



XMH 2022.02.07.0

OCCUPIED BANDWIDTH

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Cal. Due |
|------------------------------|--------------------|--------|-----|------------|------------|
| Generator - Signal | Keysight | N5182B | TEV | 2021-04-27 | 2024-04-27 |
| Analyzer - Spectrum Analyzer | Keysight | N9010A | AFQ | 2022-01-17 | 2023-01-17 |
| Block - DC | Fairview Microwave | SD3379 | AMM | 2021-09-14 | 2022-09-14 |

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The method in section 5.4 of ANSI C63.26 was used to make this measurement. The spectrum analyzer settings were as follows:

- RBW is 1% - 5% of the occupied bandwidth
- VBW is $\geq 3x$ the RBW
- Peak Detector was used
- Trace max hold was used

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHFII) as the original certification test. The AHFII antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i, and 6.4.

The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets.

FCC 24.238(b) and FCC 27.53(h)(3) defines the 26dB emission bandwidth requirement.

RSS GEN Section 6.7 defines the 99% emission bandwidth requirement.

| FCC and ISED Emission Designators for Band n25 (1930MHz to 1995MHz) | | | | | | | | | |
|---|---------------|-------------|---------|--------------|---------|--------------|---------|---------------|---------|
| Ch BW | Radio Channel | 5G-NR: QPSK | | 5G-NR: 16QAM | | 5G-NR: 64QAM | | 5G-NR: 256QAM | |
| | | FCC | ISED | FCC | ISED | FCC | ISED | FCC | ISED |
| 5MHz | Low | | | | | | | 4M85G7W | 4M49G7W |
| | Mid | 4M86G7W | 4M47G7W | 4M84G7W | 4M50G7W | 4M84G7W | 4M47G7W | 4M85G7W | 4M48G7W |
| | High | | | | | | | 4M82G7W | 4M47G7W |
| 10MHz | Low | | | | | | | 9M99G7W | 9M34G7W |
| | Mid | 9M92G7W | 9M29G7W | 9M88G7W | 9M24G7W | 9M91G7W | 9M29G7W | 9M93G7W | 9M32G7W |
| | High | | | | | | | 9M94G7W | 9M30G7W |
| 15MHz | Low | | | | | | | 14M9G7W | 14M1G7W |
| | Mid | 14M9G7W | 14M1G7W | 14M9G7W | 14M2G7W | 14M9G7W | 14M1G7W | 14M9G7W | 14M1G7W |
| | High | | | | | | | 14M9G7W | 14M1G7W |
| 20MHz | Low | | | | | | | 20M0G7W | 18M9G7W |
| | Mid | 20M0G7W | 18M9G7W | 20M0G7W | 19M0G7W | 20M0G7W | 19M0G7W | 20M0G7W | 18M9G7W |
| | High | | | | | | | 20M0G7W | 18M9G7W |
| 30MHz | Low | | | | | | | 30M1G7W | 28M6G7W |
| | Mid | 30M0G7W | 28M6G7W | 30M0G7W | 28M5G7W | 30M1G7W | 28M6G7W | 30M1G7W | 28M6G7W |
| | High | | | | | | | 30M1G7W | 28M6G7W |

Note: FCC emission designators are based on 26dB emission bandwidth. ISED emission designators are based on 99% emission bandwidth.

| FCC and ISED Emission Designators for Band n66 (2110MHz to 2200MHz) | | | | | | | | | |
|---|---------------|-------------|---------|--------------|---------|--------------|---------|---------------|---------|
| Ch BW | Radio Channel | 5G-NR: QPSK | | 5G-NR: 16QAM | | 5G-NR: 64QAM | | 5G-NR: 256QAM | |
| | | FCC | ISED | FCC | ISED | FCC | ISED | FCC | ISED |
| 5MHz | Low | | | | | | | 4M84G7W | 4M48G7W |
| | Mid | 4M83G7W | 4M49G7W | 4M83G7W | 4M51G7W | 4M87G7W | 4M50G7W | 4M85G7W | 4M48G7W |
| | High | | | | | | | 4M84G7W | 4M48G7W |
| 10MHz | Low | | | | | | | 9M91G7W | 9M31G7W |
| | Mid | 9M92G7W | 9M30G7W | 9M86G7W | 9M24G7W | 9M92G7W | 9M30G7W | 9M92G7W | 9M31G7W |
| | High | | | | | | | 9M94G7W | 9M31G7W |
| 15MHz | Low | | | | | | | 14M9G7W | 14M1G7W |
| | Mid | 14M9G7W | 14M1G7W | 14M9G7W | 14M1G7W | 14M9G7W | 14M1G7W | 14M9G7W | 14M1G7W |
| | High | | | | | | | 14M9G7W | 14M1G7W |
| 20MHz | Low | | | | | | | 20M0G7W | 18M9G7W |
| | Mid | 20M0G7W | 18M9G7W | 20M0G7W | 19M0G7W | 20M0G7W | 19M0G7W | 20M0G7W | 18M9G7W |
| | High | | | | | | | 20M0G7W | 18M9G7W |
| 30MHz | Low | | | | | | | 30M1G7W | 28M6G7W |
| | Mid | 30M1G7W | 28M5G7W | 30M0G7W | 28M4G7W | 30M1G7W | 28M6G7W | 30M1G7W | 28M6G7W |
| | High | | | | | | | 30M0G7W | 28M6G7W |

Note: FCC emission designators are based on 26dB emission bandwidth. ISED emission designators are based on 99% emission bandwidth.

OCCUPIED BANDWIDTH



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| | | | | | |
|---|---------------|------------------------------|------------|-------|--------|
| EUT: AHFIL Remote Radio Head | | Work Order: NOKI0038 | | | |
| Serial Number: YK214000035 | | Date: 18-Mar-22 | | | |
| Customer: Nokia of America Corporation | | Temperature: 21.2 °C | | | |
| Attendees: Mitchell Hill | | Humidity: 28.9% RH | | | |
| Project: None | | Barometric Pres.: 1018 mbar | | | |
| Tested by: Brandon Hobbs | Power: 54 VDC | Job Site: TX06 | | | |
| TEST SPECIFICATIONS | | | | | |
| FCC 24E:2022 | | Test Method | | | |
| RSS-133 Issue 6:2013+A1:2018 | | ANSI C63.26:2015 | | | |
| | | RSS-133 Issue 6:2013+A1:2018 | | | |
| COMMENTS | | | | | |
| All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. Band n25 carriers are enabled at maximum power (80 watts/carrier). | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | |
| None | | | | | |
| Configuration # | 2 | Signature | | | |
| | | Value | Value | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | |

Band n25, 1930 MHz - 1995 MHz, 5G NR

Port 1

5 MHz Bandwidth

| | | | | | |
|--------------------|--------------------------|------|------|-------------|------|
| QPSK Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 4.47 | 4.86 | Within Band | Pass |
| 16-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 4.50 | 4.84 | Within Band | Pass |
| 64-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 4.47 | 4.84 | Within Band | Pass |
| 256-QAM Modulation | | | | | |
| | Low Channel, 1932.5 MHz | 4.49 | 4.85 | Within Band | Pass |
| | Mid Channel, 1962.5 MHz | 4.48 | 4.85 | Within Band | Pass |
| | High Channel, 1992.5 MHz | 4.47 | 4.82 | Within Band | Pass |

10 MHz Bandwidth

| | | | | | |
|--------------------|-------------------------|------|------|-------------|------|
| QPSK Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 9.29 | 9.92 | Within Band | Pass |
| 16-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 9.24 | 9.88 | Within Band | Pass |
| 64-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 9.29 | 9.91 | Within Band | Pass |
| 256-QAM Modulation | | | | | |
| | Low Channel, 1935 MHz | 9.34 | 9.99 | Within Band | Pass |
| | Mid Channel, 1962.5 MHz | 9.32 | 9.93 | Within Band | Pass |
| | High Channel, 1990 MHz | 9.30 | 9.94 | Within Band | Pass |

15 MHz Bandwidth

| | | | | | |
|--------------------|--------------------------|------|------|-------------|------|
| QPSK Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 14.1 | 14.9 | Within Band | Pass |
| 16-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 14.2 | 14.9 | Within Band | Pass |
| 64-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 14.1 | 14.9 | Within Band | Pass |
| 256-QAM Modulation | | | | | |
| | Low Channel, 1937.5 MHz | 14.1 | 14.9 | Within Band | Pass |
| | Mid Channel, 1962.5 MHz | 14.1 | 14.9 | Within Band | Pass |
| | High Channel, 1987.5 MHz | 14.1 | 14.9 | Within Band | Pass |

20 MHz Bandwidth

| | | | | | |
|--------------------|-------------------------|------|------|-------------|------|
| QPSK Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 18.9 | 20.0 | Within Band | Pass |
| 16-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 19.0 | 20.0 | Within Band | Pass |
| 64-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 19.0 | 20.0 | Within Band | Pass |
| 256-QAM Modulation | | | | | |
| | Low Channel, 1940 MHz | 18.9 | 20.0 | Within Band | Pass |
| | Mid Channel, 1962.5 MHz | 18.9 | 20.0 | Within Band | Pass |
| | High Channel, 1985 MHz | 18.9 | 20.0 | Within Band | Pass |

30 MHz Bandwidth

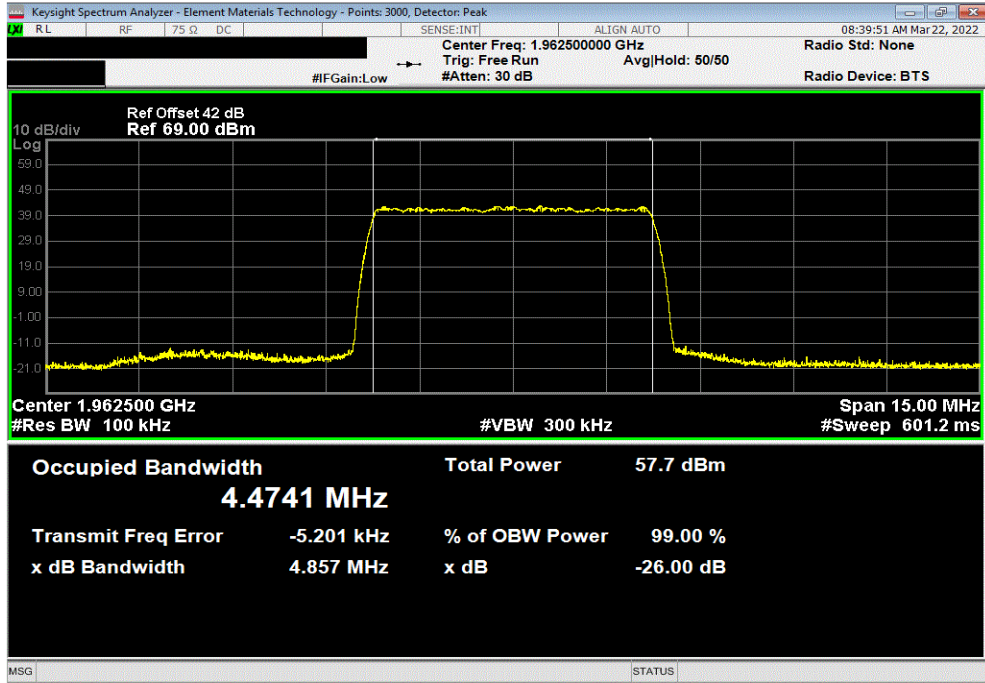
| | | | | | |
|--------------------|-------------------------|------|------|-------------|------|
| QPSK Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 28.6 | 30.0 | Within Band | Pass |
| 16-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 28.5 | 30.0 | Within Band | Pass |
| 64-QAM Modulation | | | | | |
| | Mid Channel, 1962.5 MHz | 28.6 | 30.1 | Within Band | Pass |
| 256-QAM Modulation | | | | | |
| | Low Channel, 1945 MHz | 28.6 | 30.1 | Within Band | Pass |
| | Mid Channel, 1962.5 MHz | 28.6 | 30.1 | Within Band | Pass |
| | High Channel, 1980 MHz | 28.6 | 30.1 | Within Band | Pass |

OCCUPIED BANDWIDTH

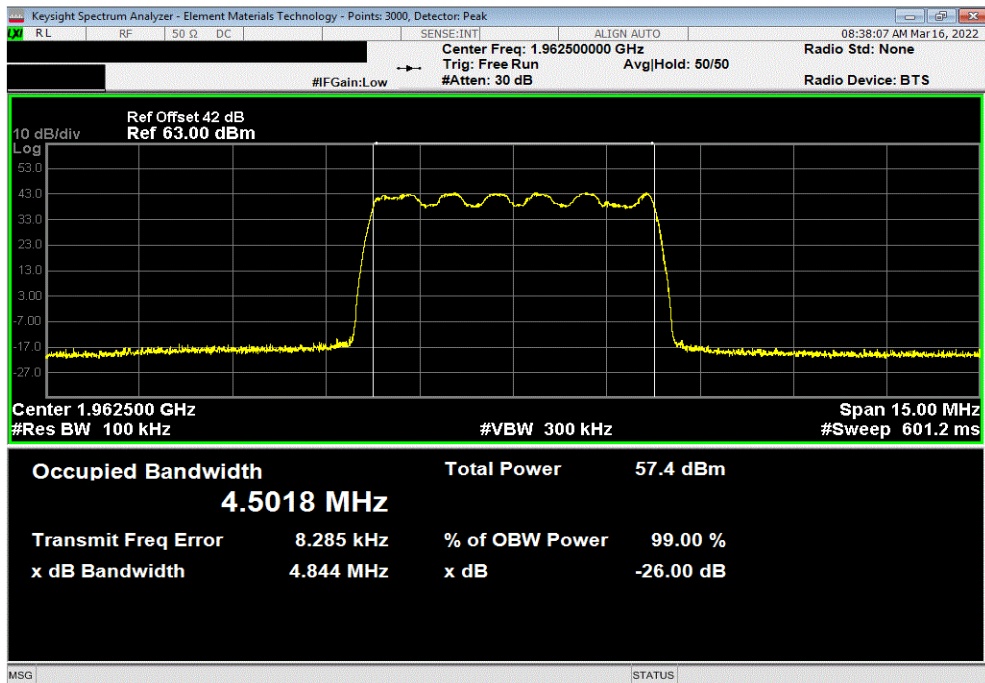


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| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.474 | 4.857 | | | Within Band | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.502 | 4.844 | | | Within Band | Pass |

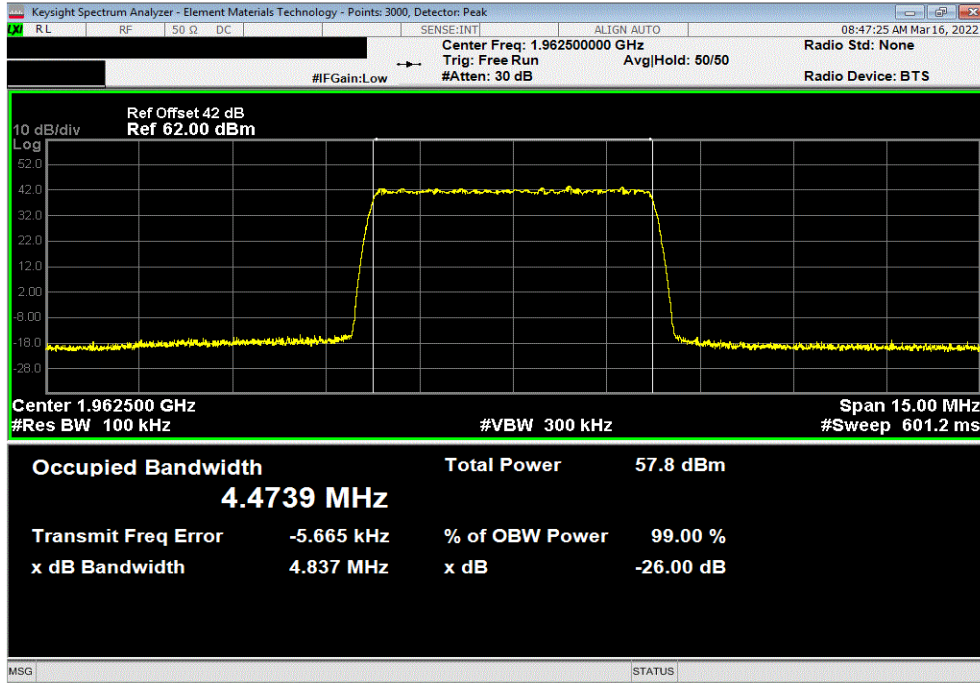


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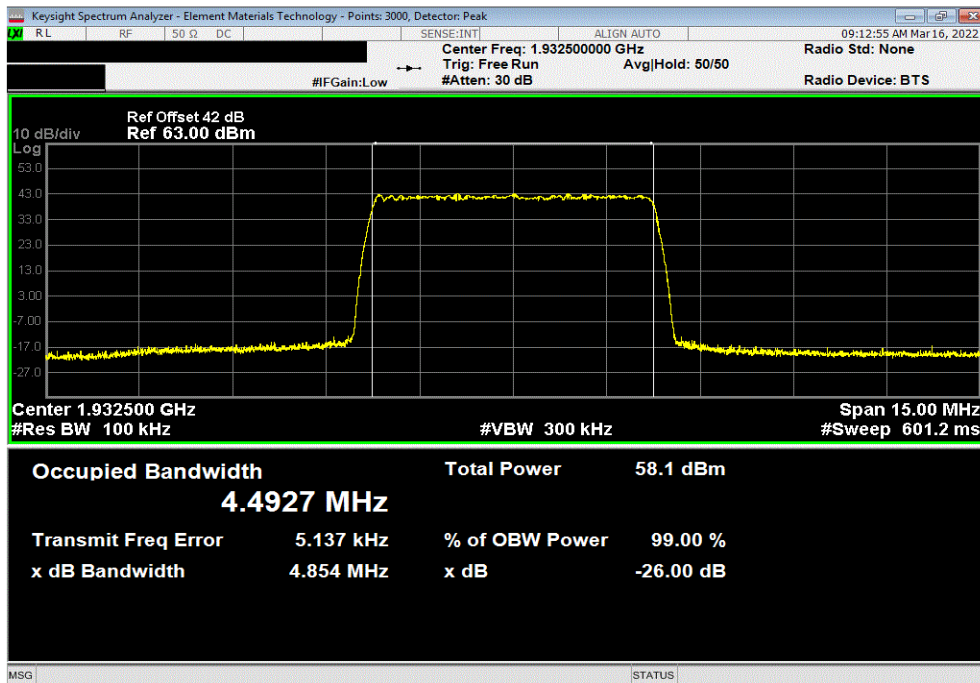


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.474 | 4.837 | | | Within Band | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1932.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.493 | 4.854 | | | Within Band | Pass |

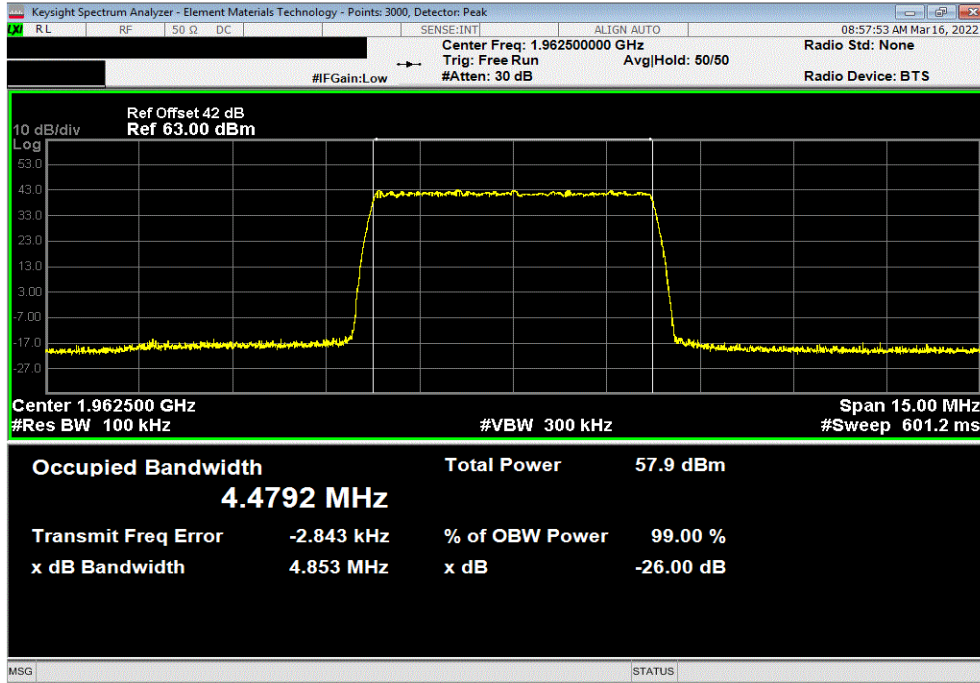


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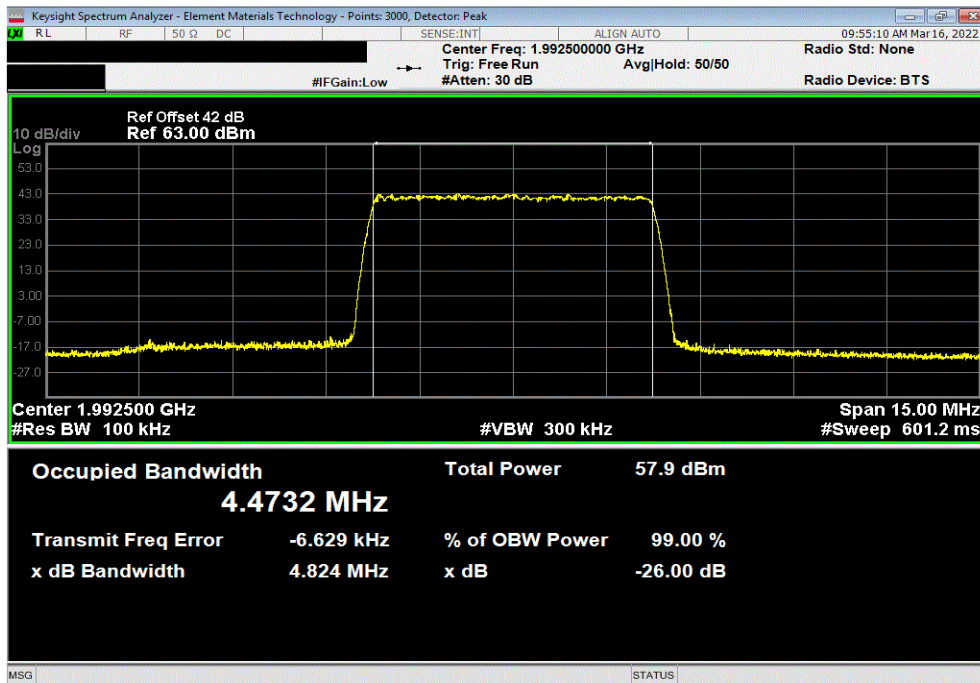


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.479 | 4.853 | | | Within Band | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, High Channel, 1992.5 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.473 | 4.824 | | | Within Band | Pass |

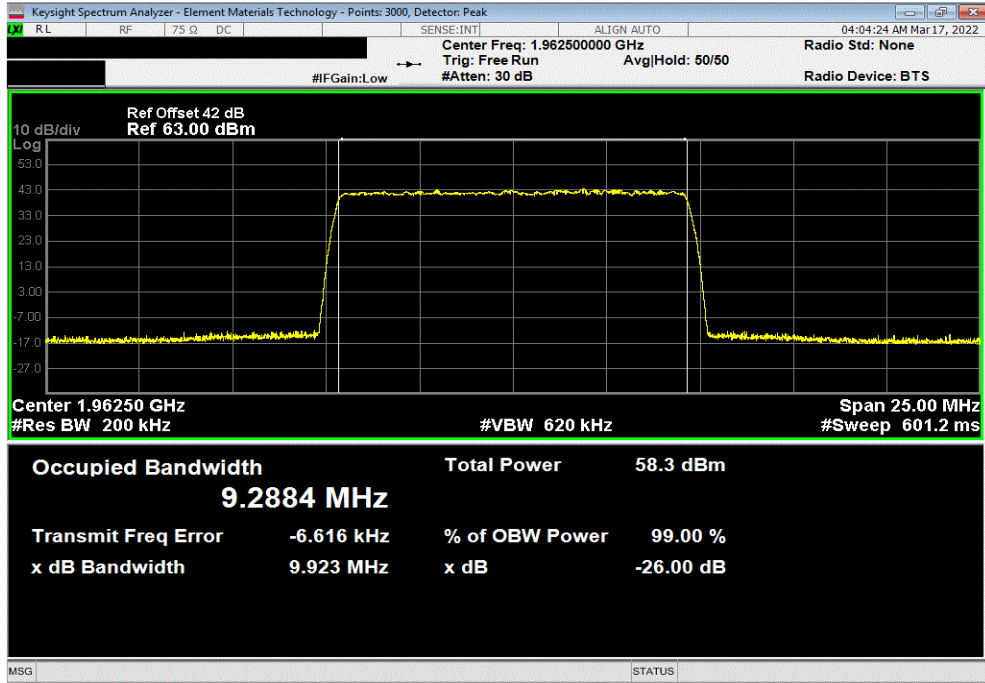


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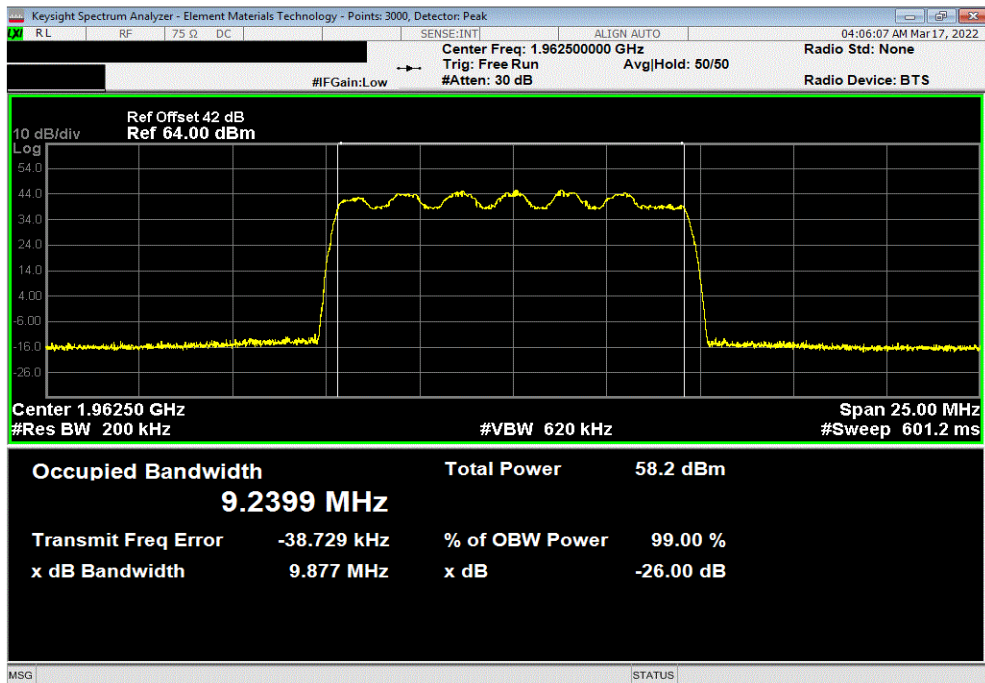


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| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 9.288 | 9.923 | | | Within Band | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 9.24 | 9.877 | | | Within Band | Pass |

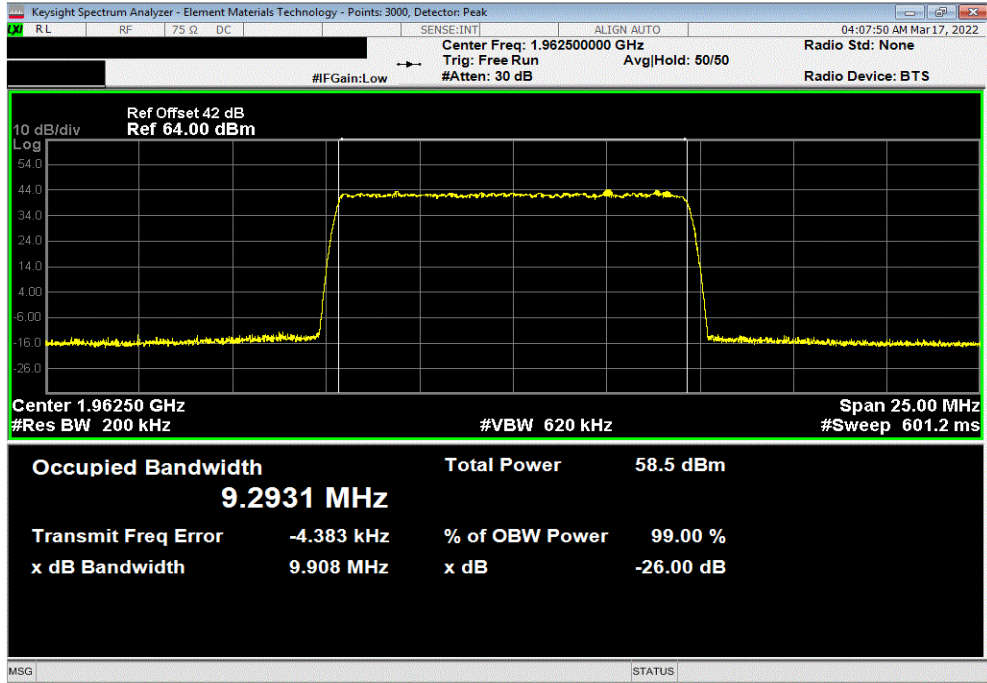


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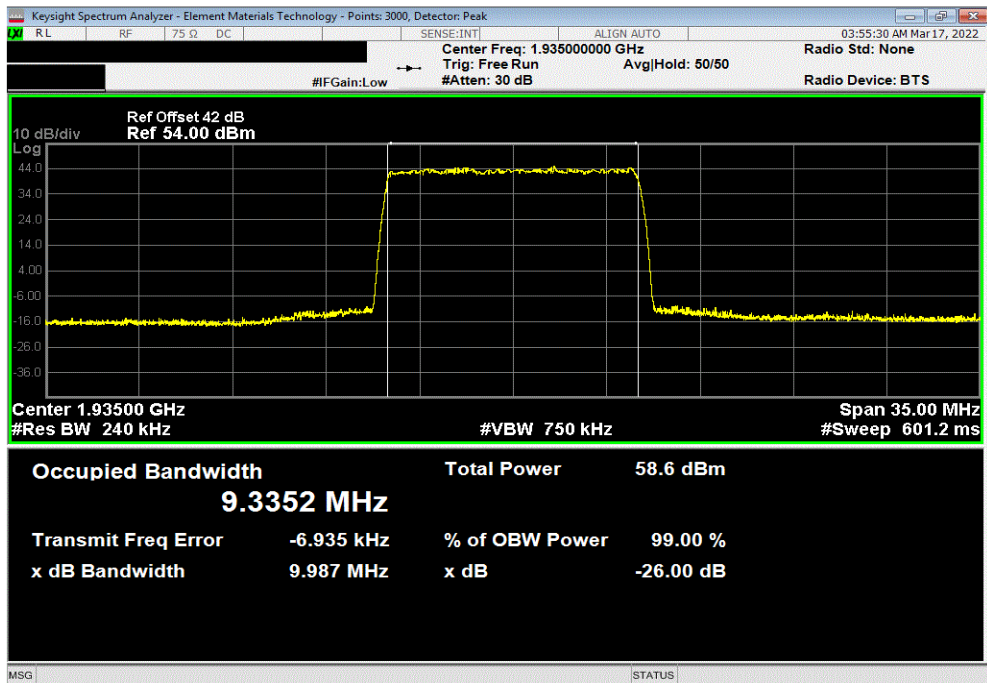


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| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.293 | 9.908 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1935 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.335 | 9.987 | Within Band | Pass | | |

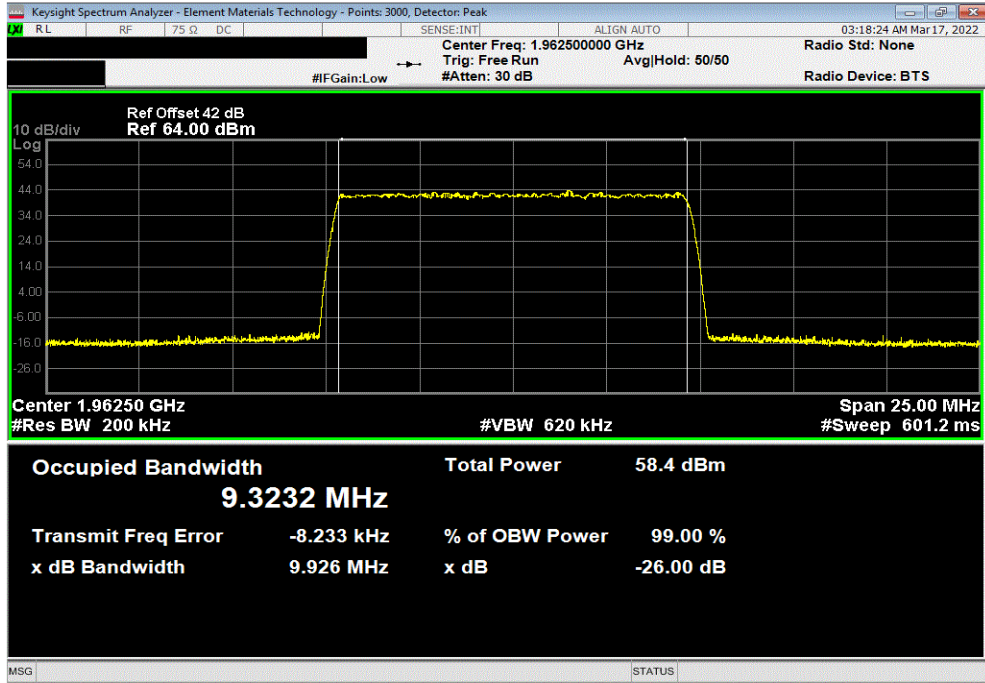


OCCUPIED BANDWIDTH

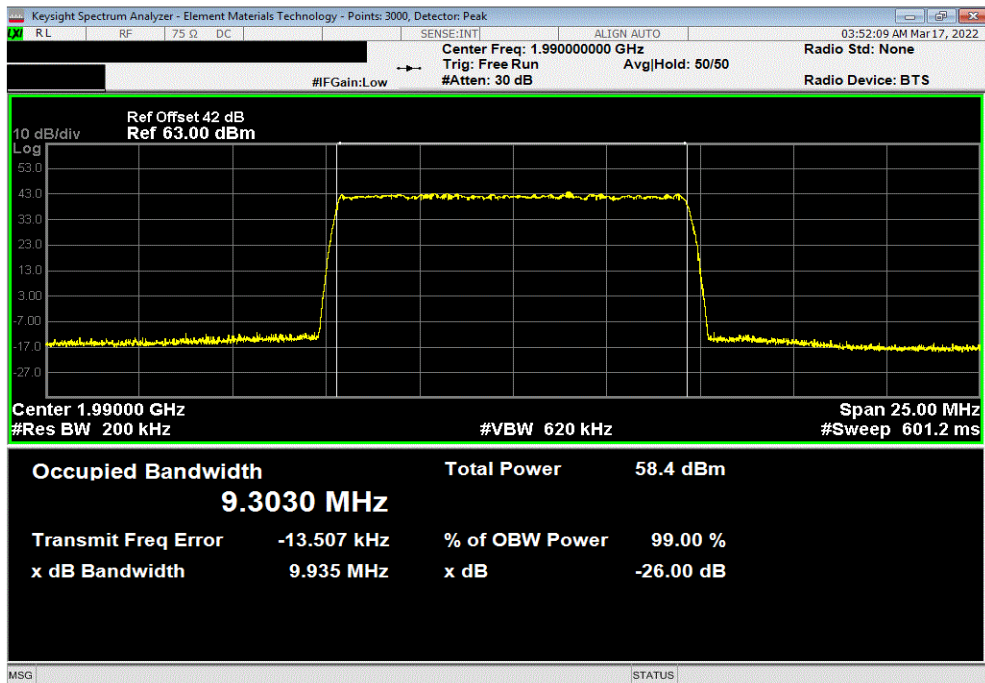


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 9.323 | 9.926 | Within Band | Pass | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, High Channel, 1990 MHz | | | | | | | |
|--|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 9.303 | 9.935 | Within Band | Pass | |

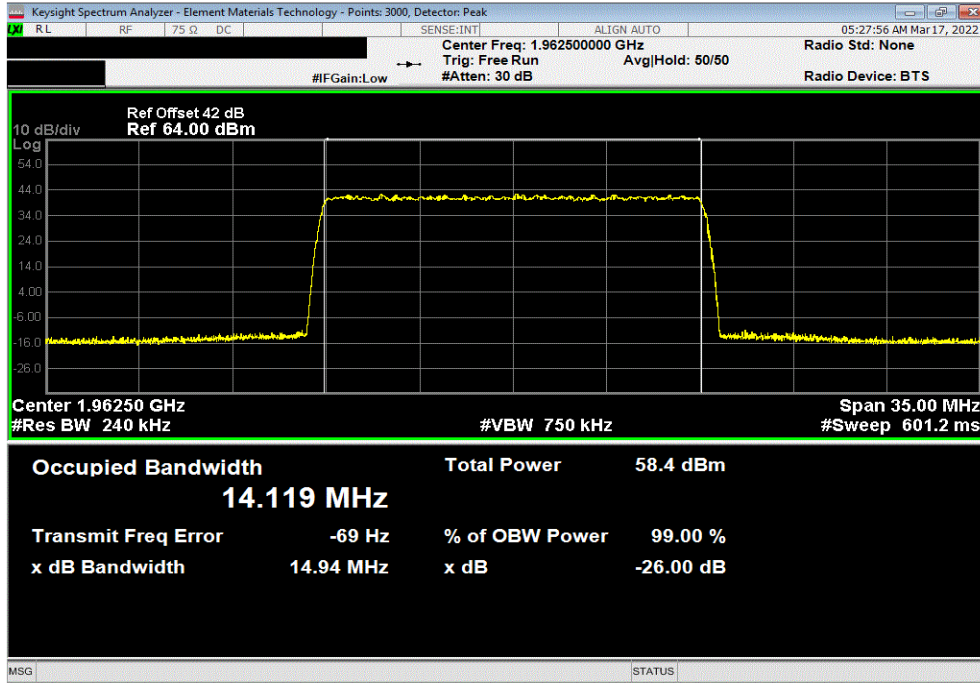


OCCUPIED BANDWIDTH

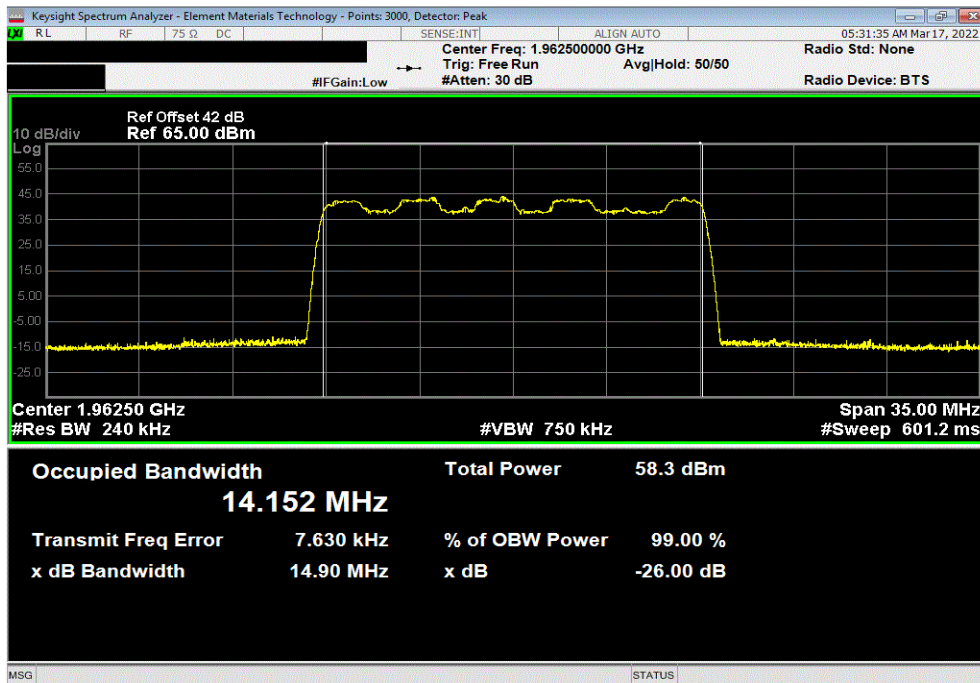


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|-------------|--------|--|--|
| | | Value | Value | Limit | Result | | |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 14.119 | 14.935 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|-------------|--------|--|--|
| | | Value | Value | Limit | Result | | |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 14.152 | 14.896 | Within Band | Pass | | |

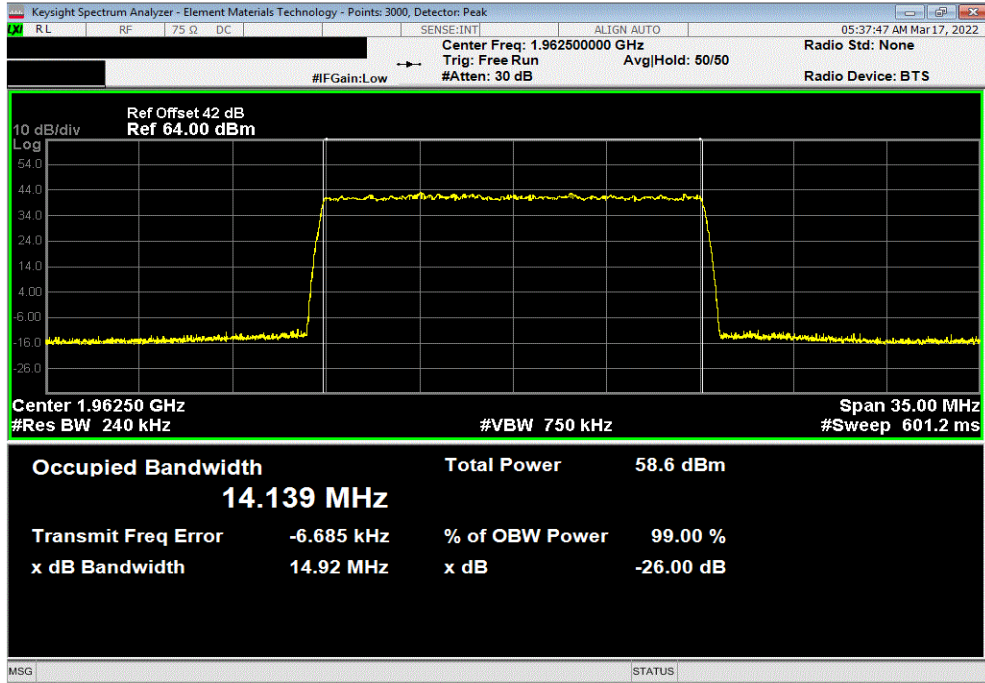


OCCUPIED BANDWIDTH

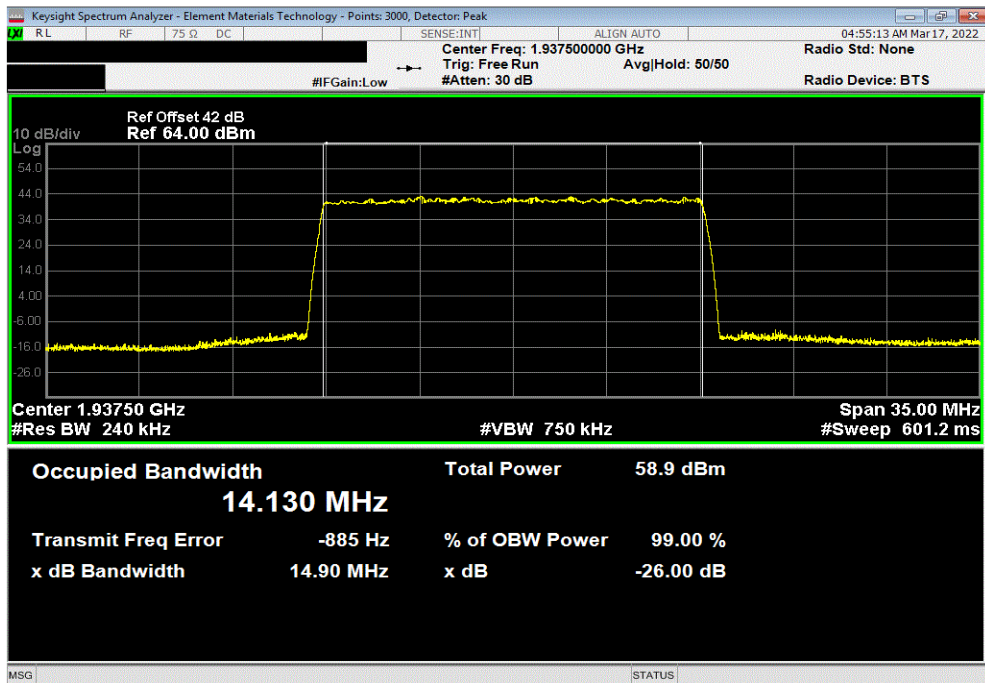


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.139 | 14.915 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1937.5 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.13 | 14.902 | Within Band | Pass | | |

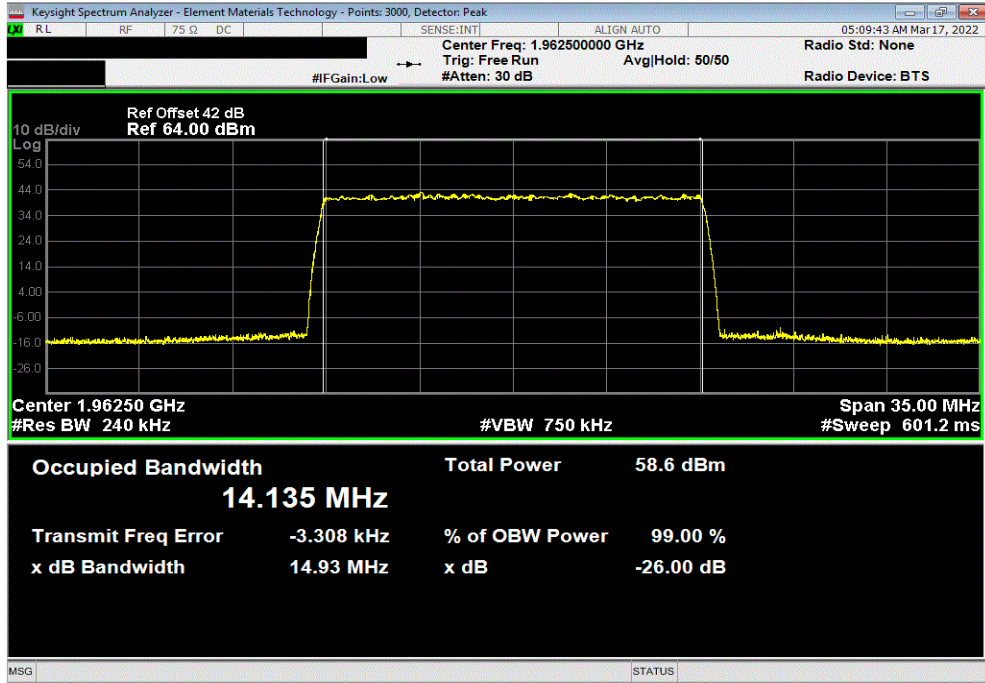


OCCUPIED BANDWIDTH

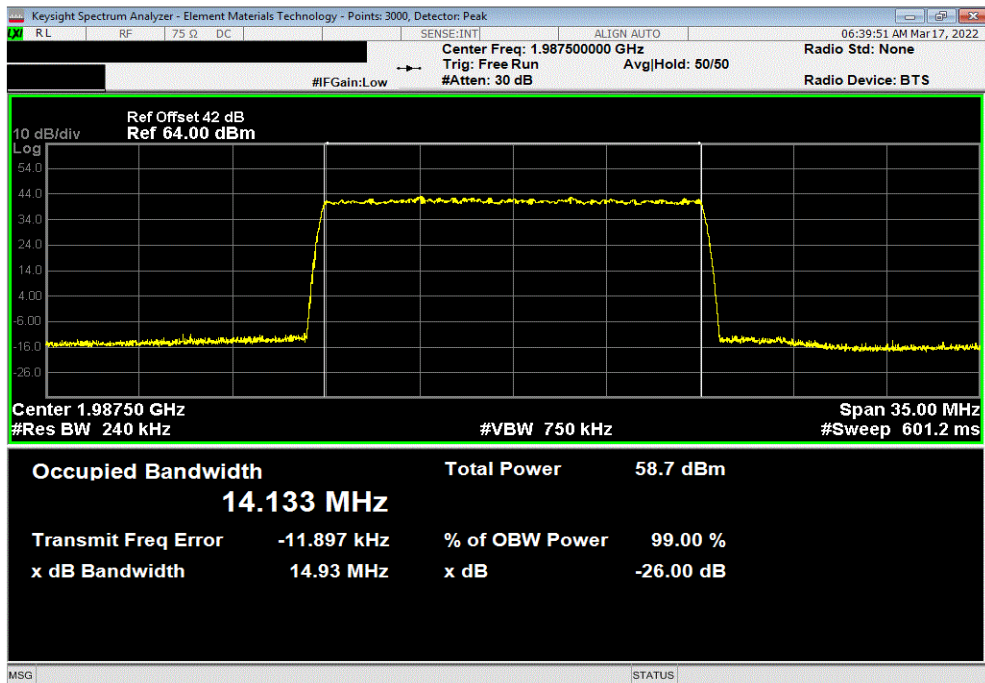


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|--|-----------|------------|-------------|--|--------|
| | | | Value | Value | | | |
| | | | 99% (MHz) | 26dB (MHz) | Limit | | Result |
| | | | 14.135 | 14.926 | Within Band | | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, High Channel, 1987.5 MHz | | | | | | | |
|--|--|--|-----------|------------|-------------|--|--------|
| | | | Value | Value | | | |
| | | | 99% (MHz) | 26dB (MHz) | Limit | | Result |
| | | | 14.133 | 14.929 | Within Band | | Pass |

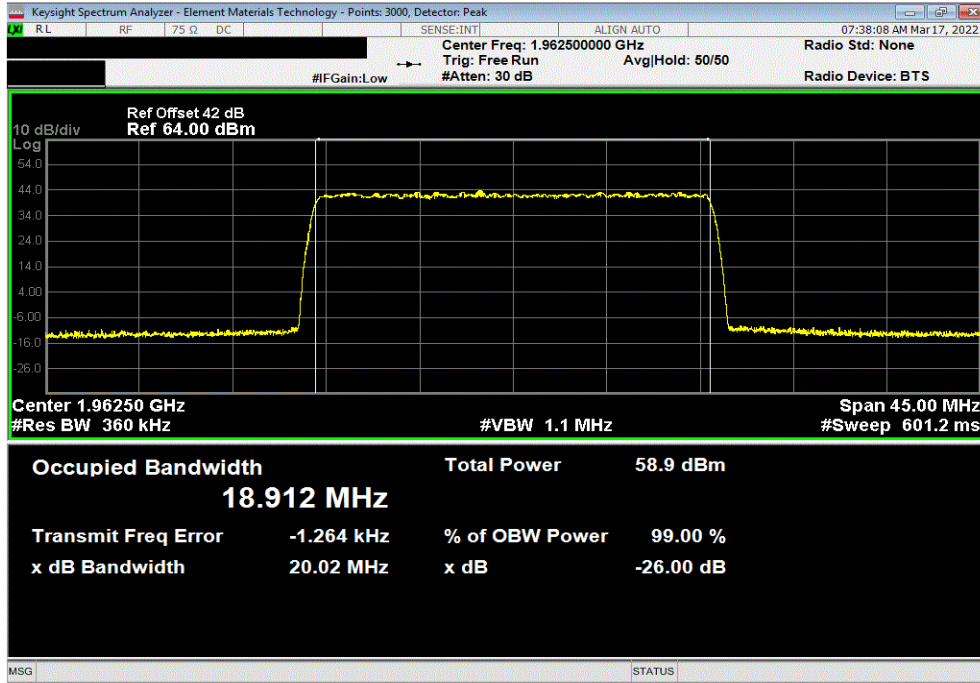


OCCUPIED BANDWIDTH

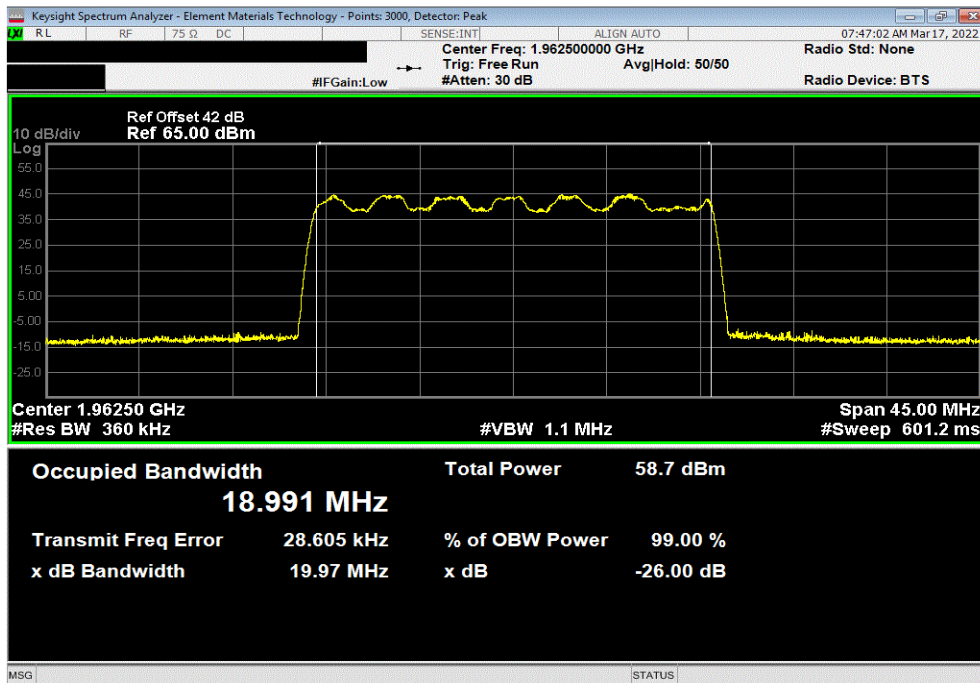


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 18.912 | 20.016 | | | Within Band | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 18.991 | 19.966 | | | Within Band | Pass |

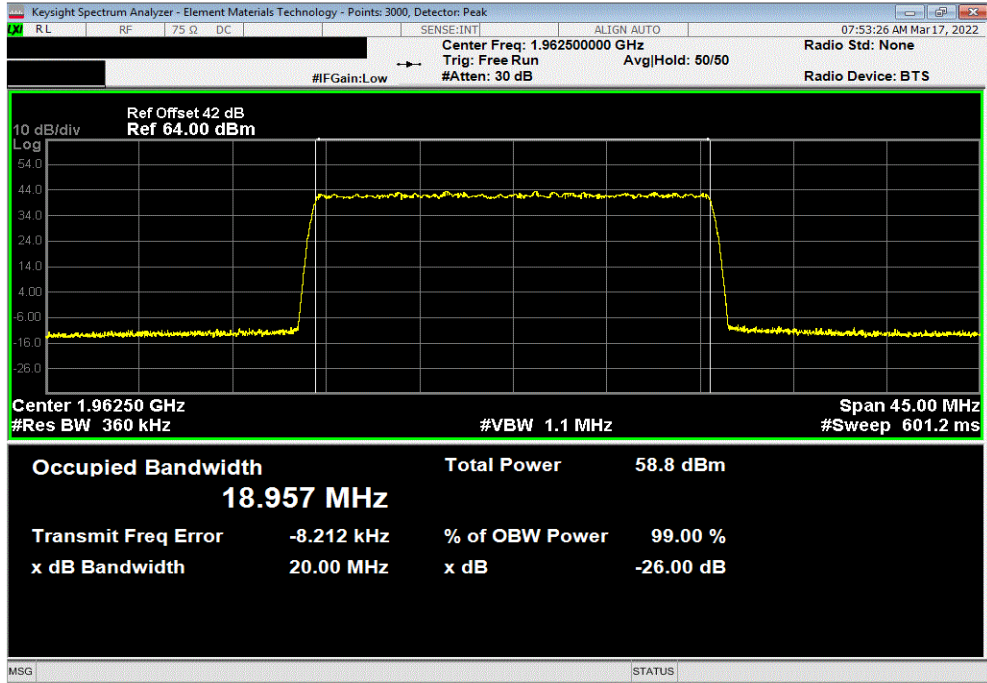


OCCUPIED BANDWIDTH

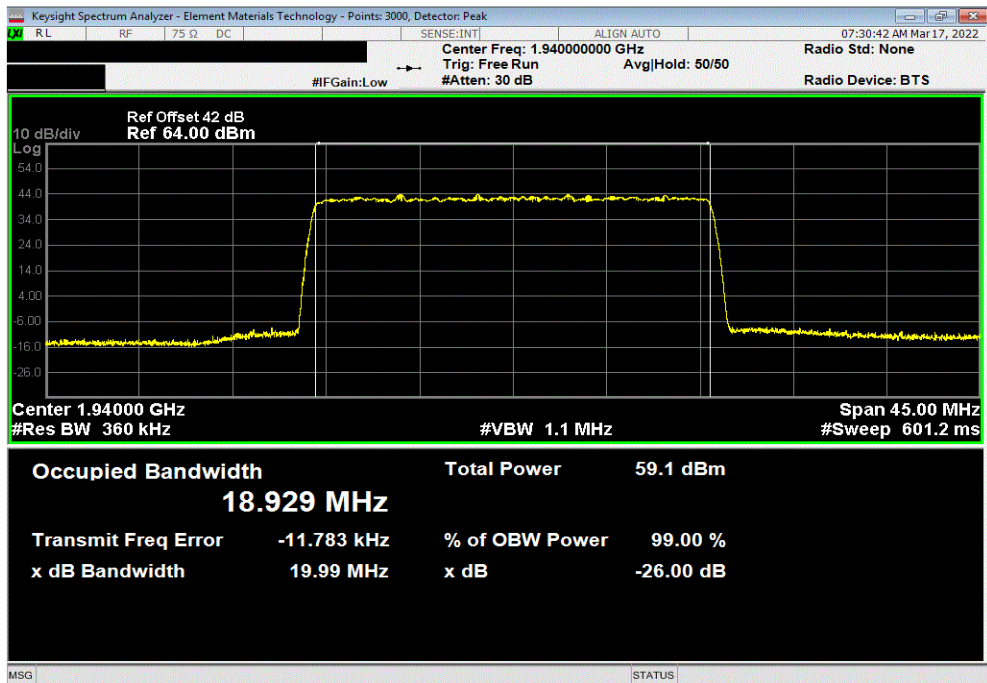


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|--|--|--|-----------|------------|-------------|--|--------|
| | | | Value | Value | | | |
| | | | 99% (MHz) | 26dB (MHz) | Limit | | Result |
| | | | 18.957 | 20.005 | Within Band | | Pass |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1940 MHz | | | | | | | |
|---|--|--|-----------|------------|-------------|--|--------|
| | | | Value | Value | | | |
| | | | 99% (MHz) | 26dB (MHz) | Limit | | Result |
| | | | 18.929 | 19.995 | Within Band | | Pass |

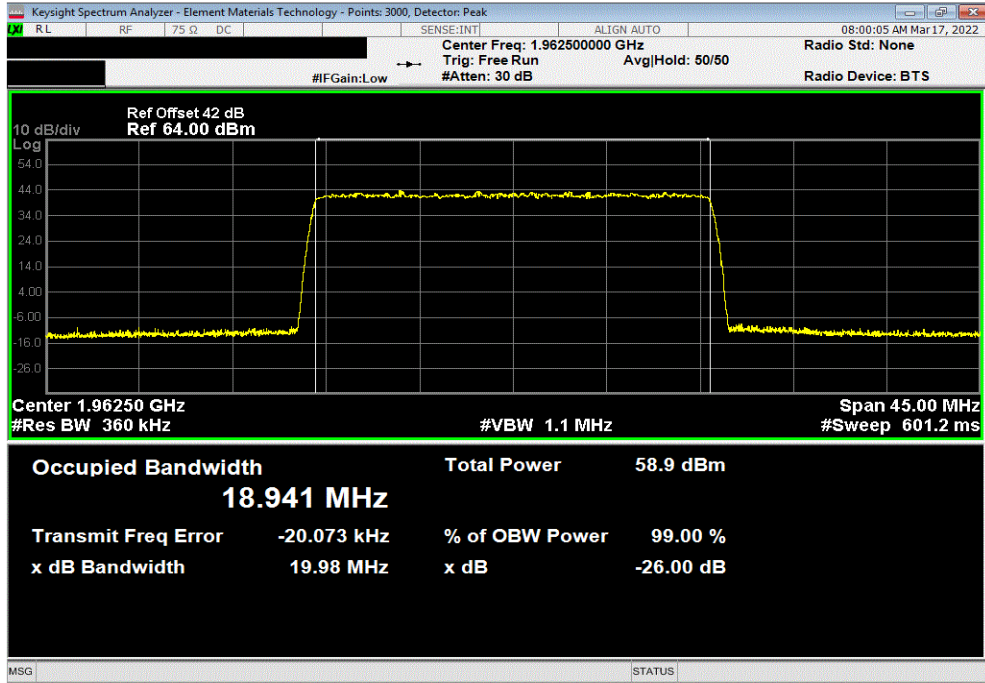


OCCUPIED BANDWIDTH

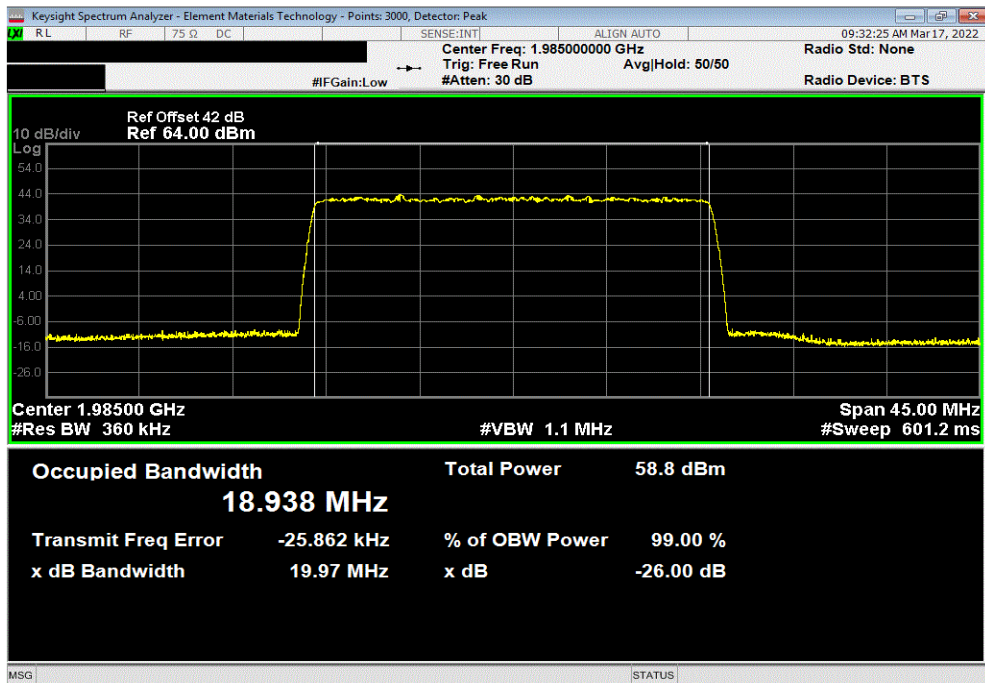


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.941 | 19.984 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, High Channel, 1985 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.938 | 19.965 | Within Band | Pass | | |

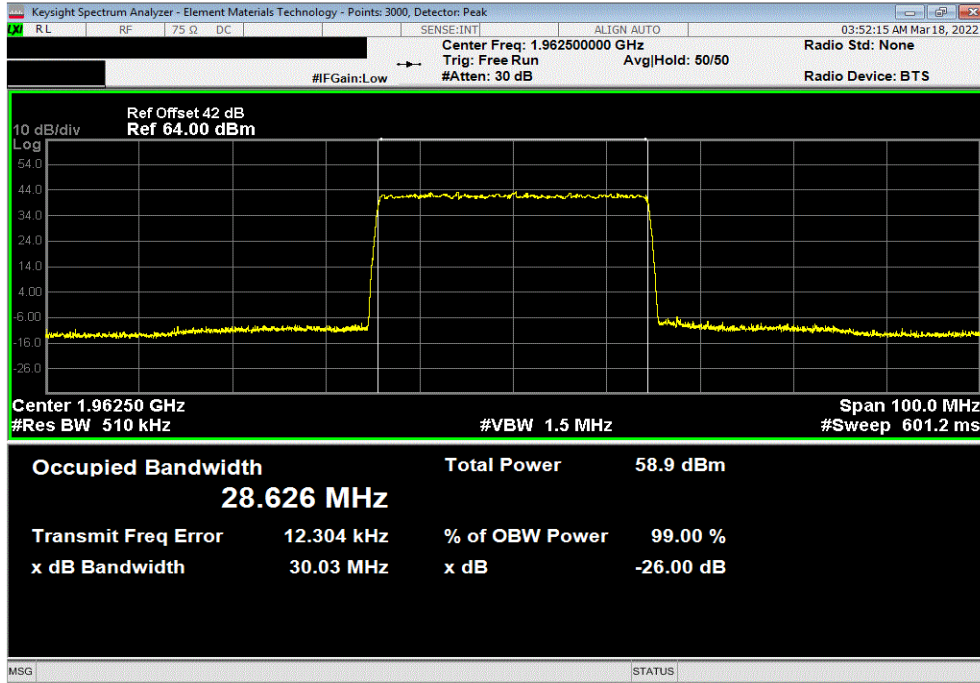


OCCUPIED BANDWIDTH

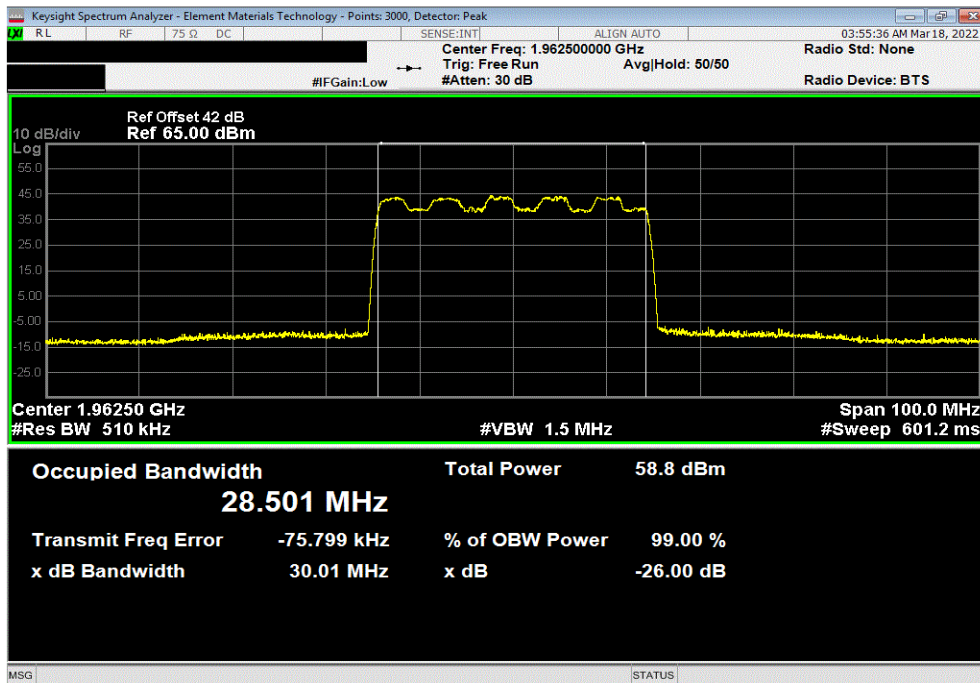


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, QPSK Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.626 | 30.03 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.501 | 30.014 | Within Band | Pass | | |

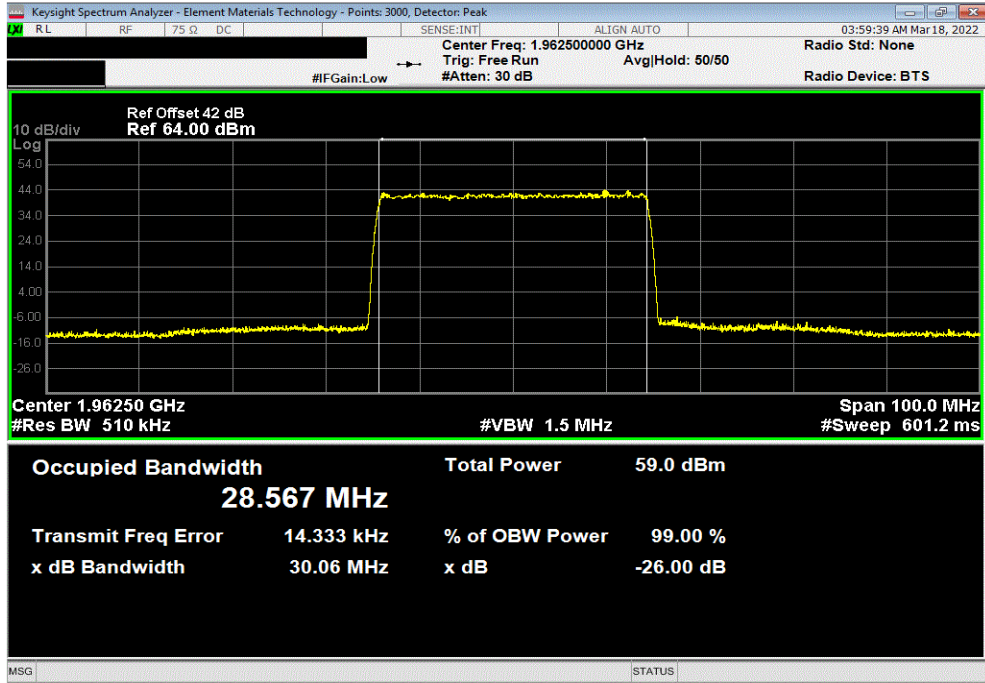


OCCUPIED BANDWIDTH

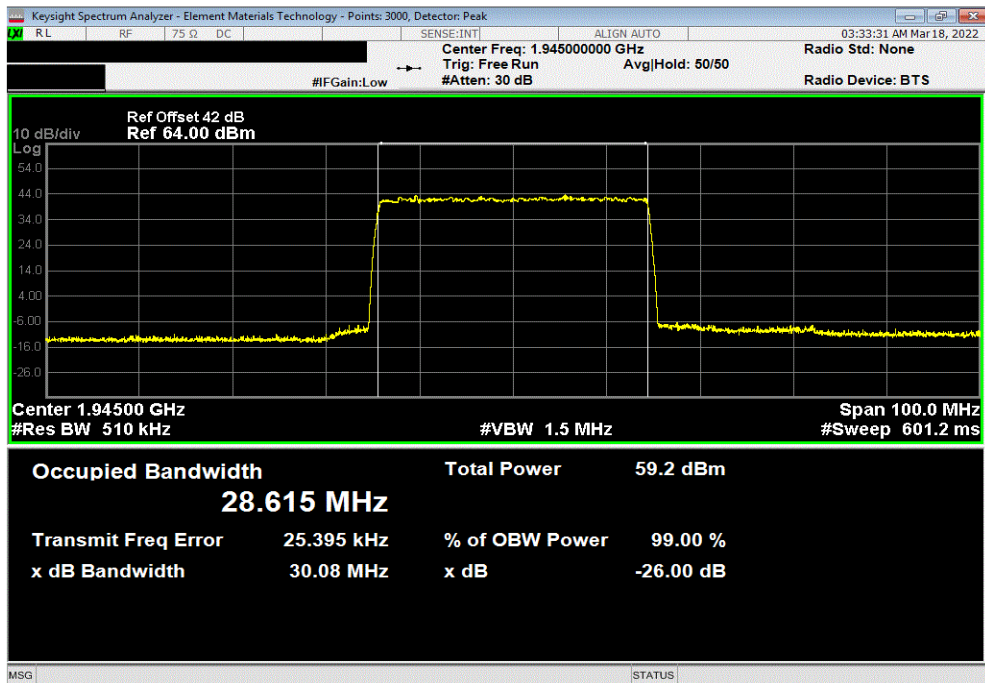


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.567 | 30.06 | Within Band | Pass | | |



| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel, 1945 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.615 | 30.081 | Within Band | Pass | | |

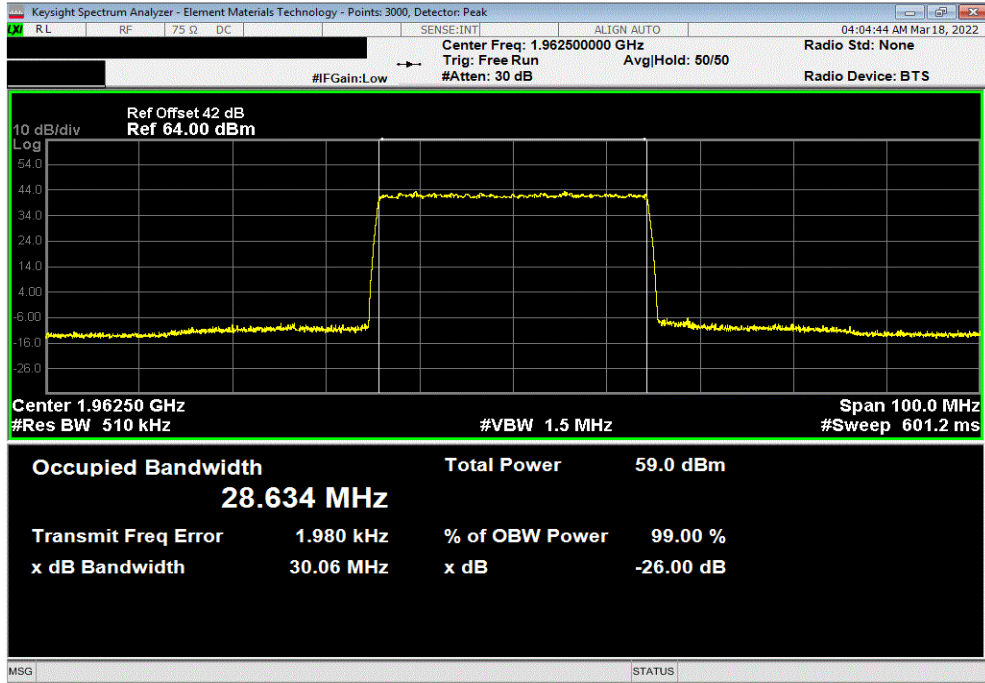


OCCUPIED BANDWIDTH

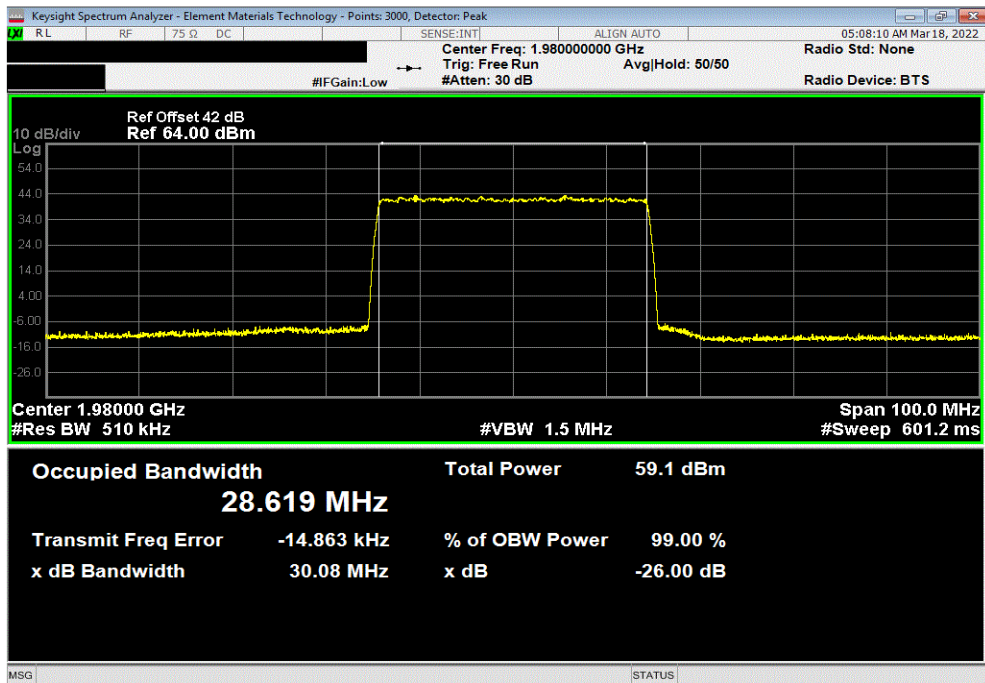


TbTx 2021.12.14.1 XMI 2022.02.07.0

| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 1962.5 MHz | | | | | | | |
|---|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 28.634 | 30.061 | Within Band | Pass | |




| Band n25, 1930 MHz - 1995 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, High Channel, 1980 MHz | | | | | | | |
|--|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 28.619 | 30.081 | Within Band | Pass | |



OCCUPIED BANDWIDTH



TM12 2022.03.14.0 XMI 2022.02.07.0

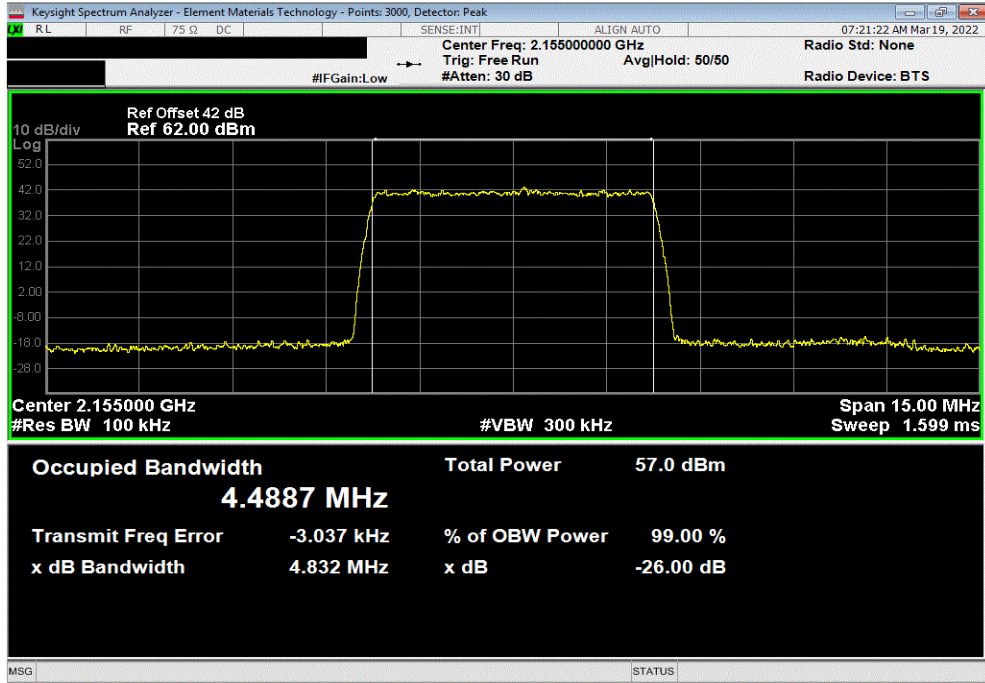
| | | | |
|---|--------------------------|---|------------|
| EUT: AHFII Remote Radio Head | | Work Order: NOKI0038 | |
| Serial Number: YK214000035 | | Date: 19-Mar-22 | |
| Customer: Nokia of America Corporation | | Temperature: 20.7 °C | |
| Attendees: Mitchell Hill | | Humidity: 26.9% RH | |
| Project: None | | Barometric Pres.: 1021 mbar | |
| Tested by: Brandon Hobbs | | Power: 54 VDC | |
| | | Job Site: TX06 | |
| TEST SPECIFICATIONS | | Test Method | |
| FCC 27:2022 | | ANSI C63.26:2015 | |
| RSS-139 Issue 3:2015, RSS-170 Issue 3:2015 | | RSS-139 Issue 3:2015, RSS-170 Issue 3:2015 | |
| COMMENTS | | | |
| All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. Band n66 carriers are enabled at maximum power (80 watts/carrier). | | | |
| DEVIATIONS FROM TEST STANDARD | | | |
| None | | | |
| Configuration # | 2 | Signature  | |
| | | Value | Value |
| | | 99% (MHz) | 26dB (MHz) |
| | | Limit | Result |
| Band n66, 2110 MHz - 2200 MHz, 5G NR | | | |
| Port 1 | | | |
| 5 MHz Bandwidth | | | |
| QPSK Modulation | | | |
| | Mid Channel, 2155 MHz | 4.49 | 4.83 |
| | Within Band | | Pass |
| 16-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 4.51 | 4.83 |
| | Within Band | | Pass |
| 64-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 4.50 | 4.87 |
| | Within Band | | Pass |
| 256-QAM Modulation | | | |
| | Low Channel, 2112.5 MHz | 4.48 | 4.84 |
| | Mid Channel, 2155 MHz | 4.48 | 4.85 |
| | High Channel, 2197.5 MHz | 4.48 | 4.84 |
| | Within Band | | Pass |
| 10 MHz Bandwidth | | | |
| QPSK Modulation | | | |
| | Mid Channel, 2155 MHz | 9.30 | 9.92 |
| | Within Band | | Pass |
| 16-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 9.24 | 9.86 |
| | Within Band | | Pass |
| 64-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 9.30 | 9.92 |
| | Within Band | | Pass |
| 256-QAM Modulation | | | |
| | Low Channel, 2115 MHz | 9.31 | 9.91 |
| | Mid Channel, 2155 MHz | 9.31 | 9.92 |
| | High Channel, 2195 MHz | 9.31 | 9.94 |
| | Within Band | | Pass |
| 15 MHz Bandwidth | | | |
| QPSK Modulation | | | |
| | Mid Channel, 2155 MHz | 14.1 | 14.9 |
| | Within Band | | Pass |
| 16-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 14.1 | 14.9 |
| | Within Band | | Pass |
| 64-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 14.1 | 14.9 |
| | Within Band | | Pass |
| 256-QAM Modulation | | | |
| | Low Channel, 2117.5 MHz | 14.1 | 14.9 |
| | Mid Channel, 2155 MHz | 14.1 | 14.9 |
| | High Channel, 2192.5 MHz | 14.1 | 14.9 |
| | Within Band | | Pass |
| 20 MHz Bandwidth | | | |
| QPSK Modulation | | | |
| | Mid Channel, 2155 MHz | 18.9 | 20.0 |
| | Within Band | | Pass |
| 16-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 19.0 | 20.0 |
| | Within Band | | Pass |
| 64-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 19.0 | 20.0 |
| | Within Band | | Pass |
| 256-QAM Modulation | | | |
| | Low Channel, 2120 MHz | 18.9 | 20.0 |
| | Mid Channel, 2155 MHz | 18.9 | 20.0 |
| | High Channel, 2190 MHz | 18.9 | 20.0 |
| | Within Band | | Pass |
| 30 MHz Bandwidth | | | |
| QPSK Modulation | | | |
| | Mid Channel, 2155 MHz | 28.5 | 30.1 |
| | Within Band | | Pass |
| 16-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 28.4 | 30.0 |
| | Within Band | | Pass |
| 64-QAM Modulation | | | |
| | Mid Channel, 2155 MHz | 28.6 | 30.1 |
| | Within Band | | Pass |
| 256-QAM Modulation | | | |
| | Low Channel, 2125 MHz | 28.6 | 30.1 |
| | Mid Channel, 2155 MHz | 28.6 | 30.1 |
| | High Channel, 2185 MHz | 28.6 | 30.0 |
| | Within Band | | Pass |

OCCUPIED BANDWIDTH

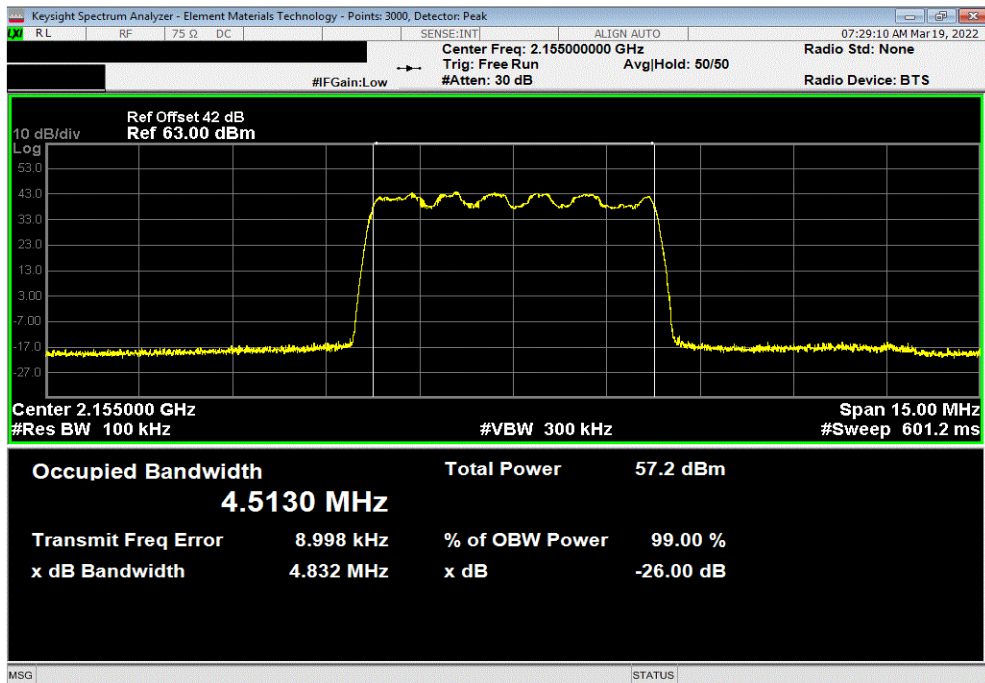


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 4.489 | 4.832 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 4.513 | 4.832 | Within Band | Pass | | |

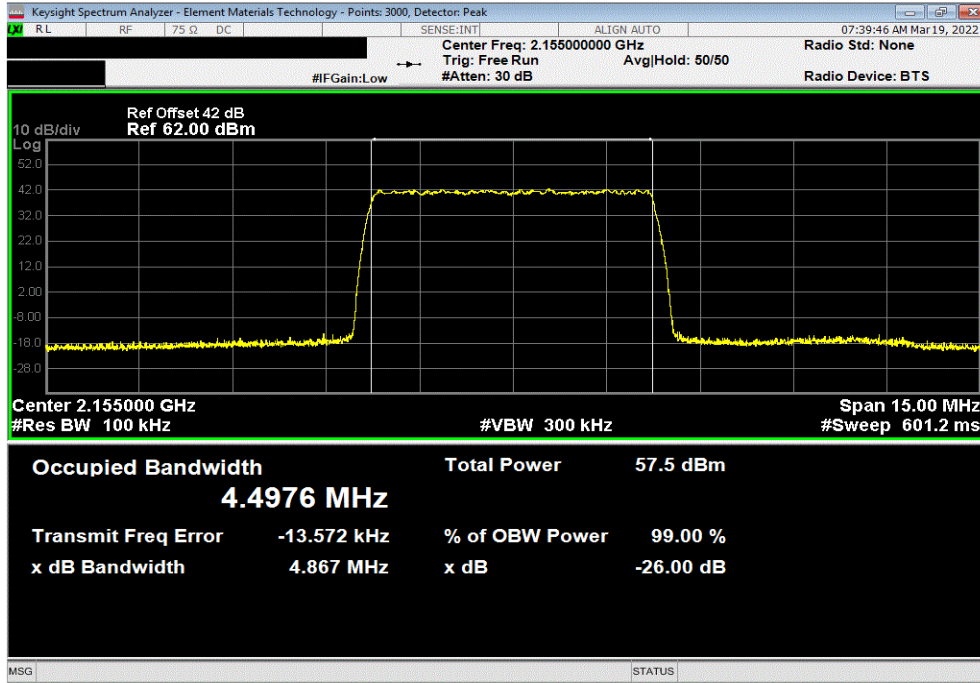


OCCUPIED BANDWIDTH

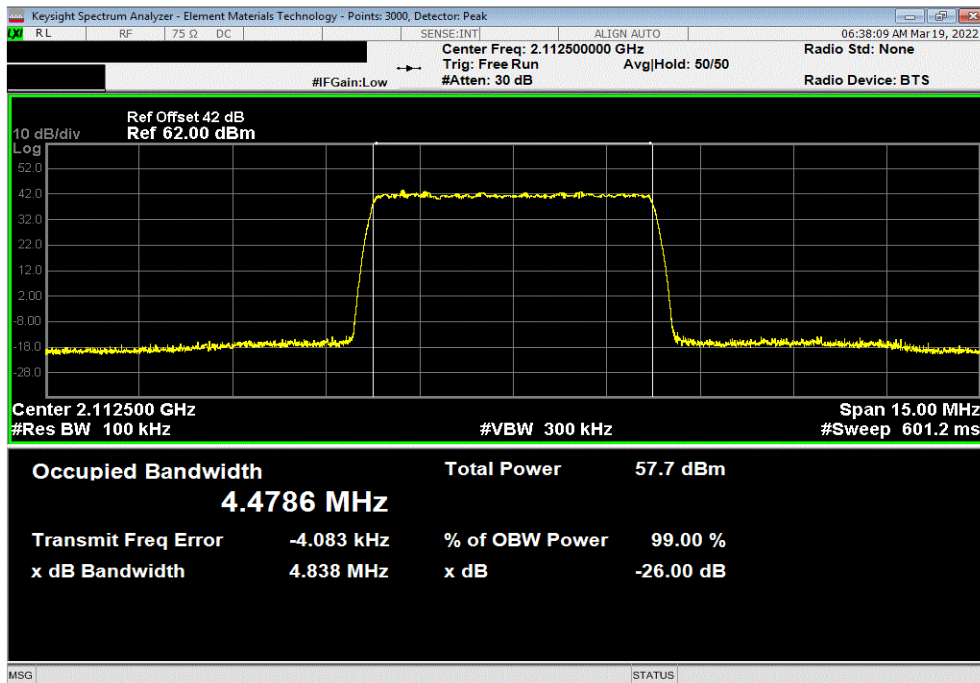


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.498 | 4.867 | | | Within Band | Pass |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2112.5 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.479 | 4.838 | | | Within Band | Pass |

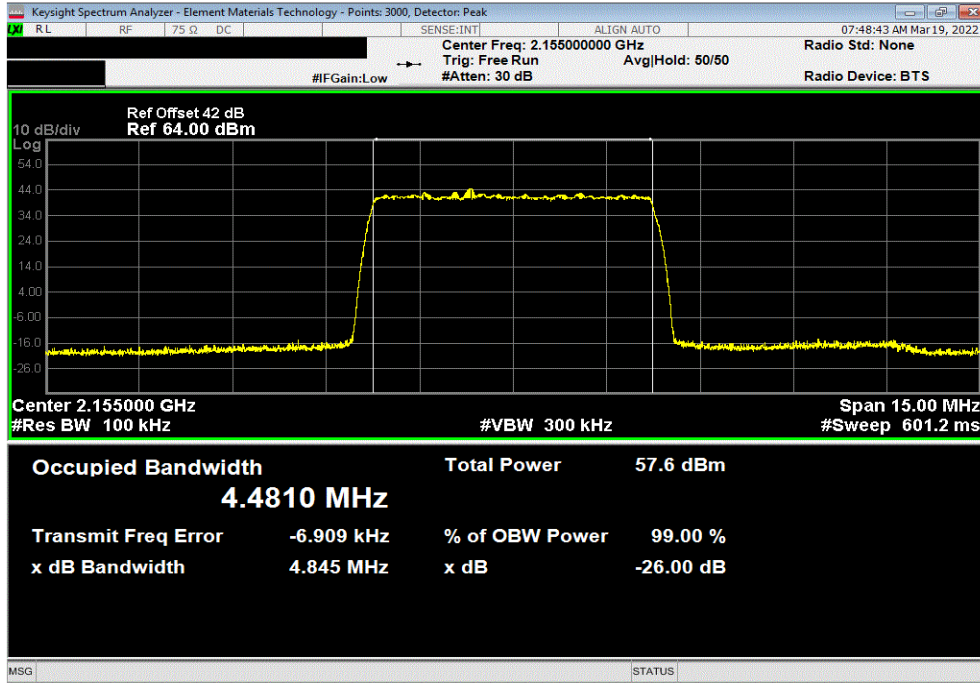


OCCUPIED BANDWIDTH

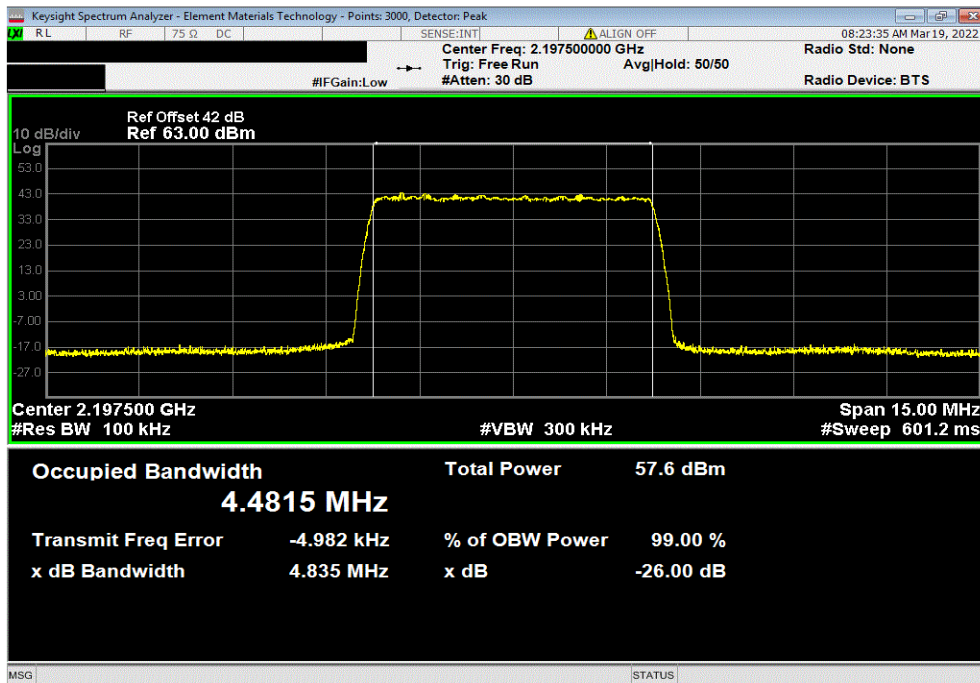


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz | | | | | | | |
|--|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.481 | 4.845 | | | Within Band | Pass |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, High Channel, 2197.5 MHz | | | | | | | |
|---|--|-----------|------------|--|--|-------------|--------|
| | | Value | Value | | | Limit | Result |
| | | 99% (MHz) | 26dB (MHz) | | | | |
| | | 4.482 | 4.835 | | | Within Band | Pass |

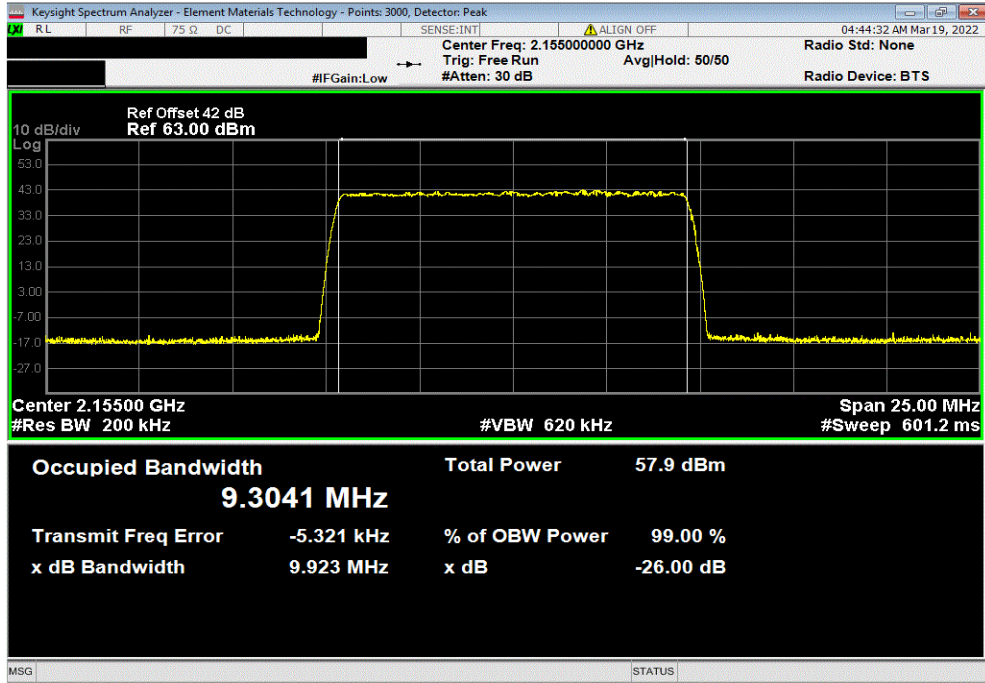


OCCUPIED BANDWIDTH

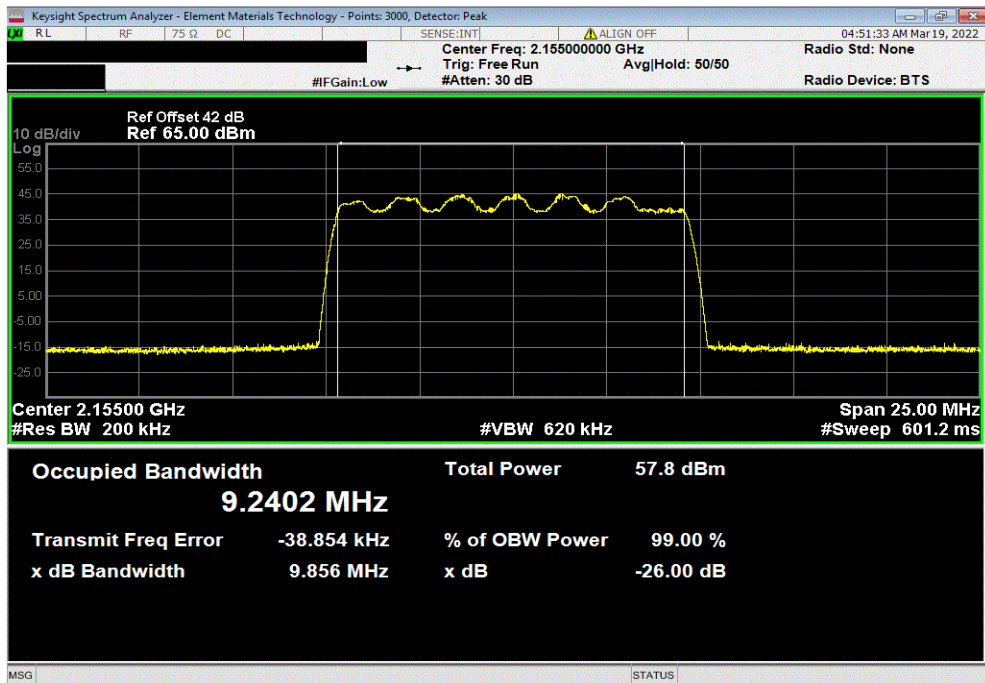


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.304 | 9.923 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.24 | 9.856 | Within Band | Pass | | |

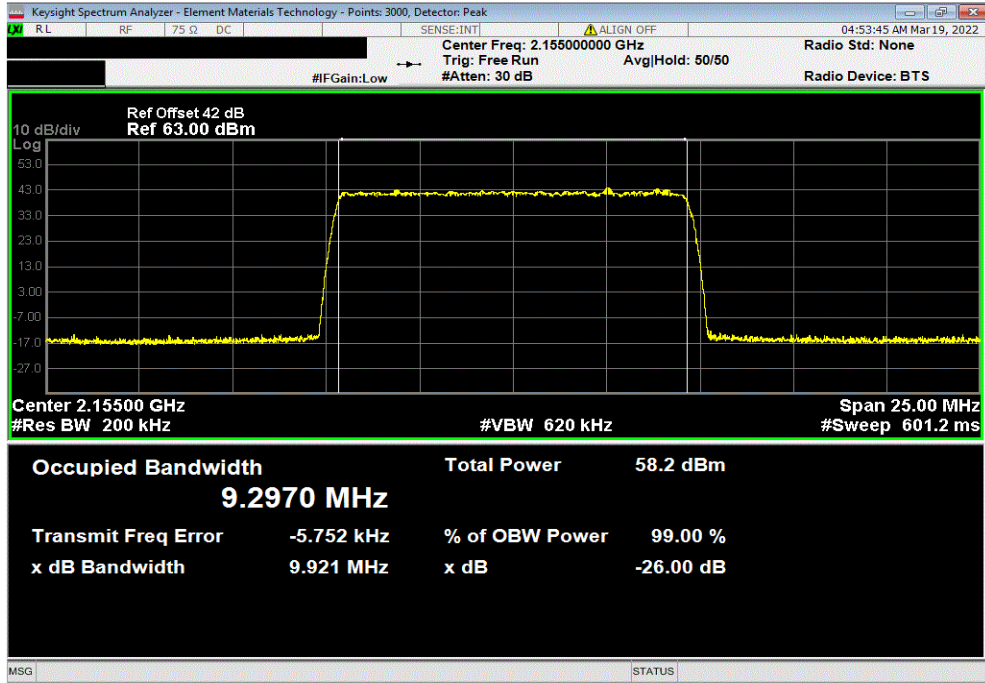


OCCUPIED BANDWIDTH

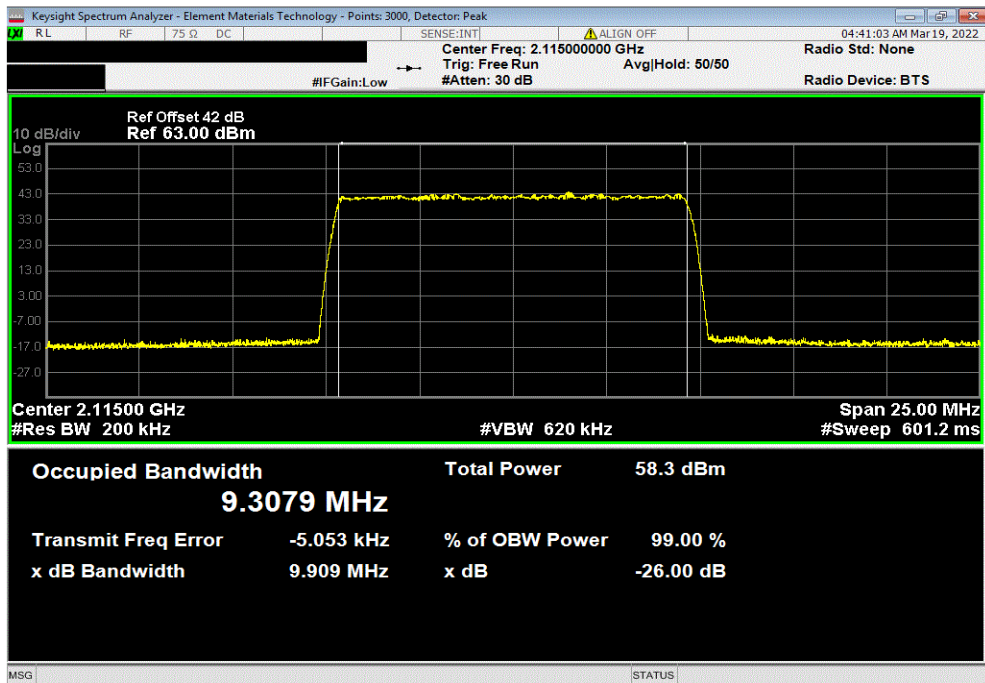


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.297 | 9.921 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2115 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.308 | 9.909 | Within Band | Pass | | |

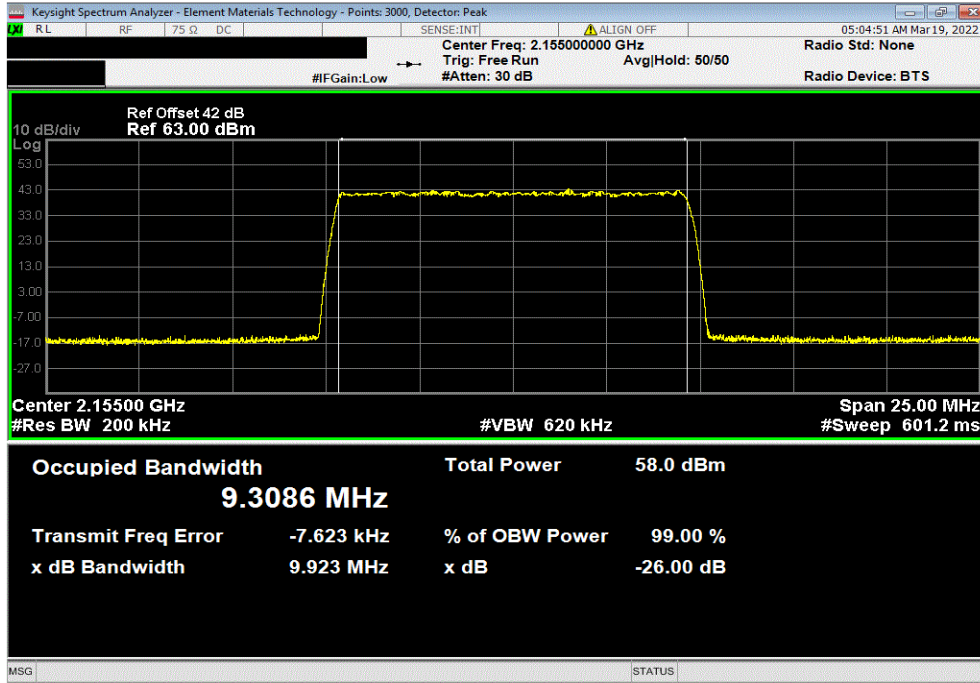


OCCUPIED BANDWIDTH

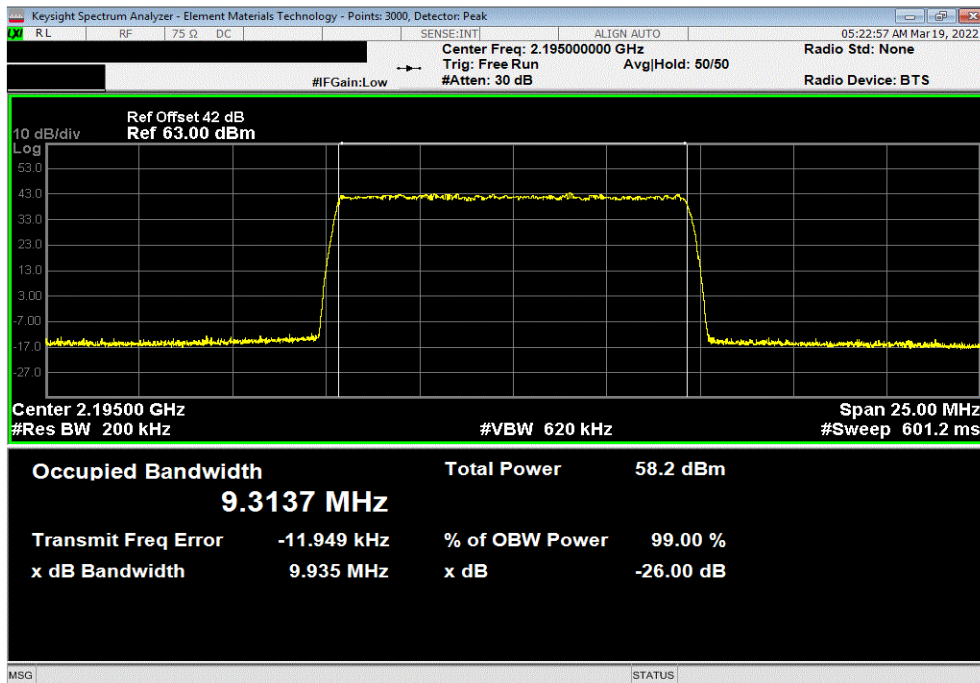


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.309 | 9.923 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, High Channel, 2195 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 9.314 | 9.935 | Within Band | Pass | | |

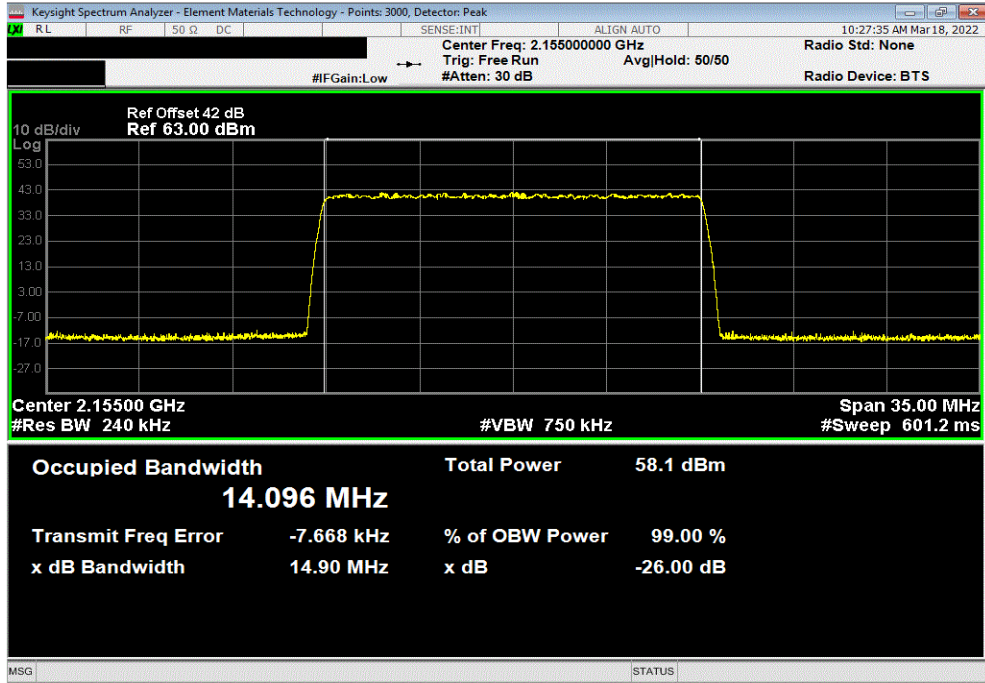


OCCUPIED BANDWIDTH

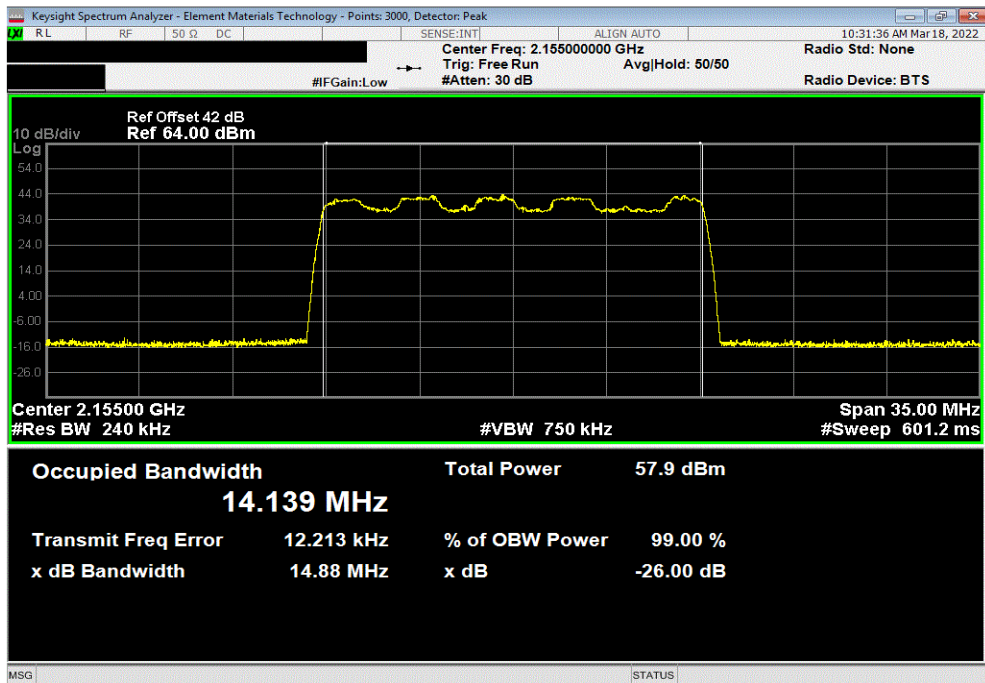


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.096 | 14.901 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.139 | 14.881 | Within Band | Pass | | |

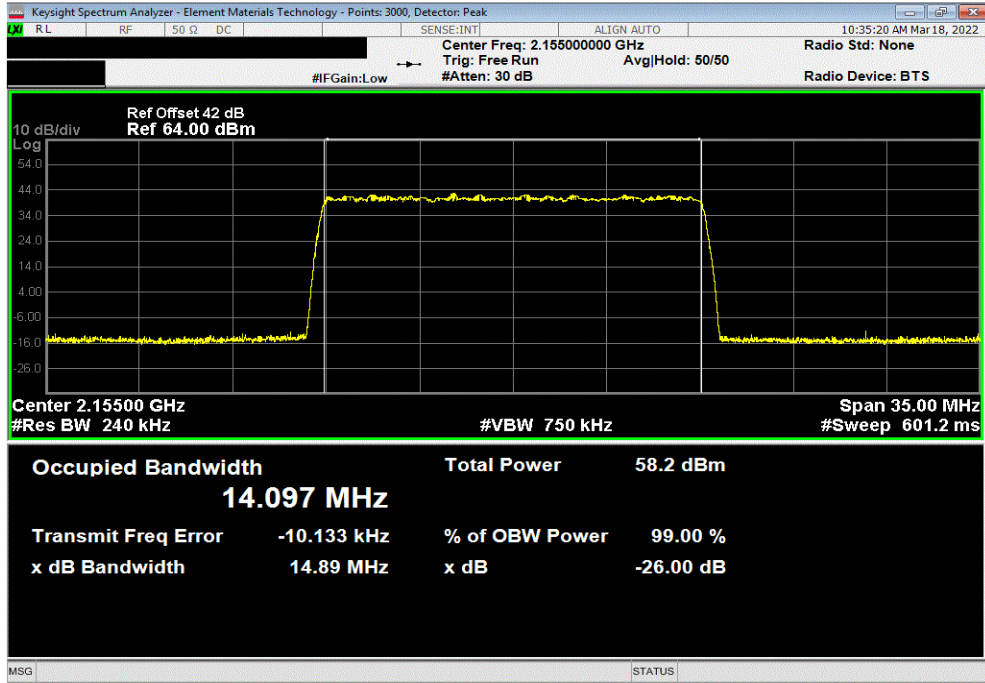


OCCUPIED BANDWIDTH

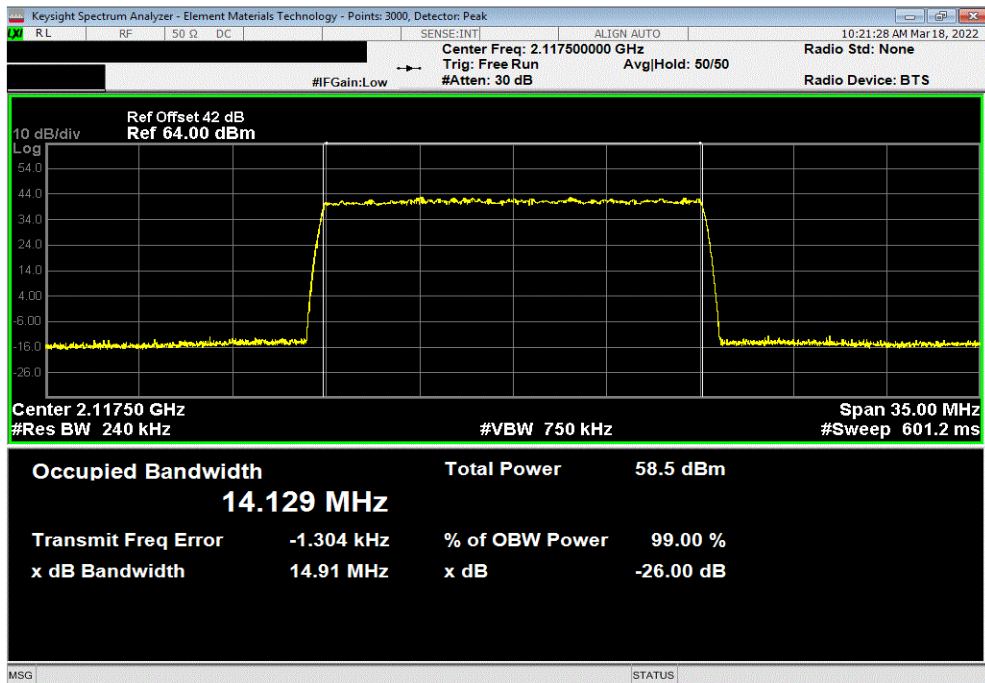


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.097 | 14.888 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2117.5 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 14.129 | 14.915 | Within Band | Pass | | |

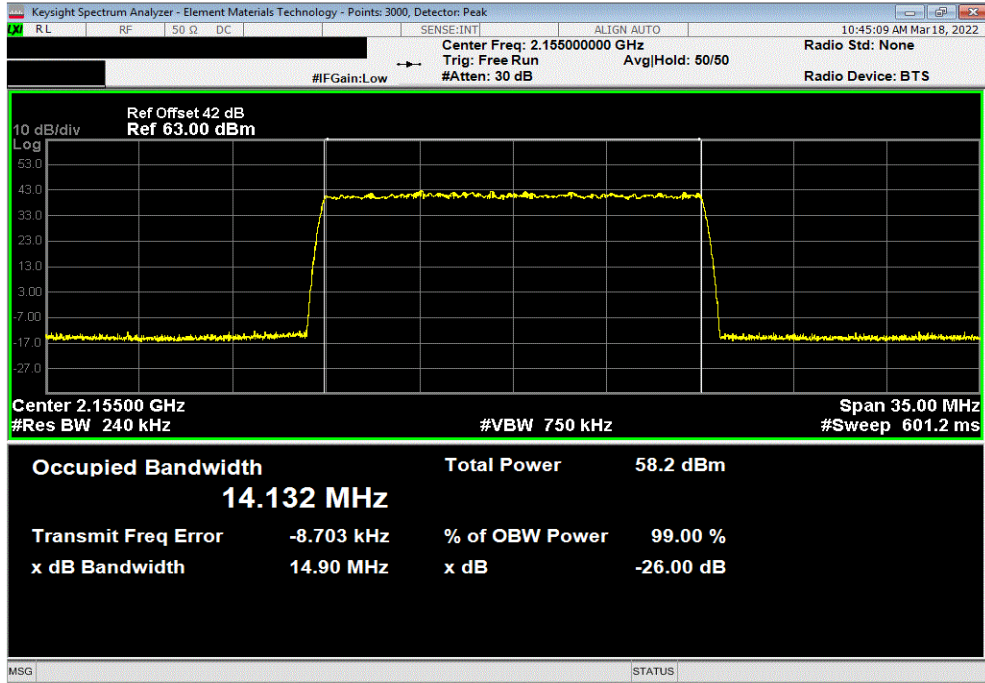


OCCUPIED BANDWIDTH

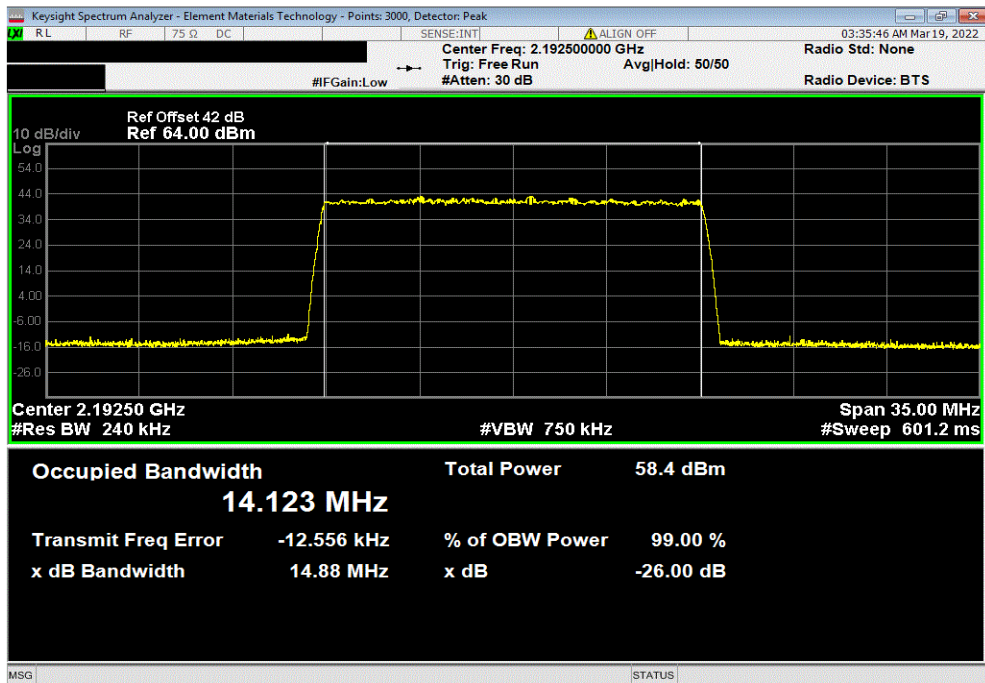


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz | | | | | | | |
|---|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 14.132 | 14.903 | Within Band | Pass | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, High Channel, 2192.5 MHz | | | | | | | |
|--|--|--|-----------|------------|-------------|--------|--|
| | | | Value | Value | Limit | Result | |
| | | | 99% (MHz) | 26dB (MHz) | | | |
| | | | 14.123 | 14.88 | Within Band | Pass | |

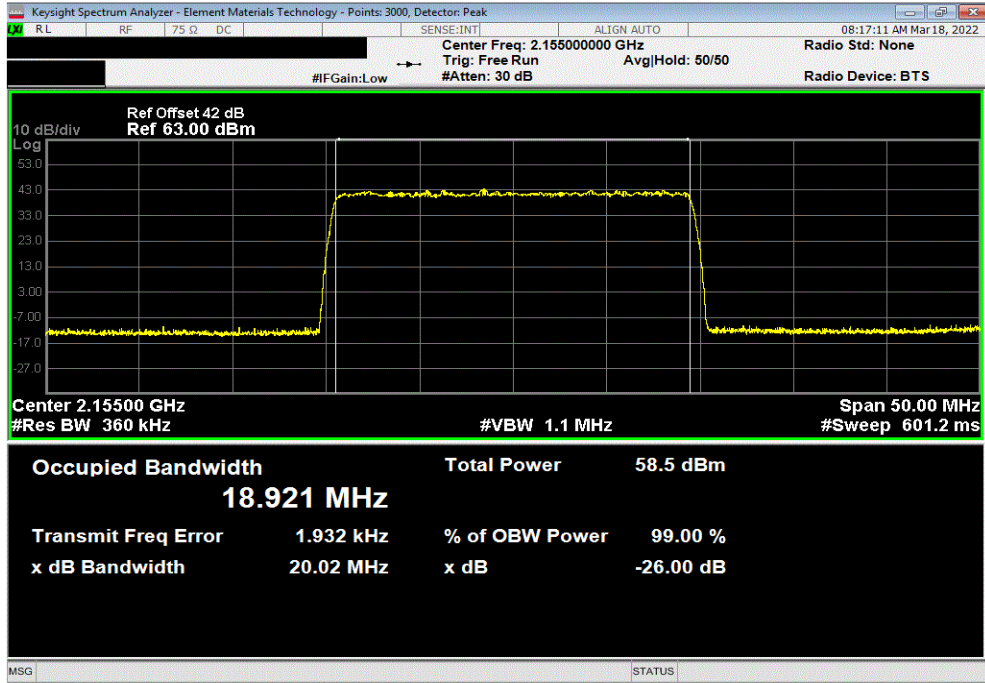


OCCUPIED BANDWIDTH

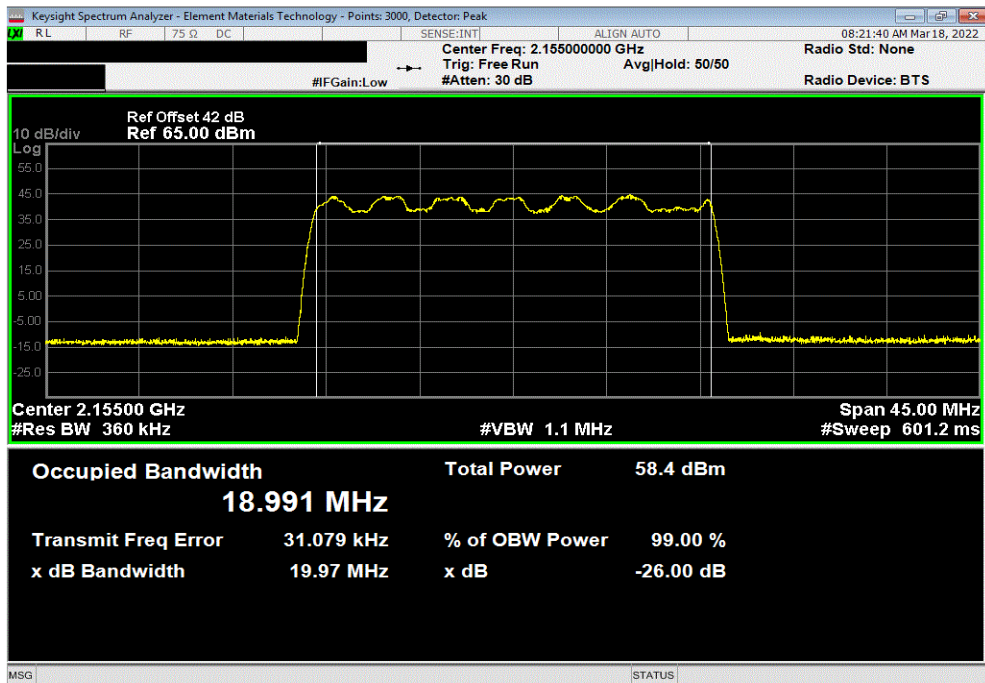


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.921 | 20.022 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.991 | 19.971 | Within Band | Pass | | |

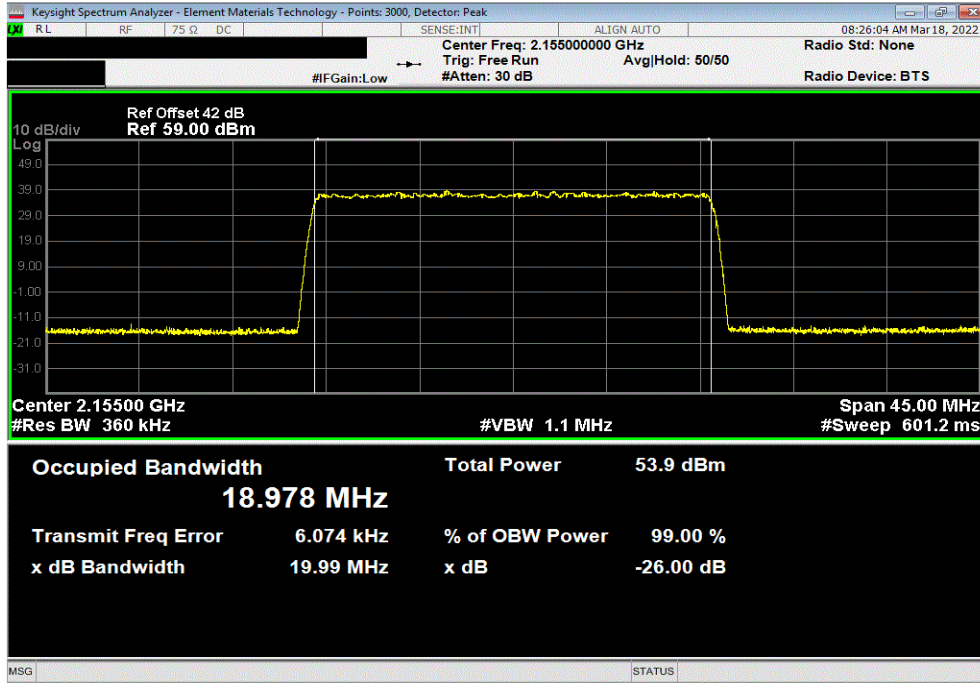


OCCUPIED BANDWIDTH

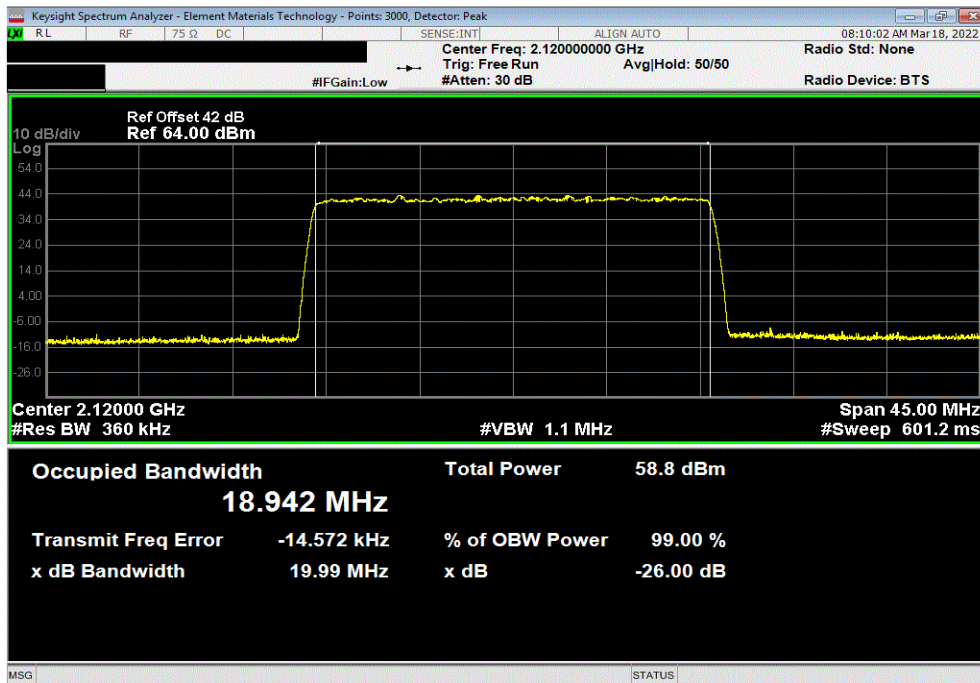


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|--|--|-----------|------------|-------------|--------|
| | | | Value | Value | Limit | Result |
| | | | 99% (MHz) | 26dB (MHz) | | |
| | | | 18.978 | 19.986 | Within Band | Pass |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2120 MHz | | | | | | |
|---|--|--|-----------|------------|-------------|--------|
| | | | Value | Value | Limit | Result |
| | | | 99% (MHz) | 26dB (MHz) | | |
| | | | 18.942 | 19.993 | Within Band | Pass |

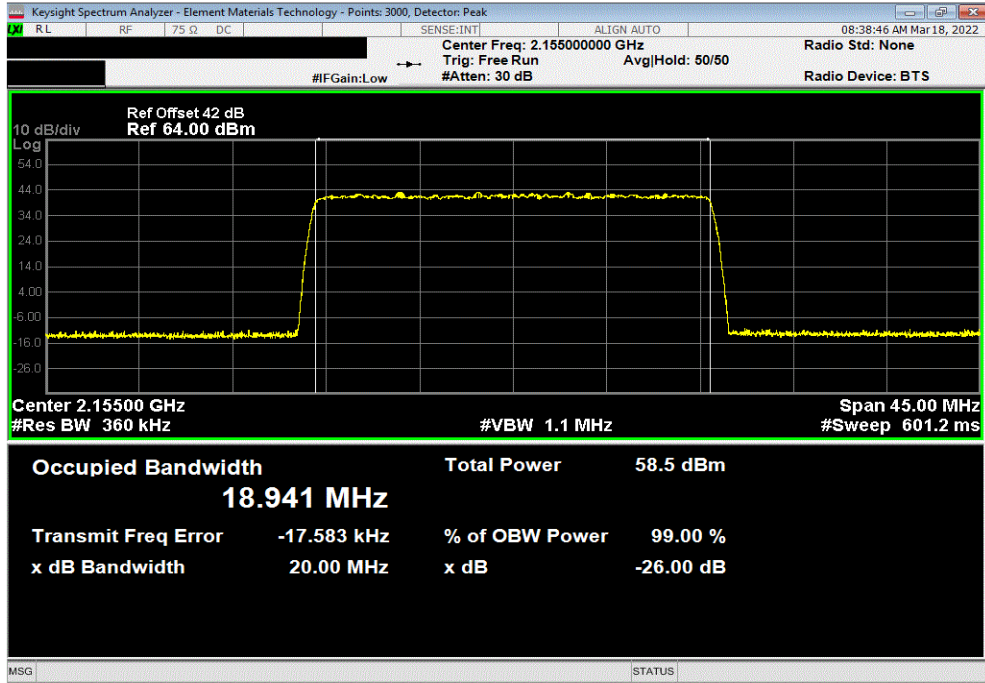


OCCUPIED BANDWIDTH

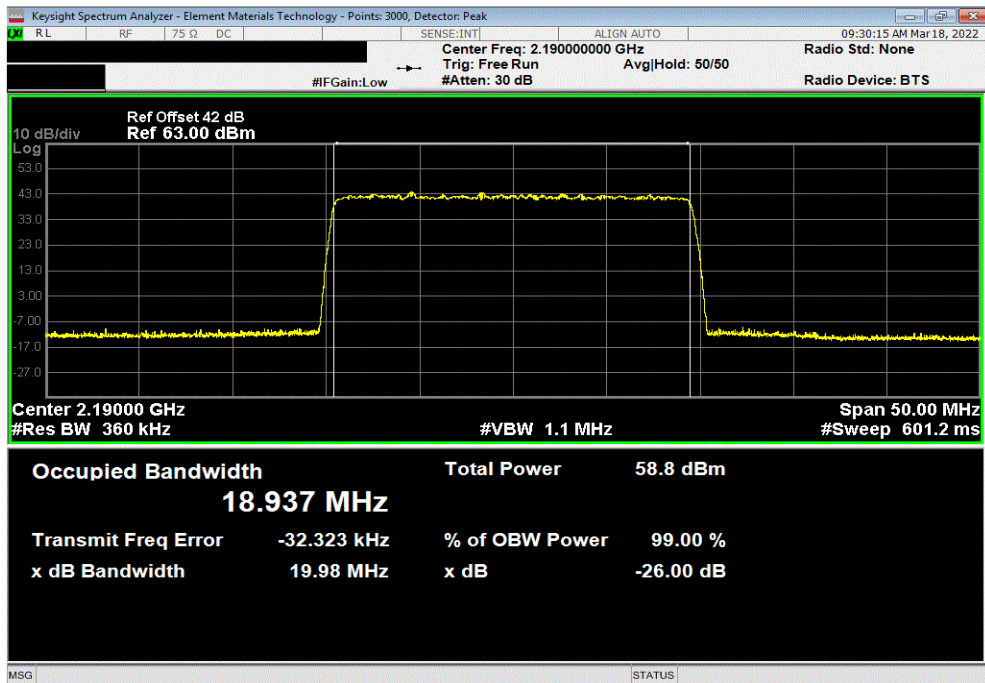


TbTx 2022.03.14.0 XbM 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.941 | 20.003 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, High Channel, 2190 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 18.937 | 19.977 | Within Band | Pass | | |

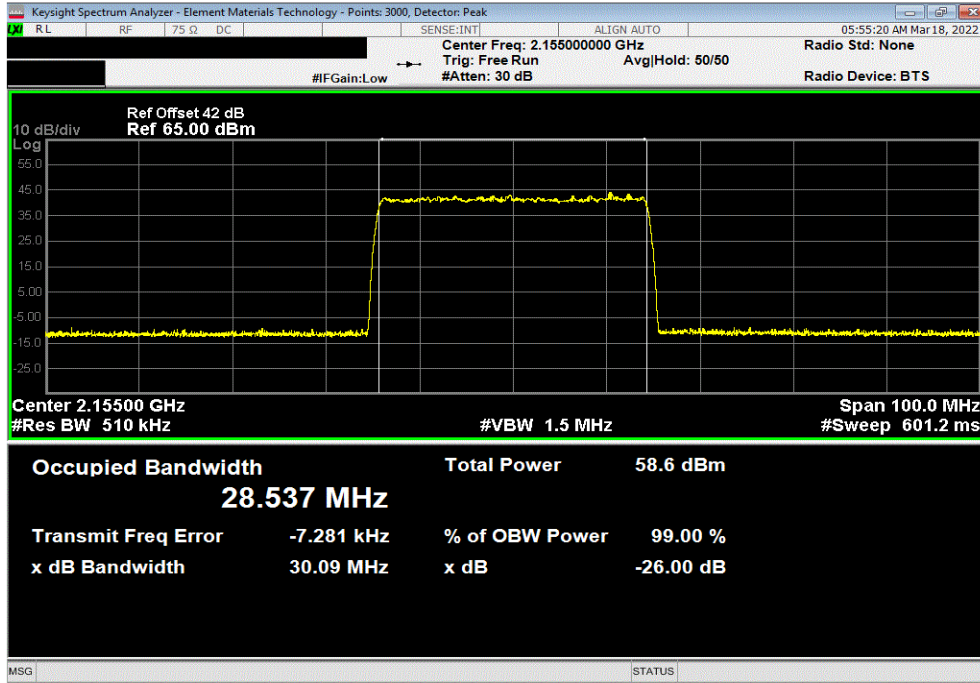


OCCUPIED BANDWIDTH

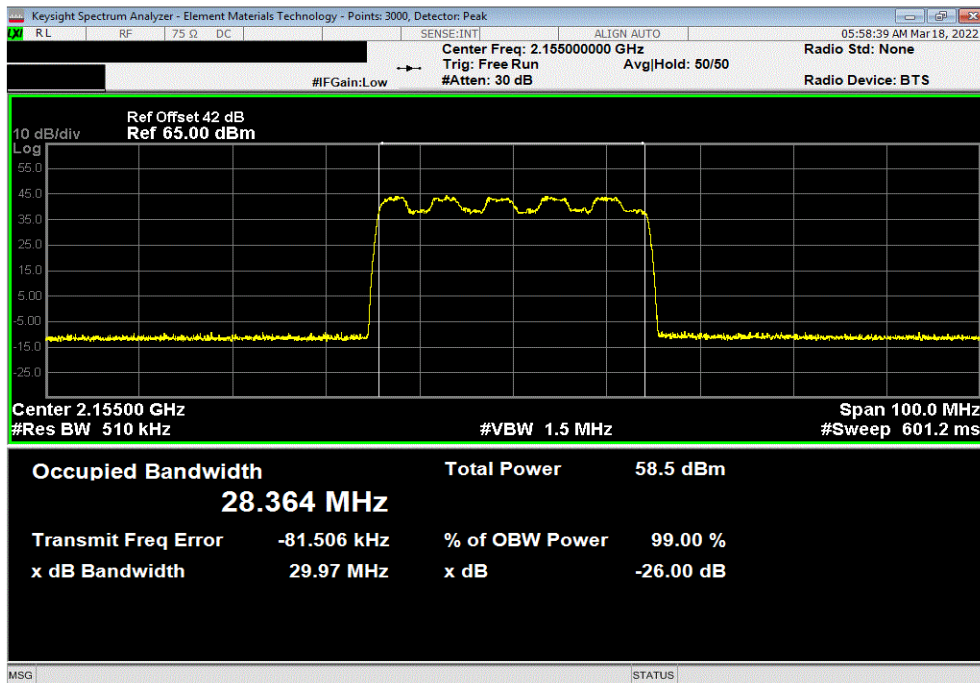


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.537 | 30.088 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.364 | 29.975 | Within Band | Pass | | |

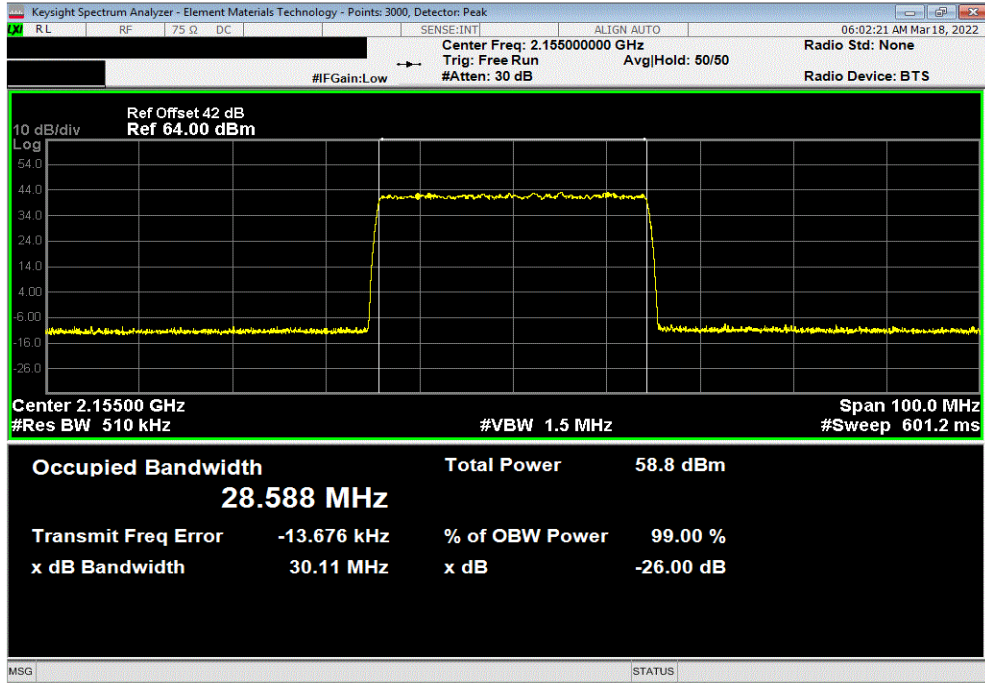


OCCUPIED BANDWIDTH

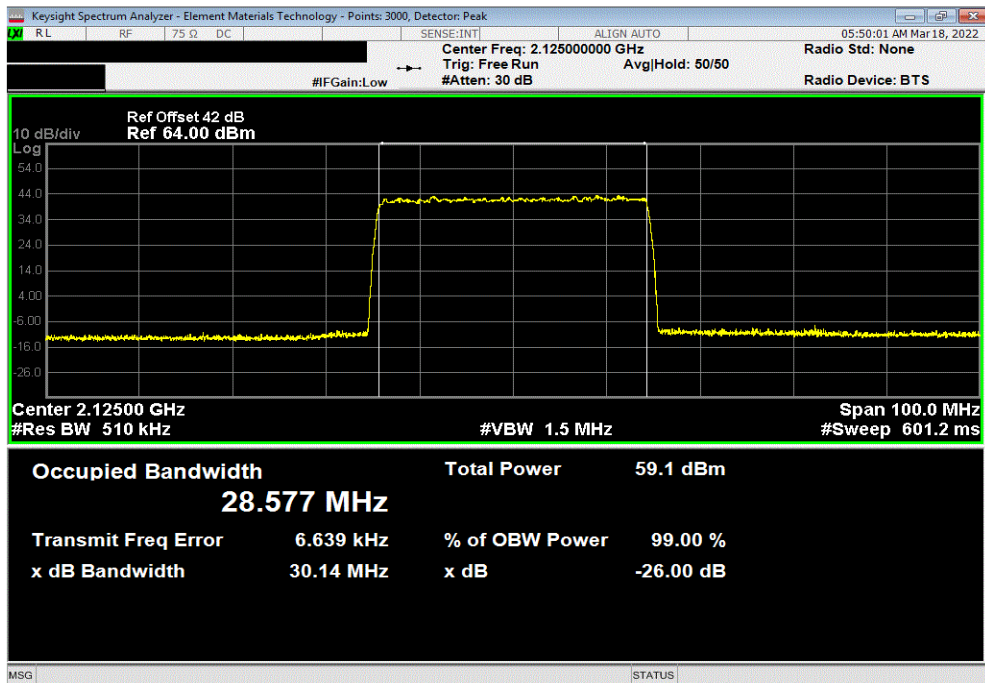


TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.588 | 30.113 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2125 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.577 | 30.136 | Within Band | Pass | | |

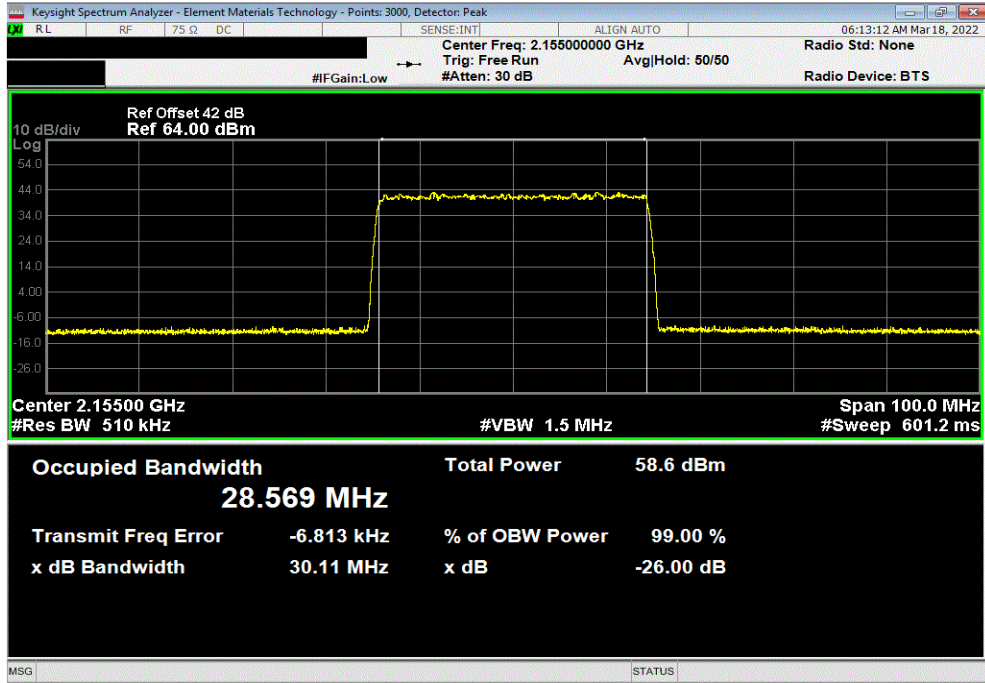


OCCUPIED BANDWIDTH



TbTx 2022.03.14.0 XMI 2022.02.07.0

| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz | | | | | | |
|---|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.569 | 30.106 | Within Band | Pass | | |



| Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, High Channel, 2185 MHz | | | | | | |
|--|-----------|------------|-------------|--------|--|--|
| | Value | Value | Limit | Result | | |
| | 99% (MHz) | 26dB (MHz) | | | | |
| | 28.582 | 30.024 | Within Band | Pass | | |

