSK  | 50/0                    |        | 8.989        | 9.95           |
|          | 10MHz, 16QAM |                         |        | 9.009        | 9.95           |
|          | 15MHz, BPSK  | 75/0                    |        | 13.471       | 14.48          |
|          | 15MHz, 16QAM |                         |        | 13.539       | 15.18          |
|          | 20MHz, BPSK  | 100/0                   |        | 17.965       | 19.70          |
|          | 20MHz, 16QAM |                         |        | 17.947       | 20.10          |
|          | 25MHz, BPSK  | 128/0                   |        | 23.054       | 25.79          |
|          | 25MHz, 16QAM |                         |        | 23.025       | 25.72          |
|          | 30MHz, BPSK  | 160/0                   |        | 28.731       | 31.06          |
|          | 30MHz, 16QAM |                         |        | 28.701       | 30.21          |
|          | 35MHz, BPSK  | 180/0                   |        | 32.332       | 35.66          |
|          | 35MHz, 16QAM |                         |        | 32.233       | 34.24          |
|          | 40MHz, BPSK  | 216/0                   |        | 38.677       | 40.83          |
|          | 40MHz, 16QAM |                         |        | 38.750       | 40.81          |
|          | 50MHz, BPSK  | 270/0                   |        | 48.395       | 50.98          |
|          | 50MHz, 16QAM |                         |        | 48.419       | 51.01          |
|          | 50MHz, BPSK  | 1/0                     |        | 0.299        | 0.54           |

**LTE BAND 41 (FCC)**

| Band        | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 41 | 5MHz, QPSK   | 25/0                    | 2593.0 | 4.501        | 5.15           |
|             | 5MHz, 16QAM  |                         |        | 4.502        | 5.11           |
|             | 10MHz, QPSK  | 50/0                    |        | 8.976        | 10.21          |
|             | 10MHz, 16QAM |                         |        | 8.982        | 10.00          |
|             | 15MHz, QPSK  | 75/0                    |        | 13.485       | 14.95          |
|             | 15MHz, 16QAM |                         |        | 13.453       | 14.86          |
|             | 20MHz, QPSK  | 100/0                   |        | 17.936       | 20.18          |
|             | 20MHz, 16QAM |                         |        | 17.966       | 19.68          |
|             | 20MHz, QPSK  | 1/0                     |        | 0.277        | 0.41           |

**5G NR n41 (FCC)**

| Band            | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-----------------|---------------|-------------------------|--------|--------------|----------------|
| 5G NR n41 (FCC) | 10MHz, BPSK   | 24/0                    | 2593.0 | 8.702        | 10.29          |
|                 | 10MHz, 16QAM  |                         |        | 8.673        | 10.01          |
|                 | 15MHz, BPSK   | 36/0                    |        | 13.195       | 14.40          |
|                 | 15MHz, 16QAM  |                         |        | 13.273       | 14.30          |
|                 | 20MHz, BPSK   | 50/0                    |        | 18.297       | 19.51          |
|                 | 20MHz, 16QAM  |                         |        | 18.364       | 19.38          |
|                 | 25MHz, BPSK   | 64/0                    |        | 23.413       | 24.88          |
|                 | 25MHz, 16QAM  |                         |        | 23.463       | 24.66          |
|                 | 30MHz, BPSK   | 75/0                    |        | 27.367       | 28.97          |
|                 | 30MHz, 16QAM  |                         |        | 27.390       | 28.77          |
|                 | 35MHz, BPSK   | 90/0                    |        | 32.375       | 34.71          |
|                 | 35MHz, 16QAM  |                         |        | 32.350       | 34.73          |
|                 | 40MHz, BPSK   | 100/0                   |        | 36.486       | 38.32          |
|                 | 40MHz, 16QAM  |                         |        | 36.573       | 38.26          |
|                 | 45MHz, BPSK   | 108/0                   |        | 38.830       | 41.43          |
|                 | 45MHz, 16QAM  |                         |        | 38.787       | 41.54          |
|                 | 50MHz, BPSK   | 128/0                   |        | 46.613       | 48.56          |
|                 | 50MHz, 16QAM  |                         |        | 46.612       | 48.32          |
|                 | 60MHz, BPSK   | 162/0                   |        | 59.032       | 61.26          |
|                 | 60MHz, 16QAM  |                         |        | 58.887       | 61.09          |
|                 | 70MHz, BPSK   | 180/0                   |        | 65.652       | 68.49          |
|                 | 70MHz, 16QAM  |                         |        | 65.616       | 68.09          |
|                 | 80MHz, BPSK   | 216/0                   |        | 78.513       | 81.38          |
|                 | 80MHz, 16QAM  |                         |        | 78.606       | 81.42          |
|                 | 90MHz, BPSK   | 243/0                   |        | 88.530       | 91.65          |
|                 | 90MHz, 16QAM  |                         |        | 88.491       | 91.46          |
|                 | 100MHz, BPSK  | 270/0                   |        | 98.390       | 101.9          |
|                 | 100MHz, 16QAM |                         |        | 98.171       | 101.5          |
|                 | 100MHz, BPSK  | 1/0                     |        | 0.597        | 1.03           |

**ULCA LTE BAND 41 (FCC)**

| Band                   | Mode                 | RB Allocation/RB Offset | f (MHz) | 99% BW (MHz) | - 26dB BW (MHz) |
|------------------------|----------------------|-------------------------|---------|--------------|-----------------|
| ULCA LTE BAND 41 (FCC) | 5MHz + 20MHz, QPSK   | 25/0 + 100/0            | 2593    | 23.417       | 26.77           |
|                        | 5MHz + 20MHz, 16QAM  |                         |         | 23.399       | 25.73           |
|                        | 20MHz + 5MHz, QPSK   | 100/0 + 25/0            |         | 23.434       | 27.59           |
|                        | 20MHz + 5MHz, 16QAM  |                         |         | 23.374       | 28.05           |
|                        | 10MHz + 20MHz, QPSK  | 50/0 + 100/0            |         | 28.166       | 31.57           |
|                        | 10MHz + 20MHz, 16QAM |                         |         | 28.119       | 32.37           |
|                        | 20MHz + 10MHz, QPSK  | 100/0 + 50/0            |         | 28.158       | 34.76           |
|                        | 20MHz + 10MHz, 16QAM |                         |         | 28.100       | 31.09           |
|                        | 15MHz + 15MHz, QPSK  | 75/0 + 75/0             |         | 28.773       | 32.32           |
|                        | 15MHz + 15MHz, 16QAM |                         |         | 28.704       | 33.34           |
|                        | 15MHz + 20MHz, QPSK  | 75/0 + 100/0            |         | 32.973       | 39.59           |
|                        | 15MHz + 20MHz, 16QAM |                         |         | 32.949       | 37.31           |
|                        | 20MHz + 15MHz, QPSK  | 100/0 + 75/0            |         | 32.968       | 37.69           |
|                        | 20MHz + 15MHz, 16QAM |                         |         | 32.943       | 37.35           |
|                        | 20MHz + 20MHz, QPSK  | 100/0 + 100/0           |         | 37.847       | 44.77           |
|                        | 20MHz + 20MHz, 16QAM |                         |         | 37.830       | 45.29           |

**LTE BAND 41 (IC)**

| Band             | Mode         | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|------------------|--------------|-------------------------|--------|--------------|----------------|
| LTE BAND 41 (IC) | 5MHz, QPSK   | 25/0                    | 2595.0 | 4.511        | 5.48           |
|                  | 5MHz, 16QAM  |                         |        | 4.526        | 5.72           |
|                  | 10MHz, QPSK  | 50/0                    |        | 9.024        | 10.23          |
|                  | 10MHz, 16QAM |                         |        | 9.001        | 10.43          |
|                  | 15MHz, QPSK  | 75/0                    |        | 13.507       | 15.42          |
|                  | 15MHz, 16QAM |                         |        | 13.519       | 15.84          |
|                  | 20MHz, QPSK  | 100/0                   |        | 17.990       | 19.78          |
|                  | 20MHz, 16QAM |                         |        | 17.996       | 21.26          |
|                  | 20MHz, QPSK  | 1/0                     |        | 0.290        | 0.40           |

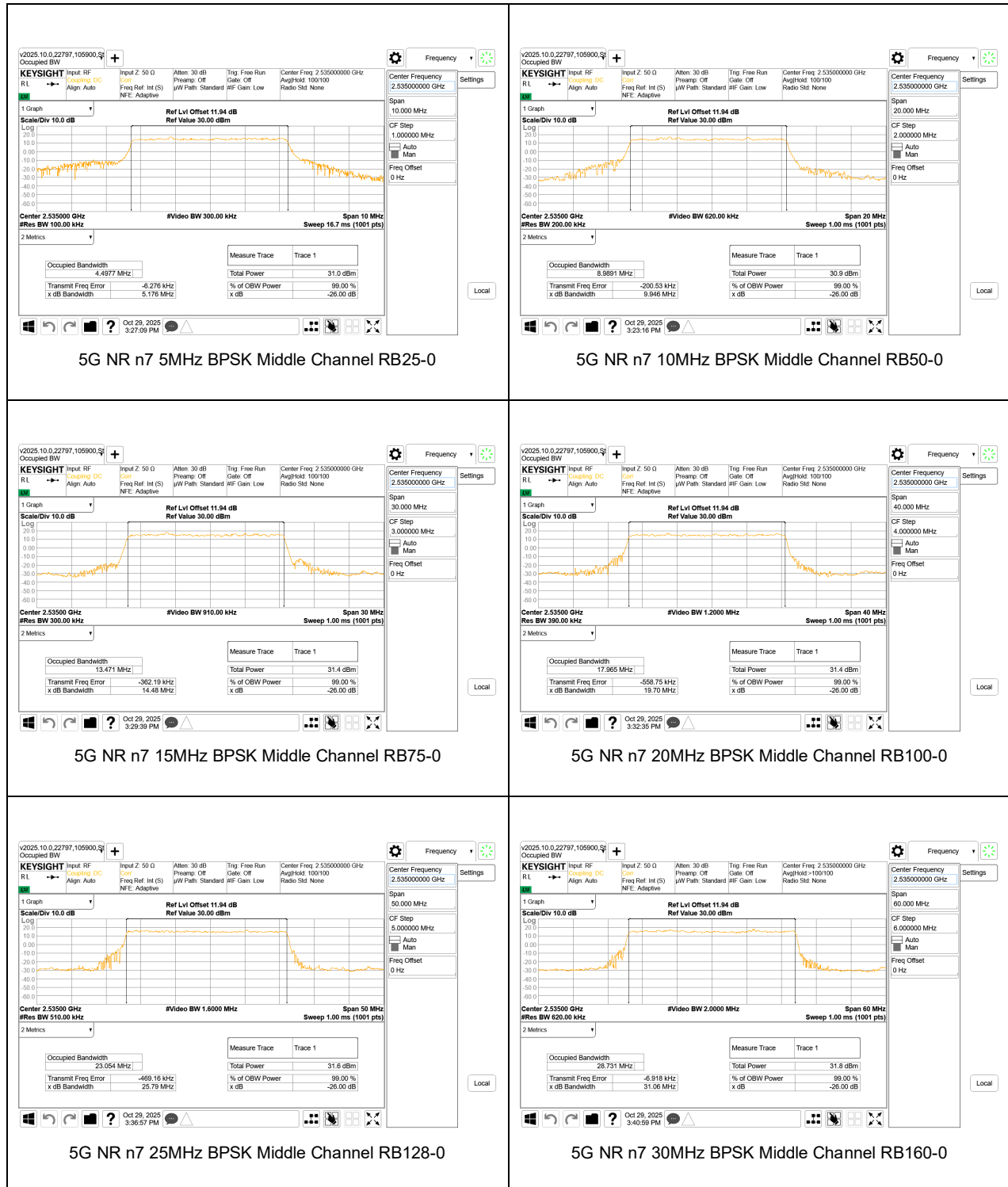
**5G NR n41 (IC)**

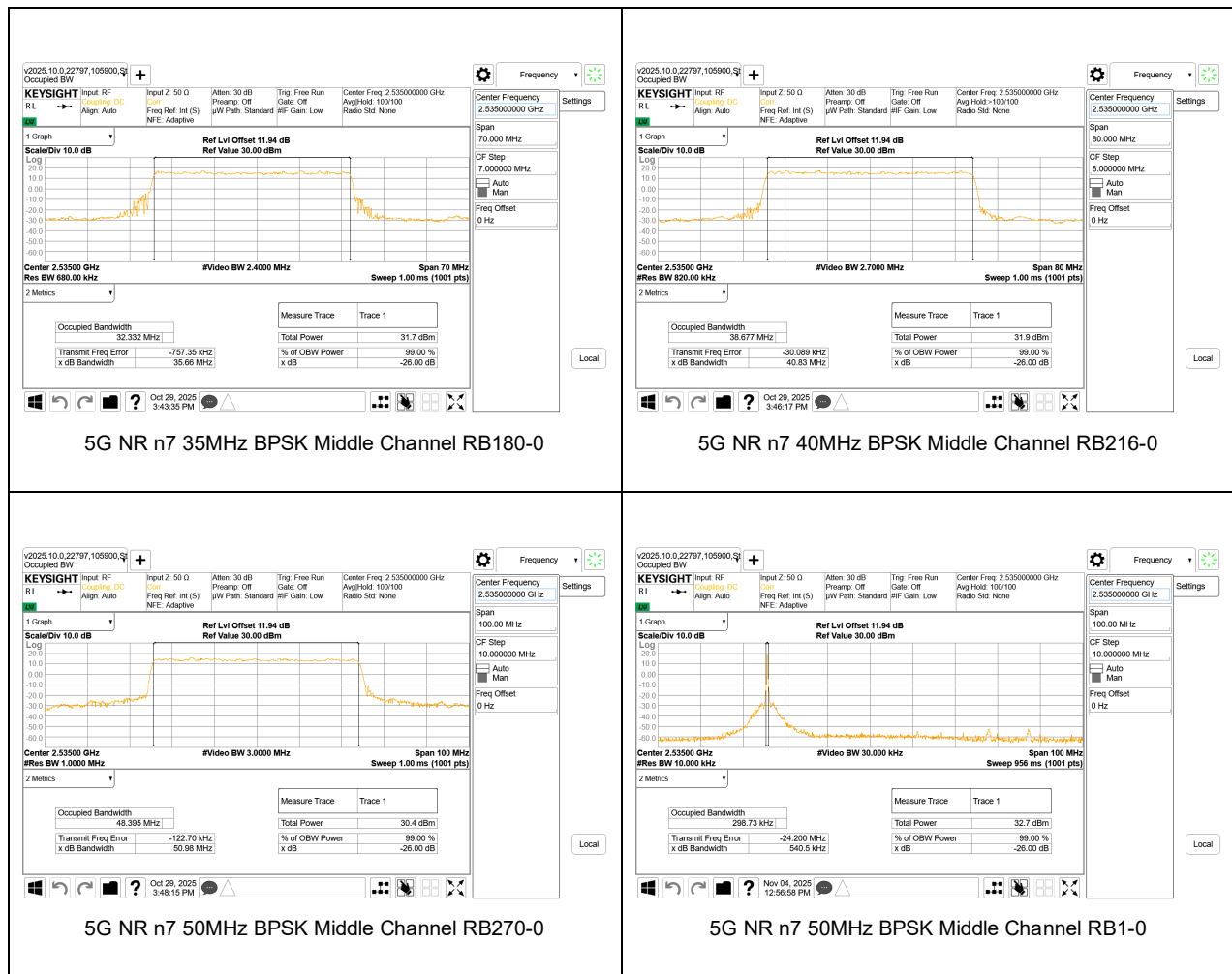
| Band           | Mode          | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|----------------|---------------|-------------------------|--------|--------------|----------------|
| 5G NR n41 (IC) | 10MHz, BPSK   | 24/0                    | 2595.0 | 8.699        | 10.16          |
|                | 10MHz, 16QAM  |                         |        | 8.681        | 10.05          |
|                | 15MHz, BPSK   | 36/0                    |        | 13.009       | 14.69          |
|                | 15MHz, 16QAM  |                         |        | 13.023       | 14.71          |
|                | 20MHz, BPSK   | 50/0                    |        | 18.019       | 19.95          |
|                | 20MHz, 16QAM  |                         |        | 18.008       | 19.81          |
|                | 25MHz, BPSK   | 64/0                    |        | 23.083       | 25.00          |
|                | 25MHz, 16QAM  |                         |        | 23.023       | 25.08          |
|                | 30MHz, BPSK   | 75/0                    |        | 27.015       | 29.09          |
|                | 30MHz, 16QAM  |                         |        | 27.005       | 29.17          |
|                | 35MHz, BPSK   | 90/0                    |        | 32.366       | 34.56          |
|                | 35MHz, 16QAM  |                         |        | 32.311       | 34.70          |
|                | 40MHz, BPSK   | 100/0                   |        | 35.979       | 38.43          |
|                | 40MHz, 16QAM  |                         |        | 35.984       | 38.50          |
|                | 45MHz, BPSK   | 108/0                   |        | 38.819       | 41.53          |
|                | 45MHz, 16QAM  |                         |        | 38.816       | 41.44          |
|                | 50MHz, BPSK   | 128/0                   |        | 45.929       | 48.59          |
|                | 50MHz, 16QAM  |                         |        | 46.022       | 49.03          |
|                | 60MHz, BPSK   | 162/0                   |        | 58.136       | 61.14          |
|                | 60MHz, 16QAM  |                         |        | 58.160       | 61.43          |
|                | 70MHz, BPSK   | 180/0                   |        | 64.771       | 68.49          |
|                | 70MHz, 16QAM  |                         |        | 64.673       | 68.44          |
|                | 80MHz, BPSK   | 216/0                   |        | 77.503       | 81.38          |
|                | 80MHz, 16QAM  |                         |        | 77.538       | 81.53          |
|                | 90MHz, BPSK   | 243/0                   |        | 87.237       | 91.38          |
|                | 90MHz, 16QAM  |                         |        | 87.205       | 91.53          |
|                | 100MHz, BPSK  | 270/0                   |        | 96.971       | 101.53         |
|                | 100MHz, 16QAM |                         |        | 96.817       | 101.58         |
|                | 100MHz, BPSK  | 1/0                     |        | 0.597        | 1.02           |

8.1.1. LTE BAND 7



## 8.1.2. 5G NR n7

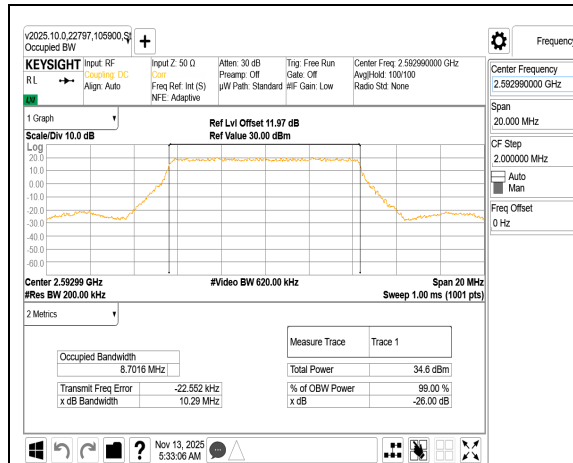




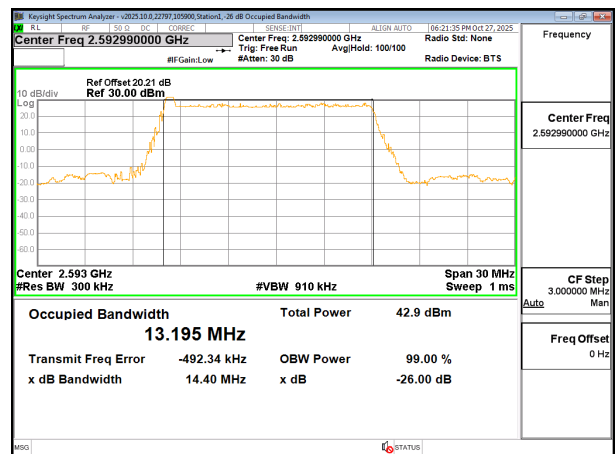
8.1.3. LTE BAND 41 (FCC)



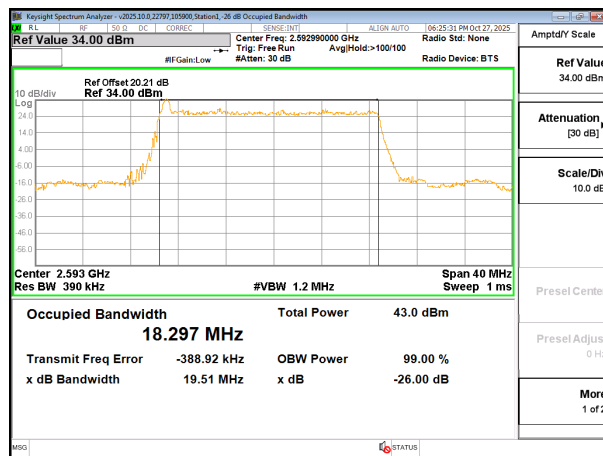
## 8.1.4. 5G NR n41 (FCC)



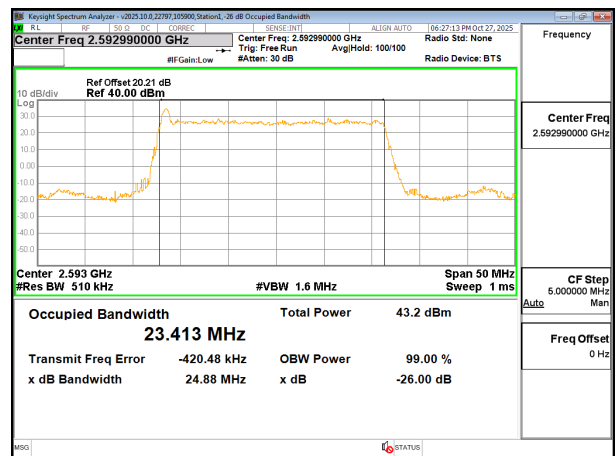
5G NR n41 10MHz BPSK Middle Channel RB24-0



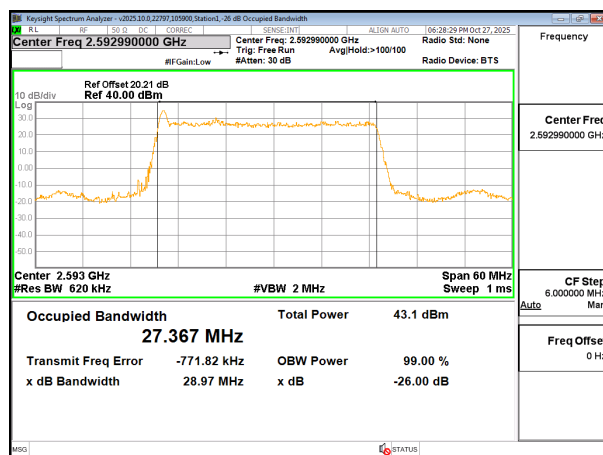
5G NR n41 15MHz BPSK Middle Channel RB36-0



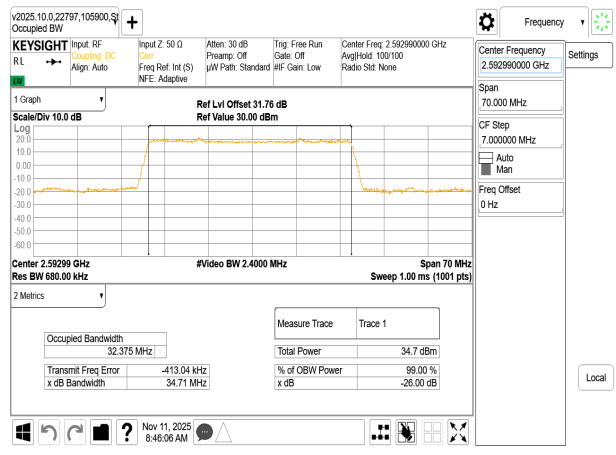
5G NR n41 20MHz BPSK Middle Channel RB50-0



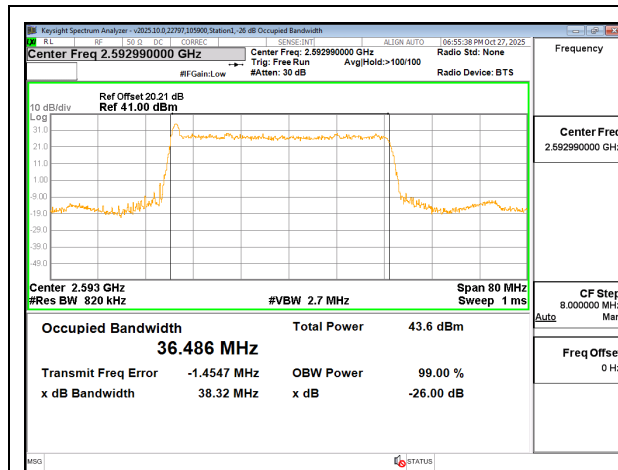
5G NR n41 25MHz BPSK Middle Channel RB64-0



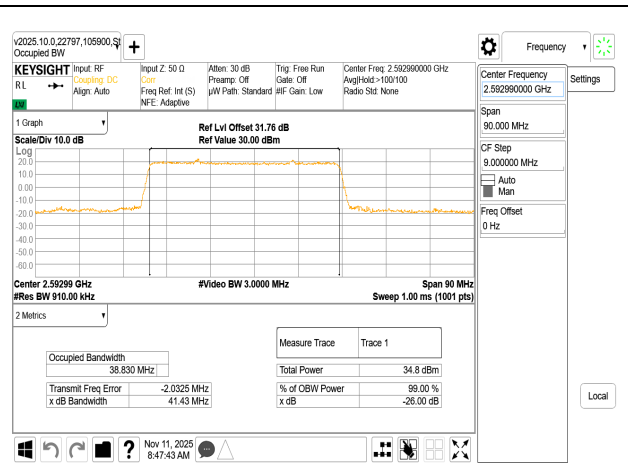
5G NR n41 30MHz BPSK Middle Channel RB75-0



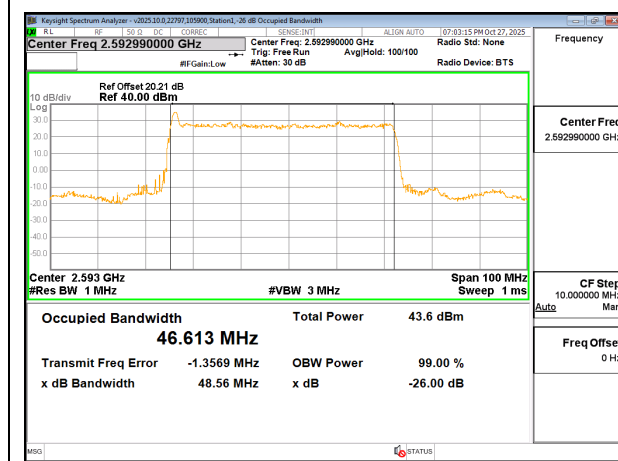
5G NR n41 35MHz BPSK Middle Channel RB90-0



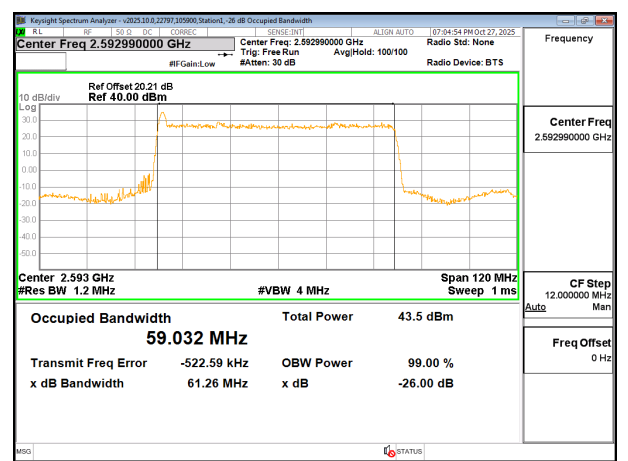
5G NR n41 40MHz BPSK Middle Channel RB100-0



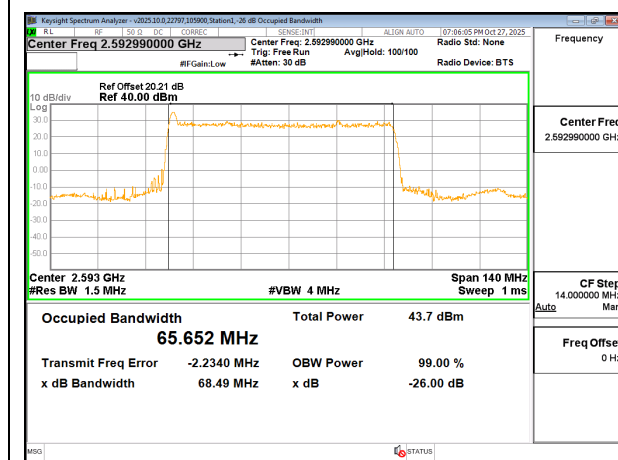
5G NR n41 45MHz BPSK Middle Channel RB108-0



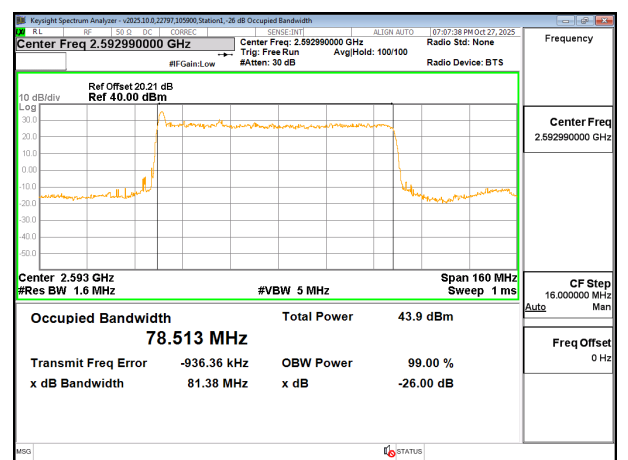
5G NR n41 50MHz BPSK Middle Channel RB128-0



5G NR n41 60MHz BPSK Middle Channel RB162-0



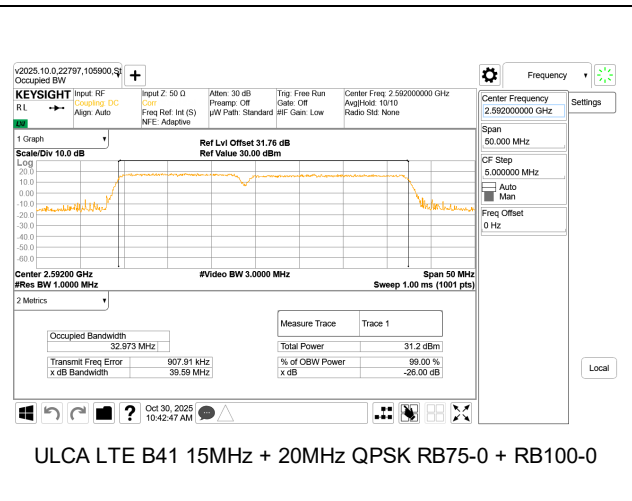
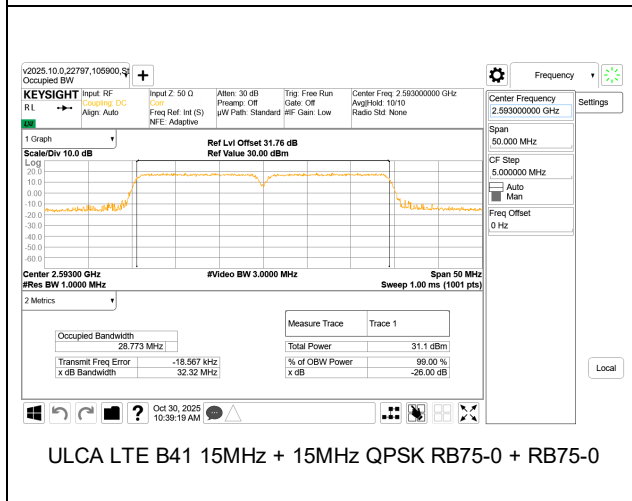
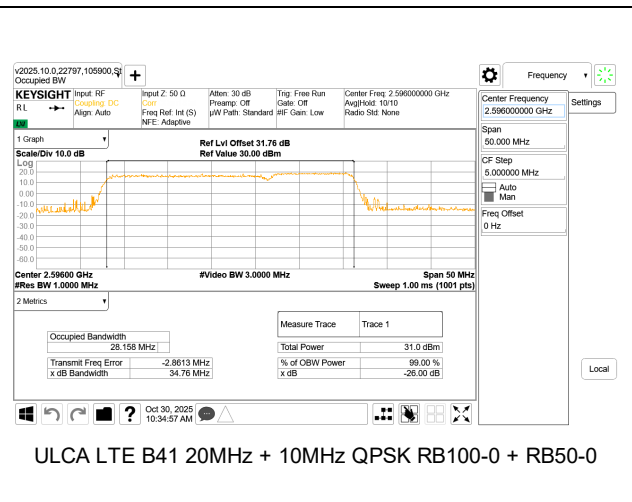
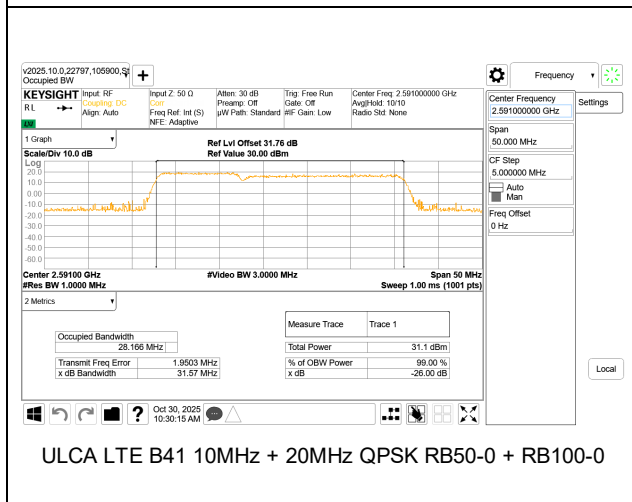
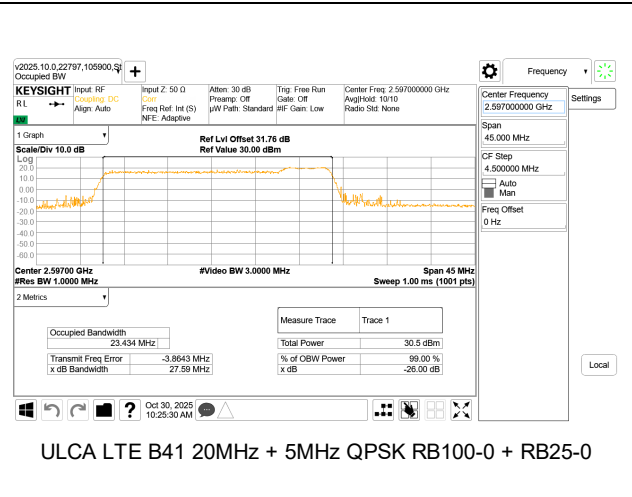
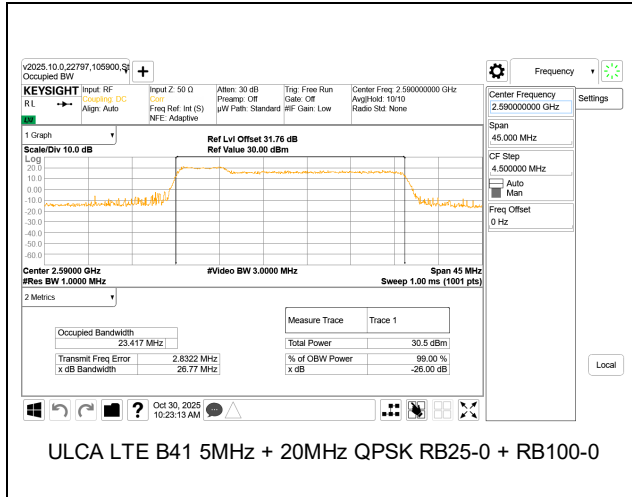
5G NR n41 70MHz BPSK Middle Channel RB180-0

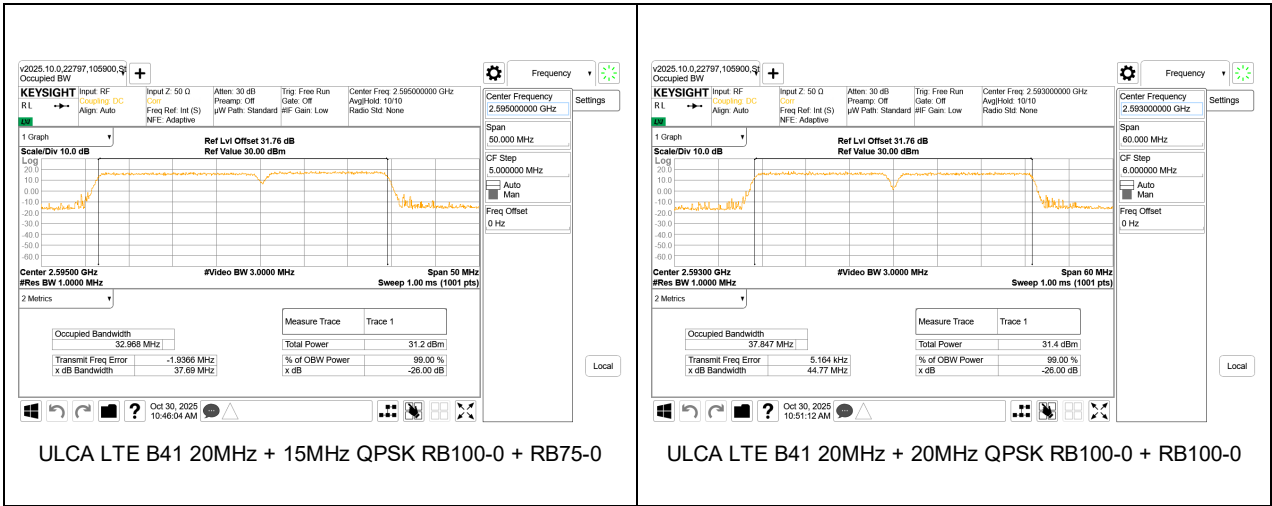


5G NR n41 80MHz BPSK Middle Channel RB216-0

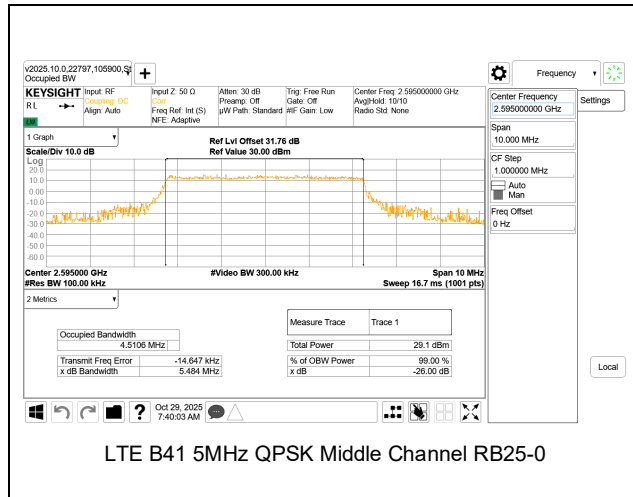


## 8.1.5. ULCA LTE BAND 41 (FCC)

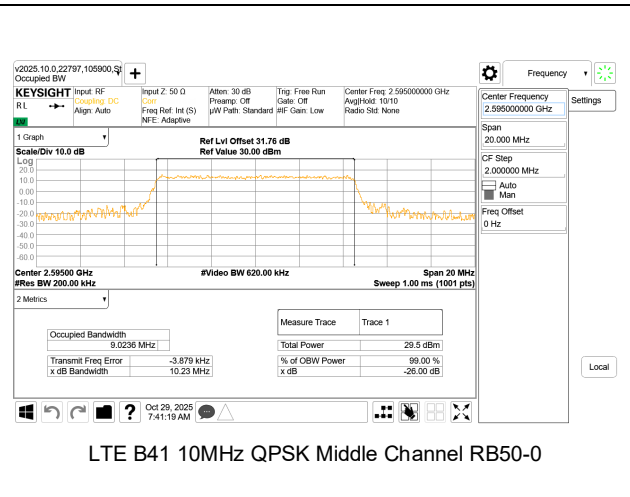




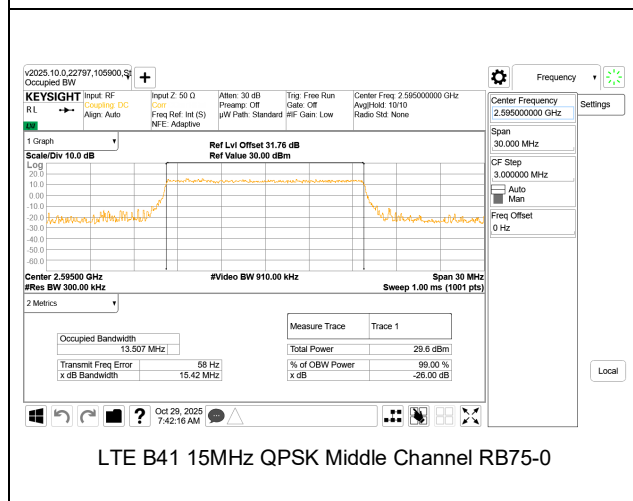
## 8.1.6. LTE BAND 41 (IC)



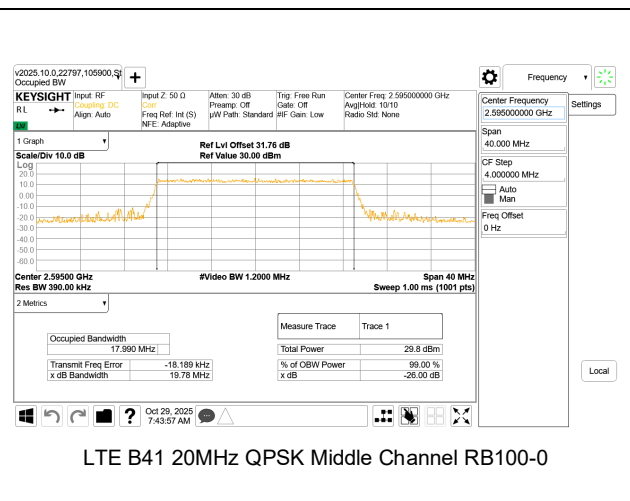
LTE B41 5MHz QPSK Middle Channel RB25-0



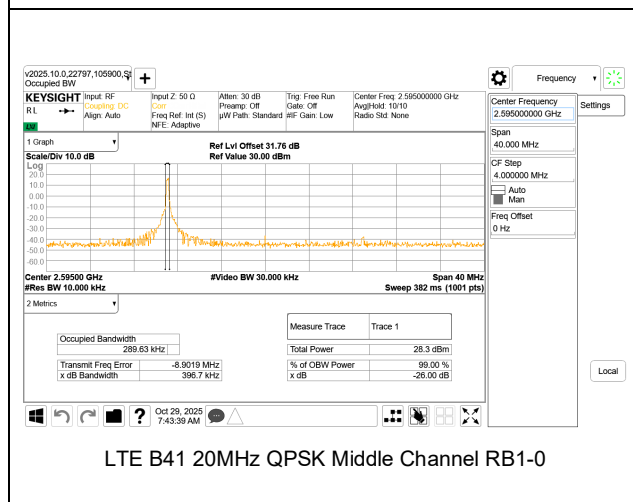
LTE B41 10MHz QPSK Middle Channel RB50-0



LTE B41 15MHz QPSK Middle Channel RB75-0



LTE B41 20MHz QPSK Middle Channel RB100-0



LTE B41 20MHz QPSK Middle Channel RB1-0

Intentionally Blank

## 8.1.7. 5G NR n41 (IC)

